## Introduction

The importance of creativity in the constantly changing world has been deemed crucial in various fields such as in Technology, in Arts, in Economy, in Sociology but also in Education. The objective of this study is to offer a deeper understanding on the educational practices that lead to the enhancement of creative thinking in kindergarten children. On the theoretical part of the study we initially refer to some vital research approaches in literature concerning creative thinking. Emphasis is given on the conceptual model of the 4P's: press, product, process and person. As this spherical approach is in line with the holistic approach that we use in preschool education, we choose the 4P's model of creativity as a platform for the whole study. Within this framework, on the experimental part of the study, we present the ways that we used in order to embody the 4P's model into an educational programme for kindergarten children and then proceed to present the results of this intervention.

## Review of relevant literature

Many researchers have analysed creativity through the lenses of creative thinking. Specifically, Guilford was the one to begin the so-called 'modern' creativity research (Urban 1990, 99) when he related creative thinking with the four components of divergent production: fluency, flexibility, originality and elaboration, meaning the richness of ideas one produces. Creativity researchers have also provided additional features on creative thinking such as openness, tolerance of ambiguity, focusing and task commitment (Urban 1990), motivation (Collins and Amabile 1999), originality and freshness of perceptions (Csikszentmihalyi 1999), problem recognition and knowledge gaps, situation redefinition and limitation surpassing (Kim 2006, 4).

Other researchers refer to creative thinking based on the ways it is expressed. According to this approach, Runco (2003, 319) suggests that creative thinking is identified in the natural environment rather than just in particular professional fields. Hong and Milgram (2010) also indicated that creative thinking is domain-general rather than task specific. Consequently, as Sternberg and William stated 'creativity is, as much an attitude towards life, as a matter of ability' (1996, 2) that may be identified in daily activities and is not solely expressed in certain fields.

During this past decade, a reshaped approach in creative thinking research has been proposed by Jeffrey and Craft (2001) who highlight the role of social interaction and its influence on an individual's creativity. As stated by Craft (2003a), researchers, having analysed the correlation of creative thinking with the overall social context, agreed that society and culture may either cultivate and direct an individual's creative potential or constrain and discourage one's creative attempts. Shi (2004) suggests that an individual's creative behaviour and its product cannot be considered separately from the particular socio-cultural background in which they occur and by which they are examined. According to the same concept, Csikszentmihalyi (1988) indicates that creativity is in a dynamic interaction with the following three systems: social institutions, cultural domain, and individuals.

Already since 1950, Rhodes (1961) attempted to formulate a model in order to describe creativity. Thus, he combines and filters a variety of definitions of creativity, which finally lead to a spherical approach of creative thinking ascribing the interaction of the following four perspectives on creativity or, according to MacKinnon (1965), of the different 'facets' of creativity.

Rhodes' examination of the field of creative research resulted in four fundamental areas of inquiry. One area of creativity research focus is that of the

identification of the characteristics of the creative *Person*. Another area of inquiry examines the components of the creative *Process.* A third area is that which examines the aspects of the creative *Product*, and the qualities of the environment (*Press*) which allow for creativity to flourish. Although Rhodes fails to compose a single definition of creativity, he develops a system that enables researchers to study smaller, more manageable elements of the larger complex concept of creativity according to J. Puccio (1999).

This very model was later adopted by MacKinnon (1961, 1978) as it summarizes a variety of approaches to creativity research and helps improve one's understanding of this multi-faceted phenomenon (MacKinnon, 1970). As MacKinnon (1961) believes, clarity may be achieved by developing an operational definition of creative behaviour from one or more of the four perspectives. The four facets of creativity interact as an entire system and they cannot operate independently.

In the following sections the interrelation of creative thinking with each of the above mentioned four perspectives is analysed in detail.

***Press***

Several researchers (in Mellou 1995, 150) highlight the influence that environmental factors, such as peer pressure and parental approval and contact, have on creative thinking. Referring to family environment, Drevdahl (in Mellou 1994, 54) argues that non-intrusive, non-authoritarian attitudes of parents provide a supportive environment for the development of creative thinking. On the contrary, more vigilant, intrusive, and demanding attitudes hinder the expression and development of creative thinking (Getzels and Jackson in Mellou 1994, 54). Therefore, environmental conditions may either stimulate or discourage the expression and the development of creative thinking.

According to Amabile (1989), some factors that may suppress creativity in school environments are competition, restricted choices, conformity pressure, frequent failures and role learning. However, an initially constraining factor does not always have a negative effect on creative thinking. For example, a social context where choices and personal autonomy are restrained might encourage the individual drive to find alternatives and to develop a creative attitude (Craft 2003a, 120). Thus, environment does not merely influence creativity but its effect depends also on the interaction of the individual with the environment.

To sum up, it is the creative environment that creates the conditions for creative thinking to flourish and allows it to emerge rather than imposing it. It is also the environment that in the end will evaluate originality and appropriateness of creative thinking according to its standards.

***Product***

Describing creativity through the lenses of the product, Urban suggests that creativity 'is the ability to create a new, unusual and surprising product as a solution to an insightfully perceived problem' (1990, 104). In addition to creative production, social recognition is required (Runco 2003). Amabile referred to the recognition and the assessment of a creative product, indicating that 'a product or response is creative to the extent that appropriate observers independently agree it is creative. Appropriate observers are those familiar with the domain in which the product was created or the response articulated' (in Wyse and Spendlove 2007, 182). Thus, creative production cannot be separated from the general social and cultural environment in which it appears.

Not only is the interaction between the creative product and the social environment crucial, but also the 'connection' or correlation of the creative product with individuals' creative characteristics. Bailin (1996) argues that creative achievement is fostered by creative skills and characteristics of a person.

***Process***

Long ago, Wallas (1926) seeking to formulate the creative process, divided it in four stages: preparation, incubation, illumination, and verification. These stages were described by Horan as an iterative process that involves 'curiosity, exploration, insight, and appropriateness' (2007, 183). A creative process includes the intention of exceeding limitation and boundaries when trying to solve a problem (Burnard and Younker 2004). As mentioned in Gabora (2002), during the creative process, unrelated or even counterpoint information is joined and reformed in new ways. For this to be possible, it is essential to consider familiar things from different perspectives and to search for alternatives while breaking conventional boundaries and routines (Prentice 2000).

Relating creative process with individuals' behaviours, Sternberg states in 2000 that 'creative people are creative, in large part, because they have *decided* to be creative' (in Sternberg 2003, 333). Thus, it is implied that a fundamental feature in creative process is the *attitude* of a person towards the process of creative thinking.

***Person***

The initial consideration when referring to creative person is that 'all people can be creative' (Craft 2003b, 146). This broadened concept of human potentiality for creative thinking was coined in 1999 by the National Advisory Committee on Creative and Cultural Education with the phrase 'democratic creativity' (in Craft 2003b, 146).

Various studies have been conducted to identify the characteristics and tendencies that may imply a creative personality. For example, Qualifications and Curriculum Authority (QCA 2003) indicate that creative pupils demonstrate interest in questioning, challenging, making connections, identifying relationships, envisaging what might be, playing with ideas, expressing an idea in different ways and finally evaluating the idea. On one hand, Dawson and others (1999, 57) describe creative individuals as impulsive, individualistic, nonconformist, and progressive. On the other hand, MacKinnon's study (1963) reveals that less creative students describe themselves as responsible, sincere, reliable, and dependable. In addition, as analysed by Zabelina and Robinson (2010), self-judgmental individuals display lower levels of creative originality than self-compassionate individuals.

**Statement of the problem**

After careful review of the literature, the purpose of this study was to develop and apply a creative programme, based on the above mentioned four perspectives in order to foster children's creative thinking and creative behaviours. Several researches have been conducted providing evidence for the effectiveness of teaching to nurture creativity in kindergarten children (Chiatt, Shaw, and Sherwood 1980). During the 1950s, 1960s and 1970s, there were attempts to design educational programmes aimed at fostering creative thinking (Edwards 1966; Rudowicz 2004).

Researchers (Littleton 1991; Smithrim 1997; Burnard 1999; Russ, Robins, and Christiano 1999; Young 2003; Trevlas, Matsouka, and Zachopoulou 2003) recommend that applying movement, music and play in preschool education, combined with teaching strategies and teachers' positive attitude, may foster the development of creative thinking in kindergarten students. In his study focusing on kindergarten

children Bowles (1998) shows that children exhibit preference in participating in music activities that involve movement and playing instruments.

Based on the above statements and literature review, the hypothesis of this study is that a music and movement programme may increase creative thinking and creative behaviours in kindergarten children. The main research hypothesis refers to the best practices that can be used by teachers in kindergarten in order to foster creative thinking and creative behaviours to children.

## Method

### *Participants*

In order to examine the research question we adopted a quasi-experimental design. The intervention took place at a public kindergarten in a suburban area of Greece with the participation of two groups (from the two next door classes): the experimental and the control group. One of the two classrooms was randomly chosen by the kindergarten teachers to be the experimental group. The intervention took place with full consent of the kindergarten director and the parents of the experimental group's children.

To maintain internal validity, the experimental group shared common features with the control group. More specifically, the experimental group was composed by 15 children (11 boys and 4 girls), and the control group by 18 children (13 boys and 5 girls). Additional homogeneity signs between the two groups were the age of children ($4.9 \pm 0.3$ years), the percentage between the two sexes, the socio-economic background of their families and the geographic region. Both groups followed the same curriculum of the Ministry of Education, shared common locations (e.g. playground) and common activities (e.g. excursions).

### *Intervention programme*

The intervention lasted for three months, during which the experimental group was enrolled in a specific music and movement educational programme 2-3 times a week, while the control group participated in the unstructured free-play setting or in routine practices according to the official curriculum. A total of sixteen interventions were applied of 45-60 minutes each. The programme was conducted by an external teacher specialised in music and movement education. The music teacher was also the observer of the intervention. Double evaluation was applied by the observer in both groups, according to Campbell and Stanley (1963) (before and after the experiment), and the results were compared in order to extract the conclusions of the study.

MacKinnon's theoretical approach was used as the basic framework for the design and implementation of the current study's educational interventions. Seeking to apply the four perspectives in the kindergarten class, the following relations were identified:

(1) Press: Creative conditions in class.
(2) Product: Creative production during the lessons.
(3) Process: Creative principles and strategies used during the design and implementation of the interventions.
(4) Person: Creative approach in teaching, teacher-student interaction.

The following sections describe the approach of our interventions for each directive, based on the relative literature.

#### *Creative conditions in class*

Researches' results consistently indicate, that in order to provide creative conditions in

class, it is essential to allow sufficient time (Fleith 2000; Craft 2003b; Sarsani 2008), to 'play with ideas' and to 'toy with materials' (Prentice 2000, 154), to provide space (Craft 2003b) and to permit the child to use physical objects in his/her own ways (Mellou 1996, 123).

Therefore, we designed a flexible timeframe for the activities in each intervention, so that it would allow time and place for the expression of emotions, feelings and personal ideas of children. Furthermore, we organised an environment which provided security and freedom of expression in order to strengthen children's initiative, to highlight the uniqueness of children's views and to trigger the formulation of unusual ideas and relationships. Thus, a climate of acceptance and support during the interventions could empower the expression of creativity.

*Creative production*

The intervention programme was structured into the following four thematic areas:

1st area: Sound (timbre, silence, pitch, dynamics, and execution mode).

2nd area: Rhythm (rhythmic values, rhythmic sense of closure, identification, composition, improvisation and performance of different rhythmic patterns).

3rd area: Melody (upward and downward movement of the melody, structure and form of a melody).

4th area: Combination (melody quality characteristics, rhythmic and melodic variations, aesthetic approach to the rhythm, sound and melodic patterns-energy).

Within these thematic areas the interventions encouraged the relative creative production, such as: rhythm and music composition, music improvisation, making small choreographies etc.

*Creative principles and strategies*

Based on related literature, a variety of strategies that foster creativity is proposed. Some of them, which were also selected to be used in the current study, are: problem discovery (Runco and Nemiro 1994; Runco 2003), critical thinking (Cropley 1992; Runco 1992) evaluative thinking (Runco 2003), self-expression (Yamamoto 1967; Torrance 1967, 1975; Zachopoulou et al. 2006), improvisation, experimentation, exploration and discovery (Theodorakou and Zervas 2003), drawing (Fleith 2000), movement exploration (Zachopoulou et al. 2006), communication, cooperation, cohesion, confidence, fiction-creation.

Other practices were also used, such as brainstorming, imaginary/hypothetical stories, predicting events and outcomes of a situation, alternative use of objects and alternative views on various situations. It was also important that the activities took place in a playful manner and were fun for the children, as also suggested by Landazabal (2005). Each intervention ended with a discussion between the music teacher/observer and children.

*Creative approach in teaching*

It is not only the strategies and their thematic structure, but also their implementation that should be regarded as a part of a creative process. The way that the strategies are applied depends on the personal characteristics of the teacher and on the way a teacher forms the interaction with the students, in order to foster their creativity. Researchers stress the idea that teachers should actively involve children in the process of their own learning through direct manipulation of materials and objects (Prentice 2000), cooperative groups, and open-ended activities (Sarsani 2008).

Teachers themselves, in Dobbins's study (2009, 98-100), point out four important factors of the relevance of creativity to teaching and learning: enjoyment, active learning, experiences and meaningful learning, as well as three key themes that they should be based on, in order to be effective both for them and for their pupils: lesson delivery, flexibility and topic work.

In the current study, the music teacher/observer followed the above factors through providing options to students (Fleith 2000), creating a supportive environment (Saracho 2002; Sarsani 2008), allowing children to take initiative and to find relevant information (Craft 2003a), making choices and being part of the decision-making process (George 1992; Sarsani 2008), engaging children in tasks and providing them with scope for exploration (Sarsani 2008).

**Measures**

Our initial concern, regarding the measurement of creativity in kindergarten children after the implementation of the programme, was to find the most suitable instrument which, as suggested by Starkweather (1964), can establish familiarity between the researcher and the child, evaluate the responses the child gives and recognise the unusual and original responses. As stated by Zachopoulou, Makri, and Pollatou (2009, 318) there are various factors that may affect children's creative behaviour like the testing environment, the variations in instruction and other administration conditions, the task unfamiliarity, the individual's level of motivation, persistence, self-confidence and the perceived relevance of testing tasks to real-life activity. Torrance (in Treffinger 1985), referring to the multidimensional nature of the creativity concept, proposes that creativity's evaluation should be based on several tests. Johnson and Fishkin (1999) recommend a minimum of two measures to assess children's potential for creative

behaviour.

Therefore, in order to increase the reliability and validity of the current study, different and complementary tools were used at the beginning and at the end of the intervention, so as to triangulate the results, to acquire a holistic interpretation and to 'confirm the validity of the processes' (Tellis 1997 in De Vries 2006, 258). More specifically, the following three tools were used:

(1) Torrance tests of creative thinking (TTCT) which were applied in both groups of children.
(2) Participant observation of the children of the experimental group during the interventions, based on a certain observation protocol.
(3) Semi-structured interviews with kindergarten teachers of both groups.

We used TTCT (TTCT-Verbal and TTCT-Figural) because it is normed for the age of children in our study, it is the most widely used test of creativity (Davis 1997), the most referenced of all creativity tests (Lissitz and Willhoft 1985) and has been translated into more than 35 languages (Millar 2002). It should be made clear that, as a number of authors have stressed (Kitto, Lok, and Rudowicz 1994 and Helson 1999 in Cropley 2000, 78), creativity tests evaluate the creative potential and not creativity itself. Torrance himself indicates that his tests don't assess all dimensions of creativity (in Treffinger 1985) and that high performance on the TTCT does not guarantee a person's chances of behaving creatively (Torrance 1974). Moreover, poor performance might reflect the children's lack of experience rather than a low capability for creative thinking (Runco, Dow, and Smith 2006, 270).

The second research tool used during the interventions was the observation protocol, which allowed the collection of information over time, rather than at

individual moments, as in the TTCT tests. Woods stresses that as observations, interviews and field notes are collected in the research process, 'there is constant reflection from the researcher' (1986, 120). The observation protocol was structured so as to identify, during the interventions, the characteristics of creative thinking and the creative behaviours of children. The assessment of behaviours from the music teacher/observer was made using a weighted rating scale used also by Treffinger and others (2002, 59-62) to quantify the observations. The four subdivisions of this scale (non-evident yet, emerging, expressing, excelling) reflected the level of a child's behaviour, indicating the degree of its acquisition or its maturity. The protocol included also a field in which the music teacher/observer could record some additional observations to arrive at additional qualitative interpretations.

Finally, we used semi-structured interviews at the beginning and at the end of the interventions, as the main tool to collect the opinions of the kindergarten teachers of both groups. The interviews consisted of open and closed questions. The open questions detected how kindergarteners perceive:

- Creativity;
- The creative nature of each child;
- The creative process;
- The supporting factors, and
- The restraining factors on the expression of creative thought.

The closed questions assessed creative behaviours, based on specific criteria on a weighted grading scale (non-evident yet, emerging, expressing, excelling), such as:

- Freedom of expression;

- Tendency for exploration and experimentation;
- Commitment to a goal;
- Challenging the commonly accepted;
- Self-confidence, and
- Fantasy

To sum up, TTCT tests were used to evaluate the characteristics of creative thinking. Participant observation was additionally used to evaluate both children's creative thinking characteristics and creative behaviours so as to compare the findings of both measures. We additionally used the semi-structured interviews so as to minimize the possible subjective evaluation of the music teacher/observer concerning the creative behaviours. The combination of these three research tools assured, to an extent, reliability of results and allowed us to identify the strategies and the conditions that should be used in order to promote the development of creative thinking in kindergarten children.

**Results**

The most significant results concerning the appropriated strategies and conditions that encourage creative thinking were revealed from the analysis of the observation protocol and the interviews with the teachers. Through the participant observation during the interventions, it became clear to the music teacher/observer that activities such as movement improvisation, free movement in space and circle discussions seem to reinforce children's freedom of expression suggesting the effortless, self-sustained child's need for expression. Activities concerning reinforcement of group dynamics, communication and emotional interaction between children, resulted in the creation of

an atmosphere of joy, confidence, spontaneous and free expression. Additionally, the activities of role-playing, dramatic play and presenting one's work to the rest of the class, provided children with the opportunity to express themselves and to overcome any hesitation to take up roles in the group or to present their work.

During the interventions, we also observed an increase of children's tendency to explore and experiment. By the last three interventions, it became apparent to the observer that all children in the experimental group, without exception, had manifested a desire for experimentation and exploration. This trend came about as a consequence of children's familiarity with exploratory activities, which were often used during the interventions. This behaviour, if analysed in depth, could imply an increase in other behaviours such as students' tolerance to unfamiliar situations, their willingness to risk, and curiosity.

According to the results of the interviews both teachers agreed that applying specific strategies and activities during the interventions, such as music and movement improvisation, playing in groups and role-playing, may support children's creativity. Additionally, they believed that the positive results of the experimental group were also a direct effect of the music teacher's/observer's interest in enhancing children's creativity, as well as her competence.

## ***Discussion***

Similarly to the design of the interventions, the analysis of the current study's results follows MacKinnon's spherical approach.

### *Creative conditions in class*

During the interventions it was revealed that providing sufficient time and space for

creative ideas to arise was essential. On the contrary, time pressure activities tended to discourage students' self-expression and decision making. An additional finding of this current study refers to the importance of play during music and movement activities. Play was an essential element of creative conditions in class and all activities were applied in a playful manner. During movement and music play the children of the experimental group were free to explore, to improvise, to express and exchange emotions and ideas. According to Trevlas and others (2003) and to Russ and others (1999) a creative environment encourages play and provides adequate time and space for creative thinking and behaviour to emerge. Young (2003) and Burnard (1999) have also highlighted the link between music-making and movement during the musical play. Referring to play, Littletons' (1991) and Smithrims' (1997) studies revealed that allowing free-play opportunities to young children fosters their imaginative and creative music ideas.

Thus it is suggested that class conditions should support playfulness. As Prentice claimed 'it seems more appropriate to view play as an attitude and process rather than an activity', by means of focusing mainly in 'nature and quality of an individual's engagements with ideas, feelings and materials' (2000, 151).

*Creative production*

During their music and movement play, the children of the experimental group used various and combined ways to express their ideas. Depending on the particular creative production (drawing, moving, composition, acting and making things) that was encouraged in each activity, the unique creative potential of each student was identified. They were very enthusiastic while playing with the musical instruments or making small choreographies, or when they participated in music activities that involved

movement, as was also demonstrated by the Bowles' study (1998). Torrance (1981) highlights that young children of the early stages are more likely to express their creativity kinaesthetically, because they are developmentally in the sensor motor state; movement is the most appropriate way for them to express their ideas and thoughts. Vygotsky (1981) states also that creative and motor development of kindergarten children represents two interrelated developmental areas of their growth.

Another point that was revealed from this study was the need to re-evaluate the creative production, taking into consideration students' description of what they want to express. A possible misunderstanding of what a child wants to express may lead to a misjudgement of his/her creative potential. Thus, creative production should be followed by a creative evaluation, which, when referring to kindergarten children requires verification of the teacher's initial assessment. Additionally, Jeanrenaud, and Bishop (1980) suggest that only when teachers are able to recognise children's creativity, it is possible to empower children's creative thinking and encourage creative production.

*Creative principles and strategies*

The strategies used in the current study, which proved to be of the biggest effect on children's creative thinking and behaviour, were alternative uses of ideas and materials, improvisation, movement exploration, hypothetical situations and problem solving. Some of these strategies have been used by Ennis (in Trevlas et al. 2003, 537) who argues that finding alternative ways to solve a problem or formulating hypotheses can be considered as creative acts. These kinds of strategies encourage children to view things from new perspectives and widen their thinking patterns. As Russo mentioned (2004, 182) finding unusual and unique solutions to problems is defined as novelty and

originality. Consequently, strategies of problem solving and of alternative uses can be actually considered as aspects of creativity, thus the more they are practiced the more they can empower creative thinking.

Various training programmes for teachers have been held based on creative activities such as creative problem solving, lateral thinking, Synectics (Parker 1998), critical evaluation and reflection, simulations, scenarios, brainstorming, role playing, assertiveness training sketches, etc., aimed to fostering empathy, generating ideas, fostering fantasy, positivising and assertiveness (Pýchová 1997, 235-236).

*Creative approach in teaching*

Although the intervention programme followed some specific strategies, its structure and application were carried out under a flexible framework that allowed either dynamic adaptation or deviation from the original design. As Tegano, Groves and Catron state (1999), flexibility, adaptability and the ability to tolerate ambiguous classroom situations have been indicated as basic characteristics of creative teachers. Under the same concept Mellou (1994) suggests that creative teachers should use intervention and non-intervention strategies with balance and they design play environments. According to Chambers (1973), teachers who foster creativity have some recognisable characteristics: they are enthusiastic, they accept students as equals, they reward students' creative behaviour, they encourage students to be independent, to have ideas, to think and to reason, and, finally, they interact with the students outside the classroom as well. In the current study, since the person who implemented the creative programme (the music teacher) was also the observer, her interest in fostering children's creative thinking was undeniable.

Furthermore, it was revealed that it is necessary to constantly trigger and question children in various ways in order to give them the opportunity to express their creativity. As also stated by Fleith (2000, 151) creative teachers can recognise students' strengths, abilities and interests, encourage different responses, humour, questions and risk-taking, and provide children with different options. They also spend time 'closely watching and recording the choices which individual children are making with regard to selection of activity, materials, forms of interpretation and expression, interactions with others (including roles adopted), as well as the content of the expression' (Craft 1999, 142).

An additional finding of the current study was the music teacher/observer's playfulness, which proved to be essential for the encouragement of creative thinking through play. We should point that there is a paradox, the '*play paradox',* as stated by Caldwell (1985), where teachers teach children how to play but they may be less likely to actually play with children, while in some cases, they don't know how to play.

It was revealed from the interviews with the kindergarten teachers that their perception of creativity and their own creative thinking affect the way they apply creative practices during interventions. Regardless of how well an intervention was designed, the catalyst for its effective application was the teacher. Not only should a teacher be able to recognize and support the creative potential of children but should also be flexible to adapt their teaching depending on children needs.

Researchers (Soriano de Alencar 1991; Scott, Leritz, and Mumford 2004; Hosseini and Watt 2010) highlight the necessity of training programmes on creative teaching, in order for teachers to be aware of the need to develop children's creative thinking, to expand their own creative thinking abilities and to develop a better understanding of appropriate approaches, strategies, skills and attitudes to nurture

creative thinking. For this reason, a variety of training programmes have been designed, as that of Soriano de Alencar in 1989, that aimed 'to make teachers aware of their own creative thinking abilities, to provide techniques and exercises for use in the classroom, to teach basic concepts about creative thinking and problem solving, and make teachers aware of the several obstacles to the development and manifestation of creativity in school and in society' (in Mellou 1996, 123).

**Conclusion**

In our days, education should be complementary to societal needs, which require flexible problem solving, generation of innovative ideas, reformation of constants and unblocking creativity. Nevertheless, educational systems for many years either misevaluate or totally neglect children's ability to think creatively. Thus, educational programmes instead of emphasising the development of problem solving, creative thinking and decision making,-focus on recall and reproduction abilities (Torrance 1983).

As is evident in the current study, a vital factor of an educational programme that fosters creativity is the concept behind the design and the appliance of the interventions. The basic consideration should not merely be 'what' practices are used to foster creative thinking in kindergarten children but additionally 'how', 'where' and 'by whom' they should be applied.

Another important outcome of the current study consists of the effective appliance of the four perspectives on a programme meant for kindergarten students. Thus, it is proposed that such an educational programme should support this interrelation in order to promote creative thinking and creative behaviour.

Finally, it must be emphasised that very few general conclusions may be deemed possible based on such a small sample. The results of this study suggest that future testing of the experiment for the development of creative thinking should take into account some psychological or sociological factors. We suggest briefly, the social background as well as children's social interactions during the activities, the academic achievement of children, the personality traits (such as curiosity, imagination, independence, etc.), the families' different cultures and professions, the willingness of the teacher to enhance creative thinking in students during his/her everyday work in the classroom, etc. Further studies should examine possible correlations between different geographical areas and children's performance in creative thinking tasks, or compare different curriculums in the kindergarten which could promote or inhibit the development of creative thinking.

Still, it is through the procedure of constant researching and investigating the enhancement of creative thinking that new practices and ideas will arise to further expand scientific understanding of children's creative thinking.

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