Teachers' situational joy, anger, and achievement goals linked by control- and value-appraisals

Tanja Bross, Anne Christiane Frenzel, Thomas Goetz, Ulrike E. Nett

Angaben zur Veröffentlichung / Publication details:

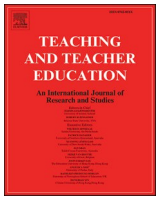
Bross, Tanja, Anne Christiane Frenzel, Thomas Goetz, and Ulrike E. Nett. 2026. "Teachers' situational joy, anger, and achievement goals linked by control- and value-appraisals." Teaching and Teacher Education 172: 105352. https://doi.org/10.1016/j.tate.2025.105352.

Teaching and Teacher Education 172 (2026) 105352

Contents lists available at ScienceDirect

Teaching and Teacher Education

journal homepage: www.elsevier.com/locate/tate



Research paper

Teachers' situational joy, anger, and achievement goals linked by control- and value-appraisals

Tanja Bross [a,*], Anne Christiane Frenzel [b], Thomas Goetz [c], Ulrike Elisabeth Nett [a]

[a] University of Augsburg, Augsburg, Germany
[b] Ludwig-Maximilians-Universität München, Munich, Germany
[c] University of Vienna, Vienna, Austria

ARTICLE INFO

Keywords:
In-service teachers
Emotions
Achievement goals
Control-value theory
Situational approach
Diary study

ABSTRACT

This study, grounded in Pekrun's control-value theory, examined how teachers' joy and anger are linked to their achievement goals across various work situations (teaching, interaction with colleagues, administration, other). Furthermore, it investigated whether these linkages are mediated by control- and value-appraisals. In a two-week diary study with 165 teachers from elementary and vocational track secondary schools, 2148 daily situations were recorded. The findings revealed that the within-person level associations between teachers' joy and anger and their achievement goals differed from the between-person level findings and varied across situations with different valence, but remained consistent across different classes of situations. Control-appraisals, in contrast to value-appraisals, mediated the associations between joy and achievement goals as well as between anger and achievement goals at the within-person level. The results highlight the importance of within-person dynamics in understanding how teachers' emotions relate to their achievement goals in everyday school life.

1. Introduction

Teaching is a profession charged with emotion, and teachers, just like their students, experience motivational rollercoasters. While some days may be filled with joy and laughter both in and outside of school, others bring anger, and it is not always easy to find the motivation to get up and go to school. Teachers' achievement goals, as a core facet of motivation, are a prominent approach for assessing the quality of motivation of a person, targeting the "why" of a person's motivation (Ford, 1992; Urdan & Maehr, 1995). Teachers' emotions and their achievement goals are closely linked to their own well-being (e.g., Burić et al., 2017; Keller et al., 2014; Parker et al., 2012; Retelsdorf et al., 2010), their teaching styles (e.g., Chen, 2019; Retelsdorf et al., 2010; Retelsdorf & Günther, 2011), and students' motivation and behavior in the classroom (e.g., Dresel et al., 2013; Hagenauer et al., 2015). Both teachers' emotions and their goals seem therefore highly relevant in the educational context. As emotions and goals are strongly intertwined (e.g., Bross et al., 2024; Wang et al., 2017), investigating their associations can help clarify, expand, and ultimately integrate the two fields of research, offering two possibilities for intervention: targeting teachers' emotional experiences and shaping their goals.

Both emotions and achievement goals differ at the inter- (between-person level) and intraindividual-level (within-person level) (e.g., Becker et al., 2015; Frenzel et al., 2015; Praetorius et al., 2014), so it seems worthwhile to investigate whether their associations also differ at the inter- and intraindividual level. Thus, as a first step, variability in teachers' emotions and goals should be examined, as insights into emotion–goal relationships across different teaching situations can help design interventions that should target the changeable aspects of teachers' experiences (Frenzel et al., 2020; Goetz et al., 2016) and ultimately support teacher well-being and enhance educational outcomes.

Examining differences at the intraindividual level is valuable, but offers limited explanatory power, as the situational factors driving these variations remain unclear. Therefore, as a second step, it is important to consider situational differences. A useful starting point in this direction is to categorize various situations and thus distinguish between distinct *classes of situations*, as teachers' everyday school life is characterized by a great variety of different situations, for example teaching, interaction with colleagues, and administrative tasks (Schmidt et al., 2017). Not only can the different classes of situations vary from day to day, but so can the individual perception of these classes, with some being perceived as more positive and others as more negative (Schmidt et al., 2017). This describes the *valence of the situation*.

To gain a deeper understanding of how exactly emotions and goals

* Corresponding author. Universitätsstraße 10, 86159 Augsburg, Germany.
E-mail address: tanja.bross@uni-a.de (T. Bross).

https://doi.org/10.1016/j.tate.2025.105352
Received 12 June 2025; Received in revised form 9 December 2025; Accepted 10 December 2025
Available online 9 January 2026

are linked, the control-value theory comes into play (Pekrun, 2006). The theory states that emotions are caused by cognitive appraisals, specifically through the subjective experience of control during an activity or the outcome of that activity, as well as the subjective value attributed to this activity or its outcome (Pekrun, 2006). Emotions and goals are assumed to be linked via these control- and value-appraisals (Pekrun et al., 2006), which should still be demonstrated to teachers.

1.1. Teachers' joy and anger in work-related situations

1.1.1. Definition and occurrences

Teachers' emotions can be defined as evaluative reactions involving various psychological and physiological subsystems, uniquely embedded in the specific events and social interactions that teachers encounter in their profession (Frenzel et al., 2021). In their daily work, teachers face various challenging situations and interact with students, parents, colleagues, and principals to manage different demands, like ensuring classroom functioning, fostering student motivation and achievement, maintaining positive relationships with parents, and collaborating with colleagues and superiors (Frenzel et al., 2021). These daily situations can be seen as either positive or negative (Schmidt et al., 2017) and elicit certain work-related emotions.

Studies on teachers' emotions showed that teachers experience various different emotions like joy, pride, anger, anxiety, shame and boredom, with joy being the most commonly experienced positive emotion and anger being the most commonly experienced negative emotion (Burić & Frenzel, 2019; Frenzel, 2014 for an overview; Frenzel & Goetz, 2007; Keller et al., 2014). Joy and anger differ in terms of their valence: joy is a positive, i.e. pleasant emotion, whereas anger is a negative, i.e. unpleasant emotion (Pekrun, 1992, 2024). They thus represent two opposite poles of affective experience and offer a theoretically significant spectrum for understanding teachers' emotional dynamics.

Teachers' emotions, particularly joy and anger, are differentially linked to a range of outcomes for both students and teachers themselves. These emotions not only directly influence students' emotions but also affect students indirectly through teachers' instructional behaviors (Frenzel et al., 2021). Specifically, teachers' joy is associated with a greater focus on students, more positive interactions, and greater student closeness, whereas experiencing anger is associated with a reduced focus on students (Chen, 2019) and less student closeness (Hagenauer et al., 2015). Moreover, teachers' joy and anger are linked to student outcomes: teachers' joy shows positive associations with higher students' engagement and discipline, whereas teachers' anger is linked to lower engagement and less discipline (Hagenauer et al., 2015). Furthermore, teachers' joy and anger are related to teachers' own well-being: joy is associated with greater satisfaction, higher self-efficacy, and lower emotional exhaustion (Burić et al., 2017; Hagenauer et al., 2015; Keller et al., 2014), whereas anger is associated with lower satisfaction and self-efficacy and higher emotional exhaustion (Burić & Frenzel, 2019; Burić et al., 2017; Hagenauer et al., 2015; Keller et al., 2014). Thus, both joy and anger are of great practical importance. Given their prominence and relevance, we found it valuable to begin exploring teachers' work-related emotions by focusing specifically on these two emotions.

Research into the circumstances, namely in which professional situations joy or anger occur, can help to develop targeted interventions to positively influence teachers' emotional experiences and outcomes. To date, most research on teachers' emotions has focused on emotions experienced during teaching, which is plausible given that teaching is one of the core tasks in teachers' professional lives (Frenzel, 2014). However, there are also a few studies investigating teachers' emotions in interaction situations additionally to teaching situations (e.g., Burić et al., 2017; Burić & Frenzel, 2019). It would be useful to expand the research by including additional important work-related situations, such as administrative tasks, and examine the situations together.

1.1.2. Inter- and intraindividual variability of teachers' joy and anger

As the previous section has shown, investigating teachers' emotions in different situations is important. However, it should also be noted that a teacher not only experiences different emotions across situations (within-person; intraindividual), but teachers also differ from one another in their emotional experiences (between-person; interindividual), as research revealed (Becker et al., 2015; Frenzel et al., 2015). Research on students showed that emotions contain about half temporally stable and half variable fractions (Respondek et al., 2019). For teachers, intraindividual differences are even more pronounced, as the majority of variance in joy and anger is located at the within-person level (77–84 % for joy, 79–80 % for anger), while the remaining variance is located at the between-person level (Becker et al., 2015; Keller et al., 2014). Situational variance in teachers' emotions can, for example, occur due to different subjects and student groups (Frenzel et al., 2015). As teachers are confronted with different tasks and people in their daily work life, an investigation of teachers' emotions at both the between- and the within-person levels, while considering different situations, is indispensable.

1.1.3. Control- and value-appraisals as proximal antecedents of teachers' joy and anger

To understand why different emotions are experienced by different people in different situations, the control-value theory (Pekrun, 2000, 2006) can be helpful. According to the control-value theory (Pekrun, 2000, 2006), which can be generalized to the emotional experience of humans (Pekrun, 2021, 2024), and is therefore also relevant for teachers' work-related emotions, cognitive appraisals of control and value are proposed to be reciprocally linked to emotions (Pekrun, 2024). The control-appraisal is defined as the perceived control over the situation and its results, while the value-appraisal pertains to the perceived importance of success (Pekrun, 2000, 2006). The control-value theory posits that different appraisal constellations evoke different emotions (Pekrun, 2006). Joy and anger are emotions linked to present situations (Pekrun, 2006). Joy is elicited by high control and a positive value (Pekrun, 2006), whereas anger is elicited by low control and a negative value (Pekrun, 2024).

The value-appraisal, originally defined as the intrinsic and extrinsic value of actions and outcomes (Pekrun, 2006), has recently been further differentiated by distinguishing between activity value and outcome value, each of which encompasses positive and negative, as well as intrinsic and extrinsic aspects of value (Pekrun, 2024). To consider this increasing differentiation of value, as an initial investigative approach in this study, we focused on attainment value, which was operationalized as personal importance (Eccles, 2005, 2009). This value facet may be particularly relevant for teachers in their daily work, as it underscores the connection between a task's relevance and aspects of self and identity (Eccles, 2005; Gaspard et al., 2015), and is closely linked to achievement goals (Conley, 2012).

1.2. Teachers' achievement goals in work-related situations

1.2.1. Definition and distinctions

Achievement goals are described as "purpose for engaging in competence-relevant behavior" (Elliot & Hulleman, 2017, p. 44). As schools are achievement contexts, not only for students, but also for teachers (Butler, 2007), teachers aim to experience competence in their day-to-day work life and may differ in how they strive for it (Dickhauser et al., 2021). The most comprehensive goal model to date is proposed by Daumiller et al. (2019), which features ten distinct goals, comprising four mastery goals (task-approach, task-avoidance, learning-approach, learning-avoidance) and four performance goals (appearance-approach, appearance-avoidance, normative-approach, normative-avoidance). Two further goal classes, work-avoidance and relational (-approach) goals, are included in the model. Mastery goals are characterized by perceiving performance situations as opportunities to increase one's

competencies and acquire new skills (Ames & Archer, 1988) and can be categorized into task goals, which focus on task-based standards, and learning goals, which focus on competence development (Elliot et al., 2011). Performance goals strive for demonstrating one's own performance abilities (appearance goals) and outperforming others (normative goals) (Ames & Archer, 1988; Elliot, 1999; Elliot, 2005; Hulleman et al., 2010; Lee & Bong, 2016; Nicholls, 1984; Urdan & Mestas, 2006). Each of these four goals can be differentiated by an approach and avoidance component (Elliot & McGregor, 2001). Approach goals focus on achieving positive outcomes, while avoidance goals aim to avoid negative outcomes (Elliot, 1999). Work-avoidance goals involve striving to get through the day with little effort (Nicholls, 1984). Relational goals involve striving to create close and caring relationships with others (Butler, 2012; Ryan & Shim, 2006; Urdan & Maehr, 1995; Wentzel, 1994).

Despite recent theoretical differentiations, teachers' achievement goals have so far typically been assessed in terms of four distinct goals: mastery, ability-approach (i.e., equals performance-approach), ability-avoidance (i.e., equals performance-avoidance), and work-avoidance goals (see Goal Orientation Scale; Butler, 2007). Studies showed that mastery goals were most frequently adopted, whereas work-avoidance goals were less frequently pursued by teachers (Butler, 2007; Retelsdorf et al., 2010).

1.2.2. Inter- and intraindividual variability of teachers' achievement goals

To understand why different goals are pursued, it should be considered that goals, like emotions, differ between and within individuals. Achievement goals contain stable and variable aspects (e.g., Bong, 2001, 2004; Bürger & Schmitt, 2017; Daumiller et al., 2023; Fryer & Elliot, 2007; Jagacinski et al., 2010; Muis & Edwards, 2009). Findings for teachers showed that their achievement goals vary to almost equal proportions at the within- and the between-person level (47–64 % for between-variance; Praetorius et al., 2014). The findings of within-person variability highlight important methodological implications, underscoring the need for research designs that capture variability at the individual level, rather than relying solely on between-person comparisons. This could be implemented with intensive longitudinal designs, for example, diary studies.

To the best of our knowledge, we are not aware of any studies that have examined the variance of teachers' achievement goals focusing on specific situations. However, studies with students showed that their goals can vary between different subjects (Goetz et al., 2016) and within different activities in the same lesson (Yu et al., 2025). Therefore, it would be important to consider teachers' achievement goals in specific situations.

1.3. Linking teachers' joy and anger with achievement goals through control- and value-appraisals

1.3.1. Theoretical assumptions

Emotions and achievement goals are strongly intertwined (e.g., Bross et al., 2024), as achievement goals are assumed to determine achievement-related thoughts and actions, and consequently shape emotions (Pekrun et al., 2006). This presumably takes place via control- and value-appraisals, as goals facilitate or dampen different appraisals, which in turn contribute to experiencing different kinds of emotions (Pekrun et al., 2006).

The model proposed by Pekrun et al. (2006) states assumptions regarding emotion-goal-associations based on the mastery versus performance focus and the approach versus avoidance components of goals. In short, mastery goals are linked to activity-related emotions, performance goals to outcome-related emotions, approach goals are associated with positive emotions, and avoidance goals with negative emotions (Pekrun et al., 2006). In detail, the following mechanisms via control- and value-appraisals are postulated (Pekrun et al., 2006): Mastery (-approach) goals are assumed to focus on the activity itself, experienced control, and a positive value of the activity. They should therefore be positively associated with the activity emotion joy, and negatively associated with the activity emotions boredom and anger. Performance-approach goals presumably focus on outcomes, high controllability, and a positive outcome value, and are assumed to be linked to positive outcome emotions such as hope and pride. Performance-avoidance goals are assumed to focus on outcomes, are characterized by a lack of controllability and a negative outcome value, and should be associated with negative outcome emotions such as anxiety, hopelessness, and shame.

The model (Pekrun et al., 2006) does not address further goals, such as work-avoidance and relational-approach goals. However, based on the assumptions for the aforementioned goals (Pekrun et al., 2006), the following associations can be theoretically assumed: It could be postulated that work-avoidance goals are, due to their avoidance component, linked to lower levels of control and value, and consequently, to experiencing less joy and more anger. In contrast, relational-approach goals, with their approach focus, might be associated with higher levels of control and a positive value, potentially leading to higher levels of joy and less anger.

1.3.2. Empirical findings

A few studies have investigated the theoretically proposed associations for teachers' joy and anger and their achievement goals, focusing on direct associations without considering control- and value-appraisals. For joy, positive associations were found with mastery-approach goals (Hu et al., 2024; Janke et al., 2019; Luo et al., 2020; Simonton et al., 2024; Wang et al., 2017) and relational goals (Simonton et al., 2024; Wang et al., 2017). Joy was negatively linked to performance-avoidance goals (Hu et al., 2024; Janke et al., 2019; Luo et al., 2020) and work-avoidance goals (Janke et al., 2019; Simonton et al., 2024; Wang et al., 2017). Both positive (Simonton et al., 2024) and negative (Janke et al., 2019) associations were found for joy and performance-approach goals.

Results for anger revealed positive associations with performance-approach goals (Hu et al., 2024; Wang et al., 2017), performance-avoidance goals (Hu et al., 2024; Luo et al., 2020; Simonton et al., 2024; Wang et al., 2017), and work-avoidance goals (Simonton et al., 2024; Wang et al., 2017). Anger was negatively associated with mastery-approach goals (Hu et al., 2024; Luo et al., 2020; Simonton et al., 2024) and relational goals (Simonton et al., 2024). Thus, in addition to theoretical assumptions linking mastery goals with activity emotions like joy and anger, and performance goals with outcome emotions (Pekrun et al., 2006), the former studies (Hu et al., 2024; Janke et al., 2019; Luo et al., 2020; Simonton et al., 2024; Wang et al., 2017) also found associations between performance goals and the activity emotions joy and anger. It is important to note that the studies (Hu et al., 2024; Janke et al., 2019; Luo et al., 2020; Simonton et al., 2024; Wang et al., 2017) focused on emotion-goal covariance between persons, not within persons.

The theoretical assumptions about the underlying mechanisms of control- and value-appraisals (Pekrun et al., 2006) have not yet been investigated in teachers but have already been investigated in students for joy (Hall et al., 2016; Li & Li, 2024). Hall et al. (2016) found no significant effects for control- and value-appraisals as mediators of the associations between goals and joy. Li and Li (2024) found that control- and value-appraisals mediated the associations between all assessed goals, namely mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance goals and joy. Approach goals were associated with higher levels of control and higher value, which led to greater joy, whereas avoidance goals were associated with lower levels of control and value, which led to less joy. The conflicting findings of the two studies (Hall et al., 2016; Li & Li, 2024) may be attributable to methodological differences between the studies (e.g., sample size, measurement of constructs). For example, value was either operationalized as intrinsic and extrinsic value (Li & Li, 2024) or a

summative value score was built, consisting of intrinsic, attainment and utility value (Hall et al., 2016). The theoretically assumed associations involving control- and value-appraisals (Pekrun et al., 2006) do not yet appear to be clearly supported by empirical evidence. Both studies (Hall et al., 2016; Li & Li, 2024) investigated the associations at the between-person level, which does not allow any conclusions to be drawn about the associations at the within-person level.

1.3.3. Situational differences

To confirm theoretical assumptions, the associations between emotions, goals and appraisals should be not only investigated at the between-, but also at the within-person level. Investigating differences at the within-person level is interesting, but contains little explanation, because it remains unclear which situational factors contribute to the differences. Therefore, it would be worthwhile to consider the differences in situations. In the present study, a situation is conceptualized as a time-limited moment, such as a specific classroom event, the work on a specific task (e.g., an administrative task), or a social interaction (e.g., interaction with colleagues).

A first step in this direction is to categorize different situations and distinguish between various *classes of situations*, like teaching, interaction with colleagues or administrative tasks. If differences in associations were to emerge here, insights would have been gained into how these situational fluctuations arise. When considering different classes of situations, however, it is important to bear in mind that not all situations are likely to be equally relevant to teachers' outcomes like well-being. Rather, it can be assumed that emotionally intense situations have a particularly strong influence on the overall experience and thus, for example, on well-being. It could therefore be worthwhile to focus specifically on situations that are associated with particularly strong emotions. An additional methodological advantage is that the emotions can then be better remembered in the self-report at the end of the day and reported more accurately. However, emotional intensity is not unipolar, but bipolar: a situation can be experienced as strongly positive or strongly negative (Schmidt et al., 2017). We refer to this as the *valence of the situation*. As the associations between emotions and their antecedents may also vary in situations with different valences, situations with opposite valences should not be analyzed together. Therefore, in the following, we take the *valence of the situation* into account and analyze the assumed associations either separately or under control of the valence of the situation. Overall, teachers experience more positive than negative situations, but the distribution of positive and negative situations varies across different *classes of situations* (Schmidt et al., 2017).

Previous research suggests that emotions and goals vary depending on the situation (e.g., Frenzel et al., 2015; Goetz et al., 2016; Yu et al., 2025), whereas their functional linkages are theoretically considered universal (Pekrun, 2006; Pekrun et al., 2006; Pekrun & Goetz, 2024). To test the theoretically proposed universal linkages, we examined situational variability based on the *valence* and *class of situation*. Research on teachers showed a variety of different classes of situations occur during their daily work life, like instruction in class, preparation, interaction with students outside class, counseling, interaction with colleagues, professional development, administration, among others (Schmidt et al., 2016, 2017). The majority of teachers' work time is spent on the situation class of "instruction in class" (Schmidt et al., 2017).

For the specific emotion-goal associations, situational differences could, for example, unfold as follows. Teachers might hold work-avoidance goals whilst conducting administrative tasks, which could lead to higher joy, but in a teaching situation, experiencing work-avoidance goals could lead to lower joy. These differences in emotion-goal associations might stem from various characteristics of the situation. As situations are inherently complex, it is conceivable that different patterns of associations could emerge. Therefore, this study additionally represents an initial attempt to assess the *class of the situation*, as this could generate findings relevant to practice.

1.4. The present study

Based on theoretical considerations and empirical findings, we propose a heuristic model linking joy, anger, appraisals, and achievement goals while considering different situational classes characterizing teachers' daily lives (Fig. 1). The model comprises two levels: the within-person level (Level 1) in the lower half, and the between-person level (Level 2) in the upper half. At both levels, goals and joy/anger are connected through direct paths. In addition, goals and joy/anger are also linked indirectly via control and attainment value. Control and attainment value are connected through a bidirectional relationship, accounting for the covariance between these two constructs. At both levels, the classes of situations are directly connected to joy/anger, as well as indirectly through their influence on the associations between goals and joy/anger. Furthermore, situational valence (positive vs. negative), as a purely within-person level variable to further characterize the situation, is directly related to joy/anger and indirectly influences the associations between goals and joy/anger.

We identified the following research gaps. First, although theoretical models highlight the importance of within-person functioning, meaning, for example, that the more a person experiences a given situation as joyful, the more likely they are to pursue a certain goal in that situation compared to a less joyful one, empirical research has tended to focus on between-person covariations of emotions and goals (e.g., Bross et al., 2024; Hu et al., 2024; Janke et al., 2019; Luo et al., 2020; Simonton et al., 2024; Wang et al., 2017). For example, some individuals may show stronger associations between, for instance, joy and a certain goal than other people. Consequently, the empirical findings provide only partial evidence for the assumed associations. Further, previous studies on teachers' joy, anger, and achievement goals have not investigated situational variance in the associations due to situational characteristics. To confirm assumptions on universal linkages (Pekrun, 2006; Pekrun et al., 2006; Pekrun & Goetz, 2024), it would be interesting to investigate whether the associations vary in different valenced situations and in different classes of situations.

Lastly, previous studies on teachers have not investigated whether and to what extent teachers' associations are mediated by control- and value-appraisals, as theoretically postulated (Pekrun et al., 2006). However, this would be of great interest as it could provide more detailed insights into the associations and bring forward theoretical assumptions.

We therefore addressed the following research questions.

(1) How are the emotions joy and anger related to achievement goals?

Theoretically, joy should be positively linked to mastery-approach goals, whereas anger should be negatively linked to mastery-approach goals (Pekrun et al., 2006). Expanding these theoretical considerations with findings from prior studies on teachers' emotion-goal associations (e.g., Hu et al., 2024; Janke et al., 2019; Luo et al., 2020; Simonton et al., 2024; Wang et al., 2017), we made the following assumptions: We expect joy to be positively associated with approach-oriented goals, such as task-approach, learning-approach, appearance-approach, normative-approach and relational goals. In contrast, joy is expected to be negatively associated with performance-avoidance goals (appearance-avoidance, normative-avoidance) and work-avoidance goals. Based on a former meta-analysis in the achievement context (Bross et al., 2024), no significant associations are expected for joy and mastery-avoidance goals, namely task-avoidance and learning-avoidance. We expect anger to be positively associated with all performance goals, irrespective of the approach- or avoidance orientation (appearance-approach, appearance-avoidance, normative-approach, normative-avoidance), with work-avoidance goals, as well as with mastery-avoidance goals, namely task-avoidance and learning-avoidance (e.g., Bross et al., 2024). Negative associations are

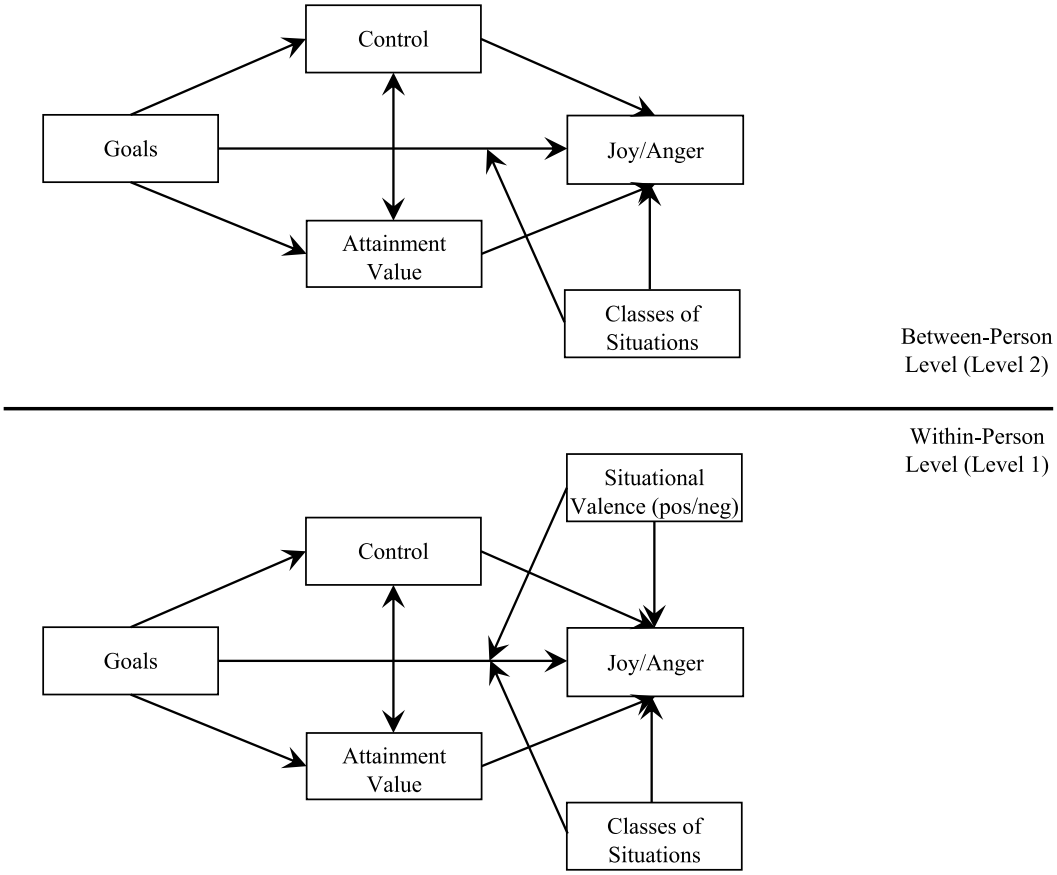


Fig. 1. Proposed theoretical model on linkages between joy, anger and achievement goals.
Notes. pos: positive, neg: negative.

expected for anger with task-approach, learning-approach and relational goals.

In order to investigate these associations, we examined within-person and between-person differences, as emotions and goals vary across individuals as well as across situations (e.g., Praetorius et al., 2014). We also distinguished between situations that were rated as positive or negative (*valence of the situation*). For within- and between-person level differences and differences in terms of the valence of the situation, we do not have specific assumptions regarding potential differences. Accordingly, we will conduct exploratory analyses.

(2) Do the associations between joy/anger and achievement goals vary across different classes of situations?

Fig. 2 illustrates the second research question. To verify whether the associations between joy/anger and achievement goals can be considered universal (Pekrun, 2006; Pekrun et al., 2006; Pekrun & Goetz, 2024), it is necessary to examine the associations in different situations. However, due to the variation in emotions and goals at mean level in different situations, it is also conceivable that the associations vary in different classes of situations. We considered four different classes of situations: teaching, interaction with colleagues, administrative tasks, and other situations. The classes of situations are directly associated with joy/anger, as teachers' intensity of joy and anger might vary in different classes of situations. Furthermore, the classes of situations are depicted as moderators between joy/anger and goals. We added the situational valence (positive vs. negative) at within-person level (Level 1) only, acting as a further variable for characterizing the situation, affecting joy/anger directly. As we do not have specific assumptions regarding situational differences, we will explore this possibility empirically through exploratory testing.

(3) Are the associations between joy/anger and achievement goals mediated by control- and value-appraisals?

Fig. 3 depicts the third research question. In line with previous theoretical assumptions made by Pekrun et al. (2006), and in extension of relevant goals, we expect stronger levels of approach goals, namely task-approach, learning-approach, appearance-approach, normative-approach, and relational-approach goals, leading to higher levels of control and attainment value, which, in turn, leads to more joy and lesser anger. Stronger levels of avoidance goals, namely task-avoidance, learning-avoidance, appearance-avoidance, normative-avoidance and work-avoidance, are assumed to result in lower levels of control and attainment value, leading to lesser joy and more anger. Situational valence was included only at the within-person level (Level 1), serving as an additional characteristic of the situation and influencing joy and anger both directly and indirectly through interactions with goals.

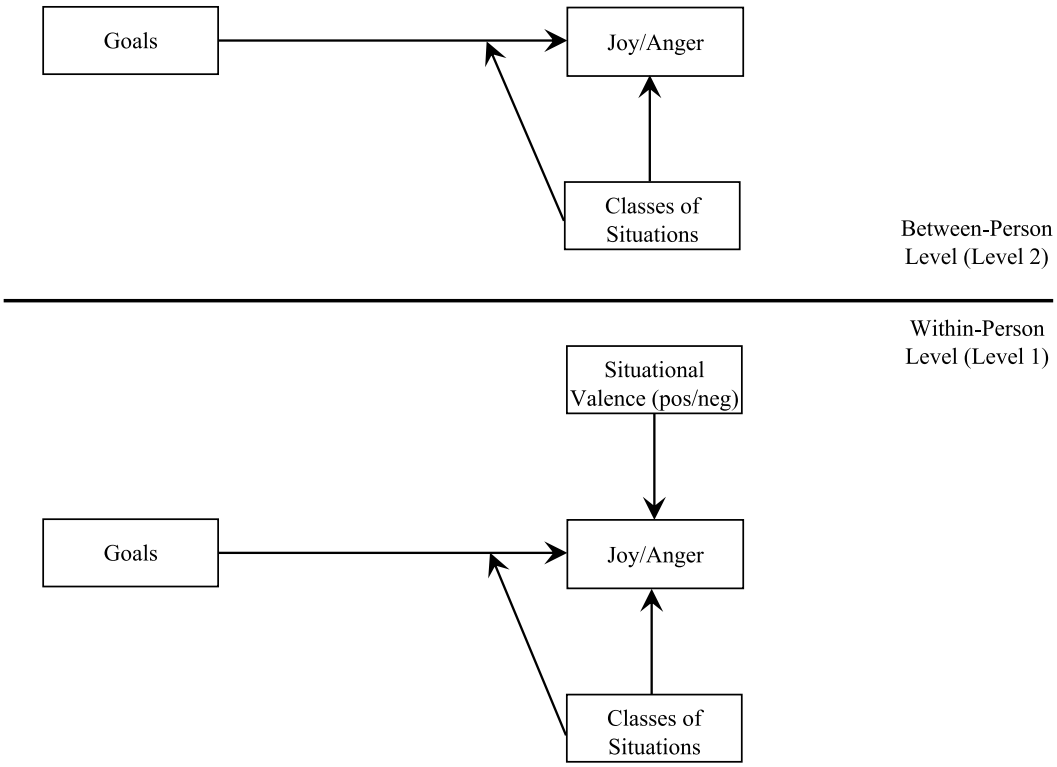


Fig. 2. Moderation model (RQ2).
Notes. pos: positive, neg: negative.

2. Method

2.1. Participants

A total of 165 teachers from German elementary schools ($N = 86$, 52.2 %) and vocational track secondary schools[1] ($N = 78$, 47.3 %; one teacher did not specify the school) participated in a two-week diary study. The participants' average age was 43.31 years ($SD = 11.12$; min. = 22, max. = 66), with 83.6 % identifying as female ($n = 138$) and the remaining identifying as male.[2] On average, the teachers had 16.02 years of teaching experience ($SD = 10.32$; min. = 1, max. = 43 years).

2.2. Procedure

The study was approved by the local school district, and the schools were contacted via phone and email. Informed consent was obtained from all participants. Daily questionnaires were sent via email, and participants received monetary compensation and individual feedback upon completing the study. Participants completed a demographic questionnaire on the first and last day. During the fourteen-day period in between, a brief questionnaire was sent each evening to be completed between 6 p.m. and midnight. Each day, teachers first indicated whether it had been a workday. Of the 2303 daily questionnaires distributed, 1604 (69.6 %) were completed, with 1159 workdays and 445 non-workdays (699 days were missing). Workday questionnaires ($n = 1159$) were considered for the present analysis, non-working days were not included in the analyses. On average, each participant completed 7.02 questionnaires related to workdays.

2.3. Measures

2.3.1. Work-related situations

Each day, teachers were asked to describe up to four emotionally intense work-related situations in an open-ended format (Klusmann et al., 2020; Schmidt et al., 2017). These situations were coded by two independent raters (Gwet's $AC1 = .84$) (Gwet, 2008) using a coding scheme adapted from Schmidt et al. (2017). The reported situations were categorized into four main categories: teaching, interaction with

[1] In Germany, the vocational track is the foundational level of the country's three-tier secondary school system. These types of schools were selected because they follow the class teacher principle, allowing emotions and goals to be observed in a variety of everyday work situations relating to a specific school class.

[2] The sample in our study was predominantly female (83.6 %), which aligns with the typical demographics of elementary and vocational-track secondary education, where the teaching workforce is largely female. While this indicates that our sample aligns broadly with the population in these school types, it also means that the findings may be less generalizable to male teachers or to school types with more balanced gender distributions.

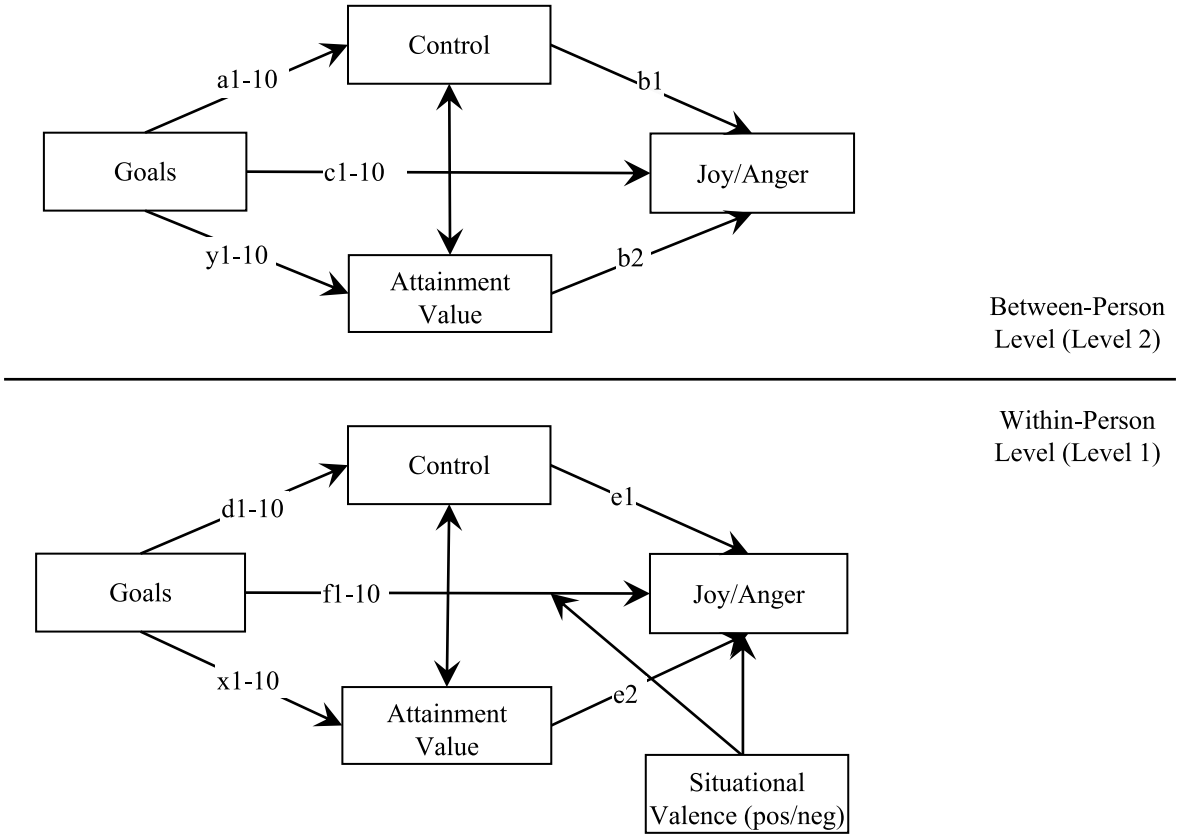


Fig. 3. 1-1-1 Mediation model with two mediators (RQ3).
Notes. pos: positive, neg: negative.

colleagues, administrative tasks, and other situations.

Following this, teachers were asked to select one emotionally positive and one emotionally negative situation from those they had reported, based on the instruction: "Please choose the situation that you remember as particularly positive/negative." These selections were used to determine the valence of the situations, which were then dummy coded (0 = negative, 1 = positive), resulting in $n = 1099$ positive (51.2 %) and $n = 1049$ negative situations (48.2 %) (see Supplementary 1).

The situations were coded as follows: $n = 1019$ were classified as teaching-related (47.4 %), $n = 298$ as interactions with colleagues (13.9 %), and $n = 349$ as administrative tasks (16.3 %). All other situations that did not fit into these three categories were coded as "other" ($n = 482$; 22.4 %). These included situations such as parent counseling, lesson preparation, and indefinable situations. Data were missing for $n = 66$ situations. For both selected situations, joy, anger, achievement goals, and control- and value-appraisals were subsequently recorded. As is common in intensive longitudinal studies, we used single items for economic reasons that have proven to be sufficiently valid and reliable (Gogol et al., 2014; Matthews et al., 2022; Song et al., 2023).

2.3.2. Joy and anger

The single items for joy and anger were adapted from Goetz et al. (2013) and Rottweiler et al. (2018) with the item "With regard to this positive/negative situation, I felt … "[joy, anger]" on a five-point Likert scale ranging from one (not true at all) to five (exactly).

2.3.3. Achievement goals

Task-approach, task-avoidance, learning-approach, learning-avoidance, appearance-approach, appearance-avoidance, normative-approach, normative-avoidance, work-avoidance and relational goals were assessed with an adapted scale by Daumiller et al. (2019) in regards to the positive/negative situation. Participants responded on an eight-point Likert-scale ranging from one (not true at all) to eight (exactly) (see Supplementary 2 for item formulation).

2.3.4. Control- and value-appraisals

Control was assessed with the item "I was in control of the situation" on a five-point Likert-scale ranging from not true at all to exactly, adapted from Goetz et al. (2010). Attainment value was assessed with the item "For me, the situation was …" [not important at all to very important] on a four-point Likert scale adapted from Goetz et al. (2010) and Klusmann et al. (2020).

2.4. Analyses

Statistical analyses were conducted with R (R Core Team, 2023). The hierarchical data structure was considered, as daily situational measurements ($N = 2148$) were nested in persons ($N = 165$). For research question one, we conducted bivariate multilevel correlations across the situational (Level 1) and person-level (Level 2) for the positive and negative situations with the misty package (Yanagida, 2024). Furthermore, manifest path models with MLR-estimator for non-normally distributed data were performed. Missing data were addressed using multiple imputation with predictive mean matching using the miceadds package (Robitzsch & Grund, 2024), while accounting for the multilevel structure of the data. A total of 20 imputations with 20 iterations were conducted. The imputed datasets were analyzed using the mitml (Grund et al., 2023) and lavaan package (Rosseel, 2012; Rosseel et al., 2025) for research question two, and lavaan.mi package (Jorgensen, 2025) for research question three. We calculated separate models for joy and anger. To account for multiple testing, we used the Benjamini and Hochberg (1995) procedure.

For approaching research question two, the coded classes of situations were dummy-coded. The specific valence of the situation (positive

or negative) was entered as a covariate at Level 1 (see Fig. 2). For research question three, we ran 1-1-1-mediation analysis, as all variables were measured at Level 1 (see Fig. 3). We ran separate models for joy and anger. Joy and anger were predicted from control- and value-appraisals and all achievement goals. Again, the specific valence of the situation (positive or negative) was entered as a covariate and as an interaction variable with all achievement goals at Level 1. For mediation models (see Fig. 3), we calculated the direct effects for goals on joy/anger, goals on control, goals on value, control on joy/anger, and value on joy/anger. We calculated the total indirect effects by considering mediation paths and total effects for the whole mediation model by considering mediation and direct paths. We report unstandardized coefficients for all analyses.

3. Results

3.1. Associations between joy, anger and achievement goals

In the following, please note that, although the results may not appear intuitive at first glance due to the focus on positive and negative work situations, we naturally observe differences in the intensity of the two emotions, joy and anger. This means that anger is more strongly expressed in negative work situations than in positive ones but still shows variance within negative work situations that leads to meaningful correlations. The same applies in reverse for joy in positive work situations.

Descriptive statistics of teachers' joy, anger, achievement goals, and their bivariate correlations are presented in Table 1 (positive situations) and Table 2 (negative situations). The correlations differed at the within- and between-person level and between positive and negative work situations. In positive work situations (Table 1), joy was associated with work-avoidance (r = -.08, $p < .05$) and relational goals ($r = .21$, $p < .05$) at the within-person level, as well as with task-approach ($r = .31$, $p < .05$), learning-approach ($r = .29$, $p < .05$), learning-avoidance ($r = .26$, $p < .05$) and relational goals ($r = .27$, $p < .05$) at the between-person level. Teachers' anger in positive work situations (Table 2) was associated with appearance-avoidance ($r = .27$, $p < .05$), normative-approach ($r = .29$, $p < .05$), normative-avoidance ($r = .26$, $p < .05$) and work-avoidance goals ($r = .45$, $p < .05$) at the between-person level.

In negative work situations (Table 2), teachers' joy was associated with learning-approach ($r = .13$, $p < .05$), appearance-approach ($r = .11$, $p < .05$) and normative-approach ($r = .14$, $p < .05$) goals at the within-person level. At the between-person level in negative work situations, joy was positively associated with learning-approach ($r = .30$, $p < .05$), learning-avoidance ($r = .39$, $p < .05$), appearance-approach ($r = .30$, $p < .05$), normative-approach ($r = .28$, $p < .05$), normative-avoidance ($r = .26$, $p < .05$) and work-avoidance goals ($r = .32$, $p < .05$). Anger in negative work situations (Table 2) was not significantly associated with any goals.

Overall, we found more significant findings at the between-person level than at the within-person level for the associations between teachers' joy and goals in positive and negative work situations and for the associations between teachers' anger and goals in positive work situations. For teachers' joy and goals, more correlations were significant in the negative work situation than in the positive work situation. Some associations showed either a significant effect at the within- or at the between-person level. For example, teachers' joy and task-approach goals were positively associated at the between-person level in the positive work situation but had no significant association at the within-person level in the positive work situation. Only a few associations were significant at both the within- and the between-person level, these include joy and learning-approach goals, joy and appearance-approach goals and joy and normative-approach goals in negative work situations. For these associations, correlations were higher at the between- than at the within-person level.

Table 1
Correlations between joy, anger and achievement goals in positive situation.

		Descriptives					Correlations													
		N	*M*	*SD*	*ICC(1)*	*ICC(2)*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Joy	1122	4.22	1.07	.15	.55		**-.47**	**.31**	.24	**.29**	**.26**	.05	.06	.05	.13	-.19	**.27**	.26	**.48**
2	Anger	1118	1.25	.68	.16	.57	**-.33**		-.05	.00	.14	.12	.20	**.27**	**.29**	**.26**	**.45**	-.04	**-.36**	**-.31**
3	Task-approach	1121	6.20	2.40	.27	.72	.02	.02		**.76**	**.63**	**.37**	**.36**	**.28**	**.31**	**.34**	.03	**.52**	**.32**	**.37**
4	Task-avoidance	1111	5.68	2.59	.33	.77	-.01	.04	**.59**		**.67**	**.60**	**.39**	**.42**	**.35**	**.41**	.12	**.62**	.13	**.40**
5	Learning-approach	1115	4.54	2.73	.36	.79	.05	-.01	**.52**	**.47**		**.76**	**.56**	**.48**	**.55**	**.54**	.10	**.62**	.21	**.35**
6	Learning-avoidance	1096	3.19	2.56	.43	.84	.02	-.04	**.27**	**.33**	**.47**		**.53**	**.68**	**.57**	**.64**	**.29**	**.60**	.10	**.24**
7	Appearance-approach	1114	3.19	2.50	.48	.86	.04	-.01	**.27**	**.38**	**.30**	**.24**		**.90**	**.90**	**.87**	**.37**	**.34**	-.04	.03
8	Apperance-avoidance	1107	2.94	2.49	.45	.85	.01	.01	**.25**	**.32**	**.25**	**.30**	**.50**		**.84**	**.93**	**.46**	**.32**	-.12	-.03
9	Normative-approach	1105	2.25	2.08	.60	.91	.02	.00	**.16**	**.24**	**.23**	**.23**	**.48**	**.36**		**.94**	**.42**	**.34**	-.10	-.02
10	Normative-avoidance	1106	2.46	2.26	.51	.86	-.04	.02	**.15**	**.27**	**.22**	**.29**	**.37**	**.57**	**.50**		**.48**	**.32**	-.06	.04
11	Work-avoidance	1116	2.22	1.94	.38	.81	**-.08**	.04	**.11**	**.09**	.04	.01	-.04	-.05	.01	**.07**		.04	-.20	-.21
12	Relational	1116	5.76	2.62	.27	.72	**.21**	-.06	**.06**	**.10**	.04	.04	**.09**	.06	.04	.00	**-.07**		.22	**.26**
13	Control	1096	4.46	.86	.18	.60	**.12**	**-.21**	**.07**	.05	-.01	.00	.00	-.03	.04	-.03	.00	-.01		**.42**
14	Attainment Value	1099	3.49	.65	.25	.69	**.17**	-.06	**.09**	.01	**.07**	.02	.05	.01	.00	-.02	**-.07**	**.11**	.04	

Notes. Pearson's correlations. Theoretical range for emotions: 1–5, for achievement goals: 1–8, for control: 1–5, and for attainment value: 1–4. *ICC(1)*: Proportion of between person variance to the total variance, *ICC(2)*: Reliability of aggregated variable. Statistically significant correlations ($p < .05$) are displayed in boldface. Correlation coefficients at Level 1 (within-person level) are displayed in the lower triangle, correlation coefficients at Level 2 (between-person level) are displayed in the upper triangle.

Table 2
Correlations between joy, anger and achievement goals in negative situation.

		Descriptives					Correlations													
		N	*M*	*SD*	*ICC(1)*	*ICC(2)*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Joy	1086	1.48	.92	.24	.68		**−.49**	.03	.12	**.30**	**.39**	**.30**	.21	**.28**	**.26**	**.32**	.23	.23	−.19
2	Anger	1084	3.53	1.42	.14	.53	**−.32**		.16	.08	.10	.03	.13	.18	.08	.08	.08	.11	−.16	**.29**
3	Task-approach	1078	5.86	2.46	.24	.68	.02	.03		**.81**	**.60**	**.45**	**.31**	**.37**	.17	**.28**	.09	**.44**	.10	**.39**
4	Task-avoidance	1073	5.40	2.50	.29	.73	−.03	.03	**.54**		**.66**	**.55**	**.39**	**.52**	**.28**	**.46**	.13	**.56**	.10	**.36**
5	Learning-approach	1067	3.51	2.60	.34	.77	**.13**	−.05	**.36**	**.31**		**.83**	**.71**	**.63**	**.53**	**.64**	**.24**	**.65**	.06	**.34**
6	Learning-avoidance	1061	2.86	2.38	.41	.82	.02	−.03	**.18**	**.29**	**.48**		**.69**	**.64**	**.61**	**.68**	**.32**	**.60**	−.08	.23
7	Appearance-approach	1069	2.71	2.26	.38	.80	**.11**	−.01	**.28**	**.27**	**.29**	**.23**		**.93**	**.86**	**.85**	**.37**	**.50**	−.01	.19
8	Apperance-avoidance	1069	3.03	2.46	.38	.80	.03	−.04	**.22**	**.27**	**.20**	**.23**	**.54**		**.77**	**.88**	**.39**	**.42**	−.12	.16
9	Normative-approach	1067	1.93	1.73	.47	.86	**.14**	−.02	**.14**	**.15**	**.23**	**.22**	**.49**	**.31**		**.91**	**.47**	**.33**	−.08	.10
10	Normative-avoidance	1066	2.35	2.14	.45	.84	.05	−.03	**.15**	**.22**	**.17**	**.23**	**.42**	**.51**	**.50**		**.41**	**.40**	−.10	.19
11	Work-avoidance	1075	2.76	2.30	.29	.73	.06	−.03	.01	.06	.01	.01	**.07**	.04	.05	.05		.04	.01	−.20
12	Relational	1073	4.38	2.72	.28	.72	.00	.00	**.21**	**.22**	**.17**	**.15**	**.13**	**.11**	**.10**	**.10**	**−.08**		.17	.19
13	Control	1048	3.09	1.39	.22	.65	**.28**	**−.37**	**.09**	−.02	.03	−.03	.02	−.02	.04	.01	**.12**	.02		−.12
14	Attainment Value	1047	3.18	.86	.15	.55	−.01	.05	**.13**	**.09**	**.14**	**.10**	**.11**	.04	.03	.04	**−.18**	**.07**	**−.15**	

Notes. Pearson's correlations. Theoretical range for emotions: 1–5, for achievement goals: 1–8, for control: 1–5, and for attainment value: 1–4. *ICC(1)*: Proportion of between person variance to the total variance, *ICC(2)*: Reliability of aggregated variable. Statistically significant correlations ($p < .05$) are displayed in boldface. Correlation coefficients at Level 1 (within-person level) are displayed in the lower triangle, correlation coefficients at Level 2 (between-person level) are displayed in the upper triangle.

3.2. Daily work situations moderating the associations between joy, anger and achievement goals

The results of the analyses with all ten goals in one model and with the moderators teaching, interaction with colleagues, administrative tasks, and other situations are shown in Table 3 (joy) and Table 4 (anger). We additionally calculated the analyses for each goal individually (see Supplementary 3 and 4). More significant moderation effects occurred in the individual models (9 in total) than in the overall models (5 in total); however, the direction of the significant effects in the individual models corresponded to those in the overall models.

With correcting for multiple testing (Benjamini & Hochberg, 1995), task-avoidance goals were negatively linked to joy ($b = -.108$, $p < .05$), and the valence of the situation was positively linked to joy ($b = 2.633$, $p < .05$) at the within-person level. The valence of the situation was negatively linked to anger ($b = -2.231$, $p < .05$) at the within-person level. We did not find any significant effects at the between-person level or moderator effects after the correction. The associations between joy/anger and goals therefore do not seem to change substantially in different classes of situations.

3.3. Control- and value-appraisals mediating the associations between joy, anger and achievement goals

The mediation model for joy is displayed in Table 5, significant direct paths at the within-person level are displayed in Fig. 4. There were no significant results at the between-person level; the following results thus relate to the within-person level. We corrected for multiple testing (Benjamini & Hochberg, 1995). Learning-approach goals and relational goals were linked positively to control (learning-approach $b = .059$, $p < .05$, relational goals $b = .079$, $p < .05$). Appearance-avoidance goals were linked negatively to control ($b = -.071$, $p < .05$). All approach goals except normative-approach goals were linked positively to value (task-approach $b = .028$, $p < .05$, learning-approach $b = .029$, $p < .05$, appearance-approach $b = .040$, $p < .05$, relational goals $b = .025$, $p < .05$). Work-avoidance goals were linked negatively to value ($b = -.064$, $p < .05$). Control was positively associated with joy ($b = .186$, $p < .05$). The indirect path via control (Goals → Control → Joy) was significant ($b = .030$, $p < .05$), which indicates mediation. Of the ten goals included, none of the direct paths between goals and joy remained significant after including control as a mediator, indicating full mediation. The total effect of the mediation model was significant ($b = .099$, $p < .05$). The R^2 values for joy were quite high (67.4 %), whereas for control and value, they were quite small (6.5 % and 7.9 %) at the within-person level.

The mediation model for anger is displayed in Table 6, significant direct paths at the within-person level are displayed in Fig. 5. Again, no significant findings occurred at the between-person level. In addition to the findings for goals and the mediators, control and value mentioned above, control at within-person level was negatively associated with anger ($b = -.327$, $p < .05$). The indirect path via control (Goals → Control → Anger) was significant with a negative effect ($b = -.053$, $p < .05$), which indicates mediation. Among all ten included goals, none of the direct paths between goals and anger remained significant after adding control as mediator, indicating full mediation. The total effect of the mediation model was not significant ($b = -.050$, $p = .257$). The R^2 values for anger were relatively high (52.3 %), while those for control (6.6 %) and value (7.9 %) were comparatively low at the within-person level.

4. Discussion

In this study, we aimed to gain insights into the associations between teachers' emotions—specifically joy and anger—and their goals. Teachers work in diverse contexts in which they experience a wide range of emotions and pursue different goals. In the classroom, these factors may have different effects than, for example, in extracurricular

Table 3
Moderation of the associations between achievement goals and joy by coded situations.

	b	*SE*	*z-value*	*p*	*adj. p*
Level 1					
Task-approach	.037	.031	1.220	.293	
Task-avoidance	−.108	.029	−3.773	<.001	*
Learning-approach	.036	.021	1.712	.095	
Learning-avoidance	.004	.024	.176	.753	
Appearance-approach	.064	.031	2.039	.050	
Appearance-avoidance	−.034	.031	−1.099	.287	
Normative-approach	.043	.034	1.257	.236	
Normative-avoidance	−.054	.031	−1.765	.106	
Work-avoidance	.007	.020	.333	.742	
Relational	.032	.019	1.657	.117	
Valence	2.633	.077	34.394	<.001	*
Teaching	−.052	.204	−1.203	.338	
Interaction with colleagues	.003	.241	−1.094	.345	
Administration	−.027	.270	−1.743	.184	
Task-approach × Teaching	.042	.035	−1.337	.263	
Task-approach × Interaction	−.014	.041	−1.269	.274	
Task-approach × Administration	−.025	.040	−.719	.479	
Task-avoidance × Teaching	−.066	.032	2.854	.007	
Task-avoidance × Interaction	−.090	.040	.836	.432	
Task-avoidance × Administration	.019	.040	2.128	.043	
Learning-approach × Teaching	.120	.024	−.077	.770	
Learning-approach × Interaction	.052	.040	−1.323	.207	
Learning-approach × Administration	−.011	.033	.089	.801	
Learning-avoidance × Teaching	−.027	.027	−1.020	.344	
Learning-avoidance × Interaction	.042	.039	1.070	.313	
Learning-avoidance × Administration	−.014	.035	−.411	.656	
Appearance-approach × Teaching	−.025	.035	−.722	.486	
Appearance-approach × Interaction	−.066	.052	−1.277	.234	
Appearance-approach × Administration	−.090	.052	−1.736	.098	
Appearance-avoidance × Teaching	.019	.037	.503	.609	
Appearance-avoidance × Interaction	.120	.052	2.326	.027	
Appearance-avoidance × Administration	.052	.046	1.122	.280	
Normative-approach × Teaching	−.011	.040	−.269	.717	
Normative-approach × Interaction	−.042	.062	−.671	.517	
Normative-approach × Administration	.049	.056	.880	.397	
Normative-avoidance × Teaching	.040	.038	1.070	.310	
Normative-avoidance × Interaction	.025	.060	.422	.639	
Normative-avoidance × Administration	.036	.050	.709	.492	
Work-avoidance × Teaching	−.015	.023	−.654	.537	
Work-avoidance × Interaction	−.007	.037	−.189	.768	
Work-avoidance × Administration	.028	.029	.955	.375	
Relational × Teaching	.029	.023	1.253	.252	
Relational × Interaction	.005	.029	.159	.726	
Relational × Administration	−.038	.028	−1.382	.196	
R-Square					
Joy	.695				
Level 2					
Task-approach	.249	1.507	.166	.858	
Task-avoidance	−.380	1.290	−.305	.763	
Learning-approach	.447	1.511	.315	.755	
Learning-avoidance	.274	1.431	.199	.846	
Appearance-approach	.085	1.446	.068	.884	
Appearance-avoidance	−.090	1.358	−.071	.917	
Normative-approach	.137	1.804	.074	.890	
Normative-avoidance	.583	1.628	.378	.711	
Work-avoidance	−.476	1.022	−.484	.634	
Relational	.084	.810	.113	.872	
Teaching	−.359	1.080	−.034	.962	
Interaction with colleagues	.068	1.096	.007	.989	
Administration	.049	11.331	.005	1.000	
Task-approach × Teaching	−.186	2.059	−.092	.935	
Task-approach × Interaction	−.202	2.425	−.072	.991	
Task-approach × Administration	−.128	2.005	−.070	.907	
Task-avoidance × Teaching	.304	1.766	.174	.851	
Task-avoidance × Interaction	.872	2.114	.429	.668	
Task-avoidance × Administration	−.107	2.438	−.040	.918	
Learning-approach × Teaching	−.639	1.795	−.366	.711	
Learning-approach × Interaction	−1.077	3.072	−.384	.712	
Learning-approach × Administration	.207	2.368	.079	.828	
Learning-avoidance × Teaching	−.022	1.878	−.014	.823	
Learning-avoidance × Interaction	−1.182	2.572	−.476	.638	
Learning-avoidance × Administration	.637	2.298	.299	.760	
Appearance-approach × Teaching	.499	2.074	.242	.796	
Appearance-approach × Interaction	.373	1.910	.204	.841	
Appearance-approach × Administration	−.794	2.627	−.338	.741	
Appearance-avoidance × Teaching	−.685	1.979	−.358	.726	
Appearance-avoidance × Interaction	.128	3.255	.045	.920	
Appearance-avoidance × Administration	−.047	2.433	.004	.832	
Normative-approach × Teaching	−.296	2.315	−.131	.871	
Normative-approach × Interaction	−.972	3.087	−.325	.734	
Normative-approach × Administration	.326	3.493	.102	.904	
Normative-avoidance × Teaching	−.135	2.422	−.051	.893	
Normative-avoidance × Interaction	−.050	3.197	−.025	.931	
Normative-avoidance × Administration	−2.026	2.183	−.976	.362	
Work-avoidance × Teaching	.197	1.258	.165	.836	
Work-avoidance × Interaction	−.338	2.032	−.168	.868	
Work-avoidance × Administration	1.095	1.763	.644	.528	
Relational × Teaching	−.025	.874	−.038	.918	
Relational × Interaction	.646	1.270	.501	.618	
Relational × Administration	−.524	1.500	−.352	.719	
R-Square					
Joy	1.000				

Notes. *b*: unstandardized estimates, *SE*: standard error, *p*: p-value; Category and valence dummy-coded; 0: negative Situation, 1: positive situation; A multiple testing correction was applied using the Benjamini and Hochberg (1995) procedure, as shown in the 'adj. p' column. Asterisks indicate significance after this correction (*$p < .05$); Joy at between-person level was fixed at 0 because of negative variances.

Table 4
Moderation of the associations between achievement goals and anger by coded situations.

	b	*SE*	*z-value*	*p*	*adj. p*
Level 1					
Task-approach	.016	.032	.491	.613	
Task-avoidance	.029	.037	.796	.440	
Learning-approach	−.030	.024	−1.206	.238	
Learning-avoidance	−.031	.025	−1.223	.246	
Appearance-approach	−.045	.033	−1.362	.189	
Appearance-avoidance	.017	.033	.499	.627	
Normative-approach	.002	.043	.039	.871	
Normative-avoidance	.037	.038	.966	.343	
Work-avoidance	−.025	.027	−.916	.368	
Relational	.023	.019	1.205	.251	
Valence	−2.231	.093	−24.061	<.001	*
Teaching	.383	.222	1.737	.118	
Interaction with colleagues	−.129	.255	−.497	.548	
Administration	.386	.282	1.379	.237	
Task-approach × Teaching	−.004	.040	−.091	.749	
Task-approach × Interaction	.032	.041	.800	.452	
Task-approach × Administration	.010	.054	.185	.729	
Task-avoidance × Teaching	−.009	.040	−.227	.772	
Task-avoidance × Interaction	.014	.044	.326	.714	
Task-avoidance × Administration	−.021	.049	−.426	.682	
Learning-approach × Teaching	.019	.028	.675	.518	
Learning-approach × Interaction	−.009	.046	−.191	.787	
Learning-approach × Administration	.042	.039	1.073	.297	
Learning-avoidance × Teaching	.033	.028	1.184	.275	
Learning-avoidance × Interaction	.006	.044	.142	.782	
Learning-avoidance × Administration	−.021	.042	−.503	.607	
Appearance-approach × Teaching	.034	.035	.970	.360	
Appearance-approach × Interaction	.025	.056	.468	.630	
Appearance-approach × Administration	.166	.065	2.564	.015	
Appearance-avoidance × Teaching	−.008	.038	−.207	.760	
Appearance-avoidance × Interaction	−.017	.051	−.332	.735	
Appearance-avoidance × Administration	−.095	.052	−1.838	.077	
Normative-approach × Teaching	−.026	.046	−.566	.582	
Normative-approach × Interaction	.070	.079	.886	.386	
Normative-approach × Administration	−.010	.071	−.136	.841	
Normative-avoidance × Teaching	−.045	.047	−.969	.339	
Normative-avoidance × Interaction	−.051	.072	−.706	.489	
Normative-avoidance × Administration	−.101	.067	−1.517	.133	
Work-avoidance × Teaching	.013	.031	.417	.685	
Work-avoidance × Interaction	.060	.036	1.683	.114	
Work-avoidance × Administration	.015	.036	.417	.672	
Relational × Teaching	−.058	.026	−2.293	.038	
Relational × Interaction	−.038	.033	−1.182	.271	
Relational × Administration	−.035	.030	−1.173	.277	
R-Square					
Anger	.548				
Level 2					
Task-approach	.482	.832	.582	.565	
Task-avoidance	−.413	.695	−.598	.553	
Learning-approach	.042	.899	.052	.847	
Learning-avoidance	.322	.747	.440	.667	
Appearance-approach	.439	.724	.597	.560	
Appearance-avoidance	.129	.678	.197	.838	
Normative-approach	−.490	1.361	−.359	.721	
Normative-avoidance	−.230	1.242	−.193	.833	
Work-avoidance	−.067	.717	−.094	.903	
Relational	−.119	.471	−.243	.776	
Teaching	−.048	5.598	−.009	.972	
Interaction with colleagues	.397	5.590	.073	.942	
Administration	−.095	6.005	−.016	.985	
Task-approach × Teaching	−1.108	1.210	−.923	.364	
Task-approach × Interaction	.822	1.092	.769	.465	
Task-approach × Administration	.249	1.101	.227	.783	
Task-avoidance × Teaching	1.039	.974	1.075	.288	
Task-avoidance × Interaction	−.279	1.119	−.261	.767	
Task-avoidance × Administration	−1.216	1.185	−1.028	.327	
Learning-approach × Teaching	−.096	1.135	−.090	.787	
Learning-approach × Interaction	−.577	1.555	−.371	.714	
Learning-approach × Administration	.446	1.304	.352	.696	
Learning-avoidance × Teaching	−.340	1.034	−.337	.722	
Learning-avoidance × Interaction	−.118	1.287	−.098	.841	
Learning-avoidance × Administration	.091	1.171	.055	.735	
Appearance-approach × Teaching	−.280	.949	−.288	.740	
Appearance-approach × Interaction	−.828	1.214	−.676	.515	
Appearance-approach × Administration	.168	1.536	.102	.851	
Appearance-avoidance × Teaching	−.572	1.043	−.547	.599	
Appearance-avoidance × Interaction	.335	1.428	.232	.798	
Appearance-avoidance × Administration	−.694	1.316	−.524	.600	
Normative-approach × Teaching	1.390	1.540	.903	.370	
Normative-approach × Interaction	−.016	2.085	−.002	.912	
Normative-approach × Administration	−1.011	2.209	−.459	.649	
Normative-avoidance × Teaching	−.039	1.359	−.027	.871	
Normative-avoidance × Interaction	1.421	2.109	.693	.496	
Normative-avoidance × Administration	.675	2.083	.329	.738	
Work-avoidance × Teaching	−.235	.834	−.284	.779	
Work-avoidance × Interaction	−.171	1.483	−.113	.862	
Work-avoidance × Administration	.646	1.212	.537	.596	
Relational × Teaching	.262	.489	.534	.604	
Relational × Interaction	−.153	.723	−.219	.764	
Relational × Administration	−.036	.914	−.046	.824	
R-Square					
Anger	1.000				

Notes. *b*: unstandardized estimates, *SE*: standard error, *p*: p-value; Category and valence dummy-coded; 0: negative Situation, 1: positive situation; A multiple testing correction was applied using the Benjamini and Hochberg (1995) procedure, as shown in the 'adj. p' column. Asterisks indicate significance after this correction (*$p < .05$); Anger at between-person level was fixed at 0 because of negative variances.

Table 5
Mediation model results with all achievement goals as predictors, control- and value-appraisals as mediators, and joy as outcome.

		b	*SE*	*z-value*	*p*	*adj. p*	
Level 1							
Task-approach → Joy	(f1)	−.019	.017	−1.146	.252		
Task-avoidance → Joy	(f2)	−.022	.016	−1.405	.160		
Learning-approach → Joy	(f3)	.037	.015	2.435	.015		
Learning-avoidance → Joy	(f4)	−.009	.016	−.528	.598		
Appearance-approach → Joy	(f5)	.038	.020	1.936	.053		
Appearance-avoidance → Joy	(f6)	−.010	.018	−.578	.563		
Normative-approach → Joy	(f7)	.053	.029	1.816	.069		
Normative-avoidance → Joy	(f8)	−.026	.021	−1.230	.219		
Work-avoidance → Joy	(f9)	.029	.015	1.975	.048		
Relational → Joy	(f10)	−.003	.012	−.251	.801		
Valence → Joy		2.199	.201	1.961	<.001		*
Task-approach × Valence → Joy		.037	.027	1.356	.175		
Task-avoidance × Valence → Joy		−.016	.027	−.600	.548		
Learning-approach × Valence → Joy		−.014	.022	−.669	.503		
Learning-avoidance × Valence → Joy		.006	.022	.246	.806		
Appearance-approach × Valence → Joy		−.037	.028	−1.293	.196		
Appearance-avoidance × Valence → Joy		.012	.029	.427	.669		
Normative-approach × Valence → Joy		−.044	.038	−1.162	.245		
Normative-avoidance × Valence → Joy		.016	.035	.442	.659		
Work-avoidance × Valence → Joy		−.077	.026	−2.954	.003		*
Relational × Valence → Joy		.080	.020	3.960	<.001		*
Task-approach → Control	(d1)	.042	.017	2.479	.013		
Task-avoidance → Control	(d2)	−.032	.016	−1.997	.046		
Learning-approach → Control	(d3)	.059	.016	3.670	<.001		*
Learning-avoidance → Control	(d4)	−.024	.015	−1.541	.123		
Appearance-approach → Control	(d5)	.042	.020	2.101	.036		
Appearance-avoidance → Control	(d6)	−.071	.021	−3.368	.001		*
Normative-approach → Control	(d7)	.058	.025	2.333	.020		
Normative-avoidance → Control	(d8)	.007	.024	.277	.782		
Work-avoidance → Control	(d9)	.004	.017	.206	.837		
Relational → Control	(d10)	.079	.016	4.896	<.001		*
Task-approach → Value	(x1)	.028	.010	2.854	.004		*
Task-avoidance → Value	(x2)	−.011	.011	−1.061	.289		
Learning-approach → Value	(x3)	.029	.010	3.001	.003		*
Learning-avoidance → Value	(x4)	.007	.009	.738	.461		
Appearance-approach → Value	(x5)	.040	.011	3.614	<.001		*
Appearance-avoidance → Value	(x6)	−.025	.012	−2.160	.031		
Normative-approach → Value	(x7)	−.019	.016	−1.202	.229		
Normative-avoidance → Value	(x8)	.005	.011	.429	.668		
Work-avoidance → Value	(x9)	−.064	.010	−6.334	<.001		*
Relational → Value	(x10)	.025	.008	3.310	.001		*
Control → Joy	(e1)	.186	.028	6.554	<.001		*
Value → Joy	(e2)	.092	.036	2.592	.010		
Total Effect		.099	.034	2.915	.004		*
Goals → Control → Joy		.030	.008	3.568	<.001		*
Goals → Value → Joy		−.003	.005	−.692	.489		
R-Square							
Joy		.674					
Control		.065					
Value		.079					
Level 2							
Task-approach → Joy	(c1)	−.065	.184	−.351	.726		
Task-avoidance → Joy	(c2)	−.107	.334	−.319	.749		
Learning-approach → Joy	(c3)	.298	.740	.403	.687		
Learning-avoidance → Joy	(c4)	.006	.346	.018	.986		
Appearance-approach → Joy	(c5)	−.616	2.444	−.252	.801		
Appearance-avoidance → Joy	(c6)	.532	2.116	.252	.801		
Normative-approach → Joy	(c7)	.450	2.011	.224	.823		
Normative-avoidance → Joy	(c8)	−.396	1.707	−.232	.817		
Work-avoidance → Joy	(c9)	.034	.078	.441	.659		
Relational → Joy	(c10)	.048	.294	.163	.871		
Task-approach → Control	(a1)	−.097	.314	−.309	.758		
Task-avoidance → Control	(a2)	.247	.358	.690	.490		
Learning-approach → Control	(a3)	−.418	.636	−.657	.511		
Learning-avoidance → Control	(a4)	.121	.319	.381	.703		
Appearance-approach → Control	(a5)	1.627	1.991	.817	.414		
Appearance-avoidance → Control	(a6)	−1.372	1.720	−.798	.425		
Normative-approach → Control	(a7)	−1.354	1.627	−.832	.405		
Normative-avoidance → Control	(a8)	.997	1.419	.703	.482		
Work-avoidance → Control	(a9)	.040	.099	.402	.688		
Relational → Control	(a10)	−.093	.269	−.346	.729		
Task-approach → Value	(y1)	.032	.159	.199	.842		
Task-avoidance → Value	(y2)	.238	.258	.923	.356		
Learning-approach → Value	(y3)	−.207	.493	−.420	.675		
Learning-avoidance → Value	(y4)	.129	.252	.512	.608		
Appearance-approach → Value	(y5)	.880	1.477	.596	.551		
Appearance-avoidance → Value	(y6)	−.863	1.255	−.688	.492		
Normative-approach → Value	(y7)	−.745	1.157	−.644	.520		
Normative-avoidance → Value	(y8)	.707	.981	.721	.471		

(*continued on next page*)

Table 5 (*continued*)

		b	*SE*	*z-value*	*p*	*adj. p*
Work-avoidance → Value	(y9)	−.038	.059	−.646	.518	
Relational → Value	(y10)	−.168	.195	−.860	.390	
Control → Joy	(b1)	.179	.222	.808	.419	
Value → Joy	(b2)	.223	.374	.596	.551	
Total Effect		−.242	.717	−.337	.736	
Goals → Control → Joy		−.056	.101	−.552	.581	
Goals → Value → Joy		2.257	3.784	.596	.551	
R-Square						
Joy		.325				
Control		.206				
Value		.330				

Notes. b: unstandardized estimates, *SE*: standard error, *p*: p-value, valence was dummy-coded: 0: negative Situation, 1: positive situation; multiple testing correction was applied using the Benjamini and Hochberg (1995) procedure, as shown in the 'adj. p' column; asterisks indicate significance after this correction (*$p < .05$).

environments. The teaching profession encompasses unique work situations; therefore, a situational approach is appropriate, as these situations are specific to the teaching profession and differ from those experienced in other populations and occupations. Accordingly, we took a closer look at teachers' emotional experiences and goals within these specific situations. We extended previous research, which primarily focused on interindividual differences, by also considering intra-individual variations, situational differences, and control- and value-appraisals. As the study was conducted in Germany, one noteworthy aspect of the German educational context is that Germany does not have a strong accountability system—teachers are not formally held responsible for their students' academic achievement. This may indeed have implications for German teachers' goals—e.g., they might have less pronounced performance-approach goals for their teaching, as the achievement of their classes is never officially compared with that of other classes, nor does it carry any consequences for the teacher.

4.1. Joy, anger and achievement goal associations

As assumed, differences in the associations between teachers' joy, anger and goals at the within- and between-person level and in positive and negative situations occurred. In extension of existing studies on teachers (e.g., Hu et al., 2024; Janke et al., 2019; Luo et al., 2020; Simonton et al., 2024; Wang et al., 2017), our findings showed that the associations at the within-person level differ from the associations at the between-person level. Most emotion-goal associations were significant at one level, but not at both levels. In the few cases where associations were significant at both levels, the correlations were stronger at the between-person level.

The results for the associations between teachers' joy and goals are partly consistent with previous research findings (e.g., Hu et al., 2024; Janke et al., 2019; Luo et al., 2020; Simonton et al., 2024; Wang et al., 2017). The findings for associations with mastery-avoidance goals, which were not investigated in previous studies on teachers, revealed interesting patterns: teachers' learning-avoidance goals were positively associated with their joy at the between-person level in both positive and negative work situations. Despite their avoidance component, this facet of mastery goals was thus positively associated with joy. This underscores the importance of taking different goal facets and their associations with emotions into account when investigating teachers (Bross et al., 2024; Daumiller et al., 2019).

Moreover, and contrary to theoretical assumptions, teachers' joy was positively associated with normative-avoidance and work-avoidance goals at the between-person level in negative work situations. This contrasts previous findings that found negative associations between teachers' joy and their avoidance goals (e.g., Hu et al., 2024; Janke et al., 2019; Luo et al., 2020; Simonton et al., 2024; Wang et al., 2017). The positive correlations could have occurred because the valence of the situation was considered in the analyses. Theoretical frameworks for teachers' emotion-goal associations could therefore be expanded to account for the valence of the situation. In negative work situations, however, it is noteworthy that teachers' joy also correlated positively with many approach-goals. Therefore, pursuing more goals in negative work situations might be beneficial for teachers, as it appears to be linked to increased joy.

The findings for anger and goals are predominantly consistent with previous research findings on teachers (e.g., Hu et al., 2024; Luo et al., 2020; Simonton et al., 2024; Wang et al., 2017). In positive work situations, we found positive associations between anger and all performance goals except appearance-approach goals, as well as with work-avoidance goals at the between-person level. This highlights that teachers' anger is associated with performance and work-avoidance goals, which are considered more maladaptive and thus should be prevented.

In positive work situations, teachers' work-avoidance goals correlated as expected negatively with joy (within-person level) and positively with anger (between-person level). This suggests that teachers should be encouraged not to adopt work-avoidance goals, especially in positive work situations, as they are associated with negative emotional experiences.

As expected, teachers' relational goals were positively associated with joy at both levels in positive work situations. This suggests that promoting relational goals, for example, by encouraging teachers to actively establish positive relationships with their students and colleagues, could be positively linked to their emotional experiences. Further, teachers should be encouraged to experience joy, for example, by using appropriate regulation strategies.

Our findings highlight the importance of considering both teachers' within- and between-level and the valence of the situation, as emotion-goal associations differed at both levels and in positive and negative work situations. This could hint to non-linear correlations, as the associations appear to change depending on the valence of the situation (positive vs. negative), suggesting that the associations may not be consistent or linear across situations Since both levels yielded relevant associations in our data, this emphasizes that examining only one level risks overlooking important findings on emotion-goal associations that might expand our theoretical understanding of teachers' emotions and goals.

4.2. Role of daily work situations for the associations

Our findings indicate that the associations between emotions and goals do not differ across different classes of situations, as none of the interaction effects were significant after correcting for multiple testing (Benjamini & Hochberg, 1995). This finding is in line with theoretical assumptions proposing universal associations between emotions and goals (Pekrun, 2006; Pekrun et al., 2006; Pekrun & Goetz, 2024), despite variations in emotions and goals at mean-level are found to exist (e.g., Becker et al., 2015; Keller et al., 2014; Praetorius et al., 2014).

This study has made a first attempt to provide a more accurate picture of the emotion-goal associations by considering different *classes of situations*. Future research could extend these *classes of situations* and address the question of how exactly situations are evaluated and based on which aspects an evaluation is made.

4.3. Control- and value-appraisal mechanisms

Extending previous studies that either found no mediation effects for control- and value-appraisals (Hall et al., 2016) or identified mediation effects for both control- and value-appraisals (Li & Li, 2024), in our

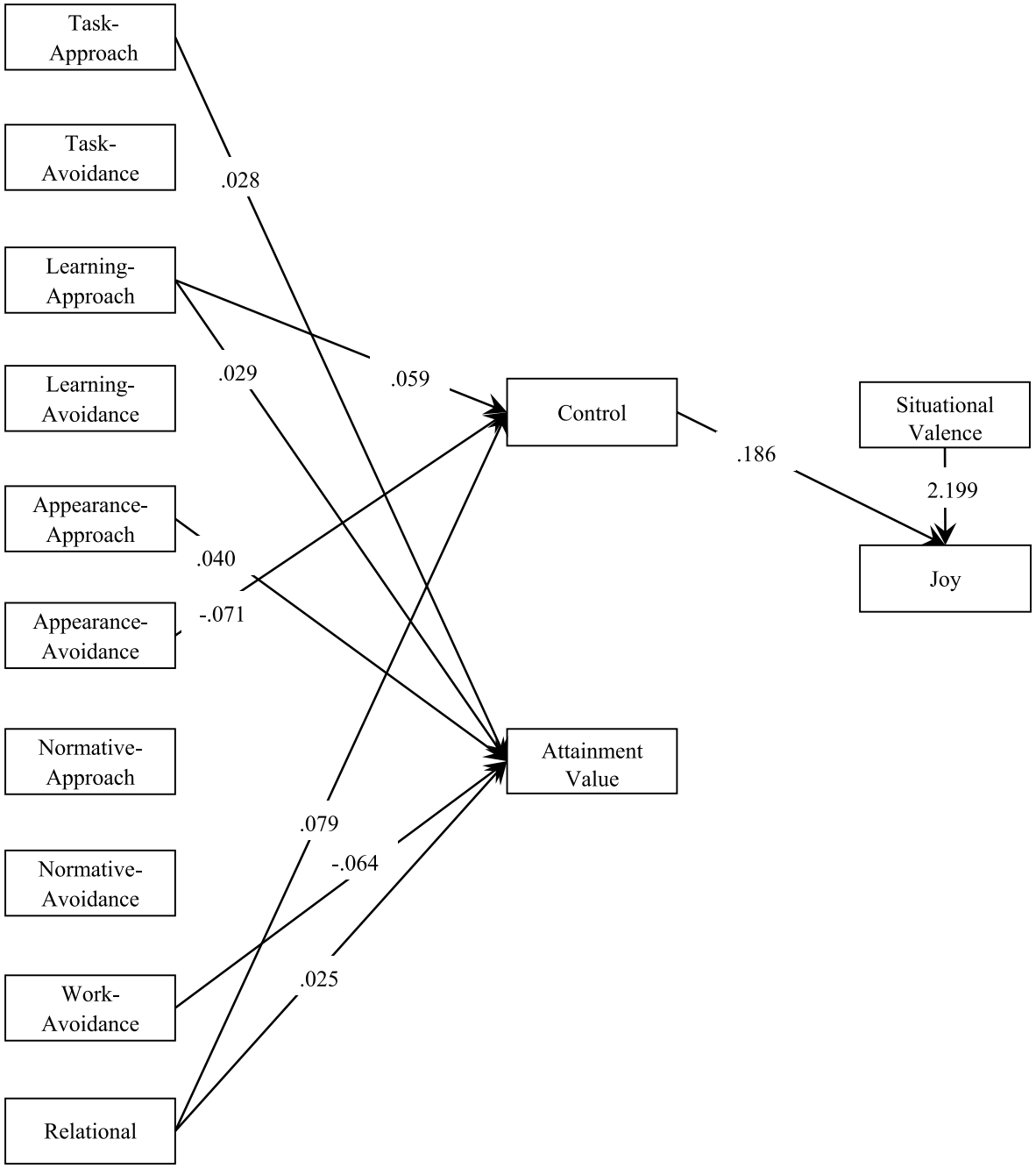


Fig. 4. Results for mediation model for joy with all goals as predictors, control- and value-appraisals as mediators, and joy as outcome.
Notes. Displayed are unstandardized coefficients; only significant direct paths after Benjamini and Hochberg (1995) correction with $p < .05$ at the within-person level are shown; mediation via control (indirect path) $b = .030$, $p < .05$; mediation via attainment value (indirect path) $b = -.003$, $p = .489$; total effect of the mediation model $b = .099$, $p < .05$.

study, control was found to fully mediate the associations between joy and goals at the within-person level, and between anger and goals at the within-person level. Notably, control served as a significant positive mediator in the link between joy and goals, and as a significant negative mediator in the link between anger and goals: learning-approach and relational goals were linked to higher levels of control, whereas appearance-avoidance goals were linked to lower levels of control. Ultimately, this led to increased joy and lower levels of anger. These findings align with theoretical assumptions that linked the approach and avoidance components of goals to higher and lower levels of perceived control and consequently to joy and anger (Pekrun et al., 2006). We were able to demonstrate this for two examined approach goals, namely learning-approach and relational goals, and for one avoidance goal, namely appearance-avoidance. Teachers who adopted approach goals in a given situation by trying to develop their own competencies and achieve a personal connection with their colleagues or students, in contrast to adopting appearance-avoidance goals, which evolve around avoiding to look incompetent to others (Elliot & Harackiewicz, 1996), therefore tended to experience more control and ultimately experience more joy and less anger in that situation compared to other situations. Fostering learning-approach and relational goals, and reducing appearance-avoidance goals that may undermine teachers' perceived control, therefore seems promising. This could be achieved, for example, in educational training and professional development programs.

Table 6
Mediation model results with all achievement goals as predictors, control- and value-appraisals as mediators, and anger as outcome.

		b	*SE*	*z-value*	*p*	*adj. p*
Level 1						
Task-approach → Anger	(f1)	.046	.024	1.917	.055	
Task-avoidance → Anger	(f2)	.010	.027	.363	.716	
Learning-approach → Anger	(f3)	−.035	.027	−1.310	.190	
Learning-avoidance → Anger	(f4)	−.019	.024	−.816	.415	
Appearance-approach → Anger	(f5)	.018	.026	.693	.489	
Appearance-avoidance → Anger	(f6)	−.028	.026	−1.050	.294	
Normative-approach → Anger	(f7)	.021	.036	.582	.560	
Normative-avoidance → Anger	(f8)	−.025	.028	−.890	.373	
Work-avoidance → Anger	(f9)	.004	.018	.205	.837	
Relational → Anger	(f10)	.012	.019	.650	.516	
Valence → Anger		−1.738	.185	−9.400	<.001	*
Task-approach × Valence → Anger		−.027	.027	−1.016	.310	
Task-avoidance × Valence → Anger		.014	.029	.469	.639	
Learning-approach × Valence → Anger		.030	.026	1.123	.261	
Learning-avoidance × Valence → Anger		.003	.027	.115	.908	
Appearance-approach × Valence → Anger		−.041	.030	−1.391	.164	
Appearance-avoidance × Valence → Anger		.030	.031	.981	.327	
Normative-approach × Valence → Anger		−.005	.042	−.116	.908	
Normative-avoidance × Valence → Anger		.022	.034	.660	.509	
Work-avoidance × Valence → Anger		.011	.021	.534	.594	
Relational × Valence → Anger		−.031	.021	−1.508	.132	
Task-approach → Control	(d1)	.042	.017	2.488	.013	
Task-avoidance → Control	(d2)	−.032	.016	−1.966	.049	
Learning-approach → Control	(d3)	.059	.016	3.693	<.001	*
Learning-avoidance → Control	(d4)	−.024	.015	−1.546	.122	
Appearance-approach → Control	(d5)	.042	.020	2.110	.035	
Appearance-avoidance → Control	(d6)	−.071	.021	−3.366	.001	*
Normative-approach → Control	(d7)	.057	.025	2.326	.020	
Normative-avoidance → Control	(d8)	.007	.024	.280	.779	
Work-avoidance → Control	(d9)	.003	.017	.202	.840	
Relational → Control	(d10)	.078	.016	4.906	<.001	*
Task-approach → Value	(x1)	.029	.010	2.865	.004	*
Task-avoidance → Value	(x2)	−.011	.011	−1.045	.296	
Learning-approach → Value	(x3)	.029	.010	2.996	.003	*
Learning-avoidance → Value	(x4)	.007	.009	.726	.468	
Appearance-approach → Value	(x5)	.041	.011	3.624	<.001	*
Appearance-avoidance → Value	(x6)	−.025	.012	−2.162	.031	
Normative-approach → Value	(x7)	−.019	.016	−1.208	.227	
Normative-avoidance → Value	(x8)	.005	.011	.433	.665	
Work-avoidance → Value	(x9)	−.064	.010	−6.323	<.001	*
Relational → Value	(x10)	.025	.008	3.297	.001	*
Control → Anger	(e1)	−.327	.032	−1.159	<.001	*
Value → Anger	(e2)	.001	.045	.018	.986	
Total Effect		−.050	.044	−1.134	.257	
Goals → Control → Anger		−.053	.012	−4.287	<.001	*
Goals → Value → Anger		.004	.008	.530	.596	
R-Square						
Anger		.523				
Control		.066				
Value		.079				
Level 2						
Task-approach → Anger	(c1)	.052	.190	.276	.782	
Task-avoidance → Anger	(c2)	−.065	.366	−.177	.859	
Learning-approach → Anger	(c3)	.232	.901	.257	.797	
Learning-avoidance → Anger	(c4)	−.222	.430	−.517	.605	
Appearance-approach → Anger	(c5)	.012	3.017	.004	.997	
Appearance-avoidance → Anger	(c6)	.105	2.592	.040	.968	
Normative-approach → Anger	(c7)	.137	2.502	.055	.956	
Normative-avoidance → Anger	(c8)	−.174	2.114	−.082	.934	
Work-avoidance → Anger	(c9)	.091	.079	1.161	.246	
Relational → Anger	(c10)	.015	.342	.045	.964	
Task-approach → Control	(a1)	−.090	.316	−.283	.777	
Task-avoidance → Control	(a2)	.253	.359	.706	.480	
Learning-approach → Control	(a3)	−.452	.624	−.724	.469	
Learning-avoidance → Control	(a4)	.130	.313	.415	.678	
Appearance-approach → Control	(a5)	1.712	1.963	.873	.383	
Appearance-avoidance → Control	(a6)	−1.438	1.695	−.848	.396	
Normative-approach → Control	(a7)	−1.420	1.598	−.888	.374	
Normative-avoidance → Control	(a8)	1.052	1.396	.754	.451	
Work-avoidance → Control	(a9)	.041	.099	.410	.682	
Relational → Control	(a10)	−.099	.267	−.371	.710	
Task-approach → Value	(y1)	.031	.156	.198	.843	
Task-avoidance → Value	(y2)	.236	.254	.930	.352	
Learning-approach → Value	(y3)	−.203	.484	−.420	.675	
Learning-avoidance → Value	(y4)	.127	.247	.516	.606	
Appearance-approach → Value	(y5)	.870	1.454	.598	.550	
Appearance-avoidance → Value	(y6)	−.854	1.235	−.692	.489	
Normative-approach → Value	(y7)	−.740	1.137	−.651	.515	

(*continued on next page*)

Table 6 (*continued*)

		b	*SE*	*z-value*	*p*	*adj. p*
Normative-avoidance → Value	(y8)	.702	.964	.728	.467	
Work-avoidance → Value	(y9)	−.038	.059	−.651	.515	
Relational → Value	(y10)	−.167	.192	−.868	.386	
Control → Anger	(b1)	−.157	.252	−.622	.534	
Value → Anger	(b2)	.142	.432	.328	.743	
Total Effect		−.136	.695	−.196	.845	
Goals → Control → Anger		.049	.091	.544	.586	
Goals → Value → Anger		1.436	4.377	.328	.743	
R-Square						
Anger		.278				
Control		.211				
Value		.327				

Notes. b: unstandardized estimates, *SE*: standard error, *p*: p-value, valence was dummy-coded: 0: negative Situation, 1: positive situation; multiple testing correction was applied using the Benjamini and Hochberg (1995) procedure, as shown in the 'adj. p' column; asterisks indicate significance after this correction (*$p < .05$).

Moreover, increasing teachers' experience of control seems favorable.

A notable finding of the study is the absence of between-person mediation effects, suggesting that the mediation effects of control are level-specific. While within-person differences in control predicted corresponding changes within teachers, these effects do not appear across teachers at the between-person level. However, since the theoretical assumptions of the control-value theory (Pekrun, 2000, 2006) are postulated for within-person processes, it is not surprising that we did not observe these effects at the between-person level. These findings may call for an updated theoretical framework, highlighting the need for a more nuanced approach that differentiates situational (within-person) processes from differences at the person-level.

In contrast to theoretical assumptions (Pekrun et al., 2006), value did not act as a mediator. At a theoretical level, this could indicate that value is less relevant than control for teachers' emotion-goal associations, which should be further investigated in future studies. At a methodological level, the lack of significant findings might be attributed to the study design, as explicitly positive and negative situations were identified to capture relevant daily situations with variance. In our study, the value-appraisal, recorded as attainment value, possibly confounds with the positive and negative valence of the situation. This could indicate that the study instruction was perceived as differentiated by the participating teachers as intended by the study design.

4.4. Limitations and further directions

Firstly, this study focused on the direction of goals on joy/anger in research questions two and three. Although this approach was necessary to model moderation and mediation assumptions, future studies could build on this by modeling reciprocal relationships and investigating other relevant work-related emotions, for example pride, hope or anxiety. Additionally, as our data are correlational, no causal inferences can be drawn.

Secondly, future studies could employ multi-item scales to better assess the constructs. Although single-item measures have been shown to be sufficiently valid and reliable (Gogol et al., 2014; Matthews et al., 2022; Song et al., 2023), multi-item scales could provide reliability estimates and enable the use of structural equation modeling. As the first study on this topic, we initially focused on one central value facet, namely attainment value. Future research should extend this approach by including additional value facets, such as intrinsic value, utility value, and cost (Eccles et al., 1983), alongside attainment value. This broader perspective would allow researchers to explore whether other facets of value mediate the associations between goals and emotions.

Thirdly, there are limitations to the research design, as it focused on capturing two situational extremes (positive vs. negative situations). This approach made it possible to capture emotionally salient experiences; however, it has the disadvantage that it did not capture a full range of situations experienced, possibly including those with a more neutral valence and therefore limits the representativeness of the data with respect to teachers' typical daily experiences. Importantly, we did not test for potential non-linear effects, but our results indicate that the associations between joy/anger and achievement goals may be more complex than a straightforward linear relationship. Future research should explore the dynamics that unfold between these extremes to gain a more nuanced understanding. To avoid distortions between participants due to self-selected situations, future studies could, for example, use vignette studies to examine how an objectively predefined situation relates to teachers' subjective experience in that situation.

Fourthly, future studies could expand beyond self-report measures. For instance, physiological methods may be employed to assess emotions. Objective measures are less susceptible to the biases of conscious reporting and are not influenced by an individual's willingness to express certain emotions (Rosenberg & Ekman, 1994). Techniques such as electroencephalography, heart rate monitoring, or facial expression analysis could be incorporated alongside self-reports in future research (e.g., Donker et al., 2023; see Mauss & Robinson, 2009 for an overview). However, it is important to note that these methods also have their own measurement limitations. Achievement goals could additionally be captured experimentally or through behavioral data.

Lastly, another limitation of this study is its cultural specificity, as all teacher participants were from Germany. The daily situations examined, such as teaching, interactions with colleagues, and administrative tasks, reflect frequent experiences within the German educational system. It is important to acknowledge that interpretations of these professional situations and the associated emotional and motivational experiences might vary across cultural contexts. For example, in other cultural settings, tasks such as interaction with colleagues might elicit different emotions and be accompanied by different goals. Albeit, based on the universality assumptions of control-value theory (Pekrun, 2006; Pekrun et al., 2006; Pekrun & Goetz, 2024), the associations between emotions and goals should be generalizable across different cultural settings, which could be investigated in future studies to better understand how situational factors are associated with teachers' emotional experiences and their goals across various cultural settings.

Despite these limitations, the current findings underscore the situational nature of emotion-goal associations. Future studies could examine teachers' emotion-goal associations, for example in relation to teachers' emotion regulation (e.g., Bross et al., 2025), students' emotions (e.g., Raccanello et al., 2022), and teachers' motivation teaching styles (e.g., Katz & Moè, 2024).

4.5. Conclusion

This study contributes to the theoretical understanding of teachers' joy, anger, and achievement goals. Our findings emphasize that joy, anger, and achievement goals exhibit distinct associations at both the within- and between-person level, as well as in positive and negative situations. Therefore, theoretical frameworks might integrate emotion-goal-assumptions for both levels as well as incorporate situational valence, and future research should investigate teachers' emotion-goal-associations accordingly.

Furthermore, the more teachers endorsed learning-approach and relational goals in a situation, the more they experienced control in that situation, which then led to higher joy and less anger in that situation. This underscores the significance of fostering approach goals and perceived control in teachers' daily work situations to ultimately increase experiences of joy. Future teacher training programs should take these situational differences into account by implementing one-to-one

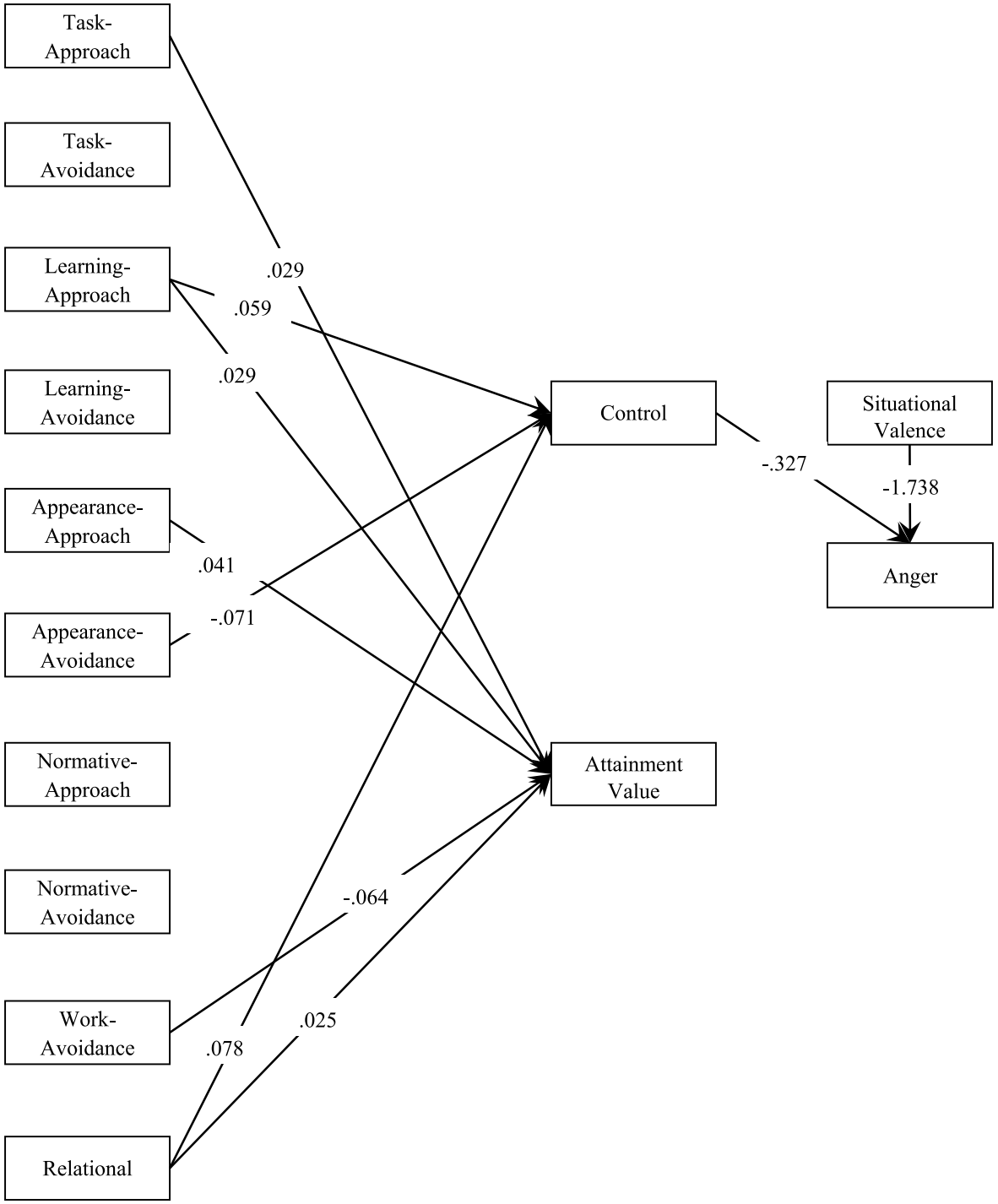


Figure 5. Results for mediation model for anger with all goals as predictors, control- and value-appraisals as mediators, and anger as outcome.
Notes. Displayed are unstandardized coefficients; only significant direct paths with $p < .05$ at the within-person level are shown; mediation via control (indirect path) $b = -.053$, $p < .05$; mediation via attainment value (indirect path) $b = .004$, $p = .596$; total effect of the mediation model $b = -.050$, $p = .257$.

training sessions or interventions that focus on personal factors and individual needs within specific work-related situations rather than offering a one-size-fits-all solution. For example, teachers could individually select the work situations that are most critical to them. They could then reflect on how they could set learning-approach and relational goals that are meaningful to them in these situations and which strategies could enhance their subjective sense of control. School leaders could also provide individualized support, for instance by offering teachers opportunities to pursue approach goals and experience greater control in their daily work life.

CRediT authorship contribution statement

Tanja Bross: Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Anne Christiane Frenzel:** Writing – review & editing, Supervision. **Thomas Goetz:** Writing – review & editing, Supervision. **Ulrike Elisabeth Nett:** Writing – review & editing, Supervision, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Funding

This work was funded by the Federal Ministry of Education and Research Germany as part of the joint "Teacher Training Quality Campaign" of the federal and state governments (Grant number 01JA1809).

Declaration of competing interest

The authors have no relevant financial or non-financial interests to disclose.

Acknowledgements

We thank Julia Hornstein and Laura Kehle for assisting in conducting this research.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.tate.2025.105352.

Data availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

References

Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of Educational Psychology, 80*(3), 260–267. https://doi.org/10.1037/0022-0663.80.3.260

Becker, E. S., Keller, M. M., Goetz, T., Frenzel, A. C., & Taxer, J. L. (2015). Antecedents of teachers' emotions in the classroom: An intraindividual approach. *Frontiers in Psychology, 6*, 635. https://doi.org/10.3389/fpsyg.2015.00635

Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society: Series B, 57*, 289–300. https://doi.org/10.1111/j.2517-6161.1995.tb02031.x

Bong, M. (2001). Between- and within-domain relations of academic motivation among middle and high school students: Self-efficacy, task-value, and achievement goals. *Journal of Educational Psychology, 93*(1), 23–34. https://doi.org/10.1037/0022-0663.93.1.23

Bong, M. (2004). Academic motivation in self-efficacy, task value, achievement goal orientations, and attributional beliefs. *The Journal of Educational Research, 97*(6), 287–297. https://doi.org/10.3200/JOER.97.6.287-298

Bross, T., Frenzel, A. C., & Nett, U. E. (2025). Unveiling situation-specific emotion regulation behaviour among teachers: Insights from a multilevel latent profile analysis. *British Journal of Educational Psychology, 95*, 256–280. https://doi.org/10.1111/bjep.12765

Bross, T., Nett, U. E., & Daumiller, M. (2024). Interrelations among achievement goals and achievement emotions: A meta-analytic examination. *Educational Psychology Review, 36*(3). https://doi.org/10.1007/s10648-024-09931-9

Bürger, K., & Schmitt, M. (2017). Students' multiple state goals as a function of appraisals, trait goals, and their interactions. *Contemporary Educational Psychology, 51*, 464–481. https://doi.org/10.1016/j.cedpsych.2017.09.006

Burić, I., & Frenzel, A. C. (2019). Teacher anger: New empirical insights using a multi-method approach. *Teaching and Teacher Education, 86*. https://doi.org/10.1016/j.tate.2019.102895

Burić, I., Slišković, A., & Macuka, I. (2017). A mixed-method approach to the assessment of teachers' emotions: Development and validation of the teacher emotion questionnaire. *Educational Psychology, 38*(3), 325–349. https://doi.org/10.1080/01443410.2017.1382682

Butler, R. (2007). Teachers' achievement goal orientations and associations with teachers' help seeking: Examination of a novel approach to teacher motivation. *Journal of Educational Psychology, 99*(2), 241–252. https://doi.org/10.1037/0022-0663.99.2.241

Butler, R. (2012). Striving to connect: Extending an achievement goal approach to teacher motivation to include relational goals for teaching. *Journal of Educational Psychology, 104*(3), 726–742. https://doi.org/10.1037/a0028613

Chen, J. (2019). Exploring the impact of teacher emotions on their approaches to teaching: A structural equation modelling approach. *British Journal of Educational Psychology, 89*(1), 57–74. https://doi.org/10.1111/bjep.12220

Conley, A. M. (2012). Patterns of motivation beliefs: Combining achievement goal and expectancy-value perspectives. *Journal of Educational Psychology, 104*(1), 32–47. https://doi.org/10.1037/a0026042

Daumiller, M., Dickhäuser, O., & Dresel, M. (2019). University instructors' achievement goals for teaching. *Journal of Educational Psychology, 111*(1), 131–148. https://doi.org/10.1037/edu0000271

Daumiller, M., Janke, S., Rinas, R., Hein, J., Dickhäuser, O., & Dresel, M. (2023). Different time and context = different goals and emotions? Temporal variability and context specificity of achievement goals for teaching and associations with discrete emotions. *Contemporary Educational Psychology, 72*. https://doi.org/10.1016/j.cedpsych.2022.102139

Dickhauser, O., Janke, S., Daumiller, M., & Dresel, M. (2021). Motivational school climate and teachers' achievement goal orientations: A hierarchical approach. *British Journal of Educational Psychology, 91*(1), 391–408. https://doi.org/10.1111/bjep.12370

Donker, M. H., Scheepers, D., van Gog, T., van den Hove, M., McIntyre, N., & Mainhard, T. (2023). Handling demanding situations: Associations between teachers' interpersonal behavior, physiological responses, and emotions. *The Journal of Experimental Education*, 1–19. https://doi.org/10.1080/00220973.2023.2249837

Dresel, M., Fasching, M. S., Steuer, G., Nitsche, S., & Dickhäuser, O. (2013). Relations between teachers' goal orientations, their instructional practices and students' motivation. *Psychology, 4*(7), 572–584. https://doi.org/10.4236/psych.2013.47083

Eccles, J. S. (2005). Subjective task values and the Eccles et al. model of achievement related choices. In A. J. Elliott, & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 105–121). Guilford Press.

Eccles, J. S. (2009). Who am I and what am I going to do with my life? Personal and collective identities as motivators of action. *Educational Psychologist, 44*, 78–89. https://doi.org/10.1080/00461520902832368

Eccles, J. S., Adler, T. F., Futterman, R., Goff, S. B., Kaczala, C. M., Meece, J. L., & Midgley, C. (1983). Expectancies, values, and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motives* (pp. 74–146). Freeman.

Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational Psychologist, 34*(3), 169–189. https://doi.org/10.1207/s15326985ep3403_3

Elliot, A. J. (2005). A conceptual history of the achievement goal construct. In A. J. E. C. S. Dweck (Ed.), *Handbook of competence and motivation* (pp. 52–72). Guilford Publications.

Elliot, A. J., & Harackiewicz, J. M. (1996). Approach and avoidance achievement goals and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology, 70*(3), 461–475. https://doi.org/10.1037/0022-3514.70.3.461

Elliot, A. J., & Hulleman, C. S. (2017). Achievement goals. In A. J. Elliot, C. S. Dweck, & D. S. Yeager (Eds.), *Handbook of competence and motivation: Theory and application* (pp. 43–60).

Elliot, A. J., & McGregor, H. A. (2001). A 2 × 2 achievement goal framework. *Journal of Personality and Social Psychology, 80*(3), 501–519. https://doi.org/10.1037/0022-3514.80.3.501

Elliot, A. J., Murayama, K., & Pekrun, R. (2011). A 3 × 2 achievement goal model. *Journal of Educational Psychology, 103*(3), 632–648. https://doi.org/10.1037/a0023952

Ford, M. (1992). *Motivating humans: Goals, emotions, and personal agency beliefs*. SAGE Publications, Inc. https://doi.org/10.4135/9781483325361

Frenzel, A. C. (2014). Teacher emotions. In R. Pekrun, & L. Linnenbrink-Garcia (Eds.), *International handbook of emotions in education* (1st ed., pp. 494–519). Routledge.

Frenzel, A. C., Becker-Kurz, B., Pekrun, R., & Goetz, T. (2015). Teaching this class drives me nuts! -Examining the person and context specificity of teacher emotions. *PLoS One, 10*(6), Article e0129630. https://doi.org/10.1371/journal.pone.0129630

Frenzel, A. C., Daniels, L., & Burić, I. (2021). Teacher emotions in the classroom and their implications for students. *Educational Psychologist, 56*(4), 250–264. https://doi.org/10.1080/00461520.2021.1985501

Frenzel, A. C., Fiedler, D., Marx, A. K. G., Reck, C., & Pekrun, R. (2020). Who Enjoys Teaching, and When? Between- and Within-Person Evidence on Teachers' Appraisal-Emotion Links [Original Research]. *Frontiers in Psychology, 11*. https://doi.org/10.3389/fpsyg.2020.01092, 2020.

Frenzel, A. C., & Goetz, T. (2007). Emotionales Erleben von Lehrkräften beim Unterrichten. *Zeitschrift für Padagogische Psychologie, 21*(3–4), 283–295. https://doi.org/10.1024/1010-0652.21.3.283

Fryer, J. W., & Elliot, A. J. (2007). Stability and change in achievement goals. *Journal of Educational Psychology, 99*(4), 700–714. https://doi.org/10.1037/0022-0663.99.4.700

Gaspard, H., Dicke, A.-L., Flunger, B., Schreier, B., Häfner, I., Trautwein, U., & Nagengast, B. (2015). More value through greater differentiation: Gender differences in value beliefs about math. *Journal of Educational Psychology, 107*(3), 663–677. https://doi.org/10.1037/edu0000003

Goetz, T., Bieg, M., Ludtke, O., Pekrun, R., & Hall, N. C. (2013). Do girls really experience more anxiety in mathematics? *Psychological Science, 24*(10), 2079–2087. https://doi.org/10.1177/0956797613486989

Goetz, T., Frenzel, A. C., Stoeger, H., & Hall, N. C. (2010). Antecedents of everyday positive emotions: An experience sampling analysis. *Motivation and Emotion, 34*(1), 49–62. https://doi.org/10.1007/s11031-009-9152-2

Goetz, T., Sticca, F., Pekrun, R., Murayama, K., & Elliot, A. J. (2016). Intraindividual relations between achievement goals and discrete achievement emotions: An experience sampling approach. *Learning and Instruction, 41*, 115–125. https://doi.org/10.1016/j.learninstruc.2015.10.007

Gogol, K., Brunner, M., Goetz, T., Martin, R., Ugen, S., Keller, U., Fischbach, A., & Preckel, F. (2014). "My Questionnaire is Too Long!" the assessments of motivational-affective constructs with three-item and single-item measures. *Contemporary Educational Psychology, 39*(3), 188–205. https://doi.org/10.1016/j.cedpsych.2014.04.002

Grund, S., Robitzsch, A., & Luedtke, O. (2023). Mitml: Tools for multiple imputation in multilevel modeling. *R package version 0, 4–5*. https://CRAN.R-project.org/package=mitml.

Gwet, K. L. (2008). Computing inter-rater reliability and its variance in the presence of high agreement. *British Journal of Mathematical and Statistical Psychology, 61*(1), 29–48. https://doi.org/10.1348/000711006X126600

Hagenauer, G., Hascher, T., & Volet, S. E. (2015). Teacher emotions in the classroom: Associations with students' engagement, classroom discipline and the interpersonal teacher-student relationship. *European Journal of Psychology of Education, 30*(4), 385–403. https://doi.org/10.1007/s10212-015-0250-0

Hall, N. C., Sampasivam, L., Muis, K. R., & Ranellucci, J. (2016). Achievement goals and emotions: The mediational roles of perceived progress, control, and value. *British Journal of Educational Psychology, 86*(2), 313–330. https://doi.org/10.1111/bjep.12108

Hu, F., Jiang, Z., Yin, H., & Tian, G. (2024). Linking teachers' student-oriented goals to their emotions in mathematics classrooms: The mediation of personal achievement goals. *The Asia-Pacific Education Researcher, 33*, 1327–1337. https://doi.org/10.1007/s40299-023-00805-2

Hulleman, C. S., Schrager, S. M., Bodmann, S. M., & Harackiewicz, J. M. (2010). A meta-analytic review of achievement goal measures: Different labels for the same constructs or different constructs with similar labels? *Psychological Bulletin, 136*(3), 422–449. https://doi.org/10.1037/a0018947

Jagacinski, C. M., Kumar, S., Boe, J. L., Lam, H., & Miller, S. A. (2010). Changes in achievement goals and competence perceptions across the college semester. *Motivation and Emotion, 34*(2), 191–204. https://doi.org/10.1007/s11031-010-9165-x

Janke, S., Bardach, L., Oczlon, S., & Lüftenegger, M. (2019). Enhancing feasibility when measuring teachers' motivation: A brief scale for teachers' achievement goal orientations. *Teaching and Teacher Education, 83*, 1–11. https://doi.org/10.1016/j.tate.2019.04.003

Jorgensen, T. D. (2025). *Lavaan.mi: Fit structural equation models to multiply imputed data*. R package version 0.1-0. https://CRAN.R-project.org/package=lavaan.mi.

Katz, I., & Moè, A. (2024). Exploring teachers' psychological needs, motivating styles, emotion regulation and self-compassion: A comparative study before and during the COVID-19 lockdown. *Teaching and Teacher Education, 148*. https://doi.org/10.1016/j.tate.2024.104706

Keller, M. M., Chang, M. L., Becker, E. S., Goetz, T., & Frenzel, A. C. (2014). Teachers' emotional experiences and exhaustion as predictors of emotional labor in the classroom: An experience sampling study. *Frontiers in Psychology, 5*, 1442. https://doi.org/10.3389/fpsyg.2014.01442

Klusmann, U., Aldrup, K., Schmidt, J., & Ludtke, O. (2020). Is emotional exhaustion only the result of work experiences? A diary study on daily hassles and uplifts in different life domains. *Anxiety, Stress & Coping, 34*(2), 173–190. https://doi.org/10.1080/10615806.2020.1845430

Lee, M., & Bong, M. (2016). In their own words: Reasons underlying the achievement striving of students in schools. *Journal of Educational Psychology, 108*(2), 274–294. https://doi.org/10.1037/edu0000048

Li, B., & Li, C. (2024). Achievement goals and emotions of Chinese EFL students: A control-value theory approach. *System, 123*. https://doi.org/10.1016/j.system.2024.103335

Luo, W., Lim, S. Q. W., Choong, P. L., & Liem, G. A. D. (2020). Perceived school goal structure, achievement goals and emotions in teaching of Singapore teachers. *Asia Pacific Journal of Education, 40*(3), 344–355. https://doi.org/10.1080/02188791.2019.1705760

Matthews, R. A., Pineault, L., & Hong, Y.-H. (2022). Normalizing the use of single-item measures: Validation of the single-item compendium for organizational psychology. *Journal of Business and Psychology, 37*(4), 639–673. https://doi.org/10.1007/s10869-022-09813-3

Mauss, I. B., & Robinson, M. D. (2009). Measures of emotion: A review. *Cognition & Emotion, 23*(2), 209–237. https://doi.org/10.1080/02699930802204677

Muis, K. R., & Edwards, O. (2009). Examining the stability of achievement goal orientation. *Contemporary Educational Psychology, 34*(4), 265–277. https://doi.org/10.1016/j.cedpsych.2009.06.003

Nicholls, J. G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review, 91*(3), 328–346. https://doi.org/10.1037/0033-295X.91.3.328

Parker, P. D., Martin, A. J., Colmar, S., & Liem, G. A. (2012). Teachers' workplace well-being: Exploring a process model of goal orientation, coping behavior, engagement, and burnout. *Teaching and Teacher Education, 28*(4), 503–513. https://doi.org/10.1016/j.tate.2012.01.001

Pekrun, R. (1992). The impact of emotions on learning and achievement: Towards a theory of cognitive/motivational mediators. *Applied Psychology: International Review, 41*(4), 359–376. https://doi.org/10.1111/j.1464-0597.1992.tb00712.x

Pekrun, R. (2000). A social-cognitive, control-value theory of achievement emotions. In J. Heckhausen (Ed.), *Motivational psychology of human development - Developing motivation and motivating development* (pp. 143–163). https://doi.org/10.1016/s0166-4115(00)80010-2

Pekrun, R. (2006). The control-value theory of achievement emotions: Assumptions, corollaries, and implications for educational research and practice. *Educational Psychology Review, 18*(4), 315–341. https://doi.org/10.1007/s10648-006-9029-9

Pekrun, R. (2021). Self-appraisals and emotions: A generalized control-value approach. In T. Dicke, F. Guay, H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *Self – A multidisciplinary concept* (pp. 1–30). Information Age Publishing.

Pekrun, R. (2024). Control-value theory: From achievement emotion to a general theory of human emotions. *Educational Psychology Review, 36*(3). https://doi.org/10.1007/s10648-024-09909-7

Pekrun, R., Elliot, A. J., & Maier, M. A. (2006). Achievement goals and discrete achievement emotions: A theoretical model and prospective test. *Journal of Educational Psychology, 98*(3), 583–597. https://doi.org/10.1037/0022-0663.98.3.583

Pekrun, R., & Goetz, T. (2024). How universal are academic emotions? In G. Hagenauer, R. Lazarides, & H. Järvenoja (Eds.), *Motivation and emotion in learning and teaching across educational contexts* (pp. 85–99). Routledge. https://doi.org/10.4324/9781003303473-7.

Praetorius, A.-K., Nitsche, S., Janke, S., Dickhäuser, O., Drexler, K., Fasching, M., & Dresel, M. (2014). Here today, gone tomorrow? Revisiting the stability of teachers' achievement goals. *Contemporary Educational Psychology, 39*(4), 379–387. https://doi.org/10.1016/j.cedpsych.2014.10.002

R Core Team. (2023). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. https://www.R-project.org/.

Raccanello, D., Brondino, M., & Moè, A. (2022). Malleability beliefs shape mathematics-related achievement emotions: The mediating role of emotion regulation in primary school children. *Learning and Individual Differences, 97*. https://doi.org/10.1016/j.lindif.2022.102177

Respondek, L., Seufert, T., & Nett, U. E. (2019). Adding previous experiences to the person-situation debate of achievement emotions. *Contemporary Educational Psychology, 58*, 19–32. https://doi.org/10.1016/j.cedpsych.2019.02.004

Retelsdorf, J., Butler, R., Streblow, L., & Schiefele, U. (2010). Teachers' goal orientations for teaching: Associations with instructional practices, interest in teaching, and burnout. *Learning and Instruction, 20*(1), 30–46. https://doi.org/10.1016/j.learninstruc.2009.01.001

Retelsdorf, J., & Günther, C. (2011). Achievement goals for teaching and teachers' reference norms: Relations with instructional practices. *Teaching and Teacher Education, 27*(7), 1111–1119. https://doi.org/10.1016/j.tate.2011.05.007

Robitzsch, A., & Grund, S. (2024). '. In *Miceadds: Some additional multiple imputation functions, especially for 'mice*' (Vol. 3, pp. 17–44). R package version. https://CRAN.R-project.org/package=miceadds.

Rosenberg, E. L., & Ekman, P. (1994). Coherence between expressive and experiential systems in emotion. *Cognition and Emotion, 8*(3), 201–229. https://doi.org/10.1080/02699939408408938

Rosseel, Y. (2012). Lavaan: An R package for structural equation modeling. *Journal of Statistical Software, 48*(2), 1–36. https://doi.org/10.18637/jss.v048.i02

Rosseel, Y., Jorgensen, T. D., & De Wilde, L. (2025). *Lavaan: Latent variable analysis*. R package version 0.6-20. https://doi.org/10.32614/CRAN.package.lavaan

Rottweiler, A.-L., Taxer, J. L., & Nett, U. E. (2018). Context matters in the effectiveness of emotion regulation strategies. *AERA Open, 4*(2). https://doi.org/10.1177/2332858418778849

Ryan, A. M., & Shim, S. S. (2006). Social achievement goals: The nature and consequences of different orientations toward social competence. *Personality and Social Psychology Bulletin, 32*(9), 1246–1263. https://doi.org/10.1177/0146167206289345

Schmidt, J., Klusmann, U., & Kunter, M. (2016). Wird alles besser? Positive und negative berufliche Ereignisse von Referendarinnen bzw. Referendaren und Lehrkräften im Vergleich. *Psychologie in Erziehung und Unterricht, 63*(4). https://doi.org/10.2378/peu2016.art22d

Schmidt, J., Klusmann, U., Lüdtke, O., Möller, J., & Kunter, M. (2017). What makes good and bad days for beginning teachers? A diary study on daily uplifts and hassles. *Contemporary Educational Psychology, 48*, 85–97. https://doi.org/10.1016/j.cedpsych.2016.09.004

Simonton, K. L., Mercier, K., Richards, K. A. R., Gaudreault, K. L., & Gray, A. (2024). Relationships and differences between goal orientations and emotional experiences of physical education teachers. *Teaching and Teacher Education, 151*. https://doi.org/10.1016/j.tate.2024.104738

Song, J., Howe, E., Oltmanns, J. R., & Fisher, A. J. (2023). Examining the concurrent and predictive validity of single items in ecological momentary assessments. *Assessment, 30*(5), 1662–1671. https://doi.org/10.1177/10731911221113563

Urdan, T. C., & Maehr, M. L. (1995). Beyond a two-goal theory of motivation and achievement: A case for social goals. *Review of Educational Research, 65*(3), 213–243. https://doi.org/10.2307/1170683

Urdan, T., & Mestas, M. (2006). The goals behind performance goals. *Journal of Educational Psychology, 98*(2), 354–365. https://doi.org/10.1037/0022-0663.98.2.354

Wang, H., Hall, N. C., Goetz, T., & Frenzel, A. C. (2017). Teachers' goal orientations: Effects on classroom goal structures and emotions. *British Journal of Educational Psychology, 87*(1), 90–107. https://doi.org/10.1111/bjep.12137

Wentzel, K. R. (1994). Relations of social goal pursuit to social acceptance, classroom behavior, and perceived social support. *Journal of Educational Psychology, 86*(2), 173–182. https://doi.org/10.1037/0022-0663.86.2.173

Yanagida, T. (2024). *Misty: Miscellaneous functions 'T. Yanagida'*. R package version 0.6.2. https://CRAN.R-project.org/package=misty.

Yu, J., Järvinen, J., & Salmela-Aro, K. (2025). Momentary achievement goal profiles: Associations with instructional activities, interest, and anxiety. *Learning and Instruction, 95*. https://doi.org/10.1016/j.learninstruc.2024.102037