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EXPLORING TEACHER EMOTIONS

A Literature Review and an Experience Sampling Study

Melanie M. Keller, Anne C. Frenzel, Thomas Goetz, Reinhard Peckrun, and Lauren Hensley

Introduction

Emotions are an integral part of human life. Along with cognition and motivation, emotions are considered one of the three fundamental mental operations that are both interdependent and inseparable in defining human beings and their relationship to the environment (e.g., Hargreaves, 2000; Lazarus, Coyle, & Folkman, 1984). Emotions can be defined via several psychological processes, including emotion-specific motivational tendencies, expressive behaviors, and physiological processes and cognitions; however, the affective component in emotions, such as feelings of unease and nervousness in anxiety, are considered the core element of emotions (e.g., Pekrun, 2006).

Common to almost all emotion theories is the conception that emotions are incredibly variable and evidence subtle differences, for example, in accompanying action tendencies or emotion expression (Ellsworth & Scherer, 2003); thus, the view shared by many researchers of emotion is that broad dimensions such as positive vs. negative affect are not sufficient to accurately describe the occurrence of emotions (Lazarus, 1991). Accordingly, in this chapter we adopt the view of distinct, discrete varied emotions like enjoyment, anxiety, or anger.

For a long time, the examination of emotions was absent from academic research, with the exception of studies on students’ anxiety (Zeidner, 1998) and discussions of emotional elements within attribution theory (Weiner, 1985). The dearth of research on emotions is even more evident in research focused on teachers, which has received very little attention so far (for exceptions, see Frenzel, Goetz, Lüdtke, Pekrun, & Sutton, 2009; Frenzel, Goetz, Stephens, & Jacob, 2009; Hargreaves, 2005; Sutton & Whealday, 2003; Zembylas, 2004). However, teacher emotions are highly relevant for instructional processes, as they affect teacher behavior, shape teacher–student relationships, and ultimately impact student outcomes. Furthermore, such emotions also are important to teachers’ psychological well-being. Oftentimes discussed in this context is teacher burnout, which can be described in terms of emotional depletion (Maslach, Schaufeli, & Leiter, 2001, p. 416) and is thought to be related to emotional experience (see the chapter by Durr, Chang, & Carson, this volume). Thus, teacher emotions should also play a crucial role in teachers’ job satisfaction and reasons for either staying in a job or leaving it prematurely.
Regarding teachers’ emotional experiences, we are particularly interested in those emotions experienced during teaching. It can be argued that the act of teaching is central in teachers’ professional lives: teachers spend about 40% to 50% of their working time in the classroom (OECD, 2011). That is not to say that the impact of teachers’ out-of-class activities, such as administrative tasks, or their relationship to students, is negligible when it comes to their emotional lives. All three areas will be accounted for in the present chapter.

Frenzel and colleagues have proposed an encompassing theoretical model on antecedents and effects of teacher emotions that proposes that teachers’ perceptions of student behaviors, and their appraisals regarding the alignment between their classroom goals and the achieved goals during teaching, are important determinants of teachers’ emotional experiences in class. In turn, they propose that teachers’ emotions influence their instructional behavior, which feeds back to student behaviors in class and to the attainment of teachers’ goals, thus closing the circle of this reciprocal model. For more details on this model, the reader is referred to Frenzel and Stephens (2013), Frenzel (in press), and Frenzel, Goetz, Stephens, et al. (2009). In this chapter, we will focus on reviewing evidence pertaining to the frequency and antecedents of teachers’ experience of positive and negative emotions during teaching and, more generally, in the course of their professional lives. This is followed by some methodological considerations regarding various assessment methods for gauging teacher emotions, particularly regarding recall-based and online-based assessment methods. We conclude with insights from a pilot study on the implementation of the Experience Sampling Method for real-time assessment of teacher emotions and present descriptive results for the frequency of teacher emotions while teaching.

Review of Research—A Tour of Empirical Evidence on Teacher Emotions

In this section we focus on teacher emotions as related to their actual emotional experiences in class but also include evidence from outside the classroom. We summarize research on the occurrence, sources, and effects of discrete teacher emotions.

So far, teacher emotions have been investigated almost exclusively via teacher self-reports. Most studies employ qualitative interviews (e.g., Coleman, 1994; Gresham, 2007; Hargreaves, 1998, 2000, 2005; Hargreaves & Tucker, 1991; Sutton, 2004, 2007), sometimes interviewing the teachers several times over a long time frame (e.g., Darby, 2008; van Veen, Sleegers, & van de Ven, 2005). Zembalas (2002, 2004) investigates teacher emotions in depth employing an ethnographic approach, including interviews, participant observations, and collection of documents. Quantitatively, teacher emotions have been investigated using questionnaires, both in single-shot designs (e.g., Frenzel, Goetz, Stephens, et al., 2009; Frenzel & Götz, 2007; Frenzel, Götz, & Pekrun, 2008; Gresham, 2007, 2009; Prawat, Byers, & Anderson, 1983) and in longitudinal designs (Beilock, Gunderson, Ramirez, & Levine, 2010; Frenzel, Goetz, Lüdtke, et al., 2009). Furthermore, Carson (2006) and Frenzel and colleagues (Frenzel, Goetz, Stephens, et al., 2009; Frenzel & Götz, 2007) investigated teacher emotions via Experience Sampling or use of a lesson diary, respectively.

Teachers’ Experience of Positive Emotions

As Hargreaves (1998) pointed out, “good teaching is charged with positive emotion” (p. 835). A primary source of teachers’ positive emotions is their students; teachers feel joy and satisfaction in their students’ growth, especially when students learn and have breakthroughs
In that sense, teaching is considered an emotionally rewarding profession. Some time ago, Lortie (1975) spoke of the “psychic rewards” resulting from “classroom events and relationships with students” (p. 817) that are associated with positive emotions.

Outside the classroom, teachers’ positive emotions and feelings of being rewarded result when students greet them in the hallways or when students respect them for something other than their subject knowledge or teaching. Teachers also describe their interaction with students outside the classroom, such as through athletics, as a positive experience (Hargreaves, 2000). Evidence suggests that in situations that transcend the usual roles of teachers and students (e.g., advising a student organization, conducting a special interest course, or doing something very unusual and unexpected in the classroom), teachers particularly profit emotionally from their interactions with students (Hargreaves, 1998, 2000).

A sense of professional efficacy, that is, the feeling that they are effective and true to their beliefs and values, is also a source for teachers’ positive emotional experiences (Nias, 1996).

Luckily, classrooms seem to be infused with positive emotions to a larger extent than with negative emotions (Coleman, 1994; Sutton & Wheatley, 2003); however, it remains unclear to what extent teachers’ reports about their emotions are influenced by social desirability and are thus subject to self-report biases favoring positive emotions. So, too, is enjoyment quite a common emotional experience of teachers in school and in class. In a diary study on the frequency and intensity of teachers’ emotional experiences, Frenzel and Götz (2007) showed that teachers’ experience of enjoyment in their classroom life is more dominant than are other distinct emotions such as anger or anxiety (see also Sutton & Wheatley, 2003). Indeed, in about 75% of their lessons, teachers experience enjoyment to at least some degree (Carson, 2006; Frenzel & Götz, 2007).

Another important distinct positive emotion is pride. Pride can be other- or self-directed; that is, one can feel proud because of one’s own accomplishments or the accomplishments of others—in the teacher’s case, typically students’ accomplishments. For example, a teacher may feel proud when he or she is able to identify a student with a learning disability (Hargreaves, 2000) or attain personally important work goals (Lortie, 1975). As stated earlier, reaching students and helping them grow are seminal ideals for teachers, so it follows that students’ progress and accomplishments may also result in feelings of pride (e.g., Darby, 2008; Hargreaves, 1998). Indeed, pride is experienced regularly by teachers; in an experience sampling study assessing teacher emotions during teaching, Carson (2006) found that pride is the second most frequent emotion, after enjoyment.

**Teachers’ Experience of Negative Emotions**

Sources outside classrooms, such as feeling impeded by the school structures, pressured by educational reforms, or subjected to scrutiny, can be identified as pertinent to teachers’ experience of negative emotions (Darby, 2008; Jeffrey & Woods, 1996; Nias, 1996). In addition, teachers feel sad or uncomfortable when they do not have emotionally close relationships with students or when they get the impression that they are misunderstood (Hargreaves, 2000). As Nias (1996) puts it, teachers feel negative emotions when they are distracted “from what they defined as their central purpose, helping children learn” (p. 300). However, during teaching and while in class, teachers can also experience negative emotions, such as frustration or anger,
in their interactions with students. Students’ (mis)behavior is a primary source for negative teacher emotions.

Specifically, teachers’ experiences of anger are closely tied to students’ misbehavior and appear to be quite common (Chang & Davis, 2009; Sutton, 2007; Sutton & Wheatley, 2003). Teachers’ anger is particularly tied to discipline and disciplinary problems in the classroom (Frenzel & Götz, 2007; Hargreaves, 2000). Teachers feel angry when students are lazy, uncooperative, or unappreciative of the effort the teacher has invested into a task or particular lesson (Hargreaves, 2000; Sutton, 2007). Teachers also report feeling angry when students refuse to make an effort or experience “‘undeserved’ success [. . .] when the consistently unmotivated child does well on an exam” (Prawat et al., 1983, p. 149) or when the teacher lacks institutional support in the face of reforms (van Veen et al., 2005). Outside the classroom, anger arises because of uncooperative colleagues or inappropriately behaving parents (Sutton, 2007). As compared to anxiety, shame, and guilt, anger seems to be most prevalent during teaching. In experience sampling and diary studies, teachers report experiencing a substantial amount of anger while in class (Carson, 2006; Frenzel & Götz, 2007) to the extent that, in about 15%–20% of their lessons, teachers report experiencing at least some anger.

Teacher shame and guilt have also been examined in the educational context. Guilt might arise when teachers realize that they are neglecting or not reaching those they care for; in fact, caring professionals, including teachers who are particularly committed to caring for their students, are prone to experiencing guilt (Hargreaves & Tucker, 1991). Sources of teachers’ guilt include feelings of inadequacy (Hargreaves & Tucker, 1991) in being unable to devote as much time and effort to a task as they think it deserves (van Veen et al., 2005) and feeling responsible for a student’s decreasing motivation or the poor performance of a high-ability student (see Chang, 2009; Prawat et al., 1983).

Empirical evidence points out that shame and guilt may only be marginally important during the actual teaching process. In Carson’s experience sampling study, teachers report feeling these particular emotions only to a very small degree while in class (Carson, 2006; see Frenzel, in press). Outside the classroom and possibly more pronounced than during teaching, guilt or shame might arise more regularly in evaluating one’s actions in retrospect (Frenzel, in press; Hargreaves & Tucker, 1991).

Another important distinct negative emotion is anxiety. Teacher anxiety received some attention in the 1970s (see review by Coates & Thoresen, 1976) but has recently been emerging particularly regarding the subject of mathematics and elementary teachers (e.g., Beilock et al., 2010; Gresham, 2007, 2009; Isiksal, Curran, Koc, & Askun, 2009). There is evidence that teacher anxiety might arise because of their “uncertainty of determining whether they are doing a good job” or whether they have achieved their goals (Sutton & Wheatley, 2003, p. 334); in that sense, younger teachers seem to experience higher levels of anxiety than their older colleagues, especially when they feel unprepared for teaching and are overwhelmed by the demands of their job (Chang, 2009; see also Hargreaves, 2005; Sutton & Wheatley, 2003). Teachers can be afraid when they are unable to reach their students and provide for their future in the midst of change, such as when changing their teaching strategies or when they are expected to participate in educational reform (Darby, 2008). In general, threats to their self-image and professional understanding as teachers is a source of teachers’ anxiety (see Sutton & Wheatley, 2003), which can change with their years of teaching experience. Coates and Thoresen (1976) summarized studies reporting that, for younger teachers, uncertainty regarding their own abilities (e.g., their subject matter knowledge) or being liked by students are
sources of anxiety; for more experienced teachers, sources of anxiety shift toward difficulties with students but also include insufficient school context conditions, such as financial constraints and resources. In classrooms, teachers' perceived level of student motivation, comprehension, and discipline are negatively related to anxiety (Frenzel, Goetz, Stephens, et al., 2009; Frenzel et al., 2008). However, little is known about the frequency of anxiety that teachers experience. In the studies summarized by Coates and Thoresen (1976), between 10% and 30% of the teachers reported being worried and nervous. In recent studies investigating the frequency and intensity of teacher emotions during teaching, anxiety was reported only to a relatively small extent (Carson, 2006; see also Frenzel, in press; Frenzel, Goetz, Stephens, et al., 2009).

Methodological Issues—How to Assess Teacher Emotions

The conceptually and phenomenologically different components of emotions are reflected in various methodological approaches to their measurement. Some assessment methods rely on the expressive and behavioral components of emotions (e.g., identifying emotions via facial or vocal expressions, e.g., Ekman & Rosenberg, 2005; Pittam & Scherer, 1993) and others on physiological processes (Bradley & Lang, 2000). For teachers, so far, measuring emotions has relied solely on self-reports that capture the subjective feelings and cognitive appraisals.

The most common are questionnaires on teachers' overall emotional experiences related to their teaching (Frenzel, Goetz, Lüdtke, et al., 2009; Frenzel, Goetz, Stephens, et al., 2009; Frenzel & Götz, 2007; Prawat et al., 1983) and qualitative interview studies in which teachers described their emotional life in school, which emotions are relevant for them, and how and when they emerge (e.g., Darby, 2008; Hargreaves, 2000, 2005; Nias, 1996; Scott & Sutton, 2009; Sutton, 2004; Zembylas, 2004) in order to reconstruct the complex relations between teachers' emotional experiences and their professional self-understanding and identity (e.g., Darby, 2008; Schutz, Cross, Hong, & Osbon, 2007; van Veen et al., 2005; Zembylas, 2002). In addition, a few studies used diary reports, in which teachers recorded their emotional experiences in class immediately after teaching. One way this research has been executed is in a structured way, with teachers responding to Likert scales with items referring to their emotions as well as their perception of student activities and characteristics in the class they had just taught (Frenzel & Götz, 2007). A second approach has been to use a semi-structured method, with a combination of open-ended and close-ended items (Zembylas, 2002) and the use of diaries. Furthermore, teacher emotions have been investigated with the Experience Sampling Method (ESM; Csikszentmihalyi & Larson, 1987), wherein teachers identified their emotional experiences at the moment they occur, as in a study by Carson (2006). In terms of ethnographic approaches, Zembylas (2002, 2004) conducted research in which he followed one teacher for three years with multiple methods involving field observations and a diary on the teacher's emotions with which to reconstruct the role of teacher emotions (on an inter- and intrapersonal as well as intergroup level) and how they were affected by context specificities, such as school politics.

In summarizing and discussing these different methodological approaches to the assessment of teacher emotions, we will specifically address the differentiation between teachers' trait and state emotions as related to their teaching. As such, trait emotions refer to the teachers' propensity to experience the particular discrete emotion in the teaching context and are assumed to be a relatively stable attribute of teachers over time and also across teaching situations; state
emotions, on the other hand, capture the situation-specific emotional state and are thought to vary depending on contextual conditions (for the trait-state distinction see, e.g., Cattell, 1966; Spielberger, 2010).

Assessing teacher emotions via recall–based self-reports (either via questionnaires or interviews) has been widely applied in research so far, using items such as “I really enjoy teaching mathematics in this class” (Frenzel, Goetz, Lüdtke, et al., 2009, p. 708) for teachers’ generalized estimate of their enjoyment pertaining to mathematics teaching in one particular class, in this case. The emotion constructs assessed by these self-reports are sometimes referred to as (contextualized) trait emotions; being time-inclusive, that is, retrospective over a longer time period, they might reflect a teacher’s beliefs about how the particular teaching situation in a given class influences his/her enjoyment (Robinson & Clore, 2002). However, retrospective emotion self-reports are liable to memory biases and do not necessarily represent the actual frequency and intensity of teachers’ emotional experiences in class. That emotions assessed by generalized, self-report items do not necessarily reflect the emotions assessed using a real-time method for data collection is shown in the intensity bias (Robinson & Clore, 2002), that is, the usual overestimation of a person’s trait emotions as opposed to their actual emotion experience. Carson (2006) showed the intensity bias to hold true for teacher emotions. Using a real-time assessment method such as ESM (e.g., Barrett & Barrett, 2001) is thought to be more ecologically valid in that it relies on experiential knowledge still accessible to the teacher and thus decouples the online experience from recall and memory biases (Napa Scollon, Prieto, & Diener, 2009).

In general, however, empirical evidence regarding the distinction of teacher emotions based on generalized self-reports and real-time (e.g., ESM) assessment is still lacking. Further research that clearly distinguishes between these different forms of assessment methods and thus theoretical meaning of teacher emotions is needed to investigate how they are related and what their respective roles are regarding not only teachers’ classroom behavior and student outcomes but also teachers’ overall well-being.

Teachers’ Emotion Experiences While Teaching—Does Experience Sampling Work for Teachers?

Based on the current lack of empirical evidence regarding state-based and thus more ecologically valid assessments of teacher emotions, we conducted a pilot study to test how well the ESM (Carson, Weiss, & Templin, 2010; Csikszentmihalyi & Larson, 1987) can be implemented with teachers for the purpose of investigating their emotions in class while teaching. Furthermore, we wanted to gain insight into which discrete emotions are reported frequently by teachers based on this real-time assessment (in the following referred to as state emotions) and compare them to their trait teaching-related emotions (in the following referred to as trait emotions; see also Spielberger, 2010). Thus, we investigated teachers’ enjoyment, pride, shame, anxiety, anger, and boredom on both a trait and a state level.

Sample and Measures

Sample. Our sample for this pilot study consisted of 22 teachers at three Gymnasium schools (the high-achieving track of the secondary school system in Germany); however, three of them did not fill in or return the trait–questionnaire (that included the demographic data), so
the trait sample is reduced to 19 teachers. Thirty-eight percent of the teachers were female, and teachers were on average 48.6 years old (minimum = 27, maximum = 62; SD = 10.8) and had been teaching for an average time (including teacher training, generally two years) of 21.4 years (minimum = 2.5, maximum = 37, SD = 12.4). The range of subjects taught by the teachers was not constricted, resulting in a large range of subjects, including languages (German, French, Latin), the natural sciences, history, music, and politics.

Measuring state and trait teaching-related emotions. The emotions assessed were teachers' positive emotions of enjoyment and pride and negative emotions of shame, anxiety, anger, and boredom. For the assessment, we relied on single items; in previous research, this approach has successfully been applied in ESM assessments of students' state emotions (e.g., Goetz, Frenzel, Stoeger, & Hall, 2010). The items were worded in order to assess the intensity of the given emotion at the time of the state assessment (e.g., “How strongly do you experience enjoyment at the moment?”) and could be rated on a five-point rating scale, ranging from 1 (not at all) to 5 (very strongly). To make a direct comparison of trait and state-assessed emotions possible, in the trait assessment we relied on single-item measures, asking teachers about their emotion experience generally during teaching (e.g., “How strongly do you typically experience enjoyment in class?”). The five-point rating scale for the trait assessment was the same as for the state assessment.

Implementation of the Experience Sampling Method

Procedure. After the trait assessment, teachers participated for two weeks in the state assessment for their emotional experiences in class. For this assessment, they were provided with personal digital assistants (PDAs) that were programmed with the respective items for emotion self-report. We decided against totally randomized time sampling, preferring to ask teachers to activate the PDA at the beginning of the lesson (so that the PDA would not signal during breaks or in classes where students had to write a test). Once activated, the PDAs emitted a signal randomly once during that lesson, following which the teachers had five minutes to complete, directly on the screen, the short questionnaire on their momentary emotional experiences. However, teachers were not always able to respond in the five minute interval (e.g., because they were too busy with the students, or the signaling noise was too low); thus, 10% of the state questionnaires (n = 39) were overlooked. Overall, this resulted in a total of 352 state assessments; on average, every teacher filled in 16 state questionnaires (SD = 8.7, minimum = 2, maximum = 29).

Our reliance on single-item measures for each emotion was chosen in order to keep our state assessment of emotion as minimally obtrusive as possible while teachers were in class. This allowed the teachers to fill in the questionnaire in a short time; on average, it took them 41 seconds.

Implementability. After the two weeks of the state assessment, we talked to the teachers about the ESM procedure and their experiences. Due to the very short questionnaire and teachers' being allowed to choose, in advance, the lessons for which they wanted to activate the PDA, teachers overall reported few problems with the implementation of the ESM. They did not find it overly intrusive or distracting and were able to adapt their teaching style for the short time it took them to fill in the questionnaire. In fact, several teachers reported the experience of indicating and pausing to consciously think about one's emotions as enlightening and interesting.
Teachers' Responses to the Trait- and State-based Emotion Assessments

Frequency and intensity of emotions. Intensities of teacher emotions are shown in Figure 5.1. The mean values for teachers' trait assessment (light grey) as well as means for the state assessments (dark grey) are displayed for each of the discrete emotions: enjoyment, pride, shame, anxiety, anger, and boredom.

As revealed by the figure, the experience of positive emotions, such as enjoyment and pride, is dominant in teaching. This finding is in line with previous research results showing that teachers experience their teaching as a generally rewarding and satisfying activity charged with positive emotions (see, e.g., Hargreaves, 1998; Sutton & Wheatley, 2003). Of the negative emotions, anger is the most prominent. This prevalence of anger might be explained by the way in which anger, in particular, is tied to managerial problems in class (Frenzel & Götz, 2007; Hargreaves, 2000) that are prone to occur in the course of one lesson.

Results in Figure 5.1 also show that shame and anxiety are, particularly in terms of state emotion, experienced only to a very small extent. The low occurrence of shame may be due to its nature as a self-conscious emotion occurring largely in retrospect (Tracy & Robins, 2004, 2006) and thus not expected to be reported while teaching. Anxiety, on the other hand, indicates a high arousal level (close to, e.g., panic). Yet, from a theoretical viewpoint, moderate nervous tension is also included in the anxiety emotion, but may not be captured by or associated with the word "anxiety." High-arousal anxiety, however, is probably rare during lessons, thus explaining the overall low values. In fact, more than half the teachers ($n = 14$) rated all their state items on anxiety as 1 (not at all).

Notably, teachers report a fair amount of boredom while teaching in class (for state, $\text{Mean} = 1.38$, $SE = 0.08$). In about a quarter of all lessons, teachers reported experiencing

![FIGURE 5.1 Descriptive statistics for teachers' trait and state emotions.](image-url)

*Note: Sample sizes for trait: $n = 19$, and state: $N = 22$. Displayed are the respective mean values for teachers' trait (light grey) and state (dark grey) emotions, pertaining to the respective single item measures. The exact means are denoted above each bar. The error bars indicate $+/- 1 SE$. 
boredom to at least some extent (i.e., a rating of two or higher on the scale). This result is surprising. In initially planning and designing of the study, we speculated that if asked about boredom, even if they did experience this emotion, teachers would probably not admit to experiencing it, or only rarely admit to it. Since boredom is generally considered a low-arousal, deactivating emotion (e.g., Pekrun, Goetz, Daniels, Stupnisky, & Perry, 2010), this result warrants further investigation as it seems to be in contrast to the active role a teacher has to engage in during the lesson.

**Difference between trait and state emotions.** As evident in Figure 5.1, teachers rate all of their trait emotions higher than their online-assessed emotion experiences; that is, their state emotions. We conducted tests of difference for each emotion, yielding all statistically significant results ($p < 0.05$, and marginally significant, $p < 0.10$ for anxiety). Such results provide evidence of the intensity bias in emotion self-reports (Robinson & Clore, 2002), denoting that retrospective evaluation of one’s emotions covering a longer time frame might not approach the emotion experiences as reported directly in the situation.

**Teachers’ feedback on the emotion assessment.** When asked after the state assessment whether they thought all relevant emotions were included in our assessment, teachers mostly agreed, yet indicated that they would have included frustration in addition to anger. The issue of whether frustration and anger can be separated as two discrete emotions has been addressed by Sutton (2007); she noted that while more teachers spontaneously spoke about frustration than anger, the teachers’ answers regarding bodily responses, actions, or coping strategies related respectively to anger and frustration probably do not warrant treating them as two distinct emotions. In layman’s terms these two words may be associated with different emotional states yet may be difficult to distinguish from a theoretical and empirical viewpoint.

An unanticipated result was that some teachers in one school had difficulties with the expression of pride. For instance, in the trait questionnaire, they put question marks next to the item for pride and rated all state items on pride with 1 (not at all). One teacher even commented, “For me, the expression ‘pride’ is inappropriate.”

**Conclusion**

Overall, our pilot study shows that ESM can be successfully applied to teachers since they were able to implement it relatively easily while teaching without being distracted or annoyed. Our results on the frequencies of teacher emotions are similar to those obtained in previous quantitative studies (Carson, 2006; Frenzel & Götz, 2007), showing that positive emotions are predominant, followed by anger as the most frequent negative emotion.

Our use of single-item measures for assessing emotion experience that directly included the emotion term (e.g., measuring anxiety by asking “How strongly do you experience anxiety at the moment?”) also had its drawbacks. Even though the unanticipated difficulties with the expression of pride encountered in this pilot study might be an exception, we also found very low overall values for anxiety and shame, suggesting that for teachers these two emotion terms do not encompass the whole range of affective experiences that the respective emotions would imply. In trait-based assessments of teacher emotions, this issue could be circumvented by using a multi-items scale that includes descriptive words for the emotion (such as nervous or tense for anxiety and embarrassed for shame). For state-based assessments such as ESM, the questionnaire has to be kept short in order to not be overly obtrusive; thus, a further validation
of which emotion terms are best used might be helpful in the future, for example, by using cognitive interviewing (see Karabenick et al., 2007).

Our data also indicated a discrepancy between teachers’ state and trait emotions. Given that much of the previous research on teacher emotions involves trait emotions, that is, retrospective self-reports spanning a longer time frame, the results yielded therein need to be further investigated to determine whether they hold true for teachers’ state emotions, as well. Future research should clearly distinguish between trait and state emotions, as both might denote slightly different meanings, and results yielded for the one kind of assessment may not necessarily be applicable or generalizable to the other.

**Implications for Future Research**

Teacher emotions matter. As we have shown in this chapter, teaching is charged with emotions, and teachers experience quite a range of discrete emotions. As such, emotions cannot be excluded when considering teachers’ professional lives, even less so as there is evidence that emotions relate to instructional behaviors and impact students’ outcomes. Yet, as research on teacher emotions is comparatively recent, much needs to be investigated and clarified by future research. We want to stress some points here related to methodology and effects, as well as the antecedents of teacher emotions.

*Methodological issues.* To date, teacher emotions have been exclusively investigated via teacher self-reports. In identifying how teacher emotions translate into the classroom and affect behavior, instruction, and student outcomes, investigating teacher emotions through such means as students’ perceptions would provide additional insight into the complex interrelationship of teacher and student emotions in classrooms. The validity of teacher emotions, measured thus far by self-reports, needs to be tested by using other methodological approaches in the classroom. In the last 15 years, videotaping classrooms and analyzing the instruction afterward, using trained observers, has proven a fruitful approach to in-depth analyses of classroom processes (see, e.g., the TIMS Video Study, e.g., Givvin, Hiebert, Jacobs, Hollingsworth, & Gallimore, 2005; Jacobs, Hollingsworth, & Givvin, 2007); similarly, observer ratings of teachers’ expressed emotions could be used and compared to teachers’ self-reported and students’ perceived teacher emotions to gain a better understanding of the nature and effects of teacher emotions.

Also, teacher emotions as assessed in class and during teaching (i.e., state emotions) might be different from those reported outside the class when retrospectively evaluating one’s generalized emotion experiences (i.e., trait emotions). In future research, it would be helpful to identify the factors leading to the observed differences in emotion experience with respect to trait and state emotions. According to the accessibility model of Robinson and Clore (2002), teachers’ subjective beliefs can influence their trait-measures on emotions to a great extent, which may partially explain the observed intensity bias. Remaining questions might focus on which exact beliefs play a role in teachers’ trait-based emotion measures and how they contribute to a differentiated understanding of trait and state emotions and their respective roles for teachers’ professional lives, teaching, and students.

*Considering effects and antecedents of teacher emotions.* Most extant research on teacher emotions does not distinguish clearly between outcomes and antecedents of teacher emotions, as most studies employ qualitative interviews or cross-sectional, quantitative studies that do not permit the determination of causal relations. Thus, longitudinal investigations following
teachers and their interactions with students for a longer timeframe are needed to explicate the complex interrelationships that ultimately shape teachers' emotional experiences and reactions, classroom interactions, and student outcomes. Another unresolved issue concerns differentiating the effects of positive versus negative teacher emotions. In other words, do negative teacher emotions always have negative effects in terms of cognitions, classroom behaviors, or student behaviors? In the teacher emotion literature so far, and largely also in our summary of it, it is implicitly assumed that positive emotions are good for teachers, students, and teaching and, conversely, that negative emotions have negative and undesired effects. However, might it be possible, for example, that teacher anger—or more precisely, the expression of teacher anger to students—is sometimes beneficial for students in that it communicates the teachers' expectations and boundaries between acceptable and unacceptable behavior? Or might (the exuberant expression of) enjoyment distract students' attention from their learning tasks?

*Considering boredom and other deactivating teacher emotions.* In our ESM study reported earlier, boredom was included as a deactivating teacher emotion, and, unexpectedly, teachers reported experiencing some boredom during teaching. For students, it is quite established that they experience boredom for a large amount of their time in class (about 30% to 60%; e.g., Larson & Richards, 1991; Nett, Goetz, & Hall, 2011). Further, different coping strategies have been identified for students: some might distract themselves by talking to their classmates and others by tuning out of instruction and thinking about something else entirely (Nett, Goetz, & Daniels, 2010; Nett et al., 2011). But what do teachers do when they are bored? Boredom is associated with a low arousal level, yet teachers need to be in attentive control all the time during teaching, so their coping strategies might be very different than those of students.

Possibly even more complex might be the role of positive deactivating emotions, like relaxation or relief, which were not included in our ESM study and to our knowledge have not yet been investigated systematically elsewhere. To what extent are they experienced during teaching, and how do they affect teaching? Clearly, in linking teacher emotions to instructional behavior (e.g., Sutton, 2004; Frenzel, Goetz, Stephens, et al., 2009; Frenzel, Goetz, Lüdtke, et al., 2009), the possibility of differentiated effects of different discrete emotions needs to be taken into account in further research.

*Considering teacher emotions across the career span.* Especially in regard to teachers' professional lives and development, the role of emotions is not yet clear. It is suggested that teacher emotions relate strongly to teacher burnout and, beyond that, are also connected to attrition (Chang, 2009, 2013). To uphold an idealized emotional self-image, teachers also regulate their emotions to quite some extent. However, the potentially complex interplay of teachers' emotional experiences, emotion regulation, and emotional exhaustion are still unclear, particularly relating to teachers' sense of professional identity. An area in need of clarification in the future relates to how, in the long run, emotional experiences and teachers' means of coping with them influence decisions to stay in or quit teaching.

Finally, it remains unclear how teacher emotions might change over the course of a career, especially during the crucial transition from preservice to full-time teacher. In order to prepare preservice teachers for the emotional challenges of teaching and provide them with adequate regulation strategies, we first need to understand the role of emotions in teachers' development, including how both particularly important events and everyday experiences shape the emotional lives of teachers.
Notes
1 In addition to the six emotion items, also two items measuring emotional dissonance were included that are not reported here. Also, before reporting on their emotional experience, teachers had to denote the number of the lesson (e.g., the first or third lesson they taught that day) and the subject of the lesson. Altogether teachers had to answer ten items in the state questionnaire.
2 For this test of difference, we aggregated the state-data into one mean value for every teacher to compare it with their trait measure.

References


