

Teachers' emotions and emotion management: integrating emotion regulation theory with emotional labor research

Mikyoung Lee¹ · Reinhard Pekrun¹ ·
Jamie L. Taxer² · Paul A. Schutz³ · Elisabeth Vogl¹ ·
Xiyao Xie¹

Received: 16 December 2015 / Accepted: 29 August 2016 / Published online: 28 September 2016
© Springer Science+Business Media Dordrecht 2016

Abstract While the similarities between emotion regulation (Gross in *J Personal Soc Psychol* 74:224–237, 1998a) and emotional labor (Hochschild in *The managed heart: commercialization of human feeling*. University of California Press, Berkeley, 1983) have been theoretically discussed, empirical research on their relation is lacking. We examined the relations between the two constructs as well as their relations with teachers' discrete emotions in a sample of 189 secondary school teachers. The results showed that reappraisal correlated positively with deep acting, whereas suppression correlated positively with surface acting. The findings further suggest that reappraisal and deep acting are linked to experiencing positive emotions, whereas suppression and surface acting are linked to experiencing negative emotions. However, there also were some differences in how emotion regulation and emotional labor were related to teachers' discrete emotional experiences. Specifically, reappraisal and deep acting strategies were positively related to enjoyment; in addition, deep acting was negatively related to negative emotions such as anxiety, anger, and frustration. By contrast, suppression and surface acting strategies were positively associated with negative emotions (i.e., suppression with anxiety; surface acting with anxiety, anger, and frustration), and surface acting was negatively associated with the positive emotion enjoyment. Implications for integrating research on teachers' emotion regulation and emotional labor are discussed.

Keywords Teacher emotions · Reappraisal · Suppression · Surface acting · Deep acting

✉ Mikyoung Lee
mikyoung.lee@psy.lmu.de

¹ Department of Psychology, University of Munich, Leopoldstrasse 13, 80802 Munich, Germany

² Department of Psychology, Stanford University, Stanford, CA, USA

³ Department of Educational Psychology, University of Texas at San Antonio, San Antonio, TX, USA

1 Introduction

Teaching is an emotional effort. It involves a number of emotional experiences that can range from joy to rage (Hargreaves 1998). Recently, researchers have suggested that the emotional nature of teaching might be associated with burnout, job dissatisfaction, health symptoms, and high rates of attrition (see Schutz and Zembylas 2009). Thus, empirical evidence on the effects of teachers' emotions is warranted, since it is crucial to improve teachers' lives and provide them with instructional guidance, which directly influences student learning and overall instructional quality (Frenzel et al. 2009). Accordingly, empirical research on teacher emotions is beginning to increase (e.g., Schutz and Zembylas 2009). However, research on how teachers regulate their emotions is still sparse and little empirical evidence is available on the association between how teachers manage their emotions and the discrete emotions they experience. This is surprising, since the way teachers regulate their emotions can be recognized as a fundamental aspect in the emotional process (Gross 2002). Furthermore, teachers often regulate their emotional experiences to improve their teaching effectiveness, which highlights the important role of emotion management in the classroom context (Sutton 2004).

Emotions are crucial factors that influence how successful individuals are in leading their personal and professional lives (Mikolajczak et al. 2009). Thus, investigators from numerous research traditions have examined how to best manage emotions for ideal functioning (cf. Mikolajczak et al. 2009). Two research traditions related to how individuals manage their emotions are (1) research on emotion regulation, which has focused on the different emotion regulatory processes individuals use to regulate their emotions (Gross 1998a, b, 2002), and (2) research on emotional labor, which has concentrated on how employees manage their emotions in order to match the display rules of the organization (Hochschild 1983, 1990). Although both emotion regulation and emotional labor research have explained important features of emotion management, both traditions also have limitations. As Mikolajczak et al. (2009) discussed, emotion regulation research has so far not thoroughly examined emotion regulation within applied or organizational contexts, and the emotional labor research has adopted a restricted perspective focusing on only two emotion regulation strategies within organizational settings (i.e., surface acting and deep acting). To overcome these limitations, it has been proposed that the emotion regulation and emotional labor traditions should be integrated (e.g., Grandey 2000, 2015); however, little empirical work has examined the specific associations between the emotion management strategies proposed by each tradition.

The present study aimed to examine the similarities between the strategies proposed by the two traditions in a sample of teachers, and to further investigate how these strategies are related to teachers' discrete emotions. Since emotion management strategies are linked to affect and well-being (cf. Gross and John 2003), we believe that it is particularly vital to examine the relationship between teachers' usage of emotion management strategies and their emotional experiences while in the classroom. Teachers experience a variety of emotions on a daily basis

and how they manage these emotions is crucial not only for their own emotional well-being, but also for their professional performance in educational settings. In particular, the current research integrated the emotion regulation and the emotional labor research traditions so that they could compensate for and benefit from each other, while at the same time gaining a deeper understanding of the importance of emotions in the teaching profession.

2 Teacher emotions

Investigating teacher emotions is invaluable for teachers' own lives as well as for improving instructional quality in educational contexts (Frenzel et al. 2009). Among the various emotions that teachers are confronted with in numerous classroom situations, we examined enjoyment, pride, anger, anxiety, and frustration, because these emotions are among the most frequently experienced by teachers (Frenzel et al. 2009; Sutton 2007; Sutton and Harper 2009; Sutton and Wheatley 2003; Taxer and Frenzel 2015; Trigwell 2009). Teachers might experience enjoyment when their instructional goals are achieved, pride when students successfully complete important tasks, anger when their goals are interrupted by students' misbehavior, anxiety when they are uncertain if they are doing a good job or their competence is challenged, and frustration when students are not able to comprehend certain concepts.

Managing these experienced emotions is an integral part of a teacher's job (Hargreaves 1998), and it is important for teachers to use appropriate strategies to manage these emotions (Hargreaves 2000). Researchers have recently begun to investigate how teachers regulate their emotions (e.g., Brackett et al. 2010; Fried 2011; Sutton 2004; Sutton and Harper 2009; Sutton et al. 2009; Taxer and Frenzel 2015). For example, Brackett et al. (2010) found that emotion regulation is related to both burnout and job satisfaction in the teaching profession. Sutton (2004) and Sutton et al. (2009) found that teachers employ emotion regulation strategies because they believe it helps them to reach their teaching goals and be more effective in classroom management, discipline, and their relationships with students. They also found that teachers believe that regulating their emotions is part of their role as a teacher and helps them to be more professional. Furthermore, when the teachers talked about their emotions, most of them spontaneously mentioned the ways they regulate their emotions, indicating that the issue of emotion regulation is significant for teachers. In addition, Fried (2011) claimed that regulating emotions could help teachers facilitate positive emotions and reduce negative emotions. Taxer and Frenzel (2015) examined which discrete emotions teachers report genuinely expressing, hiding, and faking most often and found that hiding and faking emotions are related to emotional exhaustion and physical health. However, researchers have still not explicated which specific emotion regulation strategies are the most effective for teachers to adopt in the classroom.

3 Emotion regulation

Emotion regulation refers to “the processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions” (Gross 1998a, p. 275). In other words, emotion regulation means the capability to manage the emotional experiences and expressions (Gross 2002). Gross’s (1998a, 2002) process model of emotion regulation proposed two broad levels of emotion regulation strategies: antecedent-focused and response-focused. Antecedent-focused regulation refers to altering the emotion before it is completely generated. In contrast response-focused regulation refers to modifying emotional behaviors, such as facial expressions or gestures, after the emotion has been generated. Gross (1998b) further proposed five specific emotion regulation strategies consisting of four different types of antecedent-focused emotion regulation strategies: *situation selection* (choosing to approach or avoid certain people, places, or objects in order to regulate emotions), *situation modification* (modifying the situation to alter its emotional impact), *attentional deployment* (altering the way one feels by modifying the information one attends to), and *cognitive reappraisal* (reappraising or reinterpreting the situation to alter its emotional impact), as well as one type of response-focused emotion regulation strategy: *suppression* (attempting to change physiological or behavioral aspects of the emotion).

In this study we focused on cognitive reappraisal and suppression because they respectively target the two most reported objectives of emotion regulation; that is, emotional experience and expression (Gross et al. 2006). In addition, people frequently use cognitive reappraisal and suppression in everyday life (Gross and John 2003), and we wanted to include one example from both antecedent-focused and response-focused strategies. Moreover, we selected these two emotion regulation strategies because they conceptually correspond the most to the strategies proposed by the emotional labor tradition (Grandey 2000).

Cognitive reappraisal is a procedure of cognitive change to modify emotional effects (Gross 1998a). For example, if teachers want to feel more positive emotions or fewer negative emotions while teaching, they can change the way they think about the situation (reappraisal). Since reappraisal is an antecedent-focused strategy that occurs early in the emotion-generative process, it can effectively change the whole subsequent emotion track before the emotional response has been fully produced (Gross and John 2003). Thus, reappraisal may be an effective way to reduce negative emotions or increase positive emotions. On the other hand, suppression is a form of response modification to prevent or terminate an ongoing emotion-expressive behavior (Gross 1998a). For instance, when teachers are angry due to students’ misbehaviors, they can simply pretend it is not bothering them. Suppression is a response-focused strategy happening late in the emotion-generative process, and it may decrease visible behaviors but does not actually reduce the intensity of negative emotions (Gross 2002). It rather “consumes cognitive resources, impairing memory for information presented during the emotion regulation period” (Gross 2002, p. 289). Teachers often try to suppress their

negative emotions because they believe it is inappropriate to show students those feelings (Sutton 2004). Since suppression consumes cognitive resources, this strategy may be disadvantageous for teachers because they might possess fewer cognitive capabilities for other activities, such as teaching.

In regards to affective and social functioning, previous research has shown that reappraisal may be beneficial and that suppression may be detrimental. For example, Gross and John (2003) found that individuals who reappraised the situation experienced more positive and fewer negative emotions, as well as better interpersonal functioning and higher levels of well-being, whereas the opposite was found for individuals who suppressed their emotions. Concerning research on teachers' emotion regulation, Sutton and Knight (2006) found that teachers with higher levels of reappraisal demonstrated higher levels of student engagement and classroom management efficacy. However, to date empirical research on which specific strategies are the most effective for teachers to enhance their positive emotions and reduce their negative emotions while teaching is still lacking.

4 Emotional labor

Emotional labor is defined as “the management of feeling to create a publicly observable facial and bodily display” (Hochschild 1983, p. 7). Hochschild (1983) claims that emotional labor takes effort and may cause stress, burnout, and feelings of inauthenticity. She proposed two emotional labor strategies: *surface acting* (faking unfelt emotions and/or hiding felt emotions) and *deep acting* (altering inner emotional states to really experience the desired emotion). In other words, surface acting implies superficial expressions of unfelt emotions (regulating expressions), whereas deep acting implies the modification of inner emotional states (regulating feelings; Grandey 2000, 2003). Research has shown that teachers tend to believe that they are supposed to follow certain display rules in class, which include expressing or up-regulating positive emotions and suppressing or down-regulating their negative emotions (e.g., Williams-Johnson et al. 2008; Sutton et al. 2009; Zembylas 2003). From this perspective, teachers' attempts to follow these kinds of particular display rules in class are related to the concept of emotional labor.

Research on emotional labor in service occupations has shown that surface acting is positively associated with emotional dissonance, emotional exhaustion (job burnout) and poor psychological health, and negatively related to job satisfaction (e.g., Bono and Vey 2005; Brotheridge and Grandey 2002; Brotheridge and Lee 2002; Grandey 2003; Hochschild 1990; Johnson and Spector 2007). In comparison, the findings on the influence of deep acting indicate that deep acting might be less harmful and potentially more beneficial than surface acting. Specifically, research has found that deep acting is negatively associated with emotional exhaustion (Johnson and Spector 2007) and positively to a sense of personal accomplishment (Brotheridge and Lee 2002, 2003; Grandey 2003). However, the empirical evidence on deep acting is inconsistent. For example, Brotheridge and Lee (2002, 2003) found that deep acting is not significantly correlated with emotional exhaustion or depersonalization, while alternatively there is evidence indicating that deep acting is

negatively related to job satisfaction and positively related to emotional exhaustion or depersonalization (Grandey 2003; Hochschild 1983). This could be because it takes conscious effort to express the desired emotion through modifying the emotion that was initially triggered. Nevertheless, surface acting has been found to exhibit a stronger negative relationship with job satisfaction and positive relationship with emotional exhaustion than deep acting (Bono and Vey 2005; Grandey 2003). Moreover, a recent meta-analysis shows that surface acting was positively related to personal ill-being such as emotional exhaustion, depersonalization, and psychological ill-health, and negatively related to job-related well-being such as job satisfaction and organizational attachment, and that deep acting was positively linked to job-related outcomes such as emotional performance and customer satisfaction (Hülsheger and Schewe 2011).

In recent years, research into the emotional labor specifically of teachers has increased as well (e.g., Hargreaves 2000; Näring, Briet, and Brouwers 2006; Philipp and Schüpbach 2010). This research has investigated how surface and deep acting strategies are associated with teachers' emotional exhaustion, depersonalization, and personal accomplishment. Surface acting has been found to be positively related to teachers' emotional exhaustion and depersonalization, and negatively related to their personal accomplishment, whereas the opposite has been found for deep acting (Näring et al. 2006). Furthermore, in their longitudinal study Philipp and Schüpbach (2010) reported that teachers who tended to deep act exhibited significantly less emotional exhaustion after one year, while teachers who tended to surface act exhibited more emotional exhaustion. These findings indicate that deep acting might be the more health-beneficial emotional labor strategy for teachers. However, there has been little empirical research on the relationship between the two emotional labor strategies and teachers' discrete emotions.

5 Integrating emotion regulation theory with the emotional labor concept

The emotion regulation and emotional labor strategies are theoretically very similar to one another. Grandey (2000, 2015) urged researchers to adopt the emotion regulation theory as a framework for emotional labor in order to move beyond the restricted surface and deep acting categorization of emotional labor, and to further consider specific emotion regulation strategies used in the workplace. Notably, she proposed that two processes of emotion regulation, namely, antecedent-focused and response-focused regulation strategies are linked to the emotional labor concept of deep acting and surface acting strategies. Specifically, on a theoretical level the antecedent-focused emotion regulation strategy *cognitive reappraisal* corresponds to deep acting because both focus on modifying internal feelings by reevaluating the situation, whereas the response-focused emotion regulation strategy *suppression* corresponds to surface acting because both focus on modifying expressions that are actually experienced. However, suppression only concentrates on hiding experienced emotions, whereas surface acting concentrates on both hiding and faking experienced emotions. In other words, deep acting and surface acting in the

emotional labor literature can be conceptualized more broadly as ways of regulating internal feelings (i.e., *cognitive reappraisal*) and modifying expressions (i.e., *suppression*) as addressed in the emotion regulation literature.

On the other hand, some researchers have suggested that despite their theoretical similarities emotion regulation and emotional labor strategies might not be completely aligned with one another. For instance, Diefendorff et al. (2008) conceptually claimed that emotional labor strategies are linked to specific motives, whereas the emotion regulation strategies do not presuppose specific motives. Deep acting and surface acting are associated with motives in that deep acting is defined as a sincere effort to meet the required display rules and surface acting is defined as a rather cynical endeavor to do so. The emotion regulation strategies as defined by Gross (1998a) do not follow this pattern. Diefendorff et al. (2008) also argued that items measuring deep acting are overly general and do not indicate which type of antecedent-focused emotion regulation strategy individuals are using (i.e., situation selection, situation modification, attentional deployment, or cognitive reappraisal). As such, it could be that deep acting potentially refers to more than just cognitive reappraisal (Mikolajczak et al. 2009).

Although it has been proposed that the theories from the two research traditions share similarities, to our knowledge no empirical studies have directly investigated the plausible relationships between emotion regulation and emotional labor. As pointed out by Mikolajczak et al. (2009), three main benefits would stem from integrating the emotion regulation and emotional labor traditions. First, considering more specific emotion regulation strategies might account for the inconsistent and mixed previous findings on deep acting. Second, applying the specific emotion regulation framework to emotional labor would produce a better understanding of emotion management at work as well as a more sophisticated prediction of the effects of emotions on both the individual and the organization. Finally, the extended conceptualization of emotional labor might be advantageous for both research and practice since it can provide the basis for necessary trainings focusing on specific strategies that are beneficial for individuals and organizations. In support of integrating these two traditions, Grandey (2015) additionally commented that emotional labor research could support emotion regulation research by offering evidence for the “real-world relevance” of managing emotions.

As such, researchers have discussed the advantages of theoretically integrating emotion regulation and emotional labor strategies (e.g., Grandey 2000, 2015; Mikolajczak et al. 2009), but have failed to empirically examine their relations. For example, in support of Grandey's (2000) theoretical claims, Diefendorff et al. (2008) demonstrated that in organizations considering specific emotion regulation strategies rather than the emotional labor strategies increased the understanding of emotion management at work. However, they considered only Gross's (1998a, b, 2002) emotion regulation strategies and excluded the emotional labor strategies from their study. So while the theoretical similarities have been discussed, so far no one has empirically investigated the specific associations between emotion regulation and emotional labor strategies. In particular, we attempted to examine this relation among teachers because this would make it possible to comprehensively understand their emotion management while teaching as well as the

emotional consequences of managing emotions on the individual teacher. Consequently, we expect this research to contribute to enhancing teachers' well-being as well as teaching quality and ultimately student learning and achievement (Frenzel et al. 2009).

6 Hypotheses

The purpose of this research was to integrate these two research traditions. More specifically, we sought to integrate emotion management strategies from the emotion regulation theory and emotional labor research in an educational context by empirically testing how measures of emotion regulation relate to measures of emotional labor strategies. In addition, we aimed to investigate the relationship between the four emotion management strategies and teachers' discrete emotions in order to further validate the proposed similarities between cognitive reappraisal and deep acting and suppression and surface acting. To this end, we compared teachers' usage of the emotion management strategies to their levels of enjoyment, pride, anger, anxiety, and frustration. Following the line of research presented above (e.g., theoretical similarities between emotion regulation and emotional labor as proposed by Grandey 2000, 2015) and empirical findings that reappraisers experienced more positive and fewer negative emotions whereas the opposite was found for suppressors (e.g., Gross and John 2003), we hypothesized the following:

Hypothesis 1 Reappraisal is positively related to deep acting.

Hypothesis 2 Suppression is positively related to surface acting.

Hypothesis 3 Reappraisal and deep acting are positively associated with positive emotions and negatively associated with negative emotions.

Hypothesis 4 Suppression and surface acting are positively associated with negative emotions and negatively associated with positive emotions.

7 Method

7.1 Participants and procedure

A total of $N = 189$ secondary school teachers in southern Germany (age $M = 43.01$, $SD = 11.64$, 56.6 % female) participated in this study. The sample consisted of 89 teachers (age $M = 41.87$, $SD = 10.61$, 66.3 % female) teaching 5th through 10th grade at three schools in the middle track of the German secondary school system, and 100 teachers (age $M = 43.99$, $SD = 12.43$, 48.0 % female) teaching 5th through 12th grade at three schools in the upper track of the German secondary school system. The teachers had an average of 14.05 years ($SD = 10.68$) of teaching experience, with a range of 1 to 39 years. They mainly taught natural science (26.1 %), language and social science (22.2 %), and language classes

(20 %). The teachers received a brief letter explaining the general aim of the study and assuring them of the confidentiality of their responses. Teachers then voluntarily completed the questionnaire that assessed their usage of emotion regulation and emotional labor strategies and emotions.

7.2 Measures

7.2.1 *Emotion regulation*

A slightly modified version of the German Emotion Regulation Questionnaire (Ablner and Kessler 2009) was used to examine teachers' usage of cognitive reappraisal and suppression strategies. The words "while teaching" were added to each item. Six items assessed reappraisal (e.g., "When I want to feel more *positive* emotion (such as joy or amusement) while teaching, I *change what I'm thinking about*"), and four items assessed suppression (e.g., "I keep my emotions to myself while teaching"). The participants rated each item on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The alpha coefficients were .87 for the reappraisal scale and .73 for the suppression scale.

7.2.2 *Emotional labor*

A slightly modified version of the Emotion Labor Strategies Scale (Diefendorff et al. 2005) was used to examine teachers' usage of surface and deep acting, with "for customers" being substituted by "my students" and "my job" by "as a teacher" in the items. Six items assessed surface acting (e.g., "I just pretend to have the emotions I need to display as a teacher"), and four items assessed deep acting (e.g., "I try to actually experience the emotions that I must show my students"). Two German-English bilinguals translated the items from the English version into German, and the translations were blindly back-translated to English by a bilingual co-author of the current research to check consistency. The English version was then compared with the back-translated one to ensure the accuracy of the contents. The translators extensively discussed all items until agreement was reached in terms of clarity and precision in content. The participants responded on a 5-point Likert scale from 1 (almost never) to 5 (almost always). The Cronbach's alphas were .80 for surface acting and .78 for deep acting.

7.2.3 *Teacher emotions*

The German version of the Achievement Emotions Questionnaire for Teachers (AEQ-Teacher; Frenzel et al. 2010) was used to assess teachers' experiences of enjoyment, anxiety, and anger. Each emotion scale included four items (enjoyment, e.g., "I generally enjoy teaching"; anxiety, e.g., "I am often worried that my teaching isn't going so well"; anger, e.g., "I often have reasons to be angry while I teach"). For the emotions pride and frustration, we adapted scales from the Emotions in Teaching Inventory (Trigwell 2009; pride, three items, e.g., "I am proud of the way I am teaching"; frustration, two items, e.g., "Getting students to

engage with learning is frustrating”) and added one self-developed item to the pride scale (“Thinking about my success as a teacher makes me feel proud”) and two items to the frustration scale (“I often feel frustrated while working with students” and “I generally think, frustration is a part of being a teacher”). Each item was answered on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach’s alphas for the enjoyment, pride, anxiety, anger, and frustration scales were .73/.77/.70/.70/.65, respectively.

8 Results

8.1 Preliminary analysis

Table 1 displays the intercorrelations, means, and standard deviations of the study variables. The positive emotions enjoyment and pride were positively intercorrelated, as were the negative emotions anxiety, anger, and frustration. The emotions with differing valences were negatively correlated with one another. Reappraisal was positively related to deep acting and suppression was positively related to surface acting. Reappraisal was positively related to enjoyment, whereas suppression was positively related to anxiety. Surface acting was negatively related to enjoyment and pride and positively related to anxiety, anger, and frustration, whereas deep acting was positively related to enjoyment and negatively to anger. Gender differences were only found for pride ($M_s = 3.57/3.79$, $SD_s = 0.61/0.64$, for male/female teachers), and surface acting ($M_s = 1.96/1.72$, $SD_s = 0.65/0.70$, for male/female teachers). Specifically, female teachers expressed significantly more pride than male teachers; $t(175) = 2.29$, $p < .05$, and male teachers used surface acting more than females; $t(182) = 2.35$, $p < .05$ (Cohen’s $d = .35$, each). No age differences were found.

8.2 Relationships between emotion management strategies and teachers’ discrete emotions

Structural equation modeling (SEM) was conducted using Mplus 7 (Muthén and Muthén 1998–2012) to examine the associations between emotion regulation and emotional labor strategies as well as the influence of the emotion management strategies on teachers’ discrete emotions. The model fit was assessed by the comparative fit index (CFI, Bentler 1990), the Tucker-Lewis Index (TLI, Tucker and Lewis 1973), and the root-mean-square-error of approximation (RMSEA, Steiger and Lind 1980). Scale items were used as manifest indicators of latent variables for the emotion management strategies and discrete emotions. We considered correlations among the four emotion management strategies and path coefficients from each emotion management strategy to each emotion. We constructed two models, with Model 1 including all of the emotion management and discrete emotion variables, and Model 2 additionally controlling for gender by including a path from gender to each of the latent variables. Figure 1 shows the significant correlations and path coefficients for both models. The model fits were

Table 1 Means, standard deviations, and correlations of the study variables

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Enjoyment	–										
2. Pride	.56**	–									
3. Anxiety	–.31**	–.16*	–								
4. Anger	–.40**	–.13	.49**	–							
5. Frustration	–.48**	–.29**	.43**	.63**	–						
6. Reappraisal	.16*	.10	.00	.04	.00	–					
7. Suppression	–.10	–.06	.23**	.05	.09	.22**	–				
8. Surface acting	–.21**	–.18*	.29**	.31**	.32**	.13	.27**	–			
9. Deep acting	.25**	.06	.00	–.17*	–.07	.20**	.16	.06	–		
10. Gender ^a	–.09	–.17*	.06	–.03	.00	–.10	.06	.17*	.08	–	
11. Age	.01	–.09	–.07	–.02	.06	.10	.05	.14	–.05	.14	–
Mean ^b	4.07	3.70	1.74	2.14	1.94	2.76	2.36	1.82	2.97	1.57	43.01
SD	0.58	0.63	0.65	0.71	0.69	0.86	0.75	0.69	0.87	0.50	11.64

^a Gender was coded 1 = male and 2 = female. ^b Possible range 1–5* $p < .05$. ** $p < .01$

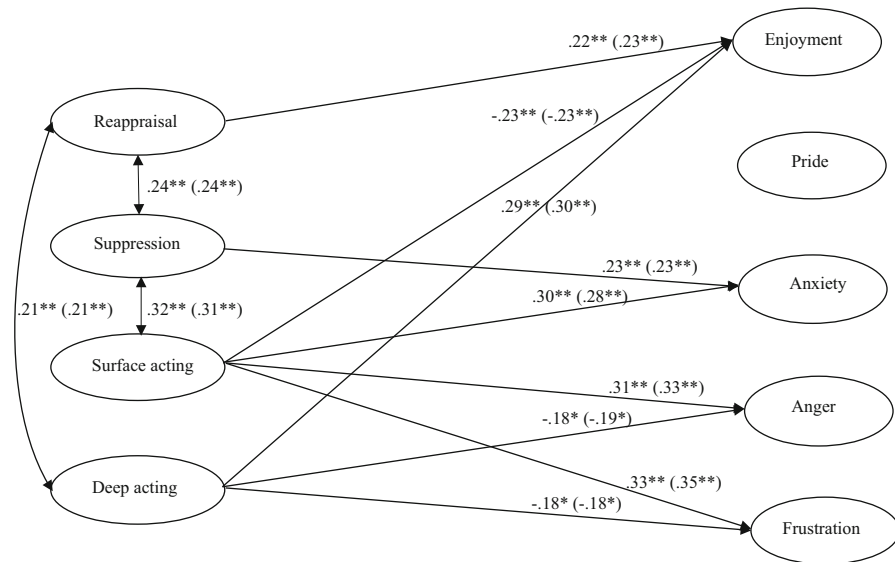


Fig. 1 Correlations for the emotion management strategies and path coefficients for their effects on teachers' emotions for SEM Model 1. Estimates in parentheses are coefficients for Model 2 (controlling for gender). To ease reading indicator variables, error variables and non-significant results are omitted. * $p < .05$. ** $p < .01$

acceptable: χ^2 (826) = 1189.09, $p < .01$, CFI = .92, TLI = .91, and RMSEA = .048 in Model 1, and χ^2 (817) = 1188.81, $p < .01$, CFI = .91, TLI = .90, and RMSEA = .049 in Model 2, considering recommendations that CFI > .90, TLI > .90 (Lance et al. 2006), and RMSEA < .060 (Hu and Bentler 1999). Table 2 displays all of the factor loadings and latent correlations for the emotion management strategies, and path coefficients for their effects on teachers' emotions in Models 1 and 2.

In Model 1, in terms of the relations between emotion regulation and emotional labor strategies, as expected reappraisal was positively related to deep acting ($r = .21$, $p < .01$) and suppression was positively related to surface acting ($r = .32$, $p < .01$). However, considering the theoretical similarities between the emotion regulation and emotional labor strategies, the strength of the correlation between the strategies was rather low. There was also a positive correlation between reappraisal and suppression ($r = .24$, $p < .01$).

Despite positive correlations between reappraisal and deep acting, and between suppression and surface acting, the different emotion management strategies were in part associated with different emotions. We expected reappraisal and deep acting to be positively related to positive emotions and negatively related to negative emotions. We also expected suppression and surface acting to be positively related to negative emotions and negatively related to positive emotions. The present findings partially supported our hypotheses. We found that both reappraisal ($\beta = .22$, $p < .01$) and deep acting ($\beta = .29$, $p < .01$) were positively related to enjoyment, but only deep acting was negatively associated with anger ($\beta = -.18$,

Table 2 Factor loadings, latent correlations of the emotion management strategies, and path coefficients for their effects on teachers' emotions from Models 1 and 2

		Factor loadings	Reappraisal	Suppression	Surface acting	Deep acting
Reappraisal by (ra)	ra1	.61**/.60**	—			
	ra2	.61**/.61**				
	ra3	.63**/.62**				
	ra4	.82**/.83**				
	ra5	.73**/.73**				
	ra6	.88**/.88**				
Suppression by (sp)	sp1	.59**/.60**	.24**/.24**	—		
	sp2	.58**/.59**				
	sp3	.82**/.83**				
	sp4	.57**/.56**				
Surface acting by (sa)	sa1	.67**/.66**	.10/.11	.32**/.31**	—	
	sa2	.67**/.66**				
	sa3	.52**/.52**				
	sa4	.78**/.79**				
	sa5	.51**/.51**				
	sa6	.80**/.79**				
Deep acting by (da)	da1	.82**/.83**	.21**/.21**	.13/.12	— .08/— .10	—
	da2	.92**/.92**				
	da3	.77**/.77**				
	da4	.48**/.48**				
Enjoyment by (jo)	jo1	.73**/.73**	.22**/.23**	— .15/— .14	— .23**/— .23**	.29**/.30**
	jo2	.53**/.52**				
	jo3	.81**/.81**				
	jo4	.69**/.70**				
Pride by (pr)	pr1	.68**/.68**	.14/.13	— .03/— .02	— .15/— .16	.11/.13
	pr2	.75**/.75**				
	pr3	.54**/.55**				
	pr4	.79**/.79**				
Anxiety by (ax)	ax1	.51**/.52**	— .12/— .11	.23**/.23**	.30**/.28**	— .09/— .10
	ax2	.53**/.51**				
	ax3	.60**/.59**				
	ax4	.84**/.86**				
Anger by (ag)	ag1	.67**/.68**	.00/— .01	.03/.04	.31**/.33**	— .18*/— .19*
	ag2	.68**/.68**				
	ag3	.51**/.52**				
	ag4	.68**/.68**				
Frustration by (fr)	fr1	.55**/.55**	— .06/— .08	.03/.03	.33**/.35**	— .18*/— .18*
	fr2	.54**/.53**				
	fr3	.69**/.69**				
	fr4	.53**/.53**				

Note: The results of Model 1 are to the left of the slash and the results of Model 2 are to the right. Correlations among the emotion management strategies are displayed in the upper part of the table; path coefficients for effects of emotion management strategies on teachers' emotions are displayed in the lower part of the table

* $p < .05$. ** $p < .01$

$p < .05$) and frustration ($\beta = -.18, p < .05$). Both suppression ($\beta = .23, p < .01$) and surface acting ($\beta = .30, p < .01$) were positively related to anxiety, but only surface acting was positively related to anger ($\beta = .31, p < .01$) and frustration ($\beta = .33, p < .01$), and negatively to enjoyment ($\beta = -.23, p < .01$). The emotion of pride was not related to either the emotion regulation or emotional labor strategies. Overall, the emotional labor strategies demonstrated more significant relationships with teachers' emotions than emotion regulation strategies.

Given the influence of gender on pride and surface acting, we controlled for gender in Model 2. All of the significant findings reported in the initial analysis remained significant when controlling for gender (see Table 2 and Fig. 1). The SEM including gender established the robustness of the observed relations.

9 Discussion

Although researchers have called for a better theoretical integration of research on emotion regulation and emotional labor (e.g., Grandey 2000, 2015; Mikolajczak et al. 2009), there has been a lack of empirical work investigating the specific associations between the two research paradigms. Therefore, the aim of the present study was to integrate emotion regulation theory with the concept of emotional labor by exploring how similar the emotion management strategies proposed by the two research traditions are to one another. Additionally, even though empirical work on teachers' emotions is increasing (e.g., Schutz and Zembylas 2009), researchers have still paid little attention to teachers' emotion management and there has been little empirical research on the association between emotion management strategies and teachers' discrete emotions. Thus, beyond integrating the two research traditions, we also examined how the emotion management strategies proposed by each tradition are related to teachers' discrete emotions in order to corroborate the assumption that individuals' use of emotion management strategies would have important implications for their affective experiences (Gross and John 2003).

It has been argued that the two research traditions could mutually benefit from each other. For example, Mikolajczak et al. (2009) claimed that integrating the emotion regulation theory with emotional labor research would allow for a better understanding of how individuals manage their emotions at work and Grandey (2015) argued that research on emotion regulation can adopt "real-world" evidence from emotional labor research. The present findings also underscore the need for linking the emotion regulation and the emotional labor literatures. We found positive relationships between reappraisal and deep acting, and between suppression and surface acting strategies. In fact, we expected strong positive correlations between these strategies, as Grandey (2000) proposed that there is a strong conceptual correspondence between emotion regulation and emotional labor strategies. However, while the strategies were positively related to one another, the correlations between them were rather low empirically. This indicates that cognitive reappraisal and deep acting as well as suppression and surface acting are not completely targeting the same strategies to manage emotions, despite their similar conceptualizations in the two research traditions (Grandey 2000).

One reason for the weak correlations between the strategies from the different research traditions could be the items used to measure these strategies. According to Diefendorff et al. (2008), deep acting items such as “I try to actually experience the emotions that I must show to others” are too general, because they do not assess the specific antecedent-focused emotion regulation strategy used. It is possible that in contrast to reappraisal items, deep acting items assess several different regulatory processes (Mikolajczak et al. 2009). Another reason for the weak relationships could be that emotional labor strategies are associated with specific motives, whereas the emotion regulation strategies are not (Diefendorff et al. 2008), as previously mentioned. For example, when individuals fake or hide emotions they act in a cynical way, but when they strive to alter their feelings they are sincere; by contrast, individuals might use the emotion regulation strategies as defined by Gross (1998a) for various reasons. They can reappraise or suppress feelings for sincere or cynical reasons.

Furthermore, the empirically low correlation between surface acting and suppression might be due to suppression only being about hiding emotions, whereas surface acting includes hiding as well as faking emotions. In fact, some researchers have pointed out the importance of separating surface acting into two dimensions, namely, suppressing felt emotions and faking unfelt emotions (Lee and Brotheridge 2006; Lee et al. 2010). We additionally found a weak but positive correlation between reappraisal and suppression. This is understandable because both could reflect the ability to self-regulate emotions, particularly entailing down-regulating emotions, even though their cognitive processing tactics differ. The positive link between reappraisal and suppression was also reported by Matsumoto et al. (2008).

With regard to the relations between emotion management strategies and teachers' discrete emotions, the findings demonstrated that reappraisal and deep acting strategies were positively related to enjoyment. In addition, deep acting was negatively related to negative emotions such as anxiety, anger, and frustration. Although previous studies have reported inconsistent findings on the influence of deep acting (e.g., Bono and Vey 2005; Brotheridge and Lee 2002, 2003; Grandey 2003), the present findings clearly demonstrate that deep acting is positively linked to teachers' positive emotions and negatively linked to their negative emotions, which indicates the potentially beneficial influences of deep acting on teachers' emotional experiences. Furthermore, suppression and surface acting strategies were positively associated with negative emotions (i.e., suppression with anxiety; surface acting with anxiety, anger, and frustration); in addition, surface acting was negatively associated with the positive emotion enjoyment. These results remained essentially the same when controlling for gender, which ensured that the observed relations were not mere artifacts of another plausible variable (i.e., gender). These findings are in line with the previous findings that reappraisal is linked to experiencing more positive emotions, whereas suppression is linked to experiencing more negative emotions (Gross and John 2003). Overall, the emotional labor strategies seem to be more related to teachers' emotions than the emotion regulation strategies. Particularly, surface acting seems to be the most disadvantageous strategy for teachers to use.

The emotion regulation and emotional labor strategies were not significantly related to the emotion of pride. This could be because teachers might not use any strategies to regulate their experiences of pride. Whereas they may use reappraisal and deep acting strategies to promote enjoyment and reduce anxiety, anger, or frustration while teaching, they may not feel the need to alter their feelings of pride through the use of emotion management strategies. One possible reason may be that teachers may not believe that pride would have a large or direct influence on successfully reaching their main instructional goals (e.g., students' cognitive development, facilitation of students' motivation, and improvement of students' social-emotional skills), in contrast to other positive emotions such as enjoyment. Future studies should examine teachers' experiences of pride in more detail and the circumstances that may lead to it not being regulated, as well as the reasons for other discrete emotions being regulated, given that the previous studies have focused on the influences of emotion management strategies on more general positive and negative affect rather than discrete emotions.

Since reappraisal and deep acting intervene in the emotion-generative process before the emotions are actually induced, using these strategies leads to modifying inner feelings as well as expressions. Drawing upon Gross and John's (2003) assumptions, under stressful situations in the classroom, teachers who reappraise may try to be optimistic, reinterpret the situation, and reduce negative emotions. These active reappraisal and deep acting efforts would help teachers experience and express more positive emotions as compared with teachers who do not use reappraisal or deep acting, which is reflected in our results. In contrast, suppression and surface acting take place late in the emotion-arousing process or after the emotions have already been prompted. Suppression can only modify individuals' expressive behaviors and consumes cognitive resources (Gross 2002). Suppressors and perhaps surface actors handle stressful situations by hiding their inner feelings, which does not result in successfully repairing negative emotions (Gross and John 2003).

In summary, based on our expectation of strong positive correlations between cognitive reappraisal and deep acting as well as between suppression and surface acting, we also assumed that these constructs would be similarly related to teachers' emotions. However, the present findings only partially supported these assumptions, because reappraisal and deep acting as well as suppression and surface acting showed different relations with teachers' discrete emotions. The findings suggest that the processes related to the emotion regulation and emotional labor strategies might be more complicated than expected, particularly when it comes to their relationships with teachers' experienced emotions.

10 Implications, limitations, and future directions

The present study expands research on teachers' emotion management and their emotions, which are two areas that have just started receiving empirical attention. Particularly, the current research is the first study which empirically examined the similarities between strategies proposed by the emotion regulation and emotional

labor research traditions. Furthermore, we investigated how these emotion management strategies are related to teachers' discrete emotions.

The present results suggest that reappraisal and deep acting strategies are associated with teachers' experiences of positive emotions, whereas surface acting might prevent teachers from experiencing positive emotions. Moreover, the findings suggest that teachers employing suppression and surface acting strategies might experience more negative emotions, whereas teachers who use deep acting experience fewer negative emotions. These findings are essential not only for research, but also for practical purposes. They can help researchers and educators to develop and implement practical interventions aimed at training pre-service and in-service teachers on how to manage their emotions in class. Our findings highlight that it is important to encourage teachers to use reappraisal and deep acting strategies. If teachers are able to learn how to use reappraisal and deep acting strategies through practical trainings, it will be advantageous for them and their overall instructional quality.

The present study has some limitations and, accordingly, we suggest additional directions for future research. In an effort to integrate emotion regulation and emotional labor, we included only two emotion regulation strategies (i.e., cognitive reappraisal and suppression) among the five specific emotion regulation strategies. Although we acknowledge the significance of including all emotion regulation strategies derived from Gross's (1998b) model in order to more completely integrate emotion regulation and emotional labor, we wanted to start investigating this unexamined research area by focusing on the two most commonly adapted emotion regulation strategies in everyday life (Gross and John 2003). Furthermore, we selected the two emotion regulation strategies that were the most conceptually similar to the emotional labor strategies. Future research might consider including all of the emotion regulation strategies proposed by Gross (1998b, 2001), particularly since Diefendorff et al. (2008) found that people used a wide variety of these emotion regulation strategies to manage their emotions at work.

We investigated the relationships between emotion management strategies and emotions at a single time point, providing only a snapshot of these relations. As the study was cross-sectional, causality cannot be inferred. We assumed that the emotion management strategies would influence teachers' emotions, but it could very well be that experiencing a particular emotion leads to teachers using one type of emotion management strategy over another. A longitudinal or experimental design is necessary to examine whether the emotion management strategy used influences the emotions experienced or vice versa. In the future, researchers should conduct longitudinal studies on these relationships in order to more fully understand how emotion management strategies and emotions are related to one another, and to also capture potential mediating processes. Since our results suggest that the emotion regulation and emotional labor strategies are not as similar to one another as they theoretically appear to be, future studies might explore these processes in more detail. This effort would help elucidate the processes of emotion management.

In addition, this study only included one sample of teachers. Studies with more diverse samples and in various contexts are needed to see if the present results are replicable. The present findings are based on teachers' self-reported data; thus,

teachers might have reported emotion management strategies and emotional experiences that they perceived as desirable for teachers. Therefore, future studies should include measures on social desirability as well as emotional display rules for teachers to understand these relationships more accurately and comprehensively.

Furthermore, as some research suggests, individual differences may be related to emotion regulation and emotional labor (Grandey 2000; Haga et al. 2009). Future research could also include individual differences such as personality constructs into the emotion regulation and emotional labor framework. While little evidence is available about how individual differences might influence emotion management, even less is known about whether cultural differences in the use of emotion management strategies exist (Haga et al. 2009). Future consideration of individual differences as well as culture could help enrich our understanding of emotion management.

Finally, we know that teachers do frequently regulate their emotions because they believe it is helpful for more effective classroom management, discipline, and interactions with students (Sutton et al. 2009). Thus, it would be meaningful to integrate teachers' emotions and emotion regulation with classroom management research in future investigations. Some researchers have emphasized that teachers' emotional experiences are particularly associated with their classroom management (e.g., Emmer and Stough 2001; Sutton 2007). Sutton (2004) also stressed the importance of considering teachers' emotion regulation when trying to understand classroom management. She reported that teachers were more likely to experience negative emotions and thus regulate their emotions, when their instructional goals were disrupted by student misbehavior rather than when students experienced difficulties in understanding concepts. As such, integrating emotional regulation into research on classroom management might be crucial for re-conceptualizing classroom management and discipline, given that the way teachers regulate their emotions would in turn impact their classroom management and discipline (Sutton and Wheatley 2003).

Acknowledgments We would like to thank Anne C. Frenzel for her valuable comments on an earlier version of this manuscript, and Wolfgang Sack, Teresa Schirmbeck, Stefan Hauser, and Cornelia Meyer for their assistance in the data collection.

References

- Abler, B., & Kessler, H. (2009). Emotion regulation questionnaire—Eine deutsche version des ERQ von Gross & John. *Diagnostica*, 55(3), 144–152.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107, 238–246.
- Bono, J. E., & Vey, M. A. (2005). Toward understanding emotional management at work: A quantitative review of emotional labor research. In C. E. J. Hartel, W. J. Zerbe, & N. M. Ashkanasy (Eds.), *Emotions in organizational behavior* (pp. 213–234). Mahwah: Lawrence Erlbaum Associates Inc.
- Brackett, M. A., Palomera, R., Mojsa-Kaja, J., Reyes, M. R., & Salovy, P. (2010). Emotion-regulation ability, burnout, and job satisfaction among British secondary-school teachers. *Psychology in the Schools*, 47(4), 406–417.
- Brotheridge, C., & Grandey, A. (2002). Emotional labor and burnout: Comparing two perspectives of “people work”. *Journal of Vocational Behavior*, 60, 17–39.

- Brotheridge, C. M., & Lee, R. T. (2002). Testing a conservation of resources model of the dynamics of emotional labor. *Journal of Occupational Health Psychology*, 7, 57.
- Brotheridge, C. M., & Lee, R. T. (2003). Development and validation of the emotional labor scale. *Journal of Occupational and Organizational Psychology*, 76(3), 365–379.
- Diefendorff, J. M., Croyle, M. H., & Gosserand, R. H. (2005). The dimensionality and antecedents of emotional labor strategies. *Journal of Vocational Behavior*, 66(2), 339–359.
- Diefendorff, J. M., Richard, E. M., & Yang, J. (2008). Linking emotion regulation strategies to affective events and negative emotions at work. *Journal of Vocational Behavior*, 73(3), 498–508.
- Emmer, E. T., & Stough, L. M. (2001). Classroom management: A critical part of educational psychology, with implications for teacher education. *Educational Psychology*, 3, 103–112.
- Frenzel, A. C., Goetz, T., Stephens, E. J., & Jacob, B. (2009). Antecedents and effects of teachers' emotional experiences: An integrated perspective and empirical test. In P. A. Schutz & M. Zembylas (Eds.), *Advances in teacher emotion research: The impact on teachers' lives* (pp. 129–151). New York: Springer.
- Frenzel, A. C., Pekrun, R., & Goetz, T. (2010). *Achievement Emotions Questionnaire for teachers (AEQ-teacher)—User's manual*. Munich: University of Munich: Department of Psychology.
- Fried, L. (2011). Teaching teachers about emotion regulation in the classroom. *Australian Journal of Teacher Education*, 36, 117–127.
- Grandey, A. A. (2000). Emotion regulation in the workplace: A new way to conceptualize emotional labor. *Journal of Occupational Health Psychology*, 5, 95–110.
- Grandey, A. A. (2003). When “the show must go on”: Surface acting and deep acting as determinants of emotional exhaustion and peer-rated service delivery. *Academy of Management Journal*, 46, 86–96.
- Grandey, A. A. (2015). Smiling for a wage: What emotional labor teaches us about emotion regulation. *Psychological Inquiry*, 26(1), 54–60.
- Gross, J. J. (1998a). Antecedent- and response-focused emotion regulation: Divergent consequences for experience, expression and physiology. *Journal of Personality and Social Psychology*, 74, 224–237.
- Gross, J. J. (1998b). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, 2(3), 271–299.
- Gross, J. J. (2001). Emotion regulation in adulthood: Timing is everything. *Current Directions in Psychological Science*, 10(6), 214–219.
- Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology*, 39, 281–291.
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85(2), 348–362.
- Gross, J. J., Richards, J. M., & John, O. P. (2006). Emotion regulation in everyday life. In D. K. Snyder, J. A. Simpson, & J. N. Hughes (Eds.), *Emotion regulation in families: Pathways to dysfunction and health* (pp. 13–35). Washington: American Psychological Association.
- Haga, S. M., Kraft, P., & Corby, E. K. (2009). Emotion regulation: Antecedents and well-being outcomes of cognitive reappraisal and expressive suppression in cross-cultural samples. *Journal of Happiness Studies*, 10(3), 271–291.
- Hargreaves, A. (1998). The emotional practice of teaching. *Teaching and Teacher Education*, 14, 835–854.
- Hargreaves, A. (2000). Mixed emotions: Teachers' perceptions of their interactions with students. *Teaching and Teacher Education*, 16(8), 811–826.
- Hochschild, A. R. (1983). *The managed heart: Commercialization of human feeling*. Berkeley: University of California Press.
- Hochschild, A. R. (1990). Ideology and emotion management: A perspective and path for future research. In T. Kemper (Ed.), *Research agendas in the sociology of emotions*. Albany: State University of New York State.
- Hu, L.-T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1–55.
- Hülshager, U. R., & Schewe, A. F. (2011). On the costs and benefits of emotional labor: A meta-analysis of three decades of research. *Journal of Occupational Health Psychology*, 16(3), 361.
- Johnson, H. A. M., & Spector, P. E. (2007). Service with a smile: Do emotional intelligence, gender, and autonomy moderate the emotional labor process? *Journal of Occupational Health Psychology*, 12(4), 319.

- Lance, C. E., Butts, M. M., & Michels, L. C. (2006). The sources of four commonly reported cutoff criteria: What did they really say? *Organizational Research Methods*, 9, 202–220.
- Lee, R. T., & Brotheridge, C. M. (2006). Validation and extension of the emotional labor scale: Evidence from daycare workers. Paper presented at the EMONET conference, Atlanta, GA.
- Lee, R. T., Lovell, B. L., & Brotheridge, C. M. (2010). Tenderness and steadiness: Relating job and interpersonal demands and resources with burnout and physical symptoms of stress in Canadian physicians. *Journal of Applied Social Psychology*, 40(9), 2319–2342.
- Matsumoto, D., Yoo, S. H., & Nakagawa, S. (2008). Culture, emotion regulation, and adjustment. *Journal of Personality and Social Psychology*, 94(6), 925.
- Mikolajczak, M., Tran, V., Brotheridge, C. M., & Gross, J. J. (2009). Using an emotion regulation framework to predict the outcomes of emotional labor. *Research on Emotion in Organizations*, 5, 245–273.
- Muthén, L. K., & Muthén, B. O. (1998–2012). Mplus user's guide (6th ed). Los Angeles: Muthén & Muthén.
- Näring, G., Briët, M., & Brouwers, A. (2006). Beyond demand–control: Emotional labor and symptoms of burnout in teachers. *Work and Stress*, 20, 303–315.
- Philipp, A., & Schüpbach, H. (2010). Longitudinal effects of emotional labour on emotional exhaustion and dedication of teachers. *Journal of Occupational Health Psychology*, 15(4), 494–504.
- Schutz, P. A., & Zembylas, M. (Eds.). (2009). *Advances in teacher emotion research: The impact on teachers' lives*. New York: Springer.
- Steiger, J. H., & Lind, J. C. (1980). Statistically based tests for the number of common factors. Paper presented at the annual Spring Meeting of the Psychometric Society, Iowa City.
- Sutton, R. E. (2004). Emotional regulation goals and strategies of teachers. *Social Psychology of Education*, 7(4), 379–398.
- Sutton, R. E. (2007). Teachers' anger, frustration, and self-regulation. In P. A. Schutz & R. Pekrun (Eds.), *Emotion in education* (pp. 251–266). San Diego: Elsevier Academic Press.
- Sutton, R. E., & Harper, E. (2009). Teachers' emotion regulation. In L. J. Saha & A. G. Dworkin (Eds.), *International handbook of research on teachers and teaching* (pp. 389–401). US: Springer.
- Sutton, R. E., & Knight, C. C. (2006, April). Assessing teachers' emotion regulation. Paper presented at the American Educational Research Association Meeting, San Francisco.
- Sutton, R. E., Mudrey-Camino, R., & Knight, C. C. (2009). Teachers' emotion regulation and classroom management. *Theory Into Practice*, 48(2), 130–137.
- Sutton, R. E., & Wheatley, K. F. (2003). Teachers' emotions and teaching: A review of the literature and directions for future research. *Educational Psychology Review*, 15(4), 327–358.
- Taxer, J. L., & Frenzel, A. C. (2015). Facets of teachers' emotional lives: A quantitative investigation of teachers' genuine, faked, and hidden emotions. *Teaching and Teacher Education*, 49, 78–88.
- Trigwell, K. (2009). Relations between teachers' emotions in teaching and their approaches to teaching in higher education: A pilot study. Paper presented at 13th conference of the European Association for Research on Learning and Instruction. Amsterdam, Netherlands.
- Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika*, 3, 1–10.
- Williams-Johnson, M. W., Cross, D. I., Hong, J. Y., Aultman, L. P., Osbon, J. N., & Schutz, P. A. (2008). "There is no emotion in math": How teachers approach emotions in the classroom. *Teacher College Record*, 110(8), 1574–1612.
- Zembylas, M. (2003). Emotions and teacher identity: A poststructural perspective. *Teachers and Teaching*, 9(3), 213.

Mikyong Lee is a guest researcher in the Department of Psychology at the University of Munich. Her main research interests include achievement goals and emotions in educational contexts as well as teachers' emotions and emotional regulation.

Reinhard Pekrun is Professor for Personality and Educational Psychology at the University of Munich, Department of Psychology. He is a highly cited scientist who pioneered research on emotions in education, authored 21 books and more than 200 articles and chapters, and originated the Control-Value Theory of Achievement Emotions. Pekrun is a Fellow of the International Academy of Education, of the

American Educational Research Association, and of the Association for Psychological Science. He served as President of the Stress and Anxiety Research Society and Vice-President for Research at the University of Munich, and is active in policy development and implementation in education.

Jamie L. Taxer is a postdoctoral fellow in the Department of Psychology at Stanford University. Her research focuses on emotional processes in educational contexts.

Paul A. Schutz is currently a professor in the Department of Educational Psychology at the University of Texas at San Antonio. His research interests include the nature of emotion, emotional regulation, and teachers' understandings of emotion in the classroom. He is a past president for Division 15: Educational Psychology of the American Psychological Association and a former co-editor of the *Educational Researcher: Research News and Comment*, a lead journal for the American Educational Research Association.

Elisabeth Vogl is a postdoctoral fellow in the Department of Psychology at the University of Munich. Her research focuses on emotional and motivational processes in educational contexts.

Xiyao Xie is a PhD graduate in Psychology and Cognitive Neuroscience. She is currently a guest researcher in the TUM-NIC Neuroimaging Center at Technical University of Munich, focusing on the social-contextual influences on emotionality.