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## RESEARCH ARTICLE

### TRACING THE VALUES OF EDUCATION FOR THE SUSTAINABLE DEVELOPMENT IN SCHOOL PROJECTS: A CASE STUDY OF EVALUATION APPROACH

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#### ABSTRACT

Research object was the cultivation of values of ESD through the SPEEs in Secondary Education of Heraklion, Crete (Greece) prefecture. The values of ESD, and the followed methodology, for the cultivation of future environmentally literate citizens in the studied SPEEs constituted the Tool of Content Analysis, which applied to the projects' archival material, to meet the aims of the research, to answer the research questions. There were sought references from the application forms and the final reports of the projects to some basic values that are enshrined in the Charter of Fundamental Rights (2000) of European Union and imported by UNECE strategy for ESD (2005) and Flogaiti (2006). These values were the ecological sustainability, social justice, autonomy, responsibility and tolerance, dignity, freedom, equality, solidarity, accountability and beauty sought to SPEEs as targets to be promoted and by what methodology. As the survey revealed, the teaching of values in schools with targeted projects and special methodology is in its infancy, at their very beginning stage. In the transformation of the EE Environmental Education to the Education for the Sustainable Development, school curriculum and educational projects need, immediately reconsideration and reconstruction to cultivate the future environmentally, scientifically, digitally literate active citizens.

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## INTRODUCTION

The person receives, filters, tastes, selects and holds messages from the environment he lives in. So gradually shapes attitudes, views, opinions, beliefs, attitudes, values, personality. The views are tested in life and made attitudes. When attitudes become grounded they transformed into values. Attitudes function as expressions of human values (Pyrovetsi, 2004). The aspect is changed easily, but not the values (Rokeach, 1976). Behavior is what we do. Although it manifested as habit, however may be the result a conscious decision (Hernandez & Monroe, 2000). Environmental consciousness consists in knowledge, attitudes, behaviors, intent. Attitudes created by the family and the children surrounding and consolidated or modified by the school. Generally there is a conceptual nebula around the concepts of attitude, perception, opinion, belief. Researchers agree that attitudes are learning product. The formation of attitudes is integral part of the individual's socialization process. Attitudes learning by social norms is most effective because the norms

coming from the immediate social environment function, naturally, as social standards on a daily basis, affecting the developing of person (Koliadis, 1997). As the values are formed by a merger closely aligned attitudes, become so strong and have dominant influence in our lives, guide our actions and our thoughts (Bennett, 1984). The action in a natural environment, according to Breiting, Mayer & Mogensen (2005), allows the connection between values, emotions and rational thought. The value is an enduring belief that a particular way of behavior or a final situation of existence is personally or socially preferable than the opposite way of behavior or final situation of existence (Rokeach, 1976). He defines the concept (beliefs) as a single sentence, conscious or unconscious, that comes from what someone says or does, and could be accompanied by the words 'I believe that ...' The sum of a person's ideas about the physical and social reality is known as system of ideas. Aspect is express an opinion in a knowledge base. Belief is to express an opinion on emotional background (Rosenberg and Hovland, 1960). There have been many attempts to categorize values. A value can be characterized aesthetic, cultural, ecological, economic, educational, egocentric, law, entertainment, social. Indicative ways of approaching values are instillation, moral dilemmas, action (political, legal, persuasion, through consumption and

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eco-management), personal variables and empathy (Lithoxoidou, 2006). The Crystalbridge (2002) recognizes the following types of values in action: Political, Economic, Ecological, Religious, Ethos, Scientific, Cultural, Educational, Aesthetic, Social, Recreational, egocentric, Health, Human prosperity. The concept of personal values, the values of the society in which we live and the values of the world is of fundamental importance of education for a sustainable future. ESD has fundamental relationship with the values (Huckle, 2006) as it seeks respect to dignity and human rights and commitment to social and economic justice for all and for future generations. It seeks respect to cultural diversity and biodiversity of the earth ecosystems, to protect and restore them and the obligation to build a culture of peace and tolerance, locally and globally. ESD emphasizes in the clarification of values, the development of a collective consciousness and to undertaking of actions to change the social and environmental reality (Tilbury and Cooke, 2005). Knowledge brings attitudes but is not enough to bring immediate behavior. The environment needs immediate friendly attitudes and EE is not sufficient to provide only knowledge, required skills and competencies of active participation.

There are many factors that can contribute to environmental conscious and a new environmental ethos. SPEEs do it because they involve family, schools, the media, universities, church, local authorities, environmental organizations, scientific societies and associations, public and private entities. The school as an educational institution, in conjunction with the change of socio-political structures, can contribute significantly to shaping attitudes and environmental consciousness. SPEEs can be designed to exploit the power of social pressure to help people to change behavior. Teachers are invited to play the most significant role. Some argue that it is difficult to define changes in environmental behavior as specific goals, since perceptions of what contributes to SD are constantly changing (Zygouri, 2005).

The value analysis is philosophical. An exemplary way of values approach is empathy, to put ourselves in the position of the other, provided that there is the knowledge of the other (Lithoxoidou, 2006). Shake off the ego with altruistic motive is so increased as blessed is the person that has emotional and cognitive intelligence, hypersensitivity to stimuli and overcapacity in the perception of stimuli. In this study, inquired if the SPEEs of Heraklion, Crete (Greece) prefecture, had targets to promote the values of ESD for the culture of future environmental active citizens.

## MATERIALS AND METHODS

Research object was the cultivation of values of ESD through the SPEEs in Secondary Education of Heraklion Crete (Greece) prefecture. The purpose of this study was to investigate student's awareness, knowledge and understanding of environmental issues for sustainable development. The Research Methodology used was the Case Study with Content Analysis, Discourse Analysis (Bird *et al.*, 1999, Bell, 1997) on printed and digital archives, with data triangulation (Cohen and Manion, 1994).

As recording unit used the word and phrase. In discourse analysis, the produced content is examined for a specific purpose, and is offered the opportunity of understanding the scope, the goals and aspirations of its creator. Since there is no a close reading frame, categories are often fluid, making analysis difficult. They describe the reality, but also introduce a theoretical explanatory framework. The research sample consisted of 22 Projects with their Application Forms (AF) and Final Reports (FR) which submitted in October 2005 to the Directorate of Secondary Education of Heraklion, Crete, in the office of EE, for implementation approval (AF-B), 8 Projects submitted for financing at the Aegean University (AF-A), and 7 texts written by the teachers who participated to the SPEES, which were parts of the FRs.

To serve the research objectives was prepared a Table of 9 evaluation criteria to answer the two research questions referred to what values of ESD, and by what methodology are cultivated the values of future environmental literate citizens. The approach of the two research objects was based on bibliographic investigation in Greek and International Bibliography (Dimitropoulos, 1996; UNESCO, 2004; UNECE, 2005; University of the Aegean SPEE, 2004; Dimitriou, 2007), Flogaiti (2006). Flogaiti (2006) proposes a set of values that could promote the Education for Environment and Sustainability. These are the values of solidarity, ecological sustainability, social justice, autonomy, responsibility and tolerance. They are included to the Evaluation Tool for the environmental projects of Greek Secondary Education through the prism of Education for the Sustainable Development (Kalathaki, 2012).

Tool of Content Analysis Research Article: Growing Values and Behaviors	
A. Cultivation Method	1. Empathy
	2. Republic
B. Values of ESD	1. Solidarity-mutual
	2. Ecological Sustainability
	3. Social Justice
	4. Responsibility
	5. Autonomy
	6. Tolerance
	7. Beauty

## RESULTS AND DESCUSSION

ESD is value-centered Education, thanks to the distribution of the values and principles that support Sustainable Development (Huckle, 2006). According to the Strategy of UNECE (2005), ESD promotes common values of peoples, countries and generations, such as responsibility, solidarity, equality, mutual respect, the dependence of future and contemporary generations of the oldest and environment. As the values are intertwined in meaning and mission, it was difficult to isolate and study individually. For the answer to the research question of which values are promoted by SPEEs, were sought references to some basic values that are enshrined in the Charter of Fundamental Rights (2000) of European Union and imported by UNECE strategy for ESD (2005) and Flogaiti (2006). The values of ecological sustainability, social justice, autonomy, responsibility and tolerance, dignity, freedom, equality, solidarity, accountability and beauty sought to SPEEs as targets to be promoted and by what methodology.

Specifically, whether the values and attitudes cultivated by empathy and democracy, inasmuch Huckle (2006) considers that strong democracy allows citizens to exercise moral and social responsibility, so human rights become the way to translate ethics to politics. In the studied archival material did not find sufficient evidence to show whether and how the SPEEs designed to cultivate the promoting by ESD values. There is not clear statistical certainty that one of the axes of design and construction of SPEEs is the promotion of these values. This does not mean that SPEEs did not cultivate the above referred values at the different levels of implementation. We cannot assume that the above values are not promoted through the SPEEs, and also many others which together run across all teaching subjects in schools, are not cultivated. The certain is that the research material did not contain adequate data to drawn firm conclusions. There were no clear and explicit references, or can be derived from the context, about what values designed to be promoted in SPEEs and how well they finally promoted. A similar situation Drakonaki (2006) records in SPEEs of Secondary Education of Lasithi prefecture of Crete, where also not reported values teaching strategies, although fostering various values is superior to the categories of aims of the projects. Below are some excerpts from the SPEEs, related to the inquired values.

#### **Solidarity, mutual assistance**

Basic principle which guides the policies of the EU as part of Strategy for SD is solidarity among people, within the contemporary generation and between generations (UNECE, 2005; UN, 2015). In the FR of project A1 one student mentioned the benefits of participating in Environmental Team that "we learned ... and mutual assistance brought the students closer together and made us realize that if we are united all we can do".

#### **Ecological Viability**

In the FR of project B1 mentioned the following "The obligation to future generations to preserve the biodiversity and quality of life of the planet and elsewhere ...Understanding the multiple value of living organisms and ecosystems to humans in the past, the present and the future, the economic value of the exploitation for food, industrial, pharmaceutical, etc., moral value preservation and value of existence of species of flora and fauna and their habitats". Also in the AF of the project A7 is written the aim "To give students a positive attitude and to turn their interest to preserve and maintain the old neighborhood as a witness of historical character of the city of Heraklion".

#### **Social Justice**

In the studied projects, there were no explicit references on the promotion of social justice as an objective or as emesis consequence of educational activity. It seems that underlies and is meant in several projects, but it is not given in concrete form.

#### **Responsibility**

There have been several reports of awareness and commitment of our personal responsibilities in many environmental issues,

such as in water consumption targeting in the B7 project's AF "To understand (students) and realize their personal responsibility in waste water".

#### **Autonomy**

With regard to promoting the value of autonomy, if autonomy is based on increased self-confidence, participation in SPEEs offers autonomy through "self-confidence strengthening" as referred to the AF of B11 project.

#### **Beauty**

Cultivation of the aesthetic criterion is among the priorities of several projects. In B2 project, they had specific objective of cultivating the aesthetic criterion, thus promoting the value of beauty. Below are excerpts from AFs of some projects that reveal how they are designed in order to be taught the beauty value. In these projects is certainly not explicitly mentioned as a prominent target but it readily apparent from the wording of other targets the choice of activities and the list of those students gained from the project. The project A7 targeted students to "Develop the aesthetic criteria and to utilize it as attitude of life in the future ... Create their close relationship to the city environment using all their senses.

Analogue reference is made to the project A1 where "The students will have the opportunity to experience, by their senses, the scents of flowers and nature, to photograph nature, ..." In the project A5 constitutes target the "sensitizing students to promote aesthetically their living space", as in project A3 which speaks about "Cultivation of aesthetic education of students by the planting and care of plants" and following "The courtyard with our interventions will become more beautiful". According to the Earth Charter (2000), respect and care of life in a sustainable community is to ensure Earth's bounty and beauty for current and future generations.

#### **Conclusion**

Teaching of values in schools with targeted projects and special methodology is in its infancy, at their very beginning stage, as the survey revealed. As environmental problems become more and more crucial and complex with the lapse of time, it is necessary to clarify the values that should encourage every school curriculum and find that methodology of cultivation of them, also the relevant teachers' training programs. The worsening financial crisis in many countries around the world makes imperative the need of redefining the EE, the ESD and generally the educational policy. In the transformation of the EE to the ESD, school curriculum and educational projects need, immediately reconsideration and reconstruction to cultivate the future environmentally, scientifically, digitally literate active citizens with cultural values. As Bioethics is an increasingly new field which follows the great scientific and technological changes of last century, school education needs to be in accordance to the immersed directions of Life Sciences. It is a field that is expanded in many scientific fields, such as medicine, biology, ecology and environment and in cultural fields, the disciplines of social sciences, philosophy, religion and literature, linked to demography, law and public policy (Callahan, 1995 in Post,

2004). As interdisciplinary field is not necessarily well served in Bioethics by a tight, specific methodology, so it needs to be open to different perspectives and methodologies. The relationship between research and educational practice, from the first steps, in Engineering Template, has affected a wide range of educational research, particularly in the USA (Janowitz, 1972; Finch, 1986). The research can contribute directly and substantially to the educational practice in various ways, on the produced knowledge and the used methodology, Results of special designed research can imply in the educational practices and to be translated into educational policies, so ESD to be more effective to students and teachers to help them change attitudes and shape values and behaviors through adequately tailored educational and training programs. In this way, with continuous feedback, schools will serve the objectives of UNESCO and the European Union towards a sustainable future cultivating environmental literate active citizens.

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