Predicting teachers' instructional behaviors: The interplay between self-efficacy and intrinsic needs

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ABSTRACT

This study was conducted to extend previous research by examining the specificity of teachers' intrinsic needs and self-efficacy, and how they interact to predict instructional behaviors. Self-reporting measures were applied to assess teachers' self-efficacy and intrinsic need satisfaction and students rated the teachers' instructional behaviors (cognitive activation, teacher–student relationship and classroom management). The latent moderated structural (LMS) equation analyses conducted on data collected from 155 mathematics teachers and 3483 grade 10 students in secondary schools in Germany revealed that separately both self-efficacy and intrinsic needs predicted instructional behaviors. Moreover, a significant interaction effect between intrinsic need satisfaction and self-efficacy emphasized that when need satisfaction is not provided by the school environment, a high level of self-efficacy has a negative effect on the teacher–student relationship. Our findings underline that self-efficacy and intrinsic needs have commonalities when predicting instructional behavior and the importance of addressing the interaction between personal and environmental characteristics within the learning environment. Future research on teachers' instructional behaviors should take aspects of teacher competence beyond self-efficacy into considerations and should examine how intrinsic need satisfaction can be enhanced.

1. Introduction

Whether teachers' success is measured through their instructional behaviors, their ability to motivate their students, the level of achievement attained by their students, or in some other way, differences in how successfully teachers perform in their classrooms increasingly are being attributed to their motivational-affective characteristics such as interest (e.g., Long & Woolfolk Hoy, 2006; Retelsdorf, Butler, Streblow, & Schiefele, 2010), goal orientation (e.g., Butler, 2007; Malmberg, 2006; Nitsche, Dickhäuser, Fasching, & Dresel, 2011), autonomous motivation (e.g., Pelletier, Seguin-Levesque, & Legault, 2002; Roth, Assor, Kanat-Maymon, & Kaplan, 2007), self-efficacy (e.g., Caprara, Barbaranelli, Borgogni, & Steca, 2003), and flow (e.g., Bakker, 2005; Evelein, Korthagen, & Brekelmans, 2008). In their introductions to the special issue on motivation Murphy and Alexander (2000) and Schunk (2000)

state that there is a wide variety of motivational constructs. However, in the future it will be essential to examine whether differentiation of the various constructs is beneficial or whether we should focus instead on the common principles of these constructs. Therefore, in the present study we focused on two motivational constructs: self-efficacy and intrinsic needs. Although coming from different strands of research, both constructs explicate determinants of human behavior. While self-efficacy and intrinsic needs overlap theoretically to some degree, it is not yet clear what specific predictive value they have with regard to explaining teachers' instructional behaviors in the classroom. In the following, we first will discuss each construct separately and then will compare their specificity.

1.1. Self-efficacy as antecedent of instructional behaviors

Within social-cognitive theory, Bandura (1977) developed the construct of self-efficacy. Defined as an individual's beliefs about his or her ability to accomplish specific tasks, self-efficacy can be classified as a personal characteristic relevant to work performance. People with strong self-efficacy are said to work harder, be more persistent, and experience less stress than people with weak self-efficacy (Bandura, 1997). These positive relationships

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between self-efficacy and work outcomes also have been found in the teaching context. Teachers' self-efficacy can be defined as teachers' beliefs about their ability to teach their subject matter even to challenging students (e.g., Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). Klassen, Tze, Betts, and Gordon (2011), Klassen, Durksen, and Tze (in press) as well as Tschannen-Moran et al. (1998) provided extensive reviews of teacher efficacy research, showing consistently that teachers' self-efficacy beliefs indeed relate positively to their behavior.

In particular, teachers' self-efficacy beliefs have been shown to be related to their instructional behaviors (Ghaith & Yaghi, 1997; Guskey, 1988; Holzberger, Philipp, & Kunter, 2013; Morris-Rothschild & Brassard, 2006; Ross, 1998; Tschannen-Moran et al., 1998; Wolters & Daugherty, 2007; Woolfolk, Rosoff, & Hoy, 1990), their well-being (Betoret, 2006; Brouwers & Tomic, 2000; Fernet, Guay, Senécal, & Austin, 2012; Schwerdtfeger, Konermann, & Schonhofen, 2008), and their job satisfaction (Caprara et al., 2003; Collie, Shapka, & Perry, 2012). While Klassen, Tze, Betts, and Gordon (2011) point out that few studies on teachers' self-efficacy beliefs have examined the relationship between teachers' efficacy beliefs and learning outcomes, these few studies have also found relationships between teachers' efficacy and the performance level of their students (Anderson, Greene, & Loewen, 1988; Ashton & Webb, 1986; Caprara, Barbaranelli, Steca, & Malone, 2006; Midgley, Feldlaufer, & Eccles, 1989; Ross, 1992). The underlying assumption is that high self-efficacy beliefs will instigate positive behaviors in teachers, whereas low self-efficacy beliefs will lead to negative consequences. Hence, based on the current state of research, it has been confirmed that self-efficacy belief is relevant to teachers' work outcomes and, thus, having positive self-efficacy belief usually is conceptualized in the educational process as an essential teacher characteristic.

1.2. Intrinsic needs as antecedent to instructional behaviors

Aside from teachers' self-efficacy as a cognitive-evaluative aspect of teachers' motivation, there is a strand of research on effective teaching dealing with a more affective motivational component, namely, teachers' intrinsic needs. According to the self-determination theory of Deci and Ryan (1985), three intrinsic needs are relevant to people's functioning: the need for autonomy (i.e., experiencing freedom in work decisions and execution), the need for competence (i.e., mastering work tasks), and the need for relatedness (i.e., feeling connected and supported by people at work). These three needs are the basis of the theory that intrinsic psychological needs are relevant to people's functioning (Deci & Ryan, 1985). The relevance of intrinsic need satisfaction to work outcomes (e.g., performance, satisfaction, and well-being) has been shown empirically (Deci et al., 2001; Gagné, 2003; Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008). In a sample of 58 bank employees, for example, Baard, Deci, and Ryan (2004) showed that need satisfaction correlated positively with performance and well-being. Ilardi, Leone, Kasser, and Ryan (1993) found that the need satisfaction of 117 employees predicted their satisfaction with their jobs. Finally, Greguras and Diefendorff (2009) showed that psychological need satisfaction predicted the affective commitment and the performance of 163 employees.

Transferred to the teaching context, as proposed in self-determination theory (see Deci & Ryan, 1985), most of the previous research was concerned with teachers' need satisfaction as a predictor of intrinsic motivation (Bakker & Bal, 2010; Bakker, Demerouti, & Euwema, 2005; Taylor, Ntoumanis, & Standage, 2008), and indicated that when teachers' intrinsic needs are satisfied they show higher autonomous motivation. Moreover, Klassen, Perry, and Frenzel (2012) found a positive relationship among teachers' intrinsic need satisfaction, their level of engagement

and emotional exhaustion. Evelein et al. (2008) showed that the need satisfaction level of student teachers was associated with positive emotions (e.g., flow) and their perceived teaching success.

Intrinsic motivation as defined in self-determination theory is one of several theoretical approaches to conceptualizing the intrinsic nature of teacher motivation (Kunter & Holzberger, in press). Across different theoretical approaches, the relationship between teachers' intrinsic motivational orientations and educational outcomes has been demonstrated in various studies (Kunter & Holzberger, in press). Teachers who like their job and enjoy what they are doing have students who also show more adaptive motivation and higher achievement (e.g. Bakker, 2005; Frenzel, Goetz, Lüdtke, Pekrun, & Sutton, 2009; Jesus & Lens, 2005; Kunter, Frenzel, Nagy, Baumert, & Pekrun, 2011; Moè, Pazzaglia, & Ronconi, 2010; Radel, Sarrazin, Legrain, & Wild, 2010; Sørebø, Halvari, Gulli, & Kristiansen, 2009; Wild, Enzle, & Hawkins, 1992; Wood, 1999). Possible factors explaining this relationship are that teachers with intrinsic motivational orientations show better instructional quality (Kunter et al., 2008; Moè et al., 2010; Pelletier et al., 2002; Retelsdorf et al., 2010; Wood, 1999), better occupational well-being (e.g., Klusmann, Kunter, Trautwein, Lüdtke, & Baumert, 2008; Kunter et al., 2011; Roth et al., 2007), and a tendency for more engagement (Jesus & Lens, 2005) and willingness to engage in further learning processes (e.g., Sørebø et al., 2009).

1.3. Commonalities and differences between teachers' self-efficacy and their intrinsic needs

In summary, teachers' self-efficacy and teachers' intrinsic needs both have been shown to be directly related to teachers' professional behavior. These constructs were developed in different strands of research, yet they appear to overlap conceptually to some degree, which has been pointed out by a number of authors (Guay, Marsh, & Boivin, 2003; Miserandino, 1996; Roca & Gagné, 2008; Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010; Van den Broeck et al., 2008). There are some empirical research studies that investigate the relationship between self-efficacy and intrinsic motivation even though these studies tend to apply a wider concept of intrinsic motivation (e.g., teachers' interest or enthusiasm), showing that teachers' mastery orientations and their level of self-efficacy predict teachers' interest and enthusiasm (Burton, Bamberry, & Harris-Boundy, 2005; Chan, Lau, Nie, Lim, & Hogan, 2008; Eccles & Wigfield, 2002; Malmberg, 2008). These findings indicate, amongst other things, that teachers' perceived sense of competence predicts their level of intrinsic motivation (e.g., Caprara et al., 2006; Eccles & Wigfield, 2002; Jesus & Lens, 2005; Malmberg, 2008), suggesting that the more competent teachers experience themselves to be, the more intrinsically motivated they seem to be during teaching.

When defined as beliefs about one's ability to accomplish specific tasks, the construct of self-efficacy bears a strong similarity to one of the three intrinsic needs, namely, the construct need for competence which is defined as mastering work tasks and as perceived competence. While, both concepts comprise feelings of perceived competence that are assumed to be related directly to teachers' behavior, a few differences have been described. Van den Broeck, Vansteenkiste, De Witte, and Lens (2008) and Van den Broeck, Vansteenkiste, De Witte, Soenens, and Lens (2010) describe self-efficacy as a socially acquired cognitive expectation of having success in specific future tasks, while intrinsic needs are considered to be inherent to all people, to be inborn and to form a more general and current feeling of effectiveness.

Differences also can be found with regard to the determinants of self-efficacy as opposed to those of intrinsic needs in general, and the need for competence in particular. Based on Bandura's (1997) four sources of self-efficacy (mastery experiences, vicarious