



A short-term longitudinal study of stability and change in achievement goal profiles



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ABSTRACT

Using a person-oriented approach, this study examined the stability of undergraduates' ($n = 121$) achievement goal profiles and their association with changes in academic achievement over a semester. Across three time points, we identified three profiles with similarly high levels of mastery: *very-low*, *low*, and *moderate performance*. Overall, 46–81% of individuals remained in the same profile between time points. Individuals were more likely to shift profiles at the beginning of the semester and less likely to shift from the moderate profile to the others. All three profiles were associated with declines in achievement, although the moderate and low profiles were associated with different patterns of change from one exam to the next. Findings suggest that achievement goal profiles display substantial, but not absolute, short-term stability. For academic achievement, findings also suggest there are neither benefits nor drawbacks to endorsing performance goals when also endorsing high levels of mastery goals.

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1. Introduction

According to achievement goal theory, students have various reasons for wanting to do well in school (Ames, 1992; Dweck & Leggett, 1988; Maehr & Zusho, 2009). Some pursue *mastery goals*, striving to understand new material and improve their skills, while others pursue *performance goals*, striving to demonstrate their competence in comparison with others. Performance goals can be further differentiated into two dimensions: *performance-approach* with a focus on striving to demonstrate competence and *performance-avoidance* with a focus on avoiding the demonstration of incompetence. Some students also pursue multiple goals simultaneously – for instance, pursuing mastery while also seeking to do better than others (Barron & Harackiewicz, 2000, 2001; Pintrich, 2000). Whether it is adaptive or not for students to pursue multiple goals simultaneously has generated considerable debate within the achievement goal literature (e.g., Brophy, 2005; Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002; Linnenbrink, 2005; Midgley, Kaplan, & Middleton, 2001; Senko, Hulleman, & Harackiewicz, 2011).

During the past decade, researchers have begun using person-oriented analyses (Aldenderfer & Blashfield, 1984; Bergman, 2001;

Bergman, Magnusson, & El Khouri, 2003; Laursen & Hoff, 2006) to identify groups of individuals who endorse distinct combinations of achievement goals (i.e., goal profiles; Bembenuddy, 1999; Fortunato & Goldblatt, 2006; Levy-Tossman, Kaplan, & Assor, 2007; Luo, Paris, Hogan, & Luo, 2011; Poulin, Duchesne, & Ratelle, 2010; Schwinger & Wild, 2012; Tuominen-Soini, Salmela-Aro, & Niemivirta, 2011, 2012). Person-oriented research has the potential to shed new light on the dispute over multiple goal pursuit, but remains limited because the majority of research using this approach has only examined profiles within a single time point (but see Tuominen-Soini et al., 2011, 2012; Pulkka & Niemivirta, 2013; Schwinger & Wild, 2012). As a result, it remains unclear whether goal profiles remain stable or change over short periods of time, and whether the beneficial or detrimental effects associated with profile membership are lasting or transitory. The lack of longitudinal analyses is also problematic because, while mastery and multiple goal pursuit may both result in high academic achievement in the short-term (e.g., an exam), they may differ in terms of overall achievement over longer periods of time (e.g., course grades). In this study, we sought to clarify these issues by using a short-term longitudinal design to examine the stability of undergraduates' goal profiles and their association with changes in academic achievement over a semester in an undergraduate anatomy course.

1.1. Achievement goal theory

Achievement goal orientations are the underlying purposes for which a person engages in competence-based activities (Ames, 1992; Dweck, 1986; Dweck & Leggett, 1988). In the trichotomous achievement goal

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model, *mastery-approach goals* focus on improving one's competence, *performance-approach goals* on demonstrating one's competence, and *performance-avoidance goals* on avoiding demonstrating incompetence. An alternative 2×2 achievement goal model also measures *mastery-avoidance goals* that focus on avoiding not learning as much as possible or losing skills an individual once possessed (Elliot & McGregor, 2001). In this study, we adopted the trichotomous goal model because the mastery avoidance dimension, while theoretically feasible, has not gained much traction in achievement goal research (Maehr & Zusho, 2009); accordingly, using the trichotomous model allowed us to consider our findings in relation to extant research. We also chose not to measure mastery-avoidance goals in light of concerns regarding the reliability and multifaceted definition of the construct (Madjar, Kaplan, & Weinstock, 2011).

Theory and research suggest that mastery-approach goals are associated with adaptive outcomes because students focus on learning and development; conversely, performance-avoidance goals are associated with maladaptive outcomes because students focus on avoiding being viewed as incompetent (Elliot, McGregor, & Gable, 1999; Kaplan & Maehr, 1999; Middleton, Kaplan, & Midgley, 2004). Research is mixed with respect to performance-approach goals because they are associated with both adaptive (e.g., engagement: Wolters, Yu, & Pintrich, 1996; achievement: Elliot et al., 1999; Wolters et al., 1996) and maladaptive outcomes (e.g., decreased interest or increased negative affect: Kaplan & Maehr, 1999; Middleton & Midgley, 1997; decreased help-seeking: Ryan & Pintrich, 1997).

The mixed findings for performance-approach goals have fueled an enduring debate among achievement goal theorists (Senko et al., 2011). According to the *multiple goal perspective*, performance-approach goals incur unique benefits and are adaptive when endorsed alongside mastery goals (Barron & Harackiewicz, 2001; Harackiewicz et al., 2002; Senko et al., 2011). The basic premise is that individuals can endorse multiple goals simultaneously, and that different configurations of achievement goals are more or less adaptive in different settings (Pintrich, 2000). However, not all goal theorists agree with the multiple goal perspective. Those supporting a *mastery goal perspective* (e.g., Brophy, 2005; Kaplan & Middleton, 2002; Midgley et al., 2001) argue that whatever short-term benefits performance-approach goals may afford are outweighed by the increased, long-term risk of multiple detrimental outcomes (e.g., test anxiety, negative affect, and decreased help-seeking; Kaplan & Maehr, 1999; Middleton & Midgley, 1997; Ryan & Pintrich, 1997). In addition, some mastery goal supporters warn that performance-approach goals may undermine mastery goals and, over time, give rise to performance-avoidance goals and learned helplessness (Brophy, 2005; Midgley et al., 2001), especially when students experience failure or encounter more challenging tasks (Emmons & King, 1988; Middleton et al., 2004; Senko & Harackiewicz, 2005).

1.2. Achievement goal profiles: A person-oriented approach

A person-oriented approach (Bergman, 2001; Bergman et al., 2003; Laursen & Hoff, 2006) is well positioned to contribute to the debate over multiple goal pursuit because it allows researchers to examine whether different groups of individuals endorse different combinations and levels of achievement goals. Variable-oriented research has attempted to address this debate by including interaction terms to examine how two or more goals combine to predict outcomes, but these analyses become quite complex when more than two goals are considered. Moreover, when one interprets interaction findings, one may be drawing conclusions for a relatively small portion of the sample (for instance, there may be very few individuals who strongly endorse performance-approach goals but have very low levels of mastery-approach goals). With its focus on identifying common combinations of variables (in this case goals) within a sample, a person-oriented approach is therefore well-suited to answer questions about common types (or

profiles) of goal endorsement as well as how these goal profiles predict outcomes.

While promising, the contribution of person-oriented research to the multiple-goal debate has been limited by the challenge of synthesizing results across person-oriented studies. To help clarify this issue, Wormington and Linnnebrink-Garcia (2016) recently used meta-analysis to examine common goal profile types across studies and consider how these profile types relate to measures of motivation (e.g., self-efficacy), well-being (e.g., test anxiety), engagement (e.g., self-regulated learning), and achievement (e.g., grades). Across 24 studies, they found evidence of ten common goal profiles. Two of these profiles – Mastery High (high mastery goals, moderate to low in all other goals) and Approach High (high in mastery-approach and performance-approach goals, moderate to low in all other goals) – were relatively common across studies (representing 13% and 14% of the total sample, respectively) and consistently related to adaptive outcomes. In fact, these two profiles did not differ significantly from each other for any type of outcome, including achievement. A High All Goals profile was also relatively commonly endorsed (representing 10% of the total sample) and associated with adaptive outcomes. By contrast, a Performance-Approach High profile (high performance-approach goals, low to moderate on all other goals) was uncommon across studies (only 3% of the total sample) and associated with less adaptive outcomes than the Mastery High and Approach High profiles. Surprisingly, the most common goal profile in the meta-analysis consisted of students who endorsed Average All Goals (37% of the total sample), which was consistently one of those least adaptive profiles across outcomes. Taken together, these findings support the mastery-goal perspective because there was no evidence of any added benefit to endorsing performance-approach goals alongside mastery goals (i.e., the mastery high and approach-high profiles did not vary across outcomes).

Importantly, Wormington and Linnnebrink-Garcia (2016) noted that the profiles identified and the relation of the profiles to outcomes varied as a function of school level (e.g., elementary, secondary, undergraduate) and goals assessed (e.g., trichotomous, 2×2), but not statistical technique (e.g., cluster analysis, latent profile analysis). Thus, studies using the same goal model (trichotomous) and population (college) are most relevant to informing the current study. Only two prior studies meet both criteria (Bembenuddy, 1999; Fortunato & Goldblatt, 2006), though several studies have utilized a trichotomous goal model to create profiles (Levy-Tossman et al., 2007; Luo et al., 2011; Poulin et al., 2010; Schwinger & Wild, 2012). Notably, both studies with college students identified the same three profiles (Mastery High, Approach High, and Average All) as other studies using a trichotomous goal model to examine goal profiles among different age groups. Interestingly, both Bembenuddy (1999) and Fortunato and Goldblatt (2006) also reported evidence aligned with the mastery goal perspective. Specifically, Bembenuddy (1999) reported no differences between Mastery High and Multiple Goal profiles (e.g., importance-value, utility-value, self-efficacy enhancement) and Fortunato and Goldblatt (2006) reported that the Approach High and Average All profiles were associated with both adaptive (achievement, self-efficacy, motivation to learn) and maladaptive outcomes (fear of failure).

1.2.1. Prior longitudinal achievement goal studies

While person-oriented research examining achievement goal profiles at a single time point provides important insights into students' motivational beliefs, it does not clarify whether students' goal endorsement remains stable across time. This may be a problem because variable-centered evidence suggests that goal endorsement changes over time, with a meta-analysis documenting a decreasing pattern of mastery-approach goals, increasing performance-avoidance goals, and no change in performance-approach goals (Corker, Donnellan, & Bowles, 2013). Person-oriented achievement goal research may therefore benefit from explicitly modeling profile stability over time.

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