The P4C approach as a promoter of dialogical creative thinking based on the teachers' perception

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Abstract: The philosophy for children (P4C) approach is an educational movement that has developed over the years to become a substantial movement with great influence in the educational fields and in many educational systems in the world and is a pedagogical basis in these systems for both students and adults. A central goal of this movement is the advancement of the students' thinking, centered on the creative, critical, cooperative, and caring types of thinking in order to prepare them to be successful citizens in the future community life in the rapidly developing world. At the same time, the importance of creative thinking increased quickly over the years, and soon occupied an essential place in various areas of life. Within all varieties of philosophy for, or with children, the vehicle to their specific forms of thinking is the community of dialogical inquiry, a tight-knit group of likeminded co-philosophers bound together by philosophical friendship whose essence is represented by the communitarian element. Because of the great and increasing importance of creative thinking in the educational field, a comprehensive study was carried out that examined the perception of science and technology teachers in the Arab elementary schools in Israel of seven of the central dimensions of creative thinking, with the teachers' perception of the factors that foster creative thinking at the center. Hence, examining the teachers' perception will form the basis for planning and carrying out any

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move required to advance the various educational goals. 313 teachers participated in the study who answered a questionnaire that was prepared and validated by content experts, went through a pilot, and was found to be very reliable so that it constitutes a solid research base on which to base findings and conclusions. A key conclusion arising from the part of the questionnaire with the 12 statements that examined the teachers' perception of the factors that foster creative thinking is that significant and many changes are required in the education systems, educational policies, curricula, methods, tools, and the teaching, learning and assessment environments to promote creative thinking. This article briefly describes the research process carried out for the purpose of examining the teachers' perception of the factors that foster students' creative thinking, presents the main findings and conclusions, and mainly discusses in detail how the Philosophy for Children (P4C) approach can be a significant way that enables the promotion of students' creative thinking based on the research findings and conclusions of examining the teachers' perception of the factors that foster students' creative thinking.

Key-words: Philosophy for Children (P4C), P4C thinking model, creative thinking, philosophical friendship, factors that promote creative thinking, teachers' perception, education systems, methods, learning environments, teaching, learning and assessment

Introduction. Cultivating thinking abilities and creative thinking at their center

In recent times, there has been a change in the curricula when the importance given to thinking increases, centered on creative, critical thinking and collaborative problem solving, and the place of knowledge and content decreases (MacBeath, 1999; Scottish Executive Education Department, 2000). The importance of promoting higher-order thinking, centered on critical thinking and creative thinking, is increasing because

they are at the core of the skills needed in contemporary society (Rose, 1997; Abbott & Ryan, 2000).

Many definitions for the term 'creative thinking' were found in the research literature (Al-Nouh, Abdul-Kareem, & Taqi, 2014: p. 74; Bronson & Merryman, 2010: p. 1; de Souza Fleith, 2000: p. 148; Turner, 2013: p. 24). The multiplicity of definitions of creative thinking is a problem, which creates complexity that hinders the understanding and application of this thinking. Parkhurst (1999) in his paper "Confusion, lack of consensus, and the definition of creativity as a construct", notes that Repucci, in search of an answer to "What is creativity?" found about 50-60 definitions in the literature in the early 1960's.

Creative thinking is a comprehensive process in which one deepens the understanding of a problem, looks at the problem from many different angles and offers original solutions and ideas based on new connections between the elements of the problem (Torrance (1969).

Breaking norms and patterns, solving problems in different ways, lack of routine, breaking fixed standards, branching out, diversity, all these and more were found to be common elements in many definitions of creative thinking (Gruber, 1981; Standler,1998; Gardner, 2006; Nakaimura & Czekozenbmchalji, 2001; Barrow, 2010; Escultura, 2012; Sternberg, Kaufman, & Pretz, 2002; Lubart & Guignard, 2004).

Creative thinking: importance and cultivation

Recently, the importance of creative thinking and the importance of its development has been increasing, so that this thinking has become a central thinking ability necessary for a graduate in order to successfully integrate into the modern world characterized by many and rapid changes (Barbot, Besançon, & Lubart, 2015; Bulut, 2019).

The many, varied, and rapid changes in the modern world oblige the education systems to put the development of creative thinking at the center of their activities so that the graduates will be able to successfully deal with these changes and challenges (Isaksen, Dorval, & Treffinger, 2010). Hence, creative thinking is considered one of the most important abilities that education systems are required to impart to students (Turkmen & Sertkahya , 2015).

An Australian study found that three-quarters of new graduates were considered unemployed and considered unsuitable by employers because their creative thinking skills were insufficient (Cropley, 2001).

People characterized by creativity skills are considered key to developing the economy wherever they are and the well-being of their peoples (Brady & Edelman, 2012; Li, 2011). Countries that believed in the importance of creative thinking and the importance of nurturing it, made changes and put creative thinking at the center of these changes, are at the forefront of the successful countries (UNESCO, 2017).

This is how creative thinking has become the educational keyword in many current curricula in the world (Tapinos, 2016).

Education systems that place the development of creative thinking at the center of their activity are required to stop operating according to fixed outlines and structures whose purpose is only to prepare the student for the next level of education (Robinson & Aronica, 2015: pp. 31-36). In addition, to having an innovative pedagogy that allows teachers to apply creative thinking, schools and education systems are required to change the concept of education from a linear to a systemic one (Robinson & Aronica, 2015: p. 41). Moreover, the cultivation of students' creative thinking requires the authorities to provide teachers with professional development based on innovative and high-quality pedagogy, which is a key factor in achieving good results (Robinson & Aronica, 2015: p. 100). Support that, high-quality pedagogy will enable the implementation of new curricula that include the new thinking styles and require teachers to implement them in all areas of study (McIlvenny, 2013: p. 18). In addition to the place of pedagogy in the cultivation of creative thinking, it was found that a pedagogy based on learning that connects the student with his day-to-day life, will be the way to active learning, in which the student is at the center of the learning, which enables the achievement of more understanding, more motivation and more equipping the student with thinking skills for the future, including creative thinking (Lombardi, 2007). In addition, regarding the place of pedagogy in the cultivation of creative thinking, it is said that attractive and student-centered teaching methods instead of a teacher, such as peer teaching, will promote creative thinking (Bulut, 2019). Moreover, a pedagogy based on systemic education instead of linear will promote creative thinking (Robinson & Aronica, 2015: p. 41).

Another factor required for the cultivation of creative thinking is the willingness of the teachers to teach creative thinking that will come through training and appropriate professional developments, curricula and educational policies aimed at creative thinking (Banaji et al., 2010; Ferrari et al., 2009; Moran, 2010).

LS-P4C approach (Lipman and Sharp - Philosophy for Children)

There are different types of programs for teaching and imparting thinking skills, for example (McGuinness, 1999): programs that are taught separately from the curriculum, programs that are taught as part of a subject, and programs that are taught throughout the curriculum. The Philosophy for Children program (P4C) (Lipman & Sharp, 1978; Lipman et al., 1980; Lipman, 1981, 2003) has often been thought of as a separate program (McGuinness, 1999).

P4C is an educational and philosophical movement that has become over the years a significant movement with a great influence on schools and education policy in many countries. The pedagogy on which this movement is based has been accepted around the world, as a pedagogical basis in various educational settings, including adults, high schools, and informal ones. As proof of its importance, we find today that philosophy for children is practiced and applied, researched, updated, and constantly renewed in more than 60 countries in the world (Gregory, Haynes & Murris, 2017). Regarding motives behind the establishment of P4C (Williams2018) notes that one of the main motives was, the great dissatisfaction of the educators with the state of education, which included - among other things - a lack of emphasizing the promotion of thinking necessary for children such as critical thinking, unconventional logical thinking, creative thinking and more, as ways to prepare the student to be a successful citizen in the future community life. In addition, regarding the motivations behind Lipman for establishing the P4C program, we can note his belief that the practice of philosophy on life is required and necessary for cultivating a thinking and prudent person, the one who knows how to conduct himself successfully in community life (Lipman, 2010, 2003, 2008). Absolutely, it can be stated that the P4C approach was brought to the world by Lipman as a result of the great educational-philosophical

influence of the pragmatic philosopher, John Dewey, who believed that education failed because it neglected the central principle that school is a form of community life, that school is perceived as a place that holds classes to transfer knowledge, that the school is not seen as a social way of life, that the teacher acts according to instructions and fulfils instructions and does actions that are not related to real life (Dewey, 1897).

The goal of Lipman's philosophy for children (P4C) (Lipman et al., 1980; Lipman, 1981, 2003) is to teach children how to think for themselves and decide for themselves about good choices, thus improving their ability to think about thinking when they discuss concepts of life that are important to them (Lipman, 1981, p.37)

Although the P4C children's philosophy can be applied to different areas of thought (Fisher, 1999) it was initially applied with children through novels (Trickey & Topping, 2004). Fisher (1999) noted that there were difficulties in evaluating P4C because of its broad goals and the lack of appropriate evaluation tools. Even Lippman himself (Baron and Sternberg, 1987, p. 229) used many and controversial criteria for evaluation such as, the students proposed arguments, the students challenged each other, asked relevant questions, and looked for connections with experiences outside the topic under discussion.

P4C is delivered through materials that are seven novels presented at the age of 6 years, with the assumption that at this age the children can think critically and reflectively. The program is delivered over time from the age of 6 to 16 years, when the novels are a challenge for discussion to solve problems that arise, while the class acts as a 'community of inquiry' and the teacher asks open questions that are a central basis for maintaining optimal thought processes (Trickey & Topping, 2004).

In the P4C program, alternative materials to Lipman's original materials were developed over time, for example in Great Britain, Fisher (1996) created a series of books, in Scotland, Cleghorn (2002) created a set of materials. In general, in P4C students and their teacher share a short story, picture, poem, object or other stimulus, the children think and raise questions, discuss the questions they raised briefly, choose one question and discuss it in detail (Trickey & Topping, 2004).

Cotton (2002) points out that for the success of the process the teacher must treat each student with respect, offer encouraging activities,

allow the student to be active and accept differences in learning abilities between learners. Oyler (2016) describes the P4C approach and its development. He points out that Philosophy for Children (P4C) is a philosophical educational movement founded by Matthew Lipman and Ann Margaret Sharp that has now become a worldwide movement. Today, many approaches that based on P4C principals use the label LS-P4C to indicate Lipman-Sharp P4C approach. LS-P4C is the first attempt of its kind to develop a comprehensive curriculum aimed at enabling children and youth to be actively involved in philosophical inquiry.

Pedagogical goals of P4C

The four types of thinking critical, creative, caring, and collaborative thinking, together build the the P4C thinking model on which the LS-P4C approach is based pedagogically, and they are cultivated together as one system to improve students' thinking abilities and their learning (Sharp, 2014; SAPERE P4C- Level 2 Handbook; Gregory, Haynes and Murris, 2017). The main pedagogical goal in the LS-P4C approach is the development of the students' investigative abilities, which will allow them to think critically and philosophically about the questions they raise about the various issues based on. In order to promote this goal, there are many focused and clear theoretical materials by Lipman, Sharp and their colleagues at P4C and PwC, while understanding that a condition for students to be able to think for themselves is the development of students' critical, creative and caring and collaborative thinking (Oyler, 2016; Phillips, 2011; SAPERE P4C- Level 2 Handbook; Gregory, Haynes and Murris, 2017).

Critical thinking: The LS-P4C approach is unique in emphasizing and basing the critical thinking that occurs in it on the principle of judgment. At the same time, this critical thinking includes the application of criteria, inferential thinking, reflective thinking, and self-correction according to criteria (Lipman 2003). Moreover, in the critical thinking that takes place in the LS-P4C approach, the applied aspect is also emphasized, that is, to what extent the product of thinking can be applied in order to maintain the meaning of the product of critical thinking and the investigation so that it will not be seen as meaningless (Peirce, 1955).

Creative thinking: Perhaps the reader will have the question of how critical thinking and creative thinking meet and work together in one system. The reason for being in this position of the difficulty of accepting it, is related to that, is critical thinking according to the LS-P4C approach places the principle of judgment based on criteria, as the key to this thinking process. As we know, this is the antithesis of creative thinking, which holds in its definitions and essence (See the definition and essence of creative thinking at the beginning of the introduction) that there is no judgment in creative thinking, since judgment is a factor that prevents and blocks openness and breaking norms and creating new, unknown connections between the known elements which are essentially characteristics of creative thinking.

The explanation given by Lipman is absolutely convincing in that he points out that although critical thinking is a thinking of judgment according to criteria and the application of rules or ideas or solutions selected following the execution of a judgment, but that creative thinking comes according to Lipman (2003) as thinking that breaks known frameworks to enable new answers possibilities, new criteria or new ways, innovative thoughts without using the thoughts of others who are familiar with the issue or the discussed problem, which we will use and on which we will base our critical thinking. Therefore, we have no doubt that Lipman's reasoning is in line with the essence of creative thinking, and it follows that, in our opinion, there is no conflict between critical and creative thinking in the LS-P4C approach which constitutes one system, but rather that the two types of thinking complement each other within one system of LS-P4C. According to SAPERE P4C- Level 2 Handbook, creative thinking is expressed by the student offering alternative ways of thinking about something.

Caring Thinking: Sharp (2014) describes caring thinking based on Lipman. She notes that caring is essential to achieving a good life and a good life comes from what we care about, what we think is important, valuable and for which we are ready to fight and suffer. The source of the criteria we use to evaluate ideas, people, events, things, and their importance in our lives, originate from what interests us. Through these criteria we judge and decide about everything in our lives, and this is how they determine and shape our lives. She notes that, Matthew Lipman

pointed out the importance of cultivating critical, creative, and caring thinking in children, if we want to prepare them to make better judgments and live better lives. Lipman states that caring thinking is appreciative thinking, active thinking, normative thinking, emotional thinking and empathic thinking and he details for each of these categories (Sharp, 2014).

Collaborative thinking: The meaning is a joint venture of common ideas that are developed in dialogue between the students and are perfected during dialogue with other students and with the teacher, this is how sharing, comparison, communication, support, respecting the other and his contribution take place, all of these when the principle of cooperation has become central and necessary in human society. Ann Sharpe also sees that collaborative thinking is also included within caring thinking. To implement collaborative thinking student asked to follow on from each other's ideas, listen and look at each other when speaking – continuing target (SAPERE P4C- Level 2 Handbook). In recent years, well-established studies show that the implementation of collaborative philosophical inquiry in schools can have considerable cognitive and social benefits. As a result, the academic performance of the students and the social dimension of the studies improve. There are studies showing that even short-term teaching of collaborative philosophical inquiry has a positive effect on students (Millett & Tapper, 2012).

How the thinking model is applied

This is how the model of the four types of thinking works according to the LS-P4C approach according to SAPERE P4C- Level 2 Handbook:

- Preparation: the teacher indicates the skills and guides how to practice them.
- Stimulation: the teacher outlines potential concepts, questions, and lines of inquiry.
- Thinking time: time is given for the development of the students' thinking and wondering, what is the story/picture about, why do you think that way? I see, I think, I wonder...
- Question-Making, Airing, Choosing: How are you the teacher going to support children's questioning? What's the model to create philosophical questions – building on 'I wonder' statements.

- First words: How will you get the children to respond to the question? For example agree/disagree. Remind them of 4C focus.
- Middle Words: Promote among the students the use of middle words that help organize thinking for example - I think.... because.
- Final thoughts: for example, how well you/we did, did you come up with a new idea, did you build on someone else's idea, and did you change your mind.
- Evaluation: for example, what went well, what do we need to focus on the next.

LS-P4C/IAPC curriculum

The LS-P4C/IAPC curriculum is designed to help teachers achieve the goals of the LS-P4C approach by allowing them to practice creative, critical, and caring thinking with students in a group dialogue, where this curriculum includes ten novels with a teacher's guide for each novel (Glaser & Bass, 2018; Splitter, 2018; Işiklar & Öztürk, 2022).

Philosophical friendship and the community of inquiry

Following the insightful P4C analyst Stefano Oliverio (Oliverio, 2017) we find it inspiring to describe the community of philosophical inquiry (CPI) as the chronotope of philosophizing-together (Lobont, 2021). The term "chronotope" has been instrumented in the design of philosophy with children/youth in order to highlight the constitutive spatial-temporal character of the type of philosophical reflection carried out within a CPI. This specification of the spatial-temporal situatedness of the thinking activity characteristic of such collectivities is opposed to the long-standing theme of the Western philosophical tradition according to which philosophical thinking involves a spatial "situatedness", in "nowhere" (Neyrat, 2018, p. 25). The chronotopic dimension of the community of philosophical inquiry goes beyond the simple property of being, constituting a co-philosophy (but also co-philosophizing), which Oliverio finds in a text by Alessandro Volpone, who calls it, inspired by Aristotle himself (Aristotle, 2003, IX, 12, 1172, a 1-7), *sumphilosopheîn* (Volpone, 2015). The Aristotelian passages define a form of friendship that constitutes "a specific type of community (*koinōnía gàr hē philía)",* a

friendship that is significantly different from the "academic" one between the master and his disciples, cultivated in the establishment founded by Plato. In other words, in the *sumphilosopheîn* framework, the communitarian element represents the essence of philosophical friendship (Oliverio, 2017, p. 94). Should we infer from this that the CPI was conceived by Lipman and Sharp as a form of Academy translated into the student learning community? Not at all. Of course, Oliverio continues,

> At one level the Academy was surely a form of philosophical life and of living among friends. But what was the meaning of this "Academic" living-together? We can capture it if we think of Plato's Seventh Letter (341c), in which Plato relates both being-together (sunousía) and living-together (suzên) exclusively to the object of his speculation. The 'Academic' philosopher lives primarily with the object of his theory and the *sumphilosopheîn* among friends is in principle, if not in practice, a derivative phase (Oliverio, 2017, p. 94).

Thus, Lipman remarks, the Academy seems to reseminate, in terms of a veritable theoretical tower, Socratic thought, progressively separated from the idea of philosophy as "fact", proper to the dialectical "activist". At the heart of Plato's academy is the philosopher with his solitary, self-contemplative vision of eternal truths, which is the self-sufficient 'prime reality' of philosophy (Lipman, 2010, p. 12). As A. Vergez and D. Huisman have also remarked, for Plato, the experience proper to philosophical knowledge "is not that of a communication of consciousness's with each other, but that of a communication of consciousness with the Idea" (Vergez & Huisman, 1995, p. 62). Only then can - not must - the level of the "second reality" occur: a "reality" which is optional in character and dependent on the "first reality" of philosophy and consists in the communication by the master *theoretikós* to the disciples of some of the results of his contemplation. The ideas are not elaborated together, since for this process the senior philosopher does not need co-philosophy. The group of disciples is only the vehicle for the socialization of the essence of philosophy, not being part of its epicenter, but only of its non-essential, marginal-derived side, represented by its dissemination as a (quasi-) finished product.

The community of philosophical inquiry constitutes a different kind of collective, which instantiates a different understanding of philosophy. In Oliverio's convincing synthetic interpretation (which starts from a series of Aristotelian ideas), the place of the master who disseminates knowledge is taken by the facilitator who teaches his students not what to think, but how to do so, by "instructing on the process, not on ideas or knowledge already known". The most radical change brought about by the CPI is "the abandonment of the image of the solitary process of philosophical inquiry" and that of the philosopher as the "first reality of philosophy" who autonomously generates and then "transmits ideas proper to a collective of addressees". Communication thus acquires a very different meaning, becoming "the chronotope of the enactment of *sumphilosopheîn*", which, not by chance, "is also the chronotope of 'dialectics' as the privileged form of dialegesthai (with the precise meaning of being-in-communication-as-dialogue)". Here becomes essential the presence of fellow co-inquirers with whom the common points of an argument are established and without whom – that is, their presence and effective participation - the research cannot take place (Oliverio, 2017, pp. 94-95).

Oliverio further illustrates ways in which Lipman's and Sharp's reconstructed philosophy as a communitarian, dialogical activity. Quoting from and commenting on David Kennedy, he highlights the ways in which the community of philosophical inquiry constitutes itself as a recapitulation of Socratic practice, with the major difference being that, in CPI, the factor controlling the direction of argument and self-correction is no longer a dominant member of the group, but¬ "the systemic and dialectical process of the ¬group itself. In the CPI, the process of deconstruction/reconstruction that Socrates exclusively assumes is distributed among all members and has its source among them - i.e. in their interactions" (Oliverio, 2017).

So Lipman and Sharp started from the Socratic pedagogy from which they gave up the predominance of one member of the group - usually a charismatic theorist - to which they added, with extraordinary creativity, elements from the pragmatist tradition. Of these, Lipman and Sharp referred, in addition to Charles Peirce - the originator of the term community of inquiry - to John Dewey and George Herbert Mead, in

particular their advocacy of an activist pedagogy based on the learning experience of children and adolescents.

Building on Mead's idea that social relation comes before thought and that meaning does not pre-exist dialogue, Lipman fully harnessed the liberation of philosophical learning from the tyranny of the primacy of autarchic theory and the affirmation of the priority of the community of inquiry (Lipman, 2003, pp. 84-85). And, inspired by Dewey, he demonstrates the ways in which CPI, by rediscovering the emergence of meanings from and within social communication, also reactualizes the idea of dialectic as being-in-communication-as-a-dialogue (Oliverio, 2017, p. 97). Secondly, this acceptance of the CPI also provides a clarification of the possible contents of the philosophical research practiced by its members. More precisely, it does not cultivate an abstract intellectualist and rationalistic play with concepts, but a shared activity of conferring meaning to a problematic or ambiguous situation, either by constructing or inventing new concepts, or by communicatively reconstructing and enlivening, as sharing, concepts. From this perspective, the role of facilitator who stimulates participation, bridge-building and triggering discussions - while managing to "melt into the background" - is the most important philosophical work, in which communication is the first reality of philosophy (in the sense of co-philosophy).

Teacher training and implementing a community of inquiry in the classroom

The implementation elements in the P4C program were the novels and the community of inquiry. Lipman and his colleagues invested a lot in training the teachers and preparing them to implement the program in the classrooms. He found that the teachers lack knowledge in the field of philosophy while they are required before implementation to know the philosophical ideas behind the novels. The teachers received extensive support through teacher guides, consultations and advice before implementation, training networks where teachers and philosophy graduates met, networks of teachers were established for ongoing contact and support, in addition, they took an essential course in preparation for teaching the program and activating inquiry communities (Lipman, 2008).

Methodology

Population and the study sample

The research population is science and technology teachers in the Arab elementary school in Israel. In a comprehensive study, these teachers' perception of seven important dimensions of creative thinking was examined. This article deals with their perception of the factors that promote the cultivation of creative thinking. The number of teachers participating in the study is 313 (N=313). These teachers cover all professional variables: gender (male and female), age (21-30, 31-40, 41-50, over 50), years of teaching experience (1-10, 11-20, 21-30, over 30), academic degree (BA, MA, PhD), geographic distribution of residence of this population in Israel.

Research tools

As stated earlier, the teachers' perception of the seven main dimensions in creative thinking, including the dimension that this article deals with, this perception was examined through a questionnaire that was prepared and validated for the purpose of this study. Thus, one of the seven parts of this questionnaire examined the teachers' perception of the factors that promote the cultivation of creative thinking among students.

The statements in the part of the questionnaire that examined the teachers' perception of the factors that foster creative thinking, as in the rest of the statements in the other parts of the questionnaire, were prepared and formulated based on what is found in the research literature on the terms that foster creative thinking. It is important to note that what is written in the research literature in the context of the factors that foster creative thinking is not based on research but is the product of the authors' thoughts. In other words, we did not find any research literature that examined the teachers' perception of the factors that foster creative thinking. The questionnaire went through many stages until its final version was prepared. These stages included the examination of the questionnaire by seven content and pedagogy experts, seven expert teachers in the field of science and technology in addition to a comprehensive and wide-ranging pilot whose reliability was found to be

high 0.94 in the statistical analysis. The part of the questionnaire that examines the teacher's perception of the factors that foster students' creative thinking is made up of 12 statements, which describe and measure the teacher's perception of the factors that foster students' creative thinking. The scale of answers to the statements is of the 5-degree Likert type, grade 1 expresses full opposition to the statement and grade 5 expresses full agreement, grades 2, 3, 4 express intermediate grades. This is according to the following breakdown: 1 disagreeing at all, 2 disagreeing, 3 not sure, 4 agree and 5 strongly agree. Each teacher who answered the questionnaire was required to express the appropriate degree of agreement or opposition to the statement.

Finding discussion

The teachers' answers in all statements were classified into three categories, instead of five categories to present a clear and comprehensive picture, with grades 1 (disagreeing at all) and 2 (disagreeing) grouped into one grade 1 expressing opposition to the statement, grade 3 (not sure) was converted to 2 with the same meaning, grades 4 (agree) and 5 (strongly agree) were grouped into one grade 3 expressing consent to the statement. The statements are arranged here only with the degree of agreement the teachers have for each statement, that is, their degree of agreement with the factor in each statement as a factor that promotes the cultivation of creative thinking:

Entrepreneurship and innovation will develop creative thinking 90.7%, using teaching, learning and assessment methods in which the student is active will result in the development of creative thinking 86.6%, the teacher's use of methods and tasks that enable multi directional thinking (divergent thinking) will foster creative thinking 86.6%, diversification in the learning environments used by the teacher will encourage the cultivation of creative thinking 83.7%, using unconventional teaching and assessment methods will foster creative thinking 81.8%, encouraging diverse and unconventional answers will foster creative thinking 81.2%, using digital technologies in teaching will foster creative thinking 79.6%, students' creative thinking can be fostered in the application of learning, through problems that allow for multiple

answers instead of exercises that have one correct answer 79.2%, creative thinking can be nurtured using existing learning materials and textbooks only if the teacher uses methods and tools that enable the cultivation of creative thinking 68.7%, taking risk on the part of the teacher and students will result in the development of creative thinking 66.5%, lack of judgment on the part of the teacher to the students' answers will promote creative thinking 60.1%, only the use of learning materials and textbooks specifically designed to cultivate creative thinking will result in the cultivation of creative thinking 20.1%.

For this purpose, the variable "the teacher's perception of factors that foster students' creative thinking" was constructed for this part of the questionnaire. This variable was constructed by calculating the average of the teachers' responses to these statements. This is when each participant received a value between 1 and 5 describing his perception of the factors that foster students' creative thinking. When a high value indicates that the teacher believes more in these factors as promoting the students' creative thinking. This part of the questionnaire was tested for reliability using an internal consistency test according to Cronbach's alpha coefficient. It was found that the alpha value is 0.812, which indicates high reliability, so that research can be based on the teachers' answers in this part of the questionnaire and conclusions and recommendations can be built on them. The hypothesis that was formulated for this part of the questionnaire to examine the teachers' perception of the factors that foster creative thinking is "It will be found that most teachers believe that in order to foster creative thinking of students, many significant changes are required in, methods, tools and environments of teaching, learning and assessment, learning materials and in the willingness of teachers to teach creative thinking". The teachers' responses in all the statements examining the teachers' perception of the factors that promote creative thinking, indicates a very clear picture in which the teachers believe in each of the factors in the various statements as a factor that fosters creative thinking.

Regarding the only factor, which has a low percentage of agreement, when 20% of the teachers agree, that it is a factor that fosters creative thinking, which is "only the use of learning materials and textbooks specifically designed to cultivate creative thinking will result in the cultivation of creative thinking", this factor is the opposite (worded in

reverse) of the factor "creative thinking can be nurtured using existing learning materials and textbooks only if the teacher uses methods and tools that enable the cultivation of creative thinking" with a percentage of 68.7% teachers agree, which is at the second level of agreement among the teachers, in which agreement was found among the teachers as factors that enable the cultivation of creative thinking.

Based on the discussion in this part of the research questionnaire, which deals with the perception of factors that foster students' creative thinking, we come to the conclusion that it fully and completely supports and reinforces the hypothesis formulated in this part.

In addition, to prove the correctness of the hypothesis statistically a t-test was conducted for a single sample to examine the variability and diversity in teachers' responses regarding the factors that foster students' creative thinking, found ($t = 146.308$, $p < 0.001$), this indicates high variability and great diversity in teachers' responses to the factors fostering students' creative thinking. Therefore, the research hypothesis was confirmed and accepted.

How can the P4C approach be integrated into the set of factors that foster creative thinking?

Following the previous findings, the question arises: Is the system of thinking - on which the thinking model is based, which is the pedagogical core of the P4C approach - and which incorporates within it the ability to think creatively, can this approach be a pedagogical approach that allows the development of creative thinking of students based on the triangle high degrees of agreement of the teachers with the factors that promote creative thinking, the acceptance of the hypothesis and support from the research literature discussed earlier. To answer this important question, we will examine the P4C approach against the statements in this part of the questionnaire and the hypothesis. That is, how and to what extent is the P4C approach as an approach that supports and agrees with a high degree of agreement like the teachers with the statements as factors that promote creative thinking and in addition how and to what extent is it found as supporting the hypothesis.

In other words, how does the P4C approach enable the promotion of entrepreneurship and innovation among students, the use of teaching, learning and assessment methods in which the student is active, the teacher's use of unconventional teaching and assessment methods, the teacher's use of methods and tasks that enable multi-directional and diverse thinking, diversity in the learning environments that the teacher uses, a teacher who encourages the students to give diverse and unconventional answers, application of learning through problems that allow multiple answers instead of exercises with one correct answer, the teacher's use of existing learning materials and textbooks using methods and tools that enable the cultivation of creative thinking, risk-taking on the part of the teacher and the students, reducing the teacher's judgment the students' answers. And finally and based on how the P4C approach is found as an approach that is a comprehensive way to develop the students' creative thinking according to the teachers' perception.

First of all, it is important to note that the main motive behind the establishment of P4C is, the great dissatisfaction of the educators with the state of education, which included - among other things - a lack of emphasizing the promotion of thinking necessary for children such as critical thinking, unconventional logical thinking, creative thinking and more, as ways to prepare the student to be a successful citizen in the future community life (Williams, 2018). In addition, and complementary to this, it is possible to point out Lipman's belief that engaging in a philosophy of life is required and necessary to cultivate a thoughtful and intelligent person who knows how to conduct himself successfully in community life, as the main motive behind Lippman's establishment of the P4C program (Lipman, 2010, 2003, 2008). The main pedagogical goal in the LS-P4C approach is the development of the students' investigative abilities, which will allow them to think critically and philosophically about the questions they raise about the various issues based on. To promote this goal, there are many focused and clear theoretical materials by Lipman, Sharp and their colleagues at P4C and PwC, while understanding that a condition for students to be able to think for themselves is the development of students' critical, creative, caring, and collaborative thinking (Oyler, 2016; Phillips, 2011; SAPERE P4C- Level 2 Handbook; Gregory, Haynes and Murris, 2017).

Based on this, it was found that the motives behind the establishment of the P4C approach meets and is on the same side of the factors and motives for cultivating creative thinking according to the perception of the teachers in this study. This is when the main motives for establishing the P4C approach is the desire and aspiration for many changes, which will move schools and education from a place of not emphasizing the promotion of the necessary thinking for children, such as critical thinking, unconventional logical thinking, creative thinking and more, to a place where this thinking will be in the center of education and school activities, this is with the aim of preparing the student to be a successful citizen in the future community life. Here in this study, it was found that the whole purpose of all the factors, in the various statements that were found with a high degree of agreement from the teachers, is the promotion of creative thinking and with it naturally according to the research literature also other types of thinking related to it and can also be concluded in statements such as systemic thinking, branching and literal thinking, unconventional logic and more.

Thus, it was found that the factors that were perceived as factors that promote creative thinking are at the root of the main motive for establishing the P4C approach. This is how the teachers' perception of the factors that foster creative thinking in this study meets the goal of Lipman's philosophy for children (P4C) (Lipman et al., 1980; Lipman, 1981; Lipman, 2003) is to teach children how to think for themselves and decide for themselves about good choices, thus improving their ability to think about thinking when they discuss concepts of life that are important to them (Lipman, 1981, p. 37).

This is the place to point out that creative thinking at the theoretical level and at the applied level in the P4C approach, is seen according to Lipman (2003) as thinking that breaks known frameworks to enable new answer options, new criteria or new ways, innovative thoughts without using the thoughts of others who are familiar with the subject or the problem under discussion. This perception clearly goes with the factors that foster creative thinking according to the teachers' perception and works in the spirit of them.

The P4C approach can be a way that brings with it to education many changes required to promote creative thinking according to the teachers' perception in this study of the factors for promoting this thinking. In the teacher's manual (SAPERE P4C- Level 2 Handbook, p. 41) dealing with the LS-P4C approach, Robert Fisher and Steve Williams describe how creative thinking works in combination with critical thinking in the P4C approach to create a successful graduate with the ability to successfully deal with life's problems while creating ideas and products. Cotton (2002) points out that for the success of the process the teacher in P4C must treat each student with respect, offer encouraging activities, allow the student to be active and accept differences in learning abilities between learners (Cotton, 2002). These are characteristics that are at the foundation of creative thinking and on which it is based and in addition are among the factors that the teachers perceive in this study with very high degrees of agreement as factors that foster creative thinking.

Sharp (2014) points out that Matthew Lipman in the P4C approach pointed out the importance of cultivating critical, creative, and caring thinking in children, if we want to better prepare them for life. Sharp also notes that Lipman states that caring thinking is appreciative thinking, active thinking, normative thinking, emotional thinking, and empathic thinking. Therefore, in Lippman's eyes, this thinking is a necessary thinking and occupies a central place in our lives (Sharp, 2014). Here the students will be asked to be ready to change their minds (SAPERE P4C-Guide Level 2). What is described here shows an approach that is a different way that brings about many changes when applied in the classroom that promote the factors found in this study as fostering the students' creative thinking and at their center: the implementation of the P4C approach will take place based on the use of non-routine teaching, learning and assessment methods and in which the student is active, allowing for multidirectional and diverse thinking, which enables problem-based learning based on plurality and diversity in student answers and more.

All of these were found in the research here with a high degree of agreement as factors that promote creative thinking at the same time, they are at the foundation of the thinking model in the P4C approach. From this a clear picture emerges in which the P4C approach can be described as an

approach whose implementation in schools will be an outline and a way to implement the factors found in this study as the promoters of students' creative thinking according to the teachers' perception.

Summary and recommendations

The findings of the examination of the teachers' perception regarding the factors that foster creative thinking which are reflected in the teachers' high agreement with all these factors, in addition to what has been said and the support for this from the research literature and the other philosophical and pedagogical principles on which the P4C approach is based and its thinking model within it with the types of thinking included in it, all these meet and constitute one system on which the promotion of creative thinking can be based.

The examination of the pedagogical elements and principles included in the 12 factors that foster creative thinking in the 12 statements whose perception by the teachers was examined in this study on the one hand, and the examination of the elements, principles, and processes on which the P4C approach and its thinking model are based, on the other hand, shows that there is a great deal in common. In other words, it was found that the P4C approach, in its goals, principles, methods, and in its methods of application, and especially its thinking model, allows it to apply all the factors that the teachers agreed to with a high degree of agreement as factors that foster creative thinking, so that the application of the P4C approach can fulfil the research hypothesis which was statistically tested and accepted and that in order to promote the cultivation of creative thinking, education systems and schools are required to make many significant changes in related to educational policy, methods of teaching, learning and assessment (such as active learning, problem-based learning that allows multiple answers, learning based on divergent thinking), diverse, non-routine, open learning environments and more other changes, since all these are at the foundation of the P4C approach.

In light of what was said above regarding the findings of the study, its conclusions and the examination of the ability of the P4C approach to be a way to implement the factors found to promote students' creative thinking based on the findings of a research examination of the teachers'

perception of these factors and with the support of the research literature, it will be possible to recommend to the educational systems to adopt the P4C approach as the appropriate approach for the promotion of creative thinking and that it has the ability to promote creative thinking based on the research findings regarding the teachers' perception of the factors for cultivating this thinking.

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