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## The creative training in the visual arts education



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#### ABSTRACT

The main purpose of this study was to examine the effect of creative training on creative thinking and problem solving of students in visual arts higher education. The participants were Turkish university students. The findings indicated that the effect of creative training on students' creative thinking was significant and effect size medium. However, creative training was not effective significantly on problem solving of students. The results indicate that the creative training as educational approach is effective on the creative thinking, but it is not effective on problem solving of students. Accordingly, it was concluded that open structures in the learning activities as component of creative training, can be cause of open-ended thinking in the thinking process. This result suggests that open structures as 'open-ended thinking' and open-minded in learning activities with the liberated-flexible learning environment and teacher's encouragements plays important role in the development creative thinking and problem solving of students.

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#### 1. Introduction

The term of creativity in modern times related to the engaging of psychological and educational began with Guilford who made the cognitive basis of creativity important separation between *convergent thinking* and *divergent thinking*. Although 'convergent thinking' is adjusted towards obtaining the single best answer to a given question (closed-ended; well-defined problems), 'divergent thinking' involves processes like changeable perspective, transforming, or producing multiple answers to questions (open-ended; ill-defined problems) from the available information and thus supports production of *novelty* (Cropley, 2001; Runco, 2014). Therefore, definitions of creativity referring to divergent thinking contain *fluency*, *flexibility* and *originality* as Guilford's attention (Roskos-Ewoldsen, Black, & Mccown, 2008), and many definitions of creativity refer to the core concept of 'novelty' (Torrance, 1966), with utility which are generally accepted as *new* and *useful* (Batey & Furnham, 2006; Batey, 2012; Mumford, 2003). Also, Plucker, Beghetto, and Dow (2004) emphasized on the importance of the 'novel' and 'useful' traits derived from analysis of the creativity literature about definitions of the creativity. To this point, Runco and Chand (1994) stated that novelty is an essential aspect of creativity.

However, prominent authors in the field of creativity also pointed out the importance of solution process of problem in terms of providing creativity beside the new and useful. Torrance (1966) stated that "sensitivity to problems" involves in creativity as one of certain process. Guilford in 1967 proposed a model of problem solving that focused on creative production. Also, Poincaré and Wallas reminded us that creative process starts with the problem and its identification (Lubart, 2001). Hence, the many definitions of creativity also focused on two basis elements as novelty and appropriateness

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to problem (Kaufmann & Baer, 2012), because creative people usually approach problems in novel ways (Sternberg, 2012). Reiter-Palmon, Illies, Cross, Buboltz, and Nimps (2009) found that creativity is affected by the problem solving. Also, major recent researches revealed that creative abilities are crucial in solving complex, individual, social and macro problems in education (Wang, 2012). Hence, scholars see the problem solving as a main aspect of creativity with using techniques based on the heuristics which allow individuals to apply available capability effectively (Scott, Leritz, & Mumford, 2004). The problems, mentioned above, are open-ended; ill-defined problems predominantly providing the more places of novelty; permitting divergent thinking (e.g. Runco, 2014). Hence, it was impossible for program makers to ignore the fact of the problem solving for creative trainings owing to be accepted the important role of problem solving in the creativity. As Basadur (1994) emphasized, the problem as an important mediating factor in training to increase creativity led to creative output with problem solving performance. Therefore, problem solving process is included in the creative training programs unavoidably. Thus, the content of the creative training is an integrated, programmatic, set of training interventions as theoretical obtained from theories of lateral thinking, productive thinking and creative problem solving (CPS). Other contents of creative training are free techniques; brainstorming or metaphor generation. Accordingly, in terms of technique, much creative training based on general models as brainstorming technique enhancing creativity with little modification for domain and population differences. Others include modify techniques for specific training (Scott et al., 2004).

Mumford, Mobley, Uhlman, Reiter-Palmon, and Doares (1991) indicated that the creative problem solving process differs from the standard noncreative process owing to creative problem solving involves *non-routine problems* more than routine problem solving. In routine problem solving process, individuals tend to satisfy involving mostly convergent thinking with the implementing of previously procedures as ready-made solutions. In contrast, individuals must produce new and different solutions with involving divergent and convergent thinking in creative operation (e.g. Lubart, 2001). Although, the creativity training programs differ regarding to domain, models, and theoretical assumptions, many creativity trainings have a common basis as divergent thinking or multiple alternative solutions instead of the one correct solution (Scott et al., 2004). Thus, it can be said that the 'non routine problem' solving processes involve more creative thinking than routine problem solving processes because non-routine problem has not certain answer or solution previously.

The most widespread investigation of the effect of creativity was the creative studies that were carried out in 1970s (Puccio, Wheeler, & Cassandro, 2004). Today, trade companies, business, industry, government, armed services, science, arts, education and large organizations believe that creative thinking is necessary of being globally competitive and able to develop new technology (Cropley, 2001; Isbell & Raines, 2003; Prentice, 2000; Runco, 2014). Even, many companies have responded to these growing needs by offering creativity training to their employees (e.g. Isbell & Raines, 2003).

Creative training program is experienced for definite time and a group of person. These programs have the essential principles and concepts regarding a specific area and content with the design of the instructional activities under the guidance of a trainer who determines the learning approach or lecture (Murdock, 2003). Creativity Training programs as a combination of techniques were invented as Computer-aided creativity training program, Purdue Creative Thinking Program, New Directions in Creativity Program, Khatena's Training Method, Osborn–Parnes Creative Problem Solving (CPS) program (Hsen–Hsing, 2006). It can be also added Synectics, TRIZ, and Six Thinking Hats to these programs (Puccio, Firestien, Coyle, & Masucci, 2006).

The best known creativity training was process-based program developed by Parnes and his colleagues as CPS program which includes creative problem solving, problem-solving processes, problem finding, information, idea, solution, and acceptance under three processes, idea generation, problem understanding, and action planning under the term of both convergent and divergent process (Scott et al., 2004). With the use of these processes, in CPS model creative thinking can be intentionally applied to solve of open-ended problems through Brainstorming. Although, many tools are used in association with the different steps, primarily Brainstorming is used for effective idea generation in CPS. Studies related to the effect of CPS can be broadly sorted into three categories as the influence on attitudes, behavior and groups (Puccio et al., 2006).

In the design of training, it was suggested by scholars that the divergent thinking tasks as judged through open-ended examines are scored for originality, fluency and elaboration providing to creative problem solving and creative performance (Scott et al., 2004). The classification of Creativity Training programs could include 12 categories as *Brainstorming, Incubation, Attitude training, Simple ideation training, Idea checklist/SCAMPER, Catalog, Part improving, Morphological synthesis, Synectics, Forced relation.* Creativity training could also include 172 techniques as the content or instructional methods which have been applied to improve the divergent thinking abilities for large occupations (Scott et al., 2004). For example, creative training programs' content can be identified as *exercises* or *activities, non-print* and *print* those are *packaged* for guided use. A large number of 'packaged' creativity training materials are real instrument guiding evaluation data to promote their usefulness. Most Packaged creativity training have either a *process focus* as forms of informativeness designing to achieve an outcome or a *person focus* as forms of activities to develop individual performance with curriculum (e.g. Murdock, 2003).

The effectiveness of creative training was performed by Scott et al. (2004) calculating their mean effect sizes of a standard training package or technique implemented in previous studies. They did not report the different effect size of a standard creative training package or technique. This is vital regarding to learning approaches, programs and activities in order to lecture for teacher in education in terms of flourishing, encouraging creativity (Loweless, Burton, & Turvey, 2005; Wang, 2012). Hence, as Scott et al. (2004) stated, creativity training was invested and implemented for occupations ranging from marketing, business management, and educational administration to medicine and engineering in many forms.

On the other hand, Prentice (e.g. 2000) stated that curriculum is not helpful for teachers to focus on possibilities of increasing creativity for learners to be actively. Researchers supported that creativity can be motivated in course of learning

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