Chapter 10
Education for Environmental Citizenship and Education for Sustainability

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10.1 Similarities and Differences Between Education for Environmental Citizenship and Education for Sustainability

In view of the required development towards more sustainable societies, citizens need to be supported and taught to overcome any important gaps or challenges in being part of a sustainable society. Environmental education focuses on promoting environmental knowledge and enhancing environmentally friendly attitudes and values, as well as achieving both the citizenship and higher-order cognitive skills necessary to promote an ecologically sound lifestyle. The teaching/learning objectives in formal settings are building scientific knowledge and developing the students' relation with nature through active learning pedagogies such as fieldwork and outdoor experiences. It is usually considered a school subject or a topic within

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Biology (Breiting 2007). Non-formal environmental education, such as awareness-raising campaigns and knowledge-sharing projects, often aims at changing peoples' personal lifestyle, e.g. saving energy, recycling and/or buying organic food. Traditionally, environmental education builds on the notion of fostering environmentally concerned and literate citizens (Hollweg et al. 2011; Kollmuss and Agyeman 2002). These aspirations could be seen as a form of Environmental Citizenship. However, Environmental Citizenship never was at the heart of our education and still remains a lively disagreement about the aims of environmental education that may lead to conflicting goals and outcomes (Schild 2016). An important idea has been to build so called pro-environmental behaviour through cognitive and affective learning. This is supported by several psychological models (e.g. Kollmuss and Agyeman 2002; Ajzen 1991; Hines et al. 1987). Hines and colleagues, for example, (1987) presented the model of responsible environmental behaviour. In their model the possession of the 'right' environmental attitudes and environmental knowledge is suggested to lead to raised intention to act pro-environmentally. Similarly, in his theory of planned behaviour, Icek Ajzen (1991) argued that possession of attitudes and beliefs towards a certain action will lead to a higher likelihood of performing the actual pro-environmental behaviour. However, Kollmuss and Agyeman (2002) claim that the link between the right attitude and knowledge and pro-environmental behaviour is not that clear-cut. In their model of pro-environmental behaviour, affective and cognitive components (constituting environmental consciousness), together with personal and societal factors, are suggested to lead to pro-environmental behaviour (Kollmuss and Agyeman 2002). As a consequence of the idea of fostering pro-environmental behaviour, environmental education has led to a focus on the teaching of ecological knowledge and facilitating the development of ecocentric attitudes.

Education for Sustainability (EfS) is often considered, in many educational systems (UNESCO 2009), to be an integrative concept of environmental education where the ecological dimension of environmental education is more strongly supplemented with social and economic dimensions (Kopnina 2014). In formal teaching this often means that ecological science content is mixed with interdisciplinary

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or multidisciplinary collaborative work with social and economic content (Scott and Gough 2003). This way of describing sustainable development by the three interconnected, hierarchically equal and mutually important dimensions of the environment, economy and society is often referred to as the 'three pillars' of sustainability (Giddings et al. 2002). This was emphasised in the Rio+20 meeting (United Nations Conference on Sustainable Development), where a new integrated agenda beyond 2015 was proposed to ensure the promotion of an economically, socially and environmentally viable future for the planet, as explicated in the Sustainable Development Goals (UN 2015). Accordingly, the sustainable development agenda should fully integrate 'the economic, social and environmental dimensions of sustainable development in a coherent, holistic, comprehensive and balanced manner' (UNEP 2015, p. 3). This way of understanding and working with sustainability around the three dimensions has become a global benchmark and a common ground for most sustainability initiatives worldwide. The main idea is that sustaining the environment and ecosystems needs to be based on considerations of social and economic development.

Education for Environmental Citizenship is defined by ENEC (2018) as 'the type of education that cultivates a coherent and adequate body of knowledge as well as the necessary skills, values, attitudes and competences that an Environmental Citizen should be equipped with in order to be able to act and participate in society as an agent of change in the private and public sphere, on a local, national and global scale, through individual and collective actions, in the direction of solving contemporary environmental problems, preventing the creation of new environmental problems, in achieving sustainability as well as developing a healthy relationship with nature. Education for Environmental Citizenship is important to empower citizens to exercise their environmental rights and duties, as well as to identify the underlying structural causes of environmental degradation and environmental problems, develop the willingness and the competences for critical and active engagement and civic participation to address those structural causes, acting individually and collectively within democratic means and taking into account the inter- and intra-generational justice' (ENEC 2018).

From the above description, it is evident that there are some similarities between Education for Environmental Citizenship and Education for Sustainability. Both aim at the same type of action abilities and to bring about environmental and social sustainability, but there are some possible differences in the overall teaching emphases.

There are, however, some differences between Education for Environmental Citizenship and Education for Sustainability. Historically, the weakest dimension in Education for Sustainability has been societal, where social justice issues have been inadequately addressed (Du Pisani 2006). The knowledge of how to democratically change a society and the social justice effects of those changes on the local and global society have, at least at the beginning, not been sufficiently emphasised in Education for Sustainability, as its roots lie in environmental education with a partly narrower focus on environmental protection and conservation of resources (Bolscho and Hauenschild 2006). These sociopolitical dimensions are emphasised in

Education for Environmental Citizenship, along with the aim of promoting people to act according to the public environmental good (Dobson 2007). In that sense, Education for Environmental Citizenship can be considered as a developed, integrated and applied approach that is in accordance with Education for Sustainability's broader context and by which the content and abilities to really make a societal change for a better world can be fulfilled. In contrast with Education for Sustainability, where citizenship is only one of the 20 Key Themes (UNECE 2005), Education for Environmental Citizenship is specifically focused on Environmental Citizenship and how this could be achieved. Environmental Citizenship never was at the heart of our education, and Education for Environmental Citizenship is doing exactly this to bring Environmental Citizenship to the heart of our education. Jacobi (2005) stated that 'EE should be placed in a broader context, namely education for citizenship and understood as a practice that is decisive in the consolidation of citizen-subjects' (p. 243). In the same point of view, according to Loureiro (2011), Environmental Education (EE) is a constituent part of social and environmental movements, and the process of constructing planetary citizenship or ecocitizenship (in ENEC Environmental Citizenship) is considered as a new concept. In addition, Education for Environmental Citizenship explicitly emphasises the practice of environmental rights and duties, the identification of underlying structural causes of the environmental problems and developing the willingness and competencies for critical and active engagement and civic participation to address structural causes, acting individually and collectively, within democratic means and considering inter- and intra-generational justice. These aspects are not explicitly in focus both in Education for Sustainability and EE. However, Education for Environmental Citizenship builds upon and integrates the pre-existing approaches in EE and Education for Sustainability.

## 10.2 Why Education for Environmental Citizenship Is Crucial

Other species have previously left their imprint on the earth, and their actions have affected and changed the planet (e.g. the proportion of oxygen in the atmosphere increased because of plants photosynthesis activity). The human species is also changing it in such a substantial way that the current era is often coined as Anthropocene (Crutzen 2006). This term has emerged as a popular scientific term to designate the current period of the Earth's history during which humans have a decisive influence on the state of the Earth's system. Although there is critique about the correctness of this name choice (Zalasiewicz et al. 2011), it has been demonstrated that we will have geological records of the greatest and fastest degradation of ecosystems associated with different human activities (from Neolithic agriculture land use changes to the technological revolution of the last 60 years, including the recording of a nuclear age by radioactive waste and current planetary climate change

which is occurring at unprecedented speed). In the age where some of the planetary ecological limits have already been exceeded (Rockström et al. 2009), the Education of Environmental Citizenship in understanding what those circumstances mean in areas that affect individual health (e.g. air and water pollution), social health (e.g. collective movement to solve an environmental injustice) and political health (e.g. preventing conflicts in the face of resource depletion) is essential.

It is crucial that an Environmental Citizen can comprehend that the environment embraces and encompasses all spheres that relate to our societal structure (Fig. 10.1) in order to understand the problems and look for solutions. Resilient human systems depend on resilient ecosystems. The economy is within the ecosystem, the products, and the wealth, all of them come from the ecosystem. The Millennium Ecosystem Assessment (MEA 2005) illustrates how the human well-being depends on the proper functioning of ecosystems and that this needs to be maintained for the continuing provision of the 'ecosystem services' we take advantage of (MEA 2005).

Being aware of the imperative need to maintain the proper functioning of ecosystems for human well-being means to reconcile with the environment. It is difficult to continue advancing as a sustainable society while turning its back on nature. That is why individuals with the knowledge and skills to defend the 'foundation' of human well-being need to be appropriately cultivated (educated) and trained as education is the driving force for promoting social changes (Hansmann 2010). Previous social changes have occurred during human history that have made our society take the next step in ethic evolution. For example, slavery abolition made humans more civilised with others. Similarly, another step must be taken to reach a higher level of civilization in terms of our relationship with our environment, and this requires a leading role that the Environmental Citizen should take. A resilient citizen, who can adapt to the new events and threats, is also required to deal with future changes at environmental, societal and political levels.

Fig. 10.1 Russian doll model. (Modified from Myllyviita and Leskinen 2013)
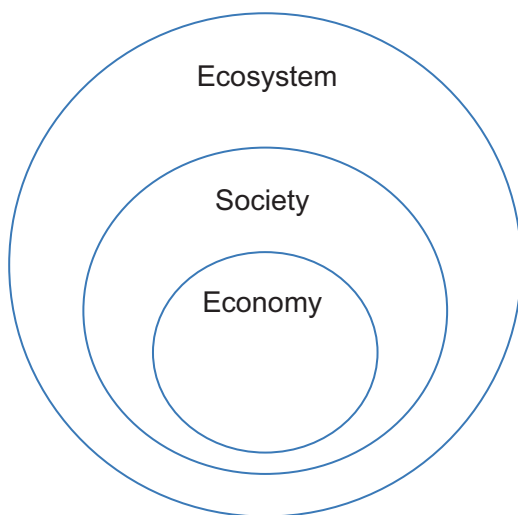
10.3 The Duty to Act and Spheres of Environmental Citizenship Action

In the domain of ethical values, responsibility depends on the level of understanding and perception of these values by people and by society. It refers to normative principles that determine the behaviour of people at any time and situation. The development of environmental knowledge and values leads to higher levels of environmental responsibility (Slavoljub et al. 2015) as those who have the knowledge also have the duty to act. A literate citizen, someone educated who can understand the problem, the structural causes and the interrelationships and who has the skills and competences to look for solutions, cannot be idle. However, the inaction of enlightened persons has been recently described by Plotica (2019), pointing out the general behaviour of persons who evade or deny a citizenship responsibility, despite the accumulated scientific evidence and consensus of our impact and subsequent consequence on ecosystems. To exercise this responsibility, one must also learn to assert their guarantees against political arbitrariness or against powerful lobbies. Environmental Citizens have the responsibility to support and foster future behavioural changes in different spheres. For this they need to be empowered in order to increase adherence to Environmental Citizenship values. Education for Environmental Citizenship means to teach in participatory ways, not only theoretically but actively, forming motivated citizens who are capable of participating in collective problem-solving and decision-making processes. So, it is necessary to promote ways of committed thinking and regulating our actions based on interpersonal commitment and individual and collective responsibility. Being aware of one's own behaviour and consequence is the first step to modify attitudes and assume responsibility. It can be understood as preparatory to an ethical relationship with all of society and nature (Plotica 2019).

Environmental awareness develops feelings and respect beyond the environmental scope and in some way should allow a wider sustainable development with social, political, economic and cultural implications. Citizen participation is much more than simply throwing your vote into the ballot box. In an active community with a high level of commitment, there are other options for public participation and political influence (e.g. through public institutions and other organisations) with the ultimate final goal of producing change in society. Environmental Citizens should properly use the consultation and discussion mechanisms that enable them to take part in the decision-making processes. Effective participation in decision-making is a key tool for addressing the problems that society currently faces (Löwy 2006). Moreover, it has been shown that participation provides opportunities for learning and practising environmental responsibility (Heras 2007).

Education for Environmental Citizenship includes actions in the private and public spheres as well as organisational behaviour. According to Stern (2000), environmentally relevant private sphere behaviours have a direct impact on the environment and actions, including consumer choices (sustainable consumption) such as buying organic products, avoiding purchases from companies harming the environment,

saving energy in the household, responsible waste disposal (non-littering, recycling) and transport, travel behaviour and the maintenance of household equipment. Public sphere behaviours, according to Stern, influence the environment rather indirectly through politics and policies which makes their impacts crucial. He assigns these behaviours to a continuum, ranging from more passive actions such as willingness to pay environmental taxes and passive policy support to more active behaviours such as voting, making a donation or being member of an environmental association. More activist forms, such as campaigning and lobbying, making links with decision-makers, taking part in a demonstrations, attending meetings and providing support by being there, voluntarism, taking part in decision-making and being involved in local politics, are also behaviours.

In addition, people also exert substantial influences via their actions as members, employees or representatives of organisations. For example, students can join green campus initiatives, and employees in a company can develop and enact 'green' processes in their company, including the purchase of environmentally responsible products. Being a good Environmental Citizen in the private sphere can move others to take the same path, but individual action should not displace or replace political, organisational and/or institutional ones (Plotica 2019).

10.4 Competencies That Need to Be Promoted by Education for Environmental Citizenship

The European reference framework on key competences for lifelong learning (EU 2006) proposed that young people should be helped in developing social and civic competences, defined in terms of knowledge, skills and attitudes, during their school education. The European framework also demands greater opportunities for students to actively participate in, for example, school-based activities with employers, youth groups, cultural activities and civil society organisations (De Coster et al. 2012).

An Environmental Citizen should have a knowledge of basic democratic concepts including an understanding of society and social and political movements and major social developments, both past and present. This citizen also requires critical thinking and communication skills and the willingness to participate constructively in the public domain. The sense of belonging to society at various levels is key for Education for Environmental Citizenship. One of the most important Education for Environmental Citizenship aims is preparing students for environmental protection engagement with repercussions at social and economic levels. Education for Environmental Citizenship needs to be efficient to ensure that students have the necessary knowledge, skills and attitudes to contribute to the development and well-being of the society in which they live.

Environmental Citizenship Education takes into consideration the main four aspects outlined in the Tbilisi Declaration (1977) but with a more contemporary

view and expands on the developed perspective under a change-oriented educational approach:

1. Knowledge: In Education for Environmental Citizenship, this includes knowledge of ecological concepts and processes that provide the foundations for understanding the human impact on ecosystems, of the interrelationships between human and natural systems, of ecosystem services, global change, links between human activities and environmental problems, environmental health and environmental action strategies.
2. Critical thinking, analytical skills and problem-solving skills: This involves abilities to critically analyse and evaluate environmental information (environmental, social and economic data), look for scientific evidence-based information and recognise, distinguish and counteract fake news.
3. Attitudes and values: Environmental awareness and sensitivity, internal locus of control, sense of environmental justice, assumption of personal environmental responsibility and averseness to 'enlightened inaction'.
4. Active participation: Putting into practice the knowledge and skills in environmental issue resolution and enhancing civic engagement aiming at environmental and social change.

It is significant that sociopolitical knowledge is addressed by Education for Environmental Citizenship alongside ecological knowledge and that citizenship skills are recognised alongside higher-order thinking skills as foundational bases of advanced sustainability-oriented environmental literacy (Goldman et al. 2013).

Four proposed Education for Environmental Citizenship competences (C1–C4) are:

• Education for Environmental Citizenship-C1: Competence for critical analysis, establishing interrelations between the social, economic and environmental aspects from local to global levels
• Education for Environmental Citizenship-C2: Competence in the sustainable use of resources and in the prevention of negative impacts on the natural and social environment
• Education for Environmental Citizenship-C3: Competence in the application of ethical principles at personal, local, national and global scales related to the values of Environmental Citizenship
• Education for Environmental Citizenship-C4: Competence for active participation in community processes enhancing environmental protection through environmental and social change

In order to reach these competences, efforts should be taken to increase the initial teacher education following recommendations to reform (or modify) the curricula to be more focused on Education for Environmental Citizenship. Special attention should be paid to introduce change in order to better prepare teachers in primary and secondary education, for instance, by establishing better educational skills on Environmental Citizenship at undergraduate and graduate courses. Education for Environmental Citizenship teachers need to be able to develop practical experiences

that are gained through school life and activities in wider society to improve the relevance of Environmental Citizen course contents for students.

The development of assessment methods for measuring progress towards the implementation of key competences, skills development and changing attitudes is crucial. Improved tools to assess social and civic competences are necessary. The creation of guidelines for evaluating student participation in school life and in wider society could be an efficient assessment strategy. Other general tools can be personal roles designated to students in the school (i.e. the water keeper), the validation of participation outside school (voluntary activities) and the objective measures of goal attainment in citizenship subjects and projects (better waste separation level).

10.5 Fostering the Idea of Sustainability Through Education for Environmental Citizenship

To resolve sustainability issues, Environmental Citizens need to face their complexity and context-dependent characteristics (Stables and Scott 2002). Sustainability is, to some extent, a vague normative concept which implies that critical thinking and mutual negotiations and discussion are required to identify, in a concrete situation, what sustainability means and what options or decisions are sustainable. Education for Environmental Citizenship needs to reconnect contemporary human societies to all other spheres of the living planet and reduce the great cognitive and emotional distance that currently separates humans from their environment, enabling people to value and respect our planetary life support system, rather than view it simply as a 'resource' to be exploited (Steffen 2019). This means that Education for Environmental Citizenship should help learners understand the complexity of social-ecological systems and identify structural causes of environmental degradation. With this in mind, Education for Environmental Citizenship broadens the perspective from local to global aspect and emphasises the interrelationships and interdependences. In addition, sustainability learning is a multilevel concept taking place at the individual level as well as on the level of social aggregates, groups, organisations and society as a whole. This corresponds with the emphasis of Education for Environmental Citizenship on the political dimension and the collective actions aimed at sustainability-oriented change. Environmental Citizens shall use their skills and competences through the involvement in local decision-making and action towards community goals, consequently achieving changes in society. The education for this purpose should therefore provide knowledge, skills and competences for real-world problem-solving processes in contexts of polycentric governance reaching from local to larger scale levels. Knowledge of the design principles for effective regulations and problem-solving as identified in research on collective action (Poteete et al. 2010; Ostrom 1998, 2009) and the knowledge of sustainability-oriented concepts such as resilience and co-management (Folke 2006; Olsson et al. 2004) are therefore as important as gaining skills through personal experiences in

such collective problem-solving processes, for example, through case studies and project-based learning. These experiences enhance the capacities of linking knowledge to action and the ability to work in teams and in different knowledge communities (Brundiers et al. 2010; van Kerkhoff and Lebel 2006).

Teachers, mentors and scientists need also to foster Environmental Citizenship and engage more effectively with other parts of society to transform it into a more sustainable society through education. Civil society needs to be in open conversation with the state (Seed 2019) to encourage policy makers to take appropriate decisions and move forwards from calls to action. Education for Environmental Citizenship should provide citizens with the necessary competences to achieve this. Political and communication skills are therefore crucial assets required by Environmental Citizens as well as environmental and sustainability-oriented knowledge, attitudes and values to motivate them to take on responsibility for action.

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