

# Abstract book

Sustainability from the Start

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# **Abstract book in submission number order**

## **2 Early Childhood Education on a scientific basis**

### **Strand 3, oral presentation**

**Caroline Karlsson, Kristianstad University, Kristianstad, Sweden**

The Early Childhood Education in Sweden should rest on a scientific basis. Previous research shows a gap between theory and practice. Practitioners in ECE understand the conception of a scientific basis differently (Rapp, Segolsson & Kroksmark, 2017). This affects children's right to an equivalent, high-quality education. In this study, the interest is directed towards the ECE scientific basis as it is expressed in the work team's planning conversations. The study aims to contribute knowledge about the scientific basis on which Early Childhood Education rests. The following questions guide the study: I. What do teachers talk about in their work team's planning conversation? II. Which discourses emerge, and which scientific ideas underlie them? III. How can the social practice be understood in relation to emerging discourse order? Norman Fairclough's critical discourse analysis is used as a theoretical and methodological framework (Fairclough, 2010). 16 planning conversations have been observed and audiotaped during spring 2022. It has resulted in 32 hours of audio recording. The participants got information about the research method and exact purpose before they chose to participate, and written consent was collected from everyone who in some way participated in the planning discussions. All were informed that participation was voluntary and that personal data is processed per the Personal Data Act. The participants were also informed of their right to withdraw their participation at any time. Only the participants' names found on the consent form have been collected and no other personal data is available in addition to the audio recordings. Preliminary findings show that the teachers talk about teaching, children's development and learning, relationships, documentation, and organization of the ECE. In the conversations, the individual is more focused than the group. A knowledge-based discourse seems to be dominant. Different scientific-based ideas appear.

Keywords: Early Childhood Education, scientific basis, equivalent, high-quality education.

### **3 Social sustainability in children's play and participation in preschool activities**

#### **Strand 1, oral presentation**

**Anna Magnea Hreinsdottir, University of Iceland, Reykjavik, Iceland**

The aim of this study was to shed light on how teachers in four preschools supported social sustainability in play and children's participation in daily activities. The purpose was to identify working methods that strengthen social sustainability in play and increase children's participation in the daily work of preschools.

The teachers took part in a collaborative study with a researcher from the University of Iceland. Social sustainability is an important part of children's play and daily activities. The Icelandic National Curriculum (2011) has adopted a rights-based approach that views children as active participants in preschools. Play is children's means to social sustainability and the role of adults is key when it comes to supporting play (Wood, 2013). The children's group is also important as children learn from each other (Corsaro, 2005). The UN Convention on the Rights of the Child (1989) recognizes children as agents of social change and sets out to listen to children and enable their participation in decision-making in matters that affects them.

This research is based on the methods of collaborative research, which is a practical way to improve practises and a way to create new knowledge by asking questions, reflecting, and developing new ways. Data was collected throughout the research process.

Permission was sought from all the parents of the preschools and from Reykjavík.

The findings show examples on how to support social sustainability in children's play. More space was created in the preschools for the children's ideas, the teacher-led classes decreased, and playtime was extended. The staff became more informed on how the children could participate in daily work. Various roles were created for the children and they were asked about their opinion on the activities, environment and play materials.

**Keywords:** Social sustainability in play, collaborative research, play, children's participation, professional development.

# **4 Everything from dinosaurs to a grandmother - A cultural heritage year project a method for learning through cultural heritage**

## **Strand 1, oral presentation**

**Erica Strand<sup>1</sup>, Marika Russberg<sup>2</sup>, Elisabeth Corsander<sup>2</sup>, <sup>1</sup>Färgelanda, Färgelanda, Sweden.  
<sup>2</sup>Bohusläns museum, Uddevalla, Sweden**

This is for children in Swedish preschool. This application will be structured as follows. First, we will briefly present what the project means. Then we will describe how the project has progressed & finally we will explain why this project is important. With united resources and common interests met with our various experiences, a museum, cultural heritage society, cultural heritage association & Matilda preschools started a project. Together, we wanted to investigate children's thoughts focused on the olden times, starting from the children's own reflection & questions. Together explore cultural heritage at several ways to learn through cultural heritage. Children's values are established early in life & preschool has an important part of this. According to the national curriculum for preschoolin, preschool will lay the foundation for a lifelong learning as well as promoting a positive belief in the future. The Swedish preschool have to transfer and develop values, traditions & history from one generation to the next. For children to understand their present it is important that we adults contribute to giving children an understanding of their history. We want to give children an understanding of the whole, that what people did in the past affect us today & what we do today affects the future (historical awareness). We do this by learning through cultural heritage. For example, it is about how Earth's resources were used in the past as well as today & how we can contribute to one sustainable future.

We have developed a collaboration with the Swedish Institute in Athens. The method we have used has become an interest for teachers in preschool and museums pedagogs. We have held workshops for them that will further take place in May-24. Then with a big focus on linking sustainable development to the course Sustainability from the start, developed by OMEP and more.

Keywords: cultural heritage, preschool, museum, explore.

## **6 Exploring parent-child dyadic talk during free play in Hong Kong**

### **Strand 1, oral presentation**

**Cathy Hung, Yew Chung College of Early Childhood Education, Hong Kong, Hong Kong**

Parent-child play provides a context for parents to connect with children, and to support children's language and social-emotional development. However, fewer studies have explored the parent-child dyadic talk during free play (namely unstructured play). Therefore, the present study has a goal to examine the parental verbalization, linguistic and language features during the free play among parents and 3-year-old children in Hong Kong. One hundred and six pairs of children and parents were recruited from 20 local kindergartens in Hong Kong. The dyads were invited to have a free play session at a specialized play space specifically designed for children and families from birth to 8 years old. The play space provides a wide range of experiential learning facilities both indoors and outdoors. The participants wore smart watch to audio-record their conversations for 20-25 minutes. The recordings of 15 minutes (after the first 5 minutes of warm up) had been transcribed and the transcripts were then analysed for the quality of parental verbal language using Dyadic Parent-Child Interaction Coding System (DPICS-IV) including negative talk, direct command, labelled praises, unlabeled praises, and questions. All utterances were segmented into C-units and analysed for the lexical diversity and language complexity using standardized guidelines and python program. The results showed that Hong Kong parents have significantly more talking than the children during play. Among the parents' utterance, most of them were questions and direct commands, while only about 3% were categorized as praises. Specifically, the parents, who have higher rates of direct commands and negative talks, have significantly lower level of lexical diversity and language complexity in their utterance than the parents who do not. Their children have significantly lower level of lexical diversity and language complexity in their utterance too. The findings have important implications on parental education and strategies during play.

Keywords: Parental verbalization, lexical diversity, language complexity.

# **9 Funds of Knowledge in Culturally Diverse Early Childhood Education**

## **Strand 2, poster presentation**

**Kubra Alhawamdeh, University of Leeds, Leeds, United Kingdom**

This study explores the experiences of early childhood teachers in employing the funds of knowledge (fok) approach in culturally and ethnically diverse Yorkshire. FOK approach focuses on collecting data about children's interests, informal knowledge, and everyday skills acquired from their families and communities to contribute to their development (Hedges et al., 2011). While there is existing literature on the theoretical aspects of the approach, there is a lack of research on how teachers utilize this knowledge in their daily practice. Therefore, this study aims to address this gap by investigating how teachers incorporate Fok into their decision-making processes and daily practices.

The research project utilized qualitative research methods, including questionnaires, semi-structured interviews and focus group discussions. A theoretical sampling approach was employed to recruit participants from online platforms. A dedicated website was created to facilitate the process and provide easy access to information and documents. Out of the pool of more than 100 applicants from minority ethnic backgrounds, 20 teachers were selected for interviews based on a questionnaire. The data from these interviews were analyzed to identify common themes and insights that informed the creation of focus groups. Additionally, three focus group discussions were conducted involving 10 teachers to gain deeper insights into the teachers' experiences and perspectives.

Currently, the analysis of both the interviews and focus group discussions is ongoing. Thematic analysis will be employed to identify patterns, themes, and key findings. The data will be interpreted and synthesized to develop a comprehensive understanding of early childhood teachers' experiences and practices related to employing FoK in their classrooms.

The findings will provide valuable insights for teachers, practitioners, and policymakers, enabling effective utilization of FoK to enhance engagement, promote cultural diversity, and improve educational outcomes.

Keywords: Funds of knowledge, Cultural diversity, Early childhood teachers, Yorkshire.

# **10 Nurturing Changemakers: An Integrative Pedagogical Expedition towards Transformative Sustainable Education in Higher Education**

## **Strand 2, oral presentation**

**Ka Lee Carrie Ho, Anglia Ruskin University, Chelmsford, United Kingdom**

Transformative Sustainable Education (TSE) advocates action-based learning and teaching experiences that is essential to nurturing changemakers and unto future sustainability (Burns, 2018). Responding to SDG Target 4.7, this presentation reports the result of a TSE-based pedagogical research that seeks to advance our understanding of how TSE can be effectively implemented and assessed. According to a Trimester-based reflective module, namely 'What does sustainability mean to me?', 35 Year 2 undergraduates from diversified disciplines participated in the research through ten weeks of online lectures, weekly discussion boards, and a podcast assignment. Students learnt to scaffold the integration of reflection, sustainability, and interdisciplinary in their works. They also delved into the multifaceted dimensions of sustainability, extending beyond the environmental concerns to encompass social, economic, and cultural (Leal Fiho et al., 2019) with the political and education aspects. Students reported that they realised the importance for the incorporation of sustainability principles across diverse disciplines, and challenged the traditional silos of academia (Sterling, 2004). Students also amazed at their own creativity through the interdisciplinary lens, that was supported by TSE theory, fostered a holistic understanding of complex global challenges, preparing themselves to become adaptable and informed global citizens (Wals & Jickling, 2002). The research fills the research gap on effective pedagogy on conveying interdisciplinary study in higher education that integrates sustainability seamlessly into the curriculum. As such approach not only enhances critical thinking, problem solving skills, and creativity, but also instills ethical consciousness in real-world higher education settings. The presentation also addresses challenges and provide strategies for overcoming barriers to the adoption of TSE, offering insights for both researchers and practitioners in the field. By intertwining reflection, sustainability, and interdisciplinary elements within a robust pedagogical research framework, we can empower students to be proactive changemakers to a sustainable and equitable global future.

Keywords: pedagogical expedition, transformative, Sustainable Education, Higher education.

# **11 FOX-pedagogy: Towards a sustainable future through exploration, adventure and play**

## **Strand 1, oral presentation**

**Anssi Almgren, Education Division, Helsinki, Finland**

Together with early childhood educators and children, the City of Helsinki's Education Division has developed a fox model. The model comprises seven foxes that help children to learn about the goals of sustainable development and ways of achieving a sustainable future. Since 2022 more than 25 000 children have participated in creating a sustainable future together with foxes.

Each fox has its own story that introduces a sustainability-related phenomenon. For example, Outdoor Fox and Rose Chafer learn about the importance of rotten wood (biodiversity), Chef Fox and Desert Fox discuss food availability (climate change), and Inventor Fox studies the possibilities for reusing plastics with Lonni the Seagull (circular economy). These stories do not provide ready-made answers or solutions, but rather leave room for creativity. The idea is for children to come up with solutions through innovation, exploration and play.

In addition to the foxes' stories, each chapter includes dozens of functional exercises, paws. The paws are used to examine, explore and build a sustainable future. The paws consist creative thinking, futures studies and finding new solutions. They have been designed in a way that allows them to be adapted according to the age, interests, ideas and wishes of children.

Keywords: FOX-pedagogy, sustainable future, exploration, early childhood educators, play.



# **12 Climate anxiety and young children: A scoping review**

## **Strand 4, oral presentation**

**Jane Spiteri, University of Malta, Msida, Malta**

As intensity of the climate crisis increases and the scientific evidence of its impacts on child development become more evident, there is emerging evidence suggesting that young children may be experiencing a noteworthy psychological strain in the shape of climate anxiety, and this can increase as they learn more about it. The distress induced by climate change manifests as heightened anxiety, hence the term ‘climate anxiety’, among children who grapple with concerns about the uncertainties surrounding their future in the face of environmental challenges. Despite the increased international recognition of climate anxiety in young children as a valid mental state, there is little empirical evidence detailing how climate anxiety manifests in young children before age eight, or describing the interventions considered most effective in addressing it. The present scoping review aims to understand how climate anxiety in early childhood is operationalised in the literature, identify knowledge gaps in this new and emerging field, and provide an initial point for scoping climate anxiety in early childhood, a topic that has not been investigated in-depth (yet). The findings suggest that while climate change and mental health represents a rapidly growing field of research, similar research in early childhood is still in its infancy. Any available research is presented from a Western perspective, and further research is needed to provide conceptual clarity of climate anxiety in early childhood from non-Western countries and indigenous perspectives. Further research employing diverse methodologies is needed to respond with evidence-based and child-friendly mitigation and adaptation strategies.

**Keywords:** Climate anxiety, mental health, early childhood.

# **13 Interdisciplinary approaches to the ethical design, conduct and dissemination of early childhood research around Education for Sustainability (ESD) in the post-pandemic, digital worlds of childhood**

## **Strand 2, oral presentation**

**Ann Farrell, Queensland University of Technology (QUT), Brisbane, Australia**

A recent international study of contemporary early childhood research in children's changing digital worlds revealed the contribution of interdisciplinary approaches to the ethical design, conduct and dissemination of research with young children around Education for Sustainable Development (ESD). Pandemic-oriented concerns over the health, wellbeing and future of young children combined with cataclysmic global trends of war, dispossession and climate change have fuelled heightened concern for ethical research that is sustainable, participatory and protective of children's rights.

Theoretical insights drawn from developmental science, sociology, health sciences and human rights are informing research methodologies that advance child agency and participation in matters that affect the lives of young children, now and into the future. Ethical considerations include recruitment and consent/dissent of young children and collaborative participation in research that is sustainable for children in increasingly digital contexts. International analysis calls for improved preparation and accountability of child researchers and those sponsoring and approving child research, in order to ensure that children's rights are articulated, profiled and sustained.

Keywords: young children, Education for Sustainable Development (ESD), research ethics, research design, interdisciplinary methodologies.

# **14 Enhancing sustainable development through analyzing video-sequences in practices developing research projects in early childhood education and care**

## **Strand 2, oral presentation**

**Emelie Stavholm, Pernilla Lagerlöf, Cecilia Wallerstedt, University of Gothenburg, Gothenburg, Sweden**

Democracy is a central aspect of sustainable development and early childhood (EC) teachers are important actors in the democratic development of societies. However, in a recent development of a market-based principles logic for early childhood education and care (ECEC), it has been proven challenging for EC teachers to take part in the development of their own professionalism. As a result, there is a risk of EC teachers becoming technical operators, following “what works”. This in turn leads to teacher agency as being shaped by accountability demands with an emphasis in out-come driven practices. We are therefore interested in how EC teachers can develop and strengthen their agency in relation to their own knowledge development and especially how analyzing video-sequences of their practice can help in this process. Agency is in this presentation understood from a sociocultural perspective as peoples’ ability to intentionally change their circumstances through distancing themselves from their immediate surroundings. In this presentation we show examples from practices developing research projects from ECEC settings in which EC teachers use video for analyzing activities in their practice. Here, we have studied the conversations between the participating teachers. The teachers have provided their informed consent to participate in the projects. The main findings show that when teachers analyze video-sequences of their practice, this (i) leads to a mutual focus of attention, (ii) helps to connect theory with practice and (iii) allows for teachers to draw argumentative conclusions about their practice. The findings are discussed in relation to how analyzing video-sequences make it possible for teachers to be active in their own knowledge development. This is important in relation to the central role that EC teachers play in the development or sustaining of democratic societies.

Keywords: democracy, sustainable development, teacher professional development, agency, analyzing video-recordings.

## **15 Linguistic image of ECEC in press discourse**

### **Strand 1, oral presentation**

**Krystyna Heland-Kurzak<sup>1</sup>, Ewelina Świdrak<sup>2</sup>, <sup>1</sup>The Maria Grzegorzewska University, Warsaw, Poland. <sup>2</sup>The John Paul II Catholic University of Lublin, Lublin, Poland**

The presented research concerns the image of a nursery based on Polish-language press statements. The study covered all articles published since 2011, when the Act on the care of children under 3 years of age appeared in Poland for the first time. The presentation will focus on how this concept was conceptualized in the media discourse. Based on the assumptions of postmodernity and on the assumptions of a society in which rapid changes are taking place, which we have seen in recent years. Based on content analysis, the (linguistic) mechanisms of constructing opinion-forming reality by the media are presented. The study covered 9,000 articles published between 2011 and 2023 in which the word "nursery" appeared in the two most opinion-forming daily newspapers published in Poland. The proposed paper will be presented against the background of the growing nursery boom, which was greatly influenced by other European countries and the result of Poland's presence in the European community.

Keywords: Articles, press, nursery, Polish language.

# **16 Follow-up research of a preschool science project called Science Kids**

## **Strand 1, oral presentation**

**Andreas Redfors, Lotta Leden, Marie Fridberg, Kristianstad University, Kristianstad, Sweden**

The presentation has its background in that the national curriculum stipulates natural science as content in Swedish preschool, i.e. children should be given the opportunity to develop an understanding of "simple chemical processes and physical phenomena" and the ability to discuss natural science. At the same time, many educators in preschool experience science as a difficult area to teach. In line with these difficulties, the Swedish Schools Inspectorate reports that science in preschool is often treated in isolation without connection to the children's own investigations or everyday life (Swedish Schools Inspectorate, 2018). We report on experiences made from partaking in a professional development programme called *Science Kids*.

We aim to develop knowledge about how participation in such programmes can contribute to the development of science teaching in preschools. The research is done in cooperation with a mid-sized Swedish municipality and empirical data is collected in terms of pre- and post-questionnaires, focus-group discussions, and interviews. Ethical considerations adhere to recommendations by the Swedish Research Council (2017). This includes the researchers informing about voluntary participation, that participants had the right to cancel their part-taking if they wish, and that participants and preschools are anonymised when results from the study are reported.

Content analysis supported by frameworks of curriculum emphases and professional development is used. The analysis is ongoing and results and discussion related to current and future science teaching in preschool will be presented at the conference. Preliminarily we can say that the participants display a positive attitude towards science in preschool and that they highlight the importance of everybody's participation. There is a pronounced focus on the importance of children being able to understand and discuss science content among themselves. Not so much about decision-making, science in society, and other aspects of science.

Keywords: Preschool teachers, Early Years Science, Professional development.

# **19 Anthropocene and dystopian thought in children's books. Cultivating planetary literacy among Preschool through Middle School Students**

## **Strand 4, oral presentation**

**Rosy-Triantafyllia Angelaki, Aristotle University of Thessaloniki, Thessaloniki, Greece**

The fundamental idea conveyed by the Anthropocene is that human actions significantly influence various aspects of the natural world and the planet's systems, impacting how we perceive, engage with, and understand our role within the environment. Within the framework of global mobilization for a new ethical approach to the natural environment by humans and the fragmentation of their dominant position within it, planetary literacy emerged: It is considered fundamental factor in ensuring sustainability and biodiversity; underlines that environmental threats are jeopardizing human health; encourages humans to change their behavior so that to reduce the environmental impact on the planet; and teaches the harmonious coexistence of the human species with all other species inhabiting the Earth. Contemporary authors of children's books explore the concept of planetary literacy in their works and often raise the readers' awareness on anthropogenic changes to the Earth's systems by mirroring the alarming environmental reality and offering dystopic images about the future. The study focuses on books for children, whose authors and illustrators represent the contemporary geoclimatic conditions as shaped by humans and involve a critique of unsustainable cultures and the features thereof, aiming to help children develop a sense of environmental morality. Drawing on posthumanist childhood studies, new materialist approaches to Children's Literature, the recent literature concerning contemporary dystopian writing, as well as the semiotic, literary, and artistic frameworks for analyzing picturebooks, the presentation aims to bridge the gap between planetary literacy and children's texts; explore how authors and illustrators educate children about the planet's functioning and the ways through which they encourage a more sustainable integration of nature and culture; how they attempt to enable children understand that environmental degradation significantly impacts the Earth's health and, consequently, affects the well-being of both humans and the broader, more-than-human world.

Keywords: Anthropocene, planetary literacy, Children's Literature, dystopia.

## **20 Bokträdgården/Bookgarden - the center for learning about sustainable development and outdoor education**

### **Strand 1, oral presentation**

**Magdalena Stenström, Ingrid Bogren, Preeschool department, Malmö, Sweden**

The city Malmö came up with innovative idea about **outdoor education**. It offers children excursions to Bokträdgården/Bookgarden , where the visitors participate in the creation of an exciting story together with the garden. Everyone can interweave their experiences and knowledge when it comes to encounters with nature through **play** and exploration. Through experience we learn that everything is connected in nature and we are dependent on each other-biocentrism. The children and educators continue to spread a positive and meaningful change in societies when they bring stories, experience, natural materials and educational documentation from Bokträdgården.

The preschool's curriculum contains both the task of caring for the children but also educating them, where both tasks include resting and learning. Since security and trust are important prerequisites for being able to rest, the preschool has a great responsibility to give children the opportunity to experience rest and, in the long run, understand the balance between physical activity and rest.

Outdoor pedagogy is an important way to inspire and promote having a sustainable, healthy and well-being life on our planet.

Keywords: Outdoor education, Bookgarden, participation, play, nature.

## **21 Pedagogical content knowledge in movement and physical activity among educators in early childhood education and care.**

### **Strand 1, oral presentation**

**Ann-Christin Sollerhed, Kristianstad University, Kristianstad, Sweden**

Movement and physical activity (MoPA) are critical to children's health and development. Many children aged 1-5 years are enrolled in Early Childhood Education and Care (ECEC), and high expectations are placed on educators to deliver education of sufficient quality for children's development. The aim of the 18-month-long action-based study was to investigate how 88 ECEC educators in five preschools in Sweden experienced the priority and teaching of MoPA. The educators planned and implemented MoPA sessions in a trial-and-error manner among children. They filmed sequences, which were shown in the focus groups and were the starting point for the collegial discussions. Six meetings were performed at each preschool during the project period. A perspective of Pedagogical Content Knowledge (PCK) (Shulman et al 2009) and the perspective of metacognition (Dunlosky and Metcalfe 2008) were used as frameworks. Content analysis of the transcribed focus group discussions revealed three themes: *Teaching aspects*; *Educational aspects*; *Structural aspects*, with associated subthemes. During the project, the educators detected insufficient competence to teach MoPA and the teaching was often replaced with free play. Increased metacognition made the educators aware of children's different MoPA levels and that free play resulted in very limited MoPA. The perceived insufficient PCK to teach MoPA was perceived as a troublesome barrier for promoting MoPA. During the project, the educators' metacognition about MoPA increased, but despite increased metacognition, most of the educators were not ready to leave their comfort zones and were not open to extra work when it came to MoPA. The educators demonstrated need for improved education in MoPA in early childhood teacher education, as well as need for continuous education for professional educators in ECEC to enhance the PCK for adequate teaching in MoPA, which is important for children's development and future health.

Keywords: Movement, Physical activity, Motor skills, Early childhood education.



## 22 Play-responsive teaching about literacy in the preschool class

### Strand 1, oral presentation

**Maria Magnusson, Department of Education and Teachers' Practice, Kalmar, Sweden**

There is previous research about play in preschool teaching (Pramling et.al, 2019). However, in the preschool class (6-years) this is a new research field. The purpose of the study is to contribute with knowledge about strategies for incorporating play in teaching when to learn written language. With increased focus on knowledge in early childhood education, there is a risk that play and creativity is neglected and that the gap between play and teaching increases in the preschool class. A crucial question for preschool class teachers is what children's play means for learning and teaching, a question that is of international interest. Theoretically, the study builds on Play-Responsive Early Childhood Education and Care (PRECEC). Central to PRECEC is communicative patterns where children and teachers shift between culturally established knowledge (as is) and fantasy (as if).

The study is a combined research and development project. Teachers in two preschool classes together with a researcher, work on developing strategies for incorporating play in teaching. The empirical data consist of video observations which were generated by the teachers themselves with focus on literacy activities. Interaction analysis has been used to clarify the communicative patterns between children and teachers. The study has been ethically reviewed by the Ethics Review Authority and follows prevailing research ethics principles (Vetenskapsrådet, 2017).

The results show how children in the teaching activities not only engage in *as-if* and *as-is* thinking, but also in *what-if* thinking. The results clarify how the pupils are engaged in the literacy activity through imaginatively playing with how it could have been different (what if it were...). By using *what-if thinking* the teachers support the pupils to elaborate questions and play with ideas to develop problem solving abilities, which is important for children appropriating the cultural tools of written language.

Keywords: Play-responsive teaching, Written language, Prospective thinking.

# **23 Young Children's Evolving Ecological Identities and Engagement in Nature-Based Learning**

## **Strand 1, oral presentation**

**Jodi Streelasky, Meredith Lemon, University of Victoria, Victoria, Canada**

In this 4-year study, a group of young children shared their perspectives on their valued school experiences each year through a range of multimodal methods, based on the Mosaic Approach (Clark & Moss, 2011). The Mosaic Approach emphasizes the importance of listening to children in all the ways they express themselves, which aligns with Articles 12 and 13 from the UN Convention on the Rights of the Child. Our intent was to acquire a deep understanding of children's valued school experiences, which were revealed to largely take place in outdoor, nature-based learning environments. Data collection began when the children were in Kindergarten and were four and five-years old. Research contexts included the children's classroom, school playground, the forest and outdoor classroom on the school grounds, and an overnight Outdoor Environmental School.

In the final year of the study, the children attended an outdoor environmental facility which included a 3-day program that provided them with nature-based and outdoor learning experiences. Specifically, the educators at the facility developed guiding principles that addressed students' development of land-based knowledge, and their understanding of the interconnection between place, social responsibility, and the natural environment. This perspective also supports Article 29(e) of the UN Convention on the Rights of the Child, "the development of respect for the natural environment." Findings revealed that the children placed a high value on their outdoor experiences and voiced their developing understanding of their ecological identities. Broom (2017) defined one's ecological identity as "encompassing individuals' knowledge of, reverence for, and actions towards the environment" (p. 34). Humphreys and Blenkinsop (2018) added that experiential learning, a key part of developing ecological identity, can foster an awareness of the inherent relationality between humans and nature. In this presentation, we will share the children's drawings, photographs, paintings, and stories of their valued outdoor experiences.

Keywords: Nature based learning, The Mosaic Approach, outdoor, experiences.

## **24 Who stands up for children's right to develop movement skills and risk management in early childhood?**

### **Strand 1, oral presentation**

**Ann-Christin Sollerhed<sup>1</sup>, Helena Lindfors<sup>2</sup>, Linda Arnrup<sup>3</sup>, Ulrika Myhr<sup>4</sup>**

**<sup>1</sup>Kristianstad University, Kristianstad, Sweden. <sup>2</sup>Småbarnilund, Lund, Sweden. <sup>3</sup>Ministuds, Halmstad, Sweden. <sup>4</sup>Stockholm Regional council/ Learn to move, Sollentuna, Sweden**

According to the Rights of the Child (United Nations, 2006) should parents, educators, caregivers, and society stand up for children's right to participate in decisions that affect them. This includes children's right to be physically active and to develop movement skills. Many adults worry that children will injure themselves in physical activity, which leads to them banning physically active play. This causes many children to be overprotected at home and in preschool. One possible interpretation of risky play is that it has evolved to counteract phobias in normal child development and preventing children from engaging in risky play that suits their age could result in more neuroticism or psychopathology in society (Sandseter & Kennair, 2011). Early childhood is a crucial period for developing and strengthening movement skills, because the brain develops and adapts to motor skill learning currently (Myer et al., 2015). Children who do not engage in activities that enrich their movement skills in early childhood may fail to achieve their full potential for motor control, which is essential for maintaining physical fitness and health in the future. The influence of adults through societal policy documents, attitudes and behaviors on children's movement skills development will be discussed in the presentation.

Keywords: Movement, physical activity, injuries, risky play, motor skills.

## **25 “Helping children become nappy free earlier within Husby preschools”**

### **Strand 1, oral presentation**

**Christina Widström, OMEP, Stockholm, Sweden**

I work as a principal at preschools in Stockholm in Sweden. We have four preschools and during the autumn 2023 we started a project about nappy free children. I think it would be interesting for the audience to hear how the teachers joyfully helps the children becoming nappy free by teaching them to use the potty or toilet.

I am chairwoman of OMEP Stockholm and participated in the research about collaboration between home and teachers in preschool. I can also see that children in our preschools are older and older when they become nappy free. Being a principal, I wanted to make a change together with the management of Husby preschools. We started with a lesson by Ingrid Engdahl, one of the founders of the campaign. During for ours 70 teachers received the foundation and knowledge of why this is so important. After that the teachers who works with the youngest children talk to the parents and gave them the booklet about nappy free children. Nowadays it is so fantastic to see the children likes to sit together, how the working is included in their everyday teaching and how many children who don't wear nappies anymore.

Keywords: sustainability, children's development, nappy, collaboration, children's independence.

## **26 Guardians' participation in preschool's systematic quality work (SQW) with a special focus on evaluation**

### **Strand 3, poster presentation**

**Charlotte Öhman, Jönköping University, Jönköping, Sweden**

Participation is an important factor for quality in preschool. Preschool is a place where participation can be understood as an aspect of sustainability. But, with participation comes opportunities and challenges. Preschool in general and preschool teachers in particular are tasked to promoting and strengthening the participation of guardians. In the preschool curriculum it is stated that preschool teachers shall ensure that guardians participate in the evaluation. The present study therefor aims to investigate how guardians´ participation is documented and interpreted in SQW with a focus on evaluation. Research questions are: How is the guardians´ participation in evaluation made visible? How do guardian´s opportunities for participation appear?

This study examines existing documents from a qualitative approach.

The project is realized by document study. Excerpts from systematic quality work with specific focus on evaluation, written by preschool teachers together with other colleagues, forms the empirical analysis material.

This study is conducted in accordance with guidelines from the Swedish Research Council. Used data material consist solely of form for guardian survey and evaluation documents written at organizational level. Any designation of preschool names and departments was removed before the material was provided.

Guardians participation is described in SQW as to:

- *Welcome*
- *Focus on the child*
- *Share information*
- Opportunities for guardians participation is described in SQW as:
- *A question of conditions*

**Keywords:** evaluation, guardians, participation, preschool.

## **27 Open-ended investigations in science teaching, a way to enhance children's agency**

### **Strand 1, oral presentation**

**Lotta Leden, Lena Hansson, Kristianstad University, Kristianstad, Sweden**

The research presented here has the overall aim to contribute with knowledge about how open-ended investigations in early years science teaching can contribute to children's agency. Recent science education literature has suggested that a focus on student agency has the potential to enhance the perceived relevance of school science. We understand agency as empowerment, and an ability to make decisions and take action. In our presentation agency will be coupled to open-ended investigations and the opportunities they can afford for making use of knowledge in and about science in children's lives now and in the future. We use examples from preschool and a grade 2 classroom to illustrate how agency can be promoted by making space for children's own questions and investigations. The research was made in close collaboration with primary and preschool teachers in two different research projects. Both projects included workshops, focus groups and teaching sequences. Data consists of audio recordings of focus groups with teachers, audio recordings and observations of teaching, and group interviews and surveys with children in grade 2. Ethical considerations adhere to recommendations by the Swedish Research Council (2017). The children were informed prior to the project and before each observation and could always choose not to participate. The children's caregivers and participating teachers were informed and provided written consent. The results show that children's curiosity can be prioritized by encouraging them to pose questions and investigate phenomena or consumers choices of interest and relevance to them. Furthermore, the opportunities to develop abilities to perform empirical investigations functioned as resources for critical examination of different statements. Possibilities to make use of science to engage in critical examination in everyday life and as a citizen is an important aspect of science agency for all children.

Keywords: open-ended investigations, science, teaching, agency.

## **28 How teachers talk about developing their practice with focus on science as a content**

### **Strand 1, oral presentation**

**Ingela Friberg, Laila Gustavsson, Kristianstad University, Kristianstad, Sweden**

Reviews by the Swedish Schools Inspectorate (2018) show that preschool teachers are still uncertain about the science content and what it should mean in a preschool context. In this pilot study, the aim is to develop preschool teachers' knowledge around a science content. Preschool teachers who were part of the project were given the opportunity for continuing education that increased their ability to teach a science content.

Variation theory is used here as a framework for analysis as well as for preschool teachers' planning. The theory is developed based on a phenomenographic approach. The outcome space of categories can be described as qualitatively different ways of distinguishing what a learning object can be and then planning based on the learning object. This research is inspired by action research, an approach with participatory, collaborative, and cyclical ways of producing knowledge and change. Teachers are seen as developers of their own practice with opportunity to constantly ask new questions. There is a focus on the teacher's ability to talk about a science content.

The teachers were informed about the purpose of the study, method, process, and consent was collected from all participants. Ethical guidelines from the Swedish Research Council (2016) was followed. The goal was to change the perspective from teachers talk about doing (how) to talk about the learning object (what) and then choose the method for teaching. Based on the concluding group discussions with the teachers, it can be stated that these aspects were distinguished only to a limited extent.

The project can contribute to increasing preschool teachers' understanding of having the object of learning in focus in their planning for a science project.

Keywords: Science, Learning object, Teaching, Preschool teacher, Variation theory.

## **29 Student Preschool Teachers' Experiences of Science and Science teaching during their Teacher Education**

### **Strand 1, oral presentation**

**Susanne Thulin, Andreas Redfors, Agneta Jonsson, Marie Friberg, Kristianstad University, Kristianstad, Sweden**

This study aims to develop knowledge about student preschool teachers' knowledge development of science and science teaching during their preschool teacher education.

The data material consists of a web-based questionnaire with multiple-choice and open-ended questions. 183 students have taken part in a cross-sectional study of students in semesters one, five and seven of a preschool teacher education programme.

The theoretical framework is based on phenomenography (Marton & Booth, 1997; Marton, 2014).

The analysis focuses on different ways of describing experiences (Marton & Booth, 1997). Distinguished descriptions are collected into separate categories.

Ethical considerations adhere to the Swedish Research Council (2017), and all necessary information and permissions were dealt with during the long-term project. Participating students have been provided with information about the purpose of the research project and have given their consent to participate. To ensure the participants' confidentiality, any names appearing in the text are pseudonyms.

The analysis shows that a positive attitude dominates the students' views of science and that their self-confidence about science subjects and science teaching increases over time. The results from the two open-ended questions about the student's experiences of science teaching in relation to thematic teaching and their own education show a great variety. Reasons why science can be perceived as difficult for them to teach are indicated, but at the same time, awareness of ways to shape science teaching emerges. The consequences of the results for preschool teacher education are discussed.

Keywords: Student preschool teacher, education, science, learning, teaching.



# **30 Do you remember? Adults' experiences of how their years in preschool and elementary school with an outdoor profile influenced their values**

## **Strand 1, oral presentation**

**Laila Gustavsson<sup>1</sup>, Lotta Söderberg<sup>2</sup>**

**<sup>1</sup>Kristianstad University, Kristianstad, Sweden. <sup>2</sup>I Ur och Skur Utveckling, Stockholm, Sweden**

Earlier research shows that outdoor education with regular physical activity and contact with nature both directly and indirectly can have positive and meaningful effects on learning, school performance, health, and well-being, as well as on students' personal and social development. The aim of the pilot study is to describe adults' own experiences of their years in pre-schools and elementary schools with an outdoor profile (I Ur och Skur). The questions that are asked is 1/ How do the respondents perceive that the preschool/school has influenced their values? 2/ How do the respondents perceive that the preschool/school has influenced their choice of profession and choice of leisure activities? The methodological approach is phenomenographic. Phenomenography is interested in what man perceives and how perception is conditioned, i.e. when the person perceives something treats (thinks, acts, feels) she this subjectively. The assumption is that we constitute the meaning of things by intellectually, physically, emotionally, etc. experiencing these from a certain position in the everyday world. A survey was distributed to 85 former pre-school/school children with age between 25 and 40. An information letter about the study was attached to the questionnaire, where information about the study's ethical considerations was explained. The results will be reported at group level and all respondents are de-identified and cannot relate to the different answers. The very first results will be discussed in this presentation where it can be discerned that the profile of the pre-school/school has influenced values and choice of leisure activities. Outdoor life and feeling for nature, but also insight into the responsibility that rests on humans when it comes to taking care of nature is an opinion that appears in the results.

Keywords: Outdoor education, Phenomenography, Values, Pre-school, Elementary School.

## **31 Effect of use of screen on child's development at early childhood education level**

### **Strand 1, oral presentation**

**Aqsa Ali, University of the Punjab, Lahore, Pakistan**

Screen time has become both a temptation and a popular pastime in recent years. Children are raised in an age of screen media and technology. The digital ecosystem is changing at a faster rate than studies into the impacts of screen media on young children's development, learning, and family life. This study focuses on the advantages and disadvantages of screen media in children, with an emphasis on developmental, cognitive, social, emotional, language and physical wellbeing. The study was qualitative. The population were consisted of parents of ECE children. Purposive sampling and the Interview guide was selected as an instrument for data collection. The data was analyzed in the light of responses given by the parents. The main findings arising from the research study was, screen time has both beneficial and bad effects on children's development. Furthermore, the amount of time spent on the screen, the quality of the content, parental involvement, monitoring, and the existence of interactive elements are all factors that impact the effect of screen use on early development. The study recommends that children restrict their routine or regular screen usage time and engage in other physical activities. These devices should not be used on a regular basis by children.

Keywords: Study screen time ECE.

## **32 Aggravated Emotional behaviors in early childhood**

### **Strand 4, oral presentation**

**Aqsa Ali, The Islamia University of Bahawalpur, Bahawalpur, Pakistan**

Early childhood is a period when aggravated behaviors are common and have a negative effect on the family, the community and the child itself. These actions may damage a child's capacity to joy, emotion regulation and academic focus. In early childhood the young children may not express what they're feeling and in fact, they may not even know what the exact problem disturbs them. Children displaying behavioral problems at a young age are at a greater risk of developing antisocial behavior and other behavioral problems in the long run (Campbell, 2006; Lynam, 1996). The main focus of this study is to control or possibly decrease the aggravated behaviors of children in early years. Understand the causes of aggravated behaviors and their management strategies to reduce the long lasting effect. This was a qualitative research. Purposive sampling method was utilized in this research. The population consisted of early childhood educators of preschool and interview guide approach was selected for data collection. This research led to the conclusion that emotional intelligence is an important element of children's development. Early childhood educators had significant impacts on children's life in order to build positivity in their behaviors. Emotional intelligence is the best tool for early childhood educators to deal with aggravated behaviors.

Keywords: Emotional intelligence, Childrens development, behavioral problems.

## **33 Early childhood leadership and artificial intelligence: implications and applications**

### **Strand 1, oral presentation**

**Christina Han, The Education University of Hong Kong, Hong Kong, Hong Kong**

After pandemic years in 2020, the landscape of education has witnessed a transformative shift with the integration of technologies and artificial intelligence (AI) to enhance efficiency and effectiveness in teaching, learning, assessment, and leadership (Harris & Jones, 2022; Hwang, Tu & Tang, 2022). Early childhood leaders in kindergarten settings are increasingly exploring the benefits of technologies to support educational works. The aim is to leverage these technologies to create more streamlined and responsive educational environments for young learners. As AI applications continue to advance, educators and leaders are eager to understand how these tools can be applied to optimize leadership tasks (Chen, Xie, Zou & Hwang, 2020), improve learning outcomes, and provide personalized experiences for both leaders and educators. School leaders play a vital role to promote the appropriate utilization of AI to reduce repetitive administrative workloads and focus more on relationships and school long-term development (Huang, Rust, & Maksimovic, 2019).

In reality, many kindergarten leaders still spend lots of time and effort busy with daily administrative works, such as doing paper works, communicating with various parents' enquiries, monitoring teachers lesson plans, arranging resources and so on. Even though there are such powerful technologies, the efficiency and effectiveness of school leadership seems not improved accordingly. In this study, the exploration of kindergarten leaders' views on the applications, implications and implementation of artificial intelligence in early childhood settings are revealed. Qualitative data is collected by using focus group interviews with kindergarten school principals in Hong Kong. The results indicate that: 1. The awareness of applying AI in kindergartens is low. 2. The relevant training in using AI is insufficient, especially in teacher training institutions. 3. There is lack of resources and support from government to promote AI usage in kindergartens. Implications and recommendations will be discussed in this paper.

Keywords: Artificial Intelligence, Early childhood leadership.

## **34 Teaching as a democratic idea – Swedish preschool teachers' understandings of the concept of teaching**

### **Strand 1, oral presentation**

**Jenny Henriksson, Bjuvs kommun/ ReCEC, Bjuv, Sweden**

Drawing on findings from a licentiate thesis (Henriksson, 2022) the presentation focuses on Swedish preschool teachers' contextual understandings of the concept of teaching. More precisely the understandings of teaching as a democratic idea that emerge in the preschool teachers' talk about the concept of teaching and their teaching practices. Different traditions and cultural conditions create different challenges for ECEC (Broström, 2017; Gunnarsdottir, 2014). Liljestrand (2010) emphasizes that teaching is central to a democratic society, but it`s meaning is not given. The licentiate study is a theory-driven, empirical investigation of preschool teachers' understandings and social construction of the concept of teaching that aim to contribute with insights about preschool teachers' understandings and the underlying social constructs on which understandings are based. Guided by social constructionism and a thematic life story approach, interview conversations (Goodson & Sikes, 2017) were conducted with nine participants. The preschool teachers' conceptualization of teaching in preschool was analyzed with a thematic content analysis (Riessman, 2005). The study adheres to ethical guidelines (Swedish Research Council, 2017) that emphasizes ethical considerations in relation to the informants and research ethics related to the conduct and writing of the research. The analysis showed that teaching was expressed in different ways, identifying various concurrent, conflicting and intertwined contextual understandings. Preschool teachers' talk of teaching as a democratic idea emerges both as something that strengthens children as members of society and as all children's right to participation and influence in preschool teaching practices. It is significant to continue to problematize teaching in ECEC and the study contributes to broadening the view of preschool education through the diversity of understandings that emerge in the findings. The study thus contributes to the ongoing discussion regarding the conceptualization of teaching and enables a continued, extended and nuanced discussion about teaching in ECEC settings.

Keywords: teaching, ECEC, preschool, teachers, democracy.

# **36 Jewish and Arab Israeli Parenting Behaviors during War: Relations to the Parents' and Children's Well-being**

## **Strand 4, oral presentation**

**Dorit Aram<sup>1</sup>, Galia Meoded Karabanov<sup>1</sup>, Mor Dekel<sup>2</sup>**

**<sup>1</sup>Tel Aviv University, Tel Aviv, Israel. <sup>2</sup>Omep Israel, Tel Aviv, Israel**

Parents' functioning and presence in their children's lives are key factors affecting the children's sense of security and coping abilities. This study examined Jewish and Arab parenting behaviors according to the "Parenting Pentagon Model" during the third week of the war (4/11/2023-12/11/2023). We studied the relations between the parents' behavior and their parental and general well-being beyond background variables (e.g., the child's age, number of children in the family, the parent's age and education) and indicators related to the war (changes in the family's income, place of residence and conscription of one of the family members). In addition, we examined the connections between the parents and their children's well-being.

Participants were 303 Jewish parents and 141 Arab parents of at least one child between the ages of two and eight. Questionnaires regarding daily parental behavior, changes in parental behavior following the war, parents' general and parental well-being, and children's well-being were distributed through social networks.

Preliminary analyses showed that during the first month of the war, Jewish and Arab parents demonstrated a high frequency of loving behaviors towards their young children and encouraging the children's independence. They reported an increase in these behaviors compared to regular days. Beyond the background variables, beneficial parenting behaviors predicted parents' well-being. Also, parents' well-being correlated significantly with their children's well-being.

These findings demonstrate family resilience and the ability to deal with unexpected situations. Resilience is achieved through intra-family processes, emphasizing optimal communication between family members and joint coping with challenges. Parents can help their children during stressful events and reduce the long-term consequences for their children. According to these findings, parents' guidance is needed more than ever. We recommend that policymakers examine the study's findings and its implications. They can assist them in planning and implementing parent training in times of crisis.

Keywords: Parental behavior, war, well-being, children.

## **37 Use of Puppets in the Early Childhood Classroom**

### **Strand 1, Symposium, self-organized**

**Gail Cox, Ph.D.<sup>1</sup>, Larry Kotch, M.A.<sup>2</sup>, Rosa Rivera<sup>3</sup>**

**<sup>1</sup>Temple College, retired, Temple, Texas, USA. <sup>2</sup>Central Texas Workforce Board, Belton, Texas, USA. <sup>3</sup>Texas Child Care Trainer, Killeen, Texas, USA**

Puppets in the early-childhood classroom offer opportunities for teachers to demonstrate and young children to engage in social, emotional, language, cognitive and physical development. Various types, uses and maintenance of puppets will be identified. Participants will have a hands-on experience with small puppets and develop strategies to use puppets in their classroom.

Goals include:

1. Identify and describe the benefits of using puppets in the classrooms with young children.
2. Recognize various methods to support teachers' development of opportunities to use puppets with and for children's understanding of issues.
3. Participate in hands-on opportunities to use small puppets within the workshop.

Keywords: Puppets, benefits, development, children, teachers.

# **38 Investigation of the Role of Play in Early Years Curricula Applied in Oman**

## **Strand 1, oral presentation**

**Iskender Gelir<sup>1</sup>, Laila Zahir Al Salmi<sup>1</sup>, Ibrahim Al-Qaryouti<sup>1</sup>, Amur Alaisari Alaisari<sup>1</sup>, Amna Al-Farsi<sup>2</sup>, Rayya Salim Al- Manthari<sup>1</sup>**

**<sup>1</sup>Sultan Qaboos University, Muscat, Oman. <sup>2</sup>Ministry of Education (Oman), Muscat, Oman**

This study reports findings from an ongoing research project that examines teachers' experiences and views of nationally applied curricula in Oman where two early years curricula (Omani and Egypt) are applied in the government preschool classrooms. Specifically, the study investigates the place of play in the curricula. Methodologically, we conducted classroom observations and semi-structured interviews to understand classroom practices and elicit teachers' views of play in the curricula. There were 30 participant teachers in this study. This study aims to address the conference theme "Early childhood education and care for sustainability -play, teaching, learning and development" by analysing teachers' views of play in early years classrooms in Oman. The importance of this research is to shed light on the place and role of play in the early years curricula to increase teachers' awareness of play in classroom activities. Theoretically, this study draws on Vygotsky's (1967) conceptualisation of play. This research was approved by the research committee at the university and the Ministry of Education in Oman.

One of the main findings is that the inclusion of play in the learning process varies from regions to regions because of weather differences, geographic locations, and teachers' and practitioners' qualifications. Another main finding is that the participant teachers mainly emphasize literacy learning with a lesser focus on maths and science learning. According to our classroom observations and teachers' account of play, the findings are closely linked to the objectives of units in the early years curricula (McLachlan et al., 2018).

**Keywords:** Role of play Curricula Oman.



## **39 Influence of a co-construction process in mathematics on the quality of learning support provided by the teacher in preschool for 5-year-olds**

### **Strand 1, oral presentation**

**Isabelle Deshaies, Université du Québec à Trois-Rivières, Québec, Canada**

Several studies in mathematics education have demonstrated that early learning in this discipline plays a crucial role in preventing later difficulties, with early mathematical skills serving as significant indicators of a child's educational success (Clark et al., 2010; Duncan et al., 2007). In Quebec, the quality of support for learning provided by preschool teachers, as assessed by the Classroom Assessment Scoring System (CLASS) tool (Pianta et al., 2008), is considered to be of low to moderate levels (Duval et collab., 2016; Montminy et al., 2020). This situation is concerning as teacher support is crucial for overall development, including mathematical skills (MEQ, 2023; Pianta et al., 2008; Boily & Deshaies, 2021).

A three-year study involving six teachers documented the impact of a co-construction process on the quality of teacher support in the classroom and the types of support offered during these three years. Approved by the university ethics committee, the research recruited voluntary participants while ensuring their anonymity. Using a mixed-method approach (Creswell, 2011), quantitative analyses based on the CLASS tool and qualitative analyses of teacher journals, questionnaires, and interviews highlighted the effects of the co-construction process on the quality of learning support. These results underscore the importance of ongoing co-construction-based professional development for teachers, while highlighting an increase in the forms of support provided to children.

Keywords: mathematics teachers quality of support.

# **40 Development of a web-survey for assessment bowel and bladder function in children who are introduced to infant toilet training**

## **Strand 2, poster presentation**

**Anna Leijon<sup>1</sup>, Terese Nilsson<sup>1</sup>, Ulla Sillén<sup>2</sup>, Anna-Lena Hellström<sup>3</sup>, Linda Vixner<sup>4</sup>, Barbro H Skogman<sup>1</sup>**

**<sup>1</sup>School of Medical Sciences, Örebro, Sweden. <sup>2</sup>Department of Pediatric Surgery, Göteborg, Sweden. <sup>3</sup>Institute of Health and Care Sciences, Göteborg, Sweden. <sup>4</sup>School of Health and Welfare, Dalarna University, Falun, Sweden**

Functional bowel and bladder disorders are prevalent among children. The impact of assisted infant toilet training on the prevalence of childhood bowel and bladder disorders has not previously been investigated. As self-reported bowel and bladder symptoms can be unreliable, robust tools are essential to evaluate interventions. The ROME Foundation offers diagnostic criteria for functional gastrointestinal disorders, while the International Children's Continence Society (ICCS) provides definitions for functional bladder disorders. Our research group has launched the BABITT study, a two-armed intervention study to investigate whether assisted infant toilet training reduces the prevalence of functional bowel and bladder disorders. To construct a questionnaire, assessing bowel and bladder function in children introduced to infant toilet training and to evaluate its' content validity and feasibility. In three consecutive steps, a web-based questionnaire was developed. In Step 1, the questionnaire was outlined based on literature review and consensus panel discussions. In Step 2, the questionnaire was validated regarding relevance and simplicity by the content validity index (CVI) method. In Step 3, a pilot phase allowed for assessment of feasibility in the clinical study setting. In Step 1, the Rome criteria and ICCS frameworks were selected for primary outcomes. After the final assessment round in Step 2, the i-CVI ranged from 0.88-1.00 in most items, in all domains, for both relevance and simplicity. Generally lower scores on simplicity emphasized revisions of this aspect of the items. In the pilot phase Step 3, respondent burden was analysed and feasibility assessed. The response rate at the 2-months questionnaire was 95% and acceptability of the intervention was satisfactory.

A web- based questionnaire for assessment of parent-reported bladder and bowel function in children who are introduced to infant toilet training was developed. The questionnaire emerged as valid and feasible in its context.

Keywords: Questionnaire development, Feasibility.

# 41 The OMEP ESD Awards Symposium

## Strand 1, Symposium, self-organized

Adrijana Višnjić-Jevtić<sup>1</sup>, Ingrid Engdahl<sup>2</sup>, <sup>1</sup>University of Zagreb, Teacher Education Ped University, Zagreb, Croatia. <sup>2</sup>OMEP, Stockholm, Sweden

The Aim for this symposium is to spread information about the Annual ESD Award and some of the winners.

Education for Sustainable Development (ESD) ranks among OMEP's highest priorities. Since 2009 World OMEP has sponsored a travel award competition for outstanding ESD projects by OMEP members. We focus on a holistic view on ESD and children's rights, as stated in the UN Convention on the Rights of the Child. The result is impressive: since 2010, the ESD projects have enrolled 143 817 young children, 15 679 teachers, 13 790 families and 1 044 student teachers in Education for Sustainability.

We are looking for outstanding projects that **combine children's voices and play with teaching and learning for sustainability**. We would like to see projects that are child-oriented where children are active in play and communication with other children, teachers, families, and communities, in a transformative change for sustainability. SDG 4.2 specifically asks for quality education for young children.

During the symposium we will present some of the winning projects and discuss future calls for more project applications.

Keywords: The OMEP ESD Awards Symposium.

## **42 Ecological relationships, biological diversity and learning for sustainable development at Preschool Teacher Education**

### **Strand 1, poster presentation**

**Britt Sandberg, Annika Bondesson, Höskolan Kristianstad, Kristianstad, Sweden**

At Kristianstad University´s Preschool Teacher Education semester 4 is about sustainable development in preschools. One of the examinations have focus on ecological relationships and biological diversity. The students work in groups. They choose a place in their nearby nature that they call their “nature room” (like an outdoor classroom). They visit the site regularly for some weeks and explore with focus on discovering and describing some ecological relationships and biodiversity. The students also reflect on how to use the place to develop children´s learning about nature. The examination includes to propose and try (by yourself or with children if possible) activities that can be conducted with children in a learning situation in the “nature room”. The examination leads to an oral presentation with the support of a physical “poster” supplemented by collected and created material. During the conference, some of “the posters” will be available.

Keywords: ESD preschool teacher education.

## **43 Daily physical activity level in early- and preschool- age children**

### **Strand 4, oral presentation**

**Iva Blažević, Kristina Alviž Rengel, Jelena Gugić, Juraj Dobrila University of Pula, Faculty of Educational Sciences, Pula, Croatia**

Research has shown that today's early- and preschool-age children are already overweight and obese, they spend more time on digital devices compared to earlier generations and are less physically active.

The aim of this paper is to investigate the daily physical activity level in early- and preschool-age children, considering the importance of encouraging physical activity at these key ages. The paper provides insight into the importance of physical activity for the overall development of early- and preschool-age children. It also emphasizes the importance of raising awareness among parents and educational specialists about their role in maintaining children's healthy body mass and offers practical advice on how to encourage daily physical activity, thus creating physically, emotionally and socially competent children. Educational initiatives aimed at parents and educational experts which encourage awareness of the importance of physical activity can significantly contribute to positive changes in daily habits. Through the education of adults, it is possible to create a stimulating environment that supports healthy lifestyle, contributing to children's optimal growth, development and prevention of later health issues.

A survey was conducted on 100 respondents, namely parents of children aged one to seven attending a kindergarten in the Republic of Croatia, about the daily physical activity level in early- and preschool-age children. The obtained results show that more than 50 % of children do not engage in physical activity or sports outside kindergarten, whereas slightly more than 50 % of parents believe their children should engage in some type of physical activity at least 1 to 3 times a week. The results of the research show that fathers/guardians engage in physical activity/sports more than mothers/guardians, while around 53 % of children spend 1 to 2 hours a day on digital devices.

Keywords: digital technologies, early- and preschool-age children, education, parents' attitudes, physical activity.

# 44 Culture of Peace - the starting point and the desired outcome of upbringing and education

## Strand 1, oral presentation

Ivana Visković<sup>1</sup>, Mie Oba<sup>2</sup>, Adrijana Višnjić Jevtić<sup>3</sup>

<sup>1</sup>University of Split, Faculty of Humanities and Social Sciences, Split, Croatia. <sup>2</sup>Fukuyama City University, Hiroshima, Japan. <sup>3</sup>University of Zagreb, Faculty of Teacher Education, Zagreb, Croatia

Culture of peace can be interpreted as a way of life that rejects violence, accepts peace and equality as fundamental values, and advocates behaviours that contribute to the establishment and maintenance of peace (UN, 1989).

The very concept directs society towards valuing and respecting life, people and their rights - equality, freedom of expression, opinion and action without endangering oneself and others, including the development of adherence to the principles of democracy and solidarity. The concept of peace cannot be limited solely to a state without conflict.

Peace presupposes the spiritual well-being of the individual and the quality of interpersonal relationships based on understanding, cooperation, respect and appreciation, forming the basis for the development of humanity and sustainable coexistence with nature.

Orientation towards the development of a culture of peace presupposes its representation from early childhood education and care (ECEC). This research explores the direction of peace education and pedagogy from a survey of the attitudes of students aspiring to become early childhood education teachers in Croatia and Japan.

According to the preliminary survey, students in the sample identified peace as one of the fundamental educational values ( $M=4,76$ ;  $SD=0,46$ ) and recognised the importance of individual action in developing a culture of peace ( $M=4,76$ ;  $SD=0,56$ ). While they agree that education for peace is essential in modern society ( $M=4,37$ ;  $SD=0,63$ ), they are sceptical that informing children about the negative consequences of war and conflict is justified ( $M=4,15$ ;  $SD=0,96$ ). They are aware that the task of education is to emphasise the possibility of peaceful resolution of conflict and problem situations ( $M=4,83$ ;  $SD=0,41$ ). A detailed discussion will be presented with the results of the main survey and comparisons.

Keywords: non-violent solutions to problem situations, culture of peace, education, pedagogy of peace, role of preschool teachers.

# **45 Promoting Resilience in Early Childhood Education and Care to Prepare Children for a World of Change: A Critical Analysis of National and International Policy Documents**

## **Strand 2, oral presentation**

**Angel Chan<sup>1</sup>, Ingrid Maria Engdahl<sup>2</sup>, Jonna Larsson<sup>3</sup>**

**<sup>1</sup>The University of Auckland, Auckland, New Zealand. <sup>2</sup>Mälardalen University, Västerås, Sweden.**

**<sup>3</sup>University of Gothenburg, Department of education, communication and learning, Gothenburg, Sweden**

Sustainability and climate crises have drawn attention and raised the concerns of many, including, for example, politicians, policymakers, scientists, researchers, and educators. Supporting children in building a resilient disposition is critical to protecting their rights and ability to live and flourish in a world of crises and change. Early Childhood Education and Care (ECEC) provides an ideal context to foster and strengthen children's resilience, which is an important aspect of Early Childhood Education for Sustainability (ECEfS), meeting the expectations of both the Sustainability Development Goals and the Convention on the Rights of the Child. Yet, resilience has only been studied to a limited extent in ECEC, and only a few studies have linked resilience to ECEfS. This presentation will report and discuss findings from a study that used critical document analysis to examine if and how resilience and its contribution to sustainability in ECEC is promoted in various national and international policies. Drawing upon the theoretical lenses of childism and place-based education, we analysed four international and national documents from five European and Asia-Pacific countries – Finland, Sweden, Slovenia, New Zealand, and the Philippines. The results show that resilience is mostly implicitly expressed in ECEC policies and rarely linked to sustainability issues. Instead, these policies limit resilience to the psychological dimension and the individual child. Applying ideas from the two theoretical lenses, we advocate for a holistic and multisystem understanding of resilience. We also suggest developing policies and pedagogies that 1) recognise and empower children's and communities' agency; 2) promote the inclusion and collaboration of diverse families and local communities; 3) provide place-based experiences for children and families to help them understand the ecology of the places they inhabit and learn how to share and live their lives with humans and more-than-human inhabitants.

Keywords: Promoting resilience, Early childhood education, Critical analysis, Policy documents.

# **46 Active and Inclusive Teaching of Literacy and Communication Skills for Enhanced Employment and Sustainable Economic Growth – an Erasmus+ Project**

## **Strand 1, poster presentation**

**Juraj Dobrila University of Pula, Faculty of Educational Sciences, Pula, Croatia**

The project Active and Inclusive Teaching of Literacy and Communication Skills for Enhanced Employment and Sustainable Economic Growth (abbreviated as In-Comm Guide) is an Erasmus + project of the duration of two years. The project leader is the Faculty of Tourism of the University of Maribor, while the partner institutions are the West Saxon University of Zwickau, University of Udine and the Faculty of Educational Sciences of the Juraj Dobrila University of Pula. The end objective of the project is the creation of a subject course whose practical implementation would enhance communication skills through movement and other forms of nonverbal communication (e.g. sign languages). A special goal of the project is the introduction of movement in educational programmes at all levels, not only during regular physical activity, but as part of other subjects' teaching as well. Effective movement (nonverbal communication) leads to better confidence in all subject areas. Research has pointed out that including movement in regular teaching enhances vocabulary acquisition and consequently improves communication, while better communication is a pathway to life success in general. Consequently, it is of key importance to introduce movement in early and preschool institutions, but not as movement *per se*; it should be part of different kindergarten activities such as storytelling or drawing. Since movement enhances knowledge acquisition and communication leading to better academic results and social success, it is of utmost importance to practice it as early as possible in order for children to become competent and successful people. The guidelines about movement and communication created as part of the project offer five shorter tasks which can be used at any point of children's daily kindergarten activities in order to engage them, make them move and reinforce the gained knowledge.

Keywords: communication skills, early and preschool institutions, health, In-comm Guide, movement.



## **48 Welcome to the borderland - A qualitative study on how preschool teachers understand their mission in a changing educational landscape**

### **Strand 1, poster presentation**

#### **Janina Carlén, DLP- Didactics and teachers' practice, Kalmar, Sweden**

This study aims to increase our understanding of how preschool teachers view their mission to qualify children for preschool class. An ever-increasing focus on knowledge has resulted in changes to the teacher's mission; emphasis is now on the elements of teaching and pedagogical management. The backdrop of these changes is the tension between the social pedagogical culture that characterizes Swedish preschools and the ongoing schoolarization (Ackesjö & Persson 2019). There are reasons to believe that preschool teachers might struggle to grasp their and the preschool's changed mission, and research on professional processes and political motives behind the reforms is needed. Based on the aim of the study, a social constructionist point of view has been chosen (Burr 2015). Conversations in focus groups with preschool teachers will be used for data collection. All respondents are guaranteed confidentiality and anonymity. They are free to leave the project at any time. Through discourse analysis, it becomes possible to see how they construct their work. The discourse analysis allows for a study of how preschool teachers construct the image of the preschool child by participating in group conversations. The study is expected to uncover teachers' constructions about what children need to know when they leave preschool and how preschool teaching is designed to prepare children for preschool class.

Keywords: schoolarization, preschool, preschool teachers, teaching, qualification.

# **49 Nurturing Sustainability in Toddlerhood: Exploring Early Childhood Teachers' Perceptions and Practices in a Swedish Preschool**

## **Strand 1, oral presentation**

**Deniz Pamuk<sup>1,2</sup>, Ingrid Pramling Samuelsson<sup>1</sup>**

<sup>1</sup>University of Gothenburg, Gothenburg, Sweden. <sup>2</sup>Mersin University, Mersin, Turkey

Research has shown that young children aged between three and five years old can learn and understand sustainability concepts. However, there is still a lack of understanding on how to engage toddlers in Early Childhood Education for Sustainability (ECEfS). This research gap highlights the need for further investigation in this area. Therefore, this study aims to investigate the perceptions and pedagogical practices of early childhood teachers for nurturing sustainability in a group of toddlers in a Swedish preschool.

The study seeks to contribute to our understanding of how to effectively engage toddlers in ECEfS and promote sustainable living from an early age. This is crucial for creating a sustainable future. By nurturing toddlers' innate curiosity and utilizing the brain's plasticity, we can shape their mindsets and behaviours. Therefore, it is vital to prioritize ECEfS during toddlerhood to realize the full potential of this investment in the future of our planet.

The present study adopted a case study approach. The data were collected through observations, interviews, and documentation analysis. Qualitative techniques were implemented for analysis. Ethical issues were considered, including the acquisition of participants' consent, ensuring the participants' confidentiality and privacy, informing them of their right to withdraw, and ensuring anonymity.

According to the findings, it was indicated that teachers have a holistic understanding of education for sustainability but have some limitations in implementing sustainability-related pedagogical practices in a toddler group. They can create appropriate learning environments and establish a connection between sustainability issues and daily life activities in the classroom, which helps to enhance the overall learning experience of young children. In conclusion, this study highlights the important role of early childhood educators in promoting sustainability among toddlers through effective pedagogy, emphasizing the need to prioritize ECEfS during the formative years.

Keywords: Toddlers, teacher perceptions, ECEfS practices, case study.

# 50 Reconnecting with Nature: A Comprehensive Exploration of ECEfS in a Turkish Forest School

## Strand 1, oral presentation

Deniz Kahrıman- Pamuk<sup>1,2</sup>, Elif Onarok<sup>3</sup>, Naciye Öztürk<sup>4</sup>

<sup>1</sup>University of Gothenburg, Gothenburg, Sweden. <sup>2</sup>Mersin University, Mersin, Turkey. <sup>3</sup>Mersin University, Mersin, Sweden. <sup>4</sup>Hacettepe University, Ankara, Turkey

The primary aim of this research is to investigate the components contributing to Early Childhood Education for Sustainability (ECEfS) within a Turkish forest preschool. The investigation is framed within the comprehensive structure of the 7Rs themes, namely, reduce, reuse, respect, reflect, rethink, recycle, and redistribute. In addition, a new R-word “reconnect with nature” is introduced. It is well known that playing and learning in, with and for nature can yield holistic developmental benefits for children. Children who have strong connections with nature are key to sustainable futures. Most children experience limited exposure to nature in their home environments, so it becomes crucial for them to be immersed in natural surroundings during their time at preschool.

The study uses an integrated approach to sustainability where social, economic, and environmental dimensions are interdependent and interconnected. The 7Rs themes serve as a guide for enriching the integrated approach to ECEfS. The additional R-word “reconnect with nature” will contribute to this framework emphasizing the relationship between nature and sustainability.

The case study approach was adopted as a methodology at a forest school in Turkey. The data for this research were gathered through instruments encompassing school observation forms and semi-structured interviews. The data were analyzed by descriptive methodologies. Ethical considerations in this research encompassed obtaining informed consent forms, ensuring confidentiality, and maintaining a transparent and respectful approach throughout the study, aligning with established ethical guidelines for qualitative research methodologies.

The research findings indicate that the forest school effectively incorporates a substantial portion of elements for sustainability within the framework of the 8R themes. Specifically, environmental, and economic aspects highlight the school's commitment to ECEfS. However, additional components related to cultural diversity and gender equality are needed to enhance the socio-cultural pillars of the educational program.

Keywords: Forest school, reconnect with nature, 7R, sustainability.

# 51 Conditions for using digital resources in pre-school education to learn sustainable development

## Strand 3, Symposium, self-organized

Gilles PÉTREAULT<sup>1,2</sup>, Manon BOILY<sup>3,4</sup>, Nathalie GOULET<sup>3,5</sup>, Nathalie REZZI<sup>6</sup>, Nadia GANDREY<sup>7</sup>, Nelly PACHA<sup>8</sup>

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This symposium will look at the required conditions for using applications on education for sustainable development (ESD) in pre-school education. At the launch of the "ECE Academy" application, presentations will focus in particular on its French-language version, "Le développement durable dès l'enfance".

Manon Boily and OMEP-Canada will present Quebec's proposed approach to sustainable development certification. In addition to the documents to be provided and the training courses chosen by staff to introduce new practices, the focus will be on the use of digital resources during training courses and in educational activities.

Gilles Pétreault will be studying the conditions for using the application ECE Academy in nursery schools (3-6 year olds) in accordance with French regulations. Adapting the activities requires reference to the curriculum, while at the same time schools should commit to a label recognising their action for sustainable development.

Nathalie Rezzi will speak about the representations of sustainable development and education for sustainable development among future French teachers, based on two surveys conducted before and after training. They show an awareness of the systemic aspect of sustainable development issues and the need for education on this subject.

Nadia Gandrey will present the national procedures for obtaining the E3D label ("École en démarche de développement durable", or "School with a sustainable development approach"), from self-positioning (steering, educational actions, school management) and team leadership within the school, right through to validation.

Nelly Pacha will talk about her experience of using the application in her class of 5-year-olds, in terms of programming activities, adapting them to the context, and proposals for adding new activities.

Keywords: Digital resources; early education; sustainable development; France and Canada.

## **52 The joy of being a Sustainable school**

### **Strand 1, poster presentation**

**Elissavet, Kontou**

**Ntekroli Preschool Education Centre - Kindergarten, Thessaloniki, Greece**

Over the last two years Ntekroli has carried out actions aiming at its inclusion on the network of sustainable schools. A variety of actions have been organized with the purpose of understanding and adopting the wider context of sustainability. Specifically, the holistic approach of sustainability in education visualizes the adoption of good practices which are categorized in the following pillars: Democracy & participation (relationships between team members and extraversion Promoting learning Promotion of arts and culture Sustainable building and courtyard Energy saving and travel policy Saving resources Promotion of health at school From local to planetary scale Sustainability in education is characterized by the holistic approach that sets the student at the center of the learning procedure and encourages lifelong learning based on cooperative learning, the collaboration and equal participation and the intersectionality. Indicative actions that were realized in the context of sustainability program and will be presented, introduced new fields of interest for the children and provided them with necessary skills to become active members of society. The acceptance of diversity, familiarization with new means of technology, introduction to the world of the arts, gardening, recycling, promotion of physical and mental health, international day of children's rights, were the most important fields we worked on.

Keywords: Sustainability, lifelong learning, active members of society.

## **53 The effect of a play-based intervention program on Executive Functions in preschoolers with different socioeconomical background**

### **Strand 2, poster presentation**

**Maria Sofologi<sup>1</sup>, Harilaos Zaragas<sup>1</sup>, Vassiliki Pliogou<sup>2</sup>, Sophia Tromara<sup>2</sup>**

<sup>1</sup>University of Ioannina, Department of Early Childhood Education, School of Education, Ioannina, Greece. <sup>2</sup>University of Western Macedonia Department of Early Childhood Studies, Florina, Greece

Executive functions (EF) refer to a wide range of higher cognitive processes that regulate behavior, emotion, and cognition and are generally conceptualized as an umbrella term. The developmental path of executive functions is noted to be greatly progressing in preschool children. Although they emerge during the toddler period, early childhood years underline a rapid increase in executive functions. The aim of the present study is to evaluate the efficacy of a 12-week intervention program conducted by educators in classroom context aiming to enhance EF in preschool children from low and medium socioeconomical background. For the present study sixty-four children 30 boys (47.6%) and 34 girls (52.4%) participated in the current study. More specifically, for the purpose of the present study, two groups were created. The intervention group consisted of 31 students (17 girls and 14 boys) aged 5.5 years ( $M = 68.04$ ,  $S.D. = 3.45$ ) and the control group consisted of 33 children (17 girls and 16 boys) aged 5 ( $M = 69.04$ ,  $S.D. = 3.94$ ). Both groups were assessed with EF measures before and after intervention program. Also, participants of both groups came from low and medium socioeconomic strata based on their parents' educational levels and professions. Results revealed that the intervention group register higher performances in EF measures after the intervention program when compared with control group. Research findings highlight that it is essential to design and implement intervention programs to promote and enhance EFs in at risk or disadvantage populations.

Keywords: Intervention program, play-based, different, socioeconomic background.

# **55 Enhancing Psychosocial Development in Preschool Children through Preventive Programs and Healthy Lifestyles**

## **Strand 4, oral presentation**

**Jarka Kreskociova, Slovak, Nove Zamky, Slovenia**

This research delves into the promotion of psychological and social well-being in preschool children, their families, and communities through the implementation of preventive programs and the adoption of healthy lifestyles. The study aims to assess the impact of a preventive intervention on the psychosocial development of preschool children, focusing on the enhancement of self-perception, peer interactions, and attitudes towards personal health. Conducted within Slovakian kindergartens, the research employs a longitudinal experimental approach, employing standardized semantic selection tests and scaled questionnaires for assessment purposes. The study cohort comprises a single class of 20 preschoolers, who engage in a six-month experiential learning initiative. Throughout this period, the children are exposed to a weekly exploration of different vegetables, with active participation encouraged from parents.

The study's findings affirm the positive influence of the preventive program, emphasizing the cultivation of healthy dietary, work, and hygiene habits among preschool children, with a specific emphasis on averting childhood obesity. The "VEGGIE MADNESS" program, designed to instill healthy eating patterns, nurture an early understanding of balanced nutrition, and foster self-care practices, proves effective in this regard. The research highlights the efficacy of experiential learning approaches, notably the "Protege Effect," wherein children learn through teaching others. Importantly, this approach stimulates continued interest and discourse among parents, sparking discussions on child nutrition, the resurgence of home-cooked meals, the advancement of child well-being, and renewed attention to family health.

Furthermore, the study establishes the sustainability of the educational program within the kindergarten context. Notably, the selected kindergarten opts to perpetuate the project, actively nurturing an early grasp of health principles among its young attendees. Today, we have more than 150 Slovak's kindergartens involved to this prevention program.

Keywords: psychosocial development, preventive programs.

## **56 ‘It looks like it’s got noodles coming out of its head’ - creating a child rights-based methodology for ESD with young children**

### **Strand 2, oral presentation**

**Muireann Ranta, South East Technological University, Carlow, Ireland**

This paper stems from a PhD thesis that was grounded in a child rights-based methodological paradigm (Ranta, 2023) to explore how young children (2-5 years old) define their own education and participatory rights to education for sustainable development (ESD) under the United Nations Convention on the Rights of the Child (CRC). The Research Ethics Committee, South East Technological University gave ethical approval. Over nine months in 2019, my research participants co-created the listening and learning environment within the research space. The study illustrated that children can contribute to an authentic ESD learning approach with the necessary resources (in this case, time, flexibility in the research agenda and a listening adult). Drawing on these insights and integrating scholarship from children’s rights, early childhood pedagogy, and ESD, this paper advocates for a methodological approach to climate research and education that foregrounds children’s agency. I argue that children must be positioned as rights-holders within their educational settings and have their views heard and included in curriculum-making.

By virtue of listening within it, I also argue that early childhood (EC) pedagogy mutually reinforces authentic child participation. I offer seven key strategies designed with the participants that could be adopted by practitioners wishing to engage in a child rights-based ESD approach: *creating a meaningful listening environment, reconceptualising the term ‘expertise knowledge’, taking time for ongoing reflexivity, maintaining an ‘ethical radar’, understanding each other, ensuring meaningful participation, and balancing power dynamics.*

Keywords: creating, child right based, methodology, ESD, ECE.



# 57 Preschool children's agency in play-activities with scientific content

## Strand 1, oral presentation

**Anna Henriksson, Marie Fridberg, Lotta Leden, Faculty of education at Kristianstad university, Kristianstad, Sweden**

This presentation describes a study that explored how preschool children's agency is supported in activities that integrate science and play.

There is an ongoing discussion about how teaching approaches that direct focus towards a learning object, and simultaneously incorporate children's perspectives can be orchestrated (Thulin, 2011). In relation to science teaching, Hansson et al. (2020) argue that more research is needed regarding what science content in early childhood education can entail, and possible ways for preschool teachers to approach it. Play-responsive teaching (Pramling et al., 2019) has the potential to bring the two teaching approaches together.

*Play-responsive early childhood education and care* (PRECEC) developed by Pramling et al. (2019) advocates a view where play and teaching are defined as a mutual activity, where both teachers and children are equally important. In these mutual activities, teachers and children are constantly shifting between *as if* (pretending) and *as is* (knowledge of the world).

The empirical material consists of video-observations of when teachers and children participate in activities that integrate play and science. A qualitative content analysis (Hsieh & Shannon, 2005) was performed through PRECEC.

The participants and the caregivers were given access to consent forms and information about the study, which [www.vr.se](http://www.vr.se) advocates. The children's consent was taken into account in the documented activities. Participants are treated confidentially.

This presentation exemplifies how children's initiatives were used to direct focus towards science related contents and issues (*as is*), and to develop the fantasy-dimension (*as if*) of play. The teachers were able to include children's initiatives into the activities *as is* and *as if*-dimension, by showing responsiveness to the suggestions and at the same time have the scientific content in focus. Implications for preschool teachers and preschool practice about integrating play and science will be discussed.

Keywords: Early childhood education, Play, PRECEC, Agency, Science, Representations.

# **58 Enhancing the quality and inclusiveness of ECEC in City of Helsinki**

## **Strand 4, oral presentation**

**Piia Nevala, Essi Strandén, City of Helsinki, Helsinki, Finland**

The changes in the Act on Early Childhood Education and Care and Curriculum for ECEC in Finland in 2022 emphasized the inclusive nature of ECEC. Because of the changes in legislation and curriculum, City of Helsinki started multiple projects to enhance the quality and inclusiveness of ECEC with the help of Ministry funding.

Inclusive early childhood education can be seen as enabling all children to thrive as themselves, whether they have special needs or speak another language. Inclusive ECEC is also imperative for children's well-being and education for peace, a base for a democratic society. To promote this, we wanted to help the staff and heads of EEC understand quality ECEC and inclusion better. We have also developed tools for pedagogical documentation and evaluation to help the staff recognize what needs to be promoted and why.

Intersubjective viewpoint on quality has been our theoretical framework and guided development.

Together with ECEC teachers we have developed materials to support children's well-being in groups. Teachers not included in the ratio have been recruited to support the implementation of inclusive pedagogics, antiracism, equality and language awareness. We believe that children's participation and listening to their opinions is crucial for well-being and education for peace. Children's participation is included in our tools for pedagogical documentation.

Cooperation with the child health clinics in assessing the child's need for support has been further developed. Consultation of experts in different fields is used, (psychologists, child protection) if necessary, to assess, plan and promote the child's well-being. Also Helsinki University Hospital is important cooperation partner to assess and plan child's support.

Preliminary results on our development work imply that the work on inclusiveness and quality has been necessary. A strong and multidimensional support seems to be effective in changing the operational culture.

Keywords: Quality, ECEC, inclusiveness, participation.

## **59 Preschool teachers' discussions about using digital tools in play-responsive science teaching**

### **Strand 1, oral presentation**

**Kristina Lund, Andreas Redfors, Agneta Jonsson, Faculty of education, Kristianstad University, Sweden**

The aim of this study is to contribute knowledge of how preschool teachers can use digital tools when initiating play-responsive science teaching. Play-responsive teaching (Pramling et al., 2019) is a relatively new way of approaching teaching in preschool, where play and teaching are seen as a mutual activity between preschool teachers and children. When exploring, playing, and learning with digital tools, Undheim (2022) emphasises the role of the preschool teacher as important in supporting and guiding the children. Based on this, there is a need to create opportunities for preschool teachers to discuss and reflect on what, how and why digital technology could be used in their practice.

The Play-Responsive Early Childhood Education and Care (PRECEC) framework (Pramling et al., 2019) and the role of different representations (Ainsworth, 1999) is used to analyse preschool teachers' discussions in focus groups thematically. The study is conducted as a CPD project where eleven preschool teachers take part in and discuss interventions about play-responsive teaching and science. Attempts to initiate play-responsive science teaching are video-documented by the preschool teachers and viewed for stimulated recall in focus groups. Participants have been informed and agreed to voluntary and anonymous participation with the right to cancel their participation at any time (Swedish Research Council, 2017).

Preliminary results from the ongoing analysis show how the preschool teachers describe using projected pictures or videos as a background in play, to trigger a play, or as part of the play. Examples like imagining being in places they cannot visit in real life, such as below the surface of the ocean, or in environments with limitations for play, like in an anthill, are discussed. The attempts involve a threefold challenge for the preschool teachers when encompassing knowledge about play, science, and digital tools.

Keywords: Play-responsive science teaching, digital tools, professional development.

# **60 Daily assisted toilet training in healthy infants and the prevalence of functional gastrointestinal disorders**

## **Strand 4, poster presentation**

Terese Nilsson<sup>1,2</sup>, Anna Leijon<sup>1,2</sup>, Riccardo Lo Martire<sup>3,4</sup>, Ulla Sillén<sup>5,6</sup>, Anna-Lena Hellström<sup>7</sup>, Barbro Hedin Skogman<sup>8,2</sup>. <sup>1</sup>Department of Family medicine and Center for Clinical Research – Uppsala University, Falun, Sweden. <sup>2</sup>Faculty of Medicine and Health Sciences, Örebro University, Örebro, Sweden. <sup>3</sup>Center for Clinical Research – Uppsala University, Falun, Sweden. <sup>4</sup>Department of Medical Sciences, Dalarna University, Falun, Sweden. <sup>5</sup>Department of Pediatric Surgery, Pediatric Uro-nephrologic Centre, Queen Silvia Children’s Hospital, Gothenburg, Sweden. <sup>6</sup>Institute of Clinical Sciences, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden. <sup>7</sup>Institute of Health and Care Sciences, University of Gothenburg, Gothenburg, Sweden. <sup>8</sup>Department of Pediatrics and Center for Clinical Research – Uppsala University, Falun, Sweden

To evaluate introduction of assisted infant toilet training and the prevalence of functional gastrointestinal disorders.

The average age for toilet training has increased in the western world. The postponed initiation of toilet training is suggested to be a contributing factor to problems related to bowel and bladder control as well as it increases the use of disposable nappies.

The BABITT study is a randomised intervention study of healthy infants in Sweden. Participants were randomised to start assisted infant toilet training at 0-2 months of age (intervention group) or at 9-11 months of age (control group). The intervention group were encouraged to practice at least once a day, 5-7 days per week. Parents answered validated web-based questionnaires at ages 2, 3, 6 and 9 months. The primary outcome measure was the combined period prevalence of functional gastrointestinal disorders (infant colic, infant dyschezia and/or functional constipation, defined by the ROME IV criteria) up to the age of 9 months. Secondary outcomes were attachment, parental stress, and use of disposable nappies. The Swedish Ethical Board approved the study and is registered at ClinicalTrials.gov (NCT04 082689). 271 infants were randomly assigned at median age of 34 days. Daily assisted infant toilet training did not reduce the combined period prevalence of functional gastrointestinal disorders up to the age of 9 months. Infant-to-mother attachment and parental stress were similar in both groups. The intervention group used significantly fewer disposable nappies per day, an important finding out of a climate and economical perspective. Long-term effects will be evaluated in the ongoing study up to the age of 4 years and will generate new knowledge to child healthcare settings, preschools and parents.

Keywords: Toilet training, functional constipation, infant colic, nappies, parental stress.

# **61 To promote the psychomotor development of children aged 4 to 5**

## **Strand 1, poster presentation**

**Harilaos Zaragas<sup>1,2</sup>, Vasiliki Pliogou<sup>3</sup>, Maria Sofologi<sup>1,4</sup>, Sofia Tromara<sup>3</sup>, Anna Angelaki<sup>1,2</sup>**

**<sup>1</sup>University of Ioannina, Ioannina, Greece. <sup>2</sup>Scientific Research Unit Motor Expression of the Laboratory of Arts, Motor Expression & Teaching Applications, Ioannina, Greece. <sup>3</sup>University of Western Macedonia, Florina, Greece. <sup>4</sup>University Research Center of Ioannina, Ioannina, Greece**

The main purpose of this work was the design, planning, implementation, and evaluation of a program with playful physical activities promoting the preschool age children psychomotor development. At the same time, the goals of promoting the cognitive, social, and emotional development as well as the creativity of the children's personality were pursued. The method of playful intervention was convergent ingenuity and divergent productivity. Through the interaction with the game environment, the children discovered solutions to the motor problems that appeared. The program lasted from mid-September until December 2023, and took place in four public kindergartens in the city of Ioannina. 56 children participated (31 boys and 25 girls, aged 4 - 5 years). 60 activities were implemented which were repeated at regular intervals based on the planning and some of them were evaluation activities. The children were divided into two groups, experimental and control ones. Initial and final measurements were taken. An appropriate battery of 18 motor tests (Zimmer & Volkamer, MOT-test, 1987) was used alongside the assessment activities. It is the kindergarten teachers who answered the questionnaire to assess the self-esteem as well as the social behavior scale of the children. The a- Cronbach reliability test showed a high degree of internal consistency both for the motor test activities (0.893) and for the social behavior (0.797) and self-esteem (0.813) scale. The confidence interval for the statistical analysis of the data was 95%. The children became closer, were able to trust their partners and learned to understand the feelings of others. Most importantly, the purpose and goals set from the beginning of the program were achieved. In conclusion, through the game, the children enjoyed themselves, expressed themselves and understood in an easy way the motor, cognitive and social challenges of playful activities.

**Keywords:** Physical activities, Psychomotor development, Playful activities.

## **63 Sustainability from the Start - an online course in the app ECE Academy**

### **Strand 1, Symposium, self-organized**

**Erica Strand<sup>1</sup>, Klara Bahtic<sup>2</sup>, Love Fredholm<sup>3</sup>, Sofia Zätterström<sup>3</sup>**

**<sup>1</sup>OMEP Sweden, Göteborg, Sweden. <sup>2</sup>OMEP Croatia, Zagreb, Croatia. <sup>3</sup>edChild, Stockholm, Sweden**

Following the key-note presentation about the course Sustainability from the Start, this session will go more into detail about the course and the app ECE Academy. Different partners in the Erasmus+ project will be available to present the different modules in the course and describing the logic of the course.

Some examples of activities with children will be presented. There will be practical examples of how some participants have implemented the course.

Additionally, it will be possible to discuss and suggest further dissemination of the course.

Keywords: Sustainability, ECE Academy, Erasmus.

## **64 The natural environment and its protection**

### **Strand 1, poster presentation**

**Eleni Kontou - Founta, Ioanna Kontou Founta, Thessaloniki, Greece**

The project method will be used for the implementation of the teaching. Through this method, the kindergarten children will learn about the natural environment and its protection. The project will last one month and will be carried out in a class of 16 kindergarten children. The aim of the teaching is for the children to learn what nature is, what it consists of, to learn about the animal organisms that live there and their characteristics. In addition, they will learn about recycling, understand the benefits and the contribution of nature to man, learn to respect and care for the natural environment. In the project, the four knowledge objects will be used, but they will not be taught in isolation. Instead, activities from different domains will be integrated each time to make the teaching more engaging and interesting for the kindergarten children. After the teaching is completed, an environmental visit will be organized where children will participate in hands-on activities that will raise their awareness of the environment and inspire them to contribute to the cultivation of the earth rather than its wasteful exploitation. In conclusion, at the end of the school year, a theatrical performance will be held by the kindergarten children with the theme of the project (The natural environment and its protection). With this celebration, the children will summarize everything they have learned and present it to their families. Parents, as they have a supportive role, will participate in the process by helping in the final preparation of their children for the theatrical performance.

Keywords: Natural environment, sustainability, parents.

# **65 Teacher-Child Interaction Quality in German Toddler Classrooms: Observation with Instruments GrazIAS 0-6 and CLASS Toddler**

## **Strand 3, oral presentation**

**Juan Xia, Catherine Walter-Laager, Institute of Early Childhood Education, University of Graz, Graz, Austria**

As of 2019, 30.3% of toddlers were already enrolled in center-based programs in Germany, but the current information about teacher-child interaction quality in German toddler classrooms is scarce.

This study aims to examine and compare the applicability of two associated instruments in typical German toddler classrooms, and comprehensively describe their current teacher-child interaction quality. the Grazer Interaction Scale for Children from 0-6 Years (GrazIAS 0-6; Walter-Laager, et al., 2022), concentrating on the evaluation of each observed teacher's interaction level with toddler throughout the morning; the Classroom Assessment Scoring System Toddler (CLASS-Toddler; La, Paro, et al., 2011), focusing on the assessment of overall interaction quality in observed groups through 4-6 observation cycles.

A total of 33 toddler classrooms with 77 teachers in Stuttgart, Baden Württemberg, Germany, were observed in this study.

Firstly, the internal consistency reliability of both instruments was excellent. Confirmatory factor analyses based on CLASS Toddler confirmed the two-domain and eight-dimension structure fitting the German data. A strong significant correlation between GrazIAS 0-6 and CLASS Toddler was revealed. In order to find out the specific consistency and difference of this two instruments, the scale structure and indicators were also compared.

Secondly, the overall quality of toddler classrooms in Stuttgart was found to be moderate. Specifically, the level of Emotional and Behavioral Support was moderate, while the level of Engaged Support for Learning was relatively low, consistent with results measured by GrazIAS 0-6.

The findings affirmed the applicability of both instruments and emphasized a critical need to enhance the interaction quality in German toddler classrooms.

Keywords: early childhood education and care, teacher-child interaction quality, toddler, quality evaluation.



## **66 “The protectors of the Earth - Children build a sustainable tomorrow”**

### **Strand 1, poster presentation**

**Anastasia Kountouroudi, Maria Kopalidou, Danai Trigoni, Paraskevi Akritopoulou, Center of Preschool Education “Nipiakos Kipos”, Thessaloniki, Greece**

“The protectors of the Earth - Children build a sustainable tomorrow” is a project on recycling and renewable energy for preschool children. The project aims to develop the children's ability to invent ways of improving environmental balance, as well as to cultivate a more responsible attitude on the matter.

The particular project was completed in three phases. The first phase involved the reflection and definition of the topic through discussions, brainstorming and information sharing. The second phase concerned the implementation of the project with activities through the four cognitive fields of the New Analytical Curriculum for Kindergarten. The new curriculum emphasizes the use of ICT and construction technology, so we carried out related activities such as digital games, programming games and S.T.E.M. activities. Finally, the third phase includes the educational project’s evaluation.

The overall purpose of the project is for the children to learn how to contribute to sustainable development and the preservation of the environment through recycling. More specifically, regarding the knowledge received, children will be able to understand relevant concepts such as "recycling", "sustainable development", "renewable energy sources" and to learn about procedures related to the conservation of natural resources. Moreover, concerning the developing attitudes, they will learn to love and care for the environment through active participation, and to develop environmental sensitivity. When it comes to abilities, the children will be able to manage recyclable materials and to cultivate cooperation skills.

Upon the completion of the project, we concluded that the activities that most interested the children were the experiments, the games with natural materials and the creation of our own board game. As a result, they realized that not only individually, but also all together, we can promote the sustainability of our planet through our actions and our choices.

Keywords: Sustainability, recycling, S.T.E.M.

## **67 Swedish quality label “School for sustainable development” A framework supporting development of quality aspects in ESD**

**Strand 3, Symposium, self-organized**

**Mats A Hansson, Karin Bårman, Ingrid Engdahl, medverkande från Kyrkenorums och Himlabäckens förskolor, National agency for education, Stockholm, Sweden**

The Swedish quality label, “School for sustainable development”, has been a framework with criteria for quality in ESD since 2004. The Swedish national agency for education receives about 100 applications every year and gives the applying preschools and schools feed-back and evaluates the applications. Preschools that are using the OMEP ESD rating scale get a good support and a good overview over their systematic work in ESD, and to achieve the criteria of “School for sustainable development”.

In this symposium we present the framework for “School for sustainable development” and the OMEP ESD rating scale. Teachers and school leaders from preschools that have achieved “School for sustainable development” will present their learning process and OMEP representatives will introduce the OMEP ESD rating scale.

Keywords: Education for Sustainable development; National framework; Quality award; OMEP ESD Rating Scale.

## **68 "Improving peace education through health and well-being"**

### **Strand 4, poster presentation**

**Anastasia Kountouroudi, Georgia Akritopoulou, Paraskevi Akritopoulou, Zoi Kokkinou, Maria Gouli, Center of Preschool Education "Nipiakos Kipos", Thessaloniki, Greece**

The project was launched on the occasion of the Christmas celebrations and the letters that the children wrote to Santa, through which they wish the whole world health, peace and happiness. The children concluded that the main prerequisite for celebrating Christmas is peace.

The project was implemented in four phases. During the first phase began the definition of the topic. In the second phase the children were divided into groups and with the help of their parents, they collected information. In the third phase belongs the implementation of the activities which were carried out based on a variety of cognitive fields.

The primary purpose of the project is to bring children into contact with Peace Education. The main objectives of the activities are for the children to develop oral communication and to raise awareness of healthy food and body care issues. Furthermore, the children learn to cultivate empathy and acceptance of others, to get to know, through some social agencies such as UN and UNICEF, similar training tactics, to get in touch with new technologies and as ambassadors of Peace, opening the borders in order to exchange views with other schools worldwide, finding that the education leads to Health and World Peace.

During the implementation of the project, the children dramatized Picasso's painting named "Guernica", and played games on the interactive board. They got to know the peace symbol, analyzed the feelings it causes them and found through robotics the path, which leads to Peace. Finally, they made dolls; role played with puppet theatre, visited museums and discussed about the Olympic Games.

In conclusion, the fourth phase concerns the evaluation of the project, presenting it to their parents through a workshop. Parents and children are divided into groups and carry out a series of activities relevant to Peace Education.

Keywords: Peace, education, EC.

## **69 The role of well-being and involvement in the educational progress of preschool-aged children: the Leuven Scale in the Bulgarian pedagogical context**

**Strand 4, oral presentation**

**Rozalina Engels-Kritidis, Sofia University "St. Kliment Ohridski", Sofia, Bulgaria**

This paper describes the Leuven Scale, as developed by Ferre Laevers and his team from the University of Leuven, Belgium and adapted in the context of its application in the Bulgarian pedagogical environment (Engels-Kritidis 2019; 2020). Originally, the Scale considers the level of children's well-being in pedagogical interactions, as well as their active involvement in the activities in kindergarten. In the Bulgarian context, educational progress was also added as an important dimension to be evaluated and its connection with the aforementioned two aspects was proved by presenting the results from a specific research conducted via kindergarten teachers' observation of Bulgarian preschool-aged children.

Keywords: well-being, involvement, educational progress, Leuven Scale, Bulgarian kindergartens.

# **70 "We want to save the world - we are going to the recycling centre"**

## **Strand 1, oral presentation**

**Anna Ståhl, Kristianstad University, Kristianstad, Sweden**

In autumn 2023, we received money for having one extra teacher so that we could start a project with Outdoor Education focusing sustainability. Aim of the project was to give the children opportunity to be outside and to learn about sustainability.

This project is important both for the children and for the teachers, because it was a start for our preschool working with sustainability and also investigate the children's knowledge about sustainability.

Outdoor Education was our theoretical framework. We wanted the children to learn about sustainability through Outdoor Education, as a complement to indoor education. It is important to vary theory with practical learning by using one's senses, therefore the place we chose is also important Szczepanski (2019).

The method was qualitative with observations and documentations of what children talked about during educational moments. The findings were analysed and used in further planning of teaching.

The most important aspect was the children's opportunity to participate and be able to influence, therefore the teachers were attentive to what the children said and did during the teaching sessions. This is in line what (Johannesen and Sandvik 2008) express, that when children express them self in playing, verbally and with their body's, we must dare to take in what the children wants us to understand.

Keywords: Sustainability, Outdoor Education, Children and Teachers.

# 71 Too young to sustainability? No, not at all!

## Strand 1, Symposium, self-organized

Lea Ann Christenson<sup>1</sup>, Mandy Andrews<sup>2</sup>, Birgitte Madsen Theilmann<sup>3</sup>, Hanne Værum Sørensen<sup>3</sup>

<sup>1</sup>Towson University, Towson, USA. <sup>2</sup>Plymouth University, Plymouth, United Kingdom. <sup>3</sup>VIA University College, Aarhus, Denmark

Previous research reveals that an educational focus on nature/outdoor-play is organized differently across cultures. Research field of outdoor-pedagogy points to the fact that children benefit from being in nature/outdoors. Being in nature promotes well-being and provides therapeutical and educational benefits (i.e. science, language and mathematical skills). Cultural understandings, demographics, educational frameworks, values, views of children and resources, vary and lead to different outdoor/nature pedagogy understandings.

Education for sustainable development has been important for quite some time. Working with sustainability in ECEC is a relatively new perspective. With the introduction to the SDG´s it becomes relevant throughout the educational system, including ECE. We think that children's being exposed to nature and ECEC-professionals creativity in making conditions for them to explore nature leads to well-being.

This project aims to develop knowledge about how outdoor/nature pedagogy contributes to create sustainable environments in kindergartens across cultures. The study explores how ECEC professionals organize and perform pedagogical practices in order to promote well-being with nature as a sustainable framework in three different countries: US, England and Denmark. With a cultural-historical approach combined with post-human understandings we exploratively analyze the three different settings. Late November 2023 we collected empirical data in each country consisting of participant observations and conversations with children and ECEC-staff, including collections of visual data (videos and photos).

Information sheets and consent forms were provided to participants. Additionally, children were informed during visits to ensure their acceptance. Ethics were treated according to national ethical review-standards approved by national ethical boards in the respective countries. Preliminary findings show different levels of inclusion of child perspectives. Key words when aiming to develop sustainable environments are: abilities of negotiation, democratic practices and perspectives, and transformative learning environments which are expressed differently across the three countries.

Keywords: Sustainability, Exploration, Belonging, Imagination, Creativity.

# 73 What's Leadership Got To Do With It? Children's Sustainable Futures

## Strand 1, Symposium, self-organized

Eva Hansson<sup>1</sup>, Claudia Gillberg<sup>1,2,3</sup>, Nina Svensson<sup>1</sup>, Linnea Ivarsson<sup>1</sup>, Mikaela Åkerhag<sup>1</sup>, Estefanie Barrera Espinoza<sup>1</sup>

<sup>1</sup>Värnamo kommun, Värnamo, Sweden. <sup>2</sup>Högskolan för Lärande och Kommunikation, Jönköping, Sweden. <sup>3</sup>Leeds Beckett University, Leeds, United Kingdom

*The aim* of our Practice-and-Research project *HållUt2023-2026* is to establish what constitutes sustainable leadership in preschool in relation to social, ecological, and economic sustainability according to the Swedish National Curriculum for Preschool (Lpfo2018). While we have been awarded a Sustainable Municipality prize, our knowledge and professional competencies require more effort regarding SDG17 to be able to support our youngest members of society. Acutely aware of the climate crisis and its catastrophic effects on societies, the development of robust pedagogies and sustainable leadership may help strengthen democracy, e.g. by inspiring resilience in children. Theories of professions, lifelong learning and sustainable leadership form part of our participatory action research framework. The Reflection-Action-Reflection-Action model (RARA) also draws on theories and science-based facts in a process-oriented manner. The RARA-model includes dialogue, diaries, videos and ongoing interview studies relating to our evolving understanding of social, ecological and economic development in preschools. Ethics in Participatory Action Research habitually exceed those stipulated by ethics committees and we have put safeguarding mechanisms into place to prevent any ethical shortcomings. We are participants *and* researching parties and participate as equal members. We strictly observe provisions in law and recommendations by social research ethics bodies, by regularly discussing any issues. The participating academic researcher is tasked with meticulously monitoring that all ethical considerations be taken seriously and swiftly dealt with.

By the end of 2026 we expect to: present a model for sustainable development and sustainable leadership, contribute towards practice-and-research based methods, offer knowledge-based professional development from inside preschools, vocalise clearly the importance of preschool teachers' professional development relating to sustainable development, better protect children by adequately preparing them for the future

Keywords: Sustainable Leadership, Practice-and-Research Methods, Professional Development, Children's Best Interests.

## **74 The importance of music in the development of preschool children**

### **Strand 1, poster presentation**

**Aikaterini Segkouna-Pliogkou, Arta, Greece**

According to modern music education approaches, the perception and understanding of music is the result of the combination of cognitive, psychomotor and emotional areas of learning, since none of them can function in isolation from the others. Through music education systems, pedagogical methods were created, which approach the teaching of music in a more scientific and integrated way, so that it is easier for young children to understand musical concepts. In this way, the lesson becomes enjoyable for the student.

In a period spanning about 450 years, the cello has now become popular and has entered the home of the average family. Cello teachers agree that students can start cello lessons from the age of 6. Parents can help their child's musical development by actively participating in their lessons when they are under 8 years old.

This paper presents the pedagogical methods of famous cello teachers, such as Dr. Robert Jesselson, Irene Sharp, Margaret Rowell, regarding their pedagogical approach to teaching the instrument. Mainly, emphasis is given on the way a teacher should prepare to teach the student, the way the parents should participate in the child's teaching cello, the basic pedagogical principles of the learning process concerning the instrument, and finally, the contribution of technology to learning the cello.

Keywords: cello, teaching methods, pedagogical principles, preschool children.



# 75 The Relationship between Executive Functions and Behavioral Difficulties

## Strand 1, poster presentation

Afroditi Kamari<sup>1</sup>, Eleni Bonti<sup>1</sup>, Loukas Athanasiadis<sup>2</sup>, Paraskevi Tatsiopoulou<sup>3</sup>, <sup>1</sup>First Psychiatric Clinic, "Papageorgiou" General Hospital, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece. <sup>2</sup>First Psychiatric Clinic, "Papageorgiou" General Hospital, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece. <sup>3</sup>Third Psychiatric Clinic, "AHEPA" General Hospital, School of Medicine, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece

The aim of the present literature research is the investigation of the role of executive functions (EFs) in early childhood and its future impact on academic achievement and psychosocial functioning during the developmental process. The study of the developmental path of EFs is of high importance as facets of EFs contribute to successful self-regulation and reduction of maladaptive impulsive tendencies. Therefore, the development of EF is essential for maximizing the child's overall psychosocial functioning and learning efficiency. Among the relevant research, it is widely agreed that the umbrella term "executive functions" (EFs) refers to the control, supervisory, or self-regulatory processes that plan and coordinate all overt behavior, emotional responses, and cognitive activities. In a broader sense, the term "EFs" refers to a broad category of higher cognitive processes that underpin goal-directed activities and govern behavior, emotion, and cognition. The onset of EFs arises during the first year of life, they develop rapidly between the ages of three and six and carry on growing throughout middle childhood, adolescence, and early adulthood. Research findings reveal that EF is an accurate indicator of kindergarten readiness, as children with higher levels of EF perform successfully in the classroom. Also, preschoolers who perform effectively are expected to show high academic achievement throughout their school life. More specifically, according to developmental research on literacy and self-regulation in the early school years, the relationship between reading and writing abilities and higher-order cognitive skills may not be unidirectional, but rather mutually interconnected. Moreover, self-regulation ability in the early years is strongly associated with high academic performance, while in later years (adolescence) it decreases the manifestation of externalizing behaviors and the development of behavioral and psychological difficulties (anxiety, substance use, aggression), as well as the levels of unemployment during adulthood.

Keywords: executive functions, self-regulation, development, psychosocial functioning, learning efficiency.

# 76 Teaching/learning about climate change in ECE

## Strand 1, poster presentation

Vassiliki Pliogou<sup>1,2</sup>, Sophia Tromara<sup>1</sup>, Harilaos Zaragas<sup>3</sup>, Maria Sofologi<sup>3</sup>, Anna Angelaki<sup>3</sup>

<sup>1</sup>University of Western Macedonia, Florina, Greece. <sup>2</sup>President of OMEP of Central Macedonia, Thessaloniki, Greece. <sup>3</sup>University of Ioannina, Ioannina, Greece

Societies, and especially children, are confronted in their everyday lives with one of the greatest challenges of our century, climate change. Its various environmental, social, and cultural effects, which in many cases have a disastrous impact, are not equally distributed, but are diversified according to age, generations, gender, social classes, income groups, and regions. Evidence suggests that those already disadvantaged by poverty are disproportionately affected. Additionally, the climate change does not bear gender-neutral manifestations, but has more serious and negative impact upon women, along with their children, rendering them more vulnerable. Quality education, which is the 4th Sustainable Development Goal (4SDG) of the UN's Agenda 2030, is a critical and decisive agent of change against the impact of the climate crisis, which in turn is encapsulated within the 13th SDG. The present paper suggests an interdisciplinary approach for the implementation of various intervention activities, through the lens of Feminist Pedagogy, addressed to Early Childhood Education. The aims are to use the key tenets of Feminist Pedagogy, such as knowledge co-creation, enhancement of community, gender empowerment, valuing children's voices/experiences, and reflection, as the tools for leading knowledge transmission, motivate action and contribute to societal transformation against climate change. Collaborative, student-centred and interactive learning, brainstorming, Web resources, videos, debates, discussions, drawings, posters, newspapers and books can be used as tools to implement various activities on the topic. Conclusively, learning outcomes will raise individual/group awareness and responsibility on climate action and will be relevant to students' lives. Additionally, they have a transformative character and long-term implications, as they can change attitudes and empower students through a critical global perspective, which addresses gender and social justice.

Keywords: Climate change; quality education; feminist pedagogy; gender equity; social justice.

# **77 Playful Mindfulness Activities in Nature: The Flow Theory and Benefits in Mental Health and Inclusion**

## **Strand 4, oral presentation**

Alexandros Argyriadis<sup>1</sup>, Olga Drakopoulou<sup>2</sup>, Emmanuel Kopanakis<sup>3</sup>, Agathi Argyriadi<sup>1</sup>

<sup>1</sup>Frederick University, Nicosia, Cyprus. <sup>2</sup>University of Patras, Patra, Greece. <sup>3</sup>Hellenic Ministry of Education, Karpenisi, Greece

The integration of mindfulness has emerged as a focal point for research, with contemporary scholars exploring innovative approaches to enhance its efficacy. This evolving research trend signifies a departure from conventional methods as scholars increasingly seek new and alternative ways to harness the full potential of mindfulness interventions. Recognizing the multifaceted benefits of mindfulness, particularly within the realm of mental health and inclusive education, researchers are actively exploring diverse avenues to optimize its impact on student well-being. The study aimed to investigate the outcomes of applying playful mindfulness activities in nature, explore their impact on mental health, and assess the inclusive benefits for children and adolescents. This is an experimental research study that involved a diverse sample of 250 students. Participants engaged in structured, playful mindfulness activities within natural environments. Pre- and post-intervention assessments were conducted, incorporating established measures for stress, anxiety, depression, and cognitive functioning. Our research addressed all ethical considerations. The results reveal the diverse benefits of integrating mindfulness, especially in nature. Playful mindfulness activities demonstrate substantial reductions in stress, anxiety, and depression, while also exhibiting positive effects on brain plasticity and cognitive functioning. Moreover, those activities seemed to be inclusive and facilitated a supportive environment for diverse learners, especially students with special needs, promoting a sense of belonging and well-being. The results of this study highlight playful mindfulness's potential as an accessible, affordable, and effective intervention to support mental health in a range of age groups and contexts. The study emphasizes the value of playful mindfulness in fostering psychological safety and enhancing interpersonal relationships, and it suggests incorporating it into mental health interventions and educational programs. It also calls for more research to explore the precise mechanisms and long-term effects of this integrated approach.

Keywords: Mindfulness, Education, Inclusion, Mental Health, Playful Activities.

# **78 Teachers' Self-Assessed Inclusion Capacity in the Context of Diversity and Special Educational Needs**

## **Strand 3, oral presentation**

**Alexandros Argyriadis, Garyfalia Mousama, Agathi Argyriadi, Frederick University, Nicosia, Cyprus**

In recent years, there has been a significant effort to upgrade and organize the evaluation processes in the educational systems of Greece and Cyprus. These efforts have been driven by the recognition of the importance of accurate and fair assessments ensuring quality education. As a result, new evaluation methods and tools have been implemented, such as standardized tests and digital platforms, to provide more reliable and comprehensive data on students' abilities and progress. Self-assessment by teachers is considered particularly innovative and essential today, despite not being systematically implemented. Additionally, incorporating self-assessment into the evaluation process empowers teachers to take ownership of their professional development and fosters a culture of continuous improvement in the educational system. This study focuses on the inclusion capacity of kindergarten teachers. Specifically, issues related to self-assessment of educators' inclusion capacity are examined, firstly through existing Greek and international literature and subsequently through new research involving kindergarten teachers from Greece and Cyprus. For the research, a questionnaire was developed and provided, addressing issues of inclusion capacity for teachers to self-evaluate. The results of the research showed that teachers self-assessed themselves highly, mainly in terms of knowledge and skills. However, they recognize the need for improvement in terms of inclusion attitudes. In conclusion, the data are encouraging; however, as it is self-assessment, it would be useful to design a qualitative study to verify if teachers' self-assessment aligns with reality. Despite the importance of the results obtained, further research in this direction is needed.

Keywords: Self-assessment, inclusion capacity, teachers, diversity, special educational needs.

## **79 Traditional games still have much to offer in the education of kindergarten teachers**

### **Strand 1, oral presentation**

**Vasiliki Fotopoulou, Angeliki Vellopoulou**

**Department of Educational Sciences and Early Childhood Education (DESECE), University of Patras, Patras, Greece**

The purpose of this research was to explore kindergarten student-teachers' perspectives on the use of traditional games in their practicum. Playful learning-teaching is a fundamental educational approach for the kindergarten school and an integral part of the goals defined in the Greek kindergarten curriculum, as well as the increasingly urgent demand for education for sustainable development (ESD). The concept of sustainability has developed and broadened its scope by embracing the environmental, social, economic, and political ideals. Respectively, the kindergarten curriculum defines sustainability with reference to environmental awareness, democracy, prosperity, and citizenship. In accordance with the priorities set by the curriculum, student-teachers' practicum focuses on the implementation of play and the use of games, in terms of ESD. During the academic year 2023-2024, third-year student-teachers' practicum prioritized the study and application of traditional games. We considered that these games combine playful learning with the principles of sustainability. Traditional games usually promote the interaction between children, have simple rules, and require only the use of children's bodies and/or natural, reusable, or household objects. They link past and present, family and school life, children's and school culture; they are adaptable to different learning contents and are indeed playful teaching strategies. Qualitative content analysis was used to study 62 students' written responses to open-ended questions. Participation in the research was voluntary and anonymous. Students provided informed consent and were assured that all information would be kept confidential, and their participation was not connected to any coursework. Preliminary results indicate that students consider traditional games as a functional teaching option for their practicum. They define them as easy, familiar, and enjoyable activities and regard that traditional games implementation facilitated them in classroom management and in making the modifications required by the teaching praxis.

**Keywords:** Traditional games, Playful learning-teaching, Sustainability, Kindergarten student-teachers, Practicum.

# 80 Parental programs in three Nordic countries

## Strand 4, Symposium, self-organized

**Gunilla Niss, Elisabet Nyléus, OMEP, Stockholm, Sweden**

Parents' role as the caregiver of their children has until recently barely been promoted even though parents or other primary caregivers are the most important providers of a safe and enabling environment for children. Parental programs that were used in Sweden, came from Canada (COPE, Community Parent Education) and USA, PMT-O (Parent Management Training – Oregon model) in Sweden called KOMET. We will here introduce three different programs from Norway, Sweden, and Denmark. How has the view of children affected these programs? On what theories are they grounded and what are the differences between the programs from Scandinavia and the North American programs?

### **Norge**

ICDP – International Child Development Programme

ICDP (International Child Development Programme) was developed in the 1990s by two Norwegian psychologists, Karsten Hundeide and Henning Rye, with colleagues. ICDP is a relationship- and empathy-based parental program that aims to increase the ability to understand and respect one another. Developed to target parents and other caregivers across cultures. In Norway, it is the most commonly used parental program.

### **Sweden**

ABC – Alla Barn i Centrum (All children in the centre)

Developed by the City of Stockholm in 2012 to strengthen family relationships and help parents deal better with everyday situations. In 2017, the section for psychology at Karolinska Institutet took over the administration of ABC in 2017. It is now used in about 120 municipalities in Sweden. In Stockholm, over 10,000 parents participated in groups.

### **Denmark**

Family lab

Founded in 2004 by Jesper Juul, a family therapist and author. Family Lab parental support program is based on Jesper Juul's theories and teachings. The program teaches how to build healthy psychological security in the family and find the individual's needs behind the behavior, through coaching.

Keywords: Parental programs, view of children.

# **81 E-Twinning European Project: Collaboration and learning about the risks and dangers of bee's extinction in ecosystems**

## **Strand 1, poster presentation**

**Effrosyni Katsikonouri<sup>1</sup>, Dr. Eleni Paschalidou<sup>2</sup>**

**<sup>1</sup>4th Public School of Acharnes, Athens, Greece. <sup>2</sup>Primary Education of East Attika, Athens, Greece**

Environmental education is essential in order to curb the current dramatic loss of biodiversity. Students' commitment to protect national and worldwide biodiversity is an important goal of education in order to develop and promote sustainable environmental education practices. The main focus of biodiversity education has been to create the knowledge, interest, and skills needed to solve various problems in ecosystems. Bees are at risk of extinction largely due to human activities: large-scale changes in land use, industrialized agricultural practices, and the detrimental use of pesticides have all contributed to destroying their habitats and reducing their available food sources. We will present the results of a European E-twinning project regarding the risks and dangers of bee's extinction in Europe. A public kindergarten school from Greece was the founder and coordinator of the project with the collaboration of schools from Italy, Poland, Turkey. Teachers through E-twinning collaborative digital platform engaged with their students in discussions and workshops about the impacts of bees on humans and endemic species, in order to raise environmental awareness, values, and attitudes as well as to achieve positive behavioral changes and improve students' participation in the decision-making process. This project was based in students pre-existing knowledge and their educational needs using questionnaires and KWHL chart. Through Project-Based Learning students had the chance to learn that bees are a keystone species because without them many other species would likely become extinct and to take action together for the protection of bees in their local environment They managed to interact and communicate creating a learning community and presented their findings and results in the form of a poster to their local community and the municipal authorities.

Keywords: biodiversity, bee's extinction, e-twinning project.

## **82 Exploring Opportunities and Ethical Considerations in Teaching Sustainability and Environmental Awareness to Icelandic Preschool Children**

### **Strand 3, oral presentation**

**Hörður Svavarsson, Kenning sfl, Hafnarfjörður, Iceland**

**What are the possibilities for education young children in Iceland about sustainability and fostering a harmonious relationship with nature without instilling fear and despondency?**

This study probes into the possibilities and ethical considerations surrounding the education of young children in Iceland on sustainability and fostering a harmonious relationship with nature, all while avoiding instilling fear and despondency related to climate anxiety. As children in Iceland universally attend preschools from the age of two until they transition to primary school, these educational institutions play a vital role in shaping their foundational understanding. Preschools adhere to a national curriculum prioritising sustainability as a fundamental pillar, urging integration into each school's educational framework. Icelandic preschools' extensive hours and operational days offer ample opportunities to effectively engage with children, fostering awareness and instilling sustainable values.

The presentation highlights various projects implemented at Aðalþing Preschool in Iceland. Some initiatives have evolved since the school's foundation 15 years ago, while other projects are more recent. Aðalþing aligns with the educational philosophy of Malaguzzi from Reggio Emilia, emphasising the active participation of children in shaping the curriculum. The preschool installs democratic values by involving children in decision-making, considering collaboration essential for instilling sustainability and climate change awareness. This presentation provides insights into the ongoing projects at Aðalþing and references educational documentation inspired by the spirit of Reggio Emilia.

Pedagogical documentation is integral to the preschool's philosophy, and parents provide informed consent for each child. In cases where children express a preference, such as not wanting to be photographed, their choices are respected. Aðalþing has established its ethical guidelines regarding the utilisation of pedagogical documentation.

Keywords: Sustainability, pedagogical documentation, Aðalþing, Adalthing.



# **83 Blue Heroes for Climate Change & Environment: An educational program of the Children's Museum of Thessaloniki, Greece**

## **Strand 1, poster presentation**

**Vassiliki Pliogou<sup>1,2</sup>, Athanasia Protopsalti<sup>3</sup>, Evangelia Lagou<sup>3</sup>**

**<sup>1</sup>University of Western Macedonia, Florina, Greece. <sup>2</sup>Board of Directors, Children's Museum, Thessaloniki, Greece. <sup>3</sup>Children's Museum, Thessaloniki, Greece**

Due to the increasingly frequent occurrence of extreme weather phenomena not only in our country but globally too, the Children's Museum of Thessaloniki considers it is imperative to take action about the climate change. The education of students, regarding the state of the climate on our planet, the actions that must be taken in the direction of positive changes as well as the protection measures during extreme weather events, are the central axis of our program. It is crucial to inform/activate children to change their environmental attitude. The goals of this educational program concern the understanding of the phenomenon of climate change, empowering students to take informed and responsible actions and attitudes, cultivation of critical thinking, development of environmental awareness, use of good practices for a balanced relationship with the environment and the information on immediate actions in case of extreme weather events. The concrete museum educational program includes: a Smurf animated presentation about the basic issues related to climate crisis such as the way energy is produced and used, temperature increase etc., the usage of tablets and the "Kahoot" application, that students are divided into groups that each constitute a "Civil Protection of Smurf Village". There is also students' representations about the suspended carbon dioxides as well as the sun's rays and how they are trapped in the earth's atmosphere due to human activity. Movements are based on a narrative timeline. Finally, students are standing on "islands" (we have created "islands" with removable floor mats), where these islands are gradually affected by the rise of the sea level (we remove floor mats) and the students are asked to stand in the increasingly smaller space.

Keywords: Climate change, environmental awareness, temperature increase, children's museum educational program.

# 84 Nappy free children earlier – research and development in Sweden

## Strand 4, Symposium, self-organized

Therése Saksø<sup>1</sup>, Johanna Tell<sup>2</sup>, Therese Nilsson<sup>3</sup>, Sofia J Frankenberg<sup>4</sup>

<sup>1</sup>OMEP, Kristianstad, Sweden. <sup>2</sup>Blekinge Institute of Technology, Karlskrona, Sweden. <sup>3</sup>Region Dalarna and Örebro University, Falun, Sweden. <sup>4</sup>Stockholm University, Stockholm, Sweden

Today, the average age for being nappy free in Sweden is 3.5 years (daytime), in the 1970's the average age was 2 years. Traditions vary with culture and society. In Vietnam, the average age is 12 months. The UNCRC gives children the right to health and well-being, to personal integrity and participation in their daily lives. The postponed initiation of toilet training is suggested to be a contributing factor to problems related to bowel and bladder control. The present situation is not in the best interest of the child, it is costly (around 2 500 Euro/child), and it is not sustainable, as the nappies are a fossil fuel product and not compostable.

OMEP Sweden runs a campaign with the goal nappy free children earlier. We collaborate with researchers who focus on the same issue, and four perspectives will be presented.

### 1. Parents' perceptions

Weaning from nappies can be seen from a learning perspective for the individual child and its parents and professionals in child health services and preschool. The study aimed to explore what parents perceive facilitates weaning from nappies, using semi-structured interviews with 23 parents from three regions in Sweden.

### 2. Assisted infant toilet training: a randomized, intervention study (BABITT)

The aim of the study is to evaluate assisted infant toilet training and the prevalence of functional gastrointestinal disorders up to 4 years of age. 271 participants were assigned to start assisted infant toilet training. The first results of the study at 9 months of age will be presented.

### 3. Scaffolding young children's bodily cleanliness practices in Swedish preschool

The study explores preschool staff's understandings related to bodily cleanliness practices and integrity. Preliminary results suggest that preschool staff are ambivalent with regard to bodily cleanliness practices in preschool.

### 4. Nappy free children earlier - the OMEP Sweden campaign.

Keywords: Nappy free, scaffolding, toilet training, evaluation.

## **85 Practice and exploration of ESD in kindergarten**

### **Strand 1, oral presentation**

#### **Xuehua Qiu, Shenzhen No. 3 Kindergarten, ShenZhen, China**

Shenzhen No.3 Kindergarten has been committed to practicing ESD in kindergarten. After nearly ten years of exploration, it has constructed kindergarten-based curriculum for ESD.

Form the sustainability literacy for ESD. The framework for children's sustainability literacy was clarified (systems thinking, problem solving, communication and collaboration critical thinking, innovative practice and 6R sustainable lifestyle) and the next level of indicators was refined depending on age.

Accumulate topics of sustainable development suitable for young children to explore. First, teachers and children discuss the United Nations Sustainable Development Goals (SDGs) and let them express their understanding through drawing, taking photos, etc. Second, based on the learning objectives of ESD and SDGs, we formed educational topics and project topics suitable for children's exploration.

Promote project-based learning that empowers children. The kindergarten takes project-based learning as an important teaching method and uses the Mosaic Approach, which supports children to explore sustainable issues and promote the sustainability literacy. Teachers choose appropriate research content around the core concept of sustainable development, grasp the "golden standard" of project-based learning and make use of community resources to make the curriculum rooted in the local. Nine project-based learning cases were made into videos and published in books.

Sustainability-based environment creation. We has created an indoor and outdoor environment with environmental, economic and socio-cultural sustainability by referring to the Assessment Scale of Early Childhood Sustainable Development Education compiled by OMEP and conclude guidelines and key items for environmental adjustments so as to allow children to experience a sustainable lifestyle in their daily life.

Develop the literacy required for ESD. The first is to establish a literacy framework, the second is to encourage teachers studying typical practice cases, the last is to promote action research for practical problems.

Keywords: China, kindergarten, ESD.

## **86 Socialization development of children with special needs**

### **Strand 1, oral presentation**

#### **Jing Li, Shenzhen No. 3 Kindergarten, ShenZhen, China**

Children's ability to socialize is the aggregation of an individual's capacity to perceive, adapt, regulate and manage peer relationships in activities such as play and learning, which are essential for children's socialization and development. Children with special needs face difficulties in socialization and social adaptation due to social skill deficits and their own developmental progress. Project-based learning is an important educational strategy that promotes the development of children's social interaction skills, helps to strengthen the establishment of children's emotional support, promotes children's cognitive development, and facilitates the improvement of overall social interaction skills.

Children with special needs face challenges in social adaptation, and traditional teaching methods are difficult to meet the needs of integrated education. Inspired by Prof. Xu Bing's "The Book of Earth", the "Children's Book" program was launched in the classroom. The program is based on tools such as symbols, signs, drawings and Chinese characters to realize the possibility of shared emotional experiences and social connections constructed by both parties in integrated education. By transforming the concept from individual-oriented (focusing on children's individual differences, problems, and conflicts) to environment-oriented (focusing on the social environment), teachers redefine the signs in the environment and take it into account to achieve a more synthesized learning support.

Both sides of the integrative education use consensual signage to create social order and engage in social behaviors. This enables children with special needs to understand and participate in social activities and achieve two-way integration of key competencies such as communication, collaboration, and critical thinking. Currently, the study only covers the kindergarten level, and future research could be expanded to include other age groups.

Keywords: Socialization, kindergarden, China, childrens, special needs.

# **87 Ambiguities and Ongoing Professionalisation Processes in Swedish Preschools: Curriculum Reform and Participatory Knowledge Production for Sustainability**

## **Strand 2, oral presentation**

**Claudia Gillberg, Jonkoping University, Jonkoping, Sweden. Leeds Beckett University, Leeds, United Kingdom. Varnamo kommun, Varnamo, Sweden.**

The aim of this three-year collaborative research project at four preschools in a southern Swedish municipality and in collaboration with an education researcher is the development of knowledge about social, environmental, and economic sustainability through participatory processes. Despite the fact that the preschool profession has been scientifically anchored for more than twenty-five years, access to which is granted exclusively through a three-year bachelor's degree, it is nigh on impossible for preschool teachers to meaningfully introduce new, complex and comprehensive areas of knowledge such as social, ecological and economic sustainability into their practice without adequate additional measures. However, one of the many ambiguities built into the Swedish preschool curriculum is the vaguely assumed maintenance and the vaguely anticipated further development of knowledge.

The ontological, epistemological and theoretical framework for this analytical part of the project HållUt2023-2026 draws on a collaborative approach that considers practitioners as knowledgeable experts, in other words, no analyses will be published without all project participants' contributions and consent. Due to problematic knowledge production experiences relating to curricular ambiguities in previous years, collaborative approaches address and resolve knowledge hierarchies from the outset. Ethical considerations are deeply embedded in the very ontology of the project. The academic researcher takes part on a genuinely equal footing, not in the role of an outsider who prescriptively dictates to preschool teachers what to do. The narrative analysis focuses on sense- and meaning-making on the part of the preschool teachers because one of the many curricular ambiguities is sustainability as a learning objective in itself as it cannot be implemented without first creating robust new knowledge and eventually arriving at new insights.

It is expected that this analysis will contribute towards knowledge production as a participatory process.

Keywords: Swedish National Curriculum for Preschools (Lpfo18), Knowledge, Professional Development, Sustainability, Participation.

## **89 The contemporary discourse on children as fellow human beings; some examples from food events in Swedish ECE**

### **Strand 4, oral presentation**

**Anette Hellman, University of Gothenburg, Gothenburg, Sweden**

The overall aim of the project is to explore norms (Butler, 2004) about gender, heteronormativity, age, children's rights, and children's integrity in three ethnographic studies from Swedish preschool 2007 – 2023 (Hellman, 2010; 2016; forthcoming). The importance of the project lays in the long-time perspectives on gender and children's rights.

This specific presentation builds on ethnographic data from 2023 (participant observations, interviews, policy analyses) from children 3-6 years of age and their teachers in ten preschool groups. I will present a contemporary discourse about children in Sweden, namely *children as fellow human beings*. Using examples from food events such as snack time and lunch, the results highlight a shift in understandings of children and childhoods among the teachers, not just viewing children as 'competent' but also as equal individuals, where humans are part of a global world as well as one of many species. The project is analysed and approved by the Swedish ethics committee [etikprövningsmyndigheten].

Keywords: Long time ethnographic studies, ECE, Sweden, children as fellow human beings, norms.

# 90 Educational play for development and learning of measurement in preschool classe

## Strand 1, oral presentation

Christina Svensson<sup>1</sup>, Linda Bengtsson<sup>2</sup>

<sup>1</sup>Kristianstad University, Kristianstad, Sweden. <sup>2</sup>UA Malmö city, Malmö, Sweden

Wood (2014) identifies perspectives on play, where adult-guided play represents one viewpoint. In this perspective, children's play is primarily valued for its benefits in learning and development. Preschool teachers can use children's play to facilitate learning and development in alignment with the curriculum. Within this framework, the aim of this study is to investigate how playful teaching, based on subject content, enhances the assessment competence of preschool teachers. Researchers and preschool teachers have collaboratively defined equitable assessment based on national assessment materials in measurement as the research problem.

The method involves an intervention that focuses on the need for preschool teachers to develop assessment competence in children's mathematical knowledge related to measurement. Ball et al. (2008) emphasise the importance of teacher competence in content knowledge (CK) and pedagogical content knowledge (PCK) for children's development and learning. This can be related to the three concepts in the didactic triangle: *What*, *How* and *Why*. *What* is linked to CK, and *How* is linked to PCK in the analysis. The results demonstrate that when preschool teachers' CK deepens, the opportunities to observe children's demonstrated knowledge (*What*) in other, more play-oriented situations (*How*) increase. This, in turn, highlights how enhanced CK expands preschool teachers' assessment competence by enabling them to recognise children's exploration of measurement (*What*) in various contexts in preschool class. This contributes to more children, according to preschool teachers, being considered to possess mathematical knowledge in measurement after the intervention. A school-like content (*What*) and assessment in a school context (*How*) challenge preschool teachers in this study. The results of the study emphasise that solely viewing adult-guided play as beneficial for development and learning in this mathematical area and assessment context is insufficient. It requires CK for preschool teachers to recognise that children demonstrated mathematical knowledge for enhanced equitable assessment.

Keywords: Educational play, preschool class, measurement Educational play for development and learning of measurement in preschool classes.

# **91 "With professionalism as a weapon": Preschool teachers' experience of their role as a vanguard in a pandemic**

## **Strand 3, oral presentation**

**Ingibjorg Sigurdardottir<sup>1</sup>, Svava B. Mork<sup>2</sup>**

**<sup>1</sup>University of Iceland, Reykjavik, Iceland. <sup>2</sup>University of Akureyri, Akureyri, Iceland**

The role of preschools in the society is multifaceted and changes in the society at any time needs to be considered. Preschools are the first level of schooling in Iceland, but at the same time, preschools are a service for parents who want to know about their children in a safe place while they work. During the pandemic, it became clear how important part the preschools play for the society in whole. Over one night, preschool teachers and other preschool staff members felt like they were in the vanguard, where preschool activities were kept going during an uncertain period, but with certain restrictions, and the preschool staff could not protect themselves from the virus during their work.

The aim of the study was to shed light on how restrictions due to the Covid-19 pandemic effected preschool practice and how preschool directors and department headteachers experienced their own role as part of the vanguard during the pandemic.

Data was collected through eleven individual interviews with preschool principals and head teachers. All signed informed consent and were given pseudonyms.

The findings of the study show that preschool principals and head teachers felt that the preschool staff were vulnerable vanguards during the time of Covid-19 who could not protect themselves against infection due to the closeness with the children which is required in the practice. During the pandemic time, the interviewees experienced how important part the preschools are for the whole community. The also found that how well the parents trust the preschools. Furthermore, the findings highlighted the importance of maintaining preschool teachers' professionalism and the importance of valuing the role of preschools as an educational institution for young children. The educational role should not be, that that role does not give way to the service role for the labor market.

Keywords: Professionalism, Educational, Pandemic.



## **92 Green Transition as World-Care in Early Childhood Education and Care**

### **Strand 1, oral presentation**

**Marie Kolmos, Ditte Alexandra Winther-Lindqvist, Anne Maj Nielsen, Dorte Kousholt, Danish School of Education, Aarhus University, Emdrup, Denmark**

This presentation disseminates preliminary results and discussions from an ongoing research project aiming at generating new knowledge on how to mobilize World-Care and green transition in Early Childhood Education and Care (ECEC). Thematized findings from an ethnographic fieldwork in two daycare facilities are presented, where the professionals are working on establishing pedagogical practices that foster and encourage a caring attitude towards the non-human world. Further, the concept of 'world-Care' is discussed as a conceptual framework for establishing a pedagogical approach nurturing sustainable vigor in children, without overwhelming them with eco-anxiety.

In Denmark the agenda of green transition in the ECEC area is new and still under development, and thus an urgent challenge for Early Years professionals. In recent years research concerning sustainability and green transition in education has argued that there is a need for a radical turn from education about nature (as something external to us we can consume and use) to an approach in education that highlights ourselves as part of nature, an education *for* and *with* nature. In this project the term of 'World-Care' is applied to denote such a turn towards a caring attitude towards oneself and other living beings as part of a shared mutual world.

The term World-Care is based on a theoretical synthesis between relations-care ethics, phenomenology, and cultural historical wholeness approach to development. The project is empirically based on a qualitative and collaborative research approach, consisting of research circles with professionals and management from 10 daycare facilities, drawing-interviews with children aged 4-5 years, and ethnographic fieldwork.

The presentation will focus on, how the intention of World-Care is transformed by professionals from research circle reflections into everyday activities with the children. Further, the presentation describes which cultural and symbolic resources are involved in addressing sustainability and world care in everyday life of ECEC.

Keywords: Denmark, ECEC, world-care.

## **93 Teaching for a peaceful and sustainable future. Students' transformative learning in conflict management in preschool teacher education**

### **Strand 4, oral presentation**

**Sara Frödén, Sanela Bajramovic', Örebro University, Örebro, Sweden**

Peaceful societies are viewed as both the goal and means of sustainable development. In Swedish preschool teacher education, conflict management has been one of the examination objectives since 2011. However, the need for a more comprehensive and adequate peace education remains, as successful teaching for peace that provides a sustainable commitment needs to be transformative and include both intellectual, emotional, and practical aspects.

This study aims to highlight the transformative potential of teacher education by exploring students' learning processes in the field of conflict management. What structural conditions, including teaching methods, can promote students' transformative learning in conflict management? What altered perspectives emerge, and how and why do they occur?

The study combines theories of positive peace and peacebuilding with Jack Mezirow's theory of transformative learning, which both focus on social relations as a prerequisite for personal transformation and collective action. The data consists of documents produced within the frame of a course in a preschool teacher program, such as teaching materials, course evaluations, and 103 students' critical self-reflecting journals and argumentative texts.

The multi-staged data analysis is partly based on the different phases of transformative learning. It includes a) self-examination, b) critically reflecting and reconsidering one's and others' assumptions and actions, c) exploring new roles, and d) describing or applying new ways of acting.

The results show how preschool teacher education can contribute to peacebuilding by stimulating transformative learning. The course's design encouraged the students to reconsider previous beliefs and actions through scenario-based workshops focusing on problem-solving using consensus decision-making processes, nonviolent communication, and role-playing. There were apparent shifts in perspectives regarding students' i) the concept of conflict, ii) self-identification concerning different conflict styles, iii) leadership style, iv) self-believed ability to handle conflicts constructively, and v) understanding of and response to children's acts of resistance.

Keywords: Transformative learning, preschool teacher education, peacebuilding.

# **95 Using augmented reality technology to visualize STEM education in the early childhood field**

## **Strand 1, oral presentation**

**Yutong Liang, Xinyun Hu, The Education University of Hong Kong, Hong Kong, Hong Kong**

Recently, there has been a global call to emphasize and strengthen science, technology, engineering, and mathematics (STEM) education in early childhood fields to ensure children's later high academic achievements and engagement in STEM-related subjects. However, our initial phase of the large-scale study revealed that early childhood (EC) educators lacked confidence in designing appropriate pedagogical strategies for meaningful STEM education in young children due to a lack of knowledge and teaching experience in this area. This study aims to address this issue by presenting three cases conducted in real practical classrooms at three local Hong Kong kindergartens, which were selected from our ongoing study. These cases will serve as examples of new learning opportunities in STEM education for young children. The cases will demonstrate how the approach, either directly or indirectly, integrates Augmented Reality (AR) technology to visualize the developmental process of young children engaged in inquiry-based STEM tasks. Throughout this process, educators and children will collaborate to co-create new visualized knowledge. This collaboration will involve integrating real-life learning experiences to identify and understand the problems presented by the tasks, fostering a holistic understanding through co-constructing learning evidence, iteratively reasoning out new STEM concepts or ideas, co-building visible learning outcomes to test the rationality and feasibility of these concepts or ideas, and establishing a common knowledge map through sharing individual learning reflections and experiences. To illustrate the implementation process of this approach and its impacts on children and EC educators, this study will utilize classroom observation videos and photos, teacher-children dialogues, educators' portfolios (including activity plans and individual reflection reports), and children's artifacts. By presenting these cases, we aim to provide EC educators with practical insights and strategies to enhance their confidence and competence in delivering meaningful STEM education to young children.

Keywords: China, ECE, reality technology, STEM education.

## **96 A child rights education project with preschools and schools for pupils with intellectual disabilities**

### **Strand 1, oral presentation**

**Anna Strandberg, Jenny Eriksson, UNICEF Sweden, Stockholm, Sweden**

In a three-year project (2023-2026), supported by the Swedish Inheritance Fund, UNICEF Sweden together with children and pedagogues in seven preschools and two schools for pupils with intellectual disabilities is developing a teaching material on the UN Convention on the Rights of the Child. The material will also highlight the intersection between children's rights and the Sustainable Development Goals.

All children – including, of course, very young children and children with intellectual disabilities – have the right to know their rights. However, our research shows that there is a lack of teaching materials about the Convention on the Rights of the Child targeting these groups.

Children's rights – not least the right to be heard – are essential not only in the finalized material, but also in the process of developing it. In this process, we apply and explore the nine requirements for processes involving children as expressed by the UN Committee on the Rights of the Child. We need to take into account factors such as age and disabilities – how do we create a process in which the right to be heard is respected, protected and fulfilled for all children involved, including the youngest ones and the ones with severe intellectual disabilities? How do we make sure that the process is transparent and informative, voluntary, respectful, relevant, child-friendly, inclusive, supported by training, safe and sensitive to risk, and accountable?

These are a few of the topics which will be discussed during our presentation.

As indicated above, the theoretical framework (for our project as well as our presentation) is the UN Convention on the Rights of the Child, the requirements for processes involving children and the Sustainable Development Goals, while the practical framework is the project itself.

The project has a reference group which includes researchers in pedagogy (University of Gothenburg and Karlstad University) and representatives of OMEP Sweden.

Keywords: Sweden, preschool, children with disabilities, Child rights education, UNICEF.

# **97 Children's voices in Lundabol – A Democratic Educational Practice in One Kindergarten**

## **Strand 4, oral presentation**

**Ardis Gretarsdottir, Maricris Castillo de Luna, Preschool Lundabol, Gardabaer, Iceland**

This project endeavors to empower children as active participants and agents of change through the utilization of their voices.

Situated in Gardabaer, Iceland, Lundabol is a compact kindergarten primarily serving the local children's population. Some of them grappled with concerns about privileges, occasionally manifesting in aggressive play, while others remained vigilant about the principles of fairness.

Recognising and amplifying children's voices represent foundational steps toward empowerment and affirming their participation rights. Acknowledging that even at the earliest ages, children possess the right to be heard and that their voices matter creates pathways for empowerment. Scholars in the field of reconceptualists, early childhood education, and sociology of childhood in the 1990s, such as Matthews (2007) and James & Prout (1997), have presented evidence of children as competent, active, and reflective architects of their worlds. These scholars contend that children are social actors capable of influencing policies and social matters impacting them.

The project involved bi-monthly meetings with the eldest children, addressing topics that piqued their interest. Discussions led to enumerating potential solutions, and consensus decision-making was achieved through voting.

Participants' parents were duly informed, and consent was obtained, with utmost care taken to maintain participant anonymity, mitigating potential future issues.

The project yielded several empowering outcomes for the children. The children demonstrated increased courage in expressing their opinions. Parental feedback indicated enhanced assertiveness and fairness exhibited by the children at home. Moreover, the children began to influence the choice of healthy food in the kindergarten, contributing to a cessation of violence and fostering respect among peers.

Keywords: Icelandic Preschool, Active Voices, Children Rights.

# **98 Importance of the opinion of educators in living the principles and values of education for sustainable development in kindergarten**

## **Strand 1, oral presentation**

**Marijana Miočić<sup>1</sup>, Ana Motl Demo<sup>2</sup>, Jelena Tomić<sup>2</sup>, <sup>1</sup>Sveučilište u Zadru Odjel za izobrazbu učitelja i odgojitelja, Zadar, Croatia. <sup>2</sup>Dječji vrtić Maslačak, Zadar, Croatia**

In early childhood education and care (ECEC) in Croatia, children are encouraged to have an active and positive attitude towards the cultural and natural environment, to raise awareness of the meaning of cultural identity and to belong to the community in which it grows and develops. By encouraging the child to be aware of belonging to the community and its own role in its preservation, its role as an active citizen of society and the creator of its future may develop. By developing the child's decision-making autonomy, enabling it to be the (co) creator of the educational process and thus through the child's own education and education, it may be prepared for an independent life in society.

The main aim of this paper is to present the results of research of the opinion of educators on the importance of creating an environment that will adequately explain to children the role and importance of environmental care for their growth and development, as well as their role of nature conservation for the future.

For the purpose of the research, a questionnaire was used which was distributed to the participants using the Google form. The results were processed using the Excel program. Educators from Zadar County, Croatia participated in the research.

Keywords: environmental care, ECEC, Croatia.

# **99 Enhancing Sustainability Education: Integrating UN Goals Through Board Game Design in Icelandic Teacher Training**

## **Strand 1, oral presentation**

**Kristín Dyrfjörð, University of Akureyri, Akureyri, Iceland**

This research delves into the integration of UN sustainability development goals by Icelandic teacher students in creating board games as part of their education in sustainability. It scrutinizes the adherence to prescribed steps, assessing the resultant product and the overall process. Rooted in game theories and the ADDIE model (Davis, 2013), the research investigates the process within sustainable development and its alignment with UN goals. Games offer a platform for students to take risks, motivating real-world learning (Freitas, 2006). Ebner & Holzinger (2007) note parallels between game-based and problem-based learning. Freitas & Liarokapis (2011) stress merging game design and pedagogic modeling. Student groups of 3-5 were assigned specific UN sustainability developmental goals, with all groups focusing on "Education for all." The ADDIE model guided the game design process, involving the analysis of goals and their connections, board game design, rule and component development, and implementing and evaluating each other's games. Students documented the process, linking their creations to UN sustainability goals, the national curriculum, and scientific knowledge.

The resulting board games demonstrated ambition and diversity in their approach, showcasing varied rules and philosophies. Students expressed enjoyment and interest in this unconventional exploration and usefulness with children. The presentation will feature the board games, examples of their use, and students' reviews, highlighting the project's impact on their ideas and attitudes towards sustainability.

Keywords: Sustainability education, Island, UN goals, teacher education, board games.

# **100 The effect of the thematic practicum class for preschool education on teacher candidates' attitudes and self-efficacy towards the profession**

## **Strand 3, oral presentation**

**Senil Ünlü, Ozlem Simsek Cetin, Metehan Buldu, Meryem Gülhan, Kırıkkale University, Kırıkkale, Turkey**

It is known that the quality of teacher education positively affects teachers' quality (Saracho & Spodek, 2007). It has been stated in various studies that the biggest deficiency in the existing pre-school teacher training programs in Turkey is limited practicum opportunities (Avcı & İbret, 2016; Demir & Çamlı, 2011; Görgeç, Çokçalışkan & Korkut, 2012; Seçer, Çeliköz & Kaygılı, 2010). Teachers' high motivation to their profession does not only leave a positive impact on children, but also creates effective educational environments (Kızıldağ, Halimatov & Sarıçam, 2012). Preschool teachers with high self-efficacy have positive relationships with families and children, have high skills like cooperation and communication, problem solving, empathy, and have positive attitudes towards the profession, children with special needs, child-centered practices, and parent participation (Balci & Küçüköğlü, 2019). In this context, preschool teacher candidates' high attitudes and self-efficacy levels towards the teaching profession can prevent many problems during the first years in the profession. The aim of the research is to examine the effect of the practice class, created to represent an ideal learning environment, on the attitudes and self-efficacy of preschool teacher candidates towards their profession. After having ethical permissions from the council and scale developers, the Attitude Scale Towards the Teaching Profession (Üstüner, 2006) and Preschool Teachers' Self-Efficacy Beliefs Scale (Tepe&Demir, 2012) were used to measure the attitudes and self-efficacy beliefs of teacher candidates towards the teaching profession. After the first data were collected, teacher candidates used the practicum class in their courses during the 2023-2024 fall semester. At the end of the term, the scales were applied, and data collection procedure has currently ended. SPSS will be used to analyze the data. Results will show the impact of using practicum class in courses on teacher candidates' self-efficacy and attitudes levels.

**Keywords:** Early childhood education, practicum class, teacher candidates, attitudes toward teaching profession, self-efficacy.



# **101 Understanding and Supporting Children's Constructive Play: Examples from a Preschool Setting in Greece**

## **Strand 1, oral presentation**

**Olga Drakopoulou, Maria Kampeza, University of Patras, Patra, Greece**

The importance of play as a potent learning tool in early childhood education has gained increased attention from educators, researchers, and policymakers alike. Constructive play develops as a distinct and valuable category within this broad spectrum of play, not only capturing the interest of children but also fostering numerous developmental benefits. Recognizing the centrality attributed to play in educational environments, this study seeks to elucidate the dynamic aspects of constructive play by examining the complexities of interactions and the transformations observed within the sphere of constructive play in kindergarten settings. Adopting a qualitative methodology, participatory observation forms the methodological foundation of this research which has been conducted in a kindergarten classroom in Greece ( $N=20$ , Age: 4,5 – 5,5 years). Photographs were gathered, dialogues were recorded, and interviews were conducted with the children during their free play. Ethical considerations were rigorously adhered to throughout the research process to safeguard the well-being and rights of the participants. The outcomes include a nuanced understanding of the role of constructive play in shaping a framework for highlighting the intricacy and the symbolic character of constructive play. By observing the children in action and indeed in their natural environment, potential benefits and challenges associated with the implementation of construction play activities were highlighted such as planning structures, imaginary scenarios, and symbolic representation. Emphasizing the importance of providing adequate time and space for young children and planning, as well as facilitating constructive play, the study advocates for the continued exploration and integration of play-based approaches in educational settings.

Keywords: Play, Preschool, Greece.

# **102 How sustainable are school feeding services and policies in Turkish Kindergartens?**

## **Strand 4, oral presentation**

**İnanç Eti, Raziye Günay Bilaloğlu, Çukurova Üniversitesi, Adana, Turkey**

Early childhood supports all areas of development, including the acquisition of healthy and sustainable eating habits. Providing children with a balanced and nutritious diet during this period is critical to their growth and development. School meals are provided to children by the institution and influence their eating habits and sustainability awareness especially in early childhood. Through school meals, children become aware of the social, economic, environmental and health consequences of eating habits. School meals also have an essential role to play in promoting sustainable development, which is directly linked to SDG2, SDG4 and SDG5. Therefore, the actions taken in school food services and policies are crucial to support sustainable development. In Türkiye, state-funded kindergartens provide free breakfast, lunch, and snacks. School food policies and services are determined by school administrations and vary regionally.

The aim of this case study is to provide a picture of school catering practices, from menu planning (vegetarian/vegan, gluten-free and food allergy-sensitive menus) and purchasing of raw materials (mostly local and organic food) to leftover catering waste management (reduction of organic and inorganic waste: composting, recycling, food donation and portion sizes). The research involved 12 administrators from public kindergartens with varying SES. The aim was to identify the food services and policies of the schools. Research data was collected using observation and interview methods. Observations were conducted three times during the children's mealtimes at each school. Observations were followed by individual interviews with the administrators.

Data collection took place in November-December 2023. The necessary permissions and ethical considerations were obtained in written form. Qualitative analysis was used to analyze the data. Although data analysis is ongoing, it has been found that none of the schools made special arrangements in menu planning and inadequate sustainable food waste management. However, in some schools a balanced diet is provided.

**Keywords:** Sustainable, school-feeding policies, waste management.

# 103 Parent, Child and Preschool Partnerships in the OMEP UK Early Childhood Education for Sustainable Citizenship (ESC) Award Scheme

## Strand 3, Symposium, self-organized

John Sirj-Blatchford<sup>1</sup>, Cheryl Hadland<sup>2</sup>, Jayde Davies<sup>3</sup>, Ciara Lightburn<sup>4</sup>. <sup>1</sup>OMEP, UK, United Kingdom. <sup>2</sup>GECCO: Champions for Change in the Early Years, Bournemouth, United Kingdom. <sup>3</sup>Leeds Beckett University, Leeds, United Kingdom. <sup>4</sup>Tops Day Nurseries, Devonport, United Kingdom

The symposium presents research carried out with the support of funding from our 2023/24 *OMEP UK Student Travel Awards* focused upon the development of Education for Sustainable Citizenship theory and practice. The symposium will provide four 15 minute presentations followed by 30 minutes open discussion of the key themes. Chair: **Prof. Cate Carroll-Meehan (OMEP UK President)** Together the presentations and papers will contribute to a critical ecological evaluation focused upon the quality and effectiveness of the early childhood partnerships developed between early childhood care and education (ECCE) practitioners, the children, their families and local communities in the context of the *OMEP UK Early Childhood Education for Sustainable Citizenship (ESC) Award Scheme*. Key themes to be addressed throughout the symposium are therefore especially associated with educational research concerning *Parent Partnership* and *Children's Voice and Agency*. The OMEP UK ESC Award scheme provides UK preschools with collaborative training and curriculum development support along with progressive accreditations for their ESC provisions, and the symposium will contribute towards our ongoing evaluation and further development of this program, which is currently being applied in 58 preschool settings in the UK.

The following authors will each be presenting:

The OMEP UK Early Childhood Education for Sustainable Citizenship (ESC) Award Scheme.

**Prof. John Siraj-Blatchford**

Parent Partnerships for ESC in 30 UK Day Nurseries: The Challenges and Way Forward

**Cheryl Hadland**

The Voice of the Child in Early Childhood Education for Sustainable Citizenship. **Jayde**

**Davies**

A case study account of transformation, impact and achievement at an English Day Nursery. **Ciara Lightburn**

We confirm that the studies have been carried with appropriate rigour, reflect good educational research practice, and to conform fully to ECECERA Revised 2015 and BERA 2018 ethical codes and principles.

Keywords: Early education for sustainability; Citizenship; Partnerships; UK ESC Award.

# **104 Approaching Children’s Modes of Communication in Construction Play**

## **Strand 1, oral presentation**

**Olga Drakopoulou, Maria Kampeza, University of Patras, Patra, Greece**

Constructive Play, is gaining momentum reflecting a growing recognition of its multifaceted role in shaping early childhood development. Recent educational research has focused on the effective communication skills of preschoolers during constructive play, primarily exploring how they establish interaction goals, rules, and resolve disagreements during free play experiences. While this body of research has significantly contributed to the understanding of the dynamics within early childhood learning environments, it is still important to deepen this issue as it might contribute to the design of further research on the topic. This research aimed to analyze how preschoolers engage in communication to set goals, formulate rules, and navigate disagreements during constructive play. By thoroughly investigating these aspects, complexities of children's communication processes were discussed for this developmental stage. The study consists of a literature review with an exploration of digital and conventional databases. The duration of the literature review was from November 2021 to December 2023. The outcomes reveal a rich tapestry of communication within constructive play, encompassing both realistic and imaginary elements in the goal-setting process. Cultural backgrounds appeared as key determinants ascertaining the structures built by the children, emphasizing the cultural components of their play experiences. Importantly, children's coordinated conduct was critical in mediating the link between spatial discourse and the final constructions created. Rule learning seems to benefit preschoolers because it helps them explore themselves, their relationships with others, and their environment via rule-related arguments. Teachers facilitated this process by initiating discussions and meaningful exchanges. This process helps children disengage from self-centeredness, acquire public awareness, and regulate their play behavior, resulting in a better understanding of their environment. The study highlights the importance of effective communication in preschoolers' constructive play, emphasizing the interplay between communication, cultural influences, and coordinated behaviors, thereby guiding future educational practices.

**Keywords:** Constructive Play, Communication Strategies.

# 106 The Early childhood education and care for sustainability play, teaching, learning and development

## Strand 1, poster presentation

Aggeliki Papakonstantinou<sup>1</sup>, Foivos Stampoulidis<sup>2</sup>. <sup>1</sup>Metropolitan College, Thessaloniki, Greece.  
<sup>2</sup>National and Kapodistrian University, Athens, Greece

This present study, is part of research project that studies, the contribution of Sustainable development to early childhood education and care of sustainability, the role of play and learning development. According to the detailed curriculum of kindergarten from the Greek educational system, children learn about sustainable development within the child and environment sector.

So the children interact both with the anthropogenic environment and the natural environment, the game between the children has impact on the psyche in the classroom. Children learn to socialize, they do experiment activities and when they go outside in school yard or in the nature environment they can touch some flowers or to see how is the insects (Comprehensive preschool education, 2020).

Moreover, the environmental Education and sustainable development are upgraded the quality of life, both presently and in the future. Sustainable development promote a different vision of life for the world. Which is prepare the young children and the others citizens for planning addressing and seeking solutions to issues that threaten the sustainability of planet ((UNESCO, 2005). A sustainable school is a school that seeks to integrate the principles of sustainable development. This school must have the concepts for environmental education. Children in Greek school have this lesson. Through it, the students understand the concept of the environment, but also the need that gave birth to it. Environmental education was created by the great environmental problems that prevail to this day, it's considered necessary not only for the appearance of new ones, which will endanger our life on the planet.

In conclusion the concept of sustainability will be presented. It arose from the dispute between ecologists and economists. The ecologists declared that with development will come the destruction of the environment while the economists gave food to the fact that the development path is necessary, because without it key answers cannot arise for the problems facing humanity such as the poverty of the population and health (Manthos,P. Mpotsaris, D. Sakellaris, G. 2002).

Keywords: environmental education, sustainable school, teaching, learning, development.

# 107 Education for sustainability in Swedish preschools - two research and development programs

## Strand 1, Symposium, self-organized

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Preschool teachers play an important role in preparing children to become responsible and competent citizens in the future for their communities and globally. EfS equips children with requisite knowledge and skills needed to create a sustainable future. The Swedish curriculum for the preschool Lpfö 2018 explicitly incorporates EfS from a holistic perspective integrating environmental, social and economic dimensions. Despite this, research indicates that many preschool teachers and principals still find the concept of sustainability as complex and abstract, particularly economic sustainability. During this self-organised symposium we present two research projects where preschool teachers and principals implement EfS in their pedagogical planning and activities.

Firstly, we present a Research and Development program (R&D) *Sustainable preschool*, 2021-2024, coordinated by the Ifous Institute, with approximately 300 participants (200 preschool teachers and 100 leaders) from 8 municipal and 1 private organisations. *Sustainable preschools* has explored how sustainable development is understood in a preschool perspective, and how principals, preschool teachers, and administration implement and work with sustainability issues in practice. All preschools are using the OMEP ESD Rating Scale. We will give examples from both the practical work in preschools and administration, as well as from research findings.

Secondly, we present the research project *Eco-certified Preschools and Children's Learning for Sustainability*, 2018-2022, where data was collected from 585 preschool teachers and child minders from 50 preschools in 25 municipalities in Sweden. The data we present was analysed with the OMEP ESD Rating Scale. The most common topics in EfS were related to the economic (389) and the environmental (318) dimensions of sustainability, while the social dimension was markedly lower (85). Collaboration outside of the preschool was unusual, however, the study was partly carried out during the Covid pandemic, which might have had some impact on the study results.

Keywords: education for sustainability, preschool teacher, preschool principals, sustainable management.

# **108 Rain Forest Eco-Learning "Reduce, Reuse and Recycle" Curriculum**

## **Strand 1, Symposium, self-organized**

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The author of this interactive project was raised in a tropical rainforest, bringing to live the world rainforest into the classrooms. She will embrace the audience with the real experiences and scientific rainforest information to promote eco-learning in the classrooms with rainforest products, natural materials, environments, and the secret of the rainforest. Also, will include demonstration of eco-science activities for classrooms of infants, toddlers and preschoolers children. Audience can participate with making eco-learning materials for their classroom using recycling materials. The presentation will end by each participants writing a commitment to save the rainforest with at least three eco-learning activities in their classrooms.

Keywords: Eco-learning, rainforest, preschool children, toddlers.

# **109 Towards an ecological, embodied and extended (3E), ontic- or ousia-system approach to Early Childhood Education for Sustainable Citizenship**

## **Strand 2, oral presentation**

**John Siraj-Blatchford, National Chung Hsing Universit, Taichung, Taiwan**

This presentation will provide a response to the challenge posed by Elliott and Davis in their 2020 paper "Challenging Taken-for-Granted Ideas in Early Childhood Education: A Critique of Bronfenbrenner's Ecological Systems Theory in the Age of Post-Humanism". An attempt will be made to provide an holistic model that remains consistent with Bronfenbrenner's ecological system model where children are 'both influenced and influential within the nested social systems they inhabit' (op cit), while maintaining that 'Humanism' and 'Post-Humanism' may be considered labels that we attach to different levels of complexity.

In recognition of the fact that the individual has a role in their own development, Hirsto (2001) has suggested an extension of Brofenbrenners account to include an *Endo-system*, but in acknowledging the strength of the ecological model of perception and the concept of 'affordance' provided by James and Eleanor Gibson, it will be argued that this cognitivist conception may be considered inadequate, and that we require a more sophisticated model that reflects more recent research perspectives in embodied and extended cognition. Such a model will be outlined, applying Jean Piaget and Ulric Neisser's distinction between a cognitive scheme and schema, and this will be elaborated to describe a system that is *ontic- (essential) system* rather than an *endo* (inner) one. We may also speculate that an even better term, drawing upon a reading of Heidegger, and the ancient Greek term 'οὐσία', would be an ousia-system that provides us with what is the essence (is essential) *in being*. Applying Koestler's (1969) conception of 'holons', and the irreducible nature of 'emergent' holarchical structures, Humanist *Ousia* might also be taken as 'that whole that subsists by itself, and not in the collective micro-system that is shared by post-humanism.

The presentation will be oral supported by Powerpoint, with the slides and associated paper provided for participants.

Keywords: ecological, embodied, extended, system, ECE.



# **110 Ni-SOS Samos: A digital board game as a tool to promote environmental education and sustainability through playing**

## **Strand 1, poster presentation**

**Dimitra Georgia Papadopoulou<sup>1,2</sup>, Sofia Saiti<sup>1,3</sup>.<sup>1</sup>OMEP Greece, Athens, Greece. <sup>2</sup>Kokkari Primary School, Samos, Greece. <sup>3</sup>47th Kindergarten of Athens, Athens, Greece**

Since the beginning of mankind both play and learning have been an integral part of human nature. Play holds a crucial role in developing a wide spectrum of experiences and skills in various domains, particularly in children's learning. The inclusion of the game-based approach in the learning process contributes on multiple levels not only in promoting knowledge, but in boosting the involvement of students as well. Consequently, the learning ability is enhanced when accompanied by playing both non-digital and digital games, as today's children are digital natives. Educational board games as learning tools seem to be providing a creative alternative way of engaging students. Learning process becomes attractive and participating within an encouraging cooperative environment of applying knowledge and developing critical and social skills. Environmental Education / Education for Sustainable Development (EE/ESD) focuses on cultivating skills and attitudes and is highly important in order to establish sustainability. This good practice project is about "Ni-SOS Samos", created for the first grade students of Kokkari Primary School on Samos Island, Greece. It is an innovative digital educational board game that aligns with the Greek curriculum, leaves no environmental footprint, is easily accessible to Greek-speaking students and combines Environmental Education with the use of new technological tools that are vital for the future of teaching and learning. It aims at raising awareness of the existing problems in the natural environment of Samos and teaching ways to overcome them by promoting a sustainable future. The tools that have been used are questionnaires, observation, and photographic records. All necessary permits have been obtained. The small number of participants does not allow generalization of the conclusions. The results indicate that students became more aware of environmental issues and embraced a more sustainable attitude.

**Keywords:** Early Childhood Education, Environmental Education, Education for Sustainable Development, Digital Educational Board Game.

# **112 The importance of nature in out-of-school care: how can a systematic literature review inform policy makers in Flanders?**

## **Strand 3, poster presentation**

**Siska van Daele, Liesa Lammens, Leen Dom, Karel de Grote University of Applied Sciences and Arts, Antwerp, Belgium**

Out-of-school care in Flanders is facing a major reform. The new decree on out-of-school care and activities aims to create an integrated offer for all children under the direction of local governmental bodies. Although a growing body of research suggests the importance of nature play and experiences for young children (Prins et al, 2022), the decree fails to address these benefits and does not mention them explicitly.

This poster presentation is part of an ongoing study that aims to fill that void and demonstrate and advocate for the importance of nature experiences for young children during out-of-school care and activities.

The study consists of a systematic literature review of recent international, peer reviewed studies. Both quantitative and qualitative studies are incorporated in the review. So far the systematic review yielded arguments related to four different fields. The first major group of arguments concerns children's health and well-being (e.g. Tseng et al., 2023). According to these studies experiencing nature promotes children's physical and mental health and social well-being. The second group of arguments stems from the field of biopsychology and biophilia and deals with nature connection and care for nature (e.g. Adams & Beauchamp 2021b). Research in this field shows that the more nature experience children obtain, the greater their connection with and care for nature becomes. The third group of arguments stems from nature pedagogy (e.g. Wojciehowski, 2018). These studies demonstrate that experiencing nature makes for more qualitative, creative and diverse play. The fourth group of arguments originates from developmental psychology and demonstrates that nature experience ensures physical and intellectual growth, language development, emotional and social development of children (Traynor et al., 2022).

During the poster presentation we will elaborate on these findings and formulate policy recommendations for local governments and supra-local networks in Flanders.

Keywords: nature play, out-of-school care, policy recommendations.

# **113 ESD for ECE in Preschool Teacher Education: Childrens agency in Preschool class projects**

## **Strand 1, oral presentation**

**Carita Sjöberg Larsson, Hilma Holm, Faculty of Education, Kristianstad University, Kristianstad, Sweden**

The presentation focus an ongoing project in the 6th semester, Preschool Teacher Education at Kristianstad University, KU, where the students study social sustainability and the Global Goals (SDG Agenda 2030, Skr 2021/22:247) in activity-based education in preschool class (LGR – 22, Skolverket NEA Sweden, 2022). The students' assignment/examination is to initiate a minor project with a designated learning content (Pramling Samuelsson & Asplund Carlsson, 2014) linked to social sustainability with a focus on globalization. The assignment should also be integrated as a meaningful part of preschool class current planning and a childs ´ perspective (Dahlberg, Moss & Pence, 2014; Sommer, Pramling Samuelsson & Hundeide, 2013). One of the challenges, to the students, is therefore to combine ongoing work in preschool class and children's interest, knowledge and curiosity with their own understanding of social and global sustainability issues (UNICEF Childrens Rights, SFS 2018:1197), furthermore, how they can be made aware of and illustrated to children in the preschool class. The presentation will focus on some of the challenges and opportunities revealed in that work.

Keywords: preschool teacher education, social sustainability, preschool class.

# **114 International teacher and student teacher cooperation between Partner Universities (SRU, Pennsylvania US – KU, Sweden) in Preschool Teacher Education - a virtual experience sharing perspectives on ECE.**

## **Strand 1, oral presentation**

**Ingmarie Bengtsson, Carita Sjöberg Larsson, Faculty of Education, Kristianstad University, Kristianstad, Sweden**

The aim of this study is to develop internationalisation work in higher education exploring students experience on the concept of *internationalisation for all* in Preschool Teacher education, KU, Sweden.

In governing documents (SOU 2018:3; SOU 2018:78) the need of development on comprehensive internationalisation is emphasized. Fjellström (2018) points out that inclusion in democratic processes can be a way to promote intercultural understanding.

Interculturality is defined by Lahdenperä (2018) as something that denotes coexistence with interaction, but it can also be seen as a starting point in school development work and as a quality aspect of education and communication.

The study has a qualitative approach (Denscombe 2018). From virtual networking between two universities, SRU in Pennsylvania and KU in Sweden, data consists of 107 individually written student reflections on intercultural aspects through sharing perspectives. Reflections were sorted and analysed in themes.

Prevailing ethical principals have been considered as they are put in The Swedish Research Council (2017). Participation was voluntary and the respondents were guaranteed anonymity.

The dominating findings are the students expressing an increased interest in intercultural interaction, knowledge about cultural differences and similarities and understanding for the need of developing professional didactic strategies.

The themes derived from student reflections will be used in collegial dialogues and for future developmental work in preschool teacher education regarding interculturality for all.

Keywords: Global competences, internationalisation, virtual networking, intercultural interaction, preschool students.

# **115 Investigation of pre-service preschool teachers' written arguments on socio-scientific issues related to the environment and sustainability**

## **Strand 1, oral presentation**

**Tuba Demircioglu<sup>1</sup>, İnanç Eti<sup>2</sup>. <sup>1</sup>Cukurova University, Adana, Turkey. <sup>2</sup>Çukurova University, Adana, Turkey**

Born amid critical global challenges like climate change and energy crises, the alpha generation must cultivate essential skills to tackle these urgent issues. Argumentation is one of the most important learning processes contributing to the construction of knowledge from an early age. Researches indicate that when children are encouraged to produce arguments, evaluate them, listen to others' arguments, and participate in solving problems, they can improve their argumentation abilities. Children's awareness of environmental education at an early age and their involvement in argumentation processes depend on the development of preschool teachers' knowledge and skills on these issues. In this context, this study aims to examine the written arguments of pre-service preschool teachers about socio-scientific issues related to environment and sustainability.

In this case study, we examined the change of argumentation abilities of 65 pre-service preschool teachers. The pre-service preschool teachers engaged in five different argumentation sessions covering the topics; Nuclear Power Plants, Solar power plants, Animal Experiments, Waste Paper, Textile Recycling. During the argumentation sessions, first they were presented with a case about these topics. Subsequently, they engaged in argumentation sessions in small groups. After small group discussions, followed whole-class discussions. Then they responded to a survey that includes four open ended questions about the cases. Toulmin's argument model and the framework developed by Erduran, Simon and Osborne, (2004) were used to analyze the answers to that questions. The results of the study show that pre-service teachers' argumentation ability improved throughout argumentation sessions. These findings highlight the importance of argumentation activities in students' argumentation abilities about environment and sustainability.

**Keywords:** Environmental education, argumentation, pre-service preschool teachers.

# **116 Supporting children’s participation and agency in preschool technology activities by bridging everyday and scientific understanding**

## **Strand 1, oral presentation**

**Sara Eliasson, University of Gothenburg, Gothenburg, Sweden**

This study explores the relationship between everyday and scientific understandings of technology in preschool environments, focusing on children’s role in sustainable education. Unlike previous research primarily highlighting preschool teachers’ perceptions of technology (Eliasson et al., 2022), the study focuses on the active role of children in these learning activities.

Drawing from sociocultural theories, particularly Vygotsky’s ideas (1934/1987) on the dialogic relationship between everyday and scientific concept formation, the study examines how these interactions lay the foundation for abstract scientific knowledge while structuring everyday experiences, as well as a sustainable, participatory technology education approach, essential for fostering long-term engagement and agency in children.

Methodologically, the study analyzed ten video-recorded technology sessions with eleven children aged 2-5 and four teachers across three Swedish preschool groups, using Interaction Analysis (Derry et al., 2010). This analysis focused on the nuances of educational interactions, exploring the dynamics of children’s participation and the educational strategies used by teachers. In adherence to the ethical guidelines of The Swedish Research Council (2017) and considering the involvement of young children (Dockett et al., 2009), measures included ensuring voluntary participation were continuously considered and the researcher wore a signal vest during filming.

Preliminary findings suggest the significance of enabling and interrelating children’s initiatives to conceptualise technology in everyday and scientific ways, as means for supporting children’s sustainable participation in concept formation in technology activities. The study adds to the growing field of technology education in early childhood education (ECE), offering didactic implications for organising technology education that suggest that emphasizing a child-centered approach that interweaves the spontaneity of children’s initiatives with the structured guidance of educators, is conducive to the development of both children’s agency and a holistic understanding of technology.

**Keywords:** Early childhood education, Technology education, Socio-cultural perspectives, Children’s agency, Everyday and Scientific concepts.

# **117 Traditions and modernity in the academic preparation of kindergarten teachers in Bulgaria**

**Strand 3, poster presentation**

**Violeta Georgieva-Hristozova, Trakia University, Stara Zagora, Bulgaria**

The present theoretical construction is about the preparation of preschool teachers in the Republic of Bulgaria. It is addressed to the international pedagogical community and specialists in early childhood education. The focus is on historical traditions and current challenges related to the training of Bulgarian students in preschool pedagogy. Based on the scientific methods of theoretical analysis and theoretical synthesis, the author popularizes in the international specialized media common aspects of the current preparation of future preschool teachers. The discussion in the article focuses on two central themes. The first analyzes the issue of the relationship between theoretical and practical training in the academic preparation of the future kindergarten teachers. The second comments on the place of digital technologies and artificial intelligence in the educational process of university education. Both discussion directions are significant for shaping the professional profile of the kindergarten teacher and mark the crossroads between tradition and modernity. In conclusion, the material emphasizes the need to find a balance between tradition and innovation. In a world that is increasingly digitized, preserving of knowledge and values from previous generations appears as a guarantee for the preservation of human culture, prosperity, and peace. Such a balance is undoubtedly a key element in the sustainable development of education and society as a whole.

**Keywords:** Early Childhood Education, Kindergarten Teacher, University Didactic.

# 118 United for recycling!!!

## Strand 1, poster presentation

Georgia Paganía<sup>1</sup>, Maria Valma<sup>2</sup>. <sup>1</sup>15th Kindergarden of Patras, Patras, Greece. <sup>2</sup>Primary school of Michoi, Patras, Greece

The goal of this project is for the students to learn more about recycling and especially: 1) to learn how to recognize the different materials that are being recycled, 2) to be able to distinguish the organic rubbish from the recycling ones, 3) to know which sign is used for recycling and learn different methods of recycling, 4) to be able to reuse recycling material for art or other uses and 5) to create a positive attitude for recycling.

In the beginning of the project, students have heard about recycling before but through this project we want to give to the students more knowledge about it and upon the right ways to recycle. This project is important because nowadays the pollution of the environment is becoming more and more threatening for the human beings and life in the planet generally, so if we do not act quickly, we will deal with unpleasant consequences.

The methods that were used in the project were: discovery learning, learning through play and art and ICT.

The idea for the project was given by the students themselves, as some of them haven't heard of that before because they did not do that at home. By the end of the project, we found out that even the students that were familiar with the term of recycling, they had wrong impression about it, so through this project we made clear to everyone how to recycle correctly.

Keywords: recycling, art, environment, play.



# **119 Sustainability in ECEC contexts: seeking for innovative, interactive and individualised professional development pathways**

## **Strand 3, oral presentation**

**Siska van Daele<sup>1</sup>, Lisandre Bergeron-Morin<sup>2</sup>. <sup>1</sup>Karel de Grote University of Applied Sciences and Arts, Antwerp, Belgium. <sup>2</sup>VBJK, Gent, Belgium**

Although education for sustainable development increasingly receives attention in ECEC, the definition and interpretation of sustainability varies greatly. Research suggests that ECEC professionals credit ESD for the development of critical thinking and should therefore have access to a range of continuous professional development opportunities and practices in that area (Veisson and Kabaday, 2018; Geuens, 2022). This paper ties in with that view and describes how ECEC professionals partaking in jobshadowing across Belgium refined their definition of ESD and professionalisation.

Previous research suggests that continuous professional development in ECEC is most effective when teams are offered a range of opportunities, which allows them to embed individual professional development into a wider system perspective at an organisational level. In this project, ECEC organisations mandated duo's or trio's of staff, educators, coordinators and coaches to participate in 'jobshadowing' experiences, i.e. immersion in the daily work of a colleague from another environment, across the linguistic borders in Belgium.

The 44 participants of the jobshadowing experience documented their experiences in log books and 16 participants took part in focus group discussions. The study followed general ethical research considerations. Participants were asked for consent and their names were anonymised. All data were thematically analysed, with emergent categories from two main foci: 1-which key elements, in those professional development trajectories, allowed participants to develop new insights about sustainability; 2- in which way participants defined and operationalised sustainability in ECEC in the different linguistic communities?

The paper sets out to describe how experiences such as 'jobshadowing' can allow ECEC professionals and organisations to explore new pathways and which specific observations and actions inspired professionals and led to a deeper understanding of ESD. During the presentation benefits and challenges will be highlighted to formulate recommendations for further research and practices in other ECEC contexts.

Keywords: ESD - continuous professional development – jobshadowing.

# 120 Small and green

## Strand 1, oral presentation

**Matea Pintarić<sup>1</sup>, Adrijana Višnjić Jevtić<sup>2</sup>. <sup>1</sup>Dječji vrtić Cvrčak, Čakovec, Croatia. <sup>2</sup>University of Zagreb, Faculty of Teacher Education, Zagreb, Croatia**

The concept of sustainable development is present in all areas of human life today. Sustainable development highlights human initiative towards changing the way of life, attitudes, values, habits, behavior and actions at all social levels. When we think about future generations, in a preschool institution, it is important to ensure children's sustainability through daily activities. First of all, the meaning of education for sustainable development is found in values and respect for others, differences, the environment and the resources at our disposal. In this paper, the emphasis is on activities that enable children to acquire knowledge about the diversity of nature, develop empathy towards all living beings, and understand the relationship between people and the environment. Also, the emphasis is on activities that are organized with children in nursery.

Keywords: Diversity of nature, empathy, nursery.

# 122 STEAM in Early Childhood Education: Fostering Integration, Creativity, and Exploration

## Strand 1, oral presentation

**Kristin Dyrfjord, University of Akureyri, Reykjavík, Iceland. OMEP, Iceland, Reykjavík, Iceland**

This research presents an approach to early childhood education, seamlessly integrating science and arts in a playful context through a teaching module. The Science Workshop has been implemented in Icelandic preschool education since 2004 and is integral to the prospective preschool teacher curriculum, emphasising divergent thinking, creativity, and hands-on exploration of scientific concepts, aligning with contemporary educational paradigms like STEM and STEAM. Originating from a 2000 curriculum review at the University of Akureyri's Teacher's Department, aiming to incorporate play-based teaching methods, the "Science Workshop" was named to reflect its emphasis.

The Science Workshop's philosophy centres on integrating diverse disciplines to stimulate divergent thinking. Activities promoting playful exploration, such as investigating possibilities with everyday objects like stones and magnets, making stop-motion movies with readily available items, and engaging in shadow theatre, foster creative problem-solving and establish connections between scientific concepts and real-world scenarios. The pedagogical focus consistently revolves around experiential learning, emphasizing the importance of children grasping concepts through hands-on experiences. Integrating STEM and (STEAM) creative practices aims to nurture a holistic understanding of mathematics, physics, and the arts, laying a foundation for lifelong learning.

The Science Workshop's ability to provide sustainable and adaptable educational resources is a strength. Participants appreciate its role as an idea-bank, enabling the development of activities tailored to children's interests and unique circumstances. As an ongoing and evolving component of early childhood education, the Science Workshop contributes to shaping innovative teaching practices. Incorporating STEM and creative elements, along with an emphasis on adaptability and sustainability, underscores its relevance in contemporary educational settings. The module is a model for educators aiming to enrich children's learning experiences, fostering curiosity, creativity, and a love for exploration.

This research provides insights into the workshop's evolution and impact on teaching methodologies, laying a foundation for further exploration and development with implications.

Keywords: STEAM, science, arts, play-based, educational resources.

# **123 Children's scientific curiosity - a Science Kids project**

## **Strand 1, poster presentation**

**Sandra Kroon, Cecilia Henriksson, Kreativum Science Center i Blekinge AB, Karlshamn, Sweden**

This presentation describes a project entitled Science Kids that intends to promote children's curiosity and interest in science and technology. The project aims to develop a web-based teaching material that intends to support early childhood teachers, as well as parents and children to approach science and technology.

Science Kids is part of a nonprofit organisation, BUNT (Children Discover Science and Technology) funded through a grant by Arvsfonden. Project managers from three Science Centers together with early childhood teachers from twelve preschools in six municipalities in Sweden participate in the Science Kids project.

The Science Kids project is presented through examples of when project managers from a Science Center (Kreativum) in collaboration with early childhood teacher and children (aged 3-5-years) participate in ten teaching activities that were connected to science and technology. Science Kids contribute with exploratory material (e.g. power and acceleration, robots and programming). The material also contains assignments that children are free to take home, as a way to further explore science or technology. Each Science Kids project begins with the opening of an exploratory bag. In the bag lives an owl (hand-puppet) that introduces different materials that are connect to science and technology. Together, the owl and the participating children explore different subject areas, such as rainbows. Similarities and differences between butterflies. These exploratory activities that children and teachers are engaged in have been documented, and the material intends to be published on a website, with the aim to support early childhood teachers in how to teach science and technology in preschool.

This presentation exemplifies how children's curiosity for science and technology can form the basis for teaching in preschool. The goal of the Science Kids project is to develop and disseminate a playful exploratory material suitable for young children's learning in science and technology.

Keywords: Science, Technology, Preschool, Science Kids-project.

# **124 Speechless but fearless through art: Expressing feelings with shapes and colours**

## **Strand 4, poster presentation**

**Maria Vassiliadou, Frederick University, President of OMEP Cyprus**

The Island of Cyprus is situated in a strategical geographical situation in the Eastern Mediterranean between three continents. During its history this privileged location has brought settlers from different ethnical, cultural and religious origins to the island, enriching it in a multicultural way but also leading to problems of invasion and domination that culminated in the occupation of a part of the Island by Turkey in 1974. This fact has led in the actual crisis with wars and conflicts in the region to a big influx of refugees and migrants through the Greenline, a non-official border line that is not really controlled by the Republic. The arrival of thousands of migrants to the small country is a huge problem that needs to be dealt with by the authorities: housing, asylum processes, schooling of children and unaccompanied minors etc. One of the biggest problems that schools are facing is cultural and linguistic integration of big numbers of foreign pupils. Even if there are special educational programs for migrant children, at the beginning their linguistical abilities in the official languages are very limited and results in a situation of complete lack of communication and isolation. As integration depends very much on mutual understanding, art can play an important role in this initial phases of schooling.

In this poster we are going to demonstrate the outcomes of an artistic activity carried out with children in early childhood settings with the abovementioned purpose.

Concluding we are going to show that the language of artistic impression is virtually global and works without words, grammar and syntaxis. In this sense, it is able to function as a mean of intercultural understanding and gives the children the possibility to express their feelings, preoccupations, fears and problems they are facing in the new and unknown environment.

Keywords: Art, expressing feelings, migrant children, mutual understanding, schooling.