Suitability of Motivational Regulation Strategies for Specific Motivational Problems

An Expert Survey

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Abstract: Learners utilize a variety of strategies to regulate their motivation. Theoretical models of motivational regulation imply a connection between the decision for a concrete strategy and the specific situational requirements. Accordingly, one would expect that the suitability of a strategy depends on how well it fits the motivational problem in question. Since reliable findings on this point are missing, we conducted a survey of N = 33 proven experts in the field of self-regulated learning to enlighten the suitability of nine strategies for six different motivational problems. Our findings showed that the suitability of a group of strategies was consistently considered dependent on the given motivational problem (e.g., ability-focus self-talk was suitable to enhance motivation for a difficult task) – pointing to the importance of conditional strategy knowledge for learners. For another group of strategies, experts' suitability judgments were indifferent, indicating that strategy suitability may also comprise idiosyncratic (i.e., person-specific) aspects.

Keywords: motivational regulation, situation-specific fit, self-regulated learning, learning motivation

Eignung von Strategien zur Motivationsregulation bei spezifischen motivationalen Problemen. Eine Expert_innenbefragung

Zusammenfassung: Lernende regulieren ihre Motivation mittels unterschiedlicher Strategien. Theoretische Modelle der Motivationsregulation legen nahe, dass die Entscheidung für eine konkrete Strategie nicht unabhängig von den spezifischen Anforderungen des vorliegenden motivationalen Problems zu betrachten ist. Entsprechend sollte die Eignung einzelner Motivationsregulationsstrategien von deren Passung zum spezifischen motivationalen Problem abhängen. Da hierzu noch keine belastbaren Befunde vorliegen, wurde eine Befragung von N = 33 ausgewiesenen Expert_innen des selbstregulierten Lernens zur Eignung von neun Strategien bei sechs unterschiedlichen Motivationsproblemen durchgeführt. Es zeigte sich, dass die Eignung einer Gruppe von Strategien übereinstimmend als abhängig vom jeweils gegebenen motivationalen Problem eingeschätzt wurde (z. B. fähigkeitsbezogene Selbstinstruktion als geeignet, um sich für eine schwierige Aufgabe zu motivieren), was auf die Bedeutung von konditionalem Strategiewissen verweist. Die Einschätzung der Eignung einer anderen Gruppe von Strategien war eher indifferent, was dafür spricht, dass die Eignung der Strategien auch durch idiosynkratische (z. B. personenspezifische) Aspekte bedingt ist.

Schlüsselwörter: Motivationsregulation, Situationsspezifität, selbstreguliertes Lernen, Lernmotivation

Self-control over learning motivation plays a decisive role in self-regulated learning (e.g., Boekaerts, 1999; Schunk et al., 2008). To consistently pursue and ultimately achieve self-imposed learning goals, learners must contend with and surmount diverse motivational obstacles. University students, for example, often have problems starting a learning task, especially when the content seems uninteresting (Engelschalk et al., 2016a). Self-regulated learners can react to such problems by influencing their learning motivation.

This influence over one's motivation, with the intention of establishing, maintaining, or increasing learning motivation, is also referred to as *motivational regulation* (e.g., Wolters, 2003). From previous research in this area, we know that learners use a variety of different strategies to positively influence their learning motivation (e.g., Wolters & Benzon, 2013). From a theoretical point of view

(e.g., Miele & Scholer, 2018; Schwinger & Stiensmeier-Pelster, 2012; Winne & Hadwin, 2008), we can expect the suitability and effectiveness of the chosen strategy also depend on the specific motivational problem the strategy is used to overcome. A student who is unmotivated to study because a task seems too difficult could profit only from a motivational regulation strategy that helps them increase their expectancy for success. Indeed, empirical evidence hints that learners tend to use motivational regulation strategies in a situationally specific way (e.g., Engelschalk et al., 2015; Wolters, 1998).

Nonetheless, to the best of our knowledge, there has been little systematic analysis of the aspect of fit between various motivational regulation strategies and different motivational problems (cf. Steuer et al., 2019b; Bäulke et al., 2021). By asking experts in the field of self-regulated learning to rate the suitability of motivational regulation strategies for specific motivational problems, the current study addresses this matter.

Strategies to Regulate Learning Motivation

Theoretically, motivational regulation strategies can be directed toward any of the factors of current learning motivation, which are open to cognitive influence (e.g., values, goals, situational interest, self-efficacy, the attractiveness of action alternatives; Miele & Scholer, 2018; Schwinger et al., 2009; Wolters, 1998; Wolters & Benzon, 2013). Thus, motivational regulation strategies can be used to modify different determinants of motivation (e.g., increase the perceived value of the learning material, activate achievement goals, increase self-efficacy, and modify the learning environment). The opportunities available to influence one's motivation to learn are diverse (Wolters, 2011). However, a vast number of studies has observed a rather consistent body of strategies for motivational regulation – which also constitutes the foundation for the present work (e.g., Engelschalk et al., 2015; Bayer & Gollwitzer, 2007; Schwinger et al., 2009; Wolters & Benzon, 2013): enhancement of situational interest (e.g., coming up with ways to make a task more enjoyable), enhancement of personal significance (creating links between the learning material and your own life), mastery self-talk (convincing yourself to work intensively for the sake of learning itself), performance-approach self-talk (convincing yourself how important it is to perform well on tests and exams), performance-avoidance self-talk (telling yourself that you need to work harder to avoid embarrassing yourself), environmental control (ensuring that as few distractions as possible can arise), self-consequating (promising yourself a reward when the task is completed), proximal goal-setting (approaching the

tasks step by step), and ability-focus self-talk (telling yourself that you can learn this material because you have already mastered similar material, or something even more difficult in the past).

A variety of studies showed that not only the extent (i.e., quantity) of strategy use (e.g., Jackson & Molloy, 1985; Schwinger et al., 2009; Wolters & Benzon, 2013) but also the quality of strategy application (e.g., Engelschalk et al., 2017; Eckerlein et al., 2019a; Leutner et al., 2001) is connected to desirable aspects of learning processes like invested effort and achievement. Regulation quality targets the idea that strategies must be properly applied (e.g., accurately, target-oriented, controlled) for maximum effectiveness. Also, high regulation quality implies that strategy use should be monitored and corrected if necessary.

Despite the obvious diversity of the detected motivational regulation strategies, it has not yet been confirmed which strategies are appropriate for specific motivational problems, which is surprising, because in the field of general self-regulated learning, the relevance of learners' conditional strategy knowledge regarding the suitability of strategies for particular purposes is irrefutable (e.g., Artelt et al., 2009; Händel et al., 2013). Further, well-established diagnostic tools exist to assess this type of knowledge (such as the Würzburger Lesestrategie-Wissenstest, WLST; Schlagmüller & Schneider, 2007). Utilizing an expert survey, the present study takes a step toward clarifying this question for motivational regulation, by trying to determine which strategies are suitable for which motivational problem situations.

To establish a theoretical framework for the suitability of motivational regulation strategies for specific motivational problems, we next outline the situatedness of motivational regulation concerning the expectancy-value theory of motivation (Eccles & Wigfield, 2002) and process models of self-regulated learning (Schmitz & Wiese, 2006).

The Situatedness of Motivational Regulation

The particular motivational challenges in a given situation are likely quite varied and potentially numerous. Motivational problems can arise, for example, when a learning task seems overly difficult, boring, or even irrelevant (e.g., Kim et al., 2018; Wolters, 1998). Moreover, learning motivation can be impaired by conflicting action tendencies (Grund et al., 2015). Regardless of the cause, motivational problems can become salient at any stage of the learning process (Schmitz & Wiese, 2006). For example, learning motivation that is too low before a planned learning ac-

tivity may hinder its onset. Similarly, a motivational problem can arise during learning or may only be brought to the learner's attention by a critical evaluation of a prior learning phase. The conceptualization of motivational regulation as a deliberate and intentional management of motivational processes (Wolters, 2003) suggests that students' engagement in the regulation of motivation is closely related to the perception of the specific motivational challenges encountered in a given context (Kim et al., 2018). Rheinberg (2004) also described the importance of situational characteristics for motivation. In his model, actual motivation arises from the interaction of personal characteristics (e.g., interests, motives) and situational characteristics (e.g., situational incentives or outcome incentives). Personal characteristics as well as situation-specific incentives should also influence motivational regulation strategies. Consequently, in the model of motivational regulation developed by Schwinger and Stiensmeier-Pelster (2012), it is assumed that strategies can be chosen according to the situation. The model implies that engagement in motivational regulation is particularly beneficial if the strategy chosen matches the motivational problem at hand. This type of emphasis on situational specificity corresponds with theoretical considerations and empirical findings on self-regulated learning in general, highlighting that self-regulated learners commonly apply strategies in response to task conditions and contexts (Hadwin et al., 2001; Winne & Hadwin, 2008). In the field of motivational regulation, this view is supported by studies showing that learners tend to use different motivational regulation strategies when different motivational problems occur (e.g., Engelschalk et al., 2015; Wolters, 1998).

Regulation of Expectancy of Success and Subjective Value

The suitability of motivational regulation strategies is most likely dependent on specific motivational triggers. Eccles and Wigfield (2002) describe two basic conditions that strongly influence motivated action: expectancy of success and subjective value (for a more differentiated view, see Rheinberg, 2004). For example, if a student is faced with a seemingly difficult task, their expectancy of success is low (referred to as an "expectancy problem"). Thus, their motivation to study is also impaired. Useful motivational regulation strategies for this specific motivational problem should be targeted at increasing the perceived expectancy of success. For example, it can be assumed theoretically that one suitable strategy for this situation is ability-focus self-talk, as thinking about situations in which one once succeeded in the face of difficulty

can increase one's belief in one's own competencies. In another case, a student could be unmotivated to study, because the content is subjectively boring or irrelevant. Consequently, the subjective value for the learning task is low, and study motivation is affected negatively (referred to as a "value problem"). Strategies suitable for this kind of problem should primarily aim to increase the subjective value of the learning content or task. From a theoretical point of view, enhancement of personal significance should be of particular effectiveness here, as finding connections between the learning content and personally relevant aspects (e.g., personal interests, life goals) can increase the value of the learning content or task. Moreover, we assume that there also exist strategies useful for value and expectancy problems alike, e.g., self-consequating, by increasing learning motivation through an extrinsic reward (e.g., watching an episode of one's favorite series), where the focus on consequences should help with expectancy and value problems alike.

The Regulation of Motivation in the Process of Self-Regulated Learning

The suitability of motivational regulation strategies should not only depend on specific motivational triggers but is likely to be determined by different phases of the learning process and their distinct requirements for motivational regulation. This can be elaborated regarding the process model of self-regulated learning (Schmitz & Wiese, 2006), in which three phases are distinguished based on the model of Zimmerman (2000): preactional phase, actional phase, and postactional phase. Pintrich (2000) also described the relevance of different motivational constructs in different phases of self-regulated learning.

In the preactional phase, choosing and committing to a learning goal is central. This has to occur regularly in the light of many action alternatives, which can endanger learning motivation for the central task (Grund et al., 2015). In this phase, the regulation demand would be to establish learning motivation to initiate the chosen learning task. In light of an expectancy problem (cf. perceptions of task difficulty as described by Pintrich, 2000), a regulation strategy should aim at increasing the expectancy of success. Regarding preactional value problems, strategies should seek to increase the subjective value of the learning task or content at hand (Engelschalk et al., 2016a; Pintrich, 2000). Strategies used in the preactional phase primarily aim at increasing self-efficacy (Wolters, 1998), interest (Pintrich, 2000), and realization motivation (Kuhl, 1983); they help in choosing a learning activity or goal by facilitating selection motivation processes (Kuhl, 1983) or activating certain goals (e.g., strategies that acti-

vate learning or achievement goals; Schwinger et al., 2007).

In the actional phase, Schmitz and Wiese (2006) focus on the relevance of quantity and quality of the previously initiated learning activity. The motivational challenges in this phase thus primarily refer to the monitoring and maintenance of an efficient learning process, the preservation of learning motivation, and the shielding of the latter against conflicting goals. Strategies to overcome motivational problems in the actional phase should aim to increase task value or expectancy of success (Engelschalk et al., 2016a) and shield the ongoing learning activity against motivational interference (Grund et al., 2015).

The postactional phase focuses on self-reflective processes. One's actions in the previous phases and the targeted goals are evaluated, resulting in feelings of satisfaction or discontent or triggering dysfunctional attributional processes. Demands for self-regulation of motivation lie in the adaptive reaction to mistakes and failure (Tulis et al., 2016b; Schmitz & Wiese, 2006; Pintrich, 2000), as well as in perceived low motivation during the previous phases. Motivational regulation strives to safeguard or increase motivation for future learning activities, for example, by analyzing reasons for low expectancy of success or perceived low subjective value during the learning process or by focusing on the potentials for learning gain of future studying (Engelschalk et al., 2016a).

The Situation-Specific Suitability of Motivational Regulation

Engelschalk et al. (2016a) have shown that university students perceive low expectations of success and low subjective value in each of the three phases of the learning process, as distinct occasions to regulate their learning motivation. Against the background of the above-presented theoretical notion that motivational regulation could be particularly effective when the chosen strategies match the motivational problem at hand, the next logical step is to determine whether certain strategies are more suitable for specific motivational problem situations than others.

However, the suitability of different strategies cannot be entirely determined from a theoretical point of view for the following reasons. First, one can assume that at least some of the established strategies affect more than one aspect of actual learning motivation. For example, the strategy of proximal goal-setting should increase the expectancy of success, because it enables more frequent mastery experiences. Also, dividing a task into smaller subgoals likely helps with value problems as well, as the

higher frequency of personal goals provides more anticipated states of personal value. Second, it is not always possible to determine which aspect of actual learning motivation is impaired in a specific situation. Although it might be likely that the motivational hurdle posed by a boring text emanates from a value problem of motivation, it could also be argued that the problem of starting studying results from a failed goal-setting process (see Lenzner & Dickhäuser, 2011). In such ambiguous situations, a given theoretical perspective held by a single researcher might be inconclusive. Third, an impaired motivational aspect does not necessarily have to become the main target of motivational regulation. A qualitative change in motivation (Senko & Harackiewicz, 2005) would be possible and the learner could focus on regulating an entirely different aspect of motivation (Wolters, 2003).

These three points show the high theoretical complexity that leads to uncertainty regarding the situation-specific suitability of regulation strategies. In light of this theoretical ambiguity and missing empirical evidence regarding the fit between motivational regulation strategies and motivational problems, we conducted an expert survey to generate insights into the suitability question, reflecting potential diverse theoretical perspectives taken by different scientific experts.

The Present Study

The goal of the current research is to bring insight into the question of the suitability of motivational regulation strategies for different motivational problems. The survey of experts incorporated nine motivational regulation strategies based on established taxonomies – as listed above (Engelschalk et al., 2015; Schwinger et al., 2007). The suitability of each strategy was assessed in the context of six different motivational challenges. This differentiation of motivational problem situations is based on the 2x3 model of motivational problems proposed by Engelschalk et al. (2016a), systematically combining specific motivational problems (expectancy for success and subjective value) and phases of self-regulated learning (preactional, actional, and postactional phase). Accordingly, we presumed that low motivation can be caused by low expectancy or low value (e.g., Eccles & Wigfield, 2002) and can arise in three phases of self-regulated learning (Heckhausen & Kuhl, 1985; Schmitz & Wiese, 2006; Zimmerman, 2000). Table 1 describes the theoretically derived, albeit tentative assumptions regarding the suitability of the described body of motivational regulation strategies for the six motivational problems.

Table 1. Preliminary presumptions about the suitability and unsuitability of motivational regulation strategies for expectation and value problems in the preactional, actional, and postactional phases of learning

Strategy	Preactional phase		Actional phase		Postactional phase	
	Expectancy problem	Value problem	Expectancy problem	Value problem	Expectancy problem	Value problem
Enhancement of personal significance	–	+	–	+	–	+
Enhancement of situational interest	–	+	–	+	–	
Self-consequating	(+)	(+)	(+)	(+)		
Mastery self-talk	(+)	(+)	(+)	(+)	(+)	(+)
Performance-approach self-talk		(+)		(+)	–	
Performance-avoidance self-talk	–		–		–	
Environmental control		(+)		(+)	–	–
Proximal goal-setting	+	(+)	+	(+)	–	–
Ability-focus self-talk	+	–	+	–	+	–

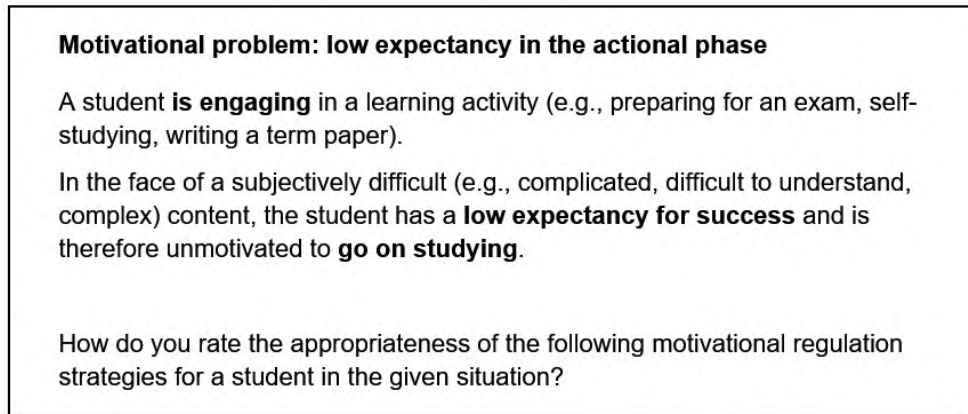*Note.* + = suitable, (+) = rather suitable, – = unsuitable.

Method

Participants

The sample consisted of $N = 33$ designated German-speaking experts with a minimum of 5 years of research and publishing activities in the field of self-regulated learning. We assumed that experienced researchers in this field have high expertise in processes of motivational self-regulation. We selected the German-speaking experts in the field of self-regulated learning based on the above-specified criteria and invited them to participate via email. 90 % of the invited experts participated in the study. Their mean research experience comprised $M = 10.9$ years ($SD = 6.1$), and they stated that they had published, on average, $M = 10.2$ publications ($SD = 7.2$) in the field of self-regulated learning prior to the survey. The average age of the experts was 40.1 years ($SD = 8.1$); 42 % were female. All experts participated in the study voluntarily.

Procedure

The expert survey was administered via an online survey. We asked the participants to rate the suitability of motivational regulation strategies for different motivational problems. In the form of standardized vignettes, the motivational problems were described as either a "low expectation of success" because of the "subjectively difficult (e. g., complicated, difficult to understand, complex) content," or as a "low subjective value" because of the "subjectively unattractive (e. g., uninteresting, not particularly useful, of low personal insignificance), however relevant content". The localization of these two problems in the different phases of action was accomplished by indicating that the problem at hand was being faced by a student who was performing a learning activity (e. g., preparing for an exam, independent learning, working on a thesis) that had not yet started (preactional phase), was now underway (actional phase), or had just ended (postactional phase). The six vignettes were presented in random order. Figure 1 presents a sample vignette.

Beneath each of the six situation descriptions were the nine motivational regulation strategies introduced earlier. Alongside each of the strategies, we provided two specific anchor examples, e. g., "enhancement of personal significance (e. g., try to create relationships between the learning material and one's own experiences; look for connections between the task at hand with other fields or domains)". On Likert-type scales with the poles 1 (*not at all suitable*) and 6 (*completely suitable*), the experts assessed the suitability of the strategies to improve learning moti-

Motivational problem: low expectancy in the actional phase

A student **is engaging** in a learning activity (e.g., preparing for an exam, self-studying, writing a term paper).

In the face of a subjectively difficult (e.g., complicated, difficult to understand, complex) content, the student has a **low expectancy for success** and is therefore unmotivated to **go on studying**.

How do you rate the appropriateness of the following motivational regulation strategies for a student in the given situation?

Figure 1. Sample text vignette describing a specific motivational problem.

vation for a student facing these specific situations (one rating per strategy and situation, resulting in 6 x 9 = 45 ratings).

Statistical Analyses and Dealing with Missing Data

The experts' assessments of the suitability of the strategies were analyzed alongside their mean values. To identify those assessments that are shared consensually by the experts to a considerable degree, we calculated r_{WG} as a measure of within-group agreement. Positive r_{WG} values indicate that the raters more strongly agree in their judgments than would be expected based on a uniform distribution (as a reference distribution). An r_{WG} of 1 indicates perfect agreement, whereas an r_{WG} of 0 indicates that the ratings are distributed similarly to the reference distribution (James et al., 1984). The r_{WG} measure was corrected for judgment-independent variance between experts, which accounted for a possible response bias in judge effects. Following James et al. (1984, 1993), values of .70 or higher were interpreted as sufficient agreement among the experts and values of .60 or higher as borderline sufficient agreement. To support interpretation – especially in the latter case – we also calculated the percentage of experts rating the respective strategies as suitable. There were no missing data for all items assessed in the study, as the answer format in the online survey was forced-choice.

Results

Table 2 shows the mean values and standard deviations for experts' assessments of the suitability of the individual strategies regarding the various motivational problems. We interpreted strategies with mean values of 4 or above to be suitable in the view of the experts. Respectively, mean values of 3 or below were interpreted as judgments of being unsuitable in the given context (mean values between 3 and 4 were seen as indifferent and not classified). [*] The proportions of experts who assessed a strategy as suitable and the within-group agreement between them (r_{WG}) can also be obtained from Table 2. In the following, we interpret motivational regulation strategies as suitable or unsuitable, respectively, when sufficient within-group agreement among the experts was evident. In the case of borderline sufficient agreement, we interpreted an assessment as consensually viewed as suitable when at least 75 % of the experts judged the respective strategy as suitable and was interpreted as consensually viewed as unsuitable when at most 25 % of them judged it as suitable.

Generally speaking, the experts showed, to a certain degree, higher agreement on strategies in the actional phase than in the preactional phase of self-regulated learning. Agreement for strategies in the postactional phase was rather low. In the preactional and the actional phases of learning, all strategies theoretically presumed as suitable were also judged as clearly suitable by the experts: Proximal goal-setting and ability-focus self-talk were judged as suitable for expectancy problems and enhancing personal significance as well as enhancing situational interest were judged as unequivocally appropriate

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for value problems. These suitability judgments were quite specific for the mentioned motivational problems, that is, these four strategies were not seen as suitable for other problems or were even seen as clearly unsuitable in the case of the strategy of enhancement of situational interest, when a learner loses their optimism to master the learning task. An expected exception of this large specificity relates to proximal goal-setting that was also judged as rather suitable for value problems in the actional phase (descriptively, the corresponding preactional phase ratings also tended toward rather suitable judgments).

The experts also had a broad consensus regarding the suitability of self-consequating and mastery self-talk strategies for motivational problems. As presumed, they considered them as rather suitable for both expectancy and value problems in the preactional and the actional phases of learning – thus, assessing them as rather broadly effective (exception: self-consequating was not judged as suitable for expectancy problems in the actional phase).

In contrast, performance-avoidance self-talk was consensually assessed as clearly unsuitable for four of the six motivational problem situations (the suitability ratings for value problems in the preactional and the actional phases were less uniform but also tended toward unsuitable judgments). No or only little consensus emerged for the strategies of performance-approach self-talk and environmental control – although experts agreed that the latter is suitable for expectancy problems in the actional phase.

Finally, experts generally disagreed concerning the suitability/unsuitability of the body of commonly analyzed motivational regulation strategies for motivational problems in the postactional phase of learning. Here, the only consensual finding was that the experts found performance-avoidance self-talk inappropriate for expectation problems.

Discussion

The present study addressed the question of whether expert assessments on the suitability of strategies to regulate motivation vary with the specific causes of deficient learning motivation. Theoretical considerations from the area of self-regulated learning in general and motivational regulation in particular (e.g., Miele & Scholer, 2018; Pintrich & Zusho, 2007; Schwinger & Stiensmeier-Pelster, 2012; Winne & Hadwin, 2008) have proposed a wide variety of arguments to support the assumption that motivational regulation strategies function differently in different situations. Based on theoretical assumptions and underlying motivational constructs, preliminary pre-

sumptions about the suitability or unsuitability of motivational regulation strategies for different motivational problems were formed.

The results of the expert survey corroborate this line of reasoning. The experts' suitability ratings for motivational regulation strategies differ regarding the phases of self-regulated learning and the underlying motivational problem (cf. Engelschalk et al., 2016a). In line with our theoretical assumptions (see Table 1), some strategies were rated more suitable for certain phases and motivational problems than others. The results indicate – again, in line with our presumptions – that certain strategies are consensually viewed as better suited to overcome expectation problems (e.g., ability-focus self-talk, proximal goal-setting), whereas others were rated to work better for issues concerning subjective value (e.g., enhancement of personal significance). These findings correspond to the expectancy-value conceptions of motivation (e.g., Wigfield & Eccles, 2000) and indicate that a problem-specific application of these strategies should be most beneficial for learners. Moreover, the findings indicate that, from the experts' point of view, certain strategies could even have aversive effects, depending on the problem, such as increasing situational interest in conjunction with expectancy problems.

Looking at a comparison between problems faced at the start of a learning process and those encountered when learning is fully underway, one notices that the experts were in a somewhat higher agreement about strategies used during the actional phase than those used in the preactional phase. This can be interpreted in light of the previous research, where motivational regulation was often considered a phenomenon tied to the actional phase of self-regulated learning (e.g., Sansone et al., 1999). Again, this finding supports the assumption that strategies are not generally considered adaptive or maladaptive, and that this assessment must be specific to the situation. This was particularly evident for the postactional phase: None of the commonly analyzed strategies was consensually considered helpful in evaluating a prior learning activity, which was perceived as motivationally unsatisfying. From a theoretical perspective, this is surprising since evaluation processes at the end of an action cycle are considered essential for maintaining motivation in future situations (e.g., Heckhausen & Gollwitzer, 1987; Schmitz & Wiese, 2006). Also, the postactional phase opens the possibility to systematically influence future learning cycles (e.g., through attributional control; Lenzner & Dickhäuser, 2011). An obvious explanation could be that the common body of previously addressed strategies focuses mainly on the actional phase of self-regulated learning (e.g., Schwinger et al., 2007) and is not transferable, one-to-one, to motivational regulation in the postactional phase. Here,

Table 2. Expert ratings of the suitability of motivational regulation strategies for expectation and value problems in the preactional, actional, and postactional phases of learning. Reported are means and standard deviations of ratings, percentages of experts rating the strategies as suitable as well as degrees of interrater agreement r_{WG}

Strategy	Pre-actional phase				Actional phase				Post-actional phase			
	Expectancy problem		Value problem		Expectancy problem		Value problem		Expectancy problem		Value problem	
	M (SD)	r_{WG} (%$_{suit}$)	M (SD)	r_{WG} (%$_{suit}$)	M (SD)	r_{WG} (%$_{suit}$)	M (SD)	r_{WG} (%$_{suit}$)	M (SD)	r_{WG} (%$_{suit}$)	M (SD)	r_{WG} (%$_{suit}$)
Enhancement of personal significance	3.71 (1.54)	.27 (52%)	5.50 (0.65)	.94 (97%)	3.07 (1.07)	.69 (36%)	5.43 (0.94)	.79 (88%)	2.67 (1.30)	.51 (26%)	4.50 (1.83)	.00 (77%)
Enhancement of situational interest	3.14 (1.23)	.57 (36%)	5.21 (0.89)	.81 (94%)	2.64 (0.93)	.79 (24%)	5.15 (1.07)	.70 (97%)	2.50 (1.51)	.31 (13%)	4.17 (1.64)	.16 (55%)
Self-consequating	4.36 (1.08)	.69 (76%)	4.71 (1.14)	.64 (91%)	3.93 (1.14)	.64 (55%)	4.71 (1.07)	.70 (88%)	3.25 (1.82)	.00 (48%)	4.25 (1.42)	.39 (68%)
Mastery self-talk	4.38 (0.87)	.83 (75%)	4.57 (1.09)	.68 (82%)	4.21 (1.05)	.71 (70%)	4.71 (1.07)	.70 (78%)	2.92 (1.44)	.37 (42%)	3.50 (1.73)	.06 (47%)
Performance-approach self-talk	3.14 (1.41)	.41 (42%)	3.79 (1.31)	.50 (76%)	3.14 (1.56)	.25 (38%)	3.93 (1.21)	.59 (79%)	2.58 (1.44)	.37 (29%)	3.00 (1.54)	.28 (52%)
Performance-avoidance self-talk	2.29 (1.14)	.64 (21%)	2.93 (1.49)	.33 (39%)	2.00 (0.78)	.88 (0%)	2.86 (1.17)	.62 (33%)	1.75 (0.87)	.83 (6%)	2.17 (1.11)	.66 (23%)
Environmental control	4.29 (1.49)	.33 (55%)	3.79 (1.31)	.50 (52%)	4.57 (0.94)	.79 (76%)	3.86 (1.10)	.67 (58%)	2.42 (1.44)	.37 (16%)	2.58 (1.38)	.44 (16%)
Proximal goal-setting	5.29 (0.83)	.85 (100%)	4.14 (1.29)	.52 (67%)	5.50 (0.76)	.89 (91%)	4.07 (1.00)	.75 (61%)	3.08 (1.98)	.00 (39%)	3.00 (1.60)	.22 (29%)
Ability-focus self-talk	5.64 (0.50)	1.00 (100%)	3.43 (1.28)	.52 (45%)	5.57 (0.65)	.94 (94%)	3.64 (1.15)	.63 (42%)	3.67 (1.92)	.00 (68%)	2.42 (1.51)	.31 (23%)

Note. N = 33 experts in the field of self-regulated learning. Ratings of 4 or above were classified as suitable, ratings of 3 or below as unsuitable. Consensual ratings by the experts are printed in **bold** (see description in the text).

future research must clarify which strategies learners actually engage in to realize motivational regulation in the postactional phase (e.g., managing attributions, dealing with errors). Identifying strategies specifically targeted at the reflection of motivational processes after learning would further hint at the situatedness of strategy use. This point also highlights the necessity for further theoretical discourse on motivational regulation in the postactional phase of self-regulated learning.

Taking the results together, on the one hand, one can identify a group of strategies for which consensual statements emerged regarding the question of how well they suit certain motivational problems in the learning process. This group of strategies consists of the enhancement of personal significance, the enhancement of situational interest, self-consequating, mastery self-talk, performance-avoidance self-talk, proximal goal-setting, and ability-focus self-talk. Many of these strategies were attested to function in a quite specific way only for certain motivational problems, no strategy was assessed as globally suitable for all addressed motivational problems, and only a few tended to function more broadly (mainly mastery self-talk, as a tendency also self-consequating and proximal goal-setting). Thus, context independency can at best be expected for these few strategies. Similarly, the experts assessed no strategy as uniformly unsuitable for all motivational problems – although performance-avoidance self-talk was consensually judged as unsuitable for many motivational problems. This is in line with findings from other research groups, who found maladaptive patterns for performance-avoidance self-talk (e.g., negative links to achievement and procrastination; Grunschel et al., 2016). These patterns underpin the present work's underlying assumption that the use and effectivity of motivational regulation strategies heavily depend on the specific motivational problem.

On the other hand, another group of strategies emerged for which experts' suitability judgments were generally or mainly indifferent, with the consequence that no consensual statements regarding their situation-specific suitability could be derived. This group of strategies consists of performance-approach self-talk and environmental control. This may be taken as an indication that the effectiveness of motivational regulation strategies is not always a universal property of these strategies that do not vary between learners. Evidence that this is not necessarily the case for all strategies was already ascertained by Engelschalk et al.(2015) in an interview study: Although students tended to report using different strategies for different motivational problems, for some strategies (e.g., performance-approach self-talk) only a few systematical connections between strategy use and motivational problems could be shown. Indeed, students may have different

individual preferences or aversions for specific strategies – and may also be differentially capable of executing them adequately. Thus, motivational regulation strategies may also have a "personal fit". It is an important prospect for future research to address those idiosyncratic aspects of strategy fit and the resulting "universality problem" when conclusions are needed on how well a strategy suits a given motivational problem ("Do statements about the effectiveness and fit of motivational regulation strategies apply for all learners?"). To a certain degree this problem also applies to the first-mentioned group of strategies since we observed no consensus among experts regarding the question for which motivational problems those strategies are clearly unsuitable.

One conceivable limitation of the chosen methodology is that individual preferences (e.g., own experiences with certain strategies, observations of students, subjective assumptions regarding the usefulness of certain strategies) of the experts queried may have influenced their ratings, a limitation inherent in the method of expert surveys. Under the assumption that these individual preferences are randomly distributed (and the experts are not collectively wrong), no systematic bias should have resulted in light of the sample size, which is relatively large for expert surveys.

Additionally, it should be taken into account that expert ratings provide important evidence regarding the appropriateness, consensus, and acceptability of theoretical assumptions, and thus provide a fundamental prerequisite for a situation-specific view on motivational regulation. However, they cannot eliminate the need for empirical studies on students and the actual effect of their motivational regulation efforts. It would be fruitful to specifically analyze strategy effects on current motivation, learning behavior, or performance in individual, clearly defined, and authentic motivational problem situations (e.g., an in-depth analysis of the effects of motivational regulation when learners are unmotivated to initiate a learning activity because of their low optimism to master the learning material adequately; see also Bäulke et al., 2021).

Even though the expert survey depicted here may represent only a first step toward clarifying the effectiveness and suitability of motivational regulation strategies in specific motivational problem situations, the findings suggest that context should be considered more rigorously. The findings revealed a group of strategies consensually considered specifically suitable by the experts for only some situations. Thus, it could be inferred that conditional knowledge about these consensually judged strategies could be functional for learners. This notion points to the necessity of developing valid assessments of motivational regulation and its underlying competencies. The present results illustrate the prospects of developing qualitative

standards (see Wirth & Leutner, 2008) for the situation-appropriate application of motivational regulation strategies. Situational judgment tests could be constructed (e.g., Steuer et al., 2019b), so that it could be empirically clarified whether, in addition to the extent (e.g., Wolters & Benzon, 2013; Schwinger et al., 2009) and the quality (e.g., Engelschalk et al., 2017; Eckerlein et al., 2019a) of the use of strategies, conditional knowledge about which motivational regulation strategies are appropriate for which specific motivational problems provides an influential facet that complements our theoretical understanding of the self-regulation of learning motivation. These insights into key aspects of successful motivational regulation, like the situation-specificity, could then be used in training approaches to help students overcome motivational problems.

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