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Yesterday, today, tomorrow

Exploring teachers' daily emotional stress experiences in secondary education

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Chapter 1

General Introduction

Being a teacher can offer considerable fulfilment, particularly when recognizing the substantial value the profession holds (Evans, 1997). This value is derived from daily activities, such as guiding students to attain learning goals, assisting them in overcoming personal and academic challenges, and accompanying them through their developmental journeys. Moreover, as a teacher, not a single day at work needs to be the same. Each day presents new avenues for learning, implementing novel pedagogical techniques, fostering individual students' engagement, and developing solutions to instructional challenges. Furthermore, the effect that an inspiring teacher can have on students' experience and growth is significant (Hattie, 2003). Forgoing test scores and academic success for a moment, nearly every person, even as an adult, can recall a teacher who meant a great deal to them. Maybe because they showed acts of kindness and understanding, making students feel seen or heard in times of need. Or perhaps by enticing them to learn about the world in new and exciting ways – possibly instilling a lifelong enthusiasm for learning and discovery.

As such, teaching can be seen as a truly wonderful, inspiring and fulfilling profession. However, it is also a difficult and demanding career that takes a lot of commitment and perseverance (Ma, 2022). This is where we see the other side of the coin, the point where wonderful teaching experiences can become the very same occurrences that increase the pressure and responsibility teachers deal with on a daily basis. For example, teachers are expected to cater to each student's unique learning needs, adapting their teaching style based on factors like students' abilities, motivation, and how well they understand the material (Fischman et al., 2006; Halvorsen et al., 2009). Then, there's the task of helping students grow personally, so they can become independent members of society (Biesta, 2020). All of this on top of grading and creating assignments and tests, coming up with interesting and engaging lesson plans, and the added pressure of feeling responsible for each student's success and well-being (Lauermann, 2014).

It makes sense then that numerous studies have indicated that teachers around the world encounter significant stress from their profession (Beltman & Poulton, 2019; Hooftman et al., 2015; Kyriacou, 2001). Such stress can have serious consequences. For example, a study by Greenglass & Burke (2003) found that high levels of stress in teachers were associated with higher rates of absenteeism. Teachers experiencing excessive stress were more likely to take sick leave and have more extended periods off work compared to their less stressed counterparts. Consequently, the resulting absenteeism of teachers can also disrupt the continuity of learning for students. Moreover, Skaalvik and Skaalvik (2015) observed that prolonged exposure to high levels of stress eventually led some teachers to reconsider their career choices and

leave the teaching profession altogether (see also Harmsen et al., 2018). This is especially troublesome considering the worldwide teacher shortage, further endangering equitable and inclusive education for students (Craig et al., 2023). In short, the stress experienced by teachers has far-reaching implications for both educators and students alike. As such, understanding more about how work-related stress manifests itself and can be affected in teachers is crucial. A greater understanding can lead to the creation of a supportive and productive learning environment for everyone involved in the education system.

Therefore, this dissertation investigates the work-related stress of teachers in secondary education. The aim is to better understand how stress relates to other important aspects of teachers' subjective experiences and behaviour. Ultimately, so that individual teachers can be aided in their day-to-day professional lives. More specifically, this dissertation investigates how work-related stress is related to teachers' investment of time and effort in their professional learning, how teachers experience their future at work, and how they can recover from stressful experiences by showing resilience in the face of daily hindrances. These relationships are all uniquely investigated from a day-to-day perspective because it is acknowledged that every day brings new challenges, hindrances, opportunities, and interactions for teachers (Schmidt et al., 2017). As such, in addition to using traditional measures, it makes sense to account for the dynamic nature of the teaching profession by employing daily research methods. What follows is a short introduction of the main concepts examined in this dissertation, what a day-to-day approach entails, the investigated research questions, an overview of the empirical studies that were conducted, and a brief description of the data that was collected.

Teachers' work-related stress

Emotions are an important part of school and classroom settings (Pekrun, 1992). While research in this context has predominantly focused on students, there has been a recent shift in attention towards investigating how teachers navigate their own emotions regarding their responsibilities at work. Among the various emotions commonly experienced by teachers, anxiety emerges as a prevailing stress-emotion (Keller et al., 2014a). In light of the prevalence of this stress-emotion in the workplace, within this dissertation teachers' work-related stress is defined and consequently measured in terms of work-related anxiety. This work-related anxiety can be further specified by the discrete sensations that teachers use to describe their genuine, daily experiences. For teachers, work-related anxiety appears best represented by a feeling of nervousness, tension, and worry regarding their work (Keller et al., 2014b). As such, for this research, these discrete sensations were used to capture teachers' work-related anxiety.

The decision to focus on work-related anxiety is further informed by the recurrent observation that anxiety is frequently experienced by teachers (Frenzel et al., 2009, 2016) and that it plays a pivotal role in shaping teachers' adverse emotional encounters concerning their professional duties (Huang et al., 2020; Keller et al., 2014b). Furthermore, this conceptual framing of work-related stress as anxiety is in line with the widely accepted stress and coping theory (Lazarus & Folkman, 1984), which acknowledges anxiety as an emotional response experienced by individuals facing stressors in their environment (Lazarus, 1999). Notably, the stress and coping theory asserts that stress arises from the interaction between the individual and the environment (Lazarus, 1999). This implies that stress responses are not solely triggered by difficult situations but are also influenced by the individual's appraisal of those situations. The fact that each individual may respond differently based on past and daily experiences, personality traits, etcetera – explains why some teachers experience more stress than others when confronted with similar situations.

Such an individual stress response is based on personal assessment and perceived importance of the situation (Lazarus & Folkman, 1984). When potentially stressful situations arise at work, teachers are likely to assess them in the following manner: first, they will evaluate the situation's importance. For example, a teacher may question the degree to which it is important that students comprehend the subject matter or cooperate with their peers during class. In essence, teachers' assessment of a situation (whether consciously or unconsciously) as personally significant is a necessary condition for stress to manifest. In simple terms, if nothing is at stake, the outcome of the situation would not matter. Second, if the event is regarded as important, teachers may ask themselves if they have sufficient resources (such as time, energy, and expertise) to handle the situation to ensure a favorable outcome. For instance, a teacher might find it important that students understand the subject matter but may encounter some disturbance from students during their instruction. If the teacher is fully capable of addressing these disturbances adequately, there is no need for a stress reaction to arise. However, if this teacher lacks the energy or expertise to resolve the issue, it may jeopardize the important task they set out to accomplish. In such a scenario, the teacher may experience stress due to the strain placed on their ability to achieve a goal they deem important.

For teachers, the dissonance between their coping capacity and the difficulties inherent in their work is a daily occurrence, given the substantial demands placed upon them (Schmidt et al., 2017). Instances of these stress-inducing scenarios are abundant and commonplace: teachers might feel stressed due to managing a large volume of grading within a short time, handling disruptive

students in class, or facing scrutiny and criticism from parents. In these situations, the personal importance for teachers could lie in their aspiration to excel in their roles, signifying their desire for success across various teaching endeavours. To summarize, the theory of stress and coping is used as a framework to understand teachers' stress to arise when they perceive a situation to be personally significant but beyond their coping capabilities (e.g., their available resources). In such cases, a stress response can manifest as a negative emotional experience, of which work-related anxiety is typical (Folkman, 2008; Keller et al., 2014a).

Work-related stress and motivated professional learning

Within this dissertation, teachers' professional learning is defined as teachers' individual or collective engagement in activities through which they develop or enhance competencies (i.e., integrated knowledge, skills, and attitudes) (Kyndt & Baert, 2013). These competencies subsequently influence both teachers' current and prospective professional accomplishments as well as the performance of their respective schools (Kyndt & Baert, 2013). This dissertation specifically delves into teachers' commitment to conscious, self-directed, and intentional learning as described by Van Eekelen et al. (2005) and Louws et al. (2017). Teachers' commitment to professional learning activities is further conceptualized as having both a quantitative aspect (i.e., the amount of time teachers invest in learning activities) and a qualitative aspect (i.e., the effort teachers exert in engaging in learning activities). In this context, effort is understood as the expenditure of mental energy, dedication, and persistence in overcoming challenges during professional learning activities (see Colquitt et al., 2000; Jansen in de Wal et al., 2020; Schaufeli et al., 2002).

Understanding teachers' commitment to conscious, self-directed, and intentional learning is important, especially given the fast-paced changes in 21st-century work and society that drive the need for teachers to continuously commit valuable time and effort to professional learning. This commitment is needed because of the frequently changing aspects of teachers' jobs, like subject knowledge, student populations, and teaching methods (Vermunt & Endedijk, 2011). However, this investment in learning cannot be taken for granted. Already, teachers in the Netherlands have little time to perform their jobs as is, without the added burden of needing to commit additional time and effort to their professional learning (Admiraal et al., 2016; Van Veen, 2008).

Hindering the commitment of time and effort to learning activities may be caused by the high degree of work-related stress that is experienced by some. Stress can elicit high levels of coping behaviour, causing fatigue (Cooper et al., 2001; Folkman et al., 1986). In turn, this fatigue can result in teachers prioritizing their already scarce time and mental effort into their primary tasks of teaching, grading, and preparing lessons (Algemene Onderwijsbond, 2017) instead of investing in professional learning activities. However, the relationship between teachers' stress experiences and their professional learning is unclear from current research. Therefore, this dissertation explores the commitment of time and effort to professional learning in relation to work-related stress, investigating whether stress causes a decrease in this commitment, or whether a greater commitment to professional learning causes stress.

Perceiving the future and work-related stress

Next, the concept of future time perspective (FTP) in this dissertation is used to explore teachers' perception of the future and its implications for their experience of the present. FTP informs how individuals perceive, structure, and emotionally respond to their future prospects (Nuttin & Lens, 1985). Essentially, FTP captures the extent and manner in which future expectations influence an individual's current psychological state (Lewin, 1942). Within the scope of this dissertation, we framed this anticipatory sense of the future in the specific context of the professional lives of teachers. For this study, we assume that a teacher with a well-defined FTP is likely to possess a clear understanding and expectation of their future at work.

A critical component of how teachers experience stress may be rooted in their perceptions of their future regarding work (Husman et al., 2014). Nevertheless, there remains significant ambiguity surrounding the interplay between teachers' foresight about their future and the stress they undergo in the present. On one side of the spectrum, teachers' future outlooks might diminish their current stress levels. This is because perceiving future tasks, challenges, or events at work may cause teachers to anticipate specific outcomes (Husman et al., 2014, 2016). If this results in better consideration, organization, and stronger positive (e.g., optimistic) feelings toward their future, then risks, impediments, and opportunities are acknowledged but not perceived as menacing. This, in turn, allows teachers to adopt a proactive rather than reactive approach toward stress and assume a constructive course of action, fostering avenues for personal development. Conversely, a less well-defined and more cynical view of the future could have the opposite effect. Yet, it's equally conceivable that the causality could be reversed. That is, current stress levels might shape

teachers' future perceptions. For instance, Husman et al. (2014) identified an inverse correlation between teachers' stress and their sentiments about the consequences of future professional endeavors. They deduced that present-day occupational stress among teachers led to a diminished forward-looking perspective, promoting a more immediate, day-to-day focus. As such, this dissertation aims to shed light on the association between work-related stress and the future time perspective of teachers by investigating the direction and causal ordering of teachers' FTP and work-related stress.

Everyday resilience of teachers against stress

Lastly, teachers' buoyancy is defined as the capability of teachers to effectively navigate through the regular setbacks and challenges inherent in their daily tasks (Martin & Marsh, 2008a; Parker & Martin, 2009). Buoyancy is frequently contrasted with resilience (Martin & Marsh, 2008a, 2009). Specifically, resilience denotes the potential to successfully address intense and extreme adversities, like acts of violence, which are usually singular incidents faced by a minority of teachers (Collie et al., 2021). Conversely, buoyancy illustrates the competency to bounce back from routine challenges and pressures, such as balancing multiple deadlines or managing student misconduct, which the majority of teachers encounter daily. It is also synonymously referred to as teachers' everyday resilience (Martin & Marsh, 2008a; Parker & Martin, 2009).

Despite the relevance of buoyancy in coping with daily stressors, the concept has never been investigated on a day-to-day basis. Furthermore, current research lacks a longitudinal perspective on teachers' buoyancy and its connection to stress. Undertaking a study that observes teachers' stress and buoyancy and their interrelation over an extended period of time would provide empirically substantiated conclusions about the nature of teachers' stress and buoyancy. For instance, this would shed light on the state-like nature of these concepts and to what extent buoyancy actually provides protection against stress. This knowledge is crucial for teaching practice. Understanding how buoyancy helps educators manage their daily challenges can inform the development of targeted interventions aimed at enhancing their resilience and well-being (see Martin et al., 2013). This, in turn, may lead to improved teacher performance and retention, as educators who are better equipped to handle stress are more likely to remain in the profession and excel in their roles.

A day-to-day research approach

The majority of research regarding teachers' stress, learning and resilience is based on nomothetic data. Such data pertains to information on differences between teachers in how stressed they are and how these relate to differences between teachers in other variables. It is not advisable to use such data to make inferences about the behaviour, thoughts or feelings of an individual. This is because such inferences assume that variation in stress between teachers, and how it relates to other between-teacher differences, mirrors variation in stress within teachers (i.e., fluctuations in stress) and how this co-occurs with fluctuations in other concepts over time. Research has shown that it is highly unlikely that the conditions under which such assumptions can be made hold for psychological processes in general (Molenaar, 2004; Murayama et al., 2017). Inferring about psychological mechanisms within teachers based on data that describes differences between teachers would therefore often lead to making an ecological fallacy. For example, finding that schools with teachers who have many years of experience also have lower levels of stress. If we conclude from this that all experienced teachers are more resilient against stress, we would be falling into the trap of the ecological fallacy. That is because, this overlooks the fact that within those schools, there might be newer teachers who are doing an outstanding job in managing their stress or veteran teachers who aren't as effective. Essentially, we're mistakenly applying broad trends to everyone, which can lead to incorrect conclusions about what makes an individual teacher resilient. A way to avoid this fallacy, is to recognize the differences in outcome in these types of data, together with the lack of research towards understanding the individuals' experiences, the need for person-focused data and interpretation at the appropriate level of measurement becomes apparent.

Fortunately, with the growth of technology, we've seen a rise in advanced ways to collect these person-focused data. Nowadays, data collection is more seamless and less bothersome for participants, thanks to the use of phone or tablet apps, smartwatches, and similar devices (Cranford et al., 2006; McNeish & Hamaker, 2019; Mehl et al., 2011). This advancement allows for more frequent data collection with shorter intervals between each point (McNeish & Hamaker, 2019). These shorter intervals result in richer data, helping researchers dive deeper into investigating changes in things like stress and emotions over time. In short, this approach favours the understanding of personal dynamics (i.e., states) beyond the traditional comparison of individuals' characteristics (i.e., traits). Therefore, in this dissertation, the concepts of work-related stress, teachers' commitment to professional learning, FTP, and buoyancy were predominantly investigated through the use of daily self-reporting questionnaires - to understand their day-to-day change and interrelationship. To our knowledge,

this research would be the first to investigate some of the included concepts, such as professional learning, the perspective of the future, and resilience of teachers from day to day in tandem with work-related stress.

Overview of this dissertation

To summarize, this dissertation aims to explore how stress affects teachers at work. It investigate the impact of stress and ways to enhance teachers' well-being. This includes helping teachers continue their learning, think positively about their future at work, and become more resilient to stress. By studying these areas, this work hopes to find simple and effective ways to support teachers, making their jobs and lives easier and more fulfilling. To this end, four research questions were formulated:

1. How can teachers' stress be measured reliably from day to day?
2. To what extent does work-related stress relate to teachers' commitment to professional learning activities from day to day (and teacher to teacher)?
3. How does teachers' future time perspective relate to their experience of work-related stress from day to day?
4. To what extent do teachers' stress and buoyancy vary, carry over, and relate from day to day?

Chapter overview

The majority of studies in this dissertation utilize time-intensive data collected from teachers over several consecutive days. As discussed above, these data are essential to avoid ecological fallacies by equating the difference in factors between individual teachers to the changes in such factors within individual teachers as they change over time. However, the application of these data is novel, and the methods for assessing the reliability of daily measures remain unclear. Therefore, chapter two introduces a new and practical method for assessing this reliability with these time-intensive data (concerning research question one), which were gathered from 151 teachers over 15 weekdays. More specifically, the chapter delves into the use of multilevel confirmatory factor analyses to establish a within-level reliability score, indicative of changes within individual teachers, and a between-level reliability score, reflective of differences between teachers.

The commitment of teachers to professional learning is crucial, especially considering the rapid developments in today's work and society. These changes demand continuous professional development due to evolving subject content, diverse student needs, and new teaching methodologies. However, dedicating valuable resources, such as time and effort to learning activities, is especially challenging for teachers already pressured by high job demands. Therefore, chapter three primarily focuses on teachers' commitment to professional learning and its relationship with work-related stress. Explicitly, it examines the extent to which the amount of time and effort teachers dedicate to professional learning activities relates to the level of stress they experience, both generally and on a daily basis. To address research question two, two types of data are utilized: one aimed at representing teachers' trait-like and state-like experiences of work-related stress and their commitment to professional learning activities, while the other type of data mainly focused on personal beliefs about these subjects.

From a theoretical standpoint, comprehending how stress and future orientations influence each other is crucial to advance our understanding of future time perspective theory, which is primarily based on motivational theory. Practically, discerning the causal relationship between these constructs offers insights into whether daily stressful events impact teachers' outlooks on their future at work, or if these future perspectives affect the level of stress experienced. Therefore, chapter four examines the relationship between teachers' work-related stress and their perspectives on the future in their professional environment (research question three). Here too, the daily data of 151 teachers gathered during a period of 15 weekdays was used.

Although buoyancy is likely to play a crucial role in managing everyday stressors, its application has not been explored on a daily basis. This is especially remarkable because buoyancy is characterized as 'everyday resilience' – suggesting that everyday occurrences are inherently part of the construct. As such, chapter five delves further into the interaction between work-related stress and the daily experiences of teachers. This chapter explores how teachers' buoyancy in dealing with stress is influenced by their daily stress levels. The core question of this chapter is whether and in what way the daily experience of stress is related to their resilience to stress (research question four). For this study, two datasets were used. To examine how stress and buoyancy fluctuate over a 5-day period, a cross-lagged panel model was employed based on the data of 151 teachers (as described above). Additionally, to achieve the necessary detail for these daily interactions, a supplementary dataset was collected from 10 teachers, documenting their feelings of stress and buoyancy over a consecutive 61-day period.

In chapter six of this dissertation, the findings are critically examined in the context of existing research, highlighting the contribution to the broader field. This section begins by summarizing the main results, emphasizing their significance. Next, the implications of these findings are further discussed, considering their impact on theory, practical applications, and future research directions. Challenges encountered during the research process, as well as the limitations of the studies included in this dissertation and potential biases, are openly addressed. The discussion also proposes areas for further investigation, suggesting how unanswered questions and new insights revealed by the study could guide subsequent research efforts. This section concludes by reiterating the importance of the contributions that are made, reinforcing the value of new knowledge this dissertation has generated.