



Construal level theory applied to sixth graders' creativity in craft constructions with integrated proximal or distal academic content



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ABSTRACT

Construal Level Theory states that focusing on distant (distal), as contrasted to near (proximal), content promotes mental levels of abstract thought increasing creative performance. Recent studies state that primed participants with distal or proximal thought content showed increased creativity when priming involved distal thought, supporting the theory. The current study's first experiment investigated if temporally, spatially, hypothetically, and socially distant academic content enhances creative performance of 24 urban sixth grade students (12 female, 12 male) in daily creative construction activities over the course of two weeks. The first experiment was a repeated measures design with distance or proximity integrated into the academic content of each lesson and alternated daily. Creative aspects of student works were scored with a rubric. Surprisingly, students displayed more creativity in the proximal condition. To test whether familiarity of topics or integration of content rather than priming was affecting results, a second one-time experiment was conducted with the same participants using priming and self-chosen topics. Similar results to the first experiment were obtained with medium-large effect sizes. The low socio-economic status and limited creative school experiences of participants may be responsible for the results.

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1. Introduction

1.1. Construal Level Theory

Construal Level Theory (Trope, Liberman, & Wakslak, 2007) asserts that an individual's focus on near (proximal) or distant (distal) content affects the level of mental activity as concrete or abstract, which, in turn, affects creative production. When a person thinks abstractly, several recent research studies have shown that creativity is enhanced (Förster, Friedman, & Liberman, 2004; Jia, Hirt, & Karpen, 2009; Liberman, Polack, Hameiri, & Blumfeld, 2012; Subbotsky, Hysted, & Jones, 2010). The Construal Level theory of psychological distance (Trope & Liberman, 2010), proposes that people are more creative when they perceive a psychological distance between themselves and the stimulus. This psychological distance can occur in

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many aspects: time, geographical space, social distance, and probability of occurrence. These distances, although different in nature, have similar effects on mental processing, causing more abstract thinking. High-level mental representations generated during abstract thinking facilitate creativity through better mental and visual insight, along with generation of more creative responses (Jia et al., 2009). This idea counters the intuitive belief that familiarity enhances creative production, but recent research applying this theory to creativity (Jia et al., 2009; Liberman et al., 2012) has suggested that reaching an abstract level of thought is more important to generating ideas. In the current study, the idea of greater student creativity through contemplation of distal concepts was tested through integration of proximal and distal academic content with creative exercises.

1.2. Previous work related to Construal Level Theory and creative production

An early set of six experiments by Förster et al. (2004) showed that distance in time positively affected creative production of college undergraduates and high school students. These researchers hypothesized that students would be able to solve a greater number of creative problems or provide more creative solutions to a single problem after students had spent time imagining distal events or when students were given a more abstract or distal, rather than concrete or proximal, problem setting. In five of six experiments, the students were asked to imagine what they would be doing the next year or what their lives would be in general (distal condition) compared to the next day (proximal condition), before solving three problems. Students who imagined events in the distant future solved more problems than those who thought about the next day. The other experiment conducted by these authors involved participants in thinking of creative, but realistic reasons to greet people (abstract generation condition) or creative, realistic ways to greet a specific person (concrete generation condition). The second part of this experiment required participants to generate a solution to a problem to be implemented a year from the present day (distant time perspective condition) or tomorrow (near time perspective condition). The researchers concluded that the distant future time perspective elicited a mental processing shift toward more abstract thought, which supported insight during problem solving.

A study by Jia et al. (2009) examined the effect of spatial distance on creative problem solving. Jia and colleagues hypothesized that students would produce more creative solutions to a problem that they perceived as originating from a distal source. The participants of their study were college students in a psychology class. They tested whether student creative production was related to subjects' perception of whether the task originated from a geographically near group of researchers in their American city or one more distant, in Greece. They found that students who believed the task originated in Greece performed better on a problem-solving task and produced more creative responses. Because the researchers later decided that the idea of "Greece" might have introduced the extra variable of a "foreign" place rather than just a distant locality, they repeated the study using California instead of Greece and added a control group. The ensuing results were similar.

An investigation by Subbotsky et al. (2010) examined distance on the dimension of hypotheticality (probability of events actually occurring) with early childhood subjects of ages 4, 6, or 8 years. These researchers hypothesized that exposure to improbable events (events distal in probability of occurrence) would lead to greater creative production. The results of the study showed that exposing children to films with magical content, rather than reality-based films, enhanced student performance on a creativity test taken following the film and on a magical thinking survey.

Another recent study by Liberman et al. (2012) was conducted with first and third grade student participants (age 6–9) to study the effects of spatial psychological distance. The investigators hypothesized that students would show greater creativity after spending time thinking about the distal location of the Milky Way. Students individually took a commercial creativity test, the Tel Aviv Creativity Test (Milgram & Milgram, 1976), after being "primed" by the researchers. Priming occurred by showing a series of slides on a laptop computer that started with an eraser and pencil on a desktop, then whole desk, classroom, school, neighborhood, and so on until zooming out to the Milky Way (the distal condition) or by beginning with the Milky Way and slowly zooming in to the eraser on a desktop (the proximal condition). Students evidenced greater fluency and originality on the creativity test when being primed with the distal condition, showing that the creative performance of elementary school students was enhanced by the focus on distant stars before taking the test because it promoted the use of abstract mental processes.

Construal Level Theory (Trope & Liberman, 2010) postulates that mental operations and behaviors are related to whether the stimulus is perceived as distant or close in time, space, probability and/or society. Therefore, academic content appropriate for the middle school students in the current study was chosen as distal or proximal in one or more of these aspects and was integrated into the activity to test the theory. The following research question was investigated: Do students evidence more creativity when the applied academic content area is perceived as distant (distal) in time, space, probability and society from them as compared to close (proximal) as claimed by previous studies? According to Construal Level Theory, students should exhibit more creativity when the applied academic content is distal.

1.3. Contrasting the current study to previous work

The current study differs from previous work in this area in the following ways:

1. It incorporates *all four* of the types of psychological distances: temporal, spatial, social, and hypotheticality (probability) in the experiment, rather than just one.

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