

Early Childhood Education for Sustainability: The OMEP World Project

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Abstract At the closure of the UNESCO decade on Education for Sustainable Development (2005–2014), this article reports on large research projects on sustainability conducted within the World Organisation for Early Childhood Education (OMEP) through 2009–2014. The overall aim of the projects within OMEP was to enhance awareness of Education for Sustainable Development among young children, OMEP members and the international early childhood community, with a special focus on taking a child-oriented perspective. The OMEP research comprised four studies which are described in this paper. The rich data in the research were drawn from 28 participating countries, involved more than 44,330 children aged from birth to 8 years, as well as 13,225 teachers. These participants were from various early childhood educational contexts. The research methods used included child interviews, children’s dialogues, and child-driven, theme-based projects as part of children’s early education programs. The results showed that young children have significant knowledge about the Earth and important ideas about environmental issues, as well as knowledge of the responsibilities which individuals carry with respect to sustainability. In the research findings, it was strongly apparent that adults often underestimate the competencies of young children. It is argued that education for sustainability can be a driver for quality early childhood education.

Keywords Education for sustainability · Early childhood education · Child-oriented perspective · Child participation · OMEP

Résumé Au terme de la décennie de l’UNESCO consacrée à l’éducation pour un développement durable (2005–2014), cet article fait état des projets de recherche importants sur la durabilité menés au sein de l’Organisation mondiale pour

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l'éducation préscolaire (OMEP) entre 2009 et 2014. L'objectif général des projets au sein de l'OMEP était de mieux sensibiliser à l'éducation pour le développement durable tant les jeunes enfants, les membres de l'OMEP que la communauté internationale de la petite enfance, en adoptant une perspective centrée sur l'enfant. La recherche de l'OMEP comprenait quatre études qui sont décrites dans cet article. Elle porte sur un ensemble riche de données issues de 28 pays, avec plus de 44 330 enfants de la naissance à huit ans et 13 225 enseignants participants de divers contextes éducatifs à la petite enfance. Les méthodes de recherche comprenaient des entretiens avec des enfants, des dialogues entre enfants et des projets thématiques menés par les enfants dans le cadre de programmes d'éducation des jeunes enfants. Les résultats ont montré que les jeunes enfants avaient beaucoup de connaissances sur la terre et des idées importantes sur les questions environnementales; qu'ils connaissaient les responsabilités que les individus portent à l'égard de la durabilité. Les résultats de recherche ont fait très clairement apparaître que les adultes sous-estiment souvent les compétences des jeunes enfants. Cela indique que l'éducation pour le développement durable peut être un moteur pour une éducation de la petite enfance de qualité.

Resumen En el cierre de la década de la UNESCO sobre la educación para el desarrollo sustentable (2005–2014), este artículo informa sobre los grandes proyectos de investigación sobre sostenibilidad, llevadas a cabo en la Organización Mundial para la Educación Preescolar (OMEP) a través de 2009–2014. El objetivo general de los proyectos dentro de OMEP era mejorar el conocimiento de la educación para el desarrollo sustentable entre los niños pequeños, los miembros de OMEP y la comunidad internacional en la primera infancia, con un enfoque en la consideración de una perspectiva especial orientada hacia los niños pequeños. La investigación OMEP comprendía cuatro estudios que se describen en este documento. Los datos, fructíferos en la investigación, procedían de 28 países participantes; participaron más de 44.330 niños con edades desde recién nacidos hasta los ocho años; así como 13.225 profesores. Estos participantes eran de diferentes contextos educativos para la primera infancia. Los métodos de investigación utilizados incluyen entrevistas con los niños, los diálogos de los niños, así como, los proyectos temáticos impulsados con y por los niños como parte de los programas de educación temprana de los niños. Los resultados mostraron que los niños pequeños tienen un conocimiento significativo sobre la tierra y las ideas importantes sobre cuestiones ambientales, así como el conocimiento de las responsabilidades que los individuos realizan con respecto a la sostenibilidad. En los resultados de la investigación, fue fuertemente evidente que los adultos, a menudo, subestiman las competencias de los niños pequeños. Se argumenta que la educación para la sostenibilidad puede ser un controlador para una educación de calidad en la primera infancia.

Introduction

Early childhood education has emerged during the last decade as an important actor for sustainable development. It is increasingly recognised that a sustainable world will require 'a shift in values, awareness and practices in order to change

our currently unsustainable patterns of consumption and production' (UNICEF 2013, p. 16). Although there is an increasing recognition of the threats associated with anthropogenic climate change and overconsumption, there is reluctance to make necessary changes resulting in business as usual (Sterling 2014). At the closure of the UNESCO decade on Education for Sustainable Development (ESD), this article reports findings from a large research project within early childhood education for sustainability. This paper will summarise this OMEP world project on ESD (2009–2014), then continues with an analysis of the results and methods used in the different studies and finishes with a discussion about the role of early childhood education for sustainability as a possible driver for early childhood education.

The World Organisation for Early Childhood Education (OMEP) is an international, non-governmental and non-profit organisation concerned with all aspects of early childhood education and care. It was founded in 1948, is currently established in over 70 countries and is represented at meetings of UNESCO, UNICEF and other international organisations with similar aims. OMEP defends and promotes the rights of the child to education and care worldwide and supports activities which improve accessibility to high-quality education and care (OMEP 2014).

Goals for the UN Decade of Education for Sustainable Development

UNESCO declared the UN Decade of Education for Sustainable Development (ESD) 2005–2014 (UNESCO 2005) with the goal to strengthen formal, informal and non-formal education and learning processes for sustainability. The purpose of ESD is to reorient education in order to contribute to a sustainable future for the common good of present and future generations. The decade was formed to scale up the work linked to the Agenda 21 document from the Rio Summit (Agenda 21 1992). To the definition of sustainable development as a 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (WCED 1987, chapter 3), the task for the decade was to integrate values, activities and principles that are inherently linked to sustainable development into all forms of education and learning, to achieve a change in attitudes, behaviours and values to ensure a more sustainable future in social environmental and economic terms.

ESD recognises the environmental, social/cultural, economic and political dimensions of the learning processes involved (UNESCO 2005) and aims at creating change, focusing on rethinking and re-making educational programmes and pedagogies to support social and cultural transformations towards sustainable development. Children of today face a rapidly changing society with new challenges and possibilities. Therefore, ESD can be considered to represent an attempt to provide equity with, to and for future generations (Hägglund and Johansson 2014). Participation and involvement are basic components of ESD, with an emphasis on empowerment and agency for active citizenship, human rights and societal change. This calls for a reorientation at all levels and in all

phases of education. As ESD also encompasses community learning, ESD is thus challenging the form and purpose of education itself (The Gothenburg Recommendations 2008). Furthermore, ESD was characterised by some overarching pedagogical and participatory principles; a holistic, interdisciplinary and multi method approach, experiential learning; values driven and creativity; inquiry-based learning; critical thinking and problem-solving; storytelling; locally relevant, authentic and applicable (UNESCO 2005).

Early childhood education for sustainability has its history in environmental education with activities in and about the natural environment, often involving outdoor play, gardening and excursions in nature. Since the 1970s, environmental issues have been a part of the steering documents for early childhood education in many countries. Some common characteristics between education for sustainability and early childhood education have been identified, such as using children's everyday lives, integrated curriculum approaches, thematic-orientated teaching, authentic topics, and relational and contextualised learning (Engdahl and Årlemalm-Hagsér 2008).

Theoretical Perspectives for the OMEP World Project

The OMEP world project is placed within a child-oriented perspective (Sommer et al. 2010) and is designed to especially invite child participation. Teachers with an interest in understanding the child's meaning-making (Sommer et al. 2010) were invited to try to collect children's thoughts, accounts and ideas linked to their daily lives and sustainability. Within a child-oriented perspective, the adults direct their attention towards an understanding of the children's perceptions, experiences and actions in the world (Pramling and Pramling Samuelsson 2011; Sommer et al. 2010) by positioning themselves close to the children to gain insight into their worlds (Engdahl 2011). A careful listening, observing and analysing may promote a better understanding of how children make sense of their lives (Farrell 2005).

There are qualitative differences between how children and adults influence and are influenced by the surrounding contexts (Kjørholt 2012). Children learn from the adult world, while at the same time, they are citizens who interpret, reproduce and also produce their own culture (Corsaro 2005). As the conditions for childhood vary and change rapidly in our times, this project strives to a conscious approach to children of today in order to give voice to children in a broad sense. Children's voice as a theoretical concept includes: '...that cluster of intentions, hopes, grievances, and expectations that children guard as their own and that only surfaces when the adults have learned to ask and get out of the way' (James 2004, p. 8).

With this approach, children are looked upon as actors who contribute both to stability and to change in a continuous interplay with their environment. Through their agency, they influence and change their everyday lives (Engdahl 2011) which is a basic foundation for the OMEP project. Respectful communication and dialogues can bring mutual benefits for young children and their teachers and

caregivers, based on the local context and including indigenous and traditional knowledge. The project is thus also founded in children's rights. Children's rights were empowered by the Convention on the Rights of the Child (United Nations 1989) which states that children have certain rights, e.g. to express his/her views, to be listened to and to participate and be involved in decision-makings in questions that relate to them (Davis 2014). In Agenda 21 (1992), children are recognised as important participants in the shaping of a sustainable future:

Children not only will inherit the responsibility of looking after the Earth, but in many developing countries, they comprise nearly half the population. The specific interests of children need to be taken fully into account in the participatory process on environment and development in order to safeguard the future sustainability of any actions taken to improve the environment (Agenda 21 1992, chapter 25:12). This child perspective is of special interest within education for sustainability that strives to elevate also the children's rights as citizens (Dahlberg and Moss 2005; Hägglund and Johansson 2014). Young children should be recognised as rights' holders and rights' partakers in a broader societal perspective that also includes collective, inter-generational and rights beyond those held by humans (Davis 2009, 2014).

Overall Aim of the OMEP Project: 2009–2014

The overall aim of the project was to enhance the awareness of ESD among OMEP members, young children and early childhood education at large, with a special focus on a child-oriented perspective. Four studies were completed within the project, and the aims for each study will be presented in the following sections.

Project Methodology

This project is a combination of action research and development projects (Elliott 2014). On the one hand, there have been guidelines from the world coordinators on what to focus on, and how to collect and analyse data, which is well aligned with action research (Denzin and Lincoln 2005). On the other hand, each national coordinator made the decisions in their respective country, which indicates that the different studies also may have been implemented as developmental projects within national and/or municipal regulations. The methods and provocations used include child interviews, children's dialogues and children-driven theme-based projects as part of their early education programmes.

The idea behind the project was to introduce and invite children and professionals to discuss ESD with a focus on the children's ideas. The executive committee of OMEP appointed two world project coordinators¹ (both senior lecturers at European universities) to lead the project. A yearly cycle was established, starting with decision-makings at the OMEP world assembly followed by invitation letters to the national OMEP committees in the around 70 member countries. With participants in all parts of the world, there were instructions and formats sent out to make some comparisons possible. The national committees

appointed national project leaders, who in their turn distributed the project information and ethical guidelines to the participants. The results were collected in each country, and the national leaders analysed the contributions and made a national yearly report of the results. The world coordinators analysed the national reports and finalised a report to the OMEP world assembly. Based on this report, the design, methods and questions for the next study were discussed and decided by the OMEP world assembly, and a new project cycle started.

Ethical Considerations

The project gave high priority to ethical consideration, specifically those involving young children. The ethical rules and guidelines differ between the countries (Harcourt and Quennerstedt 2014). The national leaders were advised to follow good research practice and the national regulations on child participation in research, to obtain parent and child consent and to maintain confidentiality/anonymity. The national leaders were asked to secure approval from the children and their parents for all pieces of drawings, paintings, and photographs that were included in the national reports to the world coordinators.

Within a world project, the question of languages emerges as an issue. OMEP recognises three official languages: English, French and Spanish. However, the majority of the participants have other mother tongues. National leaders thus translated the project guidelines, and of course the teachers communicated with the children in their mother tongue. Thus, there have been lots of translations back and forth, and in many cases the national leaders have not been able to send the children's answers in their original language. The world reports and this article are based on the data, as it was reported in one of the three official languages.

Study 1: Children's Voices for Sustainable Development

The aims of this study were to collect information about young children's thoughts, comments and understanding of a drawing of the Earth and young children and to enhance the awareness of ESD among OMEP members. In this first study (Engdahl and Rabušicová 2010), the national project leaders in 2009 were asked to invite and organise teachers who were interested in performing informal interviews with children 1–8 years, with a sincere intention to actually listen to what children say.

The method chosen was informal semi-structured child interviews around a specific drawing where teachers were to use open-ended questions and many follow-up questions (Fig. 1).

Participants

The first study became a major focus for many OMEP national committees. The exact numbers of participants were 9142 children aged 2–8 years, 641 interviewers (mainly females), in 385 preschools, schools and other settings for small children, in 241 cities and regions around the world.



Fig. 1 Stimulus drawing for the interviews with children used in Study 1

Twenty-eight national reports were handed in by the 35 countries that signed up for Study 1, namely from Africa; Benin, Cameroon, DR Congo, Ivory Coast and Nigeria, Asia Pacific; Australia, China, Japan, Korea, New Zealand-Aotearoa and Singapore, Europe; Bulgaria, Czech Republic, Finland, France, Ireland, Norway, Poland, Slovak Republic, Sweden and Turkey, Latin America; Brazil, Mexico, Nicaragua, Panama and Uruguay and North America; Canada and USA.

Interviews with Children

Guidelines included information to the interviewers on the idea to capture children's thoughts through informal child interviews with no previous teaching about the topic, choosing children and collecting informed consent, arranging a suitable quiet place, the interview questions and how to transcribe and report the children's answers as quotes, drawings and photographs. The interview questions were (Engdahl and Rabušicová 2010):

Please look at this picture. Tell me about this picture. What is going on? Tell me more. What can you see in the picture? Follow up question: Why are they doing this? Anything more you want to tell me about the picture? Anything else that has to do with the things we have talked about? For some children, when relevant, elaborate on: Have you heard of Sustainable Development? Do you know what it means?

The national leaders read through all the interviews and organised the answers under each questions with specific attention to similarities and differences. They made their own summary of the main findings, gave some examples of interesting answers

and included illustrating and typical quotes in their reports, using the children's wordings to give authenticity to the results.

Study 2: Education for Sustainable Development in Practice

The aims of this study were to implement Education for Sustainable Development together with children in early childhood education practices and to collect information and further understanding of young children's ideas and actions for ESD. Study 2 (Engdahl and Rabušicová 2011) drew on the strong interest shown in Study 1, and it was decided that the second study would implement some of the children's ideas from Study 1 through local projects in preschools and schools.

Participants

For Study 2, 28 national OMEP committees signed up and guidelines for implementing and analysis were sent out by the word coordinators. Two questions were suggested: *What do you think is NOT sustainable here in our centre/preschool/school?* and *How can we change this together?* Starting with child-oriented discussions, children, teachers and parents were to choose together how to organise an ESD in practice project. Twenty-one countries sent in national reports about Study 2; however, only 13 of these reports included basic statistics: Africa; Cameroon, Ivory Coast, Asia Pacific; China, Hong Kong, New Zealand, Europe; Czech Republic, France, Norway, Poland, Russia, Slovak Republic, Sweden, UK, and Latin America; Brazil. Within these 13 countries, Study 2 involved in total 30, 714 children and 12, 075 adults. Around half of the projects and children involved were reported from Russia.

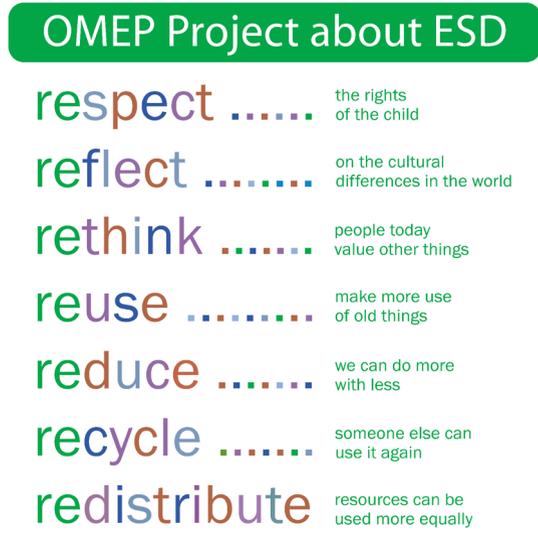
Implementation of Local Projects

The input from the world coordinators was around seven concepts linked to sustainability. The seven RE-words were available in English, French and Spanish. The words were inspired by the Brundtland report (WCED 1987) and elaborated and adapted to early childhood education by the world project coordinators. Together, they encompass three fundamental dimensions of ESD: social-cultural, environmental and economic (UNESCO 2005). The concepts with short explanations were presented as a logo for Study 2 (Fig. 2).

Respect, Reflect and Rethink relate directly to social and cultural dimensions, Reuse and Reduce highlight environmental aspects, and Recycle and Redistribute draw on the economic perspective. Also in Study 2, the national project leaders were asked to choose some projects of specific interest and to add these examples to their reports.

The approach made it possible for children and teachers to work on projects that were authentic and relevant in their local context (Ärlemalm-Hagsér and Engdahl 2015). The RE-words touch on important values and human rights such as talking about how children live in different countries, the effects of the changing weather

Fig. 2 The seven concepts linked to sustainability used to provide directions for the projects developed in Study 2



conditions, challenging the culture of (over)consumption, relationships between humans and nature and sharing common resources.

Study 3: Intergenerational Dialogues About Education for Sustainable Development

The aims of this study were to broaden the perspectives and strive beyond the preschool/school by engaging children and their teachers in intergenerational dialogues and projects around three specific goals for a sustainable lifestyle: reducing plastic, growing food and making friends through play (Engdahl and Rabušicová 2013). Intergenerational learning is a process through which people from different generations acquire skills and knowledge and develop their attitudes and values. It takes place in everyday life and on all sorts of occasions as a relational process.

By introducing intergenerational dialogues as a method for Study 3, the links between ESD and lifelong learning, as well as between children and the grand parent or great grandparent generations, were highlighted. Intergenerational dialogues may lean on the local context as well as on indigenous and traditional knowledge (Pearson and Degotardi 2009; Rabušicová et al. 2011).

Participants

Seventeen national OMEP committees signed up for Study 3 and eleven of them reported about their findings: Chile, Czech Republic, France, Japan, Kenya, Korea, Poland, Russia, Slovak Republic, Sweden and Ukraine. In these eleven countries,

Study 3 involved 4475 children, 509 teachers, 2737 grandparents and 2389 parents. Also this time, the largest contribution came from Russia.

The national project leaders reported what goal the local projects had addressed, and 160 projects were found to relate to more than one goal: reducing plastic, 77, growing food, 67 and establishing a network, 62.

Intergenerational Dialogues

The guidelines included starting out questions, content areas and goals for Study 3. The goals were chosen from successful projects in Study 2 and were also selected to encompass activities which involve all three dimensions of ESD (social-cultural, environmental and economic) as well as the political dimension of empowering the participants through the local projects (Engdahl and Rabušicová 2013).

The content and goals in Study 3 were as follows:

1. How do we use plastic? Reducing the number of plastic bottles and plastic bags used in the preschool/school and at home
2. Where does the food come from? Creating a new garden in the neighbourhood to produce food
3. How do you play with toys and with other children? Establish a network of friends, starting by the exchange of games and traditional play by reaching out to children in another preschool/school in your community or somewhere in the world.

Children and teachers together chose one of the goals and discussed how they understood the chosen topic. *How is it today?* and *How was it before, in previous times?* Together with their teachers, the children formulated questions for intergenerational dialogues with people of the grandparent generation. The intergenerational dialogues were carried out in many different ways; children asked their grandparents directly or with assistance of their parents via phone, e-mail or Skype; invitations were organised where some from older generations came to the preschool/school; groups of children went to homes for older people to pose their questions and/or any combination of these activities. The children brought their answers and ideas back to the preschool/school and discussed the result of their explorations and investigations, and the varied answers they got. Based on the ideas from the children, activities or local projects started, linked to the three goals.

Study 4: Equality for Sustainability

The aim for this study was to collect examples of early childhood education initiatives that focused on social perspectives exemplified with addressing poverty. The rationale for the Study 4 (OMEP 2014) was to address the tendency among teachers and children to primarily work with issues linked to the environmental dimension of sustainable development. Thus, Study 4 highlighted the social-cultural

and economic dimensions. A recent survey of the Ministries of Education, Environment and Sustainable Development in 97 UN Member States identified poverty as the highest priority area to be addressed in achieving sustainable development (United Nations 2013). The local projects were categorised by the inequality they addressed socio-economic/relative poverty, special needs and disability, social injustice (in general), gender and ethnicity/indigenous peoples. Several countries reported projects within more than one of these areas.

Participants

Thirteen countries signed up for Study 4, and nine of them sent in reports: Australia, Bulgaria, Czech Republic, Chile, Japan, Kenya, Nigeria, Russia and Slovak Republic. There were in total 87 projects described in the national reports, and this time 69 of them were carried out in Russia.

Building a Sustainable Society

In Study 4, early childhood practitioners, educators, researchers and advisors were invited to empower young children to address some of the disadvantages linked to poverty, abuse or discrimination. We live in a world with great inequality, and this cannot continue if we want a more sustainable world and society (CGECCD 2013). Equality is one of the key challenges in achieving a sustainable society and world. Although reducing child poverty was one of the UN millennium goals, there are still more than 1 billion people living on less than US\$ 1.25 per day (United Nations 2013; Woodhead et al. 2013). Study 4 was coordinated by a new pair of world coordinators, who in addition to sending around invitations and guidelines also created a bibliographical database with access from the OMEP international website.

Summary of Project Findings

This section addresses two aspects of the OMEP world project on ESD. First, it reviews the project methods, and second, it considers the findings from the four studies using a child-oriented perspective. The findings may be understood as examples from around the world.

Project Methods

The methods used were deliberately designed to address and give voice to children and to enhance child participation. As this project was voluntary, one may argue that the teachers who chose to participate had an interest in understanding the children's meaning-making and showed an engaged and involved approach (Sommer et al. 2010).

The starting out points in all four studies were formalised through guidelines, where the teachers were asked to consciously direct their focus towards the children's perspectives and to gain insight into their worlds. The adults showed their interest by a listening approach and the documentation of the children's thoughts, ideas and stories. The words and concepts children use provide a good basis for elaborating further on the children's experience and also give cues about how sustainable development as a perspective and as a content could be handled in the preschool.

In many countries, the project helped to form children—adult communities; children and adults did a lot together. The project has involved local educational departments, non-governmental organisations with students and retired builders, pensioners, botanical gardens, libraries, museums and enterprises. Some of the projects were covered by local papers and television. In some countries, Bulgaria, China, Russia, South Korea, Turkey and USA, OMEP collaborated with universities. The methods suggested were integrated into ordinary classes and courses, and students performed interviews and dialogues with children. Some of the projects were used as a basis for undergraduate papers or graduate diplomas. This interaction between the OMEP world project for ESD and universities has strengthened the outcomes of the project.

Adults Tend to Underestimate Children's Knowledge

Many interviewers were amazed by the knowledge the children showed them. The children had thoughts and ideas to bring up about the state of the Earth in relation to sustainability. The project leaders wrote:

It is essential to change the social attitude against their ability to participate effectively. (Brazil)

Until the implementation of this global project I felt that pre-school children are not very aware of environmental protection, ecology and other sub-themes linked to ESD. However, following the actual 17 interviews with children and reading through the individual responses, I realised that the opposite is true. Children perceive information they hear, without it being the adults' intention, and the moment they receive a particular impulse they are able to use it. (Czech Republic)

When teachers introduced the project to parents, in order to get informed consent, some parents also phrased their doubts about this kind of project with young children. One parent made the comment 'But why are they asking the kids?' to which one of the children said 'Why not? We know stuff too' (Australia). The project leader from the Slovak Republic reported discussions about who should take a leading role for sustainable development:

The children in one preschool gave the following message to the adults: Why should we take care of the water? Adults, take care of our country so we can play safely. Let fishes have clean water, keep paths clean without any garbage. (Slovak Republic)

A Global Study Locally Implemented

A global study must leave room for variations based on local contexts and languages. The reports from the national leaders tell about additional initiatives. Russia contributed a very high input to Studies 2, 3 and 4, with around half of the reported projects. The term ‘sustainable development’ is translated as ‘stable development’, and its interpretations are disputable among pedagogues in Russia. The national project leader chose thus to present multiple ideas and different contents that could be put in focus to complement the seven RE-words in Study 2:

- changing the immediate physical environment (preschool, playground, nearby park)
- examining the usage of resources (water, energy, paper, old batteries, metal cans)
- protecting nature (making books of plant and animal species, excursions to protected natural areas)
- solving specific problems crucial for the city (settlement, protecting unique landscapes)
- supporting cultural diversity and preservation of cultural traditions
- reusing old things and waste (exchanging, experimenting and repairing).

These national guidelines were taken up by large numbers of participants. The list might seem to strengthen a traditional teacher role with a risk to weaken the child-oriented approach. However, in combination with the proposed methods, this was not the case. The Russian project leader wrote:

One of the most important results is the support for the children’s initiative. Often pedagogues themselves define the theme of a project and then try to involve the children into the theme. During the course of the OMEP project, many pedagogues for the first time took the children’s opinions and initiatives seriously. Children offered subjects for research. Pedagogues and parents came to a conclusion that children have their own views and suggestions on sustainable development. So children were active participants in the projects. They did not only follow plans that adults had created for them.

Taking a Child-Oriented Perspective

The whole project was started with the intention to bring forward young children’s experiences, thoughts and ideas in relation to sustainable development, and a child-oriented perspective is deliberate throughout the project (Sommer et al. 2010). This section will bring forward results close to the children’s original accounts in order to inform about the knowledge and competencies the young children have shown during the four studies, and from the national project leaders’ reports. However, it is important to remember that the results are drawn on mostly second-hand data.

Although the studies are rich with original data from children, these data may have often been translated and processed by project leaders in the respective countries.

Children Show Knowledge and Competencies

When invited by their teachers, the children have been willing and able to comment on objects, people and actions in multiple ways and their accounts show that they register a lot in their environment. Whether they were looking at the drawing or identifying things that are unsustainable, the children associate with things in their environment. Children of all ages expressed opinions and concerns reaching beyond the immediate drawing. The Korean national leader reported that there were almost no differences between the children's answers with regard to age and gender.

I saw rubbish in the water at the beach and I saw the digger cleaning it up and the rubbish made me feel sad. I didn't want it to be there (Australia)

The children are from Sweden, Denmark, Thailand, Japan and Bergen. We can see that they are from several countries because they have different hair, shoes, and hands and look different (Norway)

When using the drawing and the seven RE-words as starting points, children volunteered information and suggestions about the state of the Earth and were also able to see causes and consequences of bad environment. Their suggestions were well connected with their concrete everyday experience.

If you put rubbish in the sea you will kill the seals (Australia)

Because the global warming is very serious problem and it would lead to the last day of the earth (Japan)

They're cleaning because we die if the earth dies (Korea)

Recycling will help cleaning the earth (Canada)

We need to consume less water and electricity (Turkey)

In Study 3, children suggested: Let's invent plastic bags that disappear. But what if it disappears at a wrong moment and everything that in it will drop out onto the pavement? Children in a Kamchatka kindergarten started a project *Just a Usual Plastic Bottle*, where they counted all types of goods in a supermarket that were sold in plastic bottles and found out what specific types of bottles in what numbers that were scattered in the streets. Then they presented the shop owner with their results. The children changed their views of things that are common and standard for them. They discovered that life is possible without a plastic bottle.

In a Swedish Study 3 project *Building bridges over time and space*, the teachers and children discussed toys, their history and their present. This preschool uses a lot of recycled materials and has few manufactured toys. This was found to be in great contrast to the homes, almost indicating two different worlds: a quite technical at home-world with multiple electric toys and games, and a preschool world, characterised by environmental awareness and restraint. After a meeting where both the elderly and the children brought out toys for mutual exchange and discussions,

the children voiced the idea that all children, regardless of time and place, played with toys. The children said that children probably like to do roughly the same things even if they live in different countries and time. They identified two distinct differences between the generations:

1. Children of today are strongly influenced by various characters or people in television and media, but the older people grew up with narratives and books, often about Indians and cowboys and
2. the number of toys available.

In the *Friendly hearts*—project in Slovakia, the children decided to have a toy-day, each bringing one toy to the visit to the retirement home. The toys became bridges that overcame the generational gap. It was easy to show and talk about toys and games. On returning after one visit, the children said:

They had very few toys, but they loved their toys and took care of them. When can we visit our friends again?

Addressing poverty might seem like a delicate theme for young children, but this was not the case in a Study 4 project *What's in your fridge?* carried out in a low income area in Western Australia, where many families live under poor conditions. The teachers wanted to explore the children's ideas about family access to food from a perspective of wealth and poverty. Without introducing the concepts wealth and poverty, the teachers started the project with the question: *What's in your fridge?* The children worked in smaller groups and made drawings of the interior of a fridge. Then they were given photographs of two fridges: one that was full of food and one that had only some food. The teachers made notes of the children's conversations and explanations, which included a full chain of reasoning: not working—no money—no food—unhealthy life, and ideas of sharing and caring. The children came up with a whole lot of empowering ideas. The aboriginal children had first-hand experience of where to find food that were tried out. Throughout the project, no child identified himself/herself as poor; on the contrary, they seemed to be certain that they could fix the problem.

Children Know Different Things to Adults

In particular, during the intergenerational dialogues within Study 3, it became clear that children and adults have different knowledge, which sometimes leads to different priorities. When discussing about growing food, the grandparents named vegetables, the children flowers and fruit. Grandparents value knowing how to grow things you can eat, whereas children who sometimes think food comes from the supermarket, prefer to grow flowers and some fruits. The different preferences, vegetables or flowers, are linked to values on sustainability. In Study 3, the children discussed questions they wanted to put to the older generation, e.g.:

Do adults like playing?

No, they have no time for that; They work all the time, you see; No, they have already grown up.

A few project leaders reported similar discussions stating that adults rarely play the games of their childhood with children, nor were traditional games played at home. Grandparents seldom speak about their own childhood.

Children are Interested in the State of the Earth

Children have thoughts around our common future and showed understanding of the complexity of the problems. Children are aware of many things related to sustainable development, even without recognising the concept:

If everybody cleans it will be cleanly and colourful. The children want everybody to be healthy and everybody has happy life. We have to protect environment against death. Without plants we will also be ill. Without the trees, oxygen will disappear (Poland)

To make the earth last longer; if the sun becomes too strong then it will be too warm for the people on earth (Sweden)

Some Norwegian and Slovakian children showed advanced knowledge during the interviews:

All the children are together to keep the earth clean. If you are blind and can't see the smoke, you can still smell it. Chimney-smoke is not good for the globe. Then ice melts on the globe. (Norway)

Our planet used to have firm cover around itself and now it has holes because exhaust gasses from cars damaged it, smoke from chimneys, fridges, sprays and now when the cover is damaged the sun shines strongly and damages everything (Slovakia).

Almost no children recognised the concept sustainable development, and there is not always a corresponding concept in the participating countries. In Mexico, when the children were asked about sustainable development, they said 'we do not know'. But when they were asked whether they knew anything about environmental education, they responded quickly and told about trees, flowers, butterflies, which all must be treated well and with respect and added:

We must take care of all that we love, just as our parents do with us, because they like us (Mexico)

Some children talked about the relationships between all people and between human and nature. The children's accounts show that they recognise that taking care of the Earth is a common task to share.

If the earth feels clean, I'll feel happy. Earth's friend will like it. Earth's friends? The sun and the moon (Korea)

The children want the globe to be clean because it is our home (Poland)
People cannot live without the earth (China)

The above taken into consideration, some children came up with very interesting definitions of sustainable development:

Ensuring everyone a better future (Brazil)

Sustainable development – it is to maintain the earth (Cameroun)

Yes, yes, it means being generous to the earth (Japan)

So that the earth is not to die and humans would need to live on another planet (Turkey)

Discussion

The overall aim of the project was to enhance the awareness of ESD among OMEP members, young children and early childhood education at large, with a special focus on a child-oriented perspective.

Preschool children as learners have the right to be involved in issues that concern life here, now and in the future. How can we work for a better future, individually and collectively, with and for all children? How can we work together to develop cultural identities within a social and ecological everyday life context? How can we support culture focusing on a democratic and sustainable society? The multiple responses to these general questions show a large interest among teachers, families and the broader community to engage in sustainability work. The most important result, however, is the number of ideas the children came up with which oftentimes were carried through in local projects that directly reflected on the children's lives. The political ambition with education for sustainability to empower and to educate for change is thereby evident. In this project, children were valued as thinkers, problem-solvers and agents of change (Davis and Elliott 2014), which aligns with the overall aim of the project. The four studies presented in this article all show examples of transformative teaching practices, including problem-solving, decision-makings and making choices, that is, they empower children to do things (Davis 2015). The projects provided successful ways to enact learner-oriented curriculum practices.

Education for Sustainability as Driver in Early Childhood Education

Education for sustainability is often positioned as additional or even ignored in national educational reforms and revisions of frameworks for education (Wals 2012) which instead tend to push for cognitive and academic knowledge transmission (Inoue 2014), and the task for early childhood education is often summarised as 'readiness for school' (Barratt et al. 2014; UNESCO 2014a).

The Aicha-Nagoya UNESCO Summit declaration from November 2014 asks the academic and research community to 'engage in collaborative and transformative knowledge production, dissemination and utilization, and promotion of innovation across sectoral and disciplinary boundaries' (UNESCO 2014b). Research shows a lack of critical awareness among early childhood teachers (Engdahl and Ärlemalm-

Hagsér 2014; Ärlemalm-Hagsér 2013; Davis 2015). The reasons given are, for example, that teachers consider the daily or weekly hours children spend playing outdoors or the frequent excursions to natural places and spaces to be enough. The traditions of playing outdoors and in nature and a child-oriented approach (Barratt et al. 2014) seem to support a position that there is no need for re-orienting the curriculum towards sustainability.

During the studies, many teachers became aware of the empowering effects of a child-oriented approach. Being able to take a child-oriented perspective is founded on an attitude of what one believes a child to be capable of (Dahlberg and Moss 2005) and an interest in understanding the child's meaning-making. But the attitude is not a guarantee for realising a child-oriented perspective. A necessary skill is the capacity to communicate in a way where children express their ideas and to share focus, level and content with the child (Pramling and Pramling Samuelsson 2011). The teachers' skills in sharing attention with the children are necessary to achieve a shared sustainable thinking (Sylva et al. 2010).

Using the drawing, the seven RE-words and specified ESD goals seem to have served as inspirational starting out points for local projects. The national committees of OMEP have initiated broad collaboration; they are interested in sharing their results and have declared their intention to continue this type of work and to organise seminars, drawing on the original data without translations.

Conclusions

Participation in the OMEP project has become a driver for quality development within daily practices. The methods used in the studies were designed for children's everyday lives, integrated curriculum approaches, thematic-oriented teaching and authentic topics. They lean on child participation through a conscious listening to children's voices and on documenting what was being put forward. This design seems to have strengthened the children's voices resulting in new knowledge about how children think about their surrounding world.

The result shows that young children have knowledge about the Earth, thoughts about environmental issues, the responsibility people carry and ideas about what to do. Multiple reports concluded that adults too often underestimate the competencies of young children. The final words in this article are thus quotes from some of the child interviews, answering the questions: Have you heard of Sustainable Development? Do you know what it means?

Action, love and care for nature, to ensure everyone a better future. (Brazil)

It means that everybody makes something for the globe. (Poland)

I think it might mean, like, to save the world for later. (Ireland)

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