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Learning to relax versus learning to ideate: Relaxation-focused creativity training benefits introverts more than extraverts

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ABSTRACT

This study compared the short-term effectiveness of two creativity training programs (ideational skills vs relaxation), and assessed whether training effectiveness in each program was dependent on participant personality. Participants comprised 163 volunteers who were allocated to one of three experimental conditions (ideation training, relaxation training, and no training control). All participants completed several self-report questionnaires, as well as tests of creative performance both before and after training. Consistent with previous research, results indicated that Extraversion and Openness were predictors of creative performance overall. More interestingly, however, results revealed a three-way interaction between Extraversion (introverts vs. extraverts), training type (ideation skills training vs. relaxation training), and time (pre- vs. post-training), suggesting that relaxation training is particularly beneficial for introverts whereas ideation skills training is more effective for extraverts. Our results offer new evidence that the expected utility of creativity training program-types may vary according the personality of trainees. On a practical note, our research has implications for organizations looking to tailor creativity-training programs in order to maximize the benefit of such programs on individual performance.

1. Introduction

Creative thinking remains an important determinant of success in a variety of domains, such as education, the workplace, and leadership performance. In education, creative students have been shown to outperform less creative students in general, and particularly on tasks requiring long-term and sustained attention (e.g., Chamorro-Premuzic, 2006). Similarly in the workplace, employee creativity has been shown to enhance job satisfaction (Robinson & Beesley, 2010; Shalley, Gilson, & Blum, 2000) and, more broadly, the likelihood of ongoing organizational success (Baer & Oldham, 2006), with many business leaders emphasizing the importance of continuous change and reinvention to long-term success (Thomke, 2003; Thompson, 2003). In terms of leadership performance, research has demonstrated that creative leaders tend to be more effective overall (Gumusluoğlu & Ilsev, 2009; Shin & Zhou, 2003) and particularly effective at leading change (Matthew, 2009). It is no surprise, then, that many individuals and organizations have sought to foster creative thinking, with organizations in particular having

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spent large sums of money on programs designed to enhance creative thinking in employees (Oldham, 2003; Scott, Leritz, & Mumford, 2004; Solomon, 1990).

The current study had two primary goals. Our first goal was to empirically assess whether two brief forms of creativity training, namely, ideation skills and relaxation training, would produce short-term improvements in creative performance. Our second goal was to investigate whether the efficacy of these two forms of creativity training was dependent on participant personality traits (Extraversion, Openness). We focused on ideation training and relaxation training because both are empirically supported forms of training, appropriate for brief, instructor led programs. Additionally, these forms of training target certain cognitive processes that theoretically might be more effective for some individuals than others (as outlined in detail later). We specifically investigated Extraversion and Openness in terms of training efficacy, because both traits have been shown to predict creativity (Sung & Choi, 2009) as well as trainability in cognitive tasks (Barrick & Mount, 1991; Dean, Conte, & Blackenhorn, 2006). Our study is the first to individually compare these two forms of creativity training and to investigate the impact of personality on the effectiveness of these two programs.

2. Creativity and creativity training

Creativity is most commonly defined as a cognitive process involving the generation of an idea, action, or object that is both novel and useful (Amabile, 1996; Amabile, Conti, Coon, Lazenby, & Herron, 1996; Wiseman, Watt, Gilhooly, & Georgiou, 2011). Individuals who engage in creative behavior therefore tend to approach problems and tasks with an open and uninhibited mind, and ultimately generate a range of novel and sometimes unorthodox ideas that tend to result in positive outcomes.

Agogué and colleagues (Agogué, Poirel, Pineau, Houdé, & Cassotti, 2014, p. 33) argue that "creativity is not an innate quality", and as such, requires developing cognitive skills in order to reason, problem-solve, and generate ideas. The conceptualization of creativity as primarily a cognitive process lends credibility to the idea that creativity can be trained (see Runco, 2004). Such training can take the form of tailored programs (e.g., in the workplace), as well as other well-known programs, such as De Bono's (2009) lateral thinking program, Buzan's (1991) mind-mapping techniques, and Isaksen and Treffinger's (2004) Creative Problem Solving Process (CPS). However, not all training programs are equivalent. A meta-analysis by Scott et al. (2004) evaluated the effectiveness of a range of different creativity training programs as well as their underlying components (i.e., theoretical approach, processes, techniques, design, use of media, and opportunity for practice). Overall, they concluded that creativity training does tend to enhance subsequent creative behavior, and that the most effective programs are those that include activities targeting the cognitive processes underlying creativity.

Clapham (1997) described an interesting study where the efficacy of a "full" creativity training program was compared with a single-component creativity training program. The aim was to determine whether the two training programs would be comparable in terms of creative improvement. The full creativity training program covered a number of techniques used in empirically-supported techniques, such as idea generation, relaxation, applied problem solving, and visualization (Birdi, Leach, & Magadley, 2012; Kabanoff & Bottger, 1991; Scott et al., 2004). In contrast, the more specific, but less comprehensive, single-component training program focused only on ideation skills (i.e., idea generation) training. Results showed that both types of training programs predicted improvements in creativity and that ideation was as effective as general creativity training in increasing participants' creative behavior.

Other research supports the notion that specific training in ideation can improve creative behavior. For example, Baruah and Paulus (2008) found that participants trained in idea generation performed significantly better in a brainstorming task than participants in a control condition. Specifically, they found that exposing participants to a short (75 min) training program resulted in enhanced performance in terms of both quantity and quality of ideas. Consistent with previous research then, and considering that ideation is a key component to creativity (Basadur, Graen, & Green, 1982; Runco & Albert, 1990), we believe that well-constructed and delivered ideation training will generally result in enhanced creative performance in the short-term. We therefore hypothesize:

Hypothesis 1a. Participants trained in ideational skills will experience greater average improvements in creative performance than untrained participants.

A second form of creativity training we investigate in this study is known as "relaxation training". In this paper, we utilize a broad definition of relaxation training, whereby we consider it to involve techniques designed to relax trainees (e.g. stretching techniques, breathing techniques) and reduce anxiety in trainees (e.g. freeing the mind from negative thoughts). Relaxation has many known benefits for improving health and well-being, and there is growing research suggesting that relaxation and related constructs (such as imagery, meditation, and hypnosis) can also have positive effects on creativity (e.g., Karwowski & Soszyński, 2008; Krampen, 1997). Indeed a recent meta-analysis on mindfulness and creativity (Lebuda, Zabelina & Karwowski, 2015) revealed a moderate relationship ($r = 0.22$) between creativity and mindfulness. Importantly the authors reported similar results for correlational and experimental studies, leading them to suggest that the relationship between mindfulness and creativity is likely to be causal (Lebuda et al., 2015).

Our conceptualization of creativity as a cognitive construct provides grounds for a theoretical perspective on why relaxation training might improve creativity. Specifically relaxation training, which involves techniques such as controlled breathing, brief meditation, and stretching, is likely to produce a state of self-awareness and mindfulness, which research has shown enhances emotional and cognitive functioning (Carson & Langer, 2006; Moore & Malinowski, 2009; Sedlmeier et al., 2012). Theoretically, it has been suggested that a state of mindfulness fosters sustained focused attention as well as