

How to Educate Children for Sustainable Learning and for a Sustainable World

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Abstract This article discusses how early learning might be made sustainable for children. It considers the application of Goal 4 of the Sustainable Development Goals to early childhood education to ensure that inclusive and equitable quality education that promotes lifelong learning opportunities is available to all children. Early childhood practitioners and researchers are encouraged to implement curricula and pedagogies that can support sustainable learning. While educational research about sustainability is necessary, understandings of sustainability policies and values are also required. Values related to sustainability promote a certain type of pedagogy in which the child should be allowed to take initiatives, think, and reflect. This requires high-quality early childhood education. How sustainability concepts can be applied to both content and pedagogy are discussed, as well as different preconditions that are necessary so that all children can access education for sustainability. Important preconditions of education for sustainability include a need for awareness that lifelong learning is applicable to early childhood education, as well as educated staff who are aware about what is relevant for young children to learn about sustainability.

Keywords Sustainability · Sustainable Developmental Goals · Early childhood education · Pedagogy · Curriculum

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Résumé Cet article discute de la façon dont l'apprentissage dès le plus jeune âge pourrait être rendu durable pour les enfants. Il examine l'application à l'éducation préscolaire de l'objectif 4 des Objectifs du Développement Durable (ODD) pour assurer à tous les enfants l'accès à une éducation de qualité, inclusive et équitable, permettant des apprentissages tout au long de la vie. Les professionnels et les chercheurs de la petite enfance sont encouragés à mettre en œuvre des programmes d'études et des pédagogies qui peuvent soutenir l'apprentissage durable. La recherche sur l'éducation durable est nécessaire, mais il faut aussi comprendre les politiques et les valeurs en matière de durabilité. Les valeurs relatives à la durabilité promeuvent un certain type de pédagogie dans laquelle on devrait permettre à l'enfant de prendre des initiatives, penser et réfléchir. Ceci exige une éducation de grande qualité pour la petite enfance. L'article aborde la manière dont les concepts de durabilité peuvent être appliqués tant au contenu qu'à la pédagogie ainsi que les différentes conditions préalables nécessaires pour que tous les enfants puissent avoir accès à une éducation durable. Ces importantes conditions préalables de l'éducation au développement durable incluent une prise de conscience que l'apprentissage tout au long de la vie est applicable à l'éducation préscolaire, ainsi qu'un personnel instruit, informé de ce qu'il est pertinent que les jeunes enfants apprennent au sujet du développement durable.

Resumen Este artículo discute de qué manera el aprendizaje temprano podría hacerse sostenible para los niños. Este artículo considera la aplicación del Objetivo número 4 de los objetivos de desarrollo sostenible (ODS) para a la educación de la primera infancia, la que pretende asegurar una educación de calidad inclusiva y equitativa, que promueva oportunidades de aprendizaje permanente, disponible para todos los niños. Educadores para la primera infancia e Investigadores son alentados a implementar currículo y pedagogías que puedan apoyar el aprendizaje sostenible. Mientras que la investigación educativa acerca de la sostenibilidad es necesaria, también se requiere entendimiento de las políticas de sostenibilidad y valores. Valores relacionados con la sostenibilidad, promueven un cierto tipo de pedagogía en la cual al niño se le permitirá tomar iniciativas, pensar y reflexionar. Esto requiere una educación de primera infancia de alta calidad. Cómo conceptos de sostenibilidad son discutidos y pueden ser aplicados en ambos, contenidos y la pedagogía, tanto como las diferentes condiciones previas que son necesarias para que todos los niños puedan acceder a una educación para la sostenibilidad. Importantes condiciones previas para una educación para la sostenibilidad incluyen la necesidad de conciencia que los aprendizajes para toda la vida son también aplicables para la educación de la primera infancia, tanto como, equipos profesionales educados que tienen conciencia de lo que es relevante que aprendan los niños sobre la sostenibilidad.

Introduction

Although most people think about sustainability as related to concerns about the environment, we focus on the often neglected role of young children's place in discourses of sustainability. We propose that all children should have opportunities

to participate in high-quality early childhood education (ECE). Such a goal has received strong support in international agreements and specifically in the Sustainable Development Goals to be achieved across the next 15 years (United Nations (UN) 2015). The UN announced 17 Sustainable Development Goals (SDGs) that should be the focus of all countries' work towards future sustainability from 2016 to 2030. In proposing "education for all" as an initiative for sustainability, the current UN General Secretary Ban (2012) also promotes a shift from education to learning. While many children worldwide now receive education, they do not always experience quality education and do not achieve their full learning capabilities because of this. At the same time, education should be viewed in relation to all the other proposed sustainability goals for the world in which children live with an emphasis on the necessary conditions that are required for a sustainable world.

The SDGs include a focus on high-quality education. Goal 4 reads, "Ensure inclusive and quality education for all and promote lifelong learning" (United Nations (UN) 2015, p. 19). An indicator for this goal (Goal 4.2) particularly focuses on ECE, "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" (United Nations (UN) 2015, p. 19). Related to this statement, it is important to view readiness for school in a broad perspective, for example, in which health, care, play, and enjoyment of learning are included. While many people think of readiness for school as training on a set syllabus and rote learning, nothing is said about this in the goals. Arguably, Goal 4 proposes transformative attention to the unfinished business of the education for all (EFA) agenda, a goal that has been around since 1992 when the first commitment to EFA was launched. At that time, EFA focussed on primary school-aged children. Finally, the "all" in EFA now also includes preschool children!

Other current goals in the 2030 Agenda for Sustainable Development (United Nations (UN) 2015, pp. 18–25) seek "good health and well-being" (Goal 3), "gender equality" (Goal 5), "clean water and sanitation" (Goal 6), "decent work and economic growth" (Goal 8), "responsible consumption and production" (Goal 12), and "climate action" (Goal 13); all of which relate closely to education in various ways. The global community has recognised education as the most important area for achieving other goals. The *Incheon Education Declaration* generated at the UNESCO final EFA conference (UNESCO 2015a), at which the agenda for SDG 4 was negotiated, reads: "our vision is to transform lives through education, recognising the important role of education as a main driver of development and in achieving the other proposed SDGs" (p. 7).

Overall, the SDGs encourage us to question what kind of curricula and pedagogy can support the sort of sustained learning addressed in Goal 4 and its indicators. In response, this paper focuses on answering that question, while acknowledging that any curriculum or pedagogy can never stand alone, there is always a context and history. Across this article, the diversity of cultural contexts in which children live is considered, as is what learning for sustainability might mean. The characteristics of high-quality early childhood education are explored and how sustainability concepts can be applied to both content and pedagogy. Finally, the preconditions necessary

for all children to experience sustainability in early childhood education are outlined.

Children Grow Up in Various Cultural Contexts

In order to show how the global context affords different living and educational conditions for young children, we could categorise countries into three groups. The first group comprises countries shown to support greater equality for their people in many ways, including most Nordic countries. For example, Sweden demonstrates the smallest gap between the richest 20% and the poorest 20% in its society compared to other countries (Wilkinson and Pickett 2009). Similarly for gender equality, Sweden is also often noted as having a leading role (Björnberg 2002); and also in early education (UNICEF 2008; Lien Foundation 2012) because all children have the right to access ECE from one year of age (National Agency of Education 2016). US economist and director of the Earth Institute at Columbia University, Jeffery Sachs (2016) also indicated Sweden was a leading nation in relation to sustainability policies.

The second group includes countries identified as having equality in education but extensive inequality in other societal matters. Most East Asian countries such as China, Hong Kong, South Korea, and Taiwan belong to this category. In those countries, governments have increased investment in ECE in recent years. For example, 3–5-year-old children in South Korea receive vouchers for 20 h of ECE and Hong Kong recently launched a program to offer free education to all 5-year-old children. Although other resources, including financial support to families, are not equally distributed for children in those countries, universal access to ECE has been achieved (Li et al. 2016).

The third group includes countries (many in sub-Saharan Africa) where access to at least one year of pre-primary education is extremely limited, despite various efforts made under the Millennium Development Goals. Often, children in these countries also experience discrimination on the basis of gender, race, or ethnicity (UNESCO 2016).

Many current studies have shown that when policies, programs, and public spending priorities are equitable and target people in the greatest need, the most disadvantaged children benefit from the services and good outcomes are achieved (Siraj-Blatchford et al. 2008). At the same time, in countries in which policies, programs, and public spending priorities are distributed inequitably, disadvantaged children face increased risks of disease, hunger, illiteracy, and poverty (Siraj-Blatchford et al. 2016). Since inequalities compound for those children who are most excluded from mainstream society, intergenerational cycles of disadvantage can be perpetuated that eventually harm children and undermine the stability of societies and even the security of the global community.

At times when greater awareness of certain issues is needed and when specific slogans are launched by the UN, then this can be fruitful. For example, Education for Sustainable Development (ESD) has been a quite successful campaign in that sense, by promoting the “Decade of ESD” (UNESCO 2015b), through which

sustainability was a lead theme across ten years. By contrast, for ECE, which has long ranked as a neglected area on the global agenda among important stakeholders, OMEP (World Organisation for Early Childhood Education) has stressed the importance of having a “Decade for Early Childhood Education”. This message has been poorly received by world leaders. In response, we argue that it is time to persuade every stakeholder to take the initiative to make that ambition a reality.

Of course, in pointing to policy as a key question for the future, we recognise that politicians cannot solve every problem. We argue that equality and equity should be the principal objective at one level and one step towards that equality and equity are to achieve Goal 4 and provide every child with access to quality education, because education is one way to overcome poverty. A related purpose is for all ECE programs in wealthier countries to sustain high-quality early education and also to host a diversity of quality programs (Sheridan et al. 2009). This means that we have to be open to ideas for alternative settings and ways in which to organise programs of various kinds. It is still important to keep in mind that it is the competence of the staff that makes the difference in providing quality programs, although parental cooperation and the overall goals stated within any curriculum are also of importance. After all, education is a complex enterprise related to children’s experiences in society, in family life, and in what ECE can offer in order to guide children towards sustainable learning and also to learn about sustainability as such.

Learning for Sustainability

Many researchers agree that a path to sustainability depends on how societies educate the next generation. How learning can be made sustainable for children and what they learn about the world around them should be addressed seriously (Siraj-Blatchford et al. 2016). More than ever, countries should recognise that the global society is sustainable only if it can be perpetuated, that is, sustained by future generations. Researchers like James Heckman (2006) and other economists showed clearly how societies accrue benefits by spending money on the youngest generation, because it yields greatest returns compared to spending money on programs at later stages of children’s development. We also know from research that the family and the individual child benefit from high-quality early education (Pramling Samuelsson and Wagner 2012). Lifelong learning begins at birth, and the learning experiences children receive during childhood will provide enduring benefits.

One aspect of learning for future generations is to develop ESD skills. UNESCO (2012) lists some of those skills and others that can be adopted for children’s education: life and lifestyle skills (e.g. consumer awareness), problem-solving skills, innovation skills (e.g. entrepreneurial education), and citizenship skills. The SDG Development Report (United Nations (UN) 2016) argues that quality education fosters the acquisition of the foundational skills of literacy and numeracy as building blocks for further learning, including analytical, problem-solving, and other high-level cognitive, interpersonal, and social skills. It develops not only the skills, but also the values and attitudes that enable citizens to live healthy lives and

respond to local and global challenges. For ECE, this means that the foundations for literacy and numeracy, as well engagement in creative and intellectual tasks with a play-based orientation, have to be central. Here, it is important that children's imagination and invention in their play is recognised as being as important as working on literacy and numeracy or other content areas (Pramling et al. 2017).

High-Quality Early Childhood Education

A precondition for educating children for sustainable learning for a sustainable world is that all children have access to high-quality ECE programs. Many studies, policy reports, and practical guides have addressed what constitutes quality ECE programs (e.g. White and Pramling Samuelsson 2014; Pramling Samuelsson and Wagner 2012; Pramling Samuelsson 2016). While this paper does not address that topic in detail, this article asks what kind of pedagogical approach and curriculum content can facilitate sustainable learning for a sustainable world? In any case, both aspects, sustainable learning and a sustainable world, depend on each other and should be integrated into everyday practices with young children.

In the Organisation for Economic Co-operation and Development's (OECD) survey of its membership on national ECE curricula, one category of analysis was whether the curriculum included skills about learning "how to learn" (OECD 2016). This can be viewed as one factor for sustainable learning, since it includes self-reflection on "what" and "how" one learns. Through that understanding is the means to modify one's learning efforts. Not many countries could report that achievement, even if the ideas of sustainability were embedded in the general view of their curricula. In response, the goals regarding how children learn "how to learn" should be similar across the world. How those goals can be achieved depends on the skills and knowledge of school staff, although ideas about the value of openness are apparent in the Swedish curriculum, as a strategy for democracy and as an aspect of sustainability (Ministry of Education and Sciences 2010). While curriculum documents point out to teachers directions for students' learning, in terms of content area and learning objectives, as research has shown, children learn in different ways depending on their previous experiences (Pramling Samuelsson and Asplund Carlsson 2014) and also on the interactions and communication between children and their teachers (Doverborg et al. 2013).

Above all, there needs to be opportunities for each child to make meaning of their own experiences; after all, that is what is considered to constitute learning. When children can create their own meaning instead of merely repeating what someone has told them, knowledge becomes integrated with their emotions and, as a result, children own that knowledge (Pramling et al. 2017). By extension, such a perspective can inform how to engage children in sustainability practices and act as agents of sustainability (Ärlemalm-Hagsér 2013). Individuals need to become engaged in questions that mean something to them, that is, knowledge grounded in their own bodies and feelings (Emilson and Johansson 2017). As an example, during recent decades, Reggio Emilia has expanded the pedagogy of listening worldwide (Rinaldi 2006). Listening is necessary for teachers to know where each child stands

in the learning process so that they can challenge children's thinking (Pramling Samuelsson 2016). Openness to children's ideas has long been a critical practice within ECE, and Reggio Emilia has been well accepted in many countries around the world (OECD 2012). Education of the next generation is, however, not only about listening to children. There is also a need for skilled teachers who can direct children's attention towards various sustainability questions within play-based activities.

In curricula, which accommodate children's voices and places, children's values and participation are central to learning through their everyday activities. However, in some curricula, for example in the Sweden, values are listed. In Sweden, it is indicated that preschools should strive to develop in children, openness, respect and responsibility, capacity to empathise with others in situations and give help, develop understanding of equal rights for all human beings, respect for all living things and the environment, and the ability to discover and reflect, and take a stand in respect to ethical dilemmas (National Agency of Education 2016). All of those values are important in agendas for sustainability that can relate to three sustainability dimensions: the economic, the environmental, and the sociocultural. Other national curricula include sustainability-related values, such as Sweden does, that strive to develop children's understanding of science and relationships with nature, including knowledge about plants, animals and environmental issues, such as global warming. Although the term *sustainability* is not always expressly used, there is considerable room in existing curricula for education towards sustainability. The Norwegian framework for preschool already has included sustainability as content in their curriculum guidelines for preschool (Kunskapsdepartementet 2017). In Sweden, sustainability and global questions have now been identified by the Swedish Government for attention when the preschool curriculum is revised (Utbildningsdepartementet 2017).

Even if a focus in teaching is on children's agency and creating their own meaning in learning, educators still have to supply guidance and challenge. Educators have to understand what may be unsustainable and what can be done to promote sustainability. In thematic work with children, an educator can direct children's attention towards the environmental, sociocultural, and economic aspects of most topics in which children engage in early education (Engdahl 2015). From the perspective that we are advocating, teaching is based on the idea of making a concept clear and discernible to the learner (Doverborg et al. 2013). In this process, it is pivotal to understand that a direct relationship between what is taught and what children learn does not exist. To create meaning, children have to relate new knowledge both to prior experiences and with their immediate communication with teachers and peers. Children see, hear, and reflect on what they experience in their everyday lives, and educators then have to meet children in their ideas, support them, and challenge their ideas to develop sustainable ways of learning as a lifelong process. This is especially true in relation to knowledge about sustainability, which cannot be learned definitively at any point in time because this knowledge may change over time, and new learning has to be based on what learners already know. To that end, sustainable lifestyles and citizenship are key notions in education for sustainability today. For example, from Fröbel's (1826/1995) philosophical ideas on

children's learning, a tradition emerged that children should be outdoors at least once every day, whether is it very cold, raining, or sunny. In Norway, walking in the forest and appreciating nature are important parts of the national culture; however, a tradition of sustainability need not relate only to the outdoors. Nevertheless, not only in Scandinavia is sustainability most commonly related to environmental questions, this seems to be the case all over the world. In fact, Davis (2015) has even categorised such education in terms of being *in* the environment, *about* the environment, and *for* the environment. However, if a perspective is taken on how the sustainability dimensions relating to environmental, economic and sociocultural aspects are integrated, then one has to change from a focus just on nature and the environment to a more holistic perspective.

In any case, teachers also have to learn about what and how they can support children's learning. A curriculum has to be open enough to afford teachers opportunities to think, reflect, and innovate. An example of an open curriculum is the Swedish one for the preschool (National Agency of Education 2016), which, at 20 pages in length, points out that the mission, theoretical perspective, view of learning, and acts of care and play are important and integrated factors. The curriculum also has three sections of goals to pursue that are related directly to children: norms and values, development and learning, and children's influence. By extension, the curriculum also has four sections addressing staff actions: cooperation with parents; cooperation with school when children are making the transition; follow-up, evaluation, and the development of preschool work; as well as the responsibilities of preschool leaders. The same principle of openness applies to the early childhood curriculum in New Zealand's *Te Whāriki* (Ministry of Education 1996) and in Australia's *Being and Becoming: The Early Years Learning Framework* (Commonwealth of Australia 2009).

At the same time, teachers' knowledge, skills, and attitudes pose consequences for what children learn in ECE (Williams et al. 2016). Interestingly, cultural preferences emerge when ECE teachers worldwide give examples of what is most important to use in educating preschool children to appreciate sustainability. For example, South Korean teachers focus on biodiversity and environmental questions, whereas Swedish teachers focus on human rights (Park and Pramling Samuelsson 2016). In terms of culture, such preferences are the result of Sweden having had a social democratic government for more than 50 years, in which equity and equality have been key concepts. Its school and health systems were built to be free for all, every child has been involved in the same united school system, and parents have fought for day-care for their children since the 1960s, when women were needed in the labour market (Klinth and Johansson 2010). By contrast, South Korea does not have a long history of democracy; thus, equity and equality have not been key concepts in society. In South Korea, education for sustainability is not embedded in the cultural context. Early childhood teachers are typically introduced to ESD concepts in their pre-service teacher education. Therefore, Korean teachers experience ESD not through sustainable living, but from their university education. But although Sweden and South Korea have very different cultural backgrounds, teachers in both countries want to create a form of early childhood education that will support sustainable learning and learning for a sustainable society.

Early Childhood Education for Sustainability is About Both Content and Pedagogy

Children's experiences are simultaneously physical, social, emotional, and intellectual. What children learn and the ways in which they are taught also tell children something about who they are and what knowledge is privileged (Hundeide 2006). Accordingly, if educators want children to take a stand and speak out for human rights, justice, and the environment, children must have experienced those ideas for themselves and seen themselves as human beings with rights, for example, someone who can claim justice or other rights. In that sense, *experience* means having had personal experiences and opportunities to communicate about those experiences and, as a result, being able to make the meaning of those experiences their own (Doverborg et al. 2013; Pramling et al. 2017). Knowledge that children acquire needs to be anchored in their own experiences to have deep meaning; otherwise, it is dead knowledge—something learned only for evaluation.

Accommodating children's knowledge process requires creativity, play, and attention to reality, meaning that play and creativity have to have space in ECE pedagogy, not as something separate from learning, but as a dimension of the teaching and learning process. If children are learning individuals then in their play, they have to be allowed to apply their perspectives, ideas, and fantasies into whatever the teacher introduces in practice (Pramling Samuelsson and Asplund Carlsson 2008). Such a conceptualisation also means that relationships, communication, and interaction have to be key notions of any ECE pedagogy for children's development of knowledge, skills, and attitudes, so that teachers can be a part of children's play world (Pramling 2016).

In that light, if children have a sense of feeling at home in nature; of what is just and unjust; of being an individual allowed to think and feel about being included in a group; and being able to negotiate agreements, then the necessary conditions for sustainability education are met. At the same time, creativity and problem-solving are important skills to implement in ECE programs, and the ECE community has to understand that it is involved in developing something that does not have a blueprint or model to be copied. People are then involved in jointly creating sustainability in a large number of ways for the future when it is hard to predict what will be most successful for the future. What we know is that we need creative people who can solve problems of various kinds and this is why children as actors and agents have to be at the agenda from the early years. Educators have to use their creativity and knowledge about sustainability in order to find new ways and new content to implement in ECE to achieve sustainable learning.

Preconditions for Involving All Children in Sustainability in ECE

Several preconditions determine the various levels for making all children a part of education for sustainability. *First*, awareness of the fact that lifelong learning includes ECE is necessary. Such awareness implies that all children should enjoy

access to high-quality ECE years before they enter school (White and Pramling Samuelsson 2014). Unfortunately, lifelong learning has often been considered to be education after the regular school years and not before. Without early education of high quality, we cannot even talk about what sustainability means in terms of content and pedagogy.

Awareness also extends to the *second* precondition: educated staff. It is not enough for educational leaders to have an education appropriate to young children's learning, they must also know about sustainability in a wide sense. All adults working and interacting with children have to be well educated as well, both when it comes to knowledge about children and awareness of sustainability questions and what is relevant for young children to learn about sustainability. This condition makes the difference for quality in practice (Sylva et al. 2010). This means that both the global world and every government need to take responsibility for ECE in the same way that they do for primary school education and make sure that young children have well-qualified ECE staff. For teachers to do a good job with the youngest age groups takes lot of skill and engagement by adults. This is why the staff in early childhood education needs the same length of educational preparation as teachers in school.

The *third* precondition is the development of curriculum plans that include sustainability. We have argued that ESD refers to not only environment-related questions but also equally to sociocultural and economic questions. All of those aspects need to be related to each other in how curriculum goals are formulated in light of SDG Target 4.7, which strives to:

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 (United Nations (UN) 2015; p.19).

The content areas stated in this SDG Target 4.7 can be viewed as including both approaches to pedagogy and content for ECE as well for later learning in school. Although every city, region, and country have some kind of guidelines, curriculum, or framework for ECE that is known to staff within that context, teachers should also be aware of the global agreements such as the SDGs. In the best of worlds, global agreements should be a part of guidelines, curricula, and frameworks; if not, then teachers should ensure that they introduce the goals by adapting them to the local situation. This is in order to take account of children's experiences and realities so that children can relate sustainability through their personal experiences (Hägglund and Pramling Samuelsson 2009; Pramling Samuelsson 2011).

Teachers who are working with young children today may not have been exposed to current thinking about sustainability and may not have learned about sustainability in their own education. They may need guidance. In response, OMEP is currently working on a Resources Bank for Early Childhood Education (OMEP 2016: <http://www.eceresourcebank.org>) that might help to inspire teachers. The Resource Bank contains, among other things, an Environmental Rating Scale for

Sustainability in eight languages, by which teachers can rate their practice. Thereby, teachers can learn what they need to do to include social and economic sustainability dimensions in their teaching, in order to promote a broad view about the meaning of sustainability in their classrooms (Siraj-Blatchford et al. 2016).

Fourth, parental involvement in ECE is important, since cooperation between home and preschools is critical for long-term benefits. ECE for sustainability may be one feature for a friendlier and safer society. However, as we have argued, teaching and learning processes need special qualities so that children will learn to take action, think, and reflect about how to influence their own futures. These ideas related to democracy, participation and influence, are central ideas that are evident in the UN Convention on the Rights of the Child (United Nations (UN) General Assembly 1989).

A fifth and final precondition for supporting the next generation to take account of sustainability is to address questions about values in education for the early years. Empirical research (Johansson et al. 2016) has shown how teachers struggle with the dilemmas of individual versus social goals in the everyday life of preschool. Ideas about values of care, ethics, and democracy most often are related to children's individual rights. However, developing an approach for ECE for sustainability also needs to focus on collective agreements to advocate for teaching children not only about their individual rights but also about their responsibilities to others. In a democracy, one cannot exist without the other. In their book that discussed their project about values education in Nordic countries, Johansson et al. (2016, p. 239) write, "Not the least, it is important to ask at the education policy level which values children should have as citizens, and what kind of society these values can lead to. Values based on diversity, democracy, and unity cannot be taken for granted, they must constantly be defended" (our translation).

Part of the necessary value system is for teachers to realise that they are part of the larger world and, in turn, have an obligation to influence each child to seek a more sustainable world for the future. This generation of children, as well the next, and the next, will have to overcome the unsustainability caused by previous generations. We cannot embrace ideas of protecting children and childhood from reality. Children are part of the social reality and have to be prepared early on to advocate for sustainability and work actively towards solutions in cooperation with adults. Adults and teachers have the responsibility to lay the foundations for young children's sustainable learning and for making sure that the next generation is interested in creating a sustainable world.

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References

- Ärlemalm-Hagsér, E. (2013). *An interest in the best for the world? Education for sustainability in the Swedish preschool (Doctoral thesis, Gothenburg Studies in Educational Sciences 335)*. Gothenburg: Acta Universitatis Gothoburgensis.
- Ban, K.-M. (2012). *Global Education First Initiative*. UNICEF. Retrieved from https://www.unicef.org/education/bege_65956.html
- Björnberg, U. (2002). Ideology and choice between work and care: Swedish family policy for working parents. *Critical Social Policy*, 22, 33–52.
- Commonwealth of Australia. (2009). *Belonging, being and becoming: The early years learning framework for Australia*. Canberra: Australian Government Department of Education, Employment and Workplace.
- Davis, J. M. (2015). *Young children and the environment: Early education for sustainability* (2nd ed.). Melbourne, VIC: Cambridge University Press.
- Doverborg, E., Pramling, N., & Pramling Samuelsson, I. (2013). *Att undervisa barn i förskolan [To teach children in preschool]*. Stockholm: Liber.
- Emilson, A., & Johansson, E. (2017). Values in Nordic early childhood education: Democracy and the child's perspective. In M. Fleer & B. van Oers (Eds.), *International handbook of early childhood education*. Dordrecht: Springer.
- Engdahl, I. (2015). Early childhood education for sustainability: The OMEP world project. *International Journal of Early Childhood*, 47(3), 347–366. doi:10.1007/s13158-015-0149-6.
- Fröbel, F. (1826/1995). *Människans fostran [On the Education of Man]*. Lund: Studentlitteratur
- Hägglund, S., & Pramling Samuelsson, I. (2009). Early childhood education and learning for sustainable development and citizenship. *International Journal of Early Childhood*, 41(2), 49–63.
- Heckman, J. J. (2006). Skill formation and the economics of investing in disadvantaged children. *Science*, 312, 1900–1902.
- Hundeide, K. (2006). *Sociokulturella ramar för barns utveckling: Barns livsvärldar [Sociocultural frames and children's development]*. Lund: Studentlitteratur.
- Johansson, E., Fugelsnes, K., Lanke Mørkeseth, E., Røthle, M., Tofteland, B., & Zachrisen, B. (2016). *Verdipedagogikk i barnehagen [Value pedagogy in preschool]*. Oslo: Univesitetsforlaget.
- Klinth, R., & Johansson, T. (2010). *Nya Svenska fader [New Swedish fathers]*. Umeå: Borea Förlag.
- Kunskapsdepartementet. (2017). *Rammeplan for barnehagens innhold og oppgaver [Frames for the content and tasks in preschool]*. Oslo, Norway: Kunskapsdepartementet. Retrieved from <https://www.udir.no/laring-og-trivsel/rammeplan/barnehagens-innhold/rammeplan-for-barnehagens-innhold-og-oppgaver/>
- Lien Foundation. (2012). *Starting well: Benchmarking early education across the world: A report from the economist intelligence unit*. Singapore: Lien Foundation.
- Li, H., Park, E., & Chen, J. (2016). *Early childhood education policies in Asia Pacific: Advances in theory and practice*. Singapore: Springer.
- Ministry of Education. (1996). *Early childhood curriculum: Te Whāriki*. New Zealand: Wellington.
- Ministry of Education and Sciences. (2010). *Förskola i förändring [Preschool in change]*. Stockholm: Ministry of Education and Sciences.
- National Agency of Education. (2016). *Curriculum for preschool, lpfö 98, revised 2016*. <http://www.skolverket.se/laroplaner-amenen-och-kurser/forskola>
- OECD. (2012). *Starting Strong III: A quality toolbox for early childhood education and care*. Paris, France: OECD. Retrieved from <https://www.oecd.org/edu/school/49325825.pdf>
- OECD (2016). *Better policy for better life: Program for international student assessment*. Paris, France: OECD: Retrieved from <https://www.oecd.org/pisa/>
- OMEP. (2016). *Resource bank on early childhood education and ESD*. OMEP (World Organisation for Early Childhood Education). Retrieved from <http://ecefesourcebank.org/>
- Park, E., & Pramling Samuelsson, I. (2016). *A study of Swedish and Korean early childhood teachers' perception and attitude on education for sustainability*. Paper presented at the OMEP World Conference, Seoul, Korea 5–7 July.
- Pramling, N. (2016). Prologue—Where to now? In A. Farrell & I. Pramling Samuelsson (Eds.), *Diversity: Intercultural learning and teaching in the early years* (pp. 212–222). Oxford: Oxford University Press.

- 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* (Vol. 15, pp. 205–218). Berlin: Springer. doi:10.1007/978-3-319-42557-3_12.
- Pramling Samuelsson, I. (2011). Why we should begin early with ESD: The role of early childhood education. *International Journal of Early Childhood*, 43, 103–118.
- Pramling Samuelsson, I. (2016). What is the future of sustainability in early childhood? In A. Farrell, S. L. Kagan, & E. K. M. Tisdall (Eds.), *The Sage handbook of early childhood research* (pp. 502–516). London: Sage.
- Pramling Samuelsson, I., & Asplund Carlsson, M. (2008). The playing learning child: Towards a pedagogy of early childhood. *Scandinavian Journal of Educational Research*, 52, 623–641.
- Pramling Samuelsson, I., & Asplund Carlsson, M. (2014). *Det lekande lärande barnet: I en utvecklingspedagogisk teori [The playing learning child: In a developmental pedagogical theory]*. Stockholm: Liber.
- Pramling Samuelsson, I., & Wagner, J. (2012). Open Appeal to local, national, regional and global leaders to secure the world's future. *International Journal of Early Childhood*, 44(3), 341–345. doi:10.1007/s13158-012-0071-0.
- Rinaldi, C. (2006). *In dialogue with Reggio Emilia: Listening, researching and learning*. London: Routledge.
- Sachs, J. (2016). *Sustainable development: A new kind of globalization*. Boston: Boston Globe.
- Sheridan, S., Pramling Samuelsson, I., & Johansson, E. (2009). *Barns tidiga lärande: En tvärsnittsstudie om förskolan som miljö för barns lärande [Children's early learning. A cross-sectional study of preschool as an environment for children's learning]*. Göteborg: Acta Universitatis Gothoburgensis.
- Siraj-Blatchford, I., Taggart, B., Sylva, K., Sammons, P., & Melhuish, E. (2008). Towards the transformation of practice in early education: The effective provision of preschool education (EPPE) project. *Cambridge journal of education*, 38, 23–36.
- Siraj-Blatchford, J., Mogharreban, C., & Park, E. (2016). *International research on education for sustainable development in early childhood*. Dordrecht: Springer.
- Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2010). *Early childhood matters: Evidence from the effective preschool and primary education project*. London: Routledge.
- UNESCO. (2012). *Promoting skills for sustainable development (ED/PSD/ESD/2012/PI/4)*. Paris, France: UNESCO. Retrieved from www.unesco.org/education/ESD012/PI/4
- UNESCO. (2015a). *Incheon declaration: Education 2030*. Paris, France: UNESCO. Retrieved from <http://en.unesco.org/world-education-forum-2015/incheon-declaration>
- UNESCO. (2015b). *UN decade of education for sustainable development 2005–2014*. Paris, France: UNESCO. Retrieved from unesdoc.unesco.org/images/0014/001416/141629e.pdf
- UNESCO. (2016). *Global action programme on education for sustainable development: Preliminary monitoring report*. Paris, France: UNESCO. Retrieved from <http://unesdoc.unesco.org/images/0024/002452/245212E.pdf>.
- UNICEF. (2008). *The child care transition: A league table of early childhood education and care in economically advanced countries*. Florence: UNICEF Innocenti Research Centre.
- United Nations (UN). (2015). *Transforming our world: The 2030 agenda for sustainable development (A/Res/70/1)*. New York: UN General Assembly. Retrieved from <http://sustainabledevelopment.un.org>
- United Nations (UN). (2016). *The sustainable development goals report 2016*. New York: United Nations. Retrieved from <https://unstats.un.org/sdgs/report/2016/>
- United Nations (UN) General Assembly. (1989). *Convention on the rights of the child*. New York: Author. Retrieved from <http://www.ohchr.org/EN/ProfessionalInterest/Pages/CRC.aspx>
- Utbildningsdepartementet (2017). *Uppdrag om en översyn av läroplanen för förskolan [Assignment for a revision of the curriculum for preschool] (2017-04-20)*. Retrieved from <http://www.regeringen.se/regeringsuppdrag/2017/04/uppdag-om-en-oversyn-av-laroplanen-for-forskolan/>
- White, J., & Pramling Samuelsson, I. (2014). Global crisis, local reality? An international analysis of 'crisis' in the early years. *Educational Philosophy and Theory*, 46, 1036–1051.
- Wilkinson, R., & Pickett, K. (2009). *The spirit level: Why more equal societies almost always do better*. London: Allen Lane.
- Williams, P., Sheridan, S., & Pramling Samuelsson, I. (2016). *Barngruppens storlek i förskolan: Konsekvenser för utveckling och kvalitet [The number of children in each group in preschool: Consequences for development and quality]*. Stockholm: Natur & Kultur.