Learning and Individual Differences 44 (2015) 1–8

Contents lists available at ScienceDirect

Learning and Individual Differences

journal homepage: www.elsevier.com/locate/lindif

Teachers' Effect on Students' Creative Self-Beliefs Is Moderated by Students' Gender

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ARTICLE INFO

Article history:
Received 18 May 2015
Received in revised form 13 September 2015
Accepted 4 October 2015

Keywords:
Creative self-beliefs
Teachers' influence
Teachers' ratings
Gender effects

ABSTRACT

Creative self-beliefs, such as creative self-efficacy, predict creative activity and achievement. Still little is known, however, about the factors that shape such self-beliefs. Drawing on Bandura's sociocognitive theory, this longitudinal study tests the role of teachers' expectations on students' domain-specific creative self-efficacy. Teachers' ratings of students' creativity were substantially related to students' creative self-perception a semester later and this effect was significantly stronger among female than male students. We discuss these findings in terms of the accuracy of teachers' beliefs and the consequences of their influence on students' creative self-perception.

1. Introduction

The sense of self-efficacy (Bandura, 1997) is one of the drives that initiate and sustain individual activity (Cervone & Peake, 1986). Consequently, it helps to deal with various tasks, including those that require creative thinking. Creative self-efficacy (CSE) is an individual's conviction that he or she is able to manage in situations that require creativity (Beghetto, 2006; Tierney & Farmer, 2002, 2004). CSE not only positively relates to creative personality (Karwowski, 2012; Silvia, Nusbaum, Berg, Martin, & O'Connor, 2009), innovative behavior (Hsu, Hou, & Fan, 2011), and creative achievement (Batey & Furnham, 2008; Tierney & Farmer, 2004), but also mediates the relations between potential and creative achievement (Lim & Choi, 2009). A recent review (Karwowski & Lebuda, in press-a) and a meta-analysis (Karwowski & Lebuda, in press-b) have demonstrated that although creative self-beliefs are related to personality – mainly openness – they are discriminatively and incrementally valid and not reducible to personality traits.

CSE shapes itself under the influence of a wide range of factors – psychological, i.e. personality-related (Karwowski, Lebuda, Wisniewska, & Gralewski, 2013), as well as social, i.e. in-class comparisons (Karwowski, 2015a). CSE crystallizes in approximately 10-year-old children (Karwowski, 2015b): Younger children usually tend to associate creativity more with activity and products than with individual traits (Karwowski & Barbot, in press). Although parents and teachers may exert special influence on the shaping of children's and young people's CSE, the creativity literature has not really investigated this yet. In this paper, we intend to fill this gap. More specifically, this paper explores the relationship between teachers' ratings of students' creativity and students' creative self-efficacy.

Consistently with sociocognitive theory (Bandura, 1997), we perceive teachers as one of the main sources that shape students' creative self-perception and we theorize that not only teachers' perceptions could shape students' creative self-efficacy, but also that this effect will be stronger among female than male students. This general hypothesis drives a study presented below. We start by shortly reviewing the relevant literature about gender differences in creative self-beliefs. In particular, we look for possible causes of the so-called "male-hubris-female-humility bias" (Furnham, Hosoe, & Tang, 2002) and show that males tend to overestimate their abilities, while females underestimate them. We theorize that this bias may be (at least partially) caused by differences in teachers' expectations regarding male and female students' creativity, which, consequently, stem from gender stereotypes (Baer & Kaufman, 2008) and teachers' implicit theories of creativity (Gralewski & Karwowski, 2013; in press). We briefly review the wide and diverse literature that suggests the existence of more space for male than female students' creativity at school and argues that teachers' implicit theories of creativity are masculinized. Keeping in mind the higher level of adaptativeness and conformity in female students (von Wittich & Antonakis, 2011), we also expect that female students will be more sensitive to teachers' perceptions and expectations – a hypothesis coherent with previous studies (Baer, 1997; Butz & Usher, 2015; Correll, 2001).

Despite the lack of systematic intergender differences in the average creative potential (Baer & Kaufman, 2008; Harris, 2004, but see Karwowski et al., in press, for a discussion about intergender differences in variability of creative potential), males' advantage over females in real-word creative accomplishment is well-established (Abra & Valentine-French, 1991; Helson, 1990; Piirto, 2004), similarly to more

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http://dx.doi.org/10.1016/j.lindif.2015.10.001
1041-6080/

positive creative self-beliefs among men, which came to be known as the male hubris-female humility bias (Furnham et al., 2002; Karwowski, 2011). Domain-specific analyses show that men are inclined to assess their creative abilities higher than women in science-analytic creativity (Kaufman, 2006), problem solving (Hughes, Furnham, & Batey, 2013), and creativity in sports (Hughes et al., 2013; Kaufman, 2006), whereas women assess their creative abilities higher in the social area (Kaufman, 2006) and the arts (Hughes et al., 2013; Kaufman, 2006).

Even though previous studies have not revealed teachers' influence on students' creative self-beliefs, such a relation is a natural consequence of the expectation models (Darley & Fazio, 1980; Jussim, in press; Urhahne, 2015) and appears to follow from out-of-school studies as well (Tierney & Farmer, 2004). Tierney and Farmer (2004) showed that supervisors' expectations of employees' creativity shape the latter's creative self-efficacy, and are predictors of supervisors' supportive behaviors toward their employees.

1.1. Teachers' expectations, practices, and implicit theories of creativity

Although creativity scholars usually agree on the definition of creativity and perceive it as a human capacity to develop ideas that are both novel and appropriate (Amabile, 1996; Sternberg & Lubart, 1999), complexity of creativity makes it a tough subject of scientific studies. Several taxonomies of creativity focusing on different aspects of creativity have been proposed over the decades, (see Glăveanu, 2010, 2014, 2015 for a discussion). From the perspective of this paper, apparently the crucial distinction is that between creative potential (Karwowski, 2015c) and creative achievement (Carson, Peterson, & Higgins, 2005). Asking teachers about how they perceive creativity of their students is obviously asking a question about their creative potential rather than their creative achievement. Such potential, understood as the conglomerate of cognitive and personality characteristics: imagination, divergent thinking, openness, is closer to the mini-c or little-c creativity (Karwowski, 2009; Kaufman & Beghetto, 2009) than creativity visible in observable products.

Teachers' expectations with regard to the creativity of their students at least to some extent are a natural consequence of teachers' implicit theories of creativity. Previous studies showed that frequently, teachers quite selectively define creativity and creative students (Andiliou & Murphy, 2010; Gralewski & Karwowski, in press; Karwowski, 2007; Westby & Dawson, 1995), and that their implicit theories differ to a large extent from explicit theories formulated by experts (Dawson, D'Andrea, Affinito, & Westby, 1999). Keeping in mind that creativity researchers also quite often disagree on the definition of creativity (Plucker, Beghetto, & Dow, 2004; Kaufman, in press), teachers' lack of coherence itself is neither surprising, nor especially damaging. However, the consequences of those discrepancies may be longstanding. A recent study has demonstrated (Gralewski & Karwowski, in press) that about one-third of participating teachers defined creativity oppositely to existing theories of creativity (e.g., perceiving creative students as conformist, subordinated, having not too original ideas), while the remaining two-thirds perceived creativity either in terms of revolutionary (Gilson & Madjar, 2011) and innovative (Kirton, 1976) creativity (dominating pattern – 46%) or in terms of more incremental (Gilson & Madjar, 2011), adaptive creativity (20%). What is even more interesting, this study also showed that those teachers who defined creativity in terms of innovativeness better recognized creative abilities of male students, while those who perceived creativity as adaptive focused more on female students' creativity and better recognized their abilities.

Previous studies have also shown that teachers more often accept boys' individualism and independence while expecting girls to be rather persevering, subordinate, cooperative, and able to take care of interpersonal relationships (Bianco, Harris, Garrison-Wade, & Leech, 2011). Boys are also more likely to have the right to show weaker control over their impulsiveness, whereas girls are expected to present a more mature approach that manifests itself in the ability to create and sustain relationships with other people. Teachers reward girls for their ability to cooperate, complete tasks, and behave appropriately in the classroom (Lindley & Keithley, 1991). Therefore, in school settings, boys may likely have more opportunities to develop independence and autonomous thinking, whereas girls undergo a peculiar training in perseverance and subordination to teachers (Forgasz & Leder, 2001; Robinson & Lubienski, 2011). These differing expectations may also shape students' diverse convictions about their own skills and creative abilities. Beghetto (2006) demonstrated that teachers' feedback on creativity was the strongest predictor of students' CSE, but the author did not analyze the possible gender-specificity of this effect.

Regardless of the possible causes of differences in self-perception among males and females, there are at least two additional reasons to believe that female students are influenced by teachers' expectations to a greater extent than male students are (Correll, 2001). First, due to their higher school engagement and the greater value they attach to the relations with their teachers (Rudasil, Niehaus, Buhs, & White, 2013; Wolter, Gluer, & Hannover, 2014), female students are more responsive to teachers' messages and behaviors. This likely involves creativity as well. Previous research (Baer, 1997) has demonstrated that while engaging into creative tasks girls are more sensitive to teachers' evaluation than boys. Second, previous studies have found a small, yet systematic difference between male and female students in their creative mindsets (Karwowski, 2014) – the perception of creativity as malleable versus fixed. As male students tend to perceive creativity as a more fixed and less malleable characteristic than female students do, their sensitivity to external influences on their CSE may be generally lower. As in their perception creativity is generally stable, the possibility of teachers' influence is lower among them.

2. The present study

This study aims at filling the gap in the research on relationship between social conditions and students' creative self-beliefs. Two specific hypotheses drive the study: H1: Teachers' expectations about students' creativity positively predict students' creative self-beliefs and H2: Students' gender moderates the strength of the relationship between teachers' expectations about students' creativity and students' creative self-beliefs. More specifically, we hypothesize this relationship to be stronger among female than male students.

2.1. Method

2.1.1. Participants

One group of participants was made up of 1614 first-grade middle-school students ($M_{age} = 13.15$, $SD = 0.44$, 49% females), members of 80 classes, attending 40 schools across Poland. The other group of participants were their teachers ($N = 189$). Two of them rated each student: A Polish language teacher ($n = 97$, 51%) and a math teacher ($n = 92$, 49%). As the study was longitudinal (see the *Procedure* section), there were some drop-outs between waves and the number of missing values differed across variables. We therefore chose to impute missing data using the multiple imputation option available in Mplus software. There were 172 female teachers (94%) and 12 male teachers (6%), 5 teachers did not answer the question about gender. Teachers' were between 25 and 64 years old, with $M = 44.76$ and $SD = 8.50$.

2.1.2. Instruments

2.1.2.1. Teachers' ratings of students' creativity. Teachers described all students in the class in terms of a wide variety of characteristics, including two items developed specifically for the purpose of measuring perceived creativity of students. The first variable was the level of creativity estimated on an IQ-type scale ($M = 100$, $SD = 15$). Teachers were provided with a short explanation of normal curve characteristics