# TEACHER EMOTIONS IN THE CLASSROOM: PATHWAYS, MECHANISMS, AND RECIPROCAL EFFECTS ON STUDENTS

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**Abstract:** Using three psychological mechanisms—direct transmission effects between teacher and student emotions, mediated effects via teachers' instructional and relational teaching behaviours, and recursive effects back from student outcomes on teacher emotions, both directly and indirectly via teachers' appraisals of student outcomes and their correspondingly adapted teaching behaviors—the current contribution conceptualises teacher emotions with a foundation in appraisal theory and draws on a number of Next, we give a broad overview of empirical data from this area of study, emphasising both valence-incongruent and valence-congruent connections, whereby pleasant emotions are associated with desired outcomes and negative emotions with undesirable ones. Finally, we highlight two major obstacles to teacher emotion effect research and propose three avenues for further study that centre on measurement, research design, and a broader scope that takes emotion regulation into account.

## 1. INTRODUCTION

Most individuals can recall contrasting pedagogical experiences: the exceptionally enthusiastic educator whose passion made complex material feel significant, and the emotionally detached or volatile instructor whose negativity fostered an aversion to the subject matter. While these anecdotal accounts are common, this article applies an educational-psychological lens to systematically examine the phenomenon of teacher emotions and their subsequent impact on student outcomes.

The body of evidence regarding teacher emotions and their consequences is expanding rapidly; however, as the field is in its nascent stages, current inquiries have remained relatively fundamental and predominantly unidirectional. There is often an implicit assumption that teacher emotions serve as the primary catalyst for student results, yet this perspective overlooks the inherent complexity of the classroom environment. Because teachers and students exist within an interdependent system, this article conceptualizes teacher emotions as a reciprocal component of a framework that both influences and is influenced by student emotions, cognitions, and behaviors. We propose a comprehensive framework to illustrate the nexus between teacher emotions and student outcomes, intended to guide future empirical inquiry and methodological approaches. This model extends beyond existing literature, which has traditionally focused on isolated subsets of the topic, such as the appraisal antecedents of these emotions (Chang, 2013; Frenzel, 2014), the sociopolitical influences pertinent to the profession (Fried et al., 2015), or specific phenomena like teacher enthusiasm (Keller et al., 2016). Our framework integrates the diverse psychological processes underlying these connections while addressing contemporary challenges in the field.

Specifically, we argue that the discipline could be enhanced by incorporating the subject of emotion regulation—the processes by which educators manage and express their affective states. The primary objective of this paper is to shift the prevailing unidirectional perspective in the field and to inspire scholars to examine the connections between teacher emotions and student outcomes from a multi-dimensional, systemic viewpoint.

## 2. Conceptualization of (teacher) emotions
### 2.1 Definition

Emotions are complex constructs that, while challenging for many academics, are perceived as the interface between an individual and their environment, consistently mediating between events, social situations, and the individual's responses and experiences. We adopt a multi-componential definition, positing that emotions can be comprehended as synchronised, coherent patterns of central nervous and peripheral physiological reactions, manifested in action tendencies and facial, vocal, and gestural expressions, which are integrated into subjective experiences (Mulligan & Scherer, 2012; Scherer & Moors, 2019).

For instance, during an episode of fury, an individual experiences significant negative arousal and feels compelled to "fight" the aversive stimuli provoking their anger, often accompanied by frowning and threatening gestures. Emotions possess significant motivational consequences since they can initiate and maintain goal-oriented behaviours (Frijda, 2013).

We define teacher emotions as evaluative reactions that integrate diverse psychological and bodily subsystems, intricately linked to the specific events and social circumstances encountered in their job. Educators engage with students, parents, colleagues, and superiors to fulfil various task requirements, including ensuring effective classroom operations, fostering student engagement and achievement, maintaining parental satisfaction and support, and promoting satisfaction and collaboration among superiors and colleagues. From this viewpoint, we concur with Schutz et al., who defined teacher emotions as "socially constructed, and personally enacted ways of being that emerge from conscious and/or unconscious judgements regarding perceived successes at attaining goals or maintaining standards or beliefs during transactions as part of social-historical contexts" (Schutz et al., 2006, p. 344).

The contextualised nature of teacher emotions necessitates the consideration of significant defining contextual elements. In particular, reflecting substantial empirical data regarding the domain-specificity of students' emotions (Goetz et al., 2006, 2010), teacher emotions have likewise been demonstrated to be organised domain-specifically. Consequently, instructing particular courses or themes elicits distinct emotions in educators, leading to varied feelings across different subjects or even topics they teach. Frenzel et al. (2015) demonstrated that German primary school teachers exhibited systematic variations in teaching enjoyment and anger when instructing math, science, and German (i.e., reading and writing). Moreover, educators' satisfaction with teaching and emotional fatigue have been demonstrated to fluctuate based on the support from teaching teams and the organisational cultures of schools (Banerjee et al., 2017; Keller-Schneider, 2018).

## 2.2 Emotions as states versus traits

An important conceptual consideration regarding emotions is their comprehension within a state-trait continuum. Emotional states are ephemeral, transient experiences. Conversely, when seeing emotions as traits, the focus is on the notion that certain individuals possess a disposition or "proneness" to consistently and regularly experience specific emotional states more than others. This may pertain to individuals broadly (strict characteristic) or manifest in particular circumstances (e.g., heightened anger propensity when engaging with a certain group). In the current quantitative literature, teacher emotions are frequently characterised as trait-like variables evaluated via self-report questionnaires, such as the Teacher Emotions Scales (TES; Frenzel et al., 2016) or the Teacher Emotion Questionnaire (TEQ; Buric et al., 2018). When teacher emotions are regarded as state-like constructs, researchers typically employ experience sampling methods (e.g., Becker et al., 2015; Carson et al., 2010; Chang & Taxer, 2020), administer brief post-lesson or daily diary questionnaires (de Ruiter et al., 2020; Frenzel et al., 2015; Keller et al., 2018), or conduct interviews in which teachers recount specific instances of positive or negative emotions involving students, colleagues, administrators, and parents (Hargreaves, 2000).

## 2.3 Dimensional perspective versus discrete emotions

Another conceptual facet to contemplate regarding emotions is that they might be perceived either along dimensions or as distinct things. Dimensional approaches classify emotions based on their valence, distinguishing between unpleasant/negative and pleasant/positive emotions. Certain researchers also take into account the dimension of arousal, ranging from calm to alert (see, for example, Posner et al., 2005). Discrete emotion theories assert that emotions such as joy, fear, rage, and sadness should be regarded individually, as they represent discrete experiencing states that entail specific physiological responses, expressive behaviours, and behavioural inclinations.

This body of work posits that a finite set of discrete emotions are "basic," indicating their presence from birth and their universality across cultures (e.g. Keltner et al., 2019). In the literature concerning teacher emotions, researchers utilise both dimensional and discrete emotion methodologies. In the discrete method, instructor enjoyment garnered the most focus, whereas other discrete emotions, such as anxiety, were significantly less emphasised. This discrepancy is unexpected, as anxiety is the most extensively studied emotion among students (e.g., Pekrun et al., 2017). The little focus on anxiety within teacher emotion research may stem from both substantive and methodological factors. Students undergo continuous evaluation at school, which may account for a significant potential for achievement-related concerns arising from the persistent risk of failure.

Conversely, educators undergo evaluations significantly less frequently. Teacher evaluations are frequently conducted in a less formalised manner, resulting in milder repercussions for underperformance; however, this is evolving as certain countries, including the US, implement more stringent assessments linked to standardised test scores. Consequently, experiences of worry may not be as pronounced among teachers as they are among pupils. Teachers may be more hesitant than students to disclose their fears due to social desirability or self-deception.

## 3. THEORETICAL CONNECTIONS BETWEEN TEACHER EMOTIONS AND STUDENT OUTCOMES

Emotions serve both interpersonal and intrapersonal roles (e.g. Barrett et al., 2016). Interpersonal functions pertain to the impact on social interaction partners of individuals experiencing emotions, while intrapersonal functions relate to the consequences on the individuals themselves, particularly regarding their cognition, memory, perception, and behaviour. Emotional functions predominantly function at the state level; however, analogous connections can also be identified between teachers' trait emotions and student results, including their beliefs. This review examines how teacher emotions, as indicated by these functions, might be considered to have both direct and indirect effects on students.

### 3.1 Immediate transmission effects

The concept of emotional transmission, or emotional contagion, posits that when an individual experiences and displays an emotion within a social environment, the same emotion might be elicited in their interaction partners. Hatfield, Cacioppo, and Rapson posited that emotional contagion encompasses "the propensity to automatically imitate and synchronise facial expressions, vocalisations, postures, and movements with those of another individual, thereby leading to emotional convergence" (Hatfield et al., 1994, p. 5). Furthermore, interpersonal emotional convergence can be elucidated through cognitively mediated processes known as social appraisals (Manstead & Fischer, 2001). Social assessment denotes the consideration of others' feelings during the evaluation of events (Parkinson & Manstead, 2015, p. 374). For instance, one individual can "absorb" another's dread by perceiving a situation as perilous, influenced by the facial expression of the other individual. Alternatively, an individual may "capture" interest based on the situational evaluations suggested by another person's inquisitive expression. For example, students' interest and delight may be ignited by their teachers' demonstrated excitement and pleasure. Conversely, educators may also "absorb" emotions from their students, such as their joy and enthusiasm over a subject or event.

### 3.2 Impact on pupils through the quality of relationships

An evolutionary theoretical perspective posits that emotions have mostly developed to effectively traverse the social environment (e.g., Fischer & Manstead, 2008). Consequently, human emotions are essential for social relationships. Positive emotions initiate, develop, and sustain relationships effectively, while negative emotions can adversely affect relationship quality (see Yee et al., 2014). The emotions that instructors experience and convey in the classroom influence the relationships they establish with their students. The joy of teaching and positive emotional experiences towards pupils can foster constructive relationships and enhance helpful instructional methods. In contrast, educators experiencing emotional exhaustion or inundated with negative emotions are prone to diminished engagement, reduced tolerance, and decreased compassion, thereby impairing the quality of their relationships with students. Assuming that student well-being and learning are enhanced by positive teacher-student relationships (e.g. Kim, 2020), the social functions of emotions constitute a significant theoretical framework for understanding the impact of teacher emotions on student outcomes.

### 3.3 Influence on students through the calibre of relationships

An evolutionary theoretical perspective asserts that emotions have primarily evolved to navigate the social environment effectively (e.g., Fischer & Manstead, 2008). Thus, human emotions are fundamental to social relationships. Positive emotions effectively establish, develop, and sustain relationships, whereas negative emotions can detrimentally impact relationship quality (refer to Yee et al., 2014, for a review). The emotions instructors experience and express in the classroom affect the bonds they form with their pupils. The pleasure of teaching and favourable emotional interactions with students can cultivate beneficial relationships and improve effective instructional strategies. Conversely, educators suffering from emotional weariness or overwhelmed by negative emotions tend to exhibit diminished involvement, reduced tolerance, and decreased compassion, thereby undermining the quality of their relationships with students. Given that student well-being and learning are improved by positive teacher-student relationships (e.g. Kim, 2020), the social functions of emotions provide a crucial theoretical framework for comprehending the influence of teacher emotions on student outcomes.

### 4. Recursive effects

The analysis of inter- and intrapersonal functions of emotions presented above offers robust theoretical foundations for the notion that teacher emotions are causally associated with student results. Considering that instructors typically serve as the initiators of most classroom processes, it is reasonable to assert that they generate numerous events, activities, and student outcomes within the classroom. We would like to underscore the importance of considering the opposite direction of effects. Students' individual or collective attributes, encompassing their emotional experiences, prior knowledge and performance levels, as well as their motivational, disciplinary, and relational behaviours towards the instructor, are likely to influence teachers in return. Nurmi and Kiuru (2015, p. 445) also assert that students exert "evocative effects" on their teachers. Reciprocal causal reasoning concerning teacher emotions has been elaborated in the model by Frenzel et al. (2020).

This paradigm posits that teachers' evaluations of classroom conditions—particularly regarding student performance, motivation, discipline, and interpersonal behaviour towards the teacher—affect teachers' emotions, which are then associated with student results. This contribution employs a reciprocal conceptual framework, positing that teacher emotions constitute a system that both affects and is affected by student results.

Significantly, recursive effects are extremely plausible for the connections between teacher emotions and their instructional behaviours as well. The instructional choices of teachers, together with their relational behaviours, undoubtedly influence their emotional state in the classroom. In essence, delivering high-quality instruction is likely to be emotionally gratifying, and pursuing (and achieving) intimacy and warmth with students can enhance pleasant experiences. In contrast, providing monotonous instruction is likely unfulfilling and tedious for educators, thereby exacerbating their emotional fatigue and fostering a disconnect between students and teachers.

### 5. A conceptual framework elucidating the connections between teacher emotions and student results

This contribution is based on a reciprocal conceptual framework for comprehending the connections between teacher emotions and student outcomes, which offers three essential mechanisms (refer to Figure 1). We propose that there are (1) direct transmission effects between teacher and student emotions, and (2) mediated effects on

student outcomes through relationship-building mechanisms, nonverbal social cues, and the efficacy of instructional strategies. Furthermore, we contend that there are three recursive impacts from student outcomes on teacher emotions, both directly and indirectly, through teachers' evaluations of student outcomes and their subsequently modified instructional practices.
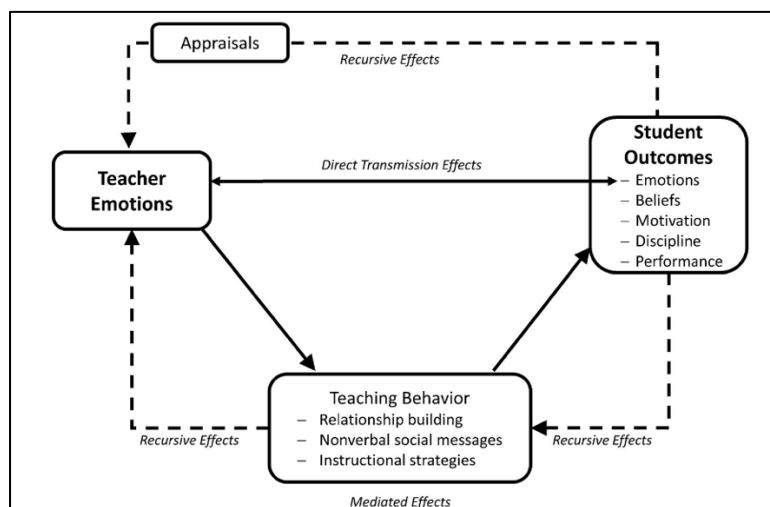


Figure 1. Conceptual framework illustrating the relationship between teacher emotions and student outcomes (Frenzel et al., 2021)

## 6. Obstacles and prospective trajectories

It is evident that recognising teachers as human beings, who, like learners, experience both triumphs and setbacks, who exhibit affection and concern for certain students inconsistently, and who continually modify their classroom conduct, often driven by their emotions, holds significant value. Incorporating instructor emotions into classroom dynamics presents numerous obstacles and adds complexity. We delineate two principal obstacles observed in teacher emotion impact research and provide complementary methodologies for measurement, research practices, and an expanded focus on emotion regulation. We anticipate that introducing fresh viewpoints, in conjunction with the significant work already under progress, will provide advancements in both theoretical and practical domains.

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### 6.1 Overdependence on self-reporting

Similar to most current studies in educational psychology, investigations into teacher emotions exhibit an excessive dependence on self-report data. This pertains to the outcomes examined (see to Ferguson, 2012; Kunter & Baumert, 2006, regarding the discourse on the validity of student-reported instructional quality) and specifically to educators' emotions. Self-report inquiry approaches for emotion research have distinct advantages, although they also include significant challenges. One advantage of self-report techniques in research is that emotions are inherently subjective phenomena; only individuals can accurately assess their own feelings. Keltner & al. assert, "A science that disavows the connection between emotion and subjective experience would, in effect, abandon the goal of explaining the phenomena that individuals perceive as emotional in nature" (Keltner et al., 2019, p. 2). Furthermore, assuming that emotions are multi-faceted phenomena consisting of subjective experiences, action tendencies, physiological reactions, and manifestations, only self-report measures enable researchers to efficiently access all components and their co-occurrence.

Self-report assessments of emotions may suffer from impaired validity due to participants' self-deception, social desirability bias, or insufficient meta-emotional awareness. Self-deception and social desirability present a specific barrier to comprehending the influence of conventionally prohibited emotions in the lives of educators. In other words, when self-reporting their emotions, teachers may also indirectly convey their perceived appropriate emotional responses. Consequently, when evaluating their emotional experiences, educators frequently appear to take into account emotional display regulations, such as the inappropriateness of exhibiting rage or fear in the classroom (Chang, 2020), a phenomena that warrants consideration within the scope of this research.

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## 6.2 Minuscule and intricate examples

To comprehend the intricacies of teacher-student interactions in classrooms, researchers must adopt hierarchical data structures wherein several students are layered within each teacher. Moreover, the nature of several secondary school environments necessitates that educators instruct multiple student groups, frequently indicating cross-classified data structures. Hierarchical linear modelling has been a typical approach in research connecting teacher characteristics to student results, with developed methodologies for incorporating student-level variables to predict contextual and classroom climate impacts (Marsh et al., 2012).

Nevertheless, it is less recognised that neglecting a crossover factor in the analysis of cross-classified data also results in biassed estimations of the standard errors of regression coefficients (Luo & Kwok, 2009). Research designs including both teachers and their students necessitate substantial data collection efforts, as each teacher in the sample must be accompanied by many students, preferably entire classes. Consequently, typical studies in this setting feature substantial sample sizes at the student level, while typically exhibiting marginal sample sizes at the teacher level. It is crucial to understand that any "teacher effect" will be assessed solely using the statistical power determined by the teacher-level sample size. Consequently, the field may require creative strategies to engage a substantial number of educators.

## 7. CONCLUSION

This article commences with a reflection on "those" educators—those who, whether deliberately or inadvertently, transmitted their positive or negative emotions to us as pupils. In examining the foundational psychological science that may elucidate these phenomena, we have delineated multiple avenues through which teacher emotions can influence students, both through direct transmission effects and indirectly via significant teacher behaviours, such as instructional strategies and relationship development. Nonetheless, this essay contends that educators should not be seen as the exclusive source of all associated student and classroom characteristics. We have emphasised the significance of recursive interactions whereby teacher emotions may be influenced by student outcomes. For instance, the exuberant teacher mentioned in the beginning may have experienced the advantages of a positive feedback loop, as their students became increasingly enthused about the material and reciprocated their enthusiasm. Conversely, the emotionally detached instructor may have been instructing a subject in which she lacked genuine enthusiasm, resulting in diminished instructional quality and strained relationships with students. It is exceedingly challenging to disentangle the causes and effects concerning teacher emotions and student outcomes, rendering reciprocal relationships seemingly rational.

Ultimately, while we have discerned various credible mechanisms, numerous significant enquiries persist, foremost among them being the function of emotion regulation. To enhance understanding of these intricate issues, researchers must transcend reliance on correlational designs and self-reports, establish global collaborations with diverse educational boards to recruit and retain substantial samples of teachers and their students, and adopt various theoretical frameworks to illuminate teacher emotions.

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