# Learning and Individual Differences

# Effectiveness of motivational regulation: Dependence on specific motivational problems☆

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## ABSTRACT

It is argued that learners' motivational regulation is strongly situation-specific and depends on the motivational problems that trigger regulation. A $2 \times 3$ model is proposed in which motivational problems are distinguished between low expectancies for success vs. poor subjective task values in three different phases of the learning process (before, during, or after a learning activity). A study with 283 undergraduates who reported how effectively they can motivate themselves in different situations strongly supported the assumptions. Confirmatory factor analyses revealed that learners' effectiveness of motivational regulation can be separated in accord with the six types of motivational problems. Separating variance components indicated that a large amount of learners' regulatory effectiveness can be attributed to the specifics of motivational problems. Finally, analyses on the mean-level yielded that motivational regulation is seen, on average, as particularly difficult when subjective task value is low or a learning activity is not yet initiated.

## 1. Introduction

Conceptualized as the process of initiating, maintaining, and evaluating one's cognition and behavior towards a learning goal (Schunk, Pintrich, & Meece, 2008), learning motivation is considered to be an essential internal resource for effective self-regulated learning (SRL; Boekaerts, 1999; Boekaerts & Corno, 2005; Schunk et al., 2008; Wolters, 2003; Zimmerman, 2000). On the meta-level, regulating this internal resource – i.e. monitoring one's learning motivation and controlling it if necessary – can be conceptualized as a distinct and basic aspect of SRL that is just as essential for mastering complex learning tasks as learning motivation itself (Boekaerts, 1995, 1997; Garcia & Pintrich, 1994; Pintrich, 1999; Sansone & Thoman, 2006). Motivational regulation in this sense is in the focus of the present work.

Originating in fundamental work on motivational aspects of SRL, research on the question of how learners deal with motivational problems has intensified in recent decades (Dewitte & Lens, 1999; Garcia, 1999; Pintrich, 1999; Prudie & Hattie, 1996; Sansone, Weir, Harpster, & Morgan, 1992; Wolters, 1998, 1999; Zimmerman & Martinez-Pons, 1986). However, previous research on motivational regulation has widely ignored the distinction between qualitatively different motivational problems. For example, effective motivational regulation may differ between an insufficient learning motivation stemming from diminishing optimism to cope with the learning task and an insufficient learning motivation resulting from the failure to perceive that the learning content is of any value (see Wolters, 1998). This disregard of qualitatively different motivational problems is surprising since research literature regularly demands a situation-specific consideration of SRL (e.g., Winne, 2010; Wirth & Leutner, 2008).

Hence, the overall objective of the present study was to advance research on learners' motivational regulation by applying a situation-specific perspective on different types of motivational problems. For this purpose, we proposed a $2 \times 3$ model of different motivational problems in academic learning. To test the assumption that the resulting six motivational problems are separable from one another, an empirical study was conducted in which undergraduates were asked to report their effectivity in successfully regulating their own motivation when faced with them.

### 1.1. Motivational regulation

The theoretical assumptions and perspectives used in the field of motivational regulation are, to a large extent, rooted in the theoretical considerations and empirical studies published by Wolters (see Wolters, 2003, for a review). He conceptualized motivational regulation as deliberately influencing one's own motivation. In this sense, individuals are supposed to initiate, maintain or even enhance their level of motivation regarding a particular activity. For this purpose, learners can use motivational regulation strategies (Wolters, 2003). For instance, a university student can intentionally make herself aware of the

significance of a given learning material in order to elevate her subjective valuing of the subject matter. This could help to prevent her from quitting a learning task that she may have experienced as boring. Studies based on a taxonomy of motivational regulation strategies presented by Wolters (1998, 1999) examined the wide range of motivational regulation strategies used by individuals to maintain sufficient, or improve insufficient, motivation while learning; they provided evidence that learners can effectively regulate their motivation using such strategies (e.g., Schwinger, Steinmayr, & Spinath, 2009, 2012; Schwinger, von der Laden, & Spinath, 2007; Wolters & Benzon, 2013). In any case, before learners will decide to manipulate their own motivation, they have to become aware that their learning motivation is inadequate to start or maintain the task at hand.

### 1.2. Situational specificity of motivational regulation

In their model of motivational regulation Schwinger and Stiensmeier-Pelster (2012) postulate that after detecting inadequate motivation and deciding to regulate it, learners analyze the quality of the motivational problem itself in the next step. This is supposed to build the basis upon which they can evaluate which motivational regulation strategy is best suited to address a given situation.

From a broader theoretical perspective on SRL, this cognitive sequence of detecting and evaluating a motivational problem is an inherent part of the regulation process. Particularly, Winne and Hadwin (2008), in reference to their four-phase model of SRL (Winne & Hadwin, 1998), argue that overcoming a motivational problem can be conceptualized as a regulation task. Although exhibiting some unique features, this regulation task is characterized by similar mechanisms (e.g., cognitive operations such as tactics and strategies, monitoring and evaluating progress against self-defined standards) as other learning tasks such as acquiring content knowledge. Winne and Hadwin (2008) locate appraisals of different motivational problems in the first phase of their model ("task definition"), in which self-regulated learners construct a personalized task profile with all essential information pertaining to the task at hand. Included are assumptions regarding the value of the task and self-assessments of how likely they are to successfully master the task. From this perspective, a task profile would provide information pertaining to different types of motivational problems (e.g., lack of motivation due to low expectancy of success) as well as appraisals of ability to deal with the specific kind of problem (e.g., expectations of getting a learning task started although it is evaluated as boring).

These appraisals of the effectiveness of motivational regulation should mirror the learners' individual experiences with specific demanding situations (Wolters, Benzon, & Arroyo-Giner, 2011). As such they should be assessable via self-reports, at least for adolescents and adult learners. Moreover, the appraisals should reflect the fact that motivational problems may place very different requirements on regulation and that engaging a motivational regulation strategy does not guarantee that it will be successful. From this theoretical point of view, learners' cognitive representations about the effectiveness of motivational regulation are supposed to depend on both their experiences with a specific motivational problem as well as on an overall person-specific self-efficacy on dealing with insufficient learning motivation (mirroring a person's basic capacity to regulate their own motivation).

Two approaches to empirically examine the situational specificity of motivational regulation are obvious. The first approach is to analyze what kind of strategies learners use in specific situations. Wolters (1998) provided 115 college students with specific learning situations (e.g., reading a chapter in a textbook), which were associated with either low expectancies of success (difficult learning material) or a low subjective value (boring or uninteresting learning material). The participants were asked to describe what they would do in the given situation in order to stay motivated. Wolters was able to show that, depending on the problem at hand, the students tended to report different strategies

with different frequencies. In a recent study conducted by Engelschalk, Steuer, and Dresel (2015), 54 college students were interviewed on their strategy use regarding various types of motivational problems. In addition to the differentiation between low expectancies of success and low subjective values, the learning phase in which motivation was compromised was subjected to variation. Again, a certain proportion of students reported different strategies for different situations. However, in both of the studies a substantial proportion of students reported using motivational regulation strategies independent from the specific motivational problems. Two theoretical explanations are possible for these findings: They either perceived no specific demands in the given situations or they chose a preferred strategy regardless of any specific demands. Neither of the two studies could clarify which explanation is more appropriate.

This leads to the second approach for examining the situational specificity of motivational regulation: Learners can be directly asked how they assess their effectiveness to regulate motivation when confronted with specific motivational problems. According to the aforementioned theoretical view, learners should be able to report their experiences in such situations. A corresponding (single) question was put to college students in the above-mentioned study by Engelschalk et al. (2015). They found first indications that students link different motivational problems with different assumptions regarding their effectiveness to cope with them. However, the findings solely rely on mean value differences and do not allow for conclusions on whether motivational regulation can be separated and therefore vary intra-individually with respect to different types of motivational problems.

### 1.3. Different motivational problems

To specify relevant and qualitatively different motivational problems which learners can react to with motivational regulation, we propose a set of $2 \times 3$ prototypical situations, each addressing specific regulation requirements (Fig. 1).
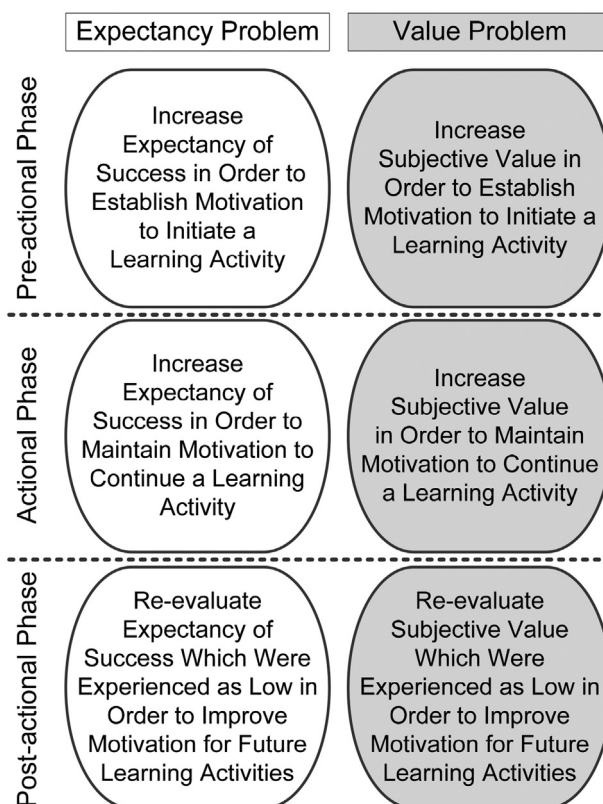


**Fig. 1.** A $2 \times 3$ model of motivational problems that can trigger motivational regulation.