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EMOTIONAL INTELLIGENCE AND CREATIVITY IN SCHOOL-AGED CHILDREN AND PREADOLESCENTS

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Abstract: *People have to constantly deal with radical changes of conduct in almost every aspect of their lives. Emotional intelligence and creativity are two important dimensions that help people to adapt and maintain their competitiveness. We used a sample of 133 school-aged children and preadolescents, who were tested with Emotional intelligence test or children and Imagination and creativity test, both adapted by Roco (2001). We discovered significant differences between male and female pre-adolescents regarding the development of emotional intelligence and significant correlations between fluidity and figural components of creativity and emotional intelligence. Implications of the results are discussed.*

Key words: *Emotional intelligence, creativity, school-aged children, preadolescents.*

1. Introduction

Emotional intelligence refers to the competence to identify, express, understand, assimilate emotions in thought, and regulate both positive and negative emotions in the self and in others (Matthews, Zeidner & Roberts, 2004).

Gardner (1993, as cited in Roco, 2001), in his theory about multiple intelligences, holds a special place for those intelligence aspects that allow people a superior adaptation to the social environment.

Wechsler emphasizes that people can adapt to their environment through both cognitive and non-cognitive elements. The non-cognitive aspects of intelligence include affective, personal and social factors, which are essential for success (Roco, 2001).

Popescu-Neveanu (1978) emphasizes that creativity is a general disposition of a personality toward novelty and it has a certain stylistic organization of psychological processes inside the personality system. The author also highlights a connection between creativity and intelligence, made by Piaget, who interprets creativity as accommodation by overflow, meaning that the reorganization of information always brings something new, which was not there in the first place (Popescu-Neveanu, 1978).

Amabile (1983) emphasizes that cognitive abilities, personality characteristics and social factors contribute to stages of the creative process. Fustier and Fustier (1988, as cited ins Roco, 2001) show that for regular people, creativity is connected to expressions

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and artistic creation, technological inventions or scientific discoveries, but also education, human behaviour, social movement and interpersonal communication. This is an important link between creativity and emotional intelligence.

Emotions are important because they assure one's survival by guiding people; they help people make decisions and they are a valuable source of information; they help people set limits and point out when those limits are crossed; they help people communicate with others; they probably are the greatest source of unity between all members of the human species (Roco, 2001). The liaison between the world and one's self is the emotional intelligence.

Rogers (1961) believes that creativity is an element of the good life. A creative person is, in the author's opinion, a person with abilities to form new relationships with his environment, which allows him to adapt and survive under changing environmental conditions (Rogers, 1961). Guastello, Guastello and Hanson (2004) explain that emotional intelligence serves as a counterweight against mood disorders in enhancing creative production.

Just like emotional intelligence, creativity appears to be an important component of problem-solving and other cognitive abilities, healthy social and emotional well-being, and scholastic and adult success (Plucker, Beghetto & Dow, 2010). Creativity is a social need which ensures people's survival (Roco, 2001). Highly creative science people are characterised by the need to liberate from rules (flexibility), opening toward experiences and sensitivity regarding important problems (Roco, 2001). To be creative means to make something new, original and adequate to reality (Roco, 2001).

As psychological formations, both emotional intelligence and creativity can be described by multiple aims: productivity, utility, efficiency, value, and resourcefulness. They are two concepts that still challenge psychologists to define.

Our society respects emotional intelligence and creativity less than academic ability, a bias particularly evident in schools (Ford & Harris, 1992).

2. Research Subject Field and Methods

We used a sample of 133 school-aged children and preadolescents, residents of the department of Constanta. The participants are: 69 children between 6 and 10 years old, and 64 children between 11 and 15 years old; 67 of the participants are female and 66 male. The research was conducted in October – March 2015.

We used two instruments, both of them belonging to Roco. The first is a Test of emotional intelligence for children, and the second an Imagination and creativity test based on Torrance, Osborn, Guilford, Wallach, Kogan and Meunier, that Roco has adapted.

3. Objectives

The objectives we set out are:

(1) Identifying the existence of differences between the development of emotional intelligence based on age and gender as variables;
(2) Identifying the existence of significant correlations between emotional intelligence and different forms and components of creativity.

4. Hypotheses

The hypotheses we set out are:

(1) We assume there are significant differences in the development of emotional intelligence between school-aged children and preadolescents;
(2) We assume there are significant differences between male and female school-aged children regarding the development of emotional intelligence;
(3) We assume there are significant differences between male and female preadolescents regarding the development of emotional intelligence;
(4) We assume there is a correlation between emotional intelligence and figural creativity;
(5) We assume there is a correlation between emotional intelligence and verbal creativity;
(6) We assume there is a correlation between emotional intelligence and flexibility,
(7) We assume there is a correlation between emotional intelligence and fluency;
(8) We assume there is a correlation between emotional intelligence and originality.

5. Findings and Results

Hypothesis 1. *We assume there are significant differences in the development of emotional intelligence between school-aged children and preadolescents.*

We compared means for the two groups, using the t-test for independent samples ($t = .368$, $p = .713$). There are no significant differences between the school-aged children and preadolescents, regarding the development of emotional intelligence.

In both stages of development there is a specific emotional instability (Crețu, 2009). It is the time for new feelings to emerge, like friendship, duty, responsibility, honesty, respect. Self-consciousness is still in development. Children have to deal with corporal changes, new cognitive abilities, changing attitudes and expectancies from other people. It is a difficult time in human development. The spiritual self is less developed than the social self, which is the centre of children's preoccupations.

Hypothesis 2. *We assume there are significant differences between male and female school-aged children regarding the development of emotional intelligence.*

Using the t-test for independent samples ($t = -.238$, $p = .813$), we discovered no significant differences.

This is a stage in human development in which children begin to manifest interests for their own interior life. They tend to express their feelings and behaviours. But still, these moments are relatively rare and short (Sălceanu, 2015). They only indicate a certain direction of a future development.

The physical self has a strengthened corporal schema, the gender identity is already clarified, children acknowledge the resemblances with the members of the family, but they also begin to acknowledge the differences with other people (Crețu, 2009).

The spiritual self begins to shape itself during scholar confrontations, appreciations and evaluations. Most traits that school-aged children perceive are those that teachers and parents highlight (Crețu, 2009).

Hypothesis 3. *We assume there are significant differences between male and female preadolescents regarding the development of emotional intelligence*.

Using the t-test for independent samples ($t = 4.50$, $p < .001$), we discovered that girls have higher levels of development of emotional intelligence.

The consequence of puberty is o notable physical change, which is associated with a subjective body image (Rayner, Joyce, Rose, Twyman & Clulow, 2012). Although boys that physically mature faster are more self-confident, have greater popularity, a positive body image and feel more attractive, girls tend to be more careful with their interior life. Girls usually develop faster than boys, in almost every way in puberty, including the spiritual point of view. They are overwhelmed with feelings and emotions, and often discuss those aspects with their best friends. Girls may think boys are foolish or ridiculous, but the fascination remains (Rayner *et al*., 2012).

Hypothesis 4. *We assume there is a correlation between emotional intelligence and figural creativity*.

Using Spearman Rho coefficient ($r = .185$, $p = .03$), we discovered a significant correlation between the two variables.

Figural creativity tests require a large number or responses based on a vague figure. Subjects have to give multiple examples of what that figure can be or where that object can be used.

The development of language skills and vocabulary, including learning a second language, can supply children with the ability to depart from traditional approaches to a problem, but also with possible rich resources for new and different ideas (Landry, 1973). The author proved that this experience is positively correlated to divergent thinking in figural tasks.

Furthermore, DeMoss, Milich and DeMers (1993) discovered a significant correlation for both sexes, between figural creativity and positive attributional style (a person's attributional style describes how they tend to, often unconsciously, explain various life events to themselves). School-aged children and especially preadolescents have an optimistic way of perceiving things, they tend to dream about their future and search for models to guide them or to help them make choices.

Another explanation is the fact that figural creativity is free from the effects of negative reactions of others, like teachers and peers.

Hypothesis 5. *We assume there is a correlation between emotional intelligence and verbal creativity*.

Using Spearman Rho coefficient ($\rho = .16$, $p = .06$), we discovered no significant correlation between the two variables.

Although we expected a significant correlation, this didn't happen. Traditional methods of measuring creativity, confound the idea of quality with the idea of quantity, which might exaggerate the relationship between creativity scores and verbal fluency (Silvia, Beaty & Nusbaum, 2013).

Hypothesis 6. *We assume there is a correlation between emotional intelligence and flexibility*.

Using Spearman Rho coefficient ($\rho = .181$, $p = .03$), we discovered a significant correlation between the two variables.

Flexibility is the capacity of restructuration of thinking, of changing its course in resolving a problem (Roco, 2001). It is the opposite of the rigidity of thinking. We appreciated flexibility by the number of response classes the subjects made.

School-aged children have, according to Piaget, a practical and concrete stage of thinking development. In this stage of development, children can think about simple causal relationships, they can see the faults or the contradictions between two judgements, etc. They operate with empirical notions, which will be transformed in scientific notions under the influence of education. Their conceptual networks are limited (Osterrieth, as cited in Zlate, 2000, as cited in Crețu, 2009).

Preadolescence is the debut of formal thinking, as Piaget describes it. Thinking becomes abstract, logical, capable of explaining, of analyzing, of leaving the descriptive level, of reasoning (Sălceanu, 2015). The notions are more abstract and general. Children gain complex notional systems at every field of study. They can also think about the past, present and future, about what's possible, real, fantastic, objective and subjective.

On the other hand, one of the components of emotional intelligence is adaptability, which resides in three important aspects (Roco, 2001, p.140): „problem solving (the ability of being aware of the problems and of defining the problems to generate and implement potential solutions; testing reality (the ability to set and evaluate correspondences between an experience and an existing set of objectives); flexibility (the ability to adjust thoughts, emotions and behavior, in order to change the situation)".

These are all quantitative and qualitative changes that explain the progress of creativity and emotional intelligence.

Hypothesis 7. *We assume there is a correlation between emotional intelligence and fluency*.

Fluency refers to the number of words, ideas, images or associations that the participants made (Roco, 2001).

Using Spearman Rho coefficient ($\rho = .208$, $p = .01$), we discovered a significant correlation between the two variables.

Creative fluency is dependent on the development of thinking, which is related to the development of the language. The language develops and the verbal flow reaches up to 60-120 words per minute (Crețu, 2009). The language is improved during these two stages of development because school-aged children and preadolescents are trained through a rich scholastic activity. They read a lot of literature, they have different media contacts, they communicate extensively with peers.

The interpersonal aspect of emotional intelligence is characterized by empathy, by social relationships and by social responsibility (the ability to prove one's contribution to the social group one belongs to) (Roco, 2001).

Hypothesis 8. *We assume there is a correlation between emotional intelligence and originality*.

Using Spearman Rho coefficient ($\rho = .146$, $p = .09$), we discovered no significant correlation between the two variables.

Originality is concerned with the uniqueness of the answers and their metaphoric degree. We considered only the answers with frequency 1.

Reproductive imagination in elementary school is more developed than the creative imagination. By comparison with preschool children, school-aged children are even less

creative and original. Studies show they are less expressive or they lack inspiration (Ribot, as cited in Crețu, 2009).

It is true that the mechanisms of imagination are not in jeopardy, but we can see the effects of a more realistic attitude that tend to appear. School-aged children oriented a lot more on reality and on keeping things real, due to the instructive activities in school.

Though during puberty, we can see that creativity is developing considerably, creativity is also dependent on personal experiences, memories, attitudes, flaws, love or certain human activities (Dragu & Cristea, 2002). Therefore there are many differences of originality at these developmental stages.

6. Conclusions

Emotional intelligence is one person's ability to use emotions effectively and productively. Many schools and educational organizations have begun to integrate the development of emotional intelligence in their educational programs. It is becoming increasingly clear that these skills can be one of the foundations for high-performing classrooms and students.

The other important aspect of the research is creativity. More or less metaphorical, creativity is the intelligence having fun. Schools need to be able to build creative generations, in order to help children keep up with the rapid changes in this era of globalization, economic transformation and information communication technology. It is of great importance that today's children can take advantage of the modern development of the reality they live in.

The study highlighted some important aspects about the development of creativity and emotional intelligence in school-aged children and preadolescents.

First of all, both dimensions of the personality are related to the characteristics of the stage of development of the individual. Some of the hypotheses were rejected because the participants were limited by their natural development and could not achieve certain performances (for example, originality of their answers). Both creativity and emotional intelligence are based on the development of the thinking process. One of the important components of emotional intelligence is the appraisal of emotion. Children have to identify and name emotions, and this is an ability that works like a bridge between cognition, affect and physiology that must be educated in school. On the other hand, a creative school environment motivates learners to discover things about themselves, both psychologically and socially and helps children to develop the creative personality traits.

Emotional intelligence is better developed for female preadolescents, this stage being a real turn in the development of self-consciousness, of one's identity or self-esteem. School-aged children tend to be more emotionally unstable than preadolescents and this oscillation of emotional states can change one's perspective from optimism to pessimism, making him consider different points of view (Roco, 2001).

There are several studies that emphasize the link between emotional intelligence and gender differences. Some of them are pointed out by Naghavi and Redzuan (2011). It seems that boys and girls are treated differently when they learn to understand and control their emotions. Parents mostly talk to their daughters, rather than their sons about emotions and the main emotion on which boys usually get better training is anger. Otherwise, parents give more information about feelings and emotions to their daughters. This, along with the fact that girls master language faster that boys, causes them to be

more experienced in expressing and naming their feelings than boys. This gives girls the advantage of being aware of their and others' emotional states to a large extent.

In the first years of life, emotions act like signals, alerting the individual and ensuring his survival. Later on, as the individual matures, emotions begin to shape the way of thinking, to influence attitudes, to point at important modifications from din inside, necessary to a normal adaptation to the environment.

Regarding the development of creativity, the personality characteristics of a creative person must be taken in consideration in order to recognize and to help develop their creative potential. Creative individuals are more likely to be: aware of their own creativity (values originality), original (imaginative, flexible), independent (self-confident, individualistic), risk-taking, energetic (enthusiastic, excitable and impulsive), curious (questioning), humorous (playful), attracted to complexity (asymmetry, novelty), artistic, open-minded, need alone time, and intuitive (perceptive) (Davis, 1992, as cited in Hong & Milgram, 2008).

As it can be seen, two important factors for the development of both creativity and emotional intelligence are education and family. Both school and parents participate in giving opportunities for the development of the two dimensions.

Today's countries, corporations and teams need people, processes and products that not only adapt in changing circumstances and needs, but also anticipate and make ready for those circumstances and needs. This environment puts pressure on schools to educate and train the next generation for a future that cannot be foreseen, a future that is not readily predictable from what currently exists (Moran, 2010).

In an era when children feel frequently disconnected from friends and family, where rapid social change is the norm, when media stars (which act like models) demonstrate poor behaviour, educators recognize the human need for developing social, emotional and creative skills. In this context, developing creativity and emotional intelligence is a fact of capital importance.

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