



# Teachers' self-concepts and emotions: Conceptualization and relations

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## HIGHLIGHTS

- Teachers' self-concepts are multifaceted.
- Teachers' self-concepts are differentially related to specific emotions.
- Only self-concept of pedagogical skills is positively linked to enjoyment.
- Only self-concept of pedagogical skills is negatively linked to anger.
- Only self-concept of subject content knowledge is negatively linked to anxiety.

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## ABSTRACT

The present study with 248 German teachers examined the conceptual separability of six dimensions of teachers' self-concept (*pedagogical skills, subject content knowledge, consulting, innovation, media use, diagnostics*) and three emotions (*enjoyment, anger, anxiety*) as well as relations of these constructs. Results showed that all self-concepts and emotions were clearly separable from each other. All six self-concepts were positively related to enjoyment and negatively related to anxiety and anger. However, regression analysis revealed that only self-concept of pedagogical skills was positively linked to enjoyment and negatively linked to anger, while only self-concept of subject content knowledge was negatively linked to anxiety.

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## 1. Introduction

A substantial body of research has been directed towards students' academic self-concepts highlighting their domain-specificity (e.g., Arens & Jansen, 2016; Jansen, Schroeders, & Lüdtke, 2014) and great influence on important educational outcomes such as motivation (Spinath & Steinmayr, 2012; Viljaranta, Tolvanen, Aunola, & Nurmi, 2014), career choice (Parker, Marsh, Ciarrochi, Marshall, & Abduljabbar, 2012), and academic achievement (Guo et al., 2016;

Huang, 2011; Marsh et al., 2016). In contrast, research on teachers' self-concepts is largely missing, particularly, in terms of its structure and influence on desirable educational outcomes such as teachers' emotions related to teaching. Thus, the central objective of the present study is to examine (a) the multifaceted structure of teachers' self-concepts and (b) specific relations of teachers' self-concepts with their emotions related to teaching. The incremental contribution of this study is, correspondingly, that it targets six specific dimensions of teachers' self-concepts and three distinct emotions related to teaching simultaneously. More specifically, using the conceptualization of teachers' self-concepts proposed by Retelsdorf, Bauer, Gebauer, Kauper, and Möller (2014), the present study addresses six specific dimensions of teachers' self-concept, namely, *pedagogical skills, subject content knowledge, consulting, innovation, media use, and diagnostics*. Moreover, for teachers' emotions, three emotions related to teaching are taken into consideration which have been found to be most prominent among

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teachers (see Frenzel, 2014; Frenzel et al., 2016), that is, *enjoyment*, *anxiety*, and *anger*. Research on the correlates of teachers' emotions is of considerable importance given that teachers' emotions influence their teaching behavior (Becker, Goetz, Morger, & Ranellucci, 2014; Gong, Chai, Duan, Zhong, & Jiao, 2013; Saunders, 2013; Trigwell, 2012), self-efficacy (Kunter, Frenzel, Nagy, Baumert, & Pekrun, 2011), and student learning (Brackett, Floman, Ashton-James, Cherkasskiy, & Salovey, 2013; Chang, 2013). Exploring self-concept/emotions interrelations is important for several reasons: First, gaining a more advanced understanding of the specific relations of various facets of teachers' self-concept and emotions has implications for professional development and wellbeing in teachers. For instance, if only some facets of teachers' self-concept are linked to enjoyment, anxiety, and anger, teacher education should give preference to enhance these specific facets of teachers' self-concept when aiming at minimizing teachers' negative emotions and fostering their positive emotions. Second, disentangling self-concept/emotion relations provides evidence for potential conceptual overlap between these constructs which contributes to improve further research. For instance, if there is empirical support for strong interrelations and empirical non-separability of those constructs, research needs to consider only one of these constructs (Goetz, Cronjaeger, Frenzel, Lüdtke, & Hall, 2010). Third, if there are strong interrelations for some emotions and not others, only these specific emotions need be investigated in combination with teachers' self-concepts leading to more specific implications. Additionally, knowledge of self-concept/emotion relations may help researchers to anticipate the extent to which multicollinearity may occur if specific facets of teachers' self-concept and emotions are considered as independent variables simultaneously.

### 1.1. Teachers' self-concepts

According to Shavelson, Hubner, and Stanton (1976), a person's self-perceptions of abilities in specific domains is referred to as his or her self-concepts. Strikingly, while a compelling body of literature resulted in a now commonly shared perspective on students' self-concepts as being hierarchically organized and multifaceted as originally proposed by Marsh and Shavelson (1985), little attention has yet been paid to the structure of teachers' self-concepts. Two notable exceptions are studies conducted by Paulick, Großschedl, Harms, and Möller (2016), and by Retelsdorf et al. (2014). Paulick et al. (2016) examined the factorial structure of preservice teachers' self-concepts differentiating between *content knowledge*, *pedagogical content knowledge*, and *pedagogical/psychological knowledge*. Using a sample of 631 German pre-service secondary teachers in biology and physics, they found that pre-service teachers' self-concepts were clearly empirically separable into these three dimensions. Another promising approach to teachers' multifaceted self-concept has been proposed by Retelsdorf et al. (2014). Based on curricula for teachers' education in Germany suggested by the *Standing Conference of the Ministers of Education and Cultural Affairs in Germany* (in German: Kultusministerkonferenz: KMK; 2004; Terhart, 2002), they identified six facets of teachers' self-concept, namely, *pedagogical skills*, *subject content knowledge*, *consulting*, *innovation*, *media use*, and *diagnostics*. Drawing on a sample of 484 teacher students, exploratory structural equation models (ESEM) as well as confirmatory factor analyses provided strong support for a six-factor structure ( $\chi^2 [155] = 1544.15$ , CFI = 0.966, TLI = 0.958, RMSEA = 0.039, SRMR = 0.032). All items loaded significantly on the respective factor ( $\beta \geq 0.55$ ,  $p < 0.001$ ). Internal consistency of all six self-concept scales was satisfactory ( $\alpha \geq 0.71$ ) and measurement invariance for gender, education program (teachers for academic vs. non-academic track schools), study phase as well as across time

was supported. Mean comparisons between gender and education programs as well as correlations with the motivation for choosing teacher education and grades confirmed the validity of the scales. Female teachers reported higher levels in all six dimensions of self-concept, particularly, in the dimensions of pedagogical skills (female:  $M = 3.32$ ,  $SD = 0.47$ ; male:  $M = 3.19$ ,  $SD = 0.50$ ;  $d = 0.27$ ,  $z = 6.15$ ,  $p < 0.001$ ), media use (female:  $M = 3.05$ ,  $SD = 0.64$ ; male:  $M = 3.21$ ,  $SD = 0.64$ ;  $d = 0.26$ ,  $z = -6.77$ ,  $p < 0.001$ ), and consulting (female:  $M = 3.26$ ,  $SD = 0.50$ , male:  $M = 3.10$ ,  $SD = 0.51$ ;  $d = 0.32$ ,  $z = 8.09$ ,  $p < 0.001$ ). Thus, the instrument developed by Retelsdorf et al. (2014) can be seen as suitable and valid for measuring teachers' multifaceted self-concept. In the present study, we adopted Retelsdorf et al.'s (2014) instrument, seeking to replicate the six-factor structure within a confirmatory factor analysis (CFA) framework.

### 1.2. Teacher emotions

In selecting teacher emotions for the present study, both pleasant and unpleasant outcome- and activity-related emotions were taken into account. More precisely, to provide important implications for teacher education, three basic emotions were focused on in the present study which have been found to be most salient and most frequent among teachers (see Hagenauer, Hascher, & Volet, 2015; Sutton & Wheatley, 2003; see also Frenzel, 2014): enjoyment (pleasant, activity- and outcome-related), anxiety (unpleasant, outcome-related), and anger (unpleasant, activity- and outcome-related). For instance, using two diary studies, Frenzel, Becker-Kurz, Pekrun, and Goetz (2015) analyzed the emotion frequency for each teacher by calculating the proportion of class periods in which each of the emotions was present. On average, teachers reported experiencing enjoyment in 97%, anger in 44%, and anxiety in 25% of all their class periods.

Enjoyment is one of the most salient positive emotions among teachers (see also Keller, Frenzel, Goetz, Pekrun, & Hensley, 2014). It results either from expecting an upcoming desirable event (anticipatory joy), from being engaged in a pleasant activity (activity-related enjoyment) or from satisfaction due to an enjoyable past event or outcome (outcome-related enjoyment). Numerous studies have highlighted the crucial role of teachers' enjoyment for students' learning: For instance, teachers' enjoyment has been found to be positively related to student ratings of monitoring, elaboration, comprehensibility, autonomy support, teacher enthusiasm, and teacher support for students (Frenzel, Goetz, Lüdtke, Pekrun, & Sutton, 2009; Frenzel, Goetz, Stephens, & Jakob, 2009; Kunter et al., 2011; Kunter et al., 2008). In addition, Hagenauer et al. (2015) showed that teachers' enjoyment was positively related to the interpersonal relationship between teachers and students, and Frenzel, Goetz, Stephens, and Jacob (2011) found strong positive relations between teachers' enjoyment and student motivation as well as discipline in class.

Anxiety, conversely, is a negative emotion which includes aversive physiological and affective components (sweating, shaking) as well as cognitive components (worries, desires to leave the situation). It is usually aroused when individuals feel threatened or when they perceive their potential to cope with an upcoming challenge as low (e.g., Smith & Lazarus, 1993). For instance, a teacher may feel anxiety when he is unsatisfied with his teaching and thinks he is incapable of improving (Darby, 2008). In addition, teaching anxiety may derive from a poor preparedness or disciplinary problems in class (Bullough, Bullough, & Mayes, 2006; Chang, 2009; Hagenauer et al., 2015).

Finally, anger is a negative emotion which pertains either to oneself or to others (Ellsworth & Tong, 2006; Kuppens, van Mechelen, & Rijmen, 2008). Teachers may experience anger

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