

 <p>ISSN NO. 2320-5407</p>	<p>Journal Homepage: - www.journalijar.com</p> <h2>INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)</h2> <p>Article DOI:10.21474/IJAR01/2777 DOI URL: http://dx.doi.org/10.21474/IJAR01/2777</p>	 <p>INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR) ISSN 2320-5407 Journal homepage: http://www.journalijar.com Journal DOI:10.21474/IJAR01</p>
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RESEARCH ARTICLE

EDUCATING ENVIRONMENTAL LITERATE CITIZENS IN ASTRITSI GORGE: A NARRATIVE REFLECTION.

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Manuscript Info

Manuscript History

Received: 15 November 2016
Final Accepted: 17 December 2016
Published: January 2017

Abstract

For more than ten years, Astritsi gorge constituted a very useful learning environment for the interdisciplinary approach of many cognitive objects taught in Meleses Lyceum, in the projects of the Environmental Education. It offered ample opportunities and possibilities to activate, in collaboration, many teachers, students, scientists, authorities, bodies, etc. and promote the principles and values of Environmental Education and Education for the Sustainable Development. This paper (consists of) is a narrative reflection of the two teachers who developed many educational activities in Astritsigorge, carrying out many school environmental projects following the UNESCO decade of Education for the Sustainable Development.

The purpose of the research was to present, in a summarized way, the extracting data from the collected archival material in a review study for teachers who materialize projects of Environmental Education in Secondary Education. The archival material of the applied projects studied, through a reflection point of view, the goals which have been explicitly expressed or implied, on the thematic subjects, the criteria of the issue selection, the purposes and objectives, the educational methodology, the educational activities, actions and interventions inside and outside the school and gorge, reflections and evaluation, recommendations and dissemination of the projects' results with impact on the local society.

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Introduction:-

The term "Sustainability" etymologically derives from the 'eternal' and 'bring' with the meaning that 'will bring forever', dealing with the exploitation of natural resources in ways that ensure their existence in the future as they exist today. The Sustainable Development (SD) is the development done with eyes on the future, trying to meet the needs of the present generation without compromising the effort of future generations to meet their own needs, as first reported by world Commission on Environment and Development (Brundtland Commission, 1987). Brundtland Commission's report considers ways and means by which the international community can deal more effectively with environment concerns and define shared perceptions of long-term environmental issues and appropriate efforts

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needed to deal successfully with the problems of protecting and enhancing the environment, a long term agenda for action during the coming decades and aspirational goals for the world community.

The main purpose of the ESD is to create Active Citizens (2014: thematic year of the UNESCO Decade for ESD). The profile of critical thinking, active citizen, as it is constructed through UNESCO documents for ESD, has two main characteristics, the participation and the action (Ziaka et al, 2000; UNESCO, 2005). The active citizen must have the ability of systematic and comprehensive consideration of social, economic, cultural, political components of a problem. ESD is political, and the political literacy is an essential core developed on five main axes of the public debate (Flogaiti, 2006): the resources and production, the distribution and redistribution, the power and decision making, the social organization, the culture and ideology. To promote ESD, each institution needs to have a shaped shared vision, broad-based, fully harmonized with the spirit and the social ethical values (Scott, 2007). The cultivation of Active Citizenship through ESD Projects (ESDPs) guides to the culture of active, creative, critical, global citizen, the citizen with democratic accountability and individual responsibility, who is able to combine theoretical knowledge with innovative ideas and practices, to develop initiatives, manage risks and overcome obstacles (Hernandez & Monroe, 2000; Huckle, 2006). Creating environmentally literate citizens requires a different culture, reorientation of the school education, which starts in school years and continues into adulthood, which introduces students, from a very early age, to/ into issues related to the care of the local, national and global environment, the sense of responsibility, the perception of daily life and capacity for intervention and change for better quality of life without harmful consequences for the Earth (Scott & Gough, 2003; Huckle, 2006). By ensuring the active participation of all relevant stakeholders and drawing on best practices and models with exploring new mechanisms to promote transparency and the effective engagement of civil society, guaranteed the way forward to SD (Rio+20, 2012).

The General Secretariat for Youth of Greek Ministry of Education, Lifelong learning and Religion developed a students' initiatives support Program "Inside, outside and on the same: Students in Action" of (Youth, 2012) which had the purpose to support actions and initiatives organized on the basis of volunteerism for secondary school students. Its purpose was to promote the collaboration between of students, teachers, local authorities and bodies, in the broader context of the curriculum and school activities, under the supervision of School Councils and local Councils of School Community. The program 'Youth' (2012) started (was initiated) in response to the experience of the European Year of Volunteering in order to mark and to actively promote the importance of volunteering of young people, from adolescence, giving added value to schools and local communities. The areas of the program concerned the environment, health, social assistance, innovation and entrepreneurship. In any educational process, the progress in the acquisition of knowledge and skills related to SD and global citizenship, needs to be monitored, even if it is not linked to changes in attitudes and behaviors (UNESCO, 2015).

Meleses Lyceum and Gymnasium participated in this Program with activities concerning (the areas of) environment and entrepreneurship. The tourist development of the area is of particular interest to locals, as the place is ideal for leisure and walks and the gorge is already used for summer cultural events. Astritsi Gorge has a total length of 3 km. It is about 300m from the village center. It is situated 8 km northeast of Meleses village where the school is located, and 25 km south of Heraklion, the capital of Crete, in the inland. The gorge has with its dense and lush vegetation and is crossed by the river Triton which is a tributary of Karteros, the river passing running close to Knossos and flows/ends into the Cretan Pelagos of Mediterranean Sea, in Karteros position. Alongside, it is crossed by narrow road with asphalt, associated with rural roads and paths. Many SPEEs, eight in number, were implemented in Astritsi gorge during the school years 2002-2013, some of them funded by national economic resources, but most of the times it was the teachers, students, parents and local authorities involved who supported the projects. The last SPEE, with the title "A Pathway from past to present and future in the natural and cultural heritage of Astritsi gorge" carried out by the Meleses Lyceum of Heraklion prefecture, in collaboration with the Meleses Gymnasium, during the school year 2012-2013, funded by the Youth (2012) Program, and summarized all the previous experience in EE applied in Meleses Lyceum. For more than ten years, Astritsi gorge constituted a very useful learning environment for the interdisciplinary approach of many cognitive objects taught in Lyceum. It offered ample opportunities and possibilities to activate, to many teachers, students, scientists, authorities, bodies, etc. to collaborate and promote the principles and values of EE and ESD through the school General Education. The educational purpose of all SPEEs was that students get acquainted with the synthesis of bio-communities of Astritsi ecosystem and ways of management and protection that have been already successfully implemented in Crete and elsewhere, enabling them to understand the need of the environmental care and the ecological sustainability.

This paper is a narrative reflection of the two teachers who developed many educational activities in Astritsi Gorge, carrying out eight school environmental projects during the UNESCO Decade of the Education for the Sustainable Development (UNESCO, 2005). It is based on the aims of the materialized SPEEs and derives as reflection on a long term educational design to incorporate in the teaching courses the EE and ESD, following the national and international upgrades.

Research Method:-

Eight SPEEs, with many educational activities mentioned below, were carried out in Astritsi gorge from 2002 to 2013. Parentheses contain the numbers and dates on which these educational projects have been entered in the Register by the Teachers' Association of Meleses Lyceum & the School Activities Commission of Heraklion Secondary Education. 1. "The forests, water sources and gorges of municipality N Kazantzakis: getting awareness and sensitization of students for their protection" (14/20.11.2001 & 7/11.21.2001). 2. "Ways of intervention of students in conservation and enhancement of the natural environment on the water sources of Kato Vrisi in the Astritsi gorge" (9/26-9-2002 & 334/21-1-2003). This program was submitted for funding to the Aegean University, EPEAEK II Program and evaluated first, nationwide, in February 2003. 3. "Sound and Nature" (11/23-10-2003 & 128/10-1-2004). 4. "The sounds of Nature will release the soul and feelings of students and will guide thinking to the beginnings of human speech". This program was also submitted for funding to Aegean University, EPEAEK II Program and evaluated first by Cretan candidates in January 2004. 5. "The sound and art in Nature" (5/14-9-2004). 6. "Forest, biodiversity and quality of life" (17/15-10-2007). It was funded by the Ministry of Education 'Callisto Program' (Circular of Greek Ministry of Education 587/28-11-2008) with the subject 'Open Environmental Classes'. 7. "Diversity, a right in life" (12/26-11-2010). 8. "Pathway from yesterday to tomorrow in the natural and cultural heritage of Astritsi gorge", in the framework of the Initiatives Support Program 'Inside, outside and on the same: Students in Action' of the General Secretariat for Youth, Greek Ministry of Education (Youth, 2012).

The purpose of the research was to present, in summarized way, the extracting data from the collecting huge archival material of the materialized SPEEs, in a review study for teachers who undertake SPEEs' implementation in Secondary Education. The researchers, focused only on the aims of the SPEEs, mainly written in the Application Forms (AFs), and with discourse analysis, extracted those references which are in accordance with the principles and objectives of EE and ESD. (By making synthesis like all the projects were only one with a unified conceptual and methodological framework, combining theory and practice, the research derived as a personal narration.)
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In the archival material of the applied projects searched the aims which had been explicitly expressed or implied, on the subjects, the educational goals, methods and activities of the SPEEs, the recommendations and dissemination of the projects' results to the local society. Following the axial coding, firstly we fixed the categories and then inserted the data. The complexity of the research questions and their mixed character, theoretical and applied, permitted the use of the sentence, and not the word, as the recording unit in the examining of the research question from the point of view of the social and critical nature of EE. All the recorded data, concerning the design and implementation of the projects coded and entered in the following thematic areas (Kalathaki, 2016). The research material was the archival material of the projects, in printed and electronic form, which examined in a semi-structured manner by making qualitative Content Analysis (Bell, 1997; Bird, 1990).

The archival material of the above projects was studied through a reflection point of view, searching for data in the aims of the AFs, combined with the memories of the researchers, to answer the research queries: a. the thematic subjects, b. the criteria of the issue selection, c. the purposes and objectives, d. the educational methodology, e. the educational activities, actions and interventions inside and outside the school and gorge, f. reflections and evaluation, g. recommendations and dissemination of the projects' results with impact on the local society.

Results and Discussion:-

The extracted data from the collected archival material is summarized in the thematic areas of the researched projects' design. Combining the past tense of the narrative and the future tense of the objectives and results, we decided that our presentation would be in the past tense, since the aims have been achieved through the many educational activities which took place in the SPEEs.

The subject of the project:-**Selection criteria of the topics:-**

The gorge and the crossing river is part of the students' lives as they are close to their villages, namely the Project subject is linked to their experience. All these years, the Municipality of N. Kazantzakis cultivated, with great sensitivity, the cultural sector and supported all educational actions developed in the gorge. What emerged through discussions with our students, was a need to upgrade the gorge with participatory interventions. "The risk of pollution and aesthetic degradation of the gorge washhigh" (P1, P2) and it still remains high, the students realized it more and more each time they visited it. "The relatively easy access of environmental groups to the gorge, due to its proximity with the school, strengthens the choice for frequent and many visits. Most Students come from neighboring villages, so it was easy to work together in the afternoons and weekends" (P2, P3, P4, P8). Lyceum students are closer to adulthood and therefore the ESDP aim to the environmentally literate active citizen, that's why the Projects' themes were selected to correspond to scientific and cultural background of students and be compatible with many subjects taught in Lyceum. SPEEs supported us with educational material and innovative ideas since the school was a member of National and European Environmental Networks for many years, eg 'Young Reporters for the Environment', 'Sound and Nature', 'Biodiversity'.

The content of the projects:-

The "Path in the great natural and cultural heritage of Astritsi gorge-from the past, the present to the future", which was the title of the last materialized SPEE, summarized all previous knowledge and experience based on the conceptual frame 'Co-responsible in the past & Co-indebted in the future', conscious of the big capital that current generations have to manage in order to inherit to their descendants. This was the topic and the title of the student Conference which took place in 2010. The educational approach was enriched with activities inside the Astritsi gorge "observation and recording of plant and zoo communities" (P2, P3, P8), "historical monuments that abound in the gorge" (P2, P3, P8), "navigation route signage" (P2, P3, P8), "cleaning interventions in the natural environment" (P2), "setting of billboards" (P2, P8), "waste bins" (P8), "localization of pollution sources and how to deal them" (P2), "promotion of Mythology with dramatization of the myth of Neraidospilios in 2003" (P2), etc. According to Vygotsky (1997), cognitive development is a process inseparable from the historical-social dimension and the cultural context in which it occurs.

Educational purpose and objectives:-**Purposes and conceptual frameworks**

The purpose of all projects that were implemented, related to the Astritsi Gorge, was the creation of the Environmentally literate Active Citizen based on the principles and values of ESD. The main objective of all actions was the initiative of the students and teachers of Meleses Lyceum, the volunteer spirit culture, the development of innovation and creativity as the basis for the enrichment and strengthening of the educational work, the promotion of critical and creative thinking of students and teachers, spearhead of the Decade of Education for Sustainable Development 2005-2014 (UNESCO, 2005). The 2009 was the European year dedicated to Innovation and Creativity. "It is the benefit of our students, their families and the local communities that we aim at through these projects, that promote public volunteering and youth creativity in entrepreneurship (P8). "We aim to become the school core of the local community, providing knowledge and experience, with two-way, through an intergenerational partnership that ensures lifelong learning in our students" (P6).

Educational Objectives:-

Cultivation of environmentally literate citizens requires reorientation of the educational process through the foundation of ESD in formal and non-formal Education by enhancing lifelong learning (Sterling, 1996; Rio+20, 2012, UNESCO, 2015). ESD is seen as a lifelong process that begins in early childhood, continuing through higher Education and adult Education, exceeding the limits of formal Education (EC, 2006). That's why the objectives of SPEEs must be harmonized with the ESD targets as set by UNESCO and the EU (UNECE, 2005; EC, 2007). Many cognitive, psychomotor, sensitive objectives are written in the AFs of the studied projects and some of them, even they are not explicitly mentioned, are derived from the educational activities which are referred in the projects' FR. The educational activities were designed "to exploit natural and cultural resources of the local community, the great heritage of students and their families, such as the Astritsi gorge" (P1, P2, P8) and "open the way to a school that seeks continuous improvement, change, conservation of biodiversity and cultural diversity" (P2, P6, P7) with new educational methods," with the development of youth entrepreneurship in the region" (P6, P8). From the educational point of view, "these actions are expected to bring added value to the existing school educational processes" (P6) and "to support the goal that students 'learn to learn', contributing to personal, social and professional development"

(P6, P8), "serving the objectives of the Lisbon Strategy and the Europe 2020 Strategy" (P6, P8, P10). Of course, a key question is the extent to which evaluation and assessment of school's performance can take into account the socio-economic and educational profile of students, thereby highlighting the school's added value. There is considerable variation across Europe in the extent to which schools have the autonomy to set their objectives, to shape their curricula, to select and remunerate their staff and to implement any changes that evaluations may show to be necessary (CEU, 2009; Chircop, 2015).

Educational Methodology:-

20-30 students of A and B classes of Lyceum, ages 15-17 year old usually participated in each research project. The students attending, the last class didn't participate due to the burden of preparation for the National Exams at the end of school year. Some actions, took place in collaboration with students of the Meleses Gymnasium situated in the same building. Two teachers, one of Greek Language and one of Biology, the co-authors of this research paper were responsible for the projects, ensuring the interdisciplinary approach through history, literature and Natural Sciences. They collaborated with many teachers with the same or different specialties, scientists and bodies for carrying out various and specified activities.

Methodological framework and techniques:-

EE and ESD are learner-centered Education programs using a wide variety of innovative methods in schools of Primary and Secondary Education. Projects' design was based on the principles of EE and ESD, as they were introduced by UNESCO declarations and European Community strategies (UNESCO, 2005; UNECE, 2005; EC, 2006, Rio+20, 2012). It was chosen, and utilized in practice, a combination of educational methods and techniques to achieve them. It combined the method of Research Essay (Method Project) with the "Problem Solving Method" (P2, P6) and "Role Play and Dramatization" (P2, P6). In all cases, bibliographic research in the school library and web, in Interdisciplinary / Multidisciplinary / Holistic approach was applied (Aegean 2004, NTUA, 2007). The method of Research Essay was implemented in all SPEEs with team and individual work in various ways. Many learning environments designed to support the SPEEs in the school science lab, in the field, in the Library, in cyberspace, with local authorities and communities (Kalathaki, 2016).

The modern labor market demands individuals who have the capacity for cooperation and communication within groups and networks. This makes the modern school imperative to cover the socialization deficit that exists in the families with a few members with the cultivation of group-cooperative spirit (Matsagouras, 2007). The collaborative nature of scientific and technological work should be supported again and again by the frequent group activity in classrooms. The paradigm is the scientists and engineers who usually work in groups and less frequently as isolated investigators (Meyer & Avery, 2001). Educational institutions that develop environmental ESD programs need "to promote social learning in the community" (P2, P6, P8) with a systemic view of the world, "to assess the environmental, experiential and exploratory learning as an instrument for effective engagement with original issues" (P6, P8).

Stages of the projects' implementation:-

A. Preparation Stage: The whole information on the collected material and data about Astritsi gorge to the following environmental teams were undertaken each subsequent year, the two accountable teachers for SPEES applying in school. The topic selection, and the project's subjects clarifying, was hypothesis of the beginning of each school year, in the discussions of the Environmental and Pedagogic Teams.

B. Implementation Stage: Work in the school and the field took place inside the classrooms, school library and Science laboratory, with visits to places of high scientific and cultural interest, carrying out measurements of physico-chemical parameters (P2), observation and recording of organizations and monuments, "geological formations and other structures" (P2, P6), dramatization of the myth of Neraiospilios (P2), interviewing locals and discussing with authorities (P2, P6, P8). Within the framework of the ecological approach of the physical object, we made extensive/detailed observations, surveys and discussions about the synthesis of the gorges' bio-communities and the special characteristics of the natural biotopes, the special geological formations which affect them, and additionally the effects of human interventions (P2, P6, P7, P8). The outcome of recording, analysis and reporting of the environmental problems that were identified in the gorge as aesthetic and chemical pollution helped us to make suggestions and recommendations to the Mayor and the President of the Cultural Association of Astritsi (P2). In 2001, a Conference with the local authorities, students, parents, and teachers took place, with initiative of the school environmental team, to discuss the existing situation of the gorge and future developmental plans. In this way,

students negotiated and were involved in solving environmental problems of their region, becoming part of the problem, and in a way complicit to the resolution.

C. Actions' Evaluation: Throughout the project, thoughts, opinions, feelings, and suggestions for improvements were expressed by the participants. Each year, experience and knowledge, along with youthful ideas (in a broad discussion and feedback, gave new impetus for creation and new horizons in the educational process. Capitalizing the needs and experiences of students, in grouped teachings with interchanging roles of teachers and students, resulted in a variety of attitudes and behaviors towards social and environmental problems. "With representation of situations, highlighted convergences, conflicts and disputes" (P6), students exercise in informed debate and find compromises (P6).

"The final evaluation is not considered complete by the Head teachers. There is a need for discussion among students and teachers in order to emphasize the strengths and highlight what could have been done, but was not achieved in the past years. This could be useful in future implementations" (FRs of P6, P8). "The objectives of the Project have been achieved without much anxiety and trouble, almost spontaneously. This, is attributed to the detailed design of the AFs of the projects" (P2) and the extended experience of the Head teachers and their collaborators.

The funding of educational actions:-

In the region of school, the municipality has invested a lot of money in basic infrastructure for hosting the Cultural Camping, inside the gorge for one month in the summer. As the years passed, it needs improvement but the economic crisis does not permit extra expenses. For this, the teachers made proposals of volunteering interventions of the students and their families which both the Municipality and the Secretariat of Youth supported, economically. The response of the Municipality to such proposals was always immediate and positive, so it established the cooperative promotion of all SPEEs' objectives, both of the school and the municipality. School years 2002-2003, 2003-2004, 2004-2005 and 2012-2013 Environmental Education projects involving Astritsi gorge funded by the Ministry of Education. The budgets concerned only the purchase of materials and the supplementary equipment available to the school. The rest of the expenses, were covered by the teachers and the students' parents.

Educational Actions:-

Places of projects' implementation:-

In terms of Constructivism, learning is not free but is embedded in the complex context of social, political and cultural environment, emerging from the biography and the learner's culture. Our individual mental structures, that shape the way we perceive the world, build through continuous interaction with the world around (Robottom, 2004). The activities and actions of SPEEs were planned and developed within and outside the school following the Aegean University (2004) guidelines. More specifically, we used: 1. the School Library for bibliographical research, 2. The Lab of Informatics for exploring in internet, to create Power Point presentations, handle correspondence via emails and to create the final product that was the 'Guide of Gorge Astritsi Gorge', 3. the Science Lab to create herbarium, which was exhibited in the school (P8), 4. the Hall of the City Council, for a meeting which was organized with the City Council on the subject of the gorge management and development. At the end of the P2, at a meeting with the City Council, students, with the help of their teachers, presented the results of the project and delivered the final product for utilization by the Municipality, 5. the school yard, at the end of the project, hosted all students, their parents and teachers of the two partner schools, in a final conference, where the results of the projects were announced and the final products were presented. There, the Municipality, Bodies and locals involved in the Astritsi gorge management were invited to be informed about the plans and current works of the environmental teams. This meeting was used to rewarding and public highlighting volunteerism, the initiative and good educational practices of students and teachers who carried out the projects, 6. Astritsi gorge for field work, study of bio-communities and geology and sign of tour-route of the trail with special marking on stones, trees and signs. Also, planting a particular area of the gorge and the school with species that already exist in the gorge and just enriched (P2, P8), action of pedagogic character.

Projects' outcomes:-

"Creating a herbarium with native species of the gorge for deeper understanding and retention in the school library. The herbarium will stay in the school library and in the Fresher of the gorge with the plant species collected in study visits" (P8). "Engrave of a path of history, ecology and culture in Astritsi gorge for highlighting our natural and cultural heritage, for maintaining it in the future (P2, P8). "The path will be marked as navigation route crossing the

gorge and will be described in text, audio and video in printed and digital material. All partners will be actively involved with the management, restoration and enhancement of the area, making interventions of pedagogical and aesthetic character" (P2, P8). At the trail tour which was engraved in 2004 were made improvements to labeling, description and reference points in the years later. "Production of printed 'Tour Guide of Astritsi Gorge', with the species of plants and zoö animals that a traveler may meet on the route, with useful historical and topographical information" (P5, P8). "The Tour Guide will utilize all the collected visual material and can, if it is used by businesses from the local community, to strengthen the demanding, alternative tourism in the region" (P5, P8). Artistic creations of students with gorge materials will decorate the school and the offices of the Municipality, artwork using natural materials, at no cost, promoting anti-consumerist model of living, according to the principles of ESD (P3, P8). "Plastic tabs on the species of the gorge plants will be placed in many points of the trail, next to the plants advising informing the traveler about the names of the plant and their possible use by the locals" (P8). "Construction of billboards deterrent for hunting and the use of pesticides" (P2, P8). Billboards had serenades related to death and imprisonment of birds and other animals, regret and complaint those they feel but they cannot express in words. "Commemorative Inscription of the project will place was placed in the gorge in a special visit of the whole school in the spring of 2004" (P2), "Information Posters of all project activities for the school and local community and the Project Results" (P2, P8). "Construction of cleaning bins and seats/ benches in harmony with the natural environment, CDs and DVDs with all materials (texts, photos and video) and notes useful to the travelers and participants" (P8). "Video Production of a theatrical happening in Neraidospilios of Astritsi gorge, near Kato Vrissi sources, where girls of the environmental team danced dressed as fairies and boys spent a few hours at a traditional cafe in the village, representing a forgotten myth about Neraidospilios" (P2). The theatrical happening constitutes educational improvisation, in the context of an unprecedented learning process, through which the participant enters the mentality of the locals at the beginning of the last century and gets to know their habits. The past came to present, the legend became reality!

Impact to the local society:-

"Apart from the students of the project, the local residents are also beneficiaries of the project, as well as every visitor of the gorge, and of course the university students who come every summer to camp in the gorge and participate in high quality artistic activities" (P8). Several visits of students and teachers from schools from Romania, Turkey and Cyprus participants to bilateral Educational Exchange Projects with Meleses Lyceum were organized at the gorge. What makes us really happy is that students who participated in SPEEs when they were in Meleses Lyceum, participated, also, in the creation of the Cultural Camping as university students, and continue to support and contribute in any cultural event that take place in the gorge, as residents of the region of the school and active, environmentally literate students.

Management of Astritsi Gorge:-

"The exploitation of project results and the continuation of educational activities and interventions, their viability after the implementation, was a key concern of all groups in perennial ESD developed in the learning environment of Astritsi gorge" (P8). The findings and proposals which addressed to the management bodies of Astritsi gorge concern the following (P2, P8): the adoption of certain areas inside the gorge by associations, residents, students, the disruption of the life of all organisms that have their habitat in the gorge by the human presence, the pollution of land and aquatic ecosystem which threatens biodiversity and balance, modifying the residential reformation of the gorge, study of required correct lighting with underground cabling, preparation of a Pavilion Information Desk for Visitors and Tourists, taking protection measures relating to free and uncontrolled grazing, hunting and use of pesticides, conservation of the historical monuments, meticulous cleanliness of the river, toilets, concert place, generally of the gorge.

Dissemination of the projects' Results:-

The presentations and dissemination of the project results were done with the expiration of each school year, where all the students of the school, the local community, Municipality, teachers, scientists and the educational authority were invited. In the final Conference a variety of activities were organized, lectures, open discussion, round table, the delivery, awarding of students and giving commemorative diplomas to the project's external partners. "Delivery of the Tour Guide to schoolchildren, local residents and the local council can be an important motivation for new business operations in the place of the gorge and the surrounding area" (P6, P8). "The placement of hunting prevention billboards in the gorge will contribute to jointly confrontation the reduction of biodiversity from human interventions" (P2, P8). With the multiple and various educational activities, actions and interventions, with questionnaires, conferences, roundtables, group discussions, were recorded knowledge, opinions and ideas relating

to the Astritsigorge expressed by the old, the present and the future generation of the school region. With meetings and presentation of the SPEEs, students and teachers came in contact with all stakeholders, parents and many other members of the local community, so they managed to disseminate the project results and motivate local people to cope with greater seriousness and rationality the exploitation of natural resources of the gorge. "With articles published, (and will continue to be published,) as well as interviews published in the local press, the local community will be encouraged by the younger members for more active participation" (P8). The studied SPEEs was adapted to local conditions and needs to create incentives for higher expectations, develop relationships and patterns similar to those attempted in Samaria Gorge, considering the Astritsi gorge as National Park. SPEEs functioned as vehicles carrying sustainable education policy from the local to national and global level. "In psychomotor and emotional level we aim to contribute to the strengthening of relations between students originating from different villages, between teachers residing in the city and the local agricultural and livestock society, changing attitudes and behavior of all of us towards the local community, the environment, for better quality of life"(P8).

Conclusions:-

Materializing so many SPEEs, which had the Astritsi gorge as main learning environment, students practiced in the scientific observation of natural ecosystems and taking measurements of physicochemical parameters. They experienced the developmental policies of public bodies and local authorities. They experienced the value of a collaborative team spirit, based on equality, understanding, mutual support and open communication. Students became stakeholders and shared responsibility in the management of a habitat of their region, developed initiatives in organizing discussions, questionnaires, conferences and interviews and so realized the need for the evaluation of the initiatives, activities and actions whenever they choose. They came closer to their teachers, worked at a different level and experienced different pedagogical methods and procedures from those they had previously experienced in traditional classrooms. They were able to get acquainted with new technologies, computers, video, Fax, Internet, emails, with presentations, producing educational material and SPEEs' final products, also publication of articles on the Web, in the 'European Young Reporters Network for the Environment', in national and international Conferences and seminars. Developed artistic activities such as theater happenings, photography, painting structures with natural materials coming from the gorge. The theatrical happening about the Fairies of Astritsi gorge, adapted to two related legends of the region, was written and filmed in a short video on the experiential acquaintance and perception of a legend.

Recommendations:-

In the end, remarks are given for further development of the educational activities in the future both at local and national level, regarding the way of students taught to be environmentally literate active citizens, in accordance with the principles and goals of UNESCO and European Union for SD. The produced knowledge in the materialized SPEEs and the tried methodology could be implemented in school curriculums as good educational practices and to be translated into educational policies.

The economic crisis, with the insecurity and the problems it has caused to schools, affected the last project's implementation. Strikes, student occupations, delays in implementation of educational reconstruction and many other created a negative atmosphere, causing inadequate disposal to all of us, we often got frustrated with significant impact on the activities and actions we desired, but finally we overcame it. Within a short time, we managed many outcomes and outputs, we pressed ourselves to achieve all the set objectives. We feel that these projects have not been over yet ... We hope that the gorge will become a source of life and social upgrading, so that neighboring settlements will not be affected. We had the need to establish that educational culture which will empower locals, students and parents, provide with responsibility opportunities, build rewards leadership and maximize collaboration, share responsibility, involve students in the planning and decision making, demonstrate innovation, assume the risk and safety, valuing the diversity of views with resilience and flexibility, where the experience reviews the progress and the people learn from everyone, as Scott(2007) suggests.

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