



Which one works best? Considering the relative importance of motivational regulation strategies



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ABSTRACT

Although previous studies have shown that motivational regulation strategies are generally effective in sustaining students' effort and persistence, little is known about which kind of motivational strategy works best in general, and for certain students in particular. In this article, we investigated the relative importance of eight different motivational regulation strategies across three samples ($N = 531$, $N = 613$, and $N = 301$, respectively) of German high school and college students under varying conditions. Relative weights analyses enabled us to control for multicollinearity and to disentangle the unique proportion of variance each motivational strategy explained in students' self-reported effort. Moreover, we examined potential moderating effects of gender, conscientiousness, dispositional interest, and achievement goal orientations. Consistently across the three samples, results revealed mastery self-talk as the most effective strategy, followed by proximal goal setting and performance-approach self-talk. Interest enhancement strategies and performance-avoidance self-talk did not explain a significant amount of variance in self-reported effort. There were no substantial moderation effects leading to the conclusion that the established rank order of motivational regulation strategies might be generally applicable to the majority of students. We discuss theoretical implications of our findings for future studies in motivation regulation research as well as practical implications for educational practitioners.

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1. Introduction

The ability to enhance and uphold one's own motivation represents an essential feature of self-regulated learning (e.g., Sansone & Thoman, 2005; Schwinger & Stiensmeier-Pelster, 2012). Researchers have therefore focused on the concept of *motivational self-regulation* which can be defined as the more or less conscious control over one's own motivation which mostly serves to increase effort and persistence (Wolters, 2003). A number of studies have shown that students who use certain strategies to regulate their motivation put more effort into learning tasks when faced with obstacles or difficulties (Leutner, Barthel, & Schreiber, 2001; Schwinger, Steinmayr, & Spinath, 2009; Wolters & Benzon, 2013). In contrast to the relatively well-established finding that frequently using any kind of motivational regulation strategy often results in higher effort and persistence, we do not know much about their relative importance, that is, which kind of motivational

strategy might be the best to choose in general, and/or for certain students in particular. Although some authors have focused on this issue (e.g., Engelschalk, Steuer, & Dresel, 2015; Wolters, 1998), the available empirical evidence is limited in several ways. First, a considerable number of studies have not examined a broad set of motivational regulation strategies simultaneously, which limits the generalizability of their findings. Second, the statistical procedures used were inadequate for controlling the multicollinearity among motivational strategies. Third, only a few studies have considered personality differences as possible moderating factors (Sansone, Wiebe, & Morgan, 1999; Schwinger et al., 2009).

In the present paper, we strive to address these shortcomings and to further our understanding of the relative importance of motivational regulation strategies. We report the findings from three empirical studies in which students' learning effort has been predicted by eight different motivational regulation strategies. Using *Relative Weights Analysis* (Tonidandel & LeBreton, 2011), we examine the relative importance of each motivational strategy across the three studies. Moreover, we investigate whether relative strategy importance differs depending on students' gender, conscientiousness, dispositional interest, and achievement goal orientations,

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which have all been described as important covariates in motivation regulation contexts.

1.1. Strategies for motivational regulation

Students can use several strategies in order to successfully regulate their motivation. Wolters (1998, 1999) originally proposed five different motivational strategies. More recently, however, Wolters and Benzoni (2013) reported on the reliability and validity of an advanced version of this instrument assessing six strategies. Schwinger, von der Laden, and Spinath (2007; see also Schwinger et al., 2009) introduced an adapted version of Wolters' original questionnaire in which they distinguished eight different strategies for motivational regulation. This taxonomy of strategies forms the basis for the present article.

Most of the eight motivational strategies can be divided into one of two categories that each describe the respective psychological mechanism through which the strategies are supposed to influence students' task-related motivation. The first group of strategies may be labelled *interest-enhancement strategies*, whereas the second group consists of rather *goal-based strategies*. Although there are certainly different ways of sorting the various motivational strategies, we think this categorization makes it easier to grasp the essentials of each strategy as well as to see similarities and differences between them. With respect to the group of interest-enhancement strategies, the first motivational strategy is called *enhancement of situational interest* and it refers to situations when students try to modify the task in a way that makes it more exciting and interesting for them. For example, younger students who have to copy long text passages at school might use different colors in order to stay motivated for this rather boring task (Sansone, Weir, Harpster, & Morgan, 1992; Sansone et al., 1999). While this strategy focuses on a short-term increase of enjoyment and persistence, the strategy *enhancement of personal significance* describes students' efforts to identify additional reasons for why engaging in certain tasks could be meaningful for them. That is, they try to find relations between the tasks at hand and their own individual interests, preferences, and goals in life (Leutner et al., 2001). The third strategy possibly labelled as an option for interest-enhancement is called *self-consequating*. This strategy is among the most frequently applied strategies for motivation regulation. Herein, students promise themselves a reward (e.g., socializing, watching a movie) for successfully accomplishing a certain task.

Regarding the group of goal-based strategies, *proximal goal setting* represents a strategy where students split a lengthy task into small pieces in order to feel more self-efficacious about the task (Bandura & Schunk, 1981). A great number of students use proximal goal setting and self-consequating in combination (cf. Wolters, 2003). Overall three goal-based strategies comprise self-talk related to long-term goals. Based on the trichotomous model of achievement goals (Elliot, 1999), *mastery self-talk* refers to remembering and thinking about the goal to improve one's competencies and to learn as much as possible. *Performance-approach self-talk* means that students recall their goal of being better than their classmates whereas *performance-avoidance self-talk* describes self-instructing by thinking about not to be worse than others. While seven of eight motivational strategies can be easily categorized as rather interest-enhancement vs. goal-based strategy, this is not that easy for the last strategy which is named *environmental control*. It refers to any kinds of rearranging the learning environment in a way that it helps to sustain one's motivation and persistence. For example, many students state to prefer quiet places for learning (Zimmerman & Martinez-Pons, 1986). Whether using environmental control for motivation regulation enhances one's effort through increasing interest and task-related value or through boosting self-efficacy to achieve one's goals may depend on both personal and contextual factors.

1.2. Effectiveness of motivational regulation strategies

Studies testing the effectiveness¹ of motivational regulation strategies have mostly focused on two outcome variables, namely academic effort and achievement. Findings from these studies have indicated that motivational regulation strategies have only weak, if any, direct effects on achievement (Schwinger et al., 2009; Schwinger, Steinmayr, & Spinath, 2012; Wolters, 1998, 1999). However, focusing mainly on direct effects of motivational strategies may underestimate the importance of motivational regulation for students' achievement. In a later review of the motivational regulation literature, Wolters clearly stated that "... one immediate goal of students' regulation of motivation is to increase their effort, persistence, or choice of activities. This adaptive change in motivation ultimately should positively affect outcomes that more directly reflect students' learning and achievement" (Wolters, 2003, p. 201). Thus, strategies for motivational regulation first and foremost aim to optimize students' learning efforts. Substantive direct effects of motivational strategies on achievement are not to be expected. This assumption parallels the discussion on the effectiveness of cognitive learning strategies, which also varies depending on the respective outcome (e.g., Credè & Kuncel, 2008). In conclusion, supposed positive effects of motivational regulation strategies on achievement would be mediated by an increase in task-related effort and persistence. Schwinger et al. (2009) yielded empirical support for the mediation effect hypothesis. In a sample of eleventh and twelfth grade German high school students, they found six of the eight motivational regulation strategies discussed above to be significantly related to students' effort management, but not to their school grades. Effort management, in turn, was demonstrated to be a significant predictor of students' GPA.

With respect to the question which motivational outcome is most important to consider, we agree with Wolters (2003) and Pintrich (2004), who have suggested the broad concept of effort to be the relevant outcome criterion in motivational regulation. Other researchers have argued that the motivational outcome should not be restricted to effort. Sansone and Thoman (2005), for example, stressed that having extrinsic reasons to perform a task (e.g., expecting rewards) is not enough to maintain motivation when a person's interest in the task has not been regulated as well. If the activity is continued only due to superordinate reasons, the person is presumed to feel stressed and hassled because there is no positive phenomenological experience while completing the task. As a consequence, the person will probably quit the task earlier and/or will perform worse compared to a person who has experienced a successful regulation of task-related interest. Following Sansone and Thoman (2005), we would need to examine phenomenological experiences such as task-related interest as well in our studies. However, in the three studies reported here, we focused on effort as the only outcome variable since we believe that investing a suitable amount of time and energy, which describes the core of the effort construct, represents the most fundamental form of motivation needed to successfully complete a task. While we agree with Sansone and Thoman (2005) that experiencing some kind of intrinsic motivation would be both beneficial and satisfying for the learner, we see it as just one of many precursors of the finally resulting effort.

Regarding the impact of motivational regulation on students' subjective effort, several studies have reported positive effects. In a study by Wolters (1999), high school students' self-reported effort was linked

¹ In this article, we use the term "effectiveness" twofold. First, we are interested whether certain strategies for motivational regulation are generally effective in enhancing students' effort. In this regard, a non-significant correlation between a motivational strategy and effort would indicate an ineffective strategy. The second use of the term effectiveness refers to the question of relative importance, that is, whether particular motivational regulation strategies appear to be more effective than others. We would like to point out that we are not able to examine the "efficiency" of motivational strategies in the studies presented here. This would relate to the question whether using a certain strategy in qualitatively different ways leads to qualitatively different effects. Albeit interesting, issues of qualitative strategy efficiency are not part of this article.

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