

ORIGINAL ARTICLE

Barriers and Inhibitors of Creativity in Physical Education**·Konstantinidou, E.¹, Zisi, V.², Katsarou, D.², Michalopoulou, M.¹**¹School of Physical Education & Sport Science, Democritus University of Thrace, Greece²School of Physical Education & Sport Science, University of Thessaly, Greece**Introduction**

Creativity in education has been at the center of attention at least for the last decade. After the report of the National Advisory Committee on Creative and Cultural Education (NACCCE, 1999)

many European Union (EU) and international governments, authorities and bodies (ACARA, 2014; Education & Training / ET 2010, 2020 work programs; EC 2008/C 86/01, EC 2010/C 117/01; UK Department of Education, 2013) highlighted the significance of the promotion of creativity and creative thinking in all education levels as it's considered a crucial and important element for the growth of modern economies and societies. Additionally, many researchers explored and discussed issues regarding the promotion of creativity in schools (Craft, 2000, 2005; Jeffrey & Woods 2003; Kampylis, Berki, & Saariluoma, 2009; Wilson, 2005).

Researches of great importance, for the promotion of creativity in different educational settings, considered to be that of teachers' implicit theories, perceptions, conceptions and other synonymous terms (Diakidoy & Kanari, 1999; De Fleith, 2000; Fryer & Collings, 1991a, 1991b; Kampylis, et al., 2009; Konstantinidou, Gregoriadis & Grammatikopoulos, 2011; Morais & Azevedo, 2011). Implicit theories of creativity are individuals' personal definitions and beliefs of creativity and about how to cultivate and assess it (Saracho, 2012). The significance of teachers' implicit theories lies in the fact that they lead directly to expectations, and their expectations are very powerful influences on students' behavior (Runco, 2007). As Konstantinidou, Gregoriadis, Grammatikopoulos and Michalopoulou (2013) pointed out educators' perceptions about creativity in the classroom are likely to outline the activities which they provide to their students and the way (strategies, techniques, behaviors and actions) they provide them in order to promote students' creative potential.

A systematic analysis and synthesis of the existing literature on K-12 teachers' implicit theories, beliefs and other synonymous terms about creativity revealed that the classroom environment is one of the main aspects of studies related to creativity (Andiliou & Murphy, 2010). Researchers tried to explore through teachers' implicit theories, beliefs and perceptions specific attitudes, strategies, practises, behaviours and actions which enhance, develop and promote or inhibit, constraint or decrease students' creative potential (Craft,

Abstract

The promotion of creativity should be an integral part of all educational levels as it is considered a crucial challenge and a necessity for social and economic competitiveness. The present study tried to shed light on the inhibitors and barriers of creativity fostering school Physical Education settings. A qualitative approach was employed in order to record Physical Educators perceptions about the barriers and the inhibitors they sense in their efforts to promote creativity in class. Exploration with a Thematic Content Analysis revealed a total of 11 major barriers which were encompassed in four theme categories. Natural and educational environment and resources, as well as Physical Educators and students' personality and qualifications were surfaced. Fruitful discussion was trying to provide a substantial assistance toward educational policy and practical implications.

Keywords: *creativity, physical educators, barriers, inhibitors, teachers, implicit theories, perceptions, obstacles.*

1998; Cheung, Tse & Tsang, 2003; De Fleith, 2000; Park, Lee, Oliver & Cramond, 2006; Tan, 2001).

Few studies focused and explicitly questioned what instructors or students perceive as barriers or obstacles for promoting creativity in educational settings, but mostly in higher education (De Alencar, De Fleith & Martinez, 2003; Kazerounian & Foley, 2007). A greater work upon barriers or obstacles to creativity has been done towards the work environment or the organizational environment from a managerial perspective (Amabile, 1996a, 1997; Groth & Peters, 1999; Wong & Pang, 2003). According to Davis (1999) barriers are blocks, internal or external, which either inhibits creative thinking and inspiration or else prevent innovative ideas from being accepted and implemented and may originate with one's family, peers, community, or educational environment, or from others in the culture or business organizations. Davis identified five categories of barriers, 1) learning and habit, 2) rules and traditions, 3) perceptual barriers, 4) cultural barriers, and 5) emotional barriers which may overlap with each other and pointed out that a readiness to deal with environmental and personal barriers are central to creative development and productivity.

It's a necessity to explore and record barriers in educational settings. As creativity considered crucial and significant for the growth of modern societies, and its promotion stressed through all educational levels, it is essential to investigate what inhibits and impedes it. Cropley (1999) indicated that there is a need of creativity-facilitating teaching and learning methods and approaches that permeate the entire curriculum in all content areas and at all age levels. Furthermore, researchers stressed the need for further investigation on educators' implicit theories, perceptions and beliefs, especially in specific school subjects (Kampylis, et al., 2009) or certain domains of knowledge (Andiliou & Murphy, 2010).

Taking into account the researchers' growing interest on educators' point of view in creativity related issues on specific subjects, the authors' interest turned to the subject of Physical Education (PE). PE is among the top three school subjects in European Union member states (EU27), where creativity and their synonyms are the most prominent in curricula (Heilmann & Korte, 2010). Furthermore, the Greek Cross Thematic Curriculum Framework (CTCF) for PE makes extensive use of creativity and their synonyms (PI, 2003). Very few studies, worldwide, in the field of PE explored creativity related issues from the Physical Educators' (PEds) perspective (Konstantinidou, Gregoriadis, et al., 2011; Konstantinidou, Michalopoulou, Aggelousis & Kourtesis, 2011; Konstantinidou, et. al., 2013; Konstantinidou, Zisi & Michalopoulou, in press). From the findings of these studies PEds appeared to have unclear perceptions, even conflicting ones regarding the nature of creativity. Also, it was revealed a poor agreement or disagreement of PEds' perceptions with the researchers explicit theories on many items related to the creativity fostering classroom environment. Furthermore, when exploring PEds' perceptions about some primary personality characteristics of the creative student, revealed that they: a) were probably unaware of what the theory supports b) frequently maintained inconsistent perceptions, c) often held contradictory perceptions with ones presented by researchers (comparison with explicit theories) and d) often supported contradictory perceptions with other in-service or prospective teachers (comparison with other implicit theories, beliefs or conceptions). For all the aforementioned reasons the purpose of the current study was easy to emerge. A qualitative approach was employed in order to record Physical Educators perceptions about the barriers and the inhibitors they sense in their efforts to promote creativity in class.

Methods

Participants

A sample of 220 (111 men and 109 women) in-service Physical educators (PEds) from 205 elementary schools answered and mailed back the questionnaire with anonymity. A total of 108 PEds (55 men and 53 women) answered the specific open-ended question (barriers and inhibited factors for the promotion of creativity in PE) which is the subject matter of the present paper. The participants had a mean age of $43,77 \pm 3,89$ years and the mean of their professional experience in elementary schools was $13,43 \pm 5,12$ years. The participation in the study was on a voluntary basis.

Procedure and Research instrument

The research took place in Greece. The instrument *Perceptions about Creativity* (PAC) was mailed in a total of 800 elementary public schools in Greece and was addressed specifically to PEds. The average time to complete the questionnaire was 25-30 minutes. PAC questionnaire was formulated after reviewing the existing body of literature in the field of teachers' perceptions, beliefs, views or implicit theories on creativity. Many items were adopted from Diakidoy and Kanari's (1999) questionnaire and were modified by the researchers in order to address primary education and PE. PAC is a self-report, pencil-and-paper questionnaire, containing 22 items which employ quantitative (20 items) and qualitative (2 items) data analysis. The particular paper discusses the analysis of PEds' perceptions on the 2nd qualitative item of PAC which was dealing with the barriers and the inhibitors for the promotion of creativity in PE.

Statistical analysis

A blend of qualitative and quantitative content analysis (Smith, 1975) was used to analyze the data. PEds transcripts were made into text and Thematic Content Analysis (TCA) was implemented. Themes were selected as the elements of the written messages to count (Berg, 2001) and inductively identified in the data and transformed into categories. Data in each theme and categories of each theme were counted for their appearance frequency (frequency distribution). Inter-rater reliability was assessed using Cohen's Kappa for all the categories. Cohen's Kappa between observer pairs ranged from $K = 0,785$ to $K = 0,898$ suggesting high inter-rater reliability.

Results

From the results of the TCA were arisen four major thematic categories (inhibitors) with a total of 11 themes (barriers) for the promotion of creativity in PE (table 1). The ranking on each category is hierarchically descending according to the frequency distribution of themes inside the texts (of the responses).

Table 1. Barriers and Inhibitors of Creativity in Physical Education

Thematic categories (Inhibitors)	Themes (Barriers)	Frequencies
Natural environment and resources	• Lack and Inappropriateness of Main Athletic and Supplementary Technical Equipment	50
	• Lack and Inappropriateness of Sport Facilities and Infrastructure (gyms, indoor spaces)	46
Educational environment and resources	• Lack of time and time pressure	63
	• Inappropriateness of the national PE Curriculum (curriculum content, textbook, objectives, topics, subject matter)	34
	• Large number of children per class	12
	• Inappropriateness of the educational system (objectives, organization of education, pedagogical processes, working conditions)	6
Physical Educator's Personality and qualifications	• Inappropriate teaching actions and behaviors (methods and teaching styles)	76
	• Lack of knowledge and experience from academic and vocational training	15
	• Negative personality traits (lack of interest and motivation, fear for the unknown, new and different)	10
Student's Personality and Qualifications	• Negative personality traits (lack of self- confidence, self-esteem, intrinsic motivation and interest, variety of fears)	30
	• Lack of basic knowledge and skills	10

Discussion

Natural environment and resources

In scientific literature the term is usually referred as natural/physical resources, sources or environment and is associated with the promotion of creativity. According to the results of the present study, natural environment and resources seems to be the main inhibitor and some significant natural barriers for the promotion of creativity in PE were exposed. From the TCA of the responses of PEds it was revealed the *Lack and Inappropriateness of Main Athletic and Supplementary Technical Equipment* and the *Lack and Inappropriateness of Sports Facilities and Infrastructure*.

More specifically, some representative responses of PEds are indicative of the Technical Equipment shortage:

PEd 87: “*a) We don’t have the comfort to exercise as a class in the yard. The most of the times we share the yard (2 classes simultaneously), b) there is only one yard, a basketball court, with cement floor, and there isn’t any other space, c) we don’t have an indoor gym or exercise area for winter, d) since we work out outdoors, I think that the natural environment, the grass, the green, is a requirement... this precondition isn’t exist!*”

PEd 14: “*The lack of suitable areas to carry out the lessons. We need indoor and quiet spaces to achieve these objectives (meaning the promotion of creativity)*”.

PEd 83: “*The space, of course, that we work out! When the attention of children, especially that of the small ones (elementary school), is always distracted from extrinsic factors (e.g. noise pollution from cars), is very difficult for them to concentrate to the subject matter that we ask (the PEds)*”.

From the aforementioned responses it’s clear that the lack and the inappropriateness of the natural environment and resources is an inhibitor for the expression of the creative potential of students. Many studies from various fields supported the significant role of the natural environment and resources for the promotion of creativity and highlighted it as the main or subsidiary inhibitor for creativity (Amabile, 1996b; Amabile, Conti, Coon, Lazenby & Herron, 1996; Groth & Peters, 1999; Hemlin, Allwood & Martin, 2008; Jackson, Kabwasa-Green, Swenson, Herranz, Ferryman, Atlas, Wallner & Rosenstein, 2003; Tan & Goh, 2002). Other studies on the physical environment not only advocated a specific position for the physical environment in the context of creativity but they revealed many aspects and specific characteristics and features of it such as the view of natural environment, the use of natural materials or the complexity of visual detail (McCoy, 2002; McCoy & Evans, 2005).

At this point, it’s worth mentioning the authors’ A personal reflection and conclusion, which arose from a flashback on her/his master thesis during an observation of preschoolers’ motor creativity. When the floor of areas for movement activities in kindergartens were covered with carpets, mats or other soft material and surfaces, children were much more creative and they expressed many different and original ways to travel in space, since they could safely and fearlessly move, drag, roll, creep and crawl their bodies in contact with the floor surfaces, touch their heads, backs and bellies onto the ground. Instead, when the areas were covered with cement, mosaic, asphalt, or other hard surface materials, it was clearly observed that the children's creativity was limited. From this example which was derived from the specific observation, everyone could make the assumption that an environmental condition or resource, (eg. the material of the floor surface) can have an obvious and direct effect on children’s creative potential.

The natural environment and resources can surprisingly influence the children’s creativity, at least this was revealed by the study of Konstantinidou, Michalopoulou, et al., (2011). According to the PEds’ reflections narrating examples of their students’ expression of

creativity in PE, it was assumed that when an additional and simulative condition of sports equipment and material was existent at the movement area, children exhibited many, different and much more creative motor responses. A particular example of students' expression of creativity which was cited from a PEd revealed the importance of the natural environment and resources:

PEd 12: *"Moving along the balance beam, not in the conventional way - walking on the top of it - but moving underneath, hanging, knitting hands and feet (it reminded me the commandos' way)"*.

This is a vibrant example of how an environmental condition or resource, the existence of a balance beam, can affect the creative thinking of children. Consequently, and not only from the results of the TCA of PEds perceptions, the lack of the natural environment and resources, such as the main sports equipment, the supplementary technical ones and the facilities and infrastructure, and their inappropriateness act as barriers of the creative potential of children.

Educational environment and resources

The majority of PEds stated many obstacles for students' expression of creativity which synthesized this particular category. The majority of PEds referred to the *Lack of Time*, expressing this way the two-hour lesson per week per class, or the *Time Pressure*, meaning the short duration of the instructional time of the lesson (40-45 minutes), as they perceived that this timeframe limits the children to express their creative potential. The following quotes declare this point of view.

PEd 19: *"The few hours of instruction per class results in a limited contact with the groups of children. Trying to cover the prerequisites of the subject matter, of movement abilities, the collaboration among children, which often serve as the objectives of the lessons...thus creativity, goes to the backstage"*.

PEd 38: *"The major barrier in PE is the lack of time. With two hours per week is impossible for children to have the opportunity to try, fail, try again and make extensions. Usually, when they start expressing their selves something stop them ... the bell"*.

PEd 68: *"There is not enough time for children to express their personal ideas, to experiment and put them into practice"*.

The insufficient time, lack of time, or time pressure have been reported as barriers for the manifestation of creativity in the work environment (Amabile, 1997; Amabile, et al., 1996; Groth & Peters, 1999). Similarly, the theory supports the pressure of time and the time limits as inhibitors, even as "murderers" of people's creativity (Craft, 2000; Davis, 1999; Hennessey 2007; Urban, 2007). Other researches in educational domain, investigating the students and teachers' implicit theories and perceptions, have also argued that insufficient time, as well as another associated factor which is the large number of students per class, are barriers for creativity (De Fleith, 2000; Kampylis, et al., 2009; Tan & Goh, 2002). Indeed, the large number of students per class is a fact at the Greek school settings. The PEds of the present study characteristically mentioned this barrier into their references while they made clear that 25-30 children per class is an enormous number of children to be handled.

PE 51: *"Two hours per week are not enough. The large number of children per class results to the absence of adequate time per child in order to express and show to the others what they feel, what they want. It's not enough time to show me what they have accomplish and create in order for me to give them back an appropriate feedback to increase their motivation"*.

Concerning the educational environment and resources, many PEds referred to *Inappropriateness of the National PE Curriculum*. They mentioned it as strict, with narrow frames, emphasizing in specific objectives/goals, especially in movement and movement abilities, non-oriented towards the children's interests and creativity. Other PEds stated the conformity they have to exhibit when they follow the PE Curriculum and the obligation for

its fulfillment at the end of the year. According to their views, there is no space and time for creativity in PE curriculum and it seemed they perceive the promotion of creativity as a totally extracurricular procedure or objective, or an objective or a subject that is obstructed or not included in the PE Curriculum.

PEd 75: *“All the lessons should be taught... We have to cover the material of the courses. The emphasis of the curriculum is given elsewhere”*.

PEd 17: *“The strict implementation of the curriculum infringes on children’s manifestation of creativity and the children’s freedom of expression”*.

PEd 80: *“A major barrier is the curriculum which predetermines the objectives that should be taught”*.

Some PEds identified it as a problem for the higher classes.

PEd 104: *“Inside the PE curriculum, the focus on creativity is given through the lessons for the first two grades and not through the lessons for the higher classes (the material explains everything)”*.

Indeed, flipping through the Greek PE curriculum, it can be easily assumed that creativity is promoted mainly in the first two grades of primary education and mostly as a non-verbal communication skill through some lessons of psychomotor domain (development of basic elements of movement and fundamental movement abilities) and through a small number of lessons on music and movement education (eurhythmics). Conversely, with a thorough examination of PE curriculum it's observed that creativity is presented as an element of the PE curriculum in many different ways. Sometimes stands as part of the axis of cognitive context of psycho-motor development or as a general goal of eurhythmics. Other times forms the goal of the emotional domain into different sections/themes (e.g. A1: space and time awareness, A4: lateral movement), or stands as an independent section/theme (A7: imagination and creativity) and at the same time the goal of cognitive and emotional domain for grades 1-2. Additionally, creative movement is referred as a specific purpose of psychomotor domain and as a goal within the emotional domain, while the development of creativity as a specific purpose of cognitive domain. Proceeding in grades 3-4 there is a significant decline of references on creativity, whereas in grades 5-6 creativity is only mentioned in a subsection of teaching methods and styles in PE.

The references on creativity and other related terms in Greek PE curriculum create a confusion about its conception and approach. It seems that various contradictions, conflicts and questions are raised concerning the approach of creativity and its promotion through the certain curriculum. Is creativity a subject of teaching and learning? Is it promoted through other subjects? Is it a purpose, a goal or an objective of some activities, of some courses or of a particular domain (cognitive, emotional, psychomotor) or part of the axis of the cognitive domain? Is it an ability, a skill or a combination of them? Is it a process, an outcome, a situation or a capability of the student itself? Is it all the aforementioned?

Another important issue raised is that in PE curriculum there is no reference of creativity in sports, in the development of sports skills and in games, whereas, regarding the traditional dances creativity occupies a tiny place as the objective of some specific activities in a few courses. This partial promotion and the confusing orientation of creativity in Greek PE Curriculum have been already mentioned in a previous study of Konstantinidou, Michalopoulou, et al., (2011). According to the results of that study it was revealed that PE encompasses a wide range of activities that allow creative outcomes to emerge, such as team games, practicing sports’ skills, activities for the development of the fundamental movement abilities, motor improvisation and dancing. A remarkable number of PEds’ references highlighted the contribution of exercising sports’ skills and practicing sports to the expression of the creative potential of the student. Examples like the execution of a strange basketball dribble, an ingenious pass in volleyball, a complex and unprecedented pretense in handball, the modification of rules, tactics and strategies of the games were well documented, showing

thus that sports and practicing sports skills promote students' creativity. Moreover, games and particularly the traditional team games have been proved to facilitate the expression of students' creativity and it seemed that they contribute to the development of higher cognitive skills (analogical reasoning thinking, convergent and divergent thinking, problem finding and solving ability, causative thinking etc.). In fact Cleland and Pearse, (1995) and McBride and Cleland (1998), some years ago, theoretically supported, before some years, the notion that higher cognitive skills, such as problem finding and solving abilities and critical thinking can be promoted through games.

Another barrier for the manifestation of creativity it seems to be the educational system as a whole. According to many PEds views the educational system, the organization and the philosophical background of education and the educational process at all levels definitely aren't conducive to the promotion of creativity:

PEd 91: "*A major barrier is how the current pedagogical process in school is set up, from kindergarten to university*".

PEd 98: "*...the complete absence of critical and creative thinking is a fact on the Greek overall educational setting*".

The comment of PEd 59 encompassed the essence of all the aforementioned inferences in a small sentence: "*The major barrier is that creativity doesn't hold a significant position in Greek educational system*".

This raises questions, if we take under consideration that:

- a) the educational policy of Greece, in the last decade, theoretically followed the educational policy of the EU and supported the promotion of creativity in schools (EC 2008 / C 86/01, 2010 / C 117/01 and 2008 / C 141/10),
- b) the purpose of primary education in Greece is to contribute to the overall, harmonious and well-balanced development of mental and psychomotor potential of students, that, regardless of gender and origin, should have the capability to evolve into integrated personalities, live creatively and develop their creative thinking (Law 1566 /85 article 1, § 1 and 1c)
- c) one of the specific objectives of primary education is the cultivation of creativity (Law 1566/85 , Article 1, § 1 and 1c) and
- d) Cross Thematic Curriculum Framework of Primary Education (PI, 2003) supported the promotion of creativity in schools and in PE.

Consequently, it should be concluded that there must be a false or a low impact of educational policy to educational practice. As educational policy made some efforts to promote creativity in education why PEds don't feel the same way? This is not surprising and is not the exception to the rule. Craft (2005) highlighted that policy scaffolding and research findings may support increased activity and commitment to teaching for creativity and fostering creative learning, in curriculum and pedagogy. But this can be problematic because there are constraints and tensions in the *translation* of policy into practice, and the formation of policy from practice. She thoroughly discussed the three major areas *paradoxes in scaffolding, disconnected curricula and curriculum organization* which form this problematic translation of policy into practice. It can be assumed that education policy ought to reconsider and/or further provide update and additional resources and assistance in order to help PEds understand and implement lessons that are creativity-oriented.

Physical Educator's Personality and Qualifications

According to PEds references three major barriers for the promotion of creativity emerged; a) Inappropriate teaching actions and behaviors which included their inappropriate for fostering creativity teaching methods and styles, b) *Lack of Knowledge and Experience coming from Academic and Vocational Training* and c) Negative personality traits which reflected their lack of interest and motivation, along with different kind of fears. These three categories (behaviors, competencies and characteristics) were also pointed by Esquivel (1995) in her literature review on teacher behaviors that influence the development of creative abilities in children.

In the current study, the majority of PEds stated as barriers the use of teachers' inappropriate teaching actions and behaviors, such as the instructor-centered style where the teacher is responsible for decision making, directs all the instructions and demonstrations, provides excessive guidance, keeps order in class with a strict manner. Additionally, they hinted that the lack of opportunities for children to express their selves, to actively engage, to question and discuss their ideas can affect them negatively, thus not giving them the space they want to unfold their creative potential. Some typical examples of PEds conceptions are following:

PEd 3: *"Barriers for creativity are the teacher-centered method, a lesson without intrinsic motivation and feedback for children, a lesson without the active participation of students, without reinforcing their self-determination. Lessons without questioning, setting out and solving problems and thinking independently"*.

PEd 40: *"... to be strict, regarding the freedom of expression on students' opinions/ideas/questions and to fulfill, in every way, the goal of a lesson (which is not usually focused on creativity)"*.

The strictness, the obedience and conformity to rules and instructions, the obeisance, the discouragement and the negative critics often mentioned as obstacles for the expression of students' creative potential. Furthermore, the first-person narratives surfaced deeper PEds thoughts and feelings and exposed some other personal related problems and fears. PEd 73 explicitly stated: *"In my lesson I don't want children to deviate from what I teach, as a result creativity is not promoted. I believe that children don't have the ability to control at which point they should stop unfolding their creativity, creating thus problems to the continuity of the lesson"*.

It seems that the particular PEd perceived creativity as a *lesson destructor* which can cause damage to a well-constructed and directed lesson by him/her. PEd 80 reassured this point of view: *"...it's a necessity to keep children in contexts for maintaining the obeisance and having done the lesson well"*.

The research on creativity provides evidence that highly creative children are more disruptive than their less creative peers (C. L. Scott, 1999). In order for a creative children to be likeable it should also be easy manageable in class (Westby & Dawson, 1995). A large scale research in European Union member states (EU27) indicated that teachers adopt teaching strategies to enhance students behaviors associated with creativity (imagination, curiosity, exploration and ability to come up with something new) and at the same time behaviors that contribute to a good and quite environment in the classroom (Cachia & Ferrari, 2010).

Certainly, there are teachers who cannot apply this teaching style. They are the teachers who believe that it is not possible to develop creativity and at the same time have a successful completion of the course. Usually these teachers are coming from cultures of collectivism / Eastern cultures (Ng & Smith, 2004). Such behaviors, however, were apparent in this study too, even though the participated PEds were coming from a Western World culture (culture of individualism).

Therefore, it is possible that the teaching behaviors and actions of PEds be affected by other factors such as their educational and training background. At least that was shown in the current TCA research:

PEd 54: *"Lack of PEds' large experience in this way of teaching, especially in those like myself that finished their Physical Education studies several years ago".*

PEd 59: *"In everyday level, there are inhibitors such as the lack of experience in using the techniques to promote creativity, since not any teacher has similar experiences both from his school years and from his higher education training, moving thereby, in the boundaries of improvisation".*

PEd 75: *"PEd's lack of knowledge on how to promote this item. Lack of seminars on how to promote creativity"*

PEds mentioned the lack of relevant experiences in their school years, the lack of relevant experience in theory and practice, both during their education and their career as PEds. Not a few PEds reported that the lack of knowledge and experience, the lack of training and seminars on fostering creativity and the use of special techniques and specific activities to promote creativity, constricts them. These findings were supported by the research of Cachia and Ferrari (2010) conducted on a sample of 7,659 European teachers in primary and secondary education. The authors found that training and education on creativity had an impact on teachers' perceptions. Participants who reported that they have not received training related to creativity during their academic studies exhibited more dichotomous and negative views about creativity.

The education and lack of knowledge referred as the most common barriers to creativity in both education (Kampylis, et al., 2009) and other work sectors (Groth & Peters, 1999). In the international literature, knowledge and training on creativity related issues, seems to be especially helpful for teachers in order to understand and promote creativity (Alencar, 1991), but also in shaping positive perceptions about creativity (Park, et al., 2006). It seems however, that training alone is not sufficient for the effectiveness of teachers in promoting creativity. Educators in the research by Park et al., (2006), although embraced the promotion of creativity in their lessons through various new teaching methods, said that since they had not similar experiences with these methods, were afraid this will not be successful in their classroom and pointed out that they would take them some time to adopt such teaching methods.

Negative personality traits, such as fear of failure in the implementation of new teaching methods, but also adherence to conventional and traditional teaching methods seem to be impediments to the promotion of creativity (Park, et al., 2006).

In current study various PEds' personality traits, such as lack of motivation and interest, willingness for renewal and suspicion and unwillingness to engage and invest time to the new and different, that creativity in the classroom represents, explicitly addressed as obstacles of a non-negligible portion of participants:

PEd 24: *"I believe that the main inhibitors for not promoting creativity are that we don't want to try procedures of the new and the original, because it has a lot of work".*

PEd 64: *"How lazy is the Ped".*

PEd 80 : *"... the PEd knows it all and is a little suspicious of something new.*

PEd 103: *The fixed position (ours and other teachers'), the lack of availability for renewal and new things.*

The fear of challenge and failure, the lack of motivation, interest, desire and willingness, and also the habit seems to be the most common self-imposed barriers, for the promotion of creativity, shaped from individuals (Groth & Peters, 1999). In contrast, the very creative teachers found to be characterized by persistence, desire to grow, embracing new experiences and self-confidence (Horng, Hong, Chanlin, Chang & Chu, 2005). If a teacher is not characterized by the desire for progress and the willingness to invest and try new and

different things in the classroom, then he/she probably will never devote time to these things, and will continue to adhere to out-of-date teaching methods and techniques and he/she probably will not facilitate the promotion of students' creative potential. An unwillingness and avoidance of risk taking and an overemphasis on the Status Quo (Amabile 1996a, 1997), as well as, perceiving things in certain ways as a perceptual sets, a mental sets, or functional fixedness, may serve as creativity barriers (Davis, 1999).

Students' personality and Qualifications

A sufficient number of PEds indicated that many times students' personality traits act as barriers to the expression of their creativity. These traits included mostly the impact or the result of personality features which were formed under bad or inappropriate circumstances inside the context of class, such as the rejection and criticism from their peers and the PEd, the peer's pressure of being ridiculous, the fear of failure, of the unknown, and of poor school performance. PEds characteristically stated:

PEd 28: "The fear of failure and the negative stance of students, the lack of confidence in their abilities. Also, students feel stressed under the pressure of poor school performance."

PEd 29: "Students feel humiliated and they fear the possibility not to perform well some motor skills. They also fear the peer pressure, the mocking, and the ironic giggles of their peers. This might create a negative impact on the psyche of children"

PEd 90: "The fear of error making – the ridicule... the fear to the unknown"

PEd 100: "Some students have low self-esteem and are afraid of their peers' negative criticism"

PEd 33: "The most important barrier, I think, is the negative criticism from their peers and their teacher"

The aforementioned different kind of fears may source from other deeper causes, such as low self-esteem and self-confidence, lack of confidence in their abilities, characteristics which sometimes explicitly expressed through the references of PEds as barriers for creativity. These characteristics, in turn, may imply low intrinsic motivation of students' participation in the course. Low intrinsic motivation of students may appear in class as laziness, disliking or lack of good mood and interest for participating in PE lessons. PEd 5 clearly stated: "Barrier is the laziness of some students. Other children (few though) just don't like to participate in PE lessons, generally". Additionally, PEd 96 mentioned: "Barriers are the negative behaviors of students and generally the lack of interest".

Students' negative stances and attitudes towards PE lessons directed to the expression of creativity could reveal their bad mood, even their unwillingness for participation in these lessons, which may stem either from:

- a) the lack of intrinsic motivation, which may be due to the lack of positive emotional experiences from participation, satisfaction and joy through activities,
- b) the different kinds of fears, which may due to negative emotional experiences from participating in various physical activities and subsequent fears for the revival of such experiences, which altogether act as inhibitors in the psyche of students,
- c) c) the creation of an inappropriate climate in the classroom which is not oriented to the promotion of students' creativity, does not cultivate the active participation of children, does not act as a secure environment for personal freedom of expression, for learning through exploration and discovery, which in turn, probably results from inappropriate teaching behaviors and actions in the classroom that tend, as mentioned before, to an authoritarian and / or preservative teaching style,
- d) the combination of all the above.

The classroom climate which is not oriented to the development of students' creative potential explicitly reassured from PEd 83: "*The perception which we cultivate in children that PE is only football and the different games they play without a clear goal*". This reference indicates that a certain notion has been cultivated or used to be cultivated in the students from their own PEds, and explains why the perceptions and behaviors of children mainly reflect the perceptions and behaviors of adults.

It seems that some negative personality traits of students stand as barriers for the expression of their creative potential. The major role, for the appearance of these traits, probably plays the educational environment which is not oriented to the promotion of creativity. Inside this context a chain reaction is created, which affects with a direct or indirect way the student's personality. The chain reaction results in a classroom climate and environment which does not cover the students' basic needs like the need for security.

It's well known that needs guide the human behaviors. Each person feels the need for security (safety needs), the need for being a part of a community (belongingness), the need for being respectable inside this community (esteem needs), the need to feel recognizable and that achieve things, as well as, to accomplish things by itself (self-actualization needs) (Maslow, 1954). Additionally, each person, feel the need for participation (social contact), for being accepted and socially accepted (acceptance and status/social standing) and independent (independence) inside a set of individuals (Reiss, 2000). When a student does not fulfill these needs or receives negative criticism and comments from their peers and teachers, then it comes naturally not to have or to diminish the willingness, the good mood and the interest to fulfill these needs and to express their selves. Subsequently, the student may develop different kind of fears (which usually are linked with possible negative future events and actions) like the fear of poor school performance, of mocking, of humiliation, of being rejected from their peers, or even ostracized by them. These students' emotional characteristics are thought to be traits that are negatively connected with creativity (Cropley, 1999; Davis, 1999; Sheldon, 1999).

Finally, a minority of PEds stated that the lack of knowledge and movement experiences, as well as, the inadequate development of students' motor skills were inhibitors of students' creative expression. The role which knowledge plays to creativity has long been questioned from theorists and researchers. Generally, it's believed that knowledge and the acquisition of knowledge and skills somehow contribute to creativity. Scott TE (1999) stated that a greater volume of general and domain-specific knowledge increases the resources available for problem solving and for divergent production, while some specific characteristics (of the person or the situation) of access and use of this volume of knowledge may influence the probability of a creative response. Ward (2007) also pointed out that prior knowledge is a key building block of creative accomplishment. Boden (2001), also, supported that creative thinking cannot happen unless the thinker already possesses knowledge of a rich and/or well-structured kind. Finally, Amabile (1983a, 1983b) identified that an individual's level of creativity is determined by knowledge and the special skills in a target domain and it can be influenced from his social environment.

In conclusion the findings of the present study pointed out that one of the main inhibitors of creativity fostering classroom environment is the educational environment and resources and specifically the problematic translation of policy into practice. Inappropriate for creativity behaviors and practices that PEds use, various negative personality traits and subsequent different fears seem to contribute in this translation. Also, this may be due to the lack of knowledge and education on creativity related issues, but also the overemphasis on the Status Quo and the functional fixedness of PEds in adhering to well-known and established teaching practices and customs. All the above, combined with the

inappropriateness of the natural environment and resources in PE hold back and are conducive to student's negative behavior characteristics.

The purpose of modern societies should be the promotion of students' creative potential in schools as a stepping stone for shaping the competitive and creative citizens of the future. Public authorities and bodies should take serious steps to remove these barriers through appropriate educational policies.

References

- ACARA (Australian Curriculum, Assessment and Reporting Authority, 2014). *The Australian Curriculum*. Retrieved from: <http://www.australiancurriculum.edu.au/>
- Amabile, T. M. (1983 α). *The social psychology of creativity*. New York: Springer-Verlag.
- Amabile, T. M. (1983 β). The social psychology of creativity: A componential conceptualization. *Journal of Personality and Social Psychology*, 45, 357-377.
- Amabile, T. M. (1996 α). *The Motivation for Creativity in Organizations*. Harvard Business School Note 396-240.
- Amabile, T. M. (1996 β). *Managing for Creativity*. Harvard Business School Note 396-271.
- Amabile, T. M. (1997). Creativity in Organizations: On Doing What You Love and Loving What You Do". *California Management Review*, 40 (1), 39-58.
- Amabile, T. M., Conti, R., Coon, H., Lazenby, J. & Herron, M. (1996). Assessing the Work Environment for Creativity. *The Academy of Management Journal*, 39 (5), 1154-1184.
- Andiliou, A. & Murphy, P. K. (2010). Examining variations among researchers' and teachers' conceptualizations of creativity: A review and synthesis of contemporary research. *Educational Research Review*, 5, 201-219. DOI: 10.1016/j.edurev.2010.07.003
- Berg, B. L. (2001). *Qualitative research methods for the social sciences* (4th ed). Boston, MA: Allyn & Bacon.
- Boden, M. A. (2001). Creativity and knowledge. In Craft A, Jeffrey B and & Leibling M (eds) *Creativity in Education*, (pp.95-102). London: Continuum.
- Cachia, R. & Ferrari, A. (2010). *Creativity in Schools: A Survey of Teachers in Europe*. Joint Research Centre – Institute for Prospective Technological Studies (JRC-IPTS) (EUR Number: 24585 EN - 10/2010). Retrieved from: <http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=3702> DOI:10.2791/48818
- Cheung, W. M., Tse, S. K. & Tsang, W. H. (2003). Teaching creative writing skills to primary school children in Hong Kong: discordance between the views and practice of Language teachers. *Journal of Creative Behavior*, 37 (2): 77-98.
- Cleland, F. E. (1994). Young children's divergent movement ability: Study II. *Journal of Teaching in Physical Education*, 13, 228-41.
- Cleland, F. E. & Pearse, C. (1995). Critical thinking in elementary physical education: reflections on a year long study. *Journal of Physical Education Recreation and Dance*, 66 (6), 31-38.
- Craft, A. (1998). Educators' perspectives on creativity: An English Study. *Journal of Creative Behavior*, 32 (4), 244-257.
- Craft, A. (2000). *Creativity across the Primary Curriculum: Framing and Developing Practice*. London: Routledge / Falmer.
- Craft, A. (2005). *Creativity in schools: Tensions and dilemmas*. London: Routledge.
- Cropley, A. J. (1999). Education. In M.A. Runco and S.R. Pritzker (Eds.) *Encyclopedia of Creativity*, vol 1(A-H) (pp.629-642). San Diego, CA: Academic Press.
- Davis, G. A. (1999). Barriers to Creativity and Creative Attitudes. In M.A. Runco and S.R. Pritzker (eds.) *Encyclopedia of Creativity*, vol 1(A-H) (pp. 165-174). San Diego, CA: Academic Press.
- De Alencar E. M. L. S. (1991). Training Teachers to Teach for Creativity. *European Journal of High Ability*, 1 (2): 222-226. DOI: 10.1080/0937445910010214
- De Alencar E. M. L. S., De Fleith D. S. & Martinez, A. M. (2003). Obstacles to Personal Creativity between Brazilian and Mexican University Students: A Comparative Study. *The Journal of Creative Behavior*, 37, 179-192. DOI: 10.1002/j.2162-6057.2003.tb00832.x
- De Fleith, D. S. (2000). Teacher and student perceptions of creativity in the classroom environment. *Roeper Review*, 22, 148-153. DOI: 10.1080/02783190009554022
- Diakidoy, I. A., & Kanari, E. (1999). Student teachers' beliefs about creativity. *British Educational Research Journal*, 2 (2), 225-243. DOI: 10.1080/0141192990250206
- Education & Training (ET), (2010). Retrieved from: http://europa.eu/legislation_summaries/education_training_youth/general_framework/index_en.htm

- Education & Training (ET), (2020). Retrieved from: http://europa.eu/legislation_summaries/education_training_youth/general_framework/ef0016_en.htm
- Esquivel, J. B. (1995). Teacher Behaviors that Foster Creativity. *Educational Psychology Review*, 7 (2), 185-202.
- EC, (European Council and Commission, 2008). 2008 joint progress report of the Council and the Commission on the implementation of the Education and Training 2010' work programme — “Delivering lifelong learning for knowledge, creativity and innovation” (2008/C 86/01). *Official Journal of the European Union*, C 86/1.
- EC, (European Council and the Representatives of the Governments of the Member States, 2008). Conclusions of the Council and of the Representatives of the Governments of the Member States, meeting within the Council of 22 May 2008 on promoting creativity and innovation through education and training (2008/C 141/10). *Official Journal of the European Union*, C 141/17.
- Fryer, M., & Collings, J. (1991). Teachers' views about creativity. *British Journal of Educational Psychology*, 61, 207–219. DOI: 10.1111/j.2044-8279.1991.tb00976.x Groth JC and Peters J (1999). What Blocks Creativity? A Managerial Perspective. *Creativity and Innovation Management* 8 (3): 179-187.
- Heilmann, G., & Korte, W. B. (2010). *The role of creativity and innovation in school curricula in the EU27: A content analysis of curricula documents*. Seville: European Commission. Joint Research Centre, Institute for Prospective Technological Studies (JRC-IPTS) (EUR Number: JRC61106 Technical Note – 10/2010). Retrieved from: <http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=3701>
- Hemlin, S., Allwood, C. M. & Martin, B. R. (2008). Creative Knowledge Environments. *Creativity Research Journal*, 20 (2), 196 - 210.
- Hennessey, B. A. (2007). Creativity and Motivation in the Classroom: A Social Psychological and Multi-Cultural Perspective. In A. G. Tan (ed.) *Creativity: A handbook of teachers* (pp. 27- 45). Singapore: World Scientific Publishing Co. Pte. Ltd.
- Hornig, J. C., Hong, J. S., Chanlin, L. J., Chang, S. H. & Chu, H. C. (2005). Creative teachers and creative teaching strategies. *International Journal of Consumer Studies*, 29 (4), 352–358.
- Jackson, M. R., Kabwasa-Green, F., Swenson, D., Herranz, J., Ferryman, K., Atlas, C., Wallner, E. & Rosenstein, C. (2003). Investing in Creativity: A Study of the Support Structure for U.S. Artists. A U.S. study conducted by the Urban Institute and supported by a 38-member consortium of funders as a part of the Culture, Creativity, and Communities Program at the Urban Institute. Retrieved from: http://www.urban.org/UploadedPDF/411311_investing_in_creativity.pdf
- Jeffrey, B., & Woods, P. (2003). *The creative school: A framework for success, quality and effectiveness*. London: Routledge / Falmer.
- Kampylis, P., Berki, E., & Saariluoma, P. (2009). In-service and prospective teachers' conceptions of creativity. *Thinking Skills and Creativity*, 4 (1), 15-29. DOI: 10.1016/j.tsc.2008.10.001
- Kazerounian, K. & Foley, S. (2007). Barriers to Creativity in Engineering Education: A Study of Instructors and Students Perceptions. *Journal of Mechanical Design*, 129, 761-768.
- Konstantinidou, E., Gregoriadis, A. & Grammatikopoulos, V. (2011). *Exploring Children's Ways of Creative Expression: A Qualitative Approach of Physical Educators' Perception*. Announcement presented at the OMEP European Conference: Perspectives on Creativity and Learning in Early Childhood Education. 6-8 May, Nicosia, Cyprus.
- Konstantinidou E., Michalopoulou, E., Aggelousis, N., & Kourtesis, T. (2011b). Creativity in Elementary Physical Education: A qualitative Approach of Teachers Perceptions. *Inquiries in Sport & Physical Education*, 9 (2), 84-100.
- Konstantinidou, E., Gregoriadis, A., Grammatikopoulos, V. & Michalopoulou, M. (2013). Primary physical education perspective on creativity: the nature of creativity and creativity fostering classroom environment. *Early Child Development and Care*, 184 (5), 766-782 . DOI: 10.1080/03004430.2013.818989.
- Konstantinidou, E., Michalopoulou, M., Aggelousis, N., & Kourtesis, T. (2013). Primary physical education perspective on creativity: The characteristics of the creative student and their creative outcomes. *International Journal of Humanities and Social Sciences*, 3 (3), 234–247. Retrieved from http://www.ijhssnet.com/journals/Vol_3_No_3_February_2013/23.pdf
- Konstantinidou, E., Zisi, V. & Michalopoulou, M. (in press). Preliminary psychometric properties of the CFTIndex in Greece: The perspective of Physical Education. *Early Childhood Development and Care*.
- NACCCE, (National Advisory Committee on Creative and Cultural Education, 1999). *All Our Futures: Creativity, Culture and Education*. London: Department for Education and Employment.
- Maslow, A. H. (1954). *Motivation and personality*. New York: Harper and Row Publishers, Inc.
- McBride, R. E. & Cleland, F. (1998). Critical thinking in physical education. *Journal of Physical Education, Recreation and Dance*, 69 (7), 42–6.

- McCoy, J. M. (2007). Linking the Physical Work Environment to Creative Context. *The Journal of Creative Behavior*, 39 (3), 169-191. DOI: 10.1002/j.2162-6057.2005.tb01257.x
- McCoy, J. M. & Evans, G. W. (2002). The Potential Role of the Physical Environment in Fostering Creativity. *Creativity Research Journal*, 14 (3-4), 409-426. DOI: 10.1207/S15326934CRJ1434_11
- Law 1566 (26-09-1985) Construction and function of primary and secondary education and other provisions. *Government gazette 167 / A / 30-09-1985*. Retrieved from: http://www.pi-schools.gr/preschool_education/nomothesia/1566_85.pdf
- Morais, M. F. & Azevedo, I. (2011). What is a Creative Teacher and What is a Creative Pupil? Perceptions of Teachers. *Procedia Social and Behavioral Sciences*, 12, 330–339. DOI: 10.1016/j.sbspro.2011.02.042
- Ng, A. K. & Smith, I. (2004). Why is there a Paradox in promoting creativity in the Asian classroom? In S. Lau, A. N. N. Hui & G. Y. C. Ng (eds.), *Creativity: When East Meets West*, (pp. 87–112). Singapore: World Scientific Publishing, Co. Pte. Ltd.
- Park, S., Lee, S., Oliver, J. S., & Cramond, B. (2006). Changes in Korean science teachers' perceptions of creativity and science teaching after participating in an overseas professional development program. *Journal of Science Teacher Education*, 17, 37–64.
- PI, (Pedagogical Institute, 2003). *A cross thematic curriculum framework for compulsory education*. Retrieved from: http://www.pi-schools.gr/programs/depps/index_eng.php
- Reiss, S. M. (2000); *Who am I? The 16 basic desires that motivate our behaviour and define our personality*. New York: Tarcher/Putman.
- Runco, M. A. (2007). *Creativity - Theories and Themes: Research, Development, and Practice*. Burlington, MA: Elsevier Academic Press.
- Saracho, O. (2012). Creativity theories and related teachers' beliefs. *Early Child Development and Care*, 182 (1), 35-44.
- Scott, T. E. (1999). Knowledge. In M.A. Runco and S.R. Pritzker (eds.) *Encyclopedia of Creativity*, vol 2(I-Z) (pp.119-129). San Diego, CA: Academic Press.
- Scott, C. L. (1999) Teachers' Biases Toward Creative Children. *Creativity Research Journal*, 12 (4), 321-328.
- Sheldon, K. M. (1999). Conformity. In M. A. Runco & S.R. Pritzker (Eds.) *Encyclopedia of Creativity*, vol 1(A-H), (pp.341-346). San Diego CA: Academic Press.
- Smith, H. W. (1975). *Strategies of Social Research*. Englewood Cliffs NJ: Prentice Hall.
- Tan, A. G. (2001). Singaporean teachers' perception of activities useful for fostering creativity. *Journal of Creative Behaviour*, 35 (2), 131–148.
- Tan, A. G., & Goh, S. C. (2002). Singaporean student teachers' perception of teacher behaviours important for fostering creativity. *Education Journal*, 30 (2), 107-31.
- Urban, K. K. (2007) Assessing Creativity: A Componential Model. In A. G. Tan (ed.) *Creativity: A handbook of teachers* (pp. 167-184). Singapore: World Scientific Publishing Co. Pte. Ltd.
- UK Department of Education, (2014). *National Curriculum*. Retrieved from: <https://www.gov.uk/government/collections/national-curriculum>
- Ward, T. B. (2007). Preface: The Multiple Roles of Educators in Children's Creativity. In A. G. Tan (Ed.) *Creativity for Teachers: A handbook of teachers* (pp. xviii-xxx). Singapore: World Scientific Publishing Co. Pte. Ltd.
- Wilson, A. (2005). *Creativity in Primary Education*. London: Learning Matters.
- Wong, C.-K. S. & Pang, W.-L. L. (2003). Barriers to creativity in the hotel industry – perspectives of managers and supervisors. *International Journal of Contemporary Hospitality Management*, 15 (1), 29 – 37.