

EARLY CHILDHOOD ENVIRONMENTAL CAMP IN A GREEK PORT

G. Koresi, V. Plaka* and C. Skanavis

Research Center of Environmental Education and Communication,
Dept. of Environment, University of the Aegean,
GR-81100 Mytilene, Lesvos, Greece

*Correspondions author: e-mail: plaka@env.aegean.gr, tel : +302251036234

Abstract

In Greece, the Port of Skyros Island has established an environmental campaign in its area, which is running for the last three years. The name of the above campaign is “SKYROS Project”. It is a cooperative project between the University of the Aegean and the Skyros Port Fund. Since 2015, every summer, academic students and researchers of the Research Center of Environmental Education and Communication of the Department of the Environment of the University of the Aegean are visiting the Island of Skyros in the spectrum of their internship requirements. The environmental communication tasks of SKYROS Project include a variety of different environmental actions. One of them is the Environmental Kids’ Camp, in which children 6 to 13 years old are participating in environmental education programs. They are being educated in a specially designed area, on how to take care, respect and protect the environment. The ultimate goal is to create environmentally active citizens with a responsible behavior. So, the main object of this research is to create a program complementary to the one already existing, based on environmental education guidelines for early childhood. For the first time, this summer of 2018, the research team of SKYROS Project will attempt to involve kids of early childhood age as well.

This program provides the opportunities for young children of locals and tourists to participate in a variety of eco-social interactions, including playing and exploring the outdoors. Based on a quality assessment process, this paper will present the benefits of environmental education in early childhood in outdoors places, like a port. The extension of the environmental camp would be based on the Guidelines for Excellence of the North American Association of Environmental Education. The overall goal of these guidelines is to chart an appropriate and positive process whereby educators can start young children on their journey towards becoming an environmentally responsive youth and later on adults. Environmental education in early childhood is a holistic concept that encompasses knowledge of the natural world strengthening this way environmental literacy for all.

Keywords

environmental education; environmental camp; early childhood; outdoor activities; environmental responsible behavior

1. INTRODUCTION

Environmental Education (EE) was born in the middle of the previous century amid a generalized concern that was developed within the modern environmental movement (Flogaitis et al, 2005). According to the definition, given by UNESCO (1978) at the Conference in Tbilisi, EE is the process of shaping a global population, which should be informed, interested in the environment and its issues,

and have the knowledge, skills, attitude and will to work, alone and collectively, on solving the current environmental issues and preventing the appearance of new ones.

The Tbilisi Declaration identified that humans and the environment were interdependent on each other and governments should consider both the needs of the present and the needs of the future generations in their policies. It emphasized that for significant change to happen, countries had to engage on environmental education for people of all ages both in formal and informal settings in order to handle the problems affecting the quality of this planet (Croft, 2017).

The main purpose of environmental education is to give every individual the opportunity to express a positive environmental attitude and responsibility towards the environment they live (Sabo, 2010). Environmental education is a way to reach an understanding of the relationship between humanity and the living environment. Young children are active and inquisitive (NAAEE, 2000). The curiosity that is a common stake of children is the way to make them interested to explore nature and learn about life in general. Everything is worth exploration for them and all their senses are involved in the understanding of how the environment is built. Children from early age are interested to connect with others and experience both indoors and outdoors environments. Outdoors Environmental Education (OEE) is one of the most successful ways to lure children towards building a solid succeeding environmental literacy (Okur-Berberoglu et al, 2014).

1.1 Environmental education in coastal areas

To sustainably manage coastal areas and conserve coastal biodiversity, the participation of local residents and other stakeholders is indispensable (Sakurai et al, 2017). Sustainable management of coastal biodiversity as well as conservation of coastal and marine areas were declared as important goals for the Aichi Targets, which all countries and stakeholders need to pursue (Sakurai et al, 2017). Researchers in various fields have tested and explained factors that affect people's willingness to behave in an environmentally friendly manner (Zanetell and Knuth, 2004; Sakurai et al, 2015).

Previous studies have identified that people's sense of place could affect their willingness to conserve the coastal area (Sakurai et al, 2017). Several studies have suggested that sense of place can include place attachment, which is the strength of the bond between a person and place. The place meaning, is the symbolic meaning people attribute to a place (Halpenny, 2010). Although sense of place has been discussed and acknowledged by many researchers as an important concept, affecting people's willingness to take care of a place, conceptualizing and quantitatively identifying this framework has been challenging (Stedman, 2002).

Environmental education is a field that aims to encourage people to adopt more sustainable lifestyles through 1) acquiring awareness, 2) developing knowledge, 3) acquiring attitudes, 4) acquiring skills, and 5) encouraging participation (Jacobson, 2009). One of the most important goals of environmental education is to understand the relationship between current and future generations (specifically, the importance of protecting the natural environment and resources for future generations), which could be regarded as directly connected to two environmental education aims: acquiring awareness and positive attitudes (NAAEE, 2009; Japanese Society of Environmental Education, 2012).

The importance of developing conservationist attitudes with regard to future generations can also be explained in the context of a major environmental worldview (Sakurai et al, 2017). The stewardship worldview assumes that we (human beings) are borrowing the earth's natural capital from future generations, and therefore, we have an ethical responsibility to leave the earth in a healthy condition for the generations to come (Miller and Spoolman, 2015).

1.2 Environmental Education at the Port of Skyros Island: Daily Environmental Kid's Camp

In Greece, Linaria Port of Skyros Island is famous for the innovative approaches enacted by the specific Port Authority. Since 2015, a worldwide environmental campaign, under the brand name

“SKYROS Project”, has launched there, presenting an innovative cooperation with the University of the Aegean and the Skyros Port Authority. University students, locals and visitors become the decision makers for environmental issues taking in their hands environmental planning and management of the specific port area (Skanavis et al, 2018). However, this approach in terms of “information-deficit” has been widely criticized as being inadequate to promote behavioral change (Ockwell et al, 2009 Skanavis & Kounani 2017). To tackle such concern, the SKYROS Project, taking off in 2015, established at Linaria port an interactive lab which included the port as a way of promoting environmental issues awareness through hands on experience (Skanavis et al, 2018). Significant environmental actions that were implemented were an Environmental Kid’s Camp, Tourist Observatory, Maritime Tourism Observatory and a Summer Academy for Environmental Educators (Plaka et al, 2017). This project was recognized at national and international competitions as one that excels on environmental awareness (Plaka et al, 2017 and Antonopoulos et al, 2017a).

2. METHODOLOGY

2.1 Study Area

Skyros Island belongs to a complex of islands, which is called Sporades. The importance of this island is considered huge not only because it is placed in the center of the Aegean Sea, but also because it connects many destinations (Antonopoulos et al, 2017a). In Linaria, the Port Authority Administration has adopted an environmental and sustainable agenda. Delivered at the port, a series of innovative environmental education projects that could promote environmentally responsible behavior for both visitors and residents (Antonopoulos et al, 2017b) proved to be a breakthrough in the promotion of responsible environmental behaviors. This port has been distinguished as a unique one for the whole country (Antonopoulos et al, 2015). Furthermore Linaria as a community has been characterized as an environmentally sustainable one (Antonopoulos et al, 2016).

The last six years, this small port constantly implements interesting ideas, such as the construction of seadromes, the use of electric scooters, the PV panels, a gas station and the cooperation of the Port Authority of Skyros with the University of the Aegean’s Department of Environment, known as SKYROS Project. These actions have attracted the interest and respect of travelers from around the world (Antonopoulos et al, 2016). Environmental actions at no cost for users, gradually formed conscious citizens at the island and encouraged visitors to become environmentally sensitive (Plaka et al, 2017). United Nations during the Climate Change Summit of 2016, recognized the Linaria Port as “the blue port with a shade of green” (Skanavis et al, 2018).

2.2 Planning and implementation

The Environmental Kids' Camp has been offered every summer for the last four years. The ages of the participants range between 6-13 years old. This coming summer, pre-school children (ages 3-6) will be welcomed. Environmental education in early childhood is a holistic concept that encompasses knowledge of the natural world, strengthening appropriate code of ethics and promoting environmental literacy for all.

This paper is based on a qualitative study, presenting the benefits of environmental education at early childhood in outdoors places, like a port. Having a high quality educational program tailored to the participants’ interests and being inspired by familiar surroundings is very important for practicing theory in real time conditions (Skanavis et al., 2018). The objectives of the summer environmental camp at Skyros Island were related to the dissemination of environmental education to children and to the promotion of their responsible environmental behavior through theory and hands on experience in an outdoors set up (Skanavis and Kounani 2017).

The environmental camp set up is based on the “Guidelines for Excellence” of the North American Association of Environmental Education (NAAEE 2017). The main goal behind the specific guidelines is to chart an appropriate and positive process whereby educators can start young children on their journey towards becoming an environmentally responsive youth and later on adults.

This research focuses on the part of preschool kids environmental education through their interaction with a port. The plan for this program is to use procedures, which will be easy to comprehend from participating kids of very young ages (3-6 years old). An environmental awareness approach may be best handled through interaction with nature, excursions and camps (Sabo, 2010). Early childhood environmental educators need to create a climate in which children are motivated to learn about and explore the environment and practice their developed skills with procedures based on a basic understanding of the goals, theory, practice, and history of the field of environmental education (NAAEE, 2000).

3. THE MAGNITUDE OF ENVIRONMENTAL EDUCATION IN EARLY CHILDHOOD

Environmental education is becoming an increasingly important learning area in early childhood education (Pearson & Degotardi, 2009). The approach to environmental education for early childhood learners is less about organization of graduated achievements and more about free discovery on each child’s own terms (NAAEE 2000). The preschoolers get their first exposure to the worldwide profile of the environmental issues, and the destructive potential of individuals to nature (Sabo, 2010).

Wilson (2012) outlines how the early childhood years are fundamental in developing “ environmental attitudes and a commitment to caring for the Earth”. The natural world can give children instant responses to their curiosity through all of their senses as they touch, taste, smell, see and hear what is going around them. Early Childhood Environmental (ECE) programs are expected to foster the physical, mental, and social- emotional development of children, and, increasingly, to address an array of the threats to children’s health and wellness (Cooper, 2015). In early childhood, it is important to concentrate on building a foundation that will allow for positive examination of issues and appropriate action later in life (NAAEE 2000). Children are the future guardians of earth. Thus, studies on children’s environment from children’s perspective are vital because the environment shapes children’s attitude and behavior as children and later on as adults (Mustapa et al, 2015).

3.1 The relationship between young children and nature

The task of environmental education for young children is to forge the bond between children and nature (NAAEE, 2000). Connection to nature during childhood has a significant impact on attitude and behavior towards nature in later life (Mustapa et al, 2015). Research by Fjortoft (2001, 2004) found young children playing in a natural environment had a greater increase in gross motor skill development, motor fitness, balance, and coordination than their peers in a traditional playground setting (Ernst and Tornabene, 2012). Freeman and Tranter (2011) also categorized the experience in nature in three types: direct, indirect and observing without contact (Mustapa et al, 2015).

Providing high-quality early childhood programs, and allowing children to follow their curiosities about their world and what nature has to offer, can bring incredible richness to their lives (NAAEE 2000). Direct experiences in nature encourage connection and increase children’s affinity towards nature (Mustapa et al, 2015). Children, who participated in a nature camp with and without environmental education showed an increase in their affinity towards nature, ecological beliefs and environmental behavior (Collado et al, 2013).

Experience in nature increases their score on eco-affinity, eco-awareness and environmental knowledge (Larson et al, 2009). They are learning how to explore and use tools of exploration such as magnifying glasses and pop sickle sticks (NAAEE, 2000). Moreover, time spent in nature is found to

be an indicator on environmental attitudes (Mustapa et al, 2015). Children are watching plants and animals change through their life cycles, and learn how to respect the natural world and living things (NAAEE, 2000). Experience in nature for prolonged time has been found to be an indicator on positive environmental attitude resulted from the connection and the empathy feelings associated with it (Stern et al, 2008). The interest and curiosity that young children typically show for plants, animals, water, clouds, rocks, and other natural phenomena are the basis for environmental educators' work (NAAEE, 2000).

Indirect experience in nature is also associated positively to children's affinity and environmental attitude and behavior. Children involved in an environmental club showed positive attitudes toward the natural environment compared to children who had not joined the club (McAllister et al, 2012). Children who respect the environment feel an emotional attachment to the natural world, and deeply understand the link between themselves and nature. They will eventually become environmentally literate citizens (NAAEE, 2000). Children with lack of experience and exposure to nature will see themselves separated from the natural world (Mustapa et al, 2015).

3.2 The role of play

As a natural and compelling activity, play promotes cognitive, physical, social, and emotional well being, offering the necessary conditions for children to thrive and learn (Bento and Dias, 2017). Wood and Attfield (2005) argue: Play cannot be easily defined or categorized because it is always context dependent, and the contexts can vary. There are many different forms of play including: role play, imaginative play, socio-dramatic play, heuristic play, constructive play, fantasy play, free-flow play, structured play, rough and tumble play, all of which involve a wide range of activities and behaviors and result in varied learning and developmental outcomes (Mackenzie and Edwards, 2013).

Through play, the child can experiment, solve problems, think creatively, cooperate with others, etc., gaining a deeper knowledge about his/her self and the world (Bento and Dias, 2017). This way of thinking about play has contributed on the learning and teaching approaches of environmental education at early childhood because it allows the value of experience (including values and action) and engagement with the sources behind the theoretical knowledge (Mackenzie and Edwards, 2013). From an early age, the possibility to experience during the unstructured play, in which the child can decide what to do, with whom and how, promotes positive self-esteem, autonomy, and confidence (Bento and Dias, 2017). Children communicate with peers and develop friendship when playing in the natural environment. They learn social skills such as manners, how to behave and interact with peers, confidence and work ethics (Laaksoharju et al., 2012).

Play and exploration promote physical development, are soothing and reduce stress, and help to restore attention. An enjoyable task has a tremendous potential for promoting creativity, helping children construct an understanding of their world, and facilitates learning in many different areas (NAAEE, 2000). Play and experience in nature, highly contributes to children's cognitive, physical and social development, restores positive emotion, develops sense of place, empathy and care for nature, as well as, associates positively with environmental attitude and behavior (Mustapa et al, 2015).

3.3 Play in outdoors places

The outdoors can be described as an open and constantly changing environment, where it is possible to experience freedom, gross and boisterous movements, and contact with natural elements (Bento and Dias, 2017). Outdoor play provides learning opportunities for infants and toddlers that they cannot get elsewhere (NAAEE, 2000). While playing outside, children benefit from being exposed to sunlight, natural elements, and open air, which contributes to bones development, stronger immune system and physical activity (Bento and Dias, 2017).

Early-learner programs provide opportunities for young children to participate in a variety of social interactions, including play and exploration in the outdoors that allow them to grow as contributing members of their community (NAAEE, 2000). The need to be physically active from an early age is particularly relevant if we consider the concerning growth of children's obesity and overweight (Bento and Dias, 2017). Nutrition is improved since children who get engaged into grow food are more likely to eat fruits and vegetables (Bell and Dymont, 2008). Gardens that support children's engagement with vegetables and fruits and increase frequency of consumption are associated with acceptance of diverse tastes (Cabalda et al, 2011) as a positive strategy to support healthy eating (Meinen et al 2012). Thus, it is important to understand benefits of the nature and environment on children's developmental needs in order to create an environment that meets the quality standards (Mustapa et al, 2015).

Because injuries can take place in outdoor play areas, safety is a major consideration (NAAEE, 2000). Three basic safety rules are as follows:

1. Provide soft, level surfaces with good drainage. Grass is best for toddling and crawling; wood, mulch, or rubber mats work well under "fall zones."
2. Eliminate possibilities for entrapment.
3. Provide watchful maintenance for items dangerous for babies to put in their mouths. Remove items that are a choking hazard.

Through outdoor play and the exploration of natural elements, it is possible to promote education in its broadest sense. Activities related to playing with soil and water can serve as examples of learning opportunities in which concepts related to mathematics, science or language were promoted in an integrated way (Bento and Dias, 2017).

3.4 Places and spaces

Early childhood environmental education programs provide places and spaces, both indoors and out, that are safe, enticing, comfortable, and enhance learning and development across all learning domains; and provide opportunities for development across social, emotional, physical, and cognitive development domain. Helping children to look more closely, listening more carefully, and understanding the natural world in rich and varied ways by providing opportunities for children to marvel in the beauty of nature are important reasons to invest in outdoors environmental education (NAAEE, 2000).

Today's society often neglects the importance of risk in children's learning agenda and developmental approaches (Bento and Dias, 2017). The integration of natural components throughout places and spaces is essential if learning opportunities and development are to be maximized (NAAEE, 2000). A culture of fear lead us to underestimate what children are capable to do, creating an even more "dangerous" learning environment, where children do not have the possibility to learn, by experience, how to stay safe (Bento and Dias, 2017). In the outdoor environment, opportunities to exceed personal limits often emerge in situations like climbing up a tree or using a tool (Bento and Dias, 2017).

In risky play, the adult should interpret the signs of the child, giving the necessary support or space that he or she needs. From experts experience and relevant studies in this area, it is possible to state that risky play promotes important skills related to persistence, entrepreneurship, self-knowledge and problem solving. During outdoor play, children should have the opportunity to experiment moments of failure and success, learning by trial and error. If we try to prevent all risky situations, children will not know how to deal with unpredictable environments and will lack the necessary confidence to overcome challenges in an autonomous way (Bento and Dias, 2017).

To develop quality outdoor practices, that can have a positive impact on children's health and development, it is fundamental to promote conditions for adults to feel comfortable and motivated during the time the children spent outside. Often educators are concerned about keeping children

together outdoors in order to keep them safe, away from streets, and to prevent them from getting lost (NAAEE, 2000). It is important not to forget that most families just want the best for their children and it is the job of professionals to help them achieve this goal (Bento and Dias, 2017).

4. DISCUSSION AND CONCLUSIONS

Environmental education often begins close to home, encouraging learners to understand and forge connections with their immediate surroundings. The environmental awareness, knowledge, and skills needed for this localized learning provide a foundation for moving out into larger systems, broader issues, and a more sophisticated comprehension of causes, connections, and consequences (NAAEE, 2000). Young individuals should experience the power, fragility, interconnectedness and awe of nature, so they can become environmental stewards of the future (Plaka and Skanavis, 2016).

Linaria is characterized as an environmentally sustainable small port community (Antonopoulos et al, 2016). Through various case studies, research has identified that people's sense of place could play an important role in motivating place-protective behavior (Halpenny, 2010; Tonge et al, 2014; Sakurai et al, 2016). Environmental Education in a port which has adopted a sustainable agenda strengthens the above mentioned feeling. The action of Environmental Camp of SKYROS Project at the Port of Skyros Island is internationally unique (Plaka et al, 2017). The variety of free environmental actions which are being held at this port, gradually transform participating kids to conscious citizens (Plaka et al, 2017). In order to achieve a satisfying deepening in environmental education, it is necessary to connect it to all three forms of education (Aposotolopoulou et al, 2016) something that been done successfully at Linaria Port.

Most environmental education, outreach, and communication programs are designed to help people understand their impact on future generations and how we need to take care of resources so that future generations can use them as well (Jacobson, 2009; NAAEE, 2009; Japanese Society of Environmental Education, 2012). However, there has not been much systematic and scientific research to understand what actually affects people's attitudes regarding future generations (Sakurai et al, 2017). This could be an interesting quantitative assessment project about an environmental education program at a port.

Youth must be educated, in and out the classrooms, in how to take care, respect and protect the environment. Promoting sustainable development should be a priority in the school system's educational agenda. The way to reach this state of excellence is through environmental education from an early age. Early learning programs provide children with opportunities to develop curiosity, ask their own questions, and be able to develop reasoning and problem-solving skills (NAAEE, 2000). Young people, by all available means, must learn to care for the planet, be familiar with nature and be a part of an environmentally active community (Plaka and Skanavis., 2016).

Connection to nature during childhood has a significant impact on attitude and behavior towards nature in later life (Mustapa et al, 2015). Providing high-quality early childhood programs, and allowing children to follow their curiosities about their world and what nature has to offer, can bring incredible richness to their lives. In early childhood, it is important to concentrate on building a foundation that will allow for positive examination of issues and appropriate action later on in life. Children are the future guardians of earth. Thus, studies on children's environmental perceptions from the children's perspectives are vital because the environment shapes children's attitude and behavior (Mustapa et al, 2015). The integration with natural components throughout places and spaces is essential if learning opportunities and development potential are to be maximized (NAAEE, 2000).

Nevertheless, the ultimate goal of Environmental Education is the development of an environmentally literate citizenry (NAAEE, 2000). As Skanavis et al. (2005) indicate “our youth is the most precious asset. Supporting their environmental consciousness, would later on enable them to actively participate in the environmental decision making. As children explore their environment, they begin to develop understandings of how the world works (NAAEE, 2000). When environmentally educated young individuals grow up, as residents they would willingly participate in a societal movement, especially when they observe that their way of life is endangered” (Nastoulas et al, 2017).

REFERENCES

1. Antonopoulos K, C. Skanavis and V. Plaka (2015) ‘Exploiting further potential of Linaria Port-Skyros: From vision to realization’ (in greek) In. **Proceedings of the First Hellenic Conference on Tourist Port, Marinas**, eds. Athens, Greece, Laboratory of Harbour Works, N.T.U.A pp. 101-111.
2. Antonopoulos K., V. Plaka and C. Skanavis (2016), ‘Linaria port, Skyros: An environmentally friendly port community for leisure crafts’, Proc. of Int. Conf. **Protection and Restoration of the Environmental island**, Greece, 2016.
3. Antonopoulos K., V. Plaka, A. Barbakonstanti, D. Dimitriadou and C. Skanavis (2017b) ‘THE BLUE PORT WITH A SHADE OF GREEN: The case study of Skyros Island’, Proc. Int.Conf. **Proceedings of the 7th Health and Environment, Innovation Arabia Conference**, Dubai, United Arab Emirates, pp. 175-187.
4. Antonopoulos K., V.Plaka and C. Skanavis (2017a), ‘INNOVATIVE IMPLEMENTS TO COLLECT INFORMATION: EFFECTIVENESS AND SAFETY IN LINARIA PORT, SKYROS’, 7^o Hellenic Conference Management and Improvement of Coastal Zones, Athens.
5. Apostolopoulou S., G. Grigoroglou, M. Karamperis, C. Skanavis and A. Kounani (2016), ‘Environmental Summer Camp in a Greek Island’, 13th Int. Conf. **Protection and Restoration of the Environment**, Mykonos Island, Greece, 2016.
6. Bell, Anne C., and Janet E. Dymont (2008) ‘Grounds for movement: green school grounds as sites for promoting physical activity’, Health Educ. Res. (2008), Vol. 23(6), pp. 952-962.
7. Bento G. and G. Dias (2017) ‘The importance of outdoor play for young children’s healthy development’, **Porto Biomedical Journal**, Vol. 2(5), pp. 157-160.
8. Cabalda A., P. Rayco-Solon, J.A. Solon and F. Solon, (2011), ‘Home gardening is associated with Filipino preschool children’s dietary diversity’, J Am Diet Assoc, Vol 111 pp.711-715.
9. Collado S., H. Staats and J. A. Corraliza, (2013) ‘Experiencing nature in children’s summer camps: Affective, cognitive and behavioural consequences’, **Journal of Environmental Psychology**, 33, pp. 37–44.
10. Cooper A. (2015) ‘Nature and Outdoor Learning Environment: The Forgotten Resource in Early Childhood Education’, **National Wildlife Federation**, Vol. 3(1), pp. 85.
11. Croft A. (2017) ‘Learning the change toward education for sustainability in early childhood education’, New Zealand Tertiary College.
12. Cutter-Mackenzie A. and S. Edwards, (2013) ‘Toward a Model of Early Childhood Environmental Education: Foregrounding, Developing, and Connecting Knowledge Through Play- Based Learning’, **The Journal of Environmental Education**, Vol 44(3), pp. 195-213.
13. Ernst J. and L. Tornabene (2012) ‘Preservice early childhood educators’ perceptions of outdoor settings as learning environments’, **Environmental Education Research**, 18(5), pp. 643 664.

14. Fjortoft I. (2001) 'The natural environment as a playground for children: The impact of play activities in pre-primary school children', **Early Childhood Education Journal**, Vol. 29(2), pp. 111–7.
15. Fjortoft I. (2004) 'Landscapes as playscape: The effects of natural environments on children's play and motor development', **Children, Youth and Environments**, Vol. 14(2), pp. 21–44.
16. Flogaitis E., M. Daskolia and E. Agelidou, (2005) 'Kindergarten Teachers' Conceptions of Environmental Education' **Early Childhood Education Journal**, Vol. 33(3) pp. 125-136.
17. Freeman C. and P. Tranter (2011), 'Children & Their Urban Environment', Earthscan.
18. Halpenny E.A. (2010) 'Pro-environmental behaviours and park visitors: the effect of place attachment', *J. Environ Psychol*, 30, pp. 409–421.
19. Japanese Society of Environmental Education, (2012) **Environmental Education, Kyoiku-Shuppan**, Tokyo, Japan (in Japanese).
20. Laaksoharju T., E. Rappe and T. Kaivola (2012), 'Garden affordances for social learning, play, and for building nature–child relationship' **Urban Forestry & Urban Greening**, Vol. 11(2), pp. 195–203.
21. Larson L.R., G. T. Green, and S. B. Castleberry (2009) 'Construction and Validation of an Instrument to Measure Environmental Orientations in a Diverse Group of Children' **Environment and Behavior**, Vol 43(1), pp. 72–89.
22. Jacobson S.K., (2009) 'Communication Skills for Conservation Professionals' **Island Press**, Washington, D.C.
1. Mcallister C., J. Lewis and S. Murphy (2012) 'The green grass grew all around: rethinking urban natural spaces with children in mind', **Children Youth and Environments**, Vol. 22, pp. 164–193.
2. Meinen A, B. Friese and W. Wright (2012) 'Youth gardens increase healthy behaviors in young children', *J Hunger Environ Nutr*, Vol. 7, pp. 192-204.
3. Mille, G.T. and S.E. Spoolman (2015) 'Living in the Environment' Eighteenth eds. Cengage Learning, Connecticut.
4. Mustapa N.D., Z. Maliki and A. Hamzah (2015) 'Repositioning Children's Developmental Needs in Space Planning: A Review of Connection to Nature', **Procedia- Social and Behavioral Sciences**, Vol. 170, pp. 330-339.
5. Nastoulas I., K. Marini and C. Skanavis 'Middle School Students' Environmental Literacy Assessment in Thessaloniki Greece' In. **Proceedings of the 7th Health and Environment, Innovation Arabia Conference**, Dubai, Unated Arab Emirates, pp. 198-209.
6. North American Association for Environmental Education (NAAEE), (2009) 'Environmental Education Materials: Guidelines for Excellence. North American Association for Environmental Education', Washington, DC.
7. North American Association for Environmental Education (NAAEE), (2017) 'Professional Development of Environmental Educators: Guidelines for Excellence', Washington.
8. Ockwell D, WhitmarshL,O'Neill S (2009) 'Reorienting Climate Change Communication for Effective Mitigation:Forcing People to be Green or Fostering Grass-Roots Engagement?'. **Science Communication**, Vol. 30(3), pp. 305-327
9. Okur-Berberoglu E., Ozdilek H.G., Yalcin- Ozdilek S., Eryaman M. Y., 2014. The Short Term Effectiveness of an Outdoor Environmental Education on Environmental Awareness and Sensitivity of In-service Teachers, *International Electronic Journal of Environmental Education*, 5 (1), 1-20.
10. Pearson E. and Degotardi S. (2009) 'Education for sustainable development in early childhood education: A global solution to local concerns', **International Journal of Early Childhood**, 419, pp. 97–111.
11. Plaka V., Tsagaki-Rekleitou E. and Skanavis C. (2017), 'Creation of an environmental educational kit: the port as an interactive tool', 7^o Hellenic Conference Management and Improvement of Coastal Zones, Athens.

12. Sabo H.M. (2010) 'Why from early environmental education', **US- China Foreign Language**, Vol. 8(12), pp. 57-61.
13. Said I. (2012) 'Affordances of Nearby Forest and Orchard on Children ' s Performances', *Procedia - Social and Behavioral Sciences*, Vol. 38, pp. 195–203, (2010).
14. Sakurai R., H. Kobori, M. Nakamura and T. Kikuchi (2016). 'Influence of residents' social interactions in and affections toward their community on their willingness to participate in greening activities', *Environ. Sci. Vol. 29 (3)*, pp. 137–146.
15. Sakurai R., T. Ota and T. Uehara (2017) 'Sense of place and attitudes towards future generations for conservation of coastal areas in the Satoumi of Japan', **Biological Conservation**, Vol. 209, pp. 332-340.
16. Sakurai, R., H. Kobori, M. Nakamura, and T. Kikuchi (2015) 'Factors influencing public participation in conservation activities in urban areas: a case study in Yokohama', *Japan. Biol. Conserv.* 184, pp. 424–430.
17. Skanavis C. and A. Kounani (2017) 'Children Communicating on Climate Change: The Case of a Summer Camp at a Greek Island.Leal-Filho W', eds. Manolas E, Azul AM, AzeiteiroU, Elsevier, Amsterdam,Handbook of Climate Change Communication.
18. Skanavis C., K. Antonopoulos, V. Plaka, S.P. Pollaki, E.Tsagaki-Rekleitou, G. Koresi and Ch. Oursouzidou (2018) **Linaria Port: An Interactive Tool for Climate Change Awareness in Greece**. 2nd World Symposium on Climate Change Communication, Graz, Austria, 7th to 9th February.
19. Stedman R.C., 2002. Toward a social psychology of place: predicting behavior from place based cognitions, attitude, and identity. *Environ. Behav.* 23 (5), 561–581.
20. Stern M.J., R.B. Powell and N.M. Ardoin (2008) 'What Difference Does It Make? Assessing Outcomes From Participation in a Residential Environmental Education Program', **The Journal of Environmental Education**, Vol. 39(4), pp. 31–43.
21. Tonge J., M.M. Ryan, S.S. Moore and , L.E. Beckley (2014), 'The effect of place attachment on pro-environment behavioral intentions of visitors to coastal natural area tourist destinations', *J. Travel Res.* 1–14
22. UNESCO (1978) 'The Tbilisi Declaration Intergovernmental Conference on Environmental Education' 14 - 26 October.
23. Wilson R. (2012) 'Nature and young children: Encouraging creative play and learning in natural environments', New York, NY: Routledge.
24. Wood E. and J. Attfield (2005) 'Play, learning and the early childhood curriculum 2nd ed.', London, UK: Sage.