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# Embodied creativity training: Effects on creative self-efficacy and creative production



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#### ABSTRACT

This paper presents a study on the effect of a new program of embodied creativity training on the trainees' creative self-efficacy and creative production. In the training program 180 trainees were trained for 39 h over a period of nine weeks. Trainee's creative self-efficacy and creative production (originality, elaboration and fluency) were tested pre and post of the training. One month after the program finished, representatives of trainees and all trainers were interviewed in order to develop a qualitative understanding of the effects and potential improvements of the training program. The results show a significant increase in creative self-efficacy as well as in creative production. Implications for embodied creativity training are discussed.

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#### 1. Introduction

Today, people have generated a variety of creativity training methods such as Brain-storming and Brain-writing (Osborn, 1953), Synectics (Gordon, 1961), Lateral Thinking (De Bono, 1992), TRIZ (Altshuller, Shulyak, Rodman, & Fedoseev, 1997), Mind Mapping (Wycoff, 1991), Creative Problem Solving (Parnes, 1992), Six Thinking Hats (De Bono, 1985), and creative checklists (Davis & Roweton, 1968). Some training programs also include systematic use of motivation, informative instruction, creativity theory, energisers, etc. Karwowski and Soszynski (2008) suggest that methods of creativity training have different focus like abarietic training (fighting barriers to creative functioning), instrumental training (solving problems creatively), personality training (strengthening the importance of personality for creativity), inventive training (gaining experience of using inventive techniques), art focused training and imagination training. Creativity training has been found to have an effect on creative abilities (Rose & Lin, 1984; Scott, Leritz, & Mumford, 2004; Torrance, 1972). Among them, there are two approaches of creativity training. One is embodied creativity training, which refers to an approach to the development of creative abilities that focuses on the trainee to become more creative. Embodied creativity training programs are more action-oriented. They focus on exercise and practice and primarily use short exercises, facilitated processes and workshops to provide the trainees with experiences (Burstiner, 1973; Glover, 1980; Kangas, 2010; Khatena, 1971; Miller, Russ, Gibson, & Hall 1970; Nelson & Lalemi, 1991; Parker, 1998; Zachopoulou, Trevlas, & Konstadinidou, 2006). Examples of embodied creativity training programs include drama education (Hui & Lau, 2006; Lin, 2010), creative drama (Karakelle, 2009) and role play training (Karwowski & Soszynski, 2008). The other approach is reflective creativity training, which

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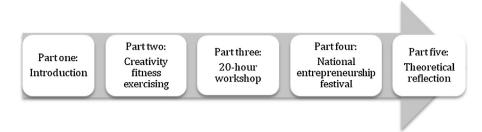


Fig. 1. Overview of embodied creativity training program.

focuses on developing *understanding* of theories, models, tools, techniques or processes. It primarily uses discussion, reading, lecturing, seminar and workshops (Birdi, Leach, & Magadley, 2012; Byrge & Hansen, 2013; Clapham & Schuster, 1992; Cropley & Cropley, 2000; Feldhusen, Bahlke, & Treffinger, 1969; Hennessey, Amabile, & Martinage, 1989; Jausovec, 1994; Osburn & Mumford, 2006; Robbins & Kegley, 2010).

Up till now, studies show that creativity can be improved through training (Rose & Lin, 1984; Scott et al., 2004; Torrance, 1972). But we still know little about the embodied creativity training. The aim of this study is to exam a new embodied training program and its training effect. The program had 180 participants and lasted 39 h. The training effect of this embodied training program included creative self-efficacy and creative production. Creative production refers to fluid thinking, original thinking and elaborative thinking (Torrance, 1974). It was measured by divergent thinking tests (Hocevar & Bachelor, 1989). Self-efficacy means one's perceived capability for oneself (Bandura, 1997; Schunk & Rice, 1987) or one's confidence in own creative ability (Tierney & Farmer, 2002). Creative self-efficacy may be necessary in order to tolerate the high risk of failure, the various hindrances and the negative social evaluation that often comes with creativity (Tierney & Farmer, 2002). A relation between creative self-efficacy and creative production has been suggested (Lubart, 1994) and empirically supported (Choi, 2004; Redmond, Mumford, & Teach, 1993; Tierney & Farmer, 2002, 2004). In this study, we will exam the effect of embodied creativity training on trainees' creative self-efficacy and creative production.

The structure of the rest of the paper is as follows: Part 2 presents the embodied creativity training program; Part 3 introduces the research method; Part 4 is the result analysis; and Part 5 is the conclusion and discussion.

#### 2. Embodied creativity training program

In 2012 a new course on creativity was designed in a university institution. It aimed to improve trainees' general creative ability and collaborative team project work behaviour, as well as foster more creative classroom culture. The course was unique in educational institutions in the world. First, it strongly focused on embodied creativity training and contained a novel part (creativity fitness exercising). Second, the length of the program (39 h of training) was quite long and the number of students in the program was big (180 trainees).

The training program was conducted for undergraduate students who majored at service management in the first nine weeks in their first semester. It was an obligatory course. The trainees passed the program by their attendance and presenting an idea developed during the program at a national entrepreneurship festival.

The training program consisted of five parts: an introduction, creativity fitness exercising, a 20-h workshop, a national entrepreneurship festival, and a theoretical reflection. The introduction and the theoretical review were reflective training while the creativity fitness exercising (the 20-h workshop and the national entrepreneurship festival) was embodied training. The main part of this program followed an embodied approach to creativity training, however it contained these two reflective parts for 3 h. Compared with 36 h embodied training, the reflective part is quite small. Thus the training program can be categorised as an embodied approach to creativity training. It is hard to imagine any kind of embodied training without a reflective introduction. In the introduction part, the definition of creativity and the purpose of the training program in the development of creative classroom culture were presented to students. Moreover, in order to make sure students have opportunity to share their learning experience of the course with teachers and fellow trainees, a reflective group roundup discussion was designed at the end of the training program. Fig. 1 shows the overview of the training program.

#### 2.1. Part 1: Introduction

The one-hour introduction was conducted in the first week of the first semester. During the introduction the trainees were grouped into seven classes. It was conducted in normal classroom settings with maximum 30 trainees in each class. The intention of the introduction was primarily to motivate trainees for the following parts of the training program. The introduction started by giving an overview of the content and rationale of the training program. It included a short video introduction of the first author explaining the design of the study and followed by a short discussion on the relation between the business study program, the embodied creativity training program and the research. Then theories of creativity training, general creativity techniques and a model for creative process were briefly introduced.

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