Evaluation Tool for the Environmental Programs of Greek Secondary Education Through the Prism of Education for the Sustainable Development

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An evaluation tool was developed by the literature review, in order to measure the efficiency of the Greek environmental school programs, regarding the offering ESD (education for the sustainable development). By using this evaluation tool at the end of the program's design, the teacher can assess whether it satisfies the principles, objectives, and proposed methodology of ESD. This tool can also be used at the end of the materialization of the program, before writing the final report, in order to assess how sustainable it was, if the aims and goals were successful according to the UNECE (United Nations Economic Commission for Europe) Strategy. The application of the tool is an evaluative research in the archival material of a school educational program where the teacher has to perform a content analysis and use the coding systems in order to identify and quantify information, by scoring 69 criteria response of 33 research questions in four axes of a program case study. The groups of criteria were established to satisfy the goals and the expectations of the research, based on a review of the relevant national and international literature. The tool refers to the content, the aims, the goals for the cultivation of the environmentally literate citizen, the methodology, and the evaluation of an ESDP (Program of Education for the Sustainable Development).

Keywords: educational evaluation, evaluation tool, programs of the education for the sustainable development

Introduction

The purpose of the ESD (education for the sustainable development) is to create citizens who will respect rules, who will be able to change attitudes towards the environment, and who will participate actively in social change based on the values of democracy, despite the complexity and uncertainty of situations and cases (UNECE (United Nations Economic Commission for Europe), 2005; Mogensen & Mayer, 2005). Participants in the international debate of the IUCN (International Union for the Conservation of the Nature) made a wide range of suggestions for what is required in the implementation of an ESDP (Program of Education for the Sustainable Development) at a unique or at a national level (Hesselink, Kempen, & Wals, 2000). The main requirement is that the inspirers of the program to be guided by the idea of changing and introducing the concept of SD (sustainable development). The management to support innovation, clarity of purpose, early investment in feedback, variety of acts, and guidelines as well as the realistic planning form must be the basics

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of the structure. In terms of learning, a high degree of consciousness of teachers, is required along with the best theoretical background on how to apply the ESD, improvement of imagination in pedagogy, training to develop key skills, and mostly deeper understanding of SD. ESD is rather a process of social learning in which teachers and learners should actively participate (Huckle, 2009). In terms of communication, there is a need to drop the walls around everyone and seek further for new partners, with respect and consent, to manage the communication and sharing of knowledge (Hesselink et al., 2000).

Law 1566 of 1985, in the Chapter III/Article 5 for the purpose of high school, rules that "the high school helps students widen the system of values (moral, religious, ethnic, humanitarian, and others) to regulate their behaviors in accordance with the requirements of it, to control and direct their emotional world in creative goals and humanitarian actions". During the last decade in Greece, the importance of designing of PEE (Environmental Education Program) in sustainable basis has been recognized (Lekkas, Kolokithas, Kazantzi, Kaila, & Gardikis, 2005; Spiropoulou, 2005; Flogaiti, 2006; Skoullos, 2007). The GME (Greek Ministry of Education) established, by the circular (GME106553/Γ7/13.10.2006), the new framework for the implementation of school PEE under the title of "environmental actions of life-education for sustainability", by using the guidelines of the international and European organizations of ESD.

The aim of this study was to collect and classify the characteristics of a PEE that can efficiently educate students on issues related to the environment, preparing them as future scientists and as citizens, to be able to make the right choices for quality in their lives with less damage of the planet. A secondary aim was to prepare a convenient tool for the investigation of sufficiency of the environmental programs that are materialized in the Greek schools of secondary education. The designed evaluation tool is a tool for content analysis of the archival material of a PEE, consisting of 70 criteria-indicators, based on the literature review. These criteria assess the ability of a PEE to promote the principles, objectives, and methodology of ESD, in the phase of design and implementation. This tool offers, also, an effective management framework measuring the materialized program's efficiency, understanding the school culture, and need of improving the quality of the teaching-learning procedures, to measure education for, rather than, education about SD (Huckle, 2009).

Methodology

The heart of this study was the construction of a tool for the evaluation of a school PEE, in the frame of ESD, as it has been defined by the UNECE and the EU (European Union). The tool can be used at the beginning of a school environmental program, immediately after the design, to assess how sustainable it was in designing (input), whether it satisfies the principles, objectives, and proposed methodology of ESD. Also, it can be used, at the end of the materialization of the program, before writing the final report, in order to assess if the aims and goals were successful according to the UNECE Strategy and finally how effective it was (output). As Tilbury, Janousek, and Denby (2007) mentioned, practitioners often develop indicators to meet the SMART conditions; that is, indicators which are S (specific), M (measurable), A (attainable), R (realistic), and T (time-bound). The construction of the tool is based, mainly, on the UNECE strategy for ESD (UNECE, 2005), the renewed and reformed strategy of the EU for the ESD (EU, 2006) and the commands of the UN decade of ESD (UN (United Nation), 2002). The suggested criteria for the ESDPs by Mogensen and Mayer (2005) were also taken into account. Significant elements were obtained from the GME circulars, proposals of the Greek Pedagogic Institute, educational materials produced by the University of Aegean, needs for PEE, training material for the ESD, prepared by National Metsovio Polytechnic University, and the Strategic for ESD in

Britain, as stated in the consultation document of DfES (the Department of Education and Skills) (DfES, 2006).

In the developed literature review, the various categories/axes and subjects were not defined beforehand, because in qualitative analysis, the classification system is adopted, developed, and changed as advancing and evolving data analysis and information, resulting, in the coding of data, needs to be repeated from the beginning, and every time meanings and new categories are emerging. The criteria of the evaluation tool were corresponded to the dimensions of the specific items' assessment and related to features and specifications attributed to the objects of the research, in accordance with the general scope of the educational evaluation (Dimitropoulos, 1999). Guidelines for the elaboration of criteria were delineated by the objects and research questions in the subject areas. The groups of criteria were established to satisfy the goals and the expectations of the research, based on a review of the relevant national and international literature. The research ambition became the determination of objective criteria for evaluating a PEE, that whoever evaluator in the future will use, he will be led to the same conclusions.

Results and Discussion

The concept of sustainability has an excellent educational component, because the preservation of the environment depends on ecological awareness, which depends on education. If we want to discover where exactly schools have been unsustainable, we can trace every action taken and compare these data with the principles of sustainability (Gadotti, 2010). All programs of ESD see monitoring and evaluation as critical to inform development and critical to program effectiveness in Australia. Many programs provide tools or incentives for teachers and schools to review and reflect upon their progress (Henderson & Tilbury, 2004). Savelava, Savelau, and Bakhnova (2010) suggested that, in order to be successful in realising the principles of ESD, a school project should meet several important criteria, such as inclusive of various groups of society, based on international cooperation, establish long-term partnerships among the project participants, strengthen youth participation in decision-making processes, demonstrate students' ability to make a difference, and contribute to the solution of relevant problems in their communities.

Specifying the Research Criteria

The main thematic areas of the tool that come out from the current literature review are: the content, the aims, the goals for the cultivation of the environmentally literate citizen, the methodology, and the evaluation of an ESDP (see Table 1). Research objects, questions, and criteria, contained in each subject area of the evaluation tool, set out in Table 1. This table illustrates 69 criteria response of 33 research questions in 17 research objects of four axes of investigation which can be carried out in a school ESDP.

Content of the ESD. Many initiatives have undertaken by many countries in order to improve the environmental management practices of schools and universities, to protect biodiversity and natural resources in small rural communities, to change the consumer choices of shoppers, to reduce the environmental impact of businesses, to reduce ecological footprints and vulnerability to climate change, the adoption of environment-friendly technologies from government (Tillbury, 2011). An ESDP should promote the ecologic, economic, social, cultural axes of sustainability, and also the personal choice of subject matter, designed on the dimensions of ESD, as mother caring of the environment, developing anti-consumption pattern, and promoting traditional lifestyle, global dimension of local issues and has connections with the everyday life, current issues, explicates the experiences and the interests of the students. Opportunities to learn and experience provided by

public and private organizations are considered, crucial learning factors for young generation embrace practical knowledge and education, as they could learn from real-life experiences (Rungrojngarmcharoen, 2013).

Table 1

Evaluation Tool for School Environmental Programs in the Frame of ESD

Axes of investigation	Analysis of the axes of investigation		Evaluation criteria
	Research objects	Research questions	
I. Content of the ESDP	A. Selected subject /content	a. Reasons of choice of subject matter	1. Connections with everyday life/current issues
			2. Exploitation experiences/interests of students
		b. Ways of choice of subject matter	1. With discussion inside the environmental team/by the teacher
	B. Topics	a. Principles of ESD according to UNECE	1. Mother caring of the environment
			2. Developing anti-consumption pattern
			3. Promotion traditional lifestyle
			4. Global dimension of local issues
		b. Dimensions of sustainability	1. Ecologic
			2. Economic
			3. Social
			4. Cultural
			5. Personal
II. Aims & goals of the ESDP for the creation of environmental literate citizen	A. Culture of knowledge	a. Ecology	1. Biotic, a-biotic factors of natural ecosystems
			2. Relations between ecosystem factors, operating mechanisms
		b. Sustainable development	1. Social relations and mechanisms
	B. Culture of values and behaviors	a. Way of culturing	1. Empathy
			2. Democracy
		b. Type of values	1. Solidarity
			2. Ecological sustainability
			3. Social justice
			4. Accountability
			5. Autonomy
			6. Tolerance
			7. Beauty
	C. Cultivation of skills	a. Problem-solving	1. Understanding constituent of the problem
			2. Formulating proposals/alternative solutions
			3. Decision-making
		b. Communication	1. Update of school community
			2. Update of the local community
			3. Interviews, use of media
			4. Participation/organization of conferences, round tables
			5. Negotiation and conciliation
		c. Partnership	1. School partnerships and networks
			2. Student councils
		d. Cooperation	1. With students and teachers
			2. With partners (agencies, parents, scientists, local community, etc.)
		e. Critical/creative thinking	1. Analysis, synthesis, and evaluation
			2. Analysis, synthesis, and imagination

(Table 1 to be continued)

	C. Cultivation of skills	f. Social action-active citizen for social intervention	1. Political character
			2. Eco-management
			3. Action plan in accordance to local Agenda 21
	D. Lifelong learning	a. Foundation of capabilities of lifelong learning	1. Intergenerational co-operation with agencies, local organizations, parents, and community
III. Methodology of ESDP	A. Connection with	a. School curriculum	1. In courses
			2. Flexible zone
			3. Research essays (projects)
	B. Educational approaches	a. Didactic approaches	1. Interdisciplinary/multidisciplinary/holistic/critical pedagogy
	C. Educational strategies	a. Teamwork	1. Assigning responsibilities/roles allocation
			2. Initiatives (self-motivated)
		b. Solitary work	1. Personal use of computer
	D. Educational methods	α. Project	1. Project
		b. Didactic research	1. Collection, data interpretation, perspectives of things, and export/conclusions presentation
	E. Educational techniques	a. Innovative techniques	1. Concept map, drama, debate, discussion, moral dilemma, brainstorming, lecture, etc.
	F. Educational activities	a. In classroom	1. Experiment, constructions, use of school library, PC, laboratories, etc.
		b. Use of ITCs	1. Internet, fax, SMS, emails, Websites, Web-services, software, libraries, audiovisual, etc.
		c. On field	1. Measurements, observations, recordings, etc.
			2. Educational visits to environmental centers, museums, areas of ecological, archaeological, cultural, etc.
	G. Details of program design	a. Organization of activities	1. Calendar, task protocol, etc. 2. Phases of implementation 3. Activities timetable
		b. Economic management	1. Budget
		c. Participation in program design	1. Jointed (students and teachers) targeting and building of the program
	H. Rewarding students	a. Moral reward	1. Oral reward/commemorative material
IV. Evaluation of ESDP	A. Internal evaluation	a. Subjects of evaluation	1. Aims/procedures/results
			2. Relations within and outside the teams
			3. Likes and dislikes
			4. Support received/obstacles encountered
		b. Self-evaluation	1. Meta-cognition
	B. External evaluation	a. Final evaluation	1. Outcome/process/goal
	C. Development indicators/criteria	a. Formulating of application form b. Writing of final report	1. Improvement in case of recurrence of the program

Aims and goals of the ESDP for the cultivation of the environmentally literate citizen. The educational goals of ESDPs must refer to knowledge, understanding, attitudes, skill and ability development, values, and attitudes cultivation of students. Particular reference should be made in capacity building, evaluation, and participatory action (UNECE, 2005). The purpose of ESDPs is to clarify values, to develop collective consciousness, to take action to change the social and environmental reality, to shift from nature to society, and to act responsibly for removing the root causes of the phenomena rather than informing the causes

or policies of protection (Skoullos, 2007). Environmental education must be implemented locally, so that it is meaningful and relevant to our diverse communities, but it is also critical for people to see themselves as citizens of one earth, our common home, and to advocate for policies and practices at all levels that respect and care for the whole community of life and for the future generations (ATST (Acting Today, Shaping Tomorrow), 2007; Clugston, 2011; CEEP (Colorado Environmental Education Plan), 2012). Values are generally considered to be intangible, and therefore, unable to be weighted, measured, or counted directly. However, behaviour and practices connected to values can be observed and measured (Handy, 1970). The assessment framework of NAAEE (North American Association for Environmental Education) defines four interrelated components of environmental literacy-knowledge, dispositions, competencies, and environmentally responsible behaviour (Paden, 2012).

Methodology of ESD. The reorientation of education was seen as a core goal of many countries, as the need to align education systems and practices to SD. It is recognised as a priority by the DESD (Decade of ESD) (UNESCO (United Nations Educational, Scientific and Cultural Organization), 2004). This consists of the adoption of new ways of thinking about teaching and learning, the active engagement of the learner in an exploratory learning process, changing education policy and curricula, changing the professional development of facilitators and the education of teachers and creating opportunities to extend understanding of, and engagement with, SD (Tillbury, 2011). Incorporating ESD into existing curriculum enriched the curriculum content and strengthened the links between curriculum and society by enhancing students' overall values, scientific knowledge, learning ability, and healthy lifestyles (Henderson & Tilbury, 2004; Qiaoling, 2011). Issues addressed by the ESD can be approached interdisciplinary and holistically, because it comprehensively examines the phenomena, facilitates learning, contributes to quality upgrading, gives the objective of transferring knowledge, and expertises with systemic approach (UNESCO, 1997). Systemic thinking encourages understanding and managing situations marked by complexity by supporting integrative and adaptive processes of thinking and practice, seeking to "join-up" thinking across disciplines, sectors and different social, environmental and economic and educational systems. In essence, systemic thinking is about "seeing the big picture" (Tillbury, 2011). Financial support, rewarding, accreditation, and certification offer to schools recognition and accolades for their efforts and achievements in ESD, attract and commit schools to the ESD (Henderson & Tilbury, 2004).

Evaluation that is used in an ESDP. Learning and assessment need to be at individual, organizational, and social levels. The danger is that EFA (education for all) is just seen at the individual level. ESD's wide remit can make focussing on assessment very difficult (Wade & Parker, 2008). Establishing monitoring and evaluation mechanisms do not seem to be a priority for many school ESDPs. Outcome indicators developed to provide information on the possible impact due to the implementation of the UNDESD strategy in Australian schools, in particular its qualitative aspect in terms of values, attitudes, and choices in favour of SD, such as learning outcomes from partnerships, community-based projects, and business involvement (Tilbury et al., 2007). Environment-schools incorporated a questionnaire for schools and 2.5 days reflection meeting at the end of the school year (Henderson & Tilbury, 2004). Both methods aimed to address and reflect upon the environment-schools guiding principles and the four key areas of school life by examining the positive changes, obstacles, and ideas for improving the program. The values, collected from case study research, which were identified from the data as significant for the CSOs (Civil Society Organisations) and confirmed from further analysis, were unity in diversity, trust/trustworthiness, justice, empowerment, integrity, and care/respect

(Podger et al., 2010).

The Scoring of Criteria

The developed criteria are qualitative, they have descriptive form in formulation and presentation of the results. The results of their judgment can be expressed in quantitative terms through frequencies, graphs, and signs on numerical rating scales, etc..

The application of the tool to a PEE is an evaluative research. At the end of the program, the teacher carries out a content analysis in the archival material that was collected during the program materialization. This research is a systematic analysis of documents, by using coding systems, in order to identify and quantify information. Indicated research method is the case study with content analysis—literature analysis (Bell, 1997; Iosifidis, 2003). The process of analyzing and interpreting of data is based on a consistent and correct axial coding of responses in the five-point Likert scale, after structuring, classification, and sorting of data. Data are analyzed both quantitatively and qualitatively with emphasis in qualitative approach. Data are grouped, coded, categorized, and ordered to follow descriptive analysis by research question and criterion. The rating criteria are registered into special databases of Excel or other statistical packages which are created specifically to serve the needs of research, as research data quantified by grating criteria. Thus, the approach is quantitative with many qualitative characteristics. The criteria range from quantitative to qualitative and differ in their means or source of verification and timeframe.

The scoring of the tool criteria is based on any elements that can contribute to the satisfaction of them, coming from the program archives. In the archive of each program, it is possible not to have recorded details of what happened. Thus, a low score means that no evidence was found to suggest that weight was given in the investigated area, and not necessarily, that implementation was imperfect. Each criterion is scored on a five-point scale of 0-4, as follows:

The scale of 0 point: No evidence to satisfy the criterion; 1 point: With significant deficiencies to satisfy the criterion. Educational activities were limited and developed at a low grade. The design was far from the principles and axes of ESD; 2 point: This criterion is satisfied modestly. The design was relatively detailed and implementation was relatively attentive. There is a distance from the principles and axes of ESD; 3 point: The level of satisfaction of the criterion was high. The design was more comprehensive and the implementation was more effective. The principles and axes of ESD were promoted satisfactorily; and 4 point: The design and implementation of the program reached the highest level. The educational activities are deemed adequate, relevant, and effective. The program was designed along the lines of SD and significantly promoted the principles of ESD.

Analogue scale was used for the sub-indices that developed for assessing the state of the UNECE strategy for ESD by the team of experts (UNECE, 2006). Scale of four points for indices (criteria) of a content analysis tool was used by Kastani (2005) to measure the presence or absence of a feature in eight thematic categories of environmental programs.

Conclusions

Taking into account the worldwide attempts of establishing criteria—indicators of the quality of educational programs, the evaluation criteria for ESDPs, designed to assess the promoting changes in country's ESD policies, programs, and actions, as well as the results of their implementation. A school educational

program that is designed in the frame of ESD must have the ecologic, economic, social, and cultural dimensions of sustainability, should have connections with the everyday life, current issues, and exploitate the experiences and the interests of the students. The educational goals of ESDPs must refer to knowledge, understanding, attitudes, skills and ability development, student values, and attitudes cultivation. These programs demand new ways of thinking about teaching and learning, the active engagement of the learner in an exploratory learning process. Learning evaluation of the ESDPs becomes at individual, organizational, and social levels.

References

ATST (Acting Today, Shaping Tomorrow) (2007). *Acting today, shaping tomorrow: A policy framework for environmental education in Ontario schools*. Retrieved December 20, 2012, from http://www.edu.gov.on.ca

Bell, J. (1997). *Methodological design of pedagogic and social research* (p. 31). Athens: Gutenberg Publications.

CEEP (Colorado Environmental Education Plan). (2012) *Colorado environmental education plan 2012: A roadmap to develop graduates with the skills and understanding of the outdoor environment*. Denver: Colorado Department of Education.

Clugston, R. (2011). Ethical framework for a sustainable world: Earth charter plus 10 conferences and follow up. *Journal of Education for Sustainable Development, 5*, 173. Retrieved January 7, 2013, from http://jsd.sagepub.com/content/5/2/173

DfES (The Department of Education and Skills). (2006). *Sustainable schools for pupils, communities and the environment—Government response to the consultation on the sustainable schools strategy*. Retrieved from http://publications.teachernet.gov.uk/default.aspx?PageFunction=productdetails&PageMode=publications&ProductId=DFES -04294-2006

Dimitropoulos, E. (1999). *Evaluation of the education and the educational output*. Athens: Grigoris Publications.

EU (European Union) (2006). *Revision of the EU strategy for the sustainable development*. Brussels: European Council. Retrieved July 14, 2007, from http://ec.europa.eu/sustainable/docs/renewed_eu_sds_el.pdf

Flogaiti, E. (2006). *Education for the environment and the sustainability* (2nd ed.). Athens: Greek Letters Publications.

Gadotti, M. (2010). Reorienting education practices towards sustainability. *Journal of Education for Sustainable Development, 4*, 203. Retrieved August 1, 2013, from http://jsd.sagepub.com/content/4/2/203

GME106553/Γ7/13.10.2006. (2006). Circular with the subject of the frame for the education for sustainability and the school activities of environmental education (Health Education, Greek Ministry of Education, Athens).

Handy, R. (1970). *The measurement of values*. St. Louis, M. O.: Warren H. Green.

Henderson, K., & Tilbury, D. (2004). Whole-school approaches to sustainability: An international review of sustainable school programs. *Report Prepared by the Australian Research Institute in Education for Sustainability (ARIES) for the Department of the Environment and Heritage*, Australian Government, ISBN1864089792.

Hesselink, F., Kempen, P., & Wals, A. (Eds.). (2000). ES debate: International debate on education for sustainable development. *Commission on Education and Communication of IUCN—The World Conservation Union*. Switzerland: IUCN Publications Services Unit.

Huckle, J. (2009, February). Consulting the UK-ESD community on an ESD indicator to recommend to Government: An insight into the micro-politics of ESD. *Environmental Education Research, 15*(1), 1-16. Retrieved January 6, 2013, from http://john. huckle.org.uk/download/2937/EER2009.doc

Iosifidis, Th. (2003). *Analysis of qualitative data in social sciences*. Athens: Kritiki Publications.

Kastani, K. (2005, September 23-25). Presentation of a methodological instrument for the Content Analysis of Environmental Projects. Paper presented at *1st Congress of School Environmental Programs*, Korinthia.

Lekkas, Th., Kolokithas, G., Kazantzi, A., Kaila, M., & Gardikis, D. (2005, September 23-25). School environmental programs: Presentation of the implementation of the national program in school years 2002-2003 & 2003-2004. Paper presented at *1st Congress of School Environmental Programs*, Korinthia.

Mogensen, F., & Mayer, M. (Eds.). (2005). *Eco-schools: Trends and divergences, school development through environmental education (SEED)*. Austria: Austrian Federal Ministry of Education, Science and Culture.

Paden, M. (2012). NAAEE releases framework for assessing environmental literacy: Being used in 2015 OECD assessment. *Journal of Education for Sustainable Development*, *6*, 17. Retrieved January 7, 2013, from http://jsd.sagepub.com/ content/6/1/17

Podger, D., Piggot, G., Zahradnik, M., Janousková, S., Velasco, I., Hak, T., Dahl, A., Jimenez, A., & Harde, M. K. (2010). The earth charter and the ESDinds initiative: Developing indicators and assessment, tools for civil society organisations to examine the values dimensions of sustainability projects. *Journal of Education for Sustainable Development, 4*, 297. Retrieved July 1, 2012, from http://jsd.sagepub.com/content/4/2/297

Qiaoling, W. (2011). Characteristics of ESD-promoting strategies in china's basic education. *Journal of Education for Sustainable Development, 5*, 215. Retrieved July 1, 2013, from http://jsd.sagepub.com/content/5/2/215

Rungrojngarmcharoen, K. (2013). A theoretical synthesis of knowledge sharing and educational leadership for sustaining learning communities. *US-China Education Review A, 3*(2), 133-139.

Savelava, S., Savelau D., & Bakhnova, C. M. (2010). Practicing ESD at school: Integration of formal and non-formal education methods based on the earth charter (Belarusian experience). *Journal of Education for Sustainable Development, 4*(2), 259-269. Retrieved December 28, 2012, from http://jsd.sagepub.com/content/4/2/259

Skoullos, M. (2007, November 9-11). Evolution of environmental education to the education for the sustainable development. Paper presented at *Similarities and Differences, 3rd Panellenic Congress of PEEKPE on Education for the Sustainable Development: Society, Economy, Environment, and Culture*, Athens.

Spiropoulou, D. (2005). Exploring data and making proposals for the promotion of the environmental education in schools of secondary education. *Journal for the Environmental Education, 34*, 16-20.

Tillbury, D., Janousek, S., & Denby, L. (2007). Monitoring and assessing progress during the UNDESD in the Asia-Pacific region: A quick guide to develop national ESD indicators. *Bangkok, Thailand: UNESCO Asia and Pacific Regional Bureau for Education*, ISBN 92-9223-115-4 (Print version), ISBN 92-9223-133-2 (Electronic version). Retrieved January 6, 2013, from http://unesdoc.unesco.org/images/0015/001553/155304e.pdf

Tillbury, D. (2011). *Education for sustainable development: An expert review of processes and learning*. Paris: Unesco. Retrieved January 6, 2013, from http://unesdoc.unesco.org/images/0019/001914/191442e.pdf

UN (United Nation). (2002). *Decade of education for sustainable development-world summit on sustainable development: Plan of implementation*. The Global Development Research Centre (GDRC). Retrieved February 2, 2008, from http://www.gdrc.org /sustdev/un-desd/intro_un-desd.html

UNECE (United Nations Economic Commission for Europe). (2005, March 17-18). Strategy of UNECE for the education for the sustainable development. Paper presented at *High Level Meeting of Ministers of Environment and Education*, Vilnius.

UNECE (United Nations Economic Commission for Europe). (2006, May 10-12). *Expert group on indicators for education for sustainable development, fourth meeting*, The Hague (The Netherlands). Retrieved February 7, 2008, from http://www.unece. org/env/esd/inf.meeting.docs/EGonInd/Guidance.for.reporting.final.e.pdf

UNESCO (United Nations Educational, Scientific and Cultural Organization). (1997). *Declaration of the international conference in Thesaloniki, proposals for the sustainability, international conference on environment and society: Education and awareness of citizens for the sustainability*, organized by UNESCO and the Greek Government. Retrieved June 14, 2007, from http://www.ekke.gr/estia/Unesco/results.htm

UNESCO (United Nations Educational, Scientific and Cultural Organization). (2004, July 15-16). Draft UNECE strategy for education for sustainable development, addendum, background economic and social council economic commission for Europe committee on environmental policy. Paper presented at *2nd Regional Meeting on Education for Sustainable Development*, Rome.

Wade, R., & Parker, J. (2008). *EFA-ESD dialogue: Educating for a sustainable world*. UNESCO, Paris. Retrieved January 6, 2013, from http://unesdoc.unesco.org/images/0017/001780/178044e.pdf