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The Influence of Feedback on Creativity and Beliefs About Creativity

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Abstract

Education leaders have called for educational reform around competencies; however, educators will be challenged in their enactment of new curriculums if they do not have concrete, research-based guidance on how to teach for competencies. Creativity is a competency that requires further elaboration on how it can best be understood and taught in educational settings. Feedback is a leverageable element of the learning process which educators can use to facilitate student learning. An underexplored area in educational research is the effect of feedback on students' creativity and creative self-beliefs. In this experimental study, the influence of feedback valence on creative performance and beliefs about creativity is explored in an undergraduate student sample. Positive feedback was found to correlate with higher levels of creative appropriateness; however, no effect of feedback was found on creative novelty. Feedback was found to interact with individuals' ratings of the desirability of creativity, indicating that individuals who view creativity as a more valuable trait have a tendency place a higher value of feedback on creativity. These results offer support for the notion that feedback may be a classroom practice which educators can use to guide students in their creative development.

Background

In recent years, there have been calls from education leaders to enact educational reform around competencies. Various educational stakeholders from around the world assert that the shift towards competency-based learning is necessary to meet the global job demands of the near future (NRC, 2012; OECD, 2018). Creativity is a competency which requires further contextualization within educational research for it to be taught effectively in schools. The influence of feedback on creativity and creative self-beliefs is an underexplored area in educational research and feedback is a potentially leverageable element of the learning process which educators may be able to use to teach for creativity.

Definitions

Creativity is a particularly relevant target for educational research as there are such varying lay beliefs about creativity and its development. In this study, creativity is defined as the ability to generate novel and appropriate ideas and products (Amabile, 1982). Beliefs about creativity are defined as a person's beliefs about their own creativity, such as their ability to be creative, whether creativity can be learned or is an inborn trait and the desirability of creativity as a useful skill (Katz-Buonincontro et al., 2016).

Feedback can be understood as a response to a learner's performance which is intended to support the learner's cognition, motivation or behavior (Fong et al., 2018). Consistent with Bandura's (1977) social learning theory, it is posited that feedback, an environmental factor, interacts with personal factors, beliefs about creativity, to influence creative behavior. Several studies, originating mostly from cognitive psychology as well as some from education, have

explored the influence of feedback on creativity. The characteristics of feedback under study have been varied revealing the multidimensional nature of feedback. In addition, various individual factors, such as self-determination, self-efficacy, and other motivational factors, have been explored as mediators of the relationship between feedback and creativity.

Present Study

Studies on the influence of feedback valence on creativity have shown mixed results. Some studies have shown positive feedback to have an ameliorating effect on creativity (George & Zhou, 2001; Hu et al., 2018; Langley, 2018; Noefer et al., 2009; Oettingen et al., 2012; Zhou, 1998), whereas a few studies have shown negative feedback to have an ameliorating effect on creativity (Katz-Buonincontro et al., 2017; Kaufman & Vosberg, 2007; Lee, 2019). Following a prior study by Zhou (1998), we investigated the influence of feedback valence on creative performance. We attempted to replicate Zhou's results using updated creativity tasks as well as the addition of a measure of creative self-beliefs. The following two research questions were examined:

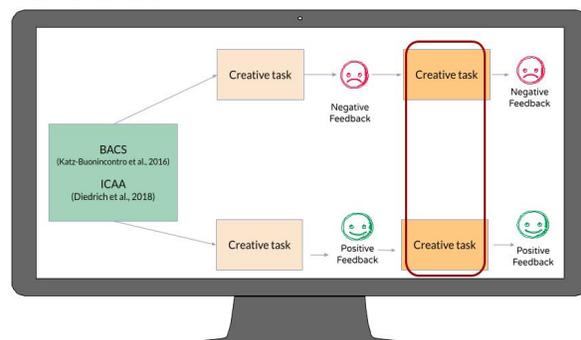
1. What is the influence of feedback valence on the novelty and appropriateness of individuals' creative responses on standard creativity tasks?
2. How does feedback interact with individual difference measures of creative achievement and beliefs about creativity?

Results

Seventy undergraduate participants ($N = 70$) completed the experimental study on a computer in a university psychology lab (Figure 1). Participants' creative performance was rated by two independent raters using the Consensual Assessment Technique (Amabile, 1982). All ratings showed excellent reliability using the intraclass coefficient: ICC (2,2) = .92 for CPS novelty, .87 for CPS appropriateness, .84 for DT novelty, and .83 for DT appropriateness. The creative novelty and appropriateness scores after receiving either negative or positive feedback formulated the dependent variable of interest. Also of interest was whether there was an interaction between individual beliefs about creativity and creative novelty and appropriateness post-feedback.

There was no significant difference between negative and positive feedback on creative novelty ($F_{2, 65} = 0.06, p > 0.05$). There was a statistically significant difference between negative and positive feedback on creative appropriateness ($F_{2, 65} = 6.52, p < 0.01$) where positive

Figure 1: Study design



feedback predicted higher levels of creative appropriateness. The difference in these two means is proportional to Zhou's (1998) results and is in alignment with other previous literature indicating that positive feedback enhances creative performance. The only significant correlation between an after-feedback score and beliefs about creativity was a positive correlation between desirability of creativity and novelty after feedback ($r = 0.27, p < 0.05$). This suggests a small, but potentially interesting tendency for those who believe creativity to be desirable to produce higher novelty after feedback of any kind. This finding is consistent with Sansone's (1986) finding regarding personal valuation which suggests that individuals who value creativity more highly may be more susceptible to the effects of feedback on their creative performance. The results of a second study ($N = 213$), designed to elucidate the interaction between task type and feedback, are forthcoming.

Discussion and Implications

In this study, we showed that creative appropriateness was significantly influenced by feedback valence whereas creative novelty was not. When people rated creativity more highly as a desirable trait, we found a significant effect of feedback whereas those who rated the desirability of creativity as lower, were less influenced by feedback. These results suggest that educators may be able to increase the appropriateness of students' creative performance by offering positive feedback on their creative work. Furthermore, if students see creativity as an important learning competency and desirable career skill, they will value feedback on their creative work more highly. This has implications for educators as they transition to competency-based curriculums where they are explicitly trying to foster students' creative thinking as a lifelong competency.

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Author Information

Katie Mathew received her bachelor degree in Psychology and Linguistics from the University of British Columbia. Motivated by a keen interest in child development and education she went on to complete her master degree in Child Study and Education from the University of Toronto where her research focused on children’s theory of mind and early literacy development. Prior to pursuing doctoral studies, she worked as an elementary teacher and teacher-leader in various public and independent schools in Vancouver, Toronto and Philadelphia. Katie is currently in her first year of studies in the PhD program in the Educational Leadership and Policy stream. Her research interests include the adoption of learning competencies in curriculums nationally and internationally. Her dissertation research centers on how teachers can use assessment frameworks to promote creative development and creative identity in students.