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Can a creative interpersonal problem solving program improve creative thinking in gifted elementary students?

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ABSTRACT

Enhancing problem solving skills of gifted students provides them with essential tools for encountering future situations. Due to the necessity of problem solving skills in the lives of the gifted students, and inspired by the CPS model, along with parents need assessment surveys, a creative interpersonal problem solving training program was developed. Furthermore, its effectiveness on creativity of the elementary gifted students was evaluated. The design of the study was semi-experimental with pretest-post-test and control group. 125 female elementary students were screened by Raven Progressive Matrix of Intelligence and Persian version of Stanford-Binet test of intelligence. Those who qualified as gifted were randomly assigned into the experiment and control groups. The experimental group participated in the creative interpersonal problem solving program, and the control group did not receive the training, but was scheduled to receive the training program after the end of the research. While Torrance Test of Creative Thinking (Torrance, 1990, standardized Persian version, 1993 & 2008) was administered to measure creative thinking, creative performance was measured through Teacher Creativity Checklists (Proctor & Burnett, 2004). The obtained data were analyzed using Repeated Measures Analysis of the Variance. The findings showed significant differences ($p < 0.05$) between the experimental and control groups in all sub-variables of creativity, and the results were maintained in the two-month follow up evaluation. In the end, applying creative interpersonal problem solving program for improving creativity in elementary gifted girls was discussed.

1. Introduction

There was a time that educators could tell their students to simply listen to their teachers in order to learn everything needed to be successful in the future; this might have been wrong even then, but it is certainly not true any longer, mainly because teachers do not even know the questions the future communities will face (Treffinger, 2007).

Life in 21st century is characterized by uncertainties. This is mainly because of social, economic, and technological changes in the world (Beghetto, 2010), which are revolutionizing the concept and characteristics of education (Craft, 2012). The next generation will need experiences and expertise in fields that are not even known yet. Although it is difficult to predict the required skills in the future world, it is obvious that students will need to be able to deal successfully with complex and

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ill-defined problems in life. Creative thinking and problem solving skills are adjustable tools for successfully handling various kinds of unfamiliar problems which enhances constructive and adaptive behaviors in these new and demanding settings. These skills are crucial for all children, especially for the gifted children who are hoped to be the leaders and creators of the change in this uncertain and dynamic environment.

1.1. Gifted students

Gifted students have special characteristics that might put them at more risk in regards to their socio-emotional development and well-being because of their differences with other children, or the asynchrony or dyssynchrony between their social, emotional, and cognitive development (Gallager, Smith, & Merrotsy, 2013). Among these characteristics are perfectionism (Fong & Yuen, 2014; Orange, 1997; Reis & Renzulli, 2004; Siegle & Schuler, 2000; Speirs Neumeister, Williams, & Cross, 2009), underachievement (McCoach & Siegle, 2001), and loneliness (Robinson, 2006; Shechtman & Silektor, 2012; Vialle, Heaven, & Ciarroch, 2007). Furthermore, some of these students are struggling with internal tensions, which might manifest as maladaptive behaviors. Because of vulnerabilities of gifted students and their social and emotional needs (Cross, 2014; Freeman, 2006) in different aspects of their lives, problem solving training might assist them in overcoming some of the obstacles in their lives, and blossom their gifts and their full creative potentials, which enable them to achieve the solutions for their communities and lead societies into prosperity.

1.2. Problem solving

A problem might be defined as a situation with a goal and an obstacle, or a gap between a current and a desired situation, in which a problem solver wants to achieve a goal, but first the obstacles need to be dealt with. The process of problem solving is transforming "what is" into "what should be" (VanGundy, 2005). It is also defined as any life situation or task, which demands a response for adaptive functioning, but no effective response is immediately available because of one or more obstacles (D'Zurilla, Nezu, & Maydeu-Oliveres, 2004). When dealing with a well-structured, closed-ended problem, individuals need convergent thinking abilities, while ill-defined, open-ended problems require the problem solvers to acquire and apply divergent thinking capabilities (Pretz, Naples, & Sternberg, 2003). Ill-defined problems have multiple appropriate solutions, each might satisfy slightly different problem solving goals. Furthermore, some problems involve a dilemma, in which you have two options, neither of which resolves the problem completely, and choosing each option contains gaining some and losing some desired results (Runco, 2014).

1.3. Social problem solving

Social problem solving is a self-directed cognitive-affective-behavioral process, by which an individual or a group attempts to find effective solutions to resolve problems they encounter in real life, social environments (D'Zurilla & Nezu, 2010). Traditional problem solving models usually consists of a series of cognitive steps including: problem identification, goal setting, finding alternative solutions, and evaluating problem solving outcomes (Fogler & LeBlanc, & Rizzo, 1995; Pretz et al., 2003). In social problem solving approach, there is more focus upon motivational, affective, and behavioral aspects of problem solving. Social problem solving model indicates that effective problem solving depends on a positive orientation towards problem solving and use of problem solving skills. Social problem solving is a conscious, rational, effortful, and purposeful activity to improve a problem situation, and reduce or modify the negative emotions generated by the situation. Social problem solving assists individuals to solve all types of real-life problems by identifying and discovering effective solutions for specific problems encountered in everyday life (D'Zurilla et al., 2004; D'zurilla & Nezu, 2010). Interpersonal problem solving has a great impact on perspective taking competency, adjustment (D'Zurilla & Maydeu-Olivares, 1995), and well-being (Elias et al., 1986; Parkinson & Creswell, 2011), preventing depression (Becker-Weidman, Jacobs, Reinecke, Silva, & March, 2010; Bell & D'Zurilla, 2009), preventing and managing stress and anxiety (D'Zurilla & Sheedy, 1991; Kant, D'Zurilla, & Maydeu-Olivares, 1997; Wilson & Hughes, 2011), and promoting social skills (Webster-Stratton & Reid, 2004). It can be integrated with behavior management programs (Guevremont & Foster, 1993) and relationship management in conflict resolution in parent-child relationship, and family emotional health, well-being, and quality of life (Siu & Shek, 2005).

An interpersonal cognitive problem solving program (ICPS) for children was developed based on the idea of teaching the students how to think instead of what to think. The effectiveness of training of this program was investigated in different studies (Shure, 2001; Shure & Aberson, 2013).

Social problem solving as solving problems was studied by focusing on problem construction, more specifically in case of ill-defined and ill-structured issues (Reiter-Palmon, Mumford, & Threlfall, 1998; Reiter-Palmon & Robinson, 2009). Mumford, Reiter-Palmon, and Redmond (1994) suggested a cognitive process model of problem construction. The base of this problem construction is problem representation, formed by the past experiences, guiding the individual in constructing and solving problems similar to those encountered in the past experiences or in structuring novel problems. This framework can be applied to any kind of problems that individuals might encounter in their everyday lives, which might be ill-defined and ambiguous with no specific goals or no pre-defined criteria for determining good solutions (Reiter-Palmon, Mumford, O'Connor Boes, & Runco, 1997).