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Children's artistic expressions inspired by nature during early childhood garden pedagogy

Abstract

The aim of this case study was to investigate how children learn about gardens and gardening through art; how they express their thoughts through visual expressions and stories. The research data includes 11 drawings and stories from children about nature and gardening, and were collected during the summer of 2021 in Finland's only campus garden for teacher education. Additionally, six teachers were interviewed about their experiences with garden pedagogy. The data was analysed using descriptive thematic analysis. The findings include: the natural garden environment supports children's creative thinking as expressed visually and verbally; children learn a great deal about nature and gardening, and outdoor pedagogy in gardens can be integrated with play, excursions, imaginary thinking and knowledge related to natural environments. The positive findings underscore the imperative to implement arts-based garden pedagogy in Finland, which has diminished greatly in recent years.

Keywords: early childhood art pedagogy, outdoor pedagogy, garden pedagogy, sustainable art education, environmental education, drawings, storytelling

Introduction

Environmental and sustainable education are important in Finnish early childhood education pedagogy. The Finnish Early Childhood Education and Care (ECEC) considers eco-social knowledge and the ability to learn and understand ecological sustainability a precondition for social sustainability and the enactment of human rights (Finnish National Agency for Education (FNAE) 2022). According to the Act of Finnish ECEC in 2018, ECEC refers to a systematic and goal-oriented entity that consists of upbringing, education/teaching and care with a special emphasis on pedagogy. ECEC pedagogy seamlessly connects these three elements. The aim of ECEC is to conduct versatile pedagogical activities based on child's play, physical activity, arts, and cultural heritage to enable positive learning experiences in healthy and safe learning environments. As teacher educators and researchers, the authors are committed to developing holistic and artistic outdoor pedagogy for children as a part of Finnish teacher education. This case study describes how children express their relationship with nature through pictorial expression in the garden and how early childhood education teachers experience garden pedagogy and cooperation with local gardening staff.

Context of the research

The purpose of this article is to highlight the importance of garden and nature education, which has previously been an integral part of Finnish early childhood education but has disappeared over the years. Both appreciation for such learning and sites of learning have diminished in the yard districts of kindergartens and in the connections between gardening and teacher training. Nature and outdoor pedagogy have been part of Finnish early childhood education since 1888 when the first kindergarten was established in Finland (Korppi-Tommola 2006). According to Fröbel's pedagogy (Helenius 2012; Meretniemi 2015), Finnish kindergartens, beginning with the first kindergarten the Ebeneser home, had small gardens where children could learn how to care for plants and vegetables. Throughout the history of Finnish teacher education, the 'training garden' used to be an essential part of every campus. Currently, Finland's only teaching garden affiliated with university-level teacher education is on the Rauma campus of the Department of Teacher Education at the University of Turku, where this research was conducted (Ruokonen and Lepistö 2021). Preservice teachers, training school pupils and children visit the garden to learn about environmental issues and sustainable education.

According to Merivuori (1987), the purpose of these gardens is to illustrate the teaching of gardening and natural sciences and arouse interest in gardening and sometimes garden art. Gardens provide a wide range of opportunities for arts and social activities for children to learn about nature (Koskela et al. 2021). Art education offers opportunities for learning about the garden, including concepts related to the garden (e.g., the names of plants or the importance of water and light for growth). Secondly, art education can be a tool for learning to work in the garden and its milieu. Thirdly, art education helps present an understanding that mankind needs to take care of nature. Learning through art gives children a holistic opportunity to experience and express themselves and learn about nature in a garden environment.

In Finland, there are now only a few arts-based, pedagogical garden research projects concerning early childhood education or the pre-primary school years. More research about arts based ECEC garden pedagogy is needed to open nature learning experiences in the garden for children under school age through art expression and related stories. Thus, the Department of Teacher Education in Rauma has focused on integrating environmental and outdoor pedagogy into arts and crafts education to strengthen children's relationship with nature (Aerila and Keskitalo

2018). In the context of early childhood teacher education, this study demonstrates how visual art and environmental education can be combined using the garden as an active and inclusive learning environment for children. This case study focuses on children's visual and verbal expressions about their experiences in a garden. Children's drawings and stories reflect their imaginative experiences with nature. The goal of this research is to examine children's experiences in the garden environment as learning processes evidenced in their drawings and stories.

Literature review

Eisner (2002) emphasized the importance of learning through the arts and how it contributes to the teaching of other subjects or skills. As an example of arts-based garden pedagogy, Galindo (2001) and Smart et al. (2018) found that art-based programs built both social and cultural cohesion and integration, while Luna et al. (2015) discovered how art-based gardening developed children's language skills and nature-related knowledge. In addition, Robinson et al. (2015), Bergan et al. (2021) and Hodgins et al. (2019) all observed that arts-based gardening developed the transversal skills needed in life, such as social abilities, self-expression, relation to nature and relationship with local food production, culture and sustainability. Researchers observed that an arts-based pedagogy garden can be a useful and effective tool in education, transforming environmental awareness through the arts and place-based pedagogy for children, preservice teachers, and classroom teachers (Bissing-Olson et al. 2013; Gray and Thomson 2016). Several scholars noticed that when children use artistic expressions, they can communicate their concerns about environmental issues and local environmental challenges more easily (Gray and Thomson 2016; Inwood and Sharpe 2018). By implementing arts- and place-based pedagogy, teachers motivate children to participate actively (Barraza 1999). Garden pedagogy through the arts offers children many ideas for imagery, materials and opportunities to learn and participate in their communities (Walshe et al. 2023). However, these studies were done outside of the Finnish context.

In Finland, there are some previous ethnographic studies concerning pre-primary and primary school children's activities in garden environments in which children's drawings were also used as research material (Heckman 2014; Laaksoharju 2020; Lahtinen 2017). In particular, Laaksoharju (2020) recognised three phases in children's relationships with a garden environment: they could be outsiders, seekers and insiders; it takes at least two weeks for children to become insiders to play and use natural materials spontaneously and imaginatively. Furthermore, Heckman (2014) and Lahtinen (2017) highlighted the importance of play and imagination in children's emotional garden experiences. The activities contributed to an increase in positive experiences and self-image, especially in the case of five- to six-year-old boys. Compared to previous research, this study is conducted with younger children (aged three to five). This study centres on children's learning experiences in the garden, examined through observation of their play, stories, and drawings. Additionally, teachers' perspectives are included as another lens on the effects of arts-based garden pedagogy.

Focusing on children's drawings is significant, as they provide valuable information about their environmental perceptions (Barraza 1999), as well as their interests, imagination, motives and the social, cultural and psychological conditions in which they live (Wilson 1997). Additionally, play is important to children, as they interpret their experiences and tell stories in play (Vygotsky 2004). Imagination and play are essential parts of child development. According to Huizinga (1949), play, as referred to as the 'magic circle', is a separate and independent sphere of human activity, where anything is possible and playfully true. In this study, children were asked to draw

anything connected to the garden environment where they had been playing and learning. Their drawings of the garden are examined along with observation of their play and stories.

Theoretical Framework: Arts-based garden pedagogy as a part of holistic Finnish ECEC pedagogy

The programme in the ECEC Rauma campus involves utilizing the teaching garden through environmental and arts pedagogy, as well as collaborating with teacher education and primary training schools. The ECEC's role is unique especially during the summer season, when training primary school pupils and teachers are on holiday.

ECEC environmental education employs Joy A. Palmer's (2002) tree model in (e.g., Cantell 2004; Reunamo and Suomela 2013). The model places children's life experiences at the core of sustainable development with the aim of strengthening their relationships with nature and teaching them to be environmentally responsible. In doing so, they learn the values of sustainable living. A holistic pedagogical approach integrating different areas of learning is permeable throughout ECEC pedagogy and related to the goals of environmental education. There are three dimensions to ECEC holistic environmental learning: learning *in* a natural environment, learning *about* the environment and *acting for* the environment (FNAE 2022). Active and experiential learning in gardens is essential for learning sustainable values. In nature, children learn to observe, wonder, learn by exploring, take care of the wellbeing of their environment, and exert influence in a manner suitable for their age level (Tereso 2012; Reunamo and Suomela 2013). Cantell (2004) also observed children's actions in their peer groups, noting that participatory social skills and caring for plants, nature and friends develop side by side. Below, the framework of ECEC garden pedagogy through the arts is developed based on the Finnish national core curriculum of ECEC and its goals for environmental education (see Figure 1). The early childhood education teachers involved in this study were familiar with this framework, which they implement in their teaching.

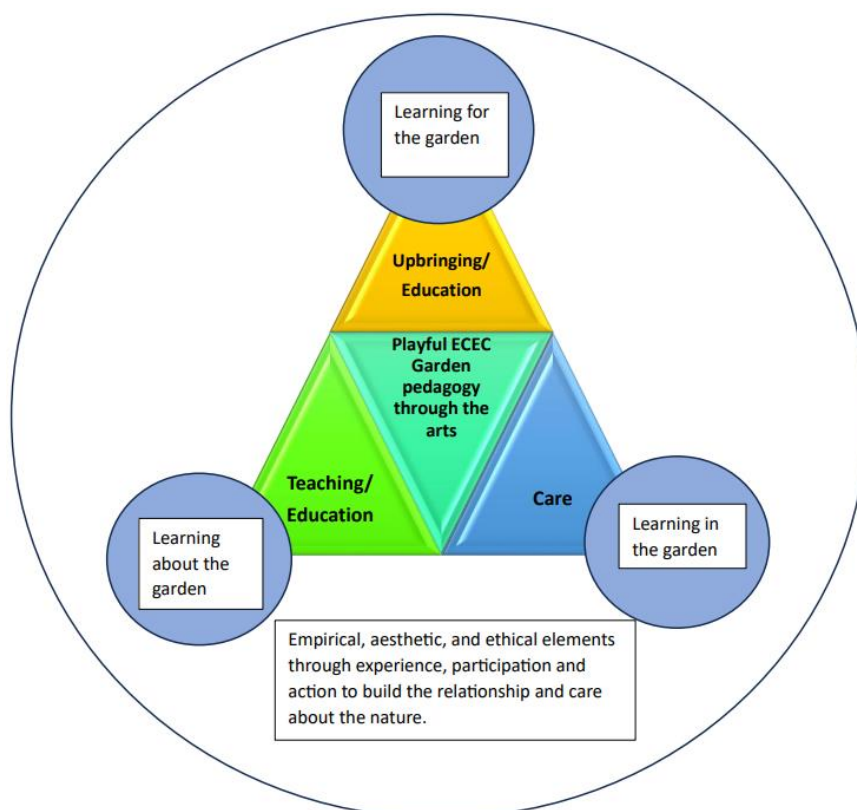


Figure 1: Framework of ECEC garden pedagogy through the arts

Figure 1 shows the relationship between the pedagogical framework and the arts-based ECEC garden pedagogy.

The four triangles in the middle describe playful early childhood education pedagogy in accordance with the Act of Early Childhood Education (2018) that consists of three parts: teaching, education, and care. In the centre of the figure is 'playful garden pedagogy through the arts', reflecting the holistic Finnish ECEC pedagogy based on playfulness and participation (Alila et al. 2022). The Blue Circles describe different forms of environmental education (FNAE 2022): Learning about, learning to act for, and learning in the garden. In learning about the garden, children learn concepts such as plant names and instructions for their care. Children are guided to learn, explore and observe empirically in nature (Cantell 2004). Learning to act for the garden is more closely related to the pedagogical concept of upbringing (e.g., how to act ethically and responsibly). This goal is accomplished when they learn to collect rubbish from the site. Children's respect for nature is part of ethical environmental education (Hodgins et al. 2019). The last form, learning in or from the garden, is associated with care and nurturing, such as planting, fertilizing and watering of plants, which promotes the values of sustainable development related to environmental (Reunamo and Suomela 2013; UNESCO 2020; FNAE 2022).

Activities based on art and playful pedagogy make the garden a place of learning and joy and a place for play. The framework of ECEC garden pedagogy through the arts was developed in cooperation with the university and its associated ECTEC centre and garden operators to frame the many forms and dimensions of ECEC arts-based garden pedagogy.

Methodology & Study Design

This is a qualitative single case study. According to Creswell (2013), this method is useful when exploring a real-life case for reporting themes and descriptions. This method fits well with our research goals and purposes for participatory pedagogy. Through participatory pedagogy approaches, environmental education can be developed so that children actively commit to learning (Shier 2001; Weckström et al. 2021). Following a participatory learning approach as a teaching method in this single case study, early childhood teachers and nurses observed and gathered information from children's interests, drawings and stories and learned to understand children's perspectives. They then used this information to develop participatory activities, e.g., narrative play and drawing, creating shared experiences for children during garden days. Nature is an important place for children to have multi-sensory experiences.

The aim of the study was to learn about children's garden experiences through their drawings and related stories. The drawings and storytelling data were analysed using descriptive thematic analysis (Braun et al. 2016; Vaismoradi et al. 2013), so that a drawing and its related story formed one unit. The themes that were found in children's drawings and stories in relation to the pedagogical framework included learning in, about and for the garden. Early childhood education teachers (N=6) were interviewed about their experiences of garden collaboration and learning themes related to garden pedagogy, particularly focusing on children's drawings and stories. Teachers were asked how they incorporated the teaching garden environment into their ECEC pedagogy. Research material consisting of three- to five-year-old children's (N=11) drawings and stories was collected in July 2021. During the year, children from the ECTEC centre made 29 visits altogether to the Rauma campus teaching garden.

The teaching garden was a familiar place for these children because of its proximity to the day care centre, and they visit the garden throughout the summer. There are three parts to the garden: a flower garden, a vegetable garden, and an orchard. Children learn in each of these environments. The gardener, who was there garden daily, instructed the teachers and children in planting seeds, watering sprouts and plants, picking flowers and vegetables and collecting apples in the summer, served as a collaborator during children's garden visits.

While children were exploring the garden and working with the teachers, nurses and gardener, they were given a paper and pencil and asked to draw what they saw in the garden and tell a story about their drawings (see Figure 2). ECE teachers and nurses documented these stories. The prompts for these drawings were: "Draw what you see in the garden and what is happening here". During and after drawing the children were asked to talk about their drawings.



Figure 2: *Children Are Drawing in the Garden*, 2021. Photo by Eero Rantanen.

Results

Children's drawings and stories, together with the teachers' experiences are reflected in the framework of ECEC garden pedagogy through the arts (Figure 1). Themes that have emerged from the children's play world and imagination are highlighted in the example descriptions below. The results showed that children engaged with nature and the garden environment through art and multisensory experiences. Children's visual and verbal expressions show an attitude of playfulness and imagination. The children had multiple opportunities to spend time in the garden, which became a familiar learning and playing environment. Thus, they could be classified as *insiders* in a garden environment. They explored nature with wonder and careful attention and spoke about themselves as little gardeners: 'I know how to tender and nurture plants; then we can get food from them.' Children's daily gardening activities included planting, caring for plants and harvesting (see Figure 3).



Figure 3: *A little gardener*, 2021. Photo by Eero Rantanen.

Learning about the garden environment

The children seemed to learn a lot about the garden and gardening. Their vocabulary developed with concepts related to plants and gardening. The teachers appreciated collaborating with the gardener because they valued the skills and knowledge of a professional and learned from them. One teacher stated: 'The warmth of gardeners towards visiting children is wonderful', and another teacher noted: 'The gardener consults with us about indoor and outdoor plants. According to teachers' observations children listened to the gardener carefully because often a person from outside the kindergarten (e.g., police officer, firefighter, or gardener) evokes children's interest immediately. One teacher explained: 'It is much easier for children to believe an outsider than a familiar everyday educator'.

In their drawings, children illustrated their learning about nature; they expressed their thoughts and ideas through drawings and stories. The striking result was that the children always added imaginative elements to their drawings, showing their creative thinking. A large old windmill was located next to the garden. The children also saw other windmills and talked about wind power. Children learnt that the sun provides energy and is important for plants. Sun, wind power and energy were all found in the children's drawings and various aircraft and rockets flew in the air!

There are numerous fruit trees in the garden. The children were introduced to the fact that trees are important to the Earth's climate. The garden is close to the sea but not on its shore. These elements combine in the drawing in Figure 4. Interestingly, the children's drawings and stories were connected to overarching environmental and futuristic themes.



“A huge forest. sun is shining. The sea eagle eats earthworms and clams. The sea eagle still must eat a lot more because the space jet is flying nearby.”

Figure 4: *Huge forest and sun*, 2021. Photo by Eero Rantanen.

Acting for the garden environment

In line with Elo et al.'s (2010) points concerning the cultural heritage values of goodness, beauty, and truth, the teachers also highlighted the garden environment as a place of cultural heritage, describing it as ‘a culturally significant place where it is possible to demonstrate to children the importance of biodiversity and show that the built world is more than just home and its surroundings’. According to one teacher: ‘The goal of environmental education during the early years is to strengthen children’s relationships with and responsibility for nature so that they learn sustainable ways of life’. The gardener’s advice was valuable and according to teacher’s observations the children remembered this and mentioned it to others, for example, ‘Emma is not allowed to throw rubbish into nature because the gardener said nature is suffering’. Teachers mentioned that the garden offered an ideal learning environment for sustainable education, noting, for instance, that it was an ‘excellent place for teaching sustainable development and the relationship with nature’. These elements were also found in children’s drawings (see Figure 5).

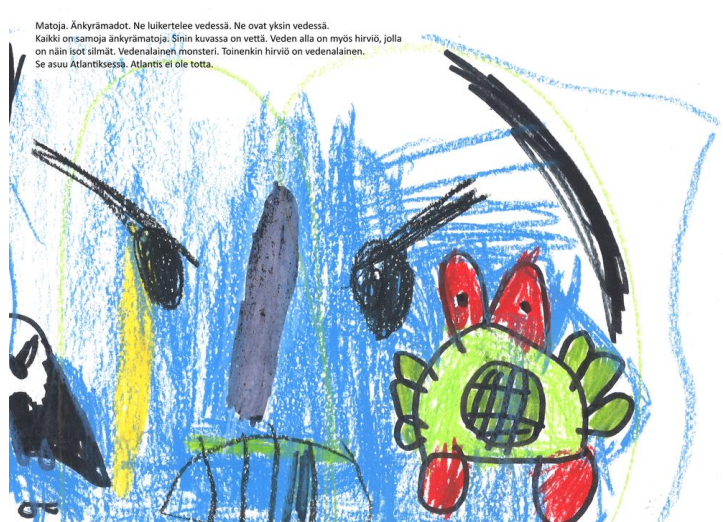


“In this picture is a flower field. All butterflies and bees love it because it is so beautiful and they eat there and fly away when their tummy is full. But they will return. There is also a tree, a home of a squirrel. Also, a rainbow bird flies there.”

Figure 5: *Flower field*, 2021. Photo by Eero Rantanen.

During the Spring of 2020, there was a national campaign *Pelasta pöriäinen* (Save the Bees) to help people learn about what everyone can do to help pollinators to survive. Children had learned that pollinators such as bees, bumblebees and butterflies are important for nature and the climate, and they thrive best in gardens and meadows. The children planted flower seeds and in the summer saw how they had grown into a large flower garden where bees buzzed. In this picture and story (Figure 5), the 'Save the bees' theme was visible. The Rauma campus teaching garden produced and sold honey through a project involving Rauma training school students. Concern about the decline of pollinators is a very serious human-caused biodiversity crisis. It can be compared to the global water crisis. In Finland, a land of forests and thousands of lakes, people take water for granted but also know that there is a shortage of clean water in other parts of the world.

Playing with water and taking care of the garden also became familiar to the children in this garden project. Water was the main element in many drawings combined with imaginary stories (see Figure 6).



“Worms. *Änkyrä* Worms crawl in the water. They are alone in the water. All are the same stump worms. There is water in the blue picture. There is also a monster underwater. An underwater monster. There is another monster under the water. It lives in the Atlantis. Atlantis is not true.”

Figure 6: *Worms and monsters*, 2021. Photo by Eero Rantanen.

Learning in the garden environment

According to interviews with the ECE teachers, the garden as a learning environment was inspiring for children. The teachers noticed that children enjoyed the garden as a positive learning space. They had the opportunity to engage in gardening and taking care of the plants. They began by planting in the spring then followed the growth of the plants every week through the summer through to harvest time in early autumn. The children learnt that plants need water, soil and sunlight to grow. According to the teachers, the harvest season brought the greatest joy; one teacher explained: ‘Harvesting is a joint celebration when children's joy is at its greatest. The same joy can be seen in the moment when the first sprouts emerge from the soil in the spring after planting the seeds.’ The teachers combined the elements of learning, education and care in their artistic pedagogy. Teachers and students sang playful songs about the vegetables and flowers growing in the garden. The learning environment was a central element in fostering children's wellbeing and motivation to learn about, through and from the garden. Teachers explained: ‘Children's needs and interests were considered in planning activities in which children have

opportunities to explore the garden and gardening, to learn, play, move and express themselves visually and verbally'. In this picture a child imagines the squirrel from 'inside' and creates a transparency style 'X-ray' drawing (see Figure 7).

Se on omenapuu. Toi omenapuu mikä tuossa on.
Omenat ova vihreitä ja punaisia. Omenat syödään myöhemmin.
Naavien lapset syöivät ne. Omenapuuissa menee orava.
Omenapuu on näin iso. Oravalla on vihreät jalat ja kädet.
Oravalla ei ole nimeä. Orava näkyy myös sisältä päin.



“It is an apple tree. This apple tree. Apples are green and red. They are eaten later. Children eat apples. There are squirrels on the apple tree. The squirrel has no name. You can see it inside.”

Figure 7: *Apple tree*, 2021. Photo by Eero Rantanen.

Through participatory and playful garden pedagogy, children learnt to think about the cycle of the year in relation to growing and caring for plants. Seeds planted in the spring were watered as the children waited for the miracle of growth. Plants, flowers, peas, carrots, potatoes and other vegetables grew from the sprouts. The children also followed the development of the fruit trees and berry bushes in the garden and learned to understand that the final harvest is collected only at the end of summer. Children's stories reflected their understanding of the ripening of the crop later in the fall.

In Figure 8, the child's drawing tells of the moment when they picked flowers. The child likes yellow flowers and says they are beautiful; In the garden there are marigolds, sunflowers, and other yellow flowers. The child remembers that flower meadows are important for bees. As a figure of authority, the spider tells the child not to pick all the flowers.



‘There are a lot of flowers in the garden. My friend and I collect yellow flowers. The wind is waving flowers. The spider mother goes into hiding and says: don't pick all my beautiful flowers.’

Figure 8: *Garden*, 2021. Photo by Eero Rantanen.

This case study has shown how engaging children in outdoor, arts-based experiences can foster agency and imaginative, creative thinking. The children's drawings and stories indicated that they understood the actions they could take toward creating a sustainable natural environment.

According to the teachers, the garden was fascinating and inspiring for children as a learning environment.

Conclusion

Although the importance of arts education for sustainable development has been emphasised in recent research (Jónsdóttir 2017; Illeris 2015; Macdonald and Jónsdóttir 2014), it is our observation that this is less established in the context early childhood teacher training in Finland. Approaches to education for sustainable development using arts pedagogy should be included in early childhood teacher education and training so that teachers are able to raise awareness of ecological issues with their young students, which would then follow children throughout their lives. This requires research and development to ensure that the special nature of early childhood education, including play, multisensory experience, learning through art and exploration are an essential part of sustainable development pedagogy in early childhood education.

An understanding of the environment and gardening can be strengthened through playful and artistic 'garden pedagogy'. Because this type of pedagogy focuses on the child as an individual and their empowerment, this pedagogy reinforces self-efficacy and a sense of community. This case study and earlier studies concerning ECEC environmental education have indicated that children can successfully learn about nature and its biodiversity in their early years (Hakala et al. 2008) and that child-centred, playful environmental pedagogy is an effective way to introduce environmental ideas in early childhood education (Smart et al. 2018; Tani 2017; Tarr 2008).

The financing and nurturing of activities in 'teaching gardens' should be regarded as an important aspect of early childhood teacher education in Finland and elsewhere in the world. Playful garden pedagogy combined with the arts marks a culturally and ecologically sustainable strategy for the future. The experiences of childhood are meaningful throughout life (Granö et al. 2018). When children are encouraged to draw, tell stories and in many ways express their experiences of nature through the arts, it is an important and transformative step in the early stages of sustainable development and eco-social knowledge.

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Endnote

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