



A prospective correlational analysis of achievement goals as mediating constructs linking distal motivational dispositions to intrinsic motivation and academic achievement



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ABSTRACT

The present study investigated achievement goals as mediating constructs linking students' distal motivational dispositions to their intrinsic motivation and academic achievement. We surveyed 288 high school students with a mean age of 17.7 years twice over the course of 1 year. At Time 1, students reported their implicit theory of intelligence, hope of success, fear of failure, and perceived competence. At Time 2, students indicated their achievement goals and intrinsic motivation. Subsequent grade point average served as criterion for academic achievement. Structural equation modeling revealed significant indirect effects of students' motivational dispositions on their intrinsic motivation and achievement via achievement goals. Fear of failure and perceived competence accounted for achievement via performance-approach goals. These effects held stable after controlling for prior achievement. Furthermore, we found evidence for multiplicative effects among motivational dispositions in predicting achievement goals: fear of failure moderated the effects of hope of success on mastery goals. Implications for theory and future research are discussed.

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1. Introduction

At the heart of achievement goal theory lies a mediation hypothesis: Achievement goal theory holds that students' distal motivational dispositions affect their achievement-related mind and behavior indirectly by orienting them toward different aims in school (Elliot & Church, 1997). Some studies from the achievement goal literature found students' implicit theory of intelligence, hope of success, fear of failure, and perceived competence as motivational dispositions underlying their achievement goals (Burnette, O'Boyle, VanEpps, Pollack, & Finkel, 2013; Elliot & Church, 1997). In addition, there is a large body of research documenting pronounced effects of students' achievement goals on achievement-related beliefs or behavior (e.g., as documented by students' intrinsic motivation and performance; see Huang, 2011, 2012, for a meta-analytical overview). However, there is hardly any evidence for achievement goals functioning as mediating constructs in this nomological network. Addressing this research desiderate and adding

to the findings on determinants of achievement goals, we report a prospective correlational mediation analysis linking antecedents of achievement goals to their consequences.

2. Theoretical background

Achievement goal theory posits that students may pursue very different aims in school and that these so-called *achievement goals* constitute a key factor for understanding their achievement-related cognition, affect, and behavior (Pintrich, 2000). Achievement goals describe individual preferences for distinct goals, individuals strive to attain in achievement settings (Dweck, 1986). The present research draws on the trichotomous model of achievement goals (Elliot, 1999; Elliot & Church, 1997; Elliot & Harackiewicz, 1996), which distinguishes between three types of goals: *Mastery goals* denote aiming for developing one's competence and accomplishing task mastery, *performance-approach goals* denote aiming for demonstrating one's high competence by outperforming others, and *performance-avoidance goals* denote aiming for avoiding the demonstration of one's incompetence by not doing worse than others.

Achievement goals have been described as proximal regulators of achievement-related behavior through which students' distal motivational dispositions affect their achievement-related experiences

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and behavior (Elliot, 2006; Elliot & Church, 1997). Among the motivational dispositions theorized to underlie achievement goals are students' implicit theory of intelligence (Dweck & Leggett, 1988), achievement motives (Elliot & Church, 1997), and perceived competence (Elliot & Church, 1997). Two important criteria for the impact of students' achievement goals on their achievement-related mind and behavior in school are students' intrinsic motivation to learn and their classroom achievement. Thus, the present study has focused on the mediational role of students' achievement goals in relation to their implicit theory of intelligence, hope of success, fear of failure, and perceived competence as determinants of students' intrinsic motivation and academic achievement.

2.1. Motivational dispositions as determinants of intrinsic motivation and achievement

Individuals vary with regard to their *implicit theory of intelligence* (Sternberg, Conway, Ketron, & Bernstein, 1981). Whereas some (holding an *entity theory*) construe intelligence as a fixed, innate entity, others (holding an *incremental theory*) conceive of intelligence as a malleable quality (Dweck & Leggett, 1988). Dweck (1986, 1999) theorized that individuals' implicit theory of intelligence functions as a meaning system that affects how they perceive and act in achievement situations. In line with this proposal, research has revealed implicit theory of intelligence to have various effects on individuals' achievement-related cognition, affect, and behavior (see Burnette et al., 2013, for a recent meta-analysis). Blackwell, Trzesniewski, and Dweck (2007, Study 1) reported that students endorsing an incremental theory of intelligence showed an upward trend in mathematical achievement in junior high school, whereas those endorsing an entity theory of intelligence showed a flat trend. Cury, Elliot, Da Fonseca, and Moller (2006) showed experimentally manipulated participants to hold an incremental theory—relative to those manipulated to hold an entity theory—to be more intrinsically motivated, as well as to perform better in a problem-solving task.

Research on *achievement motives* underlying individuals' striving to approach success and to avoid failure has a long history in the literature on motivation and achievement (see Elliot & Covington, 2001, for a review). Two achievement motives have received particular attention: *hope of success* and *fear of failure*. These motives are construed as relatively stable, affectively based dispositions that direct individuals in achievement situations toward the possibility of positive or negative outcomes, and energize their achievement-relevant behavior (Atkinson, 1957; McClelland, 1985). Individuals high in hope of success are characterized by a strong desire to approach positive outcomes because they experience a great deal of pride upon success, and individuals high in fear of failure are characterized by a strong desire to avoid negative outcomes because they experience a great deal of shame upon failure. Hope of success positively predicts academic achievement (Spangler, 1992; Steinmayr & Spinath, 2009; Ziegler, Schmukle, Egloff, & Bühner, 2010), whereas the effect of fear of failure on achievement is negative (Elliot & Church, 1997; Steinmayr & Spinath, 2009). In addition, hope of success has been found to facilitate enjoying the task (e.g., Dinger, Dickhäuser, Spinath, & Steinmayr, 2013), whereas fear of failure undermines school engagement (e.g., Caraway, Tucker, Reinke, & Hall, 2003).

Various motivational theories characterize individuals' *perceived competence* as an important determinant of achievement-related behavior (e.g., Bandura, 1997; Dweck, 1986; Elliot, 1999; Ryan & Deci, 2000; Wigfield & Eccles, 2000). There is evidence corroborating students' perceived competence to predict both their academic achievement (e.g., Guay, Marsh, & Boivin, 2003; Marsh, 1990; Marsh, Trautwein, Lüdtke, Köller, & Baumert, 2005; Marsh & Yeung, 1997) and their intrinsic motivation to learn (e.g., Marsh et al., 2005). Yet, findings regarding the latter criterion are less conclusive because several

longitudinal studies failed to show cross-lagged effects of prior academic self-concept on subsequent intrinsic motivation (e.g., Spinath & Spinath, 2005; Spinath & Steinmayr, 2008).

2.2. Achievement goals as mediating constructs

Elliot's (2006) (see also Elliot & Church, 1997) hierarchical model of approach and avoidance motivation specifies mastery goals to be grounded in high perceived competence as well as high hope of success and to result in high intrinsic motivation. Furthermore, performance-approach goals are theorized to be rooted in high perceived competence and high hope of success, but also in high fear of failure, and to result in high achievement. Finally, low perceived competence and high fear of failure are thought to underlie performance-avoidance goals, which are assumed to result in low achievement and low intrinsic motivation. Dweck's (1986) (Dweck & Leggett, 1988) social-cognitive model holds that an incremental theory of intelligence directs students toward mastery goals and that an entity theory of intelligence directs students toward performance goals in general and toward performance-avoidance goals in particular.

Evidence corroborates the relations hypothesized by both Elliot's and Dweck's model of antecedents and consequences of achievement goals (see the classical papers by Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Elliot & McGregor, 2001; Elliot & Murayama, 2008; and the meta-analyses by Baranik, Stanley, Bynum, & Lance, 2010; Burnette et al., 2013; Huang, 2012; Hulleman, Schrage, Bodmann, & Harackiewicz, 2010). Additionally, research on consequences of achievement goals yielded evidence that performance-approach goals facilitate intrinsic motivation (see Huang, 2012; Hulleman et al., 2010 for meta-analyses), although this effect was not anticipated by either model. This finding points to the fact that individuals adopting performance-approach goals may enjoy the task despite mainly being focused on attaining normative competence.

Although there are a few empirical studies testing motivational dispositions as antecedents of achievement goals, parts of these studies fail to investigate the postulated multiple determinants within a theoretical framework. Studies that test only one determinant of achievement goals therefore cannot be clearly connected to theoretical frameworks on the multiple sources of achievement goals. In addition, little research has addressed interactions among motivational dispositions in predicting achievement goals so far. Whereas a multiple goals perspective (cf. Pintrich, 2000) that acknowledges the interdependencies among achievement goals in determining achievement-related outcomes has become increasingly recognized in the last decade, both theory and research on antecedents of achievement goals regularly consider only main effects but do not attend to the potential interplay of motivational dispositions in predicting achievement goals. This is particularly true for studies analyzing field data using structural equation modeling, probably because methods allowing for specifying interactions of constructs as latent variables had not yet been available (see Marsh, Wen, & Hau, 2004, for an overview and evaluation of alternative approaches), and scholars have thus only recently begun to use these tools (for example, see Nagengast et al., 2011; Trautwein et al., 2012).

Dinger et al. (2013) recently renewed Elliot's (1999) proposal that implicit theory of intelligence and perceived competence might interact in predicting performance goals. Specifically, these authors hypothesized that students may be especially prone to adopting performance-avoidance goals if they hold an entity theory of intelligence *and* perceive their academic ability as low. Moreover, it was also suggested that students may be especially attracted by performance-approach goals if they hold an entity theory of their intellectual capabilities *and* perceive their academic ability as high. These two hypotheses are grounded in the idea that an entity theory should foster performance goals but that the valence of this striving for performance goals (i.e., approach vs. avoidance) should depend on the actual level of perceived competence.

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