

Environmental Education (EE) and Experiential Education: A Promising “Marriage” for Greek Pre-School Teachers

Alexandros Georgopoulos¹, Maria Birbili¹, Anastasia Dimitriou²

¹Department of Early Childhood Education, Aristotle University of Thessaloniki, Thessaloniki, Greece;

²Department of Educational Science in Early Childhood, Democritus University of Thrace,
Komotini, Greece.

Email: ageorgop@nured.auth.gr

Received February 18th, 2011; revised March 19th, 2011; accepted April 14th, 2011.

Kindergarten teachers tend to combine EE and experiential education in their every day practice as a matter of course. The majority perceive EE as related to sensory awareness and exploration and the concomitant will to act in a pro-environmental direction. They deal with and elaborate their pupils experiences in a way that is reminiscent of Kolb's learning cycle. It is not clear from the interviews whether they effectively facilitate their children's reflection upon the acquired experience, although there is some evidence that they accompany and assist their pupils in associating their new knowledge to that previously acquired, integrating it into new wholes and appropriating it. They do not give any information about the elaboration of their pupils emotions developed through the experiential educational approaches. They claim that when EE and experiential education are blended together then this can generate active citizens of the future.

Keywords: Environmental Education, Experiential Education, Preschool, Teachers

Introduction

Experiential education treats the individual experiences of pupils as educative material and exploits them in order to produce learning rather than using texts and knowledge imposed from above by teachers as traditional education does (Dewey, 1938, 1998). This educational approach seems to be the common denominator between the overlapping and closely related fields of environmental education (Palmer, 1998), outdoor and adventure education, as has been recently established (Dumouchel, 2003). The power of EE and experiential education acting together is recognized by workers in the field (Adkins & Simmons, 2003). Moreover, pre-service teachers who were trained to synergistically use both in order to develop “effective facilitation skills and challenge traditional practice that limited their professional development” reported positive results (Law, 2003: p. 2).

Until the late 90's “relationships between experience and values/action still lacked empirical support” (Bogeholz, 2006: p. 66). Then the “significant life experiences” series of articles appeared, building the belief that direct environmental experiences might have been a decisive factor in shaping behaviors of activists (Chawla, 1998; Tanner, 1980). Interestingly, even since 2000 there is some work which in our opinion is epistemologically under-theorized, with distinguished theorists (Dewey, Kolb, Boud etc.) not being referred to, and the experiential education component diminished into measuring the effect of “hands-on” activities on children (see for instance Fisman, 2005; Kapyula & Wahlstrom, 2000; Poudel et al., 2005). On the other hand there are articles which treat the theory of experiential education constructively to indicate the importance of facilitating a personal relationship between children (or even adults) and their object of study (Brody, 2005; Meyer &

Munson, 2005) using direct experiences as the first stage of a quite effective learning strategy.

Early childhood is a period largely neglected by environmental education research (Chawla & Cushing Flanders, 2007: p. 442) despite the desirability and feasibility of the integration of these two disciplines (Wilson, 1994). With the exception of a few works on that subject (Carson, 1956, 1984; Wilson, 1992), some articles dealing with preschoolers perceptions of environmental issues at an international level (Palmer, 1995; Palmer, Suggate, & Matthews, 1996; Palmer et al., 1999a; Palmer et al., 1999b) and some work concerning the ideas of Greek pre-school education teachers on EE (Flogaitis & Agelidou, 2003) that sector is still under-studied, especially as far as concerns the compounding of EE and experiential education. Within this context the present study set to explore early childhood teachers' perceptions about the relationship between experiential education and environmental education.

Methodology

Data were collected through semistructured interviews with fifteen female and one male early childhood teachers who had at least three years of experience on EE programs. Participants were selected from a professional development course organized by the Department of Early Childhood Education at Aristotle University of Thessaloniki. The interviews took place between March 2005 and June 2008 and lasted approximately one hour and a half. They were all recorded and transcribed.

Interview questions were open-ended and asked participants to talk about their interest in environmental education, what environmental education means to them, their experience from environmental programs they have carried out in their classroom and their methodological choices during the program. In

order to investigate how participants themselves defined key terms of the study (i.e. experiential learning, project method, environmental education etc.) particular emphasis was given on asking teachers to provide real examples of their reported actions and choices. Asking for examples was also a strategy that was used with the aim to ensure that there was a correspondence between what teachers reported doing with their students and what actually happened during the program. There was also a lot of probing in order to understand teachers' own interpretation of experiential learning, as opposed to what they might have memorized from books or seminars.

Data were analyzed both within cases (treating individual accounts as whole stories) and across cases to identify common themes. Initial categories emerged mainly from researcher questions (expressed through interview questions) and less from interviewees' responses. However, as the analysis went on, data led to more refined themes (such as "Kolb's cycle of experiential learning").

Results and Discussion

Pairing EE and Experiential Education

In the present study the pre-school teachers of the sample seem to integrate experiential education into EE considering the first to be the methodological instrument of the second "par excellence". Although experience based learning is age specific in preschool education and one might expect that preschool teachers would automatically tend to refer to the experiential approach to learning in EE, the contrary appears to be the case. The majority seem to use in a very conscious way the experiential education vocabulary in order to describe EE. In their comments they either directly equate the two fields or they refer to experiential methods of dealing with environmental issues. Sometimes they even claim that "everything is experiential in EE" thereby confirming the predominant position of the one in the field of the other. They seem to launch their educational interventions by creating the context into which children may directly experience an environmental issue. They want to make pupils themselves physically confront a specific issue and avoid "speaking theoretically" about it to them. In other words they seem to be familiar with the fundamental requirement of experiential education, namely the direct contact of children to their learning environment, the observation of it and finally the action upon specific features of it.

"EE (...) is to experience." (1)

"EE (...) is a way to get to know nature, to have some experiences near nature..." (3)

"(...) we constructed our own greenhouse (...) we were observing how [plants] grow and we were measuring, conducting experiments (...) and that was the point we noticed the best results. Children were enthusiastic, they were seeing tangible results, they were not [simply] listening, they were living, they were experiencing." (13)

"I try to relate the subject (...) to children's experiences (...) e.g. while dealing with refuse we went to the rubbish dump in order for children to have the experience of what 'rubbish dump' means and to avoid speaking theoretically about it..." (9)

"(...) lived experience doesn't mean to make them sit in the

circle time and tell them: 'children that is the beach and let's discuss about it'. Let them come across [the beach] themselves, that's what we want." (6)

"(...) everything is experiential in EE (...) you don't just see it, you yourself [should] participate in [elaborating] the specific subject (...) we wanted (...) to give them (...) more field work or visits i.e. experiential methods." (10)

"(...) I tried very much [to exclude] teaching and information [in order for] children to experience in different ways..." (16)

"(...) that's what I think the experiential approach is (...) we felt the dirtiness and the ugliness of the schoolyard (...) no talk, talk without any results." (15)

Nursery school teachers seem to purposefully expose children to experiences (e.g. by building a greenhouse in the schoolyard, conducting experiments or going to the beach) which in their judgement produce "the greatest results". They seem to believe that by creating that direct contact to the object they want to examine (e.g. the seaside) instead of behaving as a "go-between" teacher who might simply "talk, talk, talk, without any results" about that same place, their pupils will enjoy and profit from the "lived experience". It is obvious they consider experience effective, and although they don't indicate what kind of "effect" it has, we can safely assume that they believe it encourages pupils' active exploration of the environment. This empirical conclusion arrived at by the teachers in the survey concurs with recent reports that small-scale actions located at the level of the school yard or the local environment through experientially confronting environmental problems in their communities are most appropriate for learning and behaviour transformation (Chawla & Cushing Flanders, 2007: p. 438, 444), an idea which is referred to as "subject performed task" or "enactment effect" or "action component" (Chawla & Cushing Flanders, 2007: p. 441; Knapp & Benton, 2006: p. 167).

Senses, Experiences, Feelings and Behavior

Any educational intervention to be effective should create for children "learning opportunities that connect to their lives and interests" (Basile & White, 2000: p. 202). In other words, effective educational interventions should provide pupils with the kind of education that appeals to and has a personal meaning for them. It is most probable that we do not learn anything unless we have a clear personal motive for doing so (Rogers, 1957: pp. 241-243), i.e. unless it is connected to our personal experiences. In addition, research confirms that we recollect information more effectively when it is intertwined with real-life experiences and "perceived as a connection to [our] own everyday life" (Ramsden, 1997, as cited in Knapp & Benton, 2006: p. 167) such as in the examples offered by two of the teachers—"why we plant olive trees" or "why Pinios [the river of their village] was polluted".

Teachers seem to be aware of the importance of real-life experiences as the following comments reveal:

"[The topic] about olive trees cropped up because we had to plant something in our schoolyard, there was no shade there [and] we wanted something to provide shade and we discovered those trees (...) we wanted something related to the place we live." (10)

"(...) you should experience it, see it, hear it, smell it (...) If

s/he doesn't see e.g. the Pinios river which is close to our school get dirty how is s/he going to understand that this event concerns him/her, that s/he shouldn't throw rubbish in it and that s/he should do something to preserve it?" (1)

"Having in mind to try to influence children towards re-cycling, I generated an artificial lack of paper. One day, when preschoolers came to the nursery school and through searching they discovered that all paper had finished. That was a problem." (7)

In fact, the last quote indicates how important real-life experiences are considered by the teachers since they even try to "create" them by generating an "artificial lack of paper" and call upon pupils to manage the "problem".

Interviewees also seem to be aware of the preschoolers need for exploration and discovery of the world around them. As their comments indicate, real life experiences are important because they enhance "sensory exploration and awareness" (Carson, 1956, 1984) i.e. they provide children with the proper conditions that will permit them to use and work with their senses namely, sight, hearing, smell, touch (Brody, 2005: p. 611). This means to allow children to experience the world rather than simply think about it and to expose them to the widest possible variety of objects/situations in order for experiences to emerge. The sensory awareness approach forms the basis of what is called the experiential way of knowing things, that is to create knowledge through the transformation of the experience (Kolb, 1984: p. 38) or to expose children to direct experiences in order to promote the fullest feeling and thinking (Brody, 2005: p. 611). In fact, as far as thinking is concerned, the literature suggests that through storing sensory experiences (Krogh & Slentz, 2001: p. 203) the rational way of thinking is constructed (Shea, 2008). In addition, as Hyun (2005: pp. 199-200) states, direct experience in the preschool aged child "conducts thought" (whereas in adults perception "obeys thought").

Interestingly, when they talk about "sensory awareness", the overwhelming majority of the interviewees focus on the development of the pupils' emotional engagement and not to learning per se. They claim that pupils' immersion into sensory exploration triggers "appreciation" and several positive feelings that heighten children's interest producing "unforgettable" lived experiences.

"Children experienced lots of things. I don't think that they will ever forget that." (4)

"Pupils were enthusiastic." (13)

"We are interested to get their [sense of] touch, hearing, smell to work. We train them to be careful by asking them to close their eyes and lay down in the forest. In that way as well as nurturing their hearing we also nurture their emotions..." (2)

"We went to the forest, we smelt, we listened to the birds... children started experiencing with their senses (...) I think the lived experience is related to the emotion i.e. to be moved by something is very important for keeping interest alive." (16)

Teachers also stressed the intensity of the children's involvement in "their experiences": they experience things (e.g. a visit to a water treatment plant) "as if they had a thousand eyes." This involvement, in turn, produces "personal [mental] images", "heated discussions" and "living what they are doing to the fullest."

"We went to the water treatment plant and it was as if they had a thousand eyes to see everything." (3)

"The day before yesterday children were conducting heated discussions about that subject..." (1)

"They were living what they were doing to the fullest." (15)

A consequence of all these experiences and the intense involvement is the development of a pro-environmental influence on children's attitudes and behavior (e.g. "making remarks to their parents"). As their interviews suggest, teachers seem to be persuaded that somebody should be in direct physical contact with an aspect of the environment (i.e. being able to "feel" it) in order to be moved enough and to construct a personal relationship with it (Falk, 2005: p. 268). The positive feelings developed from this relationship (most importantly "enthusiasm", "joy", "appreciation", "respect", "love") are perceived as intended intermediate outcomes which can function as the moving force behind the will to protect the environment. In other words, physical contact with the "beauty of nature" is the inspiration leading them to construct a personal bonding with the natural world (Wilson, 1992) and later on to develop "good habits" towards conservation in general.

"EE is to experience, to love whatever exists around me and to appreciate it in order to be willing to protect it." (1)

"(...) to get to know nature, to live some experiences in nature (...), that is the only way to acquire good habits towards [solving] problems." (3)

"The first thing I wanted for the children was to live lots of experiences in nature, to feel its beauty, to play and enjoy. Through all that I wanted to convey some messages that I consider important and concern the environment [e.g.] respect for nature..." (2)

"They even made remarks to their fathers and mothers..." (8)

Kolb's Cycle of Experiential Learning

Interviews indicate that some early childhood teachers in this study follow certain stages in their educational practice while teaching E.E.: First, the observation of a specific environmental aspect of the world around them through the use of the senses. Second comes the conceptualization or else a deeper realization about environmental processes. Third, we have the "will to act" which is followed by action itself.

"Some pupils (...) saw in the neighborhood (...) stray dogs eating next to the rubbish bin (...) We acted out a role play imagining we were those stray dogs [exploring whether] we liked it or not, how we could protect stray dogs in our neighborhood [and] with that stimulus, i.e. their protection, we searched in several books, we found information (...) we designed a poster about it and distributed it to the people." (9)

"After having a first-hand experience of the problems of their neighborhood, [the children] decided to 'write' a letter to the mayor and ask him to construct more parks, pedestrian ways, bicycle ways etc (...) all those things that children experienced got into them (...) the result was that letter." (7)

However not everybody seems to follow all of the above stages:

"All their senses functioned, they touched, smelled, heard (...) children blew on a glass and saw that their breath misted it over. Later we covered a plant with a glass and we saw it again misted over then they were led to the conclusion that [the plant] breaths [too]." (4)

That continuum is strongly reminiscent of Kolb's (1984: p. 42) cycle of experiential learning, where a concrete experience ("breathing into a glass and then covering a plant with a glass, seeing stray dogs or going around their neighborhood") leads learners into reflective observation ("vapor is produced on both glasses—why??—what do stray dogs eat, how do they feel?" "what are the problems of our neighborhood?"), then to abstract conceptualization ("plants breath, dogs need protection or there is necessity for 'more parks and collection of refuse'") and lastly to action-active experimentation (e.g. producing posters about stray dogs or writing a letter to the mayor).

Although teachers seem to echo Dewey's (1938, 1998: p. 7) conviction about the intimate relationship between experience and learning they don't generally seem to be aware about the "continuity of experiences" criterion. There were only two teachers who seemed to purposefully design "a series of experiences" and contemplate that the genuinely educative experiences are the ones which promote the desire of children to further their knowledge (Dewey, 1938, 1998: p. 16). As one of them put it,

"We observed the bulbs, their size, their color, then each child chose their own bulb, planted it in their own flowerpot and wrote their name. We put all flowerpots by the window except one (...) which was put into a cupboard. Each child undertook to take care of his/her flowerpot. We discussed what day we'll water them and I showed them how much water to add. But some children added a lot of water and the result was for some plants to go rotten. But even that [procedure] we left it to evolve in order [for children] to see the repercussions of too much watering. They also observed that all plants which were not watered withered and only the sunlight could turn plants green. Eventually a plant blossomed and we gathered around it in order to see it and talk about it. We discussed the beginning of it, how long it took for the stem to spring up, what happened afterwards, how it blossomed. After a few days the flower faded. Therefore that cycle was over. Based on that [experience] we constructed a book about the history of the bulb. Children were narrating and I was writing. Each child drew all the stages of that evolution, we photocopied the history of the bulb and each child constructed its own book giving it its own title. In that way pupils understood the process of the evolution which is related to maths and language since they wrote a text. It was something that came out without my intervention. It began with something that children experienced and it was an amazing thing to see." (1)

As the above quotation shows, planting the bulb and watering it were two activities which were used to prepare and predispose children to keenly expect the next experience. Those experiences were related to the successive stages of growing and blossoming of a plant, drawing the evolution of the plant and constructing a story about it. That set of experiences seemed to have "aroused [children's] curiosity, strengthened initiative and set up intense desires and purposes" (Dewey, 1938, 1998: p. 31) therefore satisfying the "continuity of experiences" criterion.

The Reflection Parameter

The last quotation brings to the surface another issue: that of the role of the reflection process in experiential learning. (Priest & Gass, 1997: p. 17) claim that genuine experiential education

involves "learning by doing with reflection" which is the necessary intermediate stage between experience and learning, safeguarding children from having to digest a "half baked" practical work (Boud, Keogh, & Walker, 1985a: p. 9). As the above literature indicates, there is a tendency, among teachers using experiential learning, to conveniently condense all that previous, rather complex, process in experiential education into the "learning by doing" dictum. Most of the teachers of this study seem to belong to this group of practitioners. They either state it openly (equating knowledge with experience) or indirectly through the lack of relevant comments.

"Knowing is more or less the same as experiencing." (6)

There are however, a few of them (4) who seem to include only elements of reflection into their educational practice. As they say:

"(...) upon returning to the class we conduct activities in order for pupils to consolidate and evaluate whatever they have seen and learned." (7)

"We collect [experiences] from walks, visits (...) if we don't utilize them they are wasted (...). What we carry with us from every expedition of ours is loaded with emotions, smells (...) when bringing all of them to the class we use them in different ways. For example, we do language activities, work on visual arts...role playing, constructing stories." (2)

"As we go back to school we discuss again about what we saw, if it was like we have imagined it (...) by the river we manufactured small boats from paper and put them into the water. We observed that they floated. When we returned to school we went on with the experiment and saw more things which sink and others which float..." (3)

"After the visit we always discussed what impressed us, if there was anything we hadn't thought about [at the time]. We made a review." (4)

"Eventually a plant blossomed and we gathered around it in order to see it and talk about it. We discussed the beginning of it, how long it took for the stem to spring up, what happened afterwards, how it blossomed. After a few days the flower faded. Therefore that cycle was over. Based on that [experience] we constructed a book about the history of the bulb. Children were narrating and I was writing. Each child drew all the stages of that evolution, we photocopied the history of the bulb and each child constructed its own book giving it its own title." (1)

Only the last excerpt refers to reflection in a more explicit way. Her words describe a quite extensive elaboration of the experience of seeing, monitoring and taking into account the plant's development and clearly contain the "returning-to-experience" ingredient (i.e. recollecting previous events, replaying the experience as it evolved at the time) along with associations, integration, validation and appropriation of the new knowledge (e.g. the production of the book and the titling of it by each child) (Boud *et al.*, 1985b: pp. 32-33; Rogers, 1969: p. 3 as cited in Boud *et al.*, 1985b: pp. 33-34).

As far as the rest of the interviewees are concerned, we can safely suppose the following: Associations of new ideas to previous knowledge take place during language sessions and drawing. The "coming together" of different experiences (e.g. what we observed during our walks, what we sensed and smelled and what we felt) and the synthesis achieved through the role play, constitute the integration of new knowledge into new wholes. Testing the previous knowledge against the newly

acquired one is realized through the comparison between what children found out and what they previously imagined they would find out and constitutes the validation aspect of the reflection procedure. The less elaborated aspect of the process of reflection is the appropriation of new knowledge.

Despite the fact that reflection is reported to contain the elaboration of both the cognitive *and emotional* elements (Boud *et al.*, 1985b: pp. 28-34), one can notice that references to feelings are missing from all but one of their reflection stories and no discussion is offered on how they were dealt with. This practice seems to ignore the fact that several writers emphasize emotions as “pointers” showing whether the road to learning is accessible or not (Miller & Boud, 1996: p. 10). Interestingly enough, the same teachers identify and value pupils’ emotions *during* outdoor activities.

Environmental Education as Civic Education

Experiential education methods are perceived by early childhood teachers in this study as the “only ones” that can be effectively used in the nursery school because they match the age of the children and are additionally attributed the capability to make children aware of their civil identity and render them eager to proceed to individual or collective action. In other words, the age of the children not only does not seem to be an obstacle to the teachers treating preschoolers as the “active citizens” of the future but is actually perceived as “the most appropriate” both for children’s learning and behavior formation. It is during this age that personal characteristics are inculcated “laying the foundations” of their future social skills. When comparing “traditional education” and its “old approaches” to EE the superiority of EE is clearly demonstrated. That superiority is attributed to the experiential methodology which is ultimately credited with the development of “citizens capable of individual and collective action.” Teachers argue that the specific kind of knowledge and behaviour characteristics which are developed during the experiential approach make children capable of confronting the political power and claiming their rights. This emergence of embryonic environmental consciousness accompanied by commensurate children’s acts (such as visiting the mayor—which might well have been their first contact with the political power) is of particular importance, and upgrades EE into a kind of “citizenship education.”

“Although children are young I believe that they can now develop the right behavior... we now lay the foundations and they develop their character.” (3)

“EE is an educational process (...) without the old didactic methods (...) where the pupils are given the opportunity to act, to experience, to analyze, to explore and to construct knowledge (...) [it] can shape citizens capable of (...) individual and collective action (...). After having a first hand experience of the problems of their neighborhood, [the children] decided to ‘write’ a letter to the mayor and ask him to construct more parks, pedestrian ways, bicycle ways etc (...) all those things that children experienced influenced them (...) the result was that letter.” (7)

“When they first came across the problem of rubbish in the parks they thought hard. In the beginning they said ‘let’s collect it ourselves’. [Later on they thought] ‘how many times can we collect it though?’ ‘Can we solve that problem in that way?’ They themselves then, proposed to go to the mayor.” (4)

“(...) It was something that they were doing on their own initiative (...) they showed their work to the people, to the neighbors, to the parents, to the other children. I think the great benefit for children was empowerment.” (9)

Early childhood teachers’ approach agrees with statements by early childhood education research workers stressing the necessity of constructing EE attitudes and values as early as possible in order for the “maximum impact” to be achieved (Wilson, 1994: p. 5). Participants also seem to concur with modern educational research findings suggesting that children of that age are more than able to think critically, to make decisions about problems (Brauss, 1999, as cited in Basile & White, 2002; Driskell, 2000; Freeman, Henderson, & Kettle, 1999; Roe, 2007) and actively participate in the social aspect of everyday life (Corsaro, 2005: p. 19). Those realizations are obviously of paramount importance as far as the “civic education” of preschoolers is concerned.

In addition, participants in this research claim that “lived experiences” promote empowerment by providing opportunities for preschoolers to launch environmental action “they decided themselves”. Therefore pupils felt that their strength increased (“difficult questions” might be an indication of it) and developed confidence in their own capacities to write a “letter to the mayor” claiming their rights to a better quality of life. Those experiences, along with reflective reasoning on their every day life, produced the “we-want-more-parks” request, in fact an attempt to redistribute/reallocate power relations in their area (Townsend, 1998: p. 90). That pursuit of power redistribution results from and feeds back into their “personal investment” parameter, recalling the “ownership variable” (Hungerford & Volk, 1990) or the appropriation element for public issues (Chawla & Cushing Flanders, 2007: p. 444). That experiential way of dealing with local environmental issues with their children makes the teachers of the sample part of a distinct stream of thought into EE, arguing that social transformation should be, among other things, the result of a self reflective, participatory and empowering educational model (Sterling, 2001), incorporating even very young children into planning and designing their preferred environments (Barratt Hacking, Barratt, & Scott, 2007; Driskell, 2002; Roe, 2007).

Conclusion

The perceptions/beliefs of nursery school teachers who are active into the EE field, seem to include the following characteristics:

1) The experiential element is considered to be inextricably connected to the teaching of EE, preferred over other ways of teaching EE (e.g. the infusion model) and focused upon during their self-reported educational praxis to the degree that sometimes they seem to put more emphasis on the methodological (experiential) than the content aspect of EE. Teachers were able to identify the potential and possibilities for implementing experiential education strategies in environmental education and use both in order to make their teaching more effective. Other research workers show a similar preference of Greek elementary school teachers to support first-hand experiences as the best way to deliver environmental education (Chatzifotiou, 2005: p. 519). There is evidence that if those two approaches are applied—particularly in combination with outdoor educa-

tion in such a way as to support each other, then results with children are strong and lasting (Adkins and Simmons, 2003) one of them being increased concern for the environment (McKenzie, 2003: p.18).

2) The main conceptual/structural axis of “their” kind of experiential education are the non-intermediated, connected to personal experiences, emotionally engaged and (to a lesser extent) reflected upon way of constructing knowledge. The above axis along with the importance preschool teachers attribute to some other functional ingredients, such as the promotion of observation skills, the utilization of the “lived experience”, the work with, exploration and exploitation of all the senses (procedure which connects learning to personal experience), comprise their conceptual framework of experiential education. Their descriptions of the different stages of that kind of learning look similar to Kolb’s cycle describing the production of experiential knowledge. As far as concerns their ability to choose the quality of educative experiences, they satisfy the first of Dewey’s (1938, 1998: p. 16) criteria by managing to engage children (and consequently to produce positive feelings and personal involvement) but there is only minor evidence about satisfying the “continuity of experiences” criterion. Only one of the 16 teachers of the sample could show a more balanced reflection model. In addition, none of them referred to any kind of elaboration of feelings (except during outdoor activities) despite emotional competency being really important for future learning (Beard & Wilson, 2006: p. 192; Heron, 1982, as cited in Boud et al., 1985b; Pearson & Smith, 1985: pp. 72-73).

3) In respect to the three ingredients of EE, namely the “about”, “in” and “for” the environment, most of the teachers work intensively in the “in” aspect, agreeing with Carson’s (1956, 1984: p. 45) dictum: “I sincerely believe that for the child (...) it is not half so important to know as to feel.” That aspect strongly connects to the experiential parameters of EE, and is also credited by teachers with developing environmentally friendly emotions and attitudes. It is their conviction that the “for” the environment aspect springs out of the previous emphasis on the “in” element, producing for preschoolers pro-environmental values and behavior (Bogeholz, 2006; Chawla, 1998; Holtz, 1994; Tanner, 1982). In that way, teachers seem to jump from feeling and loving the environment “by directly contacting with it” (Van Matre, 1972: pp. 9-11) and using it as a “context for (...) interactive activities” (Robottom & Hart, 1993: p. 22) straight into behavior transformation as their “political” interventions show. They do not refer to the “learning” aspect though. What data also suggest is that between the three “paradigms”, as described by Robottom and Hart (1993), the teachers of the sample work mainly into the interpretative “Paradigm” as they try to create close relationships between children and their environment so they develop “emotions” towards it. They work less in the socially critical “Paradigm” (planning and acting towards solving environmental problems with their pupils) and the positivist “Paradigm”: that is, they don’t see children as passive recipients of knowledge “about the environment”. The fact that the teachers of this study, visit less frequently the positivist “Paradigm” is an interesting finding within the Greek educational context which is considered one that encourages mainly passive learning and factual knowledge (Giavrimis and Papanis, 2009).

4) The present work provides evidence that the interplay between EE and experiential education in the form of engaging children with public issues at a local level might be rather fertile educational ground in helping to transform them into future citizens.

These future citizens will be knowledgeable of how the political system functions, aware of their civil duties and practice active citizenship as researchers in the field of political socialization have concluded (see a review in Chawla & Cushing Flanders, 2007: p. 444). This finding might be of critical importance in the light of the following parameters: first the evolution of EE towards education for sustainable development, second the inadequate provision for children’s voices to be heard (Barratt Hacking et al., 2007) and third, young children’s willingness to believe that if they send a message they would be listened to (Roe, 2007: p. 468, 476) and the effects of their contributions become visible. Civil education can then “lend” experiential education a more political profile and neutralize the argument that the latter ignores the societal element and promotes the idea that the power to change the environment resides absolutely with individuals (Gregory, 2002: pp. 105-106). That point begs our attention because institutions like government and industry are not only the major atmosphere and water polluters, solid waste producers and nonrenewable resources consumers but they also resist attempts towards changing their unsustainable function. Consequently, in order for a sustainable society to be built, preparing children for political action might be necessary.

References

- Adkins, C., & Simmons, B. (2008). Outdoor, experiential, and environmental education: Converging or diverging approaches? *Educational Resources Information Center Digest*. Retrieved 13 September 2008. <http://www.ericdigests.org/2003-2/outdoor.html>
- Barratt-Hacking, E., Barratt, R., & Scott, W. (2007). Engaging children: Research issues around participation and environmental learning. *Environmental Education Research*, 13, 529-544. doi:10.1080/13504620701600271
- Basile, C., & White, C. (2000). Environmental literacy: Providing an interdisciplinary context for young children. *Contemporary Issues in Early Childhood*, 1, 201-208. doi:10.2304/ciec.2000.1.2.7
- Beard, C., & Wilson, J. P. (2006). *Experiential learning: A best practice handbook for educators and trainers*. London: Kogan Page. doi:10.1080/13504620500526529
- Bogeholz, S. (2006). Nature experience and its importance for environmental knowledge, values and action: Recent German empirical contributions. *Environmental Education Research*, 12, 65-84.
- Boud, D., Keogh, R., & Walker, D. (1985a). What is reflection in learning. In D. Boud, R. Keogh, & D. Walker (Eds.), *Reflection: Turning experience into learning* (pp. 7-18). London: Kogan Page.
- Boud, D., Keogh, R., & Walker, D. (1985b). Promoting reflection in learning: A model. In D. Boud, R. Keogh and D. Walker (Eds.), *Reflection: Turning experience into learning* (pp. 18-41). London: Kogan Page.
- Brody, M. (2005). Learning in nature. *Environmental Education Research*, 11, 603-621. doi:10.1080/13504620500169809
- Carson, R. (1956). *The sense of wonder*. New York: Harper and Row.
- Chawla, L. (1998). Significant life experiences revisited: A review of research on sources of environmental sensitivity. *Environmental Education Research*, 4, 369-383. doi:10.1080/1350462980040402
- Chatzifotiou, A. (2005). National policy, local awareness: Implementing environmental education in the primary schools of northern

- Greece. *Environmental Education Research*, 11, 503-523. doi:10.1080/13504620500169650
- Chawla, L., & Cushing, F. D. (2007). Education for strategic environmental behavior. *Environmental Education Research*, 13, 437-452. doi:10.1080/13504620701581539
- Corsaro, W. A. (2005). *The sociology of childhood*. London: Pine Forge Press.
- Dewey, J. (1938/1998). *Experience and education*. West Lafayette, Indiana: Kappa Delta Pi.
- Driskell, D. (2002). *Creating better cities with children and youth: A manual for participation*. London: Unesco.
- Dumouchel, D. (2003). *Experiential practice: Outdoor, environmental, and adventure education*. Retrieved 2 November 2008. <http://www.marthalakecov.org/~building/strategies/environmental/dumouchel.htm>
- Falk, J. H. (2005). Free-choice environmental learning: Framing the discussion. *Environmental Education Research*, 11, 265-280. doi:10.1080/13504620500081129
- Fisman, L. (2005). The effects of local learning on environmental awareness in children: An empirical investigation. *Journal of Environmental Education*, 36, 39-50. doi:10.3200/JOEE.36.3.39-50
- Flogaitis, E., & Agelidou, E. (2003). Kindergarten teachers' conceptions about nature and the environment. *Environmental Education Research*, 9, 461-478. doi:10.1080/1350462032000126113
- Freeman, C., Henderson, P., & Kettle, J. (1999). *Planning with children for better communities: The challenge to professionals*. Bristol: Policy Press.
- Giavrimis, P., & Papanis, E. (2009). Greek teacher's perceptions about "efficient" and "non-efficient" students development of an attribution questionnaire for teachers in north Aegean region. *The Journal of International Social Research*, 2, 191-199.
- Hungerford, H. R., & Volk, T. L. (1990). Changing learner behavior through environmental education. *Journal of Environmental Education*, 21, 8-21.
- Holtz, R. E. (1994). Rachel Carson: A mentor for early childhood environmental education. In R. A. Wilson (Ed.), *Environmental education at the early childhood level*. Washington DC: North American Association for Environmental Education.
- Hyun, E. (2005). How is young children's intellectual culture of perceiving nature different from adults? *Environmental Education Research*, 11, 199-214. doi:10.1080/1350462042000338360
- Gregory, J. (2002). Principles of experiential education. In P. Jarvis (Ed.), *The theory & practice of teaching: School and beyond in the learning society* (pp. 94-107). New York, NY: Routledge.
- Kapyula, M., & Wahlstrom, R. (2000). An environmental education training program for teacher trainers in Finland. *The Journal of Environmental Education*, 31, 31-37. doi:10.1080/00958960009598637
- Knapp, D., & Benton, G. M. (2006). Episodic and semantic memories of a residential environmental education program. *Environmental Education Research*, 12, 165-177. doi:10.1080/13504620600688906
- Kolb, D. A. (1984). *Experiential learning: experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.
- Krogh, S., & Slentz, K. (2001). *The early childhood curriculum*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Law, B. A. (2003). *Experiential education as a best practice pedagogy for environmental education in teacher education*. Doctoral Dissertation, Brisbane: Griffith University. Retrieved 20 November 2008. <http://www4.gu.edu.au:8080/adt-root/public/adt-QGU20031117.090529/index.html>
- McKenzie, M. (2003). Beyond "the outward bound process": Rethinking student learning. *Journal of Experiential Education*, 26, 8-23.
- Meyer, N. J., & Munson, B. H. (2005). Personalizing and empowering environmental education through expressive writing. *Journal of Environmental Education*, 36, 6-14. doi:10.3200/JOEE.36.3.6-14
- Miller, N., & Boud, D. (1996). Animating learning from experience. In D. Boud and N. Miller (Eds.), *Working with experience: Animating learning* (pp. 3-13). London: Routledge.
- Palmer, J. A. (1995). Environmental thinking in the early years: Understanding and misunderstanding of concepts related to waste management. *Environmental Education Research*, 1, 35-40. doi:10.1080/1350462950010103
- Palmer, J. A. (1998). *Environmental education in the 21st century: Theory, practice, progress, and promise*. New York, NY: Routledge.
- Palmer J., Suggate J., Bajd B., Tsaliki E., Mati D., Paraskevopoulos S., & Razpet, N. (1999a). Thinking about waste: Children's ideas about waste materials and domestic waste management in the UK, Slovenia and Greece. *Environmental Education*, 60, 28-30.
- Palmer J., Suggate J., Bajd B., Tsaliki E., Duraki D., Paraskevopoulos S., Razpet N., & Dimec, D. S. (1999b). Emerging knowledge of distant environments: An international study of four and six years old in England, Slovenia and Greece. *European Early Childhood Education Research Journal*, 7, 17-38. doi:10.1080/13502939985208381
- Palmer, J. A., Suggate, J., & Matthews, J. (1996). Environmental cognition: Early ideas and misconceptions at the ages of four and six. *Environmental Education Research*, 2, 301-329. doi:10.1080/1350462960020304
- Poudel, D. D., Vincent, L. M., Anzalone, C., Huner, J., Wollard, D., Clement, T., DeRamus, A., & Blakewood, G. (2005). Hands-on activities and challenge tests in agricultural and environmental education. *Journal of Environmental Education*, 36, 10-22. doi:10.3200/JOEE.36.4.10-22
- Priest, S. & Gass, M. (1997). *Effective leadership in adventure programming*. Champaign, IL: Human Kinetics.
- Robottom, I., & Hart, P. (1993). *Research in environmental education: Engaging the debate*. Geelong, Victoria: Deakin University.
- Roe, M. (2007). Feeling "secretly": Children's views on involvement in landscape decisions. *Environmental Education Research*, 13, 467-485. doi:10.1080/13504620701581562
- Rogers, C. (1957). Personal thoughts on teaching and learning. *Merrill-Palmer Quarterly*, 3, 241-243.
- Shea, C. M. (2008). NCCAT's search for a teacher renewal philosophy: An historical account. In A. G. Rud Jr. and W. P. Oldendorf (Eds.), *A place for teacher renewal: Challenging the intellect, creating educational reform* (pp. 1-24). Charlotte, NC: Information Age Publishing.
- Sterling, S. (2001). *Sustainable education: Re-visioning learning and change*. Totnes: Green Books.
- Tanner, T. (1980). Significant life experiences: A new research area in environmental education. *Journal of Environmental Education*, 11, 20-24. doi:10.1080/00958964.1980.9941386
- Townsend, E. (1998). *Good intentions overruled: A critique of empowerment in the routine organization of mental health services*. Toronto: University of Toronto Press.
- Van Matre, S. (1972). *Acclimatization: A sensory and conceptual approach to ecological involvement*. Martinsville, Indiana: American Camping Association.
- Wilson, R. A. (1992). The importance of environmental education at the early childhood level. *International Journal of Environmental Education and Information*, 12, 15-24.
- Wilson, R. A. (1994). Pairing early childhood education and environmental education. In R. A. Wilson (Ed.), *Environmental education at the early childhood level* (pp. 5-10). Troy, OH: North American Association for Environmental Education.