

A teacher's practical theories, self-efficacy, and emotions

- What connections do they have, and how can they be developed?

*Harri Pitkaniemi**

School of Applied Educational Science and Teacher Education,
University of Eastern Finland

In this review of studies an answer is looked for the questions of the title, and an attempt is made to construct a system of integrative knowledge which can be utilized to benefit student teachers in their studies as well as teachers in their life-long learning. The teacher's practical theory is a scattered and non-uniform concept in educational studies. The teacher's beliefs is a wide construct which, in addition to the practical theory, contains self-efficacy, i.e., a motivational aspect. So far, the research has analyzed the sources of the teacher's self-efficacy but also its connection to the teacher's way of thinking, emotions, quality of the teaching, and the pupil's acting and learning. Emotions are an essential power in improving the quality of teaching and the student-teacher interaction. In summary, the teacher's practical theory, self-efficacy and emotions are essential research themes in educational research, but usually they have been studied separately from each other. However, in the past few years there have appeared studies which have managed to incorporate emotion and self-efficacy in the same research. In practice, a teacher has to function as a whole person and has to take into consideration the challenges of the context, so the need for more integrative research designs will be growing.

Keywords: teacher's practical theory, teacher's self-efficacy, teacher emotions, teacher, teacher education, research integration.

* Corresponding author: harri.pitkaniemi@uef.fi

In this *research review*¹, I consider the importance of personal practical theories, self-efficacy, and emotions to the development of teachers and their teaching. Both personal practical theories (beliefs and ideas about how to realize good teaching) and self-efficacy (belief in one's abilities to act as a teacher) have been themes of educational research at least since the 1980s. In a strict sense, both place teachers' beliefs at the center of focus, but the concept of beliefs is usually associated with personal practical theories while the subjective perspective of self-efficacy places more emphasis on motivation and the intensity of one's commitment.

The study of teachers' emotions is a newer tradition. As teachers, we tend to find certain situations agreeable, others somewhat unpleasant or disturbing, but this obvious fact is a starting point only. Whatever the emotional element or the link to our personal interests, we strive to respond to all of these situations in line with the kind of teaching that is our intended target. Though failing once in a while may cause passing dejection, it can also lead us to reconsider our personal theories and adapt them to be better equipped to face new teaching situations. Accordingly, one can describe a teacher's beliefs and knowledge as an interactive relationship with motivation and emotions. Each aspect of this relationship (personal theories, self-efficacy, and emotions) has its own research tradition, but from a holistic perspective (i.e., the angle of validity of research) and a practical one (i.e., the standpoint of the teacher, or other user of knowledge), there is a need to perceive the interrelation between the traditions. My main goal here is to address this need. Personal practical theories serve as a useful starting point for the discussion.

Teachers' practical theories

Student-teachers' practical theories and their development²

Teachers use their personal practical theories as frames of reference when planning, interacting, and reflecting before, during, and after the teaching interaction (Cornett, 1990; He & Levin, 2008; Levin & He, 2008; Marland & Osborne, 1990). Practical theories can be regarded as integrated knowledge formed via experience and theory – i.e., both knowledge acquired in interaction with others and knowledge of a more academic nature. To under-

¹ I will use here the term “research review” or “research synthesis” instead of “meta-analysis”, because meta-analysis quite often refers to applying statistical techniques to the formation of summary findings. Another suitable term could be “narrative review” as it refers to the existing knowledge on a certain topic based on the published research. The selection of studies for this review was based mainly on the following keywords: teacher's practical theory, teacher's self-efficacy and teacher emotions (and certain other terms with essentially the same meanings as these three terms). EBSCO and ERIC were used as sources to find suitable journal articles. The ultimate goal is to construct a model that is based on the interrelation between these key concepts. A two-phase process is used: first, the findings of each research area are summarized, and then, the findings common to all the research areas are used to construct a more comprehensive model. This article aims at offering the basis for an integrative model.

² Quite a few studies have been conducted in the context of teacher education, because teacher educators are keen to learn how to influence the development of such teacher beliefs and practical theories. The quantity of studies focusing on personal practical theories (including a few family terms such as teacher beliefs, implicit theories and so on) is quite small comparing to those focusing on teacher efficacy. Mostly, these studies use qualitative methodology. One challenge for the empirical research is the conceptual nature of practical theories: They can consist of a variety of contents.

stand their scope, one must bear in mind the great diversity of their sources: Practical theories draw from a teacher's or student-teacher's childhood experiences at home and in school, work experience, personal beliefs and values, academic courses in teacher education, and student-teaching (e.g., Levin & He, 2008; Pitkäniemi, Karlsson, & Stenberg, 2014; see also Buehl & Fives, 2009; He, Levin, & Li, 2011).

The central motivation for studying and taking advantage of personal practical theories in teacher education is that they are known to be intimately tied to how teachers teach (e.g., Chant, 2002). Practical theories have an impact on teaching and learning, and they also influence plans related to new curricula or other education reforms. Recognizing their importance, at least some teacher educators have rather ambitious goals for the development of teachers' beliefs: they aim to produce what Fairbanks et al. (2010) refer to as thoughtful teachers. These authors argue that positive effects will come about by making the goal of teacher training the education of "thoughtful teachers who are responsive to students and situations" (p. 161). However, results are somewhat mixed as to whether a teacher's beliefs can be changed or developed and, if so, with how much effort.

Not all studies of teachers' and student-teachers' practical theories or corresponding beliefs apply the concept of practical theories (cf. Chen, 2009; Elbaz, 1981; Gholami & Husu, 2010), but several works have evaluated practical theories (or personal beliefs etc.) and examined how they change during teacher training and in the first few years of professional teaching. Leavy, McSorley, and Boté (2007) studied student-teachers' beliefs as manifested through metaphor construction. At first, almost half of their informants had mainly behaviorist ideas about teaching and learning. As the participants progressed in their studies, the number applying constructivist metaphors grew significantly. In a longitudinal study exploring similar development over the course of a year, Ng, Nicholas, and Williams (2010) assessed the evolution of 37 student-teachers' beliefs after each of four periods of teaching practice. The results showed an increase in learner-centered thinking as the participants progressed in their studies. Similarly, Sheridan's (2013) study in the context of teacher training gives a very optimistic idea of the impact of teacher training on the development of student-teachers' beliefs, which shifted from ego-centered toward pupil-centered as the students continued their studies and gained further experience. They grew interested in the ways to motivate their pupils toward goal-directed study.

Meanwhile, Lamote and Engels (2010) studied student-teachers' professional identity via questionnaires completed at several stages in teacher training. According to the results, these students had a very pupil-oriented approach to teaching right from the start; that is, they put emphasis on pupils' personal development and participation in decision-making and on a process-oriented approach to teaching. They were highly confident that they could have an impact on the pupils' commitment and achievement. As they progressed in their studies, their focus shifted away from teaching content. Cheng, Tang, and Cheng (2012) took a case-study-based perspective, with a longitudinal study of student-teachers' professional learning. One of their four case studies, that of Stanley, is particularly interesting, for its illustration of the peak in a five-level hierarchical model presented in an earlier study (Griffiths & Tann, 1992). A student-teacher at this top level has been able to move from a focus on management, or mere "survival" in the classroom, to a procedural approach that focuses on the pupil. Such a student-teacher compares between alternative methods and aims at reflexive theorizing, developing a personal schema or theory of teach-

ing. Cheng and colleagues found this level similar to Buitink's (2009) level of a "well-developed practical theory."

In contrast, Bronkhorst, Meijer, Koster, and Vermunt (2011) analyzed student-teachers' orientations. The orientations they considered can be termed survival-orientation, reproduction-orientation, and meaning-orientation. The last of these corresponds to a "well-developed practical theory," since the focus is on developing one's teaching and understanding its central processes. Student-teachers who have adopted this orientation are also interested in knowing why something works and why it does not work in their teaching (Mansvelder-Longayroux, Beijaard, Verloop, & Vermunt, 2007): They want to understand how a pupil learns.

Yilmaz and Sahin (2011), in turn, studied student-teachers' epistemological beliefs and ideas about teaching. Their data showed that students preferred the constructivist view to the traditional one and that individuals' ideas correlated with their corresponding epistemological beliefs. Accordingly, these authors recommended amending epistemological beliefs as an early step, arguing that only after this can any change be expected in the students' teaching theory or practice. Well-developed epistemological beliefs should make it possible for student-teachers to learn better and adopt constructivist teaching practices.

Scholars have seldom studied the problem of whether teachers' praxis shows signs of the contents and principles of their practical theories. One of the few to do so is Mansour (2013), in the context of teaching science. He found that, while teachers in his case study had both traditional and constructivist theories, their classroom teaching was more traditional than their beliefs had led him to expect. The question arises whether teachers should give more thought to what constructivism means when put into practice. It seems that practical theories do have an impact on teaching practice (and vice versa), but contextual and situational factors can influence how practical theories are translated into classroom practice.

Practical theories from teacher education to working life

The contents of practical theories change a little when student-teachers enter working life. Levin, He, and Allen (2013) found that after 4–6 years of teaching, 18% of the content was aimed at differentiation and another 18% at pupil-centered teaching, while the corresponding percentages in teacher education were 8% and 6%, respectively. A similar increase was seen in teachers' expectations of what their pupils could learn and in the level of professionalism the teachers felt they had. With their case study of three teachers and its follow-up, Levin et al. showed that, for the most part, practical theories remain the same upon the move from teacher training to working life, though the participants in their study did tend to become more pupil-centered and focused. The teachers' classroom practice reflected this change, though the prevailing culture and one's peers can strengthen or weaken the realization of practical theories.

According to our Finnish study (Pitkäniemi et al., 2014), at the final stage of teacher training students had, on average, one practical theory more than at the initial stage. Levin and colleagues seem to have demonstrated that the number of practical theories decreases in working life as a teacher gains more experience. Why, then, do experienced teachers have fewer practical theories? Levin et al. concluded that, in terms of teaching, they have less to attain, but Levin (2015) has also posited that this may be just a provisional finding

and that another longitudinal study, with a larger dataset, may be required. Scholars have found, in addition, that, as teachers gain experience, the focus of their beliefs shifts from themselves to the pupils' needs (He & Levin, 2008; Levin et al., 2013). In summary, Levin concludes that practical theories change with time, among other factors, because the context of teaching changes. The research shows that practical theories are influenced both by situational contexts and by teaching experiences (Beijaard, 1995; Beijaard et al., 2004; Levin et al., 2013).

A summary of the main findings, critical points and the development of practical theories

Most of the studies discussed above may equate the process of practical theories' development to the expansion of a teacher's ability to consider the teaching process from the *learner's perspective*. Taking this perspective is also one of Buitink's (2009) criteria for well-developed practical theories. It is supported additionally by a core philosophical idea presented in the context of the construction of a scientific theory of teaching: how a pupil learns should be the starting point for a theory of teaching (Sztajn, Confrey, Wilson, & Edgington, 2012). This is one possible content-based criterion in judging how well-developed a practical theory is. Buitink adds another: well-developed practical theories exist in a more *hierarchical arrangement* (i.e., a more complex structure).

Research has uncovered numerous sources of practical theories. Studies also show that teacher training has an impact on the content of practical theories, both during and after training. However, a picture of longer-term progress is largely lacking. It is still difficult to get a clear sense of what teacher education should be like for best supporting the construction of sufficiently complex and self-regulated well-developed practical theories. However, it seems that the teaching of educational theory and research skills in teacher training can make an important contribution to that endeavor. Pondering the connections among practical wisdom, theory, and experience, Lunenberg and Korthagen (2009) concluded that a teacher with large amount of teaching experience does not automatically act wisely and may be tempted by compromise, to strive not for excellence but for mere adequacy. An innovative approach and studies of theory are among the highly significant factors in student-teaching, and, conversely, intuitive insight and tentative conclusions arrived at through experience can aid in testing a practical theory or finding ideas for education research.

There has been less research on the connection between practical theories and teaching. This connection is opaque and complex, for carrying a practical theory into practice depends on many other factors besides what teachers and pupils want to achieve. Among these factors are school culture, the teacher community, parents, and the relationship and cooperation between supervisors and other academic personnel in the teacher-education system (see Buitink, 2009). On the other hand, empirical research shows that teachers' beliefs and goals have an important impact on the quality of teaching (Fives & Buehl, 2012). One must also keep in mind that a teacher's work experiences can change his or her beliefs. Beliefs can change if teachers are both given opportunities to reflect on how they do their work and supported in doing so. Naturally, personal and contextual factors can impose limits to the extent of practical theories' actualization in real-world teaching.

Fives and Buehl (2012) raised the question of the connection between teacher beliefs and two other concepts that are rarely examined as essential factors in this context of interwoven elements: teachers' sense of efficacy and teacher emotions. Reasons to address this gap are aptly expressed in the following two quotes from their paper:

Teacher educators should provide opportunities to implement practices and experience success with them as a means to bring about a change in beliefs. Such experiences may help teachers to see the relevance of a particular practice as well as provide mastery experiences that will support their sense of efficacy. (p. 489)

Others have recognized that beliefs also have emotional and affective components. Yet the absence of recognition of the latter in current research is shocking. . . . Scant attention is paid to the emotional nature of beliefs that may be part of the resistance to belief change. (p. 490)

The study of teachers' *practical theories* has not created a bridge, in either theory or practice, to the study of teachers' *self-efficacy and emotions*. As the above quotes indicate, some have pointed to the relevance of this connection. Also, scholars have concluded, the contents of teachers' practical theories suggest that self-efficacy and emotions interact in an important manner in the formation and development of practical theories. This is why I now turn to these themes.

Teachers' self-efficacy

Experiences and direct observation give teachers ideas of what teaching and learning are like and what a teacher's role is in supporting learning. The concept of teachers' self-efficacy refers to the extent to which teachers believe their teaching can facilitate student learning. Naturally, the degree of this belief varies from teacher to teacher and can change in the course of one's teaching career.

How self-efficacy expresses itself

Researchers have consistently found a *correlation between self-efficacy and quality of teaching*. Several studies, employing various criteria, clearly show that a teacher with a high level of self-efficacy activates and motivates pupils and facilitates their learning (Bates, Latham, & Kim, 2011; Caprara, Barbaranelli, Steca, & Malone, 2006; Lumpe, Czerniak, Haney, & Beltyukova, 2012; Ross, 1998; Siebert, 2006; Tschannen-Moran & Woolfolk-Hoy, 2001). Teacher efficacy correlates positively with motivation (Midgley, Feldlaufer, & Eccles, 1989) and students' achievement (Caprara et al., 2006; Caprara et al., 2008; Fast et al., 2010; Guo, Piasta, Justice, & Kaderavek, 2010).

Above all, scholars working in this field emphasize this central finding: teachers' self-efficacy is a strong motivating factor with reciprocal effects in teacher–pupil interaction (e.g., Thoonen, Slegers, Peetsma, & Oort, 2011). Teachers' positive experiences of successful situations in the classroom add to their sense of efficacy, and that feeling leads to an active orientation to teaching (e.g., Lakshmanan, Heath, Perlmutter, & Elder, 2011). When teachers perceive pupils making progress and showing ability to overcome difficulties, there is support for growth in self-efficacy. The history of research on teaching shows that teachers' self-efficacy has a clearer relationship with teaching, activation of pupils, and learning than many other factors in teachers or teaching.

Though teachers with high levels of self-efficacy do not work in a uniform way, research has produced a few characterizations. It has shown that teachers with high self-efficacy apply a variety of teaching strategies and typically utilize student-centered ap-

proaches. When teachers' sense of efficacy is high, they tend to apply instructional strategies that yield greater student autonomy and better engagement and learning outcomes, even in teaching situations that are difficult for the teacher (e.g., Lin, Gorrell, & Taylor, 2002; Skaalvik & Skaalvik, 2007). A study by Guo, Connor, Yang, Roehrig, and Morrison (2012) revealed that teachers with a higher sense of self-efficacy offered more support and created a more positive classroom atmosphere than those with lower self-efficacy.

Research has also clarified the relationship of self-efficacy to certain other professionally relevant factors. Lack of self-efficacy can predict stress, burnout, and serious intentions to leave the profession (Goddard & Goddard, 2006; O'Neill & Stephenson, 2012). In addition, teacher self-efficacy correlates with such outcomes as job satisfaction (positively) and burnout (inversely) (e.g., Brouwers & Tomic, 2000; Klassen & Chiu, 2010; Moè, Pazzaglia, & Ronconi, 2010; Skaalvik & Skaalvik, 2007). Aloe, Amo, and Shanahan (2014) studied the relationship between teacher self-efficacy specific to classroom management and burnout, using multivariate meta-analysis of the data from 16 studies. Their analysis shows that a higher level of perceived management efficacy correlates with a lower likelihood of experiencing feelings of burnout. Also, in an article reviewing 11 published studies, Brown (2012) considered the relationship between self-efficacy and burnout. This work is noteworthy for its analysis of burnout as a multidimensional concept: most literature reviews to date have regarded burnout as a unitary construct. A negative correlation between self-efficacy and the burnout dimension of depersonalization was found in all the studies reviewed.

Vieluf, Kunter, and van de Vijver (2013) have endorsed the findings of earlier research that teachers with higher self-efficacy are more satisfied with their job (e.g., Klassen & Chiu, 2010). Moè, Pazzaglia and Ronconi (2010) report that both positive affect and self-efficacy beliefs have a mediating role in the relationship between teaching strategies and praxes and job satisfaction. Skaalvik and Skaalvik (2014) conclude that teachers' self-efficacy and perceived autonomy positively predict their work commitment and job satisfaction but are negative predictors of their emotional exhaustion. A connection has been shown between self-efficacy and both greater teacher motivation and weaker feelings of stress and burnout. Klassen et al. (2013) examined preservice teachers' workload stress, self-efficacy, and occupational commitment in four countries, representing different cultures. They found a positive correlation between self-efficacy and occupational commitment in all contexts, while stress, whether caused by the workload or students' behavior, correlated negatively with commitment. According to all of the aforementioned studies, teachers' self-efficacy has the primary role when teachers try to rectify a situation or maintain the prevailing positive state of affairs.

Studies in Teacher Education. Several recent studies of teachers' beliefs in teacher education or in working life (Skaalvik & Skaalvik, 2007; Ng et al., 2010; Swackhamer, Koellner, Basile, & Kimbrough, 2009) have addressed the theory of self-efficacy. However, few of them are longitudinal studies focusing on the development of self-efficacy during and after teacher training (cf. Gorrell & Hwang, 1995; Lindeberg & Pitkäniemi, 2013; Woolfolk Hoy & Burke Spero, 2005). According to Woolfolk Hoy and Burke Spero (2005), remarkable changes in student-teachers' self-efficacy occur at the initial stage of their studies and self-efficacy also increases towards the end of teacher training (Gordon & Debus, 2002; Lin et al., 2002; Woolfolk Hoy & Burke Spero, 2005). Scholars emphasize that student-teachers'

self-efficacy is highly susceptible to “shaping” early in their studies. Clearly, teacher education offers an opportunity; seizing that early opportunity is another matter. Still, teachers’ self-efficacy is not totally static after this. Even later on in their career, it is prone to change through interventions and professional-development programs (Lumpe et al., 2012; Palmer, 2011).

The ingredients in teachers’ self-efficacy and ways to support it

Teachers’ self-efficacy is not just a “cause” of high instruction quality but also a result of it. This is evidenced by Holzberger, Philipp, and Kunter’s (2013) research into the relationship between self-efficacy and the quality of teaching. Their work, using student ratings of instructional quality, considered instruction quality in terms of concepts such as cognitive activation, classroom management, and individual learning support for students. The analyses revealed that teachers’ self-efficacy was predicted by instruction quality as indicated by students’ perceptions of their levels of cognitive activation and teachers’ ratings of the classroom management. Labone (2004) states that perhaps the central factor in the makings of teachers’ self-efficacy is not “success” in itself but the kind of cognitive processing teachers identify with their “success”.

Guo, Justice, et al. (2011) studied the connection of certain factors with preschool teachers’ self-efficacy. The analysis showed that the personnel’s cooperation and the children’s engagement both predicted the teachers’ self-efficacy level. The workplace atmosphere and the personnel’s community spirit too had an impact on the building of self-efficacy, while the quantity of teaching experience did not seem to improve it. Other studies have emphasized the significance of the social qualities or shared goals of school communities for attaining a high level of self-efficacy. Kelm and McIntosh (2012) studied the effect of the School-Wide Positive Behavior Support program (SWPBS) on teachers’ self-efficacy and found high levels of self-efficacy among the teachers who worked at SWPBS schools. Teachers at SWPBS schools felt that they were more able to engage students in the classroom and utilize strategies that take the students’ needs into consideration. It seems that the SWPBS (Sugai & Horner, 2009) holds potential to improve the school environment for students and teachers alike. This approach could also provide teachers with a shared sense of purpose. The latter study, one of those speaking about the “health” of the school environment, showed that a sense of community among the personnel predicts teachers’ self-efficacy (see also Tobin, Muller & Turner, 2006). Therefore, it makes sense to support the improvement of teachers’ work environment.

Takahashi (2011) brings to the side of the socio-cognitive theory (in which an individual processes) a socio-cultural perspective which utilizes the framework of the so called “communities of practice” to improve teachers’ self-efficacy. His interview-based study with four teachers showed that teachers can co-construct their efficacy beliefs in shared practices. This perspective stresses what schools can do to strengthen teachers’ self-efficacy in a situation wherein such measures are urgently needed (i.e., to break a vicious circle of low self-efficacy). The utility of the socio-cultural approach has been proven by a study (Moolenaar, Slegers, & Daly, 2012) exploring the relationships among collaboration networks, collective efficacy, and student achievement. According to that study, well-connected teacher networks correlate with strong collective efficacy, which, in turn, supports student achievement. In other words, we are dealing with a group’s ability to reach

certain collective goals (Goddard, Goddard, & Tschannen-Moran, 2007; Goddard, Hoy, & Woolfolk Hoy, 2000, 2004). Collective efficacy can be seen as a mechanism that enables us to understand how teacher networks affect student learning.

A few studies indicate that so-called positive psychology can be used to support and increase feelings of self-efficacy. In a study conducted by Critchley and Gibbs (2012), a school's personnel were exposed to the ideas of positive psychology and participated in an intervention designed to make them reflect on "good things," while the personnel of another school were used as a control group. The researchers found that efficacy beliefs were strengthened in the experiment group but not in the control group. In addition, help that is not initiated by the school system can be meaningful. For example, Stipek (2012) found teachers' perceptions of the support they received from parents and administrators to be correlated positively with teachers' self-efficacy.

Studies in teacher education. The theory of self-efficacy itself implies that teachers' experiences are important for the makings of self-efficacy. Successes and their cognitive processing raise the level of self-efficacy, and, conversely, relatively long series of failures and their processing lower it. One approach to the subject has involved using questionnaires which ask informants to explain the sources of their self-efficacy and point out which sources they find the most important personally. Poulou (2007) carried out one such study in the context of teacher training, examining teachers' self-efficacy and its sources through the Teaching Efficacy Sources Inventory. It revealed several significant sources: personal motivation, communication with pupils, a positive attitude, readiness to organize educational activities, a keen eye for pupils' needs, teacher education, and student-teaching. O'Neill and Stephenson (2012) studied preservice teachers' self-efficacy, its sources, and several other relevant factors. Their results showed that personality traits and teachers' physiological and affective states predicted the level of self-efficacy. Furthermore, opportunities to practice one's behavior-management skills correlated positively with teacher efficacy.

A summary of main findings, critical points and the development of teacher efficacy

The self-efficacy research tradition can be characterized as well-established and cumulative. Its theoretical foundations are sound, and it has systematically revealed factors that *either support or impair the building of teachers' self-efficacy: school experiences, positive affects, instructional quality, mastery experiences, personal motivation, ability to perceive students' needs, etc.* Proponents of the theory of self-efficacy are eager to present the *positive impact of self-efficacy on teaching quality and its support for versatile student learning.* At the same time, one should not forget *the negative outcomes connected with a low level of self-efficacy: lower job satisfaction, burnout, stress, a lower level of commitment, and quitting one's teaching career.* In a shift in the theory's landscape, self-efficacy was originally grounded in socio-cognitive theory but recently some scholars have been moving towards socio-cultural ideas. These advances seem aimed at helping problematic school communities by strengthening teachers' self-efficacy.

Reviews and abstracts of self-efficacy studies highlight several achievements in this line of research (e.g., Ross, 1998), but a research review focusing on the most recent research reveals a critical attitude as well (among other things, studies in this tradition are criticized for conceptual and measurement problems; see Klassen, Tze, Betts, & Gordon,

2011). Wyatt (2014) has pointed to some of its “simplifications.” For example, qualitative and mixed-methods approaches can aid in capturing factors additional to self-efficacy that are important in a teacher’s thinking. Also, sometimes lower self-efficacy, especially in relation to a certain situation, is not a negative feature in a teacher’s thinking. On the contrary, it can spark a process of professional development (see Wheatley, 2002). Wyatt’s (2014) central message is that self-doubt is necessary for embarking on a journey of learning and reflection. This is evident also from a qualitative case study in which Wyatt (2013) examined self-doubt and reflection as means to overcome low levels of self-efficacy.

Positive psychology and other affective elements in education bring teachers’ self-efficacy and the study of teacher emotions into closer interaction. Emotional factors are always present in teaching communities and in the cooperation with parents and other interested parties. There is a strong emotional component to studies aimed at increasing an individual teacher’s or an entire team’s self-efficacy when carried out in such settings. One can conclude that *emotions and self-efficacy are interdependent and that support for positive emotions can increase self-efficacy*. Next, I analyze the study of emotions specifically, including their connections to self-efficacy and practical theories.

Teacher emotions

Teaching is not a cognitive and rational process alone; in essence, it is an emotional affair. It is often said that teaching requires large amounts of emotional labor (Isenbarger & Zembylas, 2006; Schutz et al., 2007). Therefore, a teacher’s emotions are significant for teaching, the classroom atmosphere, school climate, and student learning (e.g., Frenzel, Goetz, Stephens, & Jacob, 2009). Today, it is understood in addition that emotions also influence teachers’ cognition and beliefs, and the latter feed back into the emotions. These elements all exhibit complex interdependence (Gill & Hardin, 2015).

In a recent review, Gill and Hardin (p. 231) gave the following definition of emotions: “Emotions are ‘interpreted feelings’ whereas feelings are undifferentiated affect. (Ortony, Norman & Revelle, 2005, p. 174) Emotions are generally short in duration, usually have a clear cause, and are available to conscious awareness. (Forgas, 2000).” Fernández-Abascal, Martín, and Domínguez (2001) have concluded that there are two types of emotions, positive and negative. Positive emotions are pleasant feelings, are of short duration, and do not require the mobilization of many resources. Negative emotions are unpleasant feelings, and coping with them, in contrast, requires the mobilization of numerous resources. My aim with the discussion that follows is to examine how teachers’ emotions are expressed, their connection with teaching, and the consequences they have. I also attempt to specify what factors and qualities in education are significant for the formation of a teacher’s emotions. Some factors favor the formation of positive emotions (such as enjoyment) while other factors, such as certain features of the environment, lead to negative emotions (including stress, depression, and anxiety).

The relation of teacher emotions to antecedents and consequences of teaching

Frenzel et al. (2009) examined the interaction of teachers’ emotions, teaching, and student learning. They found a positive correlation between the level of enjoyment of teaching that teachers reported and their pupils’ ratings of the teachers’ enjoyment in teaching. The teachers’ enjoyment level also correlated positively with their pupils’ ratings of the teaching

quality. Worrying and anxiety had a greater effect on teaching-quality ratings than anger did. Witcher, Onwuegbuzie, and Minor (2001) also found that teachers' enthusiasm and enjoyment for their professional work correlated with the quality of the teaching. Kunter et al. (2008) reported on a study in which teachers' self-reported level of enthusiasm for teaching was correlated positively with the cognitive challenge, social support, and discipline levels during the teaching as rated by the pupils.

The emotional support from a teacher influences the kind of interaction and emotional relationship exhibited between that teacher and pupils (Hamre & Pianta, 2005; Hamre, Piant, Downer, & Mashburn, 2008; Mashburn et al., 2008). This finding suggests that teachers' emotions are just as important for students' emotions as teachers' instruction behavior is (Becker, Goetz, Morger, & Ranellucci, 2014). From the standpoint of a child's development, it is essential that the classroom climate be emotionally warm and the teaching be child-centered. This is important also for a child's positive attitude to school. A strong emotional support is fundamental to learning and a solid teacher–pupil relationship. It is particularly important for at-risk first-graders (Hamre & Pianta, 2005).

Features of the environment may have either a positive or a negative impact on the development of teachers' emotions. Kimura (2010), for instance, found that certain conditions in the classroom bring on positive teacher emotions – e.g., pupils making mistakes or showing interest in learning. Such factors as pupils' inactivity or unfriendliness arouse negative emotions in teachers. Day and Qing (2009) have argued that emotional well-being is a *sine qua non* for a teacher's self-efficacy, which, in turn, is a significant factor in high-quality teaching, and, of course, emotions are important in the teaching process in their own right. However, Day and Qing found that the actual school world (i.e., teachers' work environment) displayed features hostile to teachers' well-being; the authors used the term “a cocktail of challenges.”

Some investigations have concentrated especially on the negative side of teacher emotions. Tsouloupas, Carson, Matthews, Grawitch, and Barber (2010) studied the connection between student misbehavior and the emotional exhaustion experienced by teachers, paying attention to teachers' self-efficacy (in connection with handling student misbehavior) and emotion regulation. These authors claimed that cognitive reappraisal is an efficient regulation strategy, weakening teachers' negative emotions, while expressive suppression is not an optimal strategy. They concluded that it is vital to develop strategies that strengthen teachers' situation-specific self-efficacy. Examining another aspect of negative emotions, Warren and Dowden (2012) found a positive correlation between teachers' irrational beliefs and negative emotions. The same applies to irrational beliefs and stress. Also, they found self-efficacy to correlate negatively with depression, anxiety, and stress. There was moderate negative correlation between irrational beliefs and self-efficacy.

A few more studies have examined the correlation between constructs connected with emotions and self-efficacy. Koçoğlu (2011) studied the link between emotional intelligence and self-efficacy among people studying to be teachers of English and found a positive correlation (see also Chan, 2004; Moafian & Ghanizadeh, 2009; Penrose, Perry, & Ball, 2007). Brígido, Borrachero, Bermejo, and Mellado (2013) found that a teacher's emotional state is a significant source in the building of self-efficacy and that future teachers' high self-efficacy correlates positively with positive emotions in general and, in rare cases with negative emotions (in the context of science teaching, physics, or chemistry). Similarly, accord-

ing to a few earlier studies, positive emotions strengthen self-efficacy and negative emotions weaken it (e.g., Salanova et al., 2005). One might conclude that in the aforementioned studies, teachers' emotions were material to the building of self-efficacy.

In a short-term perspective, failures and difficulties need not paralyze a teacher. Cross and Hong (2012) carried out a qualitative case study of two primary-school teachers whose work was set in a social context characterized by poverty and a minority-heavy racial mix. Despite their unpleasant emotional experiences, the teachers were governed by positive rather than negative emotions and were highly committed to their work. These teachers probably were capable of empathy and could refocus their thoughts and energy so as to make the social context appear less negative than one might initially expect. A poor community and demanding social context need not bring about negative emotions and low self-efficacy.

Studies in Teacher Education. Emotions have been studied in the context of teacher education too. When Caires, Almeida, and Vieira (2012) examined student-teachers' emotions, cognition, and perceptions of student-teaching, the informants reported difficulties such as stress, burnout, and vulnerability but also positive experiences associated with their improving skills and knowledge, self-efficacy, flexibility, and spontaneity in performance and interaction. Support from the community (for instance, the work of the supervisors – their emotional support, modeling, and logistical and technical help) was found to be a positive influence on their progress in student-teaching. When Timoštšuk and Ugaste (2012) studied student-teachers' emotions and professional identity, the most positive emotions among student-teachers were linked with pupils, whereas the negative ones were associated with experiences with supervisors and university teachers. The informants expressed a wish for more cooperation between the last two groups.

Conclusions

Clearly, teaching encompasses both positive and negative emotions. Positive emotions are vital to teachers to help them find their work meaningful enough to keep doing it and developing as professionals. Studies have analyzed the *importance of teachers' emotions to teaching, its development, educational reforms, and pupil and teacher well-being*. However, emotional labor in teaching, especially as required by the teacher–pupil relationship, has not been given the attention it deserves (Zembylas & Schutz, 2009). As for negative emotions, research has shown that teachers' emotions can have negative consequences for teaching and learning. One can conclude that a *teacher's unpleasant emotions have negative implications for students' learning, school atmosphere, and the quality of instruction generally* (e.g., Schutz, Aultman, & Williams-Johnson, 2009). Accordingly, some argue that teacher education should openly deal with teacher emotions and practice them (e.g., Hosotani & Imai-Matsumura, 2011). However, teacher education gives little or no attention to emotions, even though it should provide preparation for the emotional problems encountered in the teaching profession.

The examination above brings out why teachers' emotions are considered important and worthy of study. There is *much less research into the factors that are behind emotions and interact with their formation*. Research has, however, been able to detect a few factors that can produce – or fail to lead to – teacher satisfaction and enjoyment of the work. These are often connected with pupils and their activities (an active or passive mindset, making mistakes, etc.) or products of interaction (classroom “climate” and the teacher–pupil relation-

ship). Quite a few studies concentrate on the challenging side of teachers' emotions; i.e., they examine what causes problematic emotions and what actions can ease the heavy burden created (such as cognitive reappraisal).

Challenges for future research

Most studies of practical theories (or related concepts) are qualitative or surveys of student teachers. In addition, the highly varied terminology in these studies makes it difficult to compare the results. What is needed more is follow-up observation and follow-up interviews with teachers (Levin, 2015). For example, it would be useful to know *whether "well-developed practical theories" are carried over into schools' praxis*. At this juncture, we encounter the question of the gap that often arises between theory and practice. Why does it emerge? One central factor is that we are not able to think about teaching in all its complexity (Korthagen, 2010). One aspect of this deficit is that the affective dimension is often neglected. We have to understand that teaching requires holistic decision-making (Day, 1999).

Practical theories' significance for the quality and development of teaching is less clear, with many more dimensions and tougher challenges than that of self-efficacy. Self-efficacy is assessed mainly within a framework that considers high self-efficacy an ideal. That said, an opposing view has recently been expressed by a few dissenting voices (see Wyatt, 2014). The study of self-efficacy has been mainly quantitative, but recently there have been calls for attention to the possible advantages to be gained through qualitative and mixed-methods approaches.

Methodological variety could be useful not just for the validity of research; it could also open new vistas for the study of teachers' pedagogical thinking and beliefs and thereby improve the explanatory power of research carried out from a teacher's perspective in the field of teaching and its development. Certain new voices have expressed doubt as to whether the theory of self-efficacy alone can explain pupils' success and interest in learning. In this respect, self-efficacy is too narrow a concept. It certainly has a strong motivational charge but *does not essentially accord value to a teacher's goals and values*. These are better represented from the perspective of teachers' practical theories, albeit a more disunited and undeveloped approach at present.

One might expect an approach focusing on values and content in education to be complementary to the theory of self-efficacy. Studying inservice teachers' professional identity, Canrinus, Helms-Lorenz, Beijaard, Buitink, and Hofman (2011) found three distinct professional-identity profiles: unsatisfied and unmotivated, characterizing teachers who have a negative score from the indicators; motivated and affectively committed, associated with teachers with positive scores; and competence-doubting, describing teachers with a more varied score pattern. The authors concluded that identity is based on the following factors: level of motivation, job satisfaction, occupational commitment, and self-efficacy. Their study shows that teachers find self-efficacy and motivation central in the formation of their professional identity. However, it must be kept in mind that professional identity is a broad concept and linked to many other, related concepts. We have examined professional identity in the framework of practical theories without bringing self-efficacy into the picture (Stenberg, Karlsson, Pitkäniemi, & Maaranen, 2014). At present, it seems that professional identity could be used as a wider upper-level category under which we could collect disparate but useful narrower categories.

Although “teachers’ beliefs” could be used as an umbrella category encompassing both practical theories and self-efficacy, *there has been little contact between the two fields of research that the latter concepts represent*. Methodological tradition may be one factor in this: The study of practical theories is mainly qualitative, while that of self-efficacy is almost exclusively quantitative. There are no cooperative efforts or larger-scale research projects to unite them.

Today’s education research, which examines teachers’ emotions from a variety of perspectives, has come to the conclusion that *emotions are interactively linked with motivation and cognition*. Zembylas (2007) has dealt with the subject of teachers’ emotions from the knowledge perspective. Zembylas showed that teachers have emotional knowledge in addition to pedagogical content knowledge (PCK) (Shulman, 1986). This tells us that emotional knowledge clearly is part of the ecosystem of a teacher’s knowledge – we could even speak of emotional ecology. One could readily concur with Zembylas that PCK and teachers’ emotions rarely meet in the research literature even though in reality they exist in lively interaction.

At this point, it is abundantly clear that research has explored *the relationship between teachers’ emotions and self-efficacy*. For the most part, this research claims that certain emotions either strengthen or weaken self-efficacy. On the other hand, *there has been almost no research into the link between practical theories and emotions*, although it is an integral element in the problem of how teachers aim to do their teaching. We can draw lessons here from the study of teachers’ emotions, a modern field of research with timely work that regards emotions and cognition (rationality) not as opposing or separate forces in a teacher’s work but as acting in interaction and, in ideal circumstances, exerting a positive influence on each other.

Notes on contributors

Harri Pitkääniemi, PhD, works as an university lecturer at the School of Applied Educational Science and Teacher Education, at the University of Eastern Finland, Savonlinna. His work encompasses a wide variety of perspectives on school learning such as teacher cognition and beliefs, student cognition, and classroom interaction. He also favours comprehensive and integrative methodologies such as mixed methods and research designs which connect a variety of perspectives within a single study.

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