Emotions in the Classroom

Exploring Relationships between Students' Perceptions of Teachers' Practices and Students' Strengths and Difficulties

A thesis presented in partial fulfilment of the requirements for the degree of

Doctor of Clinical Psychology

at Massey University, Palmerston North

New Zealand

Amy Kirsten Edwards

2020

Abstract

Despite recognition of the importance of schools as a zone of social-emotional development, there is a gap in knowledge regarding students' perceptions of teachers' social-emotional practices and how these perceptions relate to students' strengths and difficulties. This thesis addresses this gap through three studies. Students' conceptual understandings of 88 social-emotional practices were examined using Multidimensional Scaling (MDS), creating a three-dimensional map depicting item relationships. Study two used this map as a lens for analysis of survey data collected from 335 students, focussing on both student-perceived teachers' practices and student variables including psychological flexibility, connectedness, and emotional, social, and behavioural strengths and difficulties. Findings indicated positive correlations between perceptions of social-emotional practices and students' connectedness, which in turn was associated with fewer social-emotional difficulties. Existing social-emotional strengths of teachers were highlighted; students reported frequently perceiving teachers' use of social-emotional practices. Importantly, however, these perceptions were not always related to students' strengths. Study three sought to deepen insights into the findings of study two by investigating potential differences in the relationships between perceived teachers' practices and students' strengths and difficulties according to student gender, in recognition of common views that social-emotional variables are affected by student gender. Findings revealed few gender differences in the relationships observed between perceived teachers' practices and student variables.

Acknowledgements

No thesis is an individual effort, and mine is no exception; there are many people for whom I hold immense gratitude in helping me reach the end of this journey. Of course, this research would not have been possible without the generosity of the many teachers and students who offered their time and perspective and provided the research data for my thesis. Thank you to all of you.

To my supervisors, who have offered endless support and guidance in a manner which has helped me to believe in myself even amid the strongest moments of doubt, thank you. This journey started first with Dr. Shane Harvey, who somehow had the ability to give his full attention to supervision every time I walked through his door as another supervisee walked out – be I the first or fifth meeting of his day. The many supervision meetings consisting of whiteboard brainstorming was key to ensuring this research progressed smoothly, even when opportunity came knocking and you had to move on from our supervision team. Dr. Kirsty Ross, you stepped up from co-supervisor to primary supervisor in Shane's absence without an apparent hint of reservation. Losing a supervisor at the halfway point of a thesis could be any doctoral student's worst nightmare, but between the two of you, you made the transition easy. Dr. David Bimler, I cannot express how thankful I am to have had your statistics support, without which I may have torn my hair out. Finally, Prof. Margaret Walshaw, who also joined the supervision team in Shane's departure and offered such a valuable extra perspective. Each one of you has been unbelievably organised, supportive and kind, and given me time I still don't believe you have in your busy schedules. I will forever be proud and privileged to have learned from all of you.

This thesis is also a component of a wider clinical training course, and I have been fortunate to have the support of many staff throughout this journey, all of whom have

shown interest in both my research and clinical training. The following list is not exhaustive, but names some of the key people who have played a role in helping me to achieve my qualification: Dr. Joanne Taylor, Dr. Kirsty Ross, Dr. Hukarere Valentine, Renée Seebeck, John Pahina, and the wider staff of the Massey University Psychology Clinic and MidCentral DHB who have supervised placements and been friendly faces in the various workplaces I have had the privilege to work from. Special mention to my two internship supervisors, Renée Seebeck and Dr. Sid Naidu, who helped keep me sane in the busiest year of my life to date.

My doctoral colleague Eddie Barnard, you were the person who was quite literally by my side for most of the planning, carrying out and writing of my research. We have progressed through the many highs and lows our doctoral journeys as a small group of two, and I can wholeheartedly say I would not have made it through the lows without your company. I wish you all the very best for your career and can't wait to see where life takes you.

I would also like to make special recognition to my friends, family and flatmates who have shared in the laughter and moments of celebration throughout eight years of tertiary study, and put up with the grumpiness that can come with a tired Amy. To my parents, Janette and Paul Edwards, I cannot tell you how much I appreciate your encouragement, support and ability to accept my decisions in life, even when it has meant moving islands (twice). Hopefully this achievement makes the years of dealing with a stubbornly independent child worthwhile.

Last but certainly not least – Bryn, I am so lucky to have someone who truly does know me better than I know myself – even if it sometimes takes hindsight to appreciate that you are right when you point out that I will always learn something from a bad day.

Table of Contents

List of Abbreviations

SE	Social-Emotional
SEL	Social and Emotional Learning
EFA	Exploratory Factor Analysis
PFC	Prefrontal Cortex
ACT	Acceptance and Commitment Therapy
DNA-V	Discoverer, Noticer, Advisor -Values
SEC	Social-Emotional Competence
ER	Emotion Regulation
MUHEC	Massey University Human Ethics Committee
NZ	New Zealand
MOSS	Method of Successive Sorts
MDS	Multidimensional Scaling
HCA	Hierarchical Cluster Analysis
GOPA	Grouping, Opposites, Partition, Addition
AFQ-Y8	Avoidance and Fusion Questionnaire for Youth – 8 item Version
SCS	School Connectedness Scale
SDQ	Strengths and Difficulties Questionnaire
ESOL	English to Speakers of Other Languages
CEEQ-S Version	Classroom Emotional Environment Questionnaire – Student
GSEP	General Social Emotional Practices
EC	Emotion Coaching
NC	Negative Connectedness
C	Connectedness
PF	Psychological Flexibility
EP	Emotional Problems
CP	Conduct Problems
H/I	Hyperactivity/Inattention
PRP	Peer Relationship Problems
PB	Prosocial Behaviour
TD	Total Difficulties

List of Figures

List of Tables

List of Appendices

Chapter One: Introduction

Steinberg (2005) likened adolescence to "starting an engine without a skilled driver behind the wheel" (p.70). Parents and teachers alike will undoubtedly hold some fond- and some less fond- memories of navigating the developmental period that is adolescence with their children and students. Adolescence has traditionally been regarded as the period beginning with puberty and ending with independence from parents, but cultural and demographic variations in when these life events occur makes this definition contextually varied (Curtis, 2015). Instead, adolescence has been defined by the World Health Organisation as occurring between the ages of 10-19 (WHO, 2014).

During this phase that marks the transition between childhood and adulthood, individuals experience significant physical, cognitive and emotional development, learning, and adjustment to new challenges and goals (Crone & Dahl, 2012; Dahl, 2016). However, also observed during adolescence is increasing prevalence of mental health problems. Onset of mental health disorders by age 14 occurs in 50% of cases worldwide (WHO, n.d.). Steinberg (2005) provides some insight into the unique characteristics of adolescence that may make it a vulnerable time for the development of mental health disorders. He acknowledges that adolescents have under-developed social-emotional skills and may not be equipped to handle the challenges they face. High rates of mental health disorders observed during this period - both internalising and externalising disorders – may therefore be a result of the mismatch between adolescents' stage of cognitive development and the challenges with which they are faced.

This point is concerning in modern society, where the challenges of adolescence are, for many, increasing in complexity. Developmental priorities during adolescence centre on social relationships and development of intimate relationships, alongside academic and physical development (Meeus, 2018; Peper & Dahl, 2013). According to

Erikson's (1969) theory of psychosocial development, adolescence is characterised by the stage of identity versus role confusion. During this period, the major focus is on development of self-identity and romantic and non-romantic relationships (Erikson, 1969). Research has demonstrated neurological patterns of development during adolescence also reflect the importance of social development; significant development is seen during adolescence in brain areas associated with social-emotional functioning, such as the prefrontal cortex (Crone & Dahl, 2012).

Social experiences during adolescence may also have an important impact on physiological development. Hormonal changes during adolescence reflect the strong influence of the social context on development; testosterone increases in both males and females during adolescence, but its levels and behavioural correlates are both influenced by social context (Peper & Dahl, 2013). One study found being a victim of bullying, for example, was associated with lower levels of testosterone in girls, and higher levels of testosterone in boys, when compared with non-victims (Vaillancourt et al., 2009). When examining behaviour associated with increased testosterone, higher levels of testosterone in males was associated with aggression, but only when individuals' social status was threatened (Josephs et al., 2011; Josephs et al., 2006). It appears, therefore, that social experiences may have a direct effect on physical development which, in turn, influences later social behaviour.

Given the importance of developing social and intimate relationships during adolescence, peer acceptance is often a significant source of stress for adolescents. There is a constant drive to seek social acceptance, making adolescents particularly vulnerable to peer evaluation and criticism (Jarvinen & Nicholls, 1996). Furthermore, the advent and progression of technology and social media has created new challenges for teenagers in their social world. While some adolescents may experience positive effects of social

media and the opportunity for increased accessibility of social networks, social media has also been connected to depression, cyber-bullying and social isolation (Best et al., 2014). Whereas once adolescents could return home from school and generally not be subject to any further social evaluation from peers for the day, social media has created 24/7 access to social relationships and potential evaluation.

Cyber-bullying is defined as "an aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and over time against a victim who cannot defend him or herself" (Smith et al., 2008, p. 376). Cyber-bullying differs from other bullying in that it provides the potential for perpetrator anonymity as well as dissemination to a widespread audience-potentially leading to much more severe acts and effects of bullying (Fanti et al., 2012). The accessibility of the social environment that is offered by social media therefore adds further complexity and potential stress and anxiety during a developmental period that is already characterised by significant vulnerability to social criticism.

It is no wonder then, based on the challenges adolescents face while their brains and bodies continue to develop, that they are at increased risk for experiencing psychological distress and onset of mental health disorders. This reality therefore highlights the need for adults to support adolescents to develop the necessary skills to respond to life stressors. One key protective skill is the ability to regulate emotions (Gross, 2002; Gross & Muaoz, 1995; Werner & Gross, 2010; Zeman et al., 2006). Emotion regulation and the closely related concept of psychological flexibility will be significant foci of this thesis. More in-depth discussion of these concepts will therefore occur in the proceeding chapters, but to briefly align the reader to the central themes of this thesis, emotion regulation is defined as "the processes by which people monitor, influence and adjust their emotions and how they evaluate and demonstrate emotions to

achieve their individual objectives in relation to their emotional context" (Callear, 2014, p. 5).

A related concept is the concept of psychological flexibility, which I will highlight in later chapters as providing a basis for positive emotion regulation. Psychological flexibility is defined as "the ability to contact the present moment more fully as a conscious human being and to change or persist in behaviour when doing so serves valued ends" (Hayes et al., 2006, p.7). Psychological flexibility is driven by acceptance, which has been demonstrated as an effective component of emotion regulation (Campbell-Sills et al., 2006; Vassilopoulos, 2008). Psychological flexibility is not simply about flexibly switching between emotional and behavioural strategies to regulate emotions, but rather about engaging in behaviour driven by a self-aware perspective. Having psychological flexibility means knowing one's values and regulating one's emotions and behaviour in a manner that aligns with these values. Moreover, it is about being present-moment focussed, rather than becoming caught in cycles of rumination or worry.

Psychological inflexibility, its opposite, represents ineffective regulation, characterised by cognitive fusion (chronic and rigid adherence to rules and beliefs), and experiential avoidance (Greco et al., 2008; Hayes et al., 2006). At the core of psychological inflexibility is difficulty regulating emotions; one chooses to avoid situations which cause difficult emotions rather than accepting the experience. As a result, psychological inflexibility can result in behaviour which is incongruent with values and leads to a less fulfilling life, and more difficult emotional experiences in the long term (Hayes et al., 2006).

Within this thesis, I will apply a developmental lens to the understanding of emotion regulation. Development of emotion regulation skills is an ongoing process that begins in infancy and continues through childhood and adolescence and into adulthood

(Zeman et al., 2006). This development is influenced by social interactions and observation of others (McLaughlin, 2008). Much research has focussed, therefore, on the family context, investigating how parents and caregivers can foster children's development in such a way that they develop the skills to navigate life's experiences with optimal outcomes for wellbeing (Assor et al., 2004; Denham et al., 1997; Gottman et al., 1996; Roth & Assor, 2012; Roth et al., 2009).

While researchers have widely acknowledged and examined the role of parents in children's development of emotion regulation skills, the role of teachers and the school context has been largely neglected to date. An increasing priority within the education sector is the movement toward educating the "whole child" rather than the traditional focus on academic learning (Burroughs & Barkauskas, 2017; Schonert-Reichl & Hymel, 2007; Schonert-Reichl et al., 2017). Accordingly, Social and Emotional Learning (SEL) has been widely introduced to schools in an effort to equip students with necessary skills for life, including self-management, of which regulating emotions is a core component (Schonert-Reichl et al., 2017).

Researchers in this area have indicated that knowledge of child and adolescent development helps teachers to enhance their teaching for the benefit of students' social, emotional, and academic outcomes (Schonert-Reichl et al., 2017). This finding is not well recognised, however, in initial teacher education, and commentary emerging from within the education sector has recognised a gap between theory and practice. In reflection of this, many teachers report feeling under-prepared for managing students' emotions and behaviour when they enter the workforce. Implications of this point affect both students and teachers, with higher stress and burnout for teachers, and poorer teacher-competence in incorporating beneficial practices in their classroom teaching (Schonert-Reichl et al., 2017).

I would like to acknowledge at this point that there are many other aspects of wellbeing that may contribute to one's wellbeing or vulnerability to distress. Holistic models of wellbeing propose that health and wellbeing are comprised of several inter-related aspects, and that weakness in one area of health will affect other areas. In New Zealand, *Te Whare Tapa Wha* is a Māori model of health, which describes health as being comprised of four realms; taha tinana (physical); taha whānau (social); taha hinengaro (emotional/psychological); and taha wairua (spiritual) (Durie, 1994). The four components are often pictorially represented as the four walls of a whare (house), representing their inter-dependence and the necessity for a holistic approach to wellbeing (Rochford, 2004).

In acknowledgement of the importance of considering health holistically, in this thesis I consider aspects of students' social and behavioural functioning alongside psychological/emotional functioning, to gain a more holistic picture of the potential influences a teacher may have on student health. Even so, it is acknowledged that this does not encompass other aspects of wellbeing commonly incorporated into holistic models (such as spiritual and physical health). Nonetheless, due to the positioning of this thesis within Clinical Psychology, psychological wellbeing was the primary interest within students' strengths and difficulties.

This thesis consists of three independent related studies which, together, aimed to address the research question *"How do students' perceptions of teachers' social-emotional practices relate to students' social, emotional, and behavioural strengths and difficulties?"*. Time constraints of a two-year part-time doctoral research project limit the scope of research to a cross-sectional design. While these constraints do not allow for conclusions to be drawn regarding the effect of perceived teachers' practices on students' development over time, it is hoped that the data gained will nonetheless provide a

valuable insight into the relationships between teacher and student variables that may inform hypotheses for future research.

Throughout the process of planning and designing this research project, it was determined that there was no appropriate existing survey measure for gaining students' perspectives of their teacher's social-emotional practices. Study One was therefore a necessary precursor to Studies Two and Three, aiming to validate the *Classroom Emotional Environment Questionnaire-Student Version (CEEQ-S)* for use with a population of New Zealand secondary school students. The benefit of validating this measure rather than using an existing classroom climate questionnaire is discussed in Chapter Seven. In the interests of avoiding repetition, it will not be discussed in depth here.

Studies Two and Three then drew on data collected with a sample of New Zealand high school students. The CEEQ-S was applied alongside measures of school connectedness, psychological flexibility, and social, emotional, and behavioural strengths and difficulties to examine the relationships between teachers' social-emotional practices and students' strengths and difficulties. An online survey was created and administered with Year 12 and 13 students in secondary schools.

In Study Two, exploratory factor analysis (EFA) and bivariate correlation methods were used to investigate the relationships between students' perceptions of teachers' practices and student variables (connectedness, psychological flexibility, emotional difficulties, conduct problems, hyperactivity/inattention, peer relationship problems, prosocial behaviour and total difficulties). Linear regression was used to further explore relationships of significance and interest; namely, the relationships found between perceived teachers' practices and students' connectedness.

Study Three provides deeper insights into the relationships between students' perceptions of teachers' practices and student variables by exploring whether any gender differences were evident in the relationships between variables.

This thesis is presented in a 'thesis with publication' format, owing to the multiple study format of the overall project. Studies One and Two were prepared as manuscripts for publication. At the time of thesis submission, both had been submitted to journals (*Educational Review* and *Journal of Educational Research,* respectively), and were awaiting response. To reduce repetition within this thesis, Study Three was not prepared as an additional publication as it used the same sample and data as Study Two. Nevertheless, Study Three was included in the thesis as it contributed further interesting findings and discussion and may be published in the future.

The following literature review will discuss the role of emotion regulation skills in psychological wellbeing, current knowledge of how these skills develop, and the potential contribution of teachers in supporting students' emotion regulation development.

Chapter Two: Emotions and Emotion Regulation

What is emotion: Evolution and neurobiology

Prior to discussing emotion regulation in detail, it is important to understand what emotions are, and why and how we experience them. According to functionalist views, emotions have an evolutionary basis, providing adaptive functions for human survival. When we are faced with a stimulus, emotions drive our physiological and behavioural responses in accordance with goals for survival (Gross, 2014; Ochsner & Gross, 2014; Phillips et al., 2003). A classic evolutionary example is that if we were to see a lion, we would experience fear that ignites our fight or flight system to help us escape impending danger.

Brain structures included in emotional responding include both subcortical structures (the limbic system), and cortical structures (predominantly the prefrontal cortex, or PFC), which all play specific roles in the experience and regulation of emotion (Ahmed et al., 2015; Crone & Dahl, 2012; Ernst, 2014; LeDoux, 1996; Phillips et al., 2003). Phillips et al. (2003) suggested that, neurobiologically, emotional processes following exposure to a stimulus involve three separate processes: appraisal/recognition that a stimulus is emotionally significant, development of an affective response, and regulation of the affective response/subsequent behaviour. These processes tend to involve increasing cortical input and thus offer increasing opportunity for cognitive influence of the outcome.

First, Physiological responses to emotional stimuli are induced by subcortical structures such as the amygdala, insula, and thalamus-areas of the brain that are primarily involved with primitive brain functioning (LeDoux, 1996; Phillips et al., 2003). As a result, we have little cognitive control over the initiation of an emotional experience. The brain automatically determines the emotional valence of a stimulus without cortical

control, thus inducing the aforementioned physiological response (Phillips et al., 2003). Second, development of an affective response remains largely subcortical, again involving the amygdala, subcortical regions involved in the reward circuit, and thalamus. At this stage, however, some basic involvement of cortical structures can be observed; the anterior cingulate cortex and parts of the frontal cortex have been connected to affective responding, with lesions in these areas resulting in changes in emotional responding (Phillips et al., 2003). Lastly, the regulation of the affective response relies more on cortical structures, namely areas of the frontal cortex. At this stage, higher executive functions are employed to regulate the autonomic physiological response to produce a desired behavioural output (Phillips et al., 2003).

Insight into the various components of the emotional experience is critical to understanding the contribution of emotion to mental health. We may consider emotions as central to mental health, but given the evolutionary benefit of experiencing all emotions, it is not the experience of fear, sadness, anxiety, or any other emotion that makes a person mentally unwell. Rather, it is likely some difficulty with the regulation of emotions that can lead to one's experience of some emotion becoming relentless and chronic in such a way that it leads to psychological distress.

What is emotion regulation?

Current research evidence for the benefits of emotion regulation skills will be discussed below, but it is important to first define the term "emotion regulation". Despite its emergence as a commonplace term in psychological literature, as research interest in its psychological importance has grown, there has been inconsistency in its definition. Gross (1998) defined the term simply as "the process by which individuals influence the emotions they have, when they have them, and how they experience and express these emotions" (p. 275). Extending this definition, Eisenberg and colleagues defined emotion

regulation as "the process of initiating, maintaining, modulating, or changing the occurrence, intensity, or duration of internal feeling states, emotion-related physiological processes, and the behavioural concomitants of emotion (e.g., facial expressions) in the service of accomplishing goals" (Eisenberg et al., 2001, p. 114). An important aspect of this definition that did not feature in the former is that emotion regulation is goal-directed.

Callear (2014) recognised context was also critical to defining the construct, and that no existing definition effectively conveyed this aspect alongside the goal-directedness of emotion regulation. Consequently, Callear (2014) defined emotion regulation as "the processes by which people monitor, influence and adjust their emotions and how they evaluate and demonstrate emotions to achieve their individual objectives in relation to their emotional context" (p. 5). Callear's definition is the first to acknowledge that emotion regulation is both goal-directed and contextually dependent. That is, while two people may have the same goal, their emotion regulation strategies may look very different depending on their context.

The role of emotion regulation in mental health

Knowledge of the benefits associated with emotion regulation has emerged from a growing body of literature. Within this literature, researchers have demonstrated that the ability to regulate emotions is associated with positive outcomes in many domains, including social, emotional, academic and occupational functioning, as well as psychological wellbeing (Benita et al., 2016; Campbell-Sills et al., 2006; Campbell-Sills et al., 2014; Carthy et al., 2010; Cicchetti et al., 1995; Roth et al., 2009; Szentágotai-Tătar & Miu, 2016).

Conversely, difficulties regulating emotions can contribute to psychopathology. Poor emotion regulation abilities in early childhood have been linked to increased likelihood of developing a number of disorders later in life, including Attention-Deficit

Hyperactivity Disorder (ADHD), Conduct Disorder (CD) and anxiety disorders (Woodward et al., 2016). Suppression of emotions in children is associated with symptoms of depression (Gullone & Taffe, 2012), and unregulated negative emotions have been associated with less social competence in children (Fabes et al., 2001).

In adulthood, emotion regulation has been incorporated into models of several psychological disorders. Depression and anxiety have been recognised as emerging from emotion regulation difficulties (Aldao et al., 2010; Mennin et al., 2007; Schäfer et al., 2017), and such difficulties also feature as a core component of several other disorders, including borderline personality disorder (Carpenter & Trull, 2013; Linehan, 1987; Sloan et al., 2017), substance use disorders (Wilcox et al., 2016), and eating disorders (Burns et al., 2012; Pisetsky et al., 2017; Svaldi et al., 2012).

What is "good" emotion regulation?

The evolving nature of how emotion regulation is defined has contribute to a lack of clarity over its conceptualisation. There are numerous strategies individuals may use to regulate emotions, and an extensive body of literature is available detailing the benefits and limitations associated with them.

Process model of emotion regulation

The process model organises emotion regulation strategies according to the stage of the emotional response at which they are enacted (Gross, 2002, 2014; Werner & Gross, 2010). Gross (2002) proposed that emotion regulation strategies can be broadly categorised as antecedent-focussed or response focussed. That is, they are either enacted prior to the emotional response, by altering the antecedent, or after the emotional response. Extending on this, the process model identifies five overarching categories spanning from antecedent- to response-focussed: situation selection, situation modification, attentional deployment, cognitive change, and response modulation.

Situation Selection

Situation selection is an antecedent-focussed strategy involving active avoidance or pursuit of experiences based on their anticipated emotional outcome. That is, people may regulate their emotions by avoiding experiences they believe will produce negative emotions, and pursuing experiences they believe will produce positive emotions (Livingstone & Isaacowitz, 2015; Markovitch et al., 2017; Sands & Isaacowitz, 2016). Situation selection can be a useful strategy for aligning behaviour with emotional goals, such as pursuing situations that provoke happiness or relaxation (Markovitch et al., 2017).

It may be less beneficial, however, when situation selection is used to avoid negative emotions. As individuals are unable to control the autonomic subcortical activation that occurs in response to exposure to an emotional stimulus (LeDoux, 1996; Phillips et al., 2003), they may engage in chronic and unhelpful situation selection to control the onset of negative emotions. This avoidance can be detrimental in that it inhibits learning opportunities. Avoiding any contact reinforces (rather than challenges) the perception that negative emotions and the situations that cause them are a threat (Kashdan et al., 2006).

Furthermore, avoidance limits individuals' engagement with social, occupational, and other leisurely events that would typically occupy and contribute great enjoyment to one's life. In effect, avoidance can be counteractive to the initial goal of minimising negative emotion by increasing sadness, anger, and guilt stimulated by missing out on these normal activities. Situation selection may therefore decrease the experience of some negative emotion, but is associated with long-term costs that outweigh the benefit as secondary distress emerges, and challenging unhelpful perceptions about the danger of emotions is inhibited (Werner & Gross, 2010).

Situation Modification

Situation modification is enacted at the point of contact with an emotional stimulus, to alter the nature of one's engagement with the stimulus to increase or dampen the emotional response (Werner & Gross, 2010). An example of an adaptive use of situation modification is standing in a confident posture and using an assertive tone of voice to increase one's confidence and decrease anxiety in a confrontational situation. Less adaptive, however, are situation modification strategies that prevent individuals from fully experiencing an anxiety-provoking situation, such as by attending a meeting but not speaking when a confrontation arises (Werner & Gross, 2010). Like situation selection, this strategy inhibits learning and challenging of the dominant rules that characterise psychological inflexibility: that negative emotions are dangerous (Kashdan et al., 2006).

Attentional Deployment

Attentional deployment may be used by distracting oneself from the antecedent at the point of contact. Distraction involves thinking about something else, or taking an action that decreases the attention given to the stimulus (Rothbart et al., 2014; Werner & Gross, 2010). For short-term reduction of negative affect, distraction can be beneficial (Joorman et al., 2014). Chronic use of distraction, however, can function similarly to situation selection in that it prevents contact with emotions by consistently altering thought processes or behaviour. Negative reinforcement may maintain distraction as distracting oneself often reduces the subjective unpleasant experience associated with the emotion. It prevents the individual, however, from experiencing an emotion being triggered, experienced, and naturally easing (Werner & Gross, 2010).

A further antecedent-focussed attentional strategy, though not originally described in the attentional deployment category by Gross (2002), is worry. I include worry in this category because it focusses on negatively thinking about or attending to future events (Werner & Gross, 2010). Research showing that worry predominantly

involves verbal thought rather than mental imagery led to the proposition that worry functions as a cognitive mechanism for avoiding negative emotional images (Borkovec & Inz, 1990; Borkovec et al., 2004; Freeston et al., 1996). More recently, however, researchers have proposed that worry does not serve to avoid experiencing negative emotion, given that worrying is itself characterised by negative affect. Rather, worry reduces the reactivity people experience to further negative emotional stimuli. In effect, worrying functions to maintain a consistent state of negative affect, in such a way that exposure to emotional stimuli does not prompt as significant change in affect as compared to exposure preceded by a relaxed state (Newman & Llera, 2011). Thus, increasing one's attention to an impending emotional stimulus reduces the increase in distress that is experienced from baseline when the stimulus is encountered. Unfortunately, however, the reduced reactivity comes with the cost of more constant distress (Newman & Llera, 2011).

Cognitive Change

Cognitive reappraisal is one of the most widely favoured emotion regulation strategies, with literature frequently referring to its adaptiveness (Aldao et al., 2010; Schäfer et al., 2017). It is characterised by attempts to alter one's appraisal of a situation to reduce or enhance its emotional significance. Individuals may 'prepare' themselves for an emotional event by cognitively changing their expectations of it (Gross, 2002), or experience an emotional response to a stimulus *then* employ cognitive reappraisal strategies to change the emotion.

Cognitive reappraisal relates to the cognitive-process model of emotion, which proposes that emotions are underpinned by valuation. That is, the experience of emotion is dependent on one's appraisal of whether an event is positive or negative in value (Ochsner & Gross, 2014). Cognitive reappraisal thus aims to alter the valuation of an emotional event to change the subjective emotion experienced.

Cognitive reappraisal has successfully reduced subjective distress following exposure to emotion-eliciting stimuli in laboratory research (Troy et al., 2018). In one study, undergraduate students who used cognitive reappraisal were found to express more positive and fewer negative emotions, and experience fewer symptoms of depression and more markers of positive wellbeing than those who use suppression (Gross & John, 2003).

A criticism of cognitive reappraisal is that it can contribute to experiential avoidance by teaching that certain emotions should be avoided, or reappraised, to be more positive (Werner & Gross, 2010). Reappraisal relies on a judgment of the positivity or negativity of an emotional experience, rather than promoting non-judgmental acceptance of emotions. In effect, learning that certain emotions are valuable, and others not, can contribute to the verbal rules that characterise cognitive fusion and psychological inflexibility. This cognitive valuation of emotion is thought to contribute more to psychopathology than the emotion itself (Werner & Gross, 2010).

An additional problem associated with promoting use of cognitive strategies for regulating emotions include the difficulty with accessing cognitive resources to regulate emotions when under stress. Emotions such as anger, fear, and anxiety, which are often the targets of cognitive emotion regulation strategies, are also characterised by high levels of stress that can inhibit the employment of cognitive abilities (Raio et al., 2013; Zhan et al., 2017). As mentioned in the introductory paragraphs, the regulation of emotions relies strongly on prefrontal cortex functioning (Phillips et al., 2003). Research has shown this functioning is significantly impaired by stress, and that participants who are stressed have more difficulty using cognitive regulation strategies following a fear-eliciting task than non-stressed participants (Raio et al., 2013). In real-life scenarios, stress is therefore likely to have a significant impact on the usefulness of cognitive reappraisal and other cognitive

strategies for regulating emotions. Therefore, successful use of these strategies relies strongly on first calming the physiological effects of stress on the brain.

Response Modulation

Response modulation consists of suppression strategies. Suppression takes two forms: emotional suppression, and expressive suppression (Campbell-Sills et al., 2014). First, in cases of emotional suppression, one attempts to inhibit their subjective experience of emotion (Campbell-Sills et al., 2014). Emotional suppression is a cognitive form of experiential avoidance; it involves inhibiting thoughts so as not to experience the emotions with which they are associated. In this form of experiential avoidance, unwillingness to experience emotion is manifest in cognitive efforts to inhibit the subjective feelings of emotion. This strategy is often counterproductive, however, in that efforts to suppress a thought actually lead to the thought being more salient (Hayes et al., 1996).

In other cases, suppression of one emotion can produce another secondary negative emotion. Where one suppresses anger, for example, due to a belief that anger is socially unacceptable, one may initiate secondary guilt as a result of their initial anger response (Werner & Gross, 2010). Moreover, suppression used to inhibit a thought has been associated with elevated negative emotional responses when the inhibited thoughts are re-encountered (Wegner & Zanakos, 1994). Similarly, when individuals suppress thoughts related to physical discomfort, they have been found to be more sensitive to future discomfort than those who attend to the discomfort initially (Cioffi & Holloway, 1993). In effect, emotion suppression, like all avoidance strategies, is often associated with counterproductive outcomes in that it may lead to heightened experiences of negative emotion and associated discomfort.

Suppression can also take the form of expressive suppression, in which the individual inhibits his or her outward expression of the emotion (Campbell-Sills et al.,

2014). Several studies have found that while expressive suppression can effectively moderate behaviour, it is less effective in reducing subjective distress. Neuroimaging research has in fact found that brain regions associated with emotion-processing (the amygdala and insula) show heightened activation in response to expressive suppression in healthy subjects (Goldin et al., 2008). Other studies have shown that suppression fails to influence one's subjective experience of emotion, indicated by self-report of emotional responses to stimuli (Gross & Levenson, 1993), and that those who frequently use expressive suppression experience less positive emotion and more negative emotion than those who do not (Gross & John, 2003). Physiologically, expressive suppression has been linked to increased sympathetic nervous system activity in response to both negative and positive emotional stimuli (Gross, 1998a; Gross & Levenson, 1993, 1997). Finally, in research with children, expressive suppression was associated with negative coping strategies (retaliation and internalising behaviours) in response to bullying (Gardner et al., 2017). These findings demonstrate that while expressive suppression may successfully regulate one's behavioural outputs (and thus be adaptive where a situation requires regulated behaviour), in the long term it is ineffective for reducing the subjective emotional experience and associated physiological responses to emotion.

In summary, all of these strategies may have positive outcomes in certain situations, but are often associated with negative outcomes. Hayes and Wilson (1994) suggest that the positive versus negative outcomes of the strategies discussed to this point depends on the temporal nature of the situation or stimulus to which the emotion is tied. That is, if the emotion is related to a short-lasting stimulus, such as being anxious about going to the dentist, then using strategies that control the emotion may be effective for meeting the goal of getting to the dentist and getting through the appointment, after which the distress will be resolved anyway. In contrast, where the emotion-provoking stimulus

is longer-lasting or repeated, attempts to control the emotion experienced are likely to lead to greater distress (Hayes & Wilson, 1994).

Problems associated with focussing on emotion regulation strategies

While the literature frequently refers to "good" or "poor" emotion regulation skills, there is little clarity regarding the meaning behind these terms. This lack of clarity has manifest in two ways: (1) "adaptive" emotion regulation is frequently over-simplified, with the down-regulation of unpleasant emotions being considered the desired outcome of utilising emotion regulation skills; and (2) specific emotion regulation strategies have been over-represented as adaptive or maladaptive.

Moreover, research has primarily focussed on adults and studies investigating emotion regulation in children is limited. Moving forward, clarification of what "good" emotion regulation looks like in children will be an important precursor to drawing conclusions on how development of emotion regulation is best fostered.

1. ***Representing good emotion regulation as the down-regulation of unpleasant emotion***

Numerous studies have examined what regulatory processes provide the most reduction in subjective distress following a negative emotional event (eg. Lieberman et al., 2011; Tull et al., 2010; Wolgast et al., 2011). Subjective distress is typically indicated by levels of sadness, anger, or fear- so-called 'negative emotions', as well as physiological indicators of distress.

The key issue with this approach is the labelling of emotions as positive or negative. Kashdan and Rottenberg (2010) advised caution against this, because doing so undermines the functional nature of emotions. As highlighted earlier, the usefulness of an emotion is not determined by the pleasantness of its experience, but by its effects on behaviour. Anxiety can be useful when it motivates us to work hard to achieve a goal; on

the other hand, it can be unhelpful when it becomes so overwhelming that it stops us working. Happiness and joy, so-called 'positive' emotions, have obvious benefits but they, too, could become unhelpful, such as by motivating risky behaviours in absence of appropriate judgment and impulse control. In effect, labelling emotions as negative does not accurately reflect their purpose, but creates a social construction that some emotions should be sought, and some avoided (Werner & Gross, 2010).

Furthermore, determining the efficacy of any strategy by measuring its influence on decreasing short-term subjective distress suggests this is the optimal outcome for healthy psychological functioning. Any efforts focussed on short-term reduction of unpleasant emotion, however, can be considered avoidance that can exacerbate difficulties in the longer term (Werner & Gross, 2010). Research promoting use of emotion-regulation strategies for gaining the fastest reduction in subjective distress following an emotional event may therefore not be drawing conclusions that are beneficial for long-term psychological wellbeing. Instead, considering one's ability to experience waves of emotion and continue to behave in accordance with their goals and values may be more appropriate. Such abilities provide evidence of coping and resilience.

2. Categorising specific strategies as adaptive or maladaptive

Research has often over-generalised specific strategies as adaptive and maladaptive, without considering context. It has come to be generally accepted that cognitive reappraisal is an adaptive strategy, while suppression and avoidance strategies are maladaptive (Aldao et al., 2010; Schäfer et al., 2017). Thompson (2014) emphasised however, that organising specific emotion regulation strategies according to their adaptiveness is problematic given all strategies can be adaptive in some situations.

Callear's (2014) definition of emotion regulation highlights both the goal-directed function and contextual nature of emotion regulation. Ruling that any strategy is maladaptive denies there are many contextual factors that influence the strategy employed

to meet a goal. Consider for example, a young child crying loudly when their parents are arguing. The child's goal could be to stop their parents' argument by creating a distraction. This goal may be achieved by up-regulating emotion. In effect, the child may appear unable to regulate distress, but in fact crying may be an adaptive strategy. In turn, reducing parental conflict may ease the child's distress. If contextual factors were changed, such as the child's age, the most effective strategy for minimising parental conflict may also change.

Research does support the notion that some strategies, such as cognitive reappraisal and acceptance, are more commonly associated with positive outcomes than other strategies, such as suppression and rumination, but there are limitations to this framework (Bonanno et al., 2004; Boyes et al., 2016; Kashdan & Rottenberg, 2010; Stikkelbroek et al., 2016). Supporting the adaptive/maladaptive strategy framework, Schäfer et al. (2017) reported that so-called "adaptive" strategies (cognitive reappraisal, acceptance, and problem solving) were negatively related to symptoms of anxiety and depression in adolescence, whereas "maladaptive" strategies (avoidance, suppression, and rumination) were positively correlated with experience of depressive and anxiety symptoms. Similarly, a meta-analysis of 114 studies examining the relationships between emotion-regulation strategies and psychopathology reported positive correlations between use of rumination, avoidance, and suppression strategies and psychopathology, and negative correlations between the use of so-called adaptive strategies and psychopathology (Aldao et al., 2010).

Despite the findings above, other research has highlighted less adaptive outcomes related to use of cognitive reappraisal. A study conducted with advanced cancer patients, for example, found positive reappraisal to be negatively associated with resilience, whereas acceptance, planning, positive refocussing (focussing on positives rather than

reappraising negative experiences), and perspective taking were all positively related to resilience (Baghjari et al., 2017). Another study with adolescents reported greater use of cognitive reappraisal was associated with reduced depressive symptoms in individuals with high emotional reactivity, but the same was not found for anxiety symptoms (Shapero et al., 2016).

Inconsistency in support for the adaptiveness and practicality of various strategies suggests that categorising any strategy as adaptive or maladaptive may be too simplistic. Supporting this point, research with students studying in New York following the 9/11 terror attacks found psychological flexibility was associated with better long-term adjustment over and above specific emotion regulation strategies. Participants were exposed to emotion-eliciting stimuli and instructed to either express or suppress emotions experienced. Participants found it easier to suppress than to express emotions, but participants' ability to employ both suppression and expression flexibly was associated with greater adjustment at a two-year follow up (Bonanno et al., 2004).

Summary

Emotion regulation is an extremely useful construct contributing to mental health and wellbeing. Lack of clarity in definition and measurement of emotion regulation, however, limits the potential value of the construct. Prior research has inconsistently defined the meaning of "positive" emotion regulation and over-emphasised a maladaptive/adaptive skills-based approach to measuring use of emotion regulation in individual subjects. In this chapter, I have emphasised the issues with this approach, particularly the promotion of a view that emotions can be positive or negative, and that 'adaptive' emotion regulation may be determined by the efficacy of strategies in reducing the subjective experience of so-called negative emotions such as anger, anxiety, sadness, and fear. I have also acknowledged the contradiction between this view and the functionalist definition of

emotions, which emphasises that all emotions emerged evolutionarily as a survival mechanism. Given this, in the following chapter I will introduce an alternative conceptualisation of positive emotion regulation: psychological flexibility.

Chapter Three: Psychological Flexibility: An Alternative

To address the lack of clarity regarding what is considered adaptive when examining emotion regulation, psychological flexibility is the target of the measure that will be used in this research. As highlighted in Chapter One, psychological flexibility enables individuals to regulate their emotions and behaviour in a way that is congruent with values and is characterised by acceptance of all experiences. It is impossible to never experience unpleasant emotions; we already know they are necessary for survival. Psychological flexibility, therefore, represents the ability to experience all emotions as they come without avoidance, in turn allowing them to naturally dissipate over time. In effect, the individual is then able to regulate their behaviour as guided by their values, rather than by the fear of unpleasant emotions (Hayes et al., 2006).

Conversely, psychological inflexibility often leads to chronic use of emotion regulation strategies that seek to avoid or minimise emotions, rather than accepting emotion in a way that enables one to move toward goals. This notion is underpinned by the core components of psychological inflexibility: cognitive fusion and experiential avoidance (Hayes et al., 2006).

Cognitive fusion is the chronic adherence to verbal processes, such as negative thoughts and beliefs that become internalised as 'rules'. One may believe, for example, that some emotions should be avoided, and internalise this as a rule to guide one's emotion regulation habits (Hayes et al., 2006). Hayes et al. (2006) described this strategy as 'living in the mind', which hinders one's ability to be present in the moment without stress or worry.

The second component, experiential avoidance, is related to the fact that the goal when regulating emotions is often to minimise 'negative' feelings. Experiential avoidance occurs when a person is "unwilling to remain in contact with particular private

experiences (e.g., bodily sensations, emotions, thoughts, memories, behavioural predispositions) and takes steps to alter the form or frequency of these events and the contexts that occasion them" (Hayes et al., 1996, p. 1155).

While some literature considers experiential avoidance to be an independent strategy for regulating emotions, Boulanger, Hayes, and Pistorello (2010) emphasise it as an underlying goal common to many strategies. This point was alluded to in Chapter Two.

Avoiding stimuli expected to produce unpleasant emotions maintains mental distress. Such avoidance is particularly evident and a defining feature in anxiety disorders, in which fear of a stimulus leads to avoidance which in turn maintains anxiety (Sadock et al., 2015; Werner & Gross, 2010). This is based on Mowrer's (1960) two-factor theory of fear. According to this theory, fear develops as a conditioned response to frightening stimuli (e.g. loud noises may elicit fear after experiencing an event in which danger was associated with loud noises). This conditioned response is then maintained through avoidance, as avoiding the stimulus prevents the individual from experiencing it in absence of danger and consequently, learning that it does not need to be feared. In effect, exposure to stimuli is necessary for one to learn whether a negative emotional appraisal is warranted, and avoidance prevents this from occurring. Furthermore, experiential avoidance can also decrease opportunity for positive affective experiences, and prevent individuals from engaging with positive daily events and interpersonal relationships (Kashdan et al., 2006).

Experiential avoidance and cognitive fusion lead to ineffective behaviour regulation as the range of activities and behaviours perceived as dangerous increases. As cognitive fusion increases, preoccupation with verbal rules and thoughts increases, and people become less able to engage in behaviour motivated by long-term goals and values

(Hayes et al., 2006). Over time, disconnection from values can occur and behaviour can cease to align with values (Hayes et al., 2006).

Measuring psychological flexibility addresses both issues that have arisen out of lack of clarity associated with emotion regulation. Emotions are not labelled as positive or negative, nor is the success of regulation defined by down-regulation of negative emotion. Rather, successful regulation is defined as that which "serves valued ends" (Hayes et al., 2006, p.7). Second, no specific strategy for regulating emotions is measured or considered adaptive or maladaptive, as all strategies can be used appropriately given the contextual and goal-directed nature of emotion regulation. In effect, effective emotion regulation is not defined by use of a particular strategy (or strategies) which reduce subjective distress; rather it is measured by the ability to accept emotional experiences without engaging in avoidance and to behave in a value-driven manner.

Psychological (In)Flexibility and Wellbeing

Acceptance has demonstrated efficacy in reducing physiological and subjective distress associated with emotional experience, and can be easier to engage in than cognitive reappraisal (Troy et al., 2018). Vassilopoulos (2008) found that when socially anxious individuals attended to an emotional event without analysing its causes and consequences (acceptance), they experienced decreased subjective distress over time. In contrast, when they attended analytically, thinking about causes and consequences of the event it did not decrease anxious mood (Vassilopoulos, 2008). This aligns with evidence that rumination (thinking about an event or concerning stimulus without gaining resolution) predicts increases in psychological distress over time (Mazzer et al., 2019; Vannikov-lugassi et al., 2020).

In another study, participants reported subjective distress and had physiological measures of emotional arousal prior to, during, and after exposure to an emotion-eliciting

film. Findings showed subjects who used acceptance strategies, compared to those who used suppression, experienced equal levels of subjective distress during exposure, but demonstrated quicker recovery from negative affect post-exposure. Furthermore, while suppression resulted in increased heart rate during exposure, acceptance promoted a decrease in heart rate during exposure compared to pre-exposure (in anticipation of the stimulus) (Campbell-Sills et al., 2006).

Similarly, in a recent review of studies examining relationships between use of various emotion regulation strategies and depressive and anxious symptoms in youth, acceptance had the strongest negative association with distress symptoms, while rumination and avoidance showed the strongest positive correlations (Schäfer et al., 2017).

Conversely, psychological inflexibility is considered the core problem underlying psychopathology according to Acceptance and Commitment Therapy (ACT) (Hayes et al., 2006). Several studies have indeed demonstrated relationships between psychological inflexibility and various psychological disorders. A study of students in their first year of College (ages 17-20) found students who reported either current or historical depression or anxiety disorders, or having had an eating disorder at any point in their lives, scored higher on a measure of psychological inflexibility than students who had not experienced any psychological disorder (Levin et al., 2014). Another study conducted with participants of similar ages (M=23 years) found a strong positive correlation between psychological inflexibility and social anxiety and avoidance (Tillfors et al., 2015).

Similar results have also been reported with children. In a recent study, children who scored in the clinically significant range on the SCARED-71 questionnaire (Screen for Anxiety Related Disorders) demonstrated higher overall psychological inflexibility scores, as well as higher experiential avoidance and behavioural ineffectiveness scores,

than children who did not score in the clinically significant range (Simon & Verboon, 2016). These findings reinforce the view that control and inflexibility are characteristic markers of ineffective emotion regulation, while acceptance and flexibility appear to be effective.

Psychological flexibility through childhood and adolescence

Proponents of ACT have acknowledged that terms such as 'psychological flexibility' and related concepts such as cognitive fusion may be difficult for children and adolescents to understand. This does not mean, however, that the concepts are of no use in this age group. Models such as "DNA-V" have been adapted to use language suitable for work with adolescents that strives to increase psychological flexibility and values-driven action (Hayes & Ciarrochi, 2015). DNA stands for 'discoverer', 'noticer' and 'advisor'-terms used to describe modes of behaviour that function to move toward values (represented by the V in DNA-V).

Hayes et al. (2015) describe the roles of the discoverer, noticer, and advisor: "The advisor's purpose is to use past teaching and experience to navigate the present; the noticer's is to detect physical, psychological, and environmental events as they occur; and the discoverer's is to expand behavioural repertoires" (p.15). The DNA-V model outlines developmental stage-appropriate ways of discussing each component with adolescents to encourage them to notice what is meaningful to them and what they want in life (identifying values), discover ways of acting in accordance, and use their discoveries to advise future behaviours.

Adolescents occupy the developmental stage of 'identity versus role confusion' (Erikson, 1969). Identification of values and goals is therefore inherent to the development that occurs during this period. Psychological flexibility is an important process underlying this. An ability to be psychologically flexible may help adolescents to

develop an identity that is personally fulfilling, rather than influenced by societal values. In contrast, role confusion may reflect a lack of clarity regarding one's goals and values, or conflicts between personal and societal values. In a world where adolescents are increasingly subject to diverse media portrayals of socially desirable ways of being alongside peer influences, identity conflicts may arise from adherence to social norms that are incongruent with one's personal values. The concept of psychological flexibility is therefore extremely important to adolescent development, as it functions in accord with development of a fulfilling personal self-identity.

Summary

In this thesis, I try to address the lack of clarity regarding what is considered effective emotion regulation by measuring psychological flexibility. Though not synonymous, the constructs of emotion regulation and psychological flexibility are highly related. Measuring psychological flexibility, rather than use of specific emotion regulation skills, acknowledges the contextual nature of emotion regulation and prevents inaccurate negative labelling of skills that may be contextually appropriate. Moreover, in adolescence, the concept of psychological flexibility aligns closely with the major developmental goal of identity development. Adolescents who are able to adopt a sense of psychological flexibility may develop a more personally fulfilling self-identity, a key task during this developmental stage.

Chapter Four: Development of Emotion Regulation

Given the established importance of emotion regulation skills, researchers have begun to investigate how their development occurs. Zimmer-Gembeck and Skinner (2011) proposed that coping processes, strongly related to emotion regulation, show the most substantial development during five developmental periods: early childhood (0-2 years), 5-7 years, late childhood/early adolescence (10-12 years), mid-adolescence (14-16 years), and late adolescence (18-22 years). These are all important periods characterised by cognitive development as well as environmental changes (such as school transitions) that can contribute in various ways to the development of emotion regulation skills.

Adolescence is a unique developmental period and has been identified as a particularly important stage for research for several reasons. Adolescence is both a period of potential opportunity and vulnerability as adolescents face a myriad of new challenges and occupy a developmental stage associated with increased drive for social fulfilment and identity development (Ahmed et al., 2015; Crone & Dahl, 2012; Erikson, 1969; Ernst, 2014). Many adolescents lay the foundations for their future adult lives during this period, but there is also vulnerability in making impulsive or risky decisions, or to experiencing difficulties with mental health (Ahmed et al., 2015; Ernst, 2014).

Many challenges and pressures emerge during adolescence that are not typically faced during childhood (Hazen et al., 2011). While there are cultural variations in adolescent experiences, the World Health Organisation recognises the emergence of social pressures as adolescents strive to discover and fulfil their personal identity and values, while also gaining peer approval (World Health Organisation (WHO), 2014). In addition, as adolescents approach their final years of secondary school, they face academic pressures associated with frequent school examinations, and the pressure to make important decisions regarding the path their lives will take after school. Together,

such pressures can create significant challenges for adolescents, which is reflected in the high rate of onset of mental health disorders during adolescence (Hazen et al., 2011; World Health Organisation (WHO), 2014).

From a neuroscience perspective, it has been suggested that adolescence may be a critical phase for emotion regulation development, with greater neural flexibility, sensitivity to social context and scaffolding, and opportunity for learning (Ahmed et al., 2015; Crone & Dahl, 2012). Furthermore, neural development during adolescence can help explain adolescents' propensity toward risk taking and impulsivity, and their vulnerability to mental health difficulties (Ahmed et al., 2015; Crone & Dahl, 2012; Ernst, 2014). The potentially detrimental future outcomes associated with these characteristics of adolescence emphasise the importance of understanding how we can scaffold adolescents' emotion regulation for best outcomes (Martin & Ochsner, 2016).

This chapter will discuss current neuroscientific understandings of emotion regulation development and the role of social-contextual factors in shaping this development.

Neurobiological contributions to emotion regulation development

The earlier discussed neurobiological understandings of emotion regulation are important when considering how emotion regulation skills may develop throughout the lifespan. Areas of the brain known to be involved in emotion regulation, including the PFC and limbic system, undergo structural change throughout adolescence. In the PFC, reduction in grey matter is observed through adolescence, which is believed to indicate synaptic pruning and/or myelination of axons that improves efficiency of connections between brain structures (Ahmed et al., 2015; Blakemore, 2008; Paus, 2005). Connections between the limbic and prefrontal regions also undergo continued development during adolescence, with increase in white matter indicating strengthening connectivity thought

to facilitate regulation (Ahmed et al., 2015; Ostby et al., 2009; Perlman & Pelphrey, 2011; Tamnes et al., 2013).

In accounting for the increased vulnerability to mental health disorders observed during adolescence, researchers have developed various theories related to emotion regulation development. Proponents of the dual-systems theory have emphasised slower development of the PFC compared to the more evolutionarily primitive limbic system. This differential rate of development may create an imbalance to the extent that subcortical affective activation is strengthened at a rate disproportionate to development of cortical structures involved in regulating the response. This imbalance is thought to peak during adolescence and may be a contributing factor in patterns of emotional reactivity observed during this time (Martin & Ochsner, 2016). Supporting this, neuroscientific research has found that ability to down-regulate unpleasant emotions increases with age alongside increasing connectivity between the amygdala and prefrontal cortex. This dual-systems theory has been commonly applied to explain the occurrence of many psychological disorders, positing that the immature PFC is overwhelmed by the overactivated ventral affective system (Martin & Ochsner, 2016).

Recently, neuroscientists have begun to suggest a more complex process of neural development occurs during adolescence, and propose alternative hypotheses regarding the neural contribution to psychological disorders. According to current meta-analyses, several studies have reported non-linear PFC development during adolescence that does not support the dual-systems theory, with both decreasing and increasing activation observed in various PFC areas (Crone & Dahl, 2012; Pfeifer & Allen, 2012). In their review, Crone and Dahl (2012) highlighted evidence that the development of brain circuitry is flexible and sensitive to contextual influence during adolescence. That is,

social-contextual factors have a significant influence on shaping the development that occurs (Crone & Dahl, 2012).

Pfeifer and Allan (2012) proposed that maturity of the PFC could also contribute to development of psychological disorders, as PFC development contributes to more perception of risk and foreshadow negative outcomes.

Crone and Dahl (2012) also discussed the influence of neural development on wider social-affective development and functioning during adolescence. Cortical control may be less automatic in adolescence (than adulthood) due to immature neural connectivity. This could mean adolescents are more vulnerable to attentional demands, but also that adolescents have more flexibility in learning contexts.

In applying this proposal to emotion regulation in adolescence, it is likely that adolescents have a less automatic or fixed emotion regulation style than adults, and a neural flexibility that makes them sensitive to environmental influences on development of emotion regulation skills. Supporting this proposal, social influences on emotion regulation development have been acknowledged and well-recognised within research looking into the family context, as the following section will discuss.

Emotion regulation development: The family context

Parents socialise emotion and emotion regulation by responding to their children's emotions and modelling emotional responses (Thompson, 2014; Viana et al., 2016; Williams & Woodruff-Borden, 2015). Such socialisation can be influenced by several factors, including parents' own emotional development and exposure to emotional experiences, mental health, and relationships with their own parents (Morris et al., 2007). Parents develop personal views regarding emotions and their expression that influence the family emotional climate (Gottman et al., 1996; Morris et al., 2007).

Morris et al. (2007) proposed parents' influence on emotion regulation development can be organised according to three factors. First, parents' own use of emotion regulation strategies can be learned by the children through modelling and observational learning. Children learn through observation what emotions are valued, and how different emotions should be exhibited and regulated (Denham et al., 2012; Morris et al., 2007; Valiente et al., 2004). Second, specific parenting practices (such as the ways parents respond to children's emotion) can reinforce this learning, as children further observe the relationships between their own emotional expressions and the positive or negative responses of their parents (Denham et al., 2012; Morris et al., 2007). Third, the emotional climate of the family (characterised by parent-child attachment, emotional expressivity of other family members, and the presence or absence of marital conflict) can influence the child's emotion regulation (Morris et al., 2007). Highly negative or intensely emotional environments can undermine children's openness to experiencing emotions and engaging in self-reflection, thus obstructing their learning about emotion (Denham et al., 2012).

Gottman et al. (1996) proposed that a key underlying factor influencing parents' socialisation of emotion is parental meta-emotional philosophy, defined as "an organised set of feelings and thoughts about one's own emotions and one's children's emotions" (p. 243). Gottman et al. (1996) proposed parents' practices could be categorised by meta-emotional philosophy. The first style of parenting he proposed was emotion-coaching. Parents who displayed an emotion-coaching philosophy demonstrated awareness of and validated children's emotions, and perceived emotional experiences as an opportunity for teaching, problem solving, and discussion. In contrast, parents who demonstrated an emotion-dismissing philosophy tended to perceive negative emotions as undesirable and preferred to ignore or deny such emotions rather than exploring them. This group tended

to see the most beneficial response to negative emotion as changing or removing negative feelings, rather than validating or exploring them (Gottman et al., 1996).

Gottman et al. (1996) found children whose parents show more emotion-coaching characteristics had more favourable outcomes when compared to children of emotion-dismissive parents. These outcomes involved better emotion regulation abilities and more positive peer interactions. Parental emotion-coaching has also been linked to children's decreased externalising tendencies and more anger-regulatory abilities in adolescence (Shortt et al., 2010). In contrast, parents' punitive and minimising responses to children's emotion have been linked to poorer social competence in children (Jones et al., 2002).

The influence of parents may also be mediated by the parent-child attachment relationship. Research has found that in secure attachment relationships, parents respond to children's emotion and model emotion regulation skills (Brumariu, 2015). These skills, in turn, are internalised by the child, enabling the children to develop their own understanding of emotion regulation that they can apply outside of the relationship with their parents. In effect, children who have a secure attachment with their parents are more likely to express emotion and learn effective ways of dealing with unpleasant emotions (Brumariu, 2015).

In contrast, children who have a disorganised attachment relationship can have more difficulty monitoring emotion and employing effective emotion regulation and coping strategies (Brumariu et al., 2012; Colle & Del Giudice, 2011). One study found that decreasing security in the parent-child attachment between ages 4-6 predicted decreases in emotion regulation skills at ages 6-8, whereas increasing security predicted increases in emotion regulation skills (Viddal et al., 2017).

A study of the relationships between attachment styles and emotion regulation in adolescence found securely attached individuals demonstrated better adjustment across

domains of psychological symptomatology, self-concept, and risky behaviour. Insecurely attached individuals experienced greater psychological symptomatology and higher negative affect, indicating greater difficulty regulating emotions. Within the insecurely attached group, distinction of anxious-ambivalent and avoidant attachment styles revealed that anxious-ambivalent individuals showed the poorest overall adjustment. While both insecure groups had greater psychological symptomatology, only the anxious-ambivalent group showed increased risky behaviour (Cooper et al., 1998).

Application to psychological flexibility

Notably, in this chapter I have primarily discussed the development of emotion regulation skills. In most cases, studies reviewed refer to the development of specific emotion regulation skills such as cognitive reappraisal. No research to date has examined the neurobiology or development of psychological flexibility.

Despite the lack of recognition of psychological flexibility, it is likely that the literature discussed is highly applicable. Mindfulness is a closely related concept to psychological flexibility and common component of Acceptance and Commitment Therapy, as well as several other psychological theories. Mindfulness refers to non-judgmental focus in the present moment and reduces cognitive fusion and experiential avoidance (Tang, 2015). Neuroscientific research has demonstrated that similar brain regions are involved in mindfulness as emotion regulation, including the PFC, anterior cingulate cortex, orbitofrontal cortex and limbic system (Tang et al., 2015; Wheeler et al., 2017).

Summary

Adolescence is a critical developmental period for emotion regulation development and thus warrants significant research attention. In this chapter, I have discussed the neuroscience of emotion regulation and its interaction with social influences affecting

emotion regulation development. In the next chapter, I will highlight the need for more research in an important social context that has to date received significantly less research attention than families: the school context.

Chapter Five: The School Context

Why school is important in shaping development

All environments in which an individual grows can shape development. Bronfenbrenner's (1979) ecological theory posits that this can be conceptualised such that environments that are proximal to the individual have the greatest influence, with the degree of influence lessening through more distal or infrequently contacted environments and higher level societal factors. Accordingly, school is considered one of the most important environments influencing child and adolescent development alongside the family unit (Joyce, 2015). The school context may be even more proximal during adolescence, as adolescents tend to seek autonomy and increasing independence from their parents, resulting in changing dynamics in other relationships. Adolescents tend to rely more strongly on peers, and also increasingly form stronger relationships with non-familial adults, such as teachers (Oldfield et al., 2016). At the adolescent stage, therefore, the school environment and teacher-student relationship can be of particular importance when considering influences on development.

Furthermore, most children and adolescents spend a significant portion of their week with teachers, in many cases spending more waking hours with teachers than parents (Ahn, 2005; Ahn & Stifter, 2006; Ciucci et al., 2015)**.** Given so, it is sensible to propose that like parents, teachers could influence social-emotional development (Ahn, 2005; Ahn & Stifter, 2006; Bailey et al., 2016; Ciucci et al., 2015; Denham et al., 2012).

The school setting also offers opportunities to acquire emotional learning through experiences children would not be exposed to at home. The demands of socialising and cooperating with peers, behaving in acceptable ways in a classroom, and the frequency with which learning introduces goal-directed behaviour, all contribute to experiences that promote emotion regulation development at school. Accordingly, teachers have

acknowledged the importance of emotional skills in creating an effective learning environment for children (Poulou, 2005). Many teachers regulate their own emotions because they consider it necessary for classroom management; thus teachers, like parents, model emotion regulation. When asked about goals underlying their use of emotion regulation, many teachers have volunteered they tend to up-regulate positive emotions and down-regulate negative emotions, because they see negative emotions as disruptive, and positive emotions as facilitative to interpersonal relations (Sutton et al., 2009). Such reflections demonstrate the goal-directed function of emotion regulation which may be transmitted to students through observational learning.

Teacher-child relationships: Parallels with parenting

Given that parenting research is strongly grounded in attachment theory, researchers have considered how attachment theory may translate into the school setting, and to teacher-student relationships. Aligning with the function of parental attachment, the teacher may act as a secure base for students, such that the teacher can provide support for students when necessary (Verschueren, 2015; Verschueren & Koomen, 2012). It is acknowledged, however, that this relationship changes in nature significantly as children progress through schooling, and is likely to become more dissimilar to an attachment relationship as academic learning takes increasing priority over relational aspects (Verschueren, 2015).

Recognising that the teacher-student relationship differs from a parent-child relationship (but may serve similar functions in terms of providing safety and security), researchers have recognised the teacher-student relationship as providing a sense of *connectedness* (Joyce, 2015). School connectedness has been found to relate to and connect with parental attachment such that parental attachment is a strong predictor of adolescents' connectedness to school (Shochet et al., 2007). School connectedness is closely related to school climate, and involves feelings of belongingness and positive

regard toward school and teachers (Blum, 2005). School connectedness has been connected to a number of positive outcomes for students, including greater likelihood of school completion (Bond et al., 2007), prosocial behaviour (Oldfield et al., 2016), and reduced likelihood of depression and anxiety symptoms (Lester et al., 2013; Shochet et al., 2006). However, in line with perspectives on the changing nature of the teacher-child relationship, school connectedness has been found to decrease with age, alongside the transition to high school (Newman et al., 2007).

Teachers' social-emotional practices and school connectedness

Emerging research has indicated that teachers' use of social-emotional practices (specific practices that have an emotional impact on students), may significantly impact the student-teacher relationship and students' connectedness to school. In a sample of 14-year-old female South Korean students, Han (2016) found that students' endorsement of teachers' use of social-emotional practices, particularly relationship-building practices, were positively related to students' self-reported teacher- and school-connectedness.

Current understandings of students' social-emotional development

Social and Emotional Learning Theory (SEL)

In recent decades, the education sector has begun increasingly to acknowledge the importance of social and emotional learning, or SEL. SEL is defined as "the processes through which individuals acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage their emotions, feel and show empathy for others, establish and achieve positive goals, develop and maintain positive relationships, and make responsible decisions." (Schonert-Reichl et al., 2017, p. 5). SEL theory recognises five key competencies underpinning students' outcomes at school: self-awareness; social awareness; self-management; relationship skills; and responsible decision making (Schonert-Reichl et al., 2017).

Research to date has found SEL programmes tend to be more efficacious with students of younger age groups than adolescents (Tan et al., 2017; Yeager et al., 2018). In addressing why this is so, researchers have pointed to a lack of recognition of the developmental stage needs of adolescents (Yeager et al., 2018). Yeager and colleagues emphasised traditional interventions targeted at social and emotional difficulties fail to consider adolescents' developmental needs for social status and peer respect. They argue that for interventions to be effective, they need to acknowledge the developmental aspects underpinning adolescents' behaviour.

The gap between theory and practice: Increasing teachers' Social and Emotional Competence (SEC)

Another key barrier to fostering students' social and emotional development effectively in schools is teachers' social and emotional competence (SEC). Teachers must be able to recognise students' emotions and understand the relationships between emotion, emotion regulation and behaviour in order to respond to student emotion in the classroom effectively. Teachers who have SEC are more able to support students to communicate their emotions and needs effectively, model positive emotion regulation, understand and manage challenging behaviours and student conflicts, and motivate students' learning than teachers who lack SEC (Jennings & Greenberg, 2009). The importance of teachers' SEC is under-recognised in initial teacher education; a US Study examining teacher education courses found that very few addressed any of the five identified components of students' social-emotional learning. Accordingly, teachers reported feeling underprepared in their first years of teaching (Schonert-Reichl et al., 2017).

A critical step toward improving teachers' SEC is the development of an evidence-base for specific teaching practices that enhance student outcomes. Research investigating specific practices that teachers can use in the classroom to affect their students' social and emotional learning positively would bridge the gap between theory

and practice. This, in turn, could facilitate initial and ongoing teacher education to incorporate effective social and emotional practices for best student outcomes.

Summary

There is considerable evidence that teachers have a beneficial role in supporting students' social and emotional development. To date, however, research has not recognised this potential to the same degree that it has recognised the potential within the family context. As a result, despite acknowledgement of SEL as an important facet of education, there remain barriers to teachers' implementation of practices that will enhance students' social and emotional development, of which emotion regulation is a critical component. This thesis aims to address this issue by bridging the gap between current theory and practice and investigating students' perceptions of their teachers' use of social-emotional practices to begin developing evidence-based practice for incorporation in initial and ongoing teacher education.

Chapter Six: Methods

This research was comprised of three independent studies which together sought to answer the research question *"How do students' perceptions of teachers' social-emotional practices relate to students' social, emotional, and behavioural strengths and difficulties?"*. Each study made a unique contribution to answering this question. In this chapter I will briefly outline the aims and research methods of each study to provide an overall summary of the research methodology. More information will be found in the following chapters, which present the article manuscripts. To avoid repetition, specific details of participant demographics and measures used have been omitted from this chapter.

Study One

Aim

To validate 88 items describing teachers' social-emotional practices with a sample of New Zealand secondary students by creating a stable and reliable map depicting the relationships between items, as guided by students' subjective ranking.

Method

Data Collection. Data were collected using a card-sort task, in a method of successive sorts (MOSS) format, with secondary school students. One data set containing MOSS responses from a group of ESOL (English as a Second Language) students was obtained with permission from Dr. Shane Harvey. This data set had been collected prior to the researcher commencing her doctorate, but raw data had never been analysed.

Data were then collected from 31 New Zealand secondary school students by the researcher. Permission was sought from school principals for the researcher to visit their schools to conduct a card-sort task with students. This took place outside of school hours to minimise disturbance to students' learning, and students were given a $20 voucher in

reimbursement for their time. Students received an information sheet prior to completing the card sort (Appendix A) and gave written consent (Appendix B). Through peer evaluation, this study was deemed low risk, and a low risk ethics notification was submitted to Massey University Human Ethics Committee (MUHEC; Appendix C).

Materials for this task were obtained from previous research conducted by Dr. Shane Harvey which used the same method and items. This included an instruction sheet for the card sort (Appendix D), response sheets (Appendix E), and 32 sets of 88 cards, each depicting one social-emotional practice used by teachers (Appendix F). Item development had been performed prior to this research and is detailed further in the following chapter.

Within the MOSS task, students were asked to complete a GOPA procedure (Grouping, Opposites, Partition, Addition). Details of this process are provided in Chapter Seven, but to outline briefly, the process entailed a succession of card-sort stages. Each participant identified groups of items which they perceived to be similar and groups which were most dissimilar (opposites). They then completed further steps which altered the sensitivity of their grouping (partitioning groups to create more distinguished sub-groups and finally adding groups together to reduce the threshold of discriminance). Participants recorded their groupings on the response sheet, and their hand-written responses were later transcribed into electronic word documents.

Data Analysis. Data were analysed using Microsoft Excel and SPSS. Hierarchical Cluster Analysis (HCA) and Multidimensional scaling (MDS) were performed to spatially organise items. Both HCA and MDS are methods of spatial organisation which facilitate visual analysis of relationships between items by converting numerical data from similarity rankings into a spatial format. From students' ratings, each pair of items received a value between 0-1 (0 for items which never appeared in a group together across

all participants' responses, and 1 for items which always appeared in groups together across all participants' responses). These processes were used to analyse the data in three groups: individual New Zealand and ESOL samples, and a combined sample in which responses from the two individual samples were amalgamated.

Hierarchical Cluster Analysis (HCA) was performed first, to create dendrograms depicting the items in a branching tree diagram such that more similar items appeared clustered on shorter branches. This enabled easy identification of clusters of items which appeared on short branches. Clusters were then colour coded for ease of visual analysis.

Second, MDS was performed to convert the data into multi-dimensional maps which depicted the items around the surface of a globe. The colour coding from the dendrograms was applied to the maps, providing a clearer picture of the items' spatial positioning.

Once clusters were identified, the underlying themes influencing their organisation were identified. To facilitate this process, items were ranked within each cluster according to their relevance to the underlying cluster theme, determined by analysing their spatial positioning. Proximity to the centre of the cluster and the outer surface of the map were both considered in determining relevance of items, such that the most relevant items were those that sat both close to the cluster centre, and close to the outer surface of the map. This resulted in items within each cluster being listed in descending order of relevance to the cluster's overall theme. These lists were sent to three independent experts from the School of Psychology and Institute of Education at Massey University. These experts were provided an explanation of the research purpose, but were otherwise naïve to the data, so were not influenced by the researcher in any way. They provided their perspectives on how they would describe the SE practices which formed

each cluster. Their responses were then considered by the researcher to create cluster labels informed by their opinions.

In addition to identifying clusters, dimensionality was determined by examining stress values and goodness-of-fit data. Having identified three dimensions, the maps were rotated and visually examined to identify dimensional organisation of items.

Comparison was made between characteristics of the two original maps (New Zealand and ESOL samples), and the combined sample map, to examine similarities and differences between the samples and assist in determining the reliability of data. This comparison was made using Procrustes distance analysis in addition to canonical correlation and analysis of correlations of corresponding dimensions between maps.

It should be noted that some of the analytical procedures involved in this methodology were considered beyond the scope of a DClinPsych thesis. Dr. David Bimler therefore provided statistical assistance by converting the raw data into dendrograms and MDS solutions. The doctoral student, Amy Edwards, carried out all subsequent interpretation and analysis as detailed above. Amy also carried out statistical procedures involved in the comparison between the various MDS solutions, performing canonical correlation analyses. Dr. David Bimler took an advisory role in this stage of the analysis and assisted with calculating Procrustes distances, which relied on software not available to Ms. Edwards.

Study Two

Aim

- To investigate students' perceptions of their teachers' social-emotional practices using the MDS map created in study one as a lens for analysis.
- To investigate how students' perceptions of their teachers' social-emotional practices relates to students' strengths and difficulties.

Method

Survey Development. The researcher elected to develop an electronic survey to facilitate easiest access and efficient data analysis. The electronic survey was developed by Mr Harvey Jones (programmer/analyst, Massey University Palmerston North) using Qualtrics computer software. It was designed to be accessible by any device (laptop, tablet or smartphone) to ensure all students would be able to have access, using their smartphones if they did not have a laptop available. All content for the survey including introductory information and consent, demographic questions, and survey items were provided by the researcher. Decisions regarding formatting of items (e.g. use of Likert scales and drop-down boxes) were also made by the researcher with advice from Mr Jones.

The survey consisted of four measures: The CEEQ-S (a questionnaire comprising the 88-items describing teachers' social-emotional practices which made up the map created in Study One), the School Connectedness Scale (SCS), the Avoidance and Fusion Questionnaire for Youth (AFQ-Y) and the Strengths and Difficulties Questionnaire (SDQ). Further information regarding these measures is provided in Chapter Eight. Together, students' responses to these four measures provided data pertaining to students' perceptions of their teacher's practices and students' connectedness with teachers, psychological flexibility and social, emotional and behavioural strengths and difficulties.

Recruitment. Three secondary schools were involved in the study. Initial contact with secondary schools was made via email with the school Principal, or a senior staff member with whom the Principal had delegated authority (Appendix H). The purpose and nature of the study was explained to these staff members, and consent gained to contact wider staff to recruit teachers who were willing to have their students report on their practices. Contact with staff was made in the manner preferred by each school; in two cases this

involved holding an information meeting in person, while the third school preferred information to be sent via email. In all cases, teachers were provided with a written information sheet and gave written consent (Appendix I). They were subsequently contacted via email to arrange a suitable time to visit one of their classes to administer the survey. The senior staff member involved in initial consultation granted the researcher permission to physically enter schools prior to this stage. Teachers were able to select any Year 12 or 13 class at a time which was convenient to them. In cases where a Year 12 class was selected, both teachers and students were reminded the survey was only able to be filled out by students aged 16 or over, as parental consent was not sought prior. Where possible, students under 16 left the room with teachers to complete an alternative activity.

Survey Administration. Teachers were asked to leave the room for the duration of the survey to prevent their presence from influencing students' answers. The purpose and nature of the survey and participant rights were explained to all students prior to beginning the survey. In addition, the survey began with an electronic information sheet (Appendix J). Those who wished not to participate were asked to complete some classwork or another quiet activity that would not disturb those completing the survey. Students were allowed sufficient time to complete the survey before the teacher was asked to return and resume their usual classroom teaching. In most cases, total administration time ranged from 25-35 minutes. To maintain anonymity of students participating, the researcher received email notifications when a survey was submitted. This assisted in determining when students had finished without requiring the researcher to ask students to publically indicate if they were still working on the survey. Students were also told they were able to stop completing the survey and resume later in a more private setting if they were not finished when their teacher returned.

A full ethics application was submitted and approved by MUHEC (Appendix K).

Data analysis. At the culmination of the data collection phase, data were automatically converted into an SPSS spreadsheet using the Qualtrics programme. The SPSS file contained individual item responses for the overall survey which were then converted into scores for each of the measures.

Analysis of the CEEQ-S data took place over two phases. First, survey data were analysed to determine how students' perceptions of their teachers' practices could be understood conceptually. MDS was performed using survey responses to produce a map for comparison against the conceptual map produced in study one. In theory, the map produced in Study Two would represent the relationships between items according to students' perceptual experience of their teacher's practices, rather than their conceptual understanding of the items' similarity as measured in Study One. It was expected the maps would be comparable and facilitate analysis of the students' perceptions of their teachers through application of the meanings determined in Study One.

Our initial expectation had been that students would perceive their teachers' practices in such a way that would enable differentiation of the practices according to their underlying purpose or nature (e.g. emotion coaching practices versus relationship-building practices). This would have facilitated development of profiles depicting general patterns observed in teachers' practices. For example, some teachers may show a high degree of emotion coaching and relationship building practices and less inclination toward classroom/behaviour management practices, while others may show a different inclination toward frequent use of practices used to promote learning and motivate students, and less focus on emotion coaching. There is of course variation in the approaches taken by all teachers, and the goal of this phase of the research was to develop a series of profiles which approximately described groups of teachers and enabled students' strengths and difficulties to be compared across these groups.

As will be discussed further in the article manuscript, however, comparison between the conceptual map and map produced from students' perceptual data indicated some differences in items' spatial arrangement. Items were more widely dispersed and did not form distinct clusters as they had in the conceptual map. Exploratory Factor Analysis corroborated this, finding a large portion of the variance was accounted for by one factor. A smaller second factor was also present and was included in subsequent analysis. Beyond these two factors, there appeared to be no further meaningful factors. These results did not support creation of teaching profiles, as the data did not clearly distinguish underlying aspects of social-emotional practices as had been expected.

The second phase of analysis in Study Two therefore focussed on investigating how students' strengths and difficulties were related to the two factors identified, using correlational analysis. A correlation matrix was created to show the correlations between all variables. Points of interest were then identified in the matrix (significant relationships between teacher and student variables) and linear regression performed to analyse these relationships in greater depth.

Study Three

Aim

To investigate whether there were any demographic effects on the relationships between perceived teachers' practices and student variables according to student gender.

Method

The same data set was used as in Study Two. The SPSS data file was split according to gender to enable independent analysis of male and female students' survey responses. Five participants indicated their gender as "other" and were excluded from analysis in Study Three as the number of responses was insufficient to support statistical analysis.

The resulting female and male subsamples analysed consisted of 179 and 151 participants, respectively.

Descriptive statistics were calculated for each student variable across the two samples to determine any gender-differences in student variables. The correlational analysis used in Study Two was then repeated for the independent subsamples, producing two correlation matrices. Differences between samples were tested for statistical significance to examine how relationships between variables differed between genders.

In the following two chapters I present two article manuscripts, both of which have been submitted for publication and at the time of thesis submission are awaiting responses from the respective journals. Article one, *Mapping teachers' social-emotional practices: students' perspectives,* has been submitted to *Educational Review.* Article two, *Students' perceptions of teachers' practices: investigating relationships with students' strengths and difficulties*, has been submitted to *Journal of Educational Research.*

Chapter Seven: Study One Manuscript

Mapping teachers' social-emotional practices: students' perspectives

Alongside increasing recognition of mental health difficulties as commonly emerging in adolescence, it has become important to consider how a teacher's role may support not only students' academic learning, but their social and emotional development. Harvey and colleagues (2012) identified six categories of social-emotional practices used by teachers that contributed to students' emotions and emotional development. However, in that categorization, students' perspectives were not investigated. This study aimed to establish a student-derived model of teachers' social-emotional practices in the New Zealand context. Drawing on items generated by students and literature, a stable map was created using Multidimensional Scaling (MDS). Eighty-eight practices formed nine clusters organized along three dimensions: *activeness of practice, locus of influence,* and *teacher-student relationship.* Findings enabled the creation of a measure of student-perceived teacher social-emotional practices that will facilitate further research and insight into how teachers and teacher education may seek to increase social-emotional competence of teachers.

Keywords: social-emotional practices, teaching, emotions, adolescence

Introduction

Emotions were argued by Hargreaves (1998) to be central to teaching practices in a classroom. Good teachers were described as "emotional, passionate beings who connect with their students and fill their work and their classrooms with pleasure, creativity, challenge and joy" (Hargreaves, 1998, p. 835). According to Hargreaves, it is the way in which emotion is used to create a vibrant and enjoyable classroom environment that

defines good teaching practice. This article explores this notion from the students' perspective.

Students may encounter any number and combination of emotions in their everyday interactions with teachers and peers. How teachers respond to these emotions and emotional situations as they arise will help to model, shape, and reinforce students' social-emotional learning and development. Just as parents are known to respond to emotions in different ways depending on their meta-emotional philosophy (Gottman, et al., 1996), different teachers are likely to manage classroom emotions differently. Teachers' beliefs about the role of a teacher, their general attitude toward emotions and their expression, and their own emotion regulation style are all likely to influence the ways they practice emotionally with students (Andersen et al., 2012).

To date, however, teachers' skilled use of emotions in their teaching practices has not been clearly defined in the literature. Concepts such as 'emotional intelligence' and 'emotional competence' have previously been used to describe the skills associated with the effective response to one's own emotions, as well as the emotions of others (Garner, 2010; Salovey & Mayer, 1990). However, these are broad concepts that lack useful application to identifying specific and concrete teaching behaviours. We chose instead to use the term "social-emotional practices" to refer to the behaviours teachers can apply to their practice to manage and use emotions to aid in the learning and emotional development of pupils.

Owing to the centrality of emotion in classroom interactions, social-emotional (SE) practices encompass a wide variety of teachers' behaviours, ranging from teachers' responses to student emotion through to the ways they motivate students to learn and manage students' behaviours. In using the term 'social-emotional practices' we emphasize our interest in those practices that are social-emotional in nature. The term

"teaching practices" may be characterized by those in the education sector as pedagogical strategies, such as classroom management practices and subject teaching methods. Indeed, these are relevant within the concept of social-emotional practices, but in our study, it is teachers' emotional influence (such as creating enthusiasm and enjoyment in the classroom), that is of primary interest.

We argue that teachers' SE practices may affect students' psychological development. Children develop important social-emotional skills, such as self-regulation, through interactions with close adults (McLaughlin, 2008). Given it is not unusual for youth to spend more time in the presence of teachers than parents, teachers' SE practices are an important source of students' social-emotional learning and development (Ahn, 2005; Ahn & Stifter, 2006; Ciucci et al., 2015). Accordingly, classrooms have been recognized as a zone of proximal developmental influence since early ecological theories were developed (Bronfenbrenner, 1979).

Teacher- and classroom-level factors found to have a positive relationship to student outcomes have included: teachers' beliefs and optimism regarding their efficacy to teach and students' abilities to learn (Beard et al., 2010; Eccles & Roeser, 2011; Knoblauch & Woolfolk Hoy, 2008); orientation of teachers' instructional practices toward individual students' learning and understanding of concepts, rather than comparison against other students' abilities (Meece et al., 2006; Midgley, 2002); and positive teacher-student relationships, in which the teacher is perceived as caring and provides emotional support to students while allowing autonomy (Wentzel & Wigfield, 2007; Zimmer-Gembeck et al., 2006). Each of these factors relates to emotional aspects of teaching and learning; variously, they increase motivation, self-esteem, enthusiasm, and sense of belongingness in the classroom, and are associated with greater

psychological wellbeing, social and academic functioning in students (Eccles & Roeser, 2011).

Harvey and Evans (2003) created a model of teachers' SE practices that emotionally benefited students. However, their spatial mapping of the structure of these SE practices failed to incorporate the perspectives of students (Harvey et al., 2012). The omission of students' perspectives is problematic for several reasons. First, individual experiences or perceptions of teachers' practices may differ between students as a function of variations in the teacher-student relationship. Information gained from teachers offers a limited perspective that cannot account for the individual experiences of all students who make up a classroom. In contrast, sourcing information from students takes into account the collective student experience, thus fostering insight into a spectrum of individuals' experiences (Rowe et al., 2010).

Second, students and teachers have been found to differ in their perception of the classroom, with teachers reporting more positive perceptions than their students (Fraser & Walberg, 2005). A student's perception of his or her teacher's practices reflects that student's reality, regardless of the practices the teacher is intending. The discrepancies between teacher and student reports of teachers' practices therefore suggest students' perceptions provide a more accurate insight into the lived experience of a student in their classroom.

Research has indicated that students of all ages are aware of and can actively observe emotions in their interactions with teachers. This awareness includes verbal descriptions on how their teachers' SE practices affect their own emotions and behavior (Andersen et al., 2012). From the reported research, it is clear that students can be a rich source of information about classroom interactions. Thus, inclusion of students'

perspectives provides a rich platform towards understanding how teachers' intended practices may be perceived by the recipients of that practice.

Student perspectives of school and teachers have been an increasing focus of research, but existing measures do not isolate and comprehensively measure teachers' *emotional* practices. Instead, they tend to explore a broad range of questions about teaching practices and school climate in general. The *What Is Happening In Class? (WIHIC)* questionnaire, for example, features scales measuring both student behavior (such as student cohesiveness) and teacher behavior (such as teachers' support) (Fraser et al., 1996). *The Tripod Student Survey* is more closely aligned to teachers' practices but does not cover the full range of emotional encounters that occur in a classroom. It primarily focusses on teachers' approaches to student learning, but neglects aspects such as how a teacher responds to a student who becomes upset, or to conflicts between students (Ferguson & Danielson, 2014). The present research will contribute to the development of a measure that will address these concerns. Namely, it will isolate teachers' SE practices and the responses students have to such practices from other school climate factors, and will endeavor to encompass the full breadth of student-perceived teachers' practices that may have an emotional impact on students.

To measure teachers' SE practices from students' perspectives accurately, it is important to understand how students understand those practices and their relationships to each other. Harvey and Evans (2003) proposed that SE practices could be understood according to a 5-part model, with the five components being emotional relationships, emotional awareness, emotional intrapersonal beliefs, emotional interpersonal guidelines, and emotion management. This was more recently updated to include emotion contagion (Harvey et. al., 2012). Concurrent with their research with teachers, Harvey, et. al. (unpublished data) also constructed a geometrical model (map) of SE teaching practices

derived from New Zealand (NZ) students' descriptions. However, significant gaps were identified in the map structure, indicating the item pool did not adequately capture all aspects of SE practices. Further investigation into the missing content was conducted by Chia (2014) and used to map the SE practices of Polytechnic tutors in Singapore. Chia found the resulting Multidimensional Scaling (MDS) structure represented the content domain for her cohort (Chia, 2014). However, mapping has not yet occurred in the context from which the items were derived, namely, NZ secondary school students.

Using MDS to organize teachers' practices structurally has proved useful for understanding the effects of teachers' SE practices on students (Chia, 2014; Han, 2016). Chia (2014) and Han (2016) both reported finding their participants' positive attitudes toward teachers (operationalized as connectedness by Han (2016) and liking of tutors by Chia (2014)), differed according to students' perceptions of the practices exhibited by teachers. MDS was used by these researchers as a method of converting teachers' or students' perceptions of SE practice similarity into a multidimensional map by representing practices as points in a three-dimensional space in order to visually depict their relationships. The object is to reconstruct the "working model" that students use when they think about teachers' SE practices. The model then facilitates the researcher to draw meaning from student reports of the frequency with which they observe SE practices in their classrooms by providing a lens through which understanding of observed practices can be drawn.

MDS is an effective method for examining inter-item relationships, as its visual output makes data more readily interpretable (Jaworska & Chupetlovska-Anastasova, 2009). Furthermore, MDS analysis acknowledges item dissimilarity can be multi-dimensional in that items can be different from each other in more than one way, and thus enables the interpretation of meaning on several dimensions (Bimler & Kirkland, 2007).

The aim of this study was therefore to create a stable and reliable map with complete content coverage depicting NZ secondary school students' perceptions of items related to teachers' SE practices, using MDS. The insight gained from this will facilitate the creation of the *Classroom Emotional Environment Questionnaire-Student Version (CEEQ-S*) with a view towards use in future research to evaluate teachers' SE practices and student variables.

Method

Participants

Participants formed a convenience sample of 31 Year 12 and Year 13 NZ secondary school students. The age range for this sample was between 16-18 years (M = 16.61, SD = 0.72). Nineteen participants identified as male and 12 as female. Eighteen reported their ethnicity to be New Zealand European, six Māori, and six other/mixed ethnicities. One did not report ethnicity. Twenty-five participants were recruited from two secondary schools, four from a community group, and two through online advertising.

For the purposes of reliability, data collected from NZ secondary school students were compared against data collected from a sample of Asian students who were enrolled in an ESOL (English as a Second Language) course. The ESOL sample consisted of 27 participants. The reported age range was between 19-36 years (M = 23, SD = 4.88). Twelve students did not report their ages. Ten participants reported their ethnicity as Chinese, nine Vietnamese, six Japanese, one Thai, and one Korean. Raw data had been collected from this sample prior to this study and was provided for analysis by Dr. Shane Harvey.

The purpose of the ESOL reliability sample was to compare the responses of NZ students against a sample of participants from a different language community. Comparing responses from different language communities enables an evaluation of

whether participants' responses reflect true conceptual similarity. Participants whose first language is not English may rely on irrelevant parallels between items such as sentence structure or matching words, and thus give similarity ratings that do not represent an underlying conceptual similarity. It was expected NZ students would produce a more reliable map than the sample of ESOL students, given English is predominantly their primary language, and therefore the students were more likely to understand true conceptual similarity. That is, NZ students were expected to demonstrate more agreement between subjects as their responses would be based on a more unified conceptual understanding of items.

Materials

Each participant was provided with a stack of 88 cards, each containing an item describing an observable SE teaching practice. In addition, participants were provided with an information sheet, instruction sheet**,** and response sheet**.** Participants were instructed to record their responses on the response sheet with pen.

Item Development

Items were sourced with permission from previous research that used the same method in different populations (Chia, 2014; Han, 2016; Harvey & Evans, 2003). An original item pool of 76 items was developed by Harvey and Evans (2003), informed by focus-group interviews with students and teachers. These items were reviewed and refined by Chia (2014). Chia (2014) expanded the item list to 88 items following a process of consultation with the EPIC (Emotional Practice in Context) lab group, a group of researchers and students conducting research related to emotional practice. These 88 items have been shown to produce stable maps in student samples in research conducted with Korean and Singaporean samples (Chia, 2014; Han, 2016).

Procedure

After providing informed consent, participants individually completed a card-sort task consisting of four phases, known as GOPA (G*rouping, Opposites, Partitioning,* and *Addition*) (Bimler & Kirkland, 2007; Kirkland et al., 2004). This process asks participants to 1. **G**roup items they perceive to be similar; 2. Identify item groupings they consider **O**pposite in theme; 3. **P**artition each group of items into subsets of themes; and 4. identify groups they consider to be similar (**A**ddition). A convenience sample of 30 participants is considered appropriate for this methodology and has been found to produce stable MDS maps (Bimler & Kirkland, 2007).

The GOPA procedure took approximately 40 to 70 minutes for each participant to complete. No time limit was enforced for the task, and participants were told to take as long as they needed. Participants received a $20 café voucher in reimbursement for their time. Data were recorded in each phase and converted into a numerical value for each pair of items, representing their perceived similarity based on the frequency with which they were grouped together. Similarity value ranged from 0-1, with 0 indicating the pair of items never grouped together (even in the addition phase, where similarity threshold is decreased), and 1 indicating that the item pair always appeared together (even in the partition phase, where similarity threshold is increased).

Data Analysis. An implementation of Kruskal's algorithm for non-metric MDS was used to analyze data, applying the similarity values to assign each item to a location within a three-dimensional space, thus visually representing the relationships between all items. Each item is represented as one point such that the more similar two items are, the closer together they appear in the map (Jaworska & Chupetlovska-Anastasova, 2009). This visual representation enables an observer to examine relationships between items dimensionally, with each dimension in the map representing an underlying meaning or

conceptual reasoning for the distinction among items (Harvey et al., 2012; Jaworska & Chupetlovska-Anastasova, 2009).

Hierarchical Cluster Analysis (HCA) was used to aid interpretation of the data. Data were transformed into a dendrogram using the unweighted pair-group algorithm. The dendrogram depicted the similarity of items in a tree diagram such that items appear in branches, with more similar items appearing on closer branches and more dissimilar items appearing further apart. Branches were nested, with larger branches comprising smaller ones. These branches were identified and color-coded at the level of generality where the underlying themes unifying each cluster were most apparent. Clusters identified in the dendrogram were correspondingly color coded within the MDS map, facilitating further analysis of clusters. Outlying items from each cluster were reassigned based on their spatial representation.

Each cluster was examined individually, and member-items listed in descending order according to their representativeness of the cluster. To ensure objectivity of cluster labelling, this list of items was sent to an expert panel who independently named item-clusters. The panel consisted of Massey University researchers from the School of Psychology and Institute of Education, offering perspectives of experts specializing in child psychology, teaching, and educational psychology. Each panel member worked independently and sent their feedback on cluster labels to the researcher. The independent labelling resulted in a variety of perspectives and label suggestions for each cluster. From these suggestions, the researcher was able to identify common themes to determine one label for each cluster that was most representative of the different perspectives.

Results

Hierarchical Cluster Analysis (HCA)

In the interest of concision, dendrograms created through HCA analysis have been attached as supplementary material.

Multidimensional Scaling (MDS)

The maps for the NZ and ESOL samples are presented in Figure 1 and Figure 2, respectively. Items were spread across the three-dimensional surface of both maps such that no significant gaps were observed in the surface coverage. For ease of interpretation, the maps have been flattened in two dimensions. The MDS solutions formed a hollow spherical shell, making it possible to flatten them for display as separate hemispheres without serious distortion. A detailed description of the clusters identified within each map and the dimensions according to which items are organized follows.

Clusters. Nine item clusters were identified in the NZ sample, and eight in the ESOL sample. A visual comparison of the clusters as they appeared in the two maps, with associated cluster descriptions, is presented in Table 1. Where clusters of the same meaning were identified in both maps, the cluster is presented in the same row of the table for each sample. Where clusters represented similar themes, but had slightly different meanings, they are presented in adjacent rows.

Figure 1.

Split hemisphere views of the New Zealand sample map. Each circle is a hemisphere, flattened with the stereographic projection, with the 'pole' at the centre and the 'equator' (where hemispheres meet) as its perimeter. Top= Positive D1 hemisphere; Bottom = Negative D1 hemisphere (D1 centre; D2 horizontal; D3 vertical)

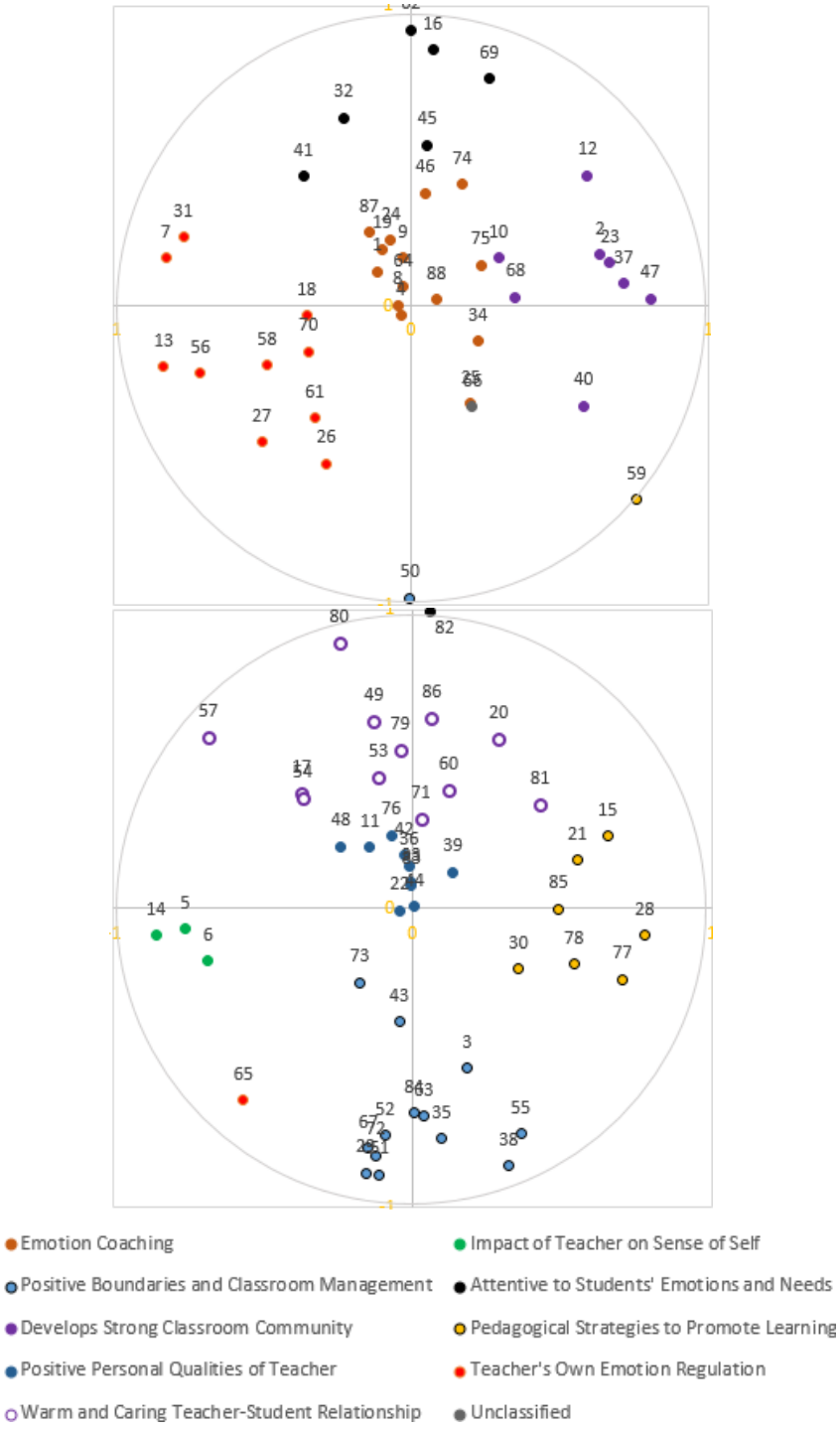


Figure 2.

Split hemisphere views of the ESOL sample map. Top = Positive D1 hemisphere; Bottom = Negative D1 hemisphere (D1 centre; D2 horizontal; D3 vertical)

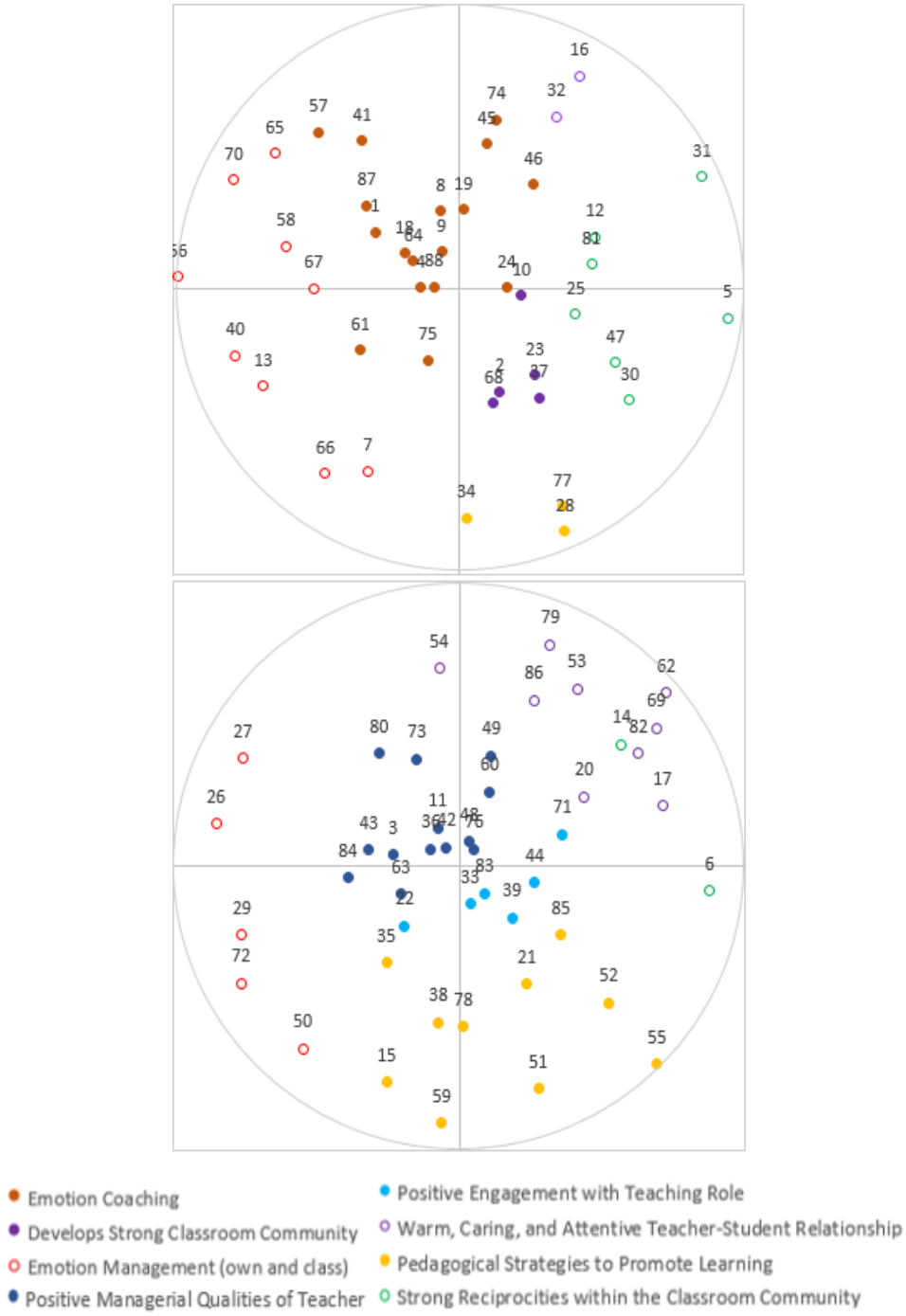


Table 1.

A comparison of item clusters identified within Zealand and ESOL sample maps

New Zealand Sample		ESOL Sample		Cluster Description
Cluster Label	Example Items	Cluster Label	Example Items	
Teacher's own emotion regulation	Uses own emotion to control the mood of the class; Acts as if they are feeling something different to what they are			Teacher regulates their own emotions in a way that influences students' emotions.
		Emotion management (own and classroom)	We mirror how our teacher feels; Consistently enforces consequences	Teacher regulates their own emotions as well as employing strategies to manage students' emotions
Pedagogical strategies to promote learning	Uses creative techniques to teach; Encourages us to learn new things	Pedagogical strategies to promote learning	Maintains clear teacher-student boundaries with us; Uses creative techniques to teach	Teacher uses pedagogical strategies that motivate students to engage with learning
Positive personal qualities of teacher	Enthusiastic; Positive			Teacher exhibits personal qualities that make them an effective teacher
		Positive managerial qualities of teacher	Positive; Enthusiastic	Teacher exhibits personal qualities that make them an effective teacher and classroom manager

		Positive engagement with the teaching role	Likes teaching; Enjoys teaching	Teacher displays a positive attitude toward their role as a teacher
Impact of teacher on sense of self	My behaviour is affected by what my teacher believes about me; My self-esteem is related to how this teacher feels about me			Students internalise teachers' beliefs and feelings about them in such a way that their sense of self is affected
		Strong reciprocities within the classroom community	My behaviour is affected by what my teacher believes about me; Makes our class a safe place to be	Teachers' beliefs and actions have an impact on students' sense of self and general sense of class environment
Attentive to students' emotions and needs	Understands how we feel; Takes our problems seriously			Teacher cares about and takes time to attend to students' emotional needs
Warm & caring teacher-student relationship	Makes us feel welcome; Speaks warmly to us			Teacher interacts positively with students to create a warm and caring teacher-student relationship
		Warm, caring & attentive teacher-student relationship	Takes time to help us; Takes time to talk	Teacher interacts positively with students and is attentive to their emotions, creating a warm, caring and attentive teacher-student relationship

Develops strong classroom community	Uses students to support other students (eg. Student mediators, student monitors); Helps us work together	Develops strong classroom community	Uses students to support other students (eg. Student mediators, student monitors); Encourages us to build enjoyable friendships with other students	The teacher facilitates peer relationships and encourages student-student support to develop a strong learning community
Positive boundaries & classroom management	Disciplines fairly; Good but strict			Teacher uses appropriate discipline and strategies to manage student behaviour to maintain a positive class environment
Emotion Coaching	Uses emotional situations to teach us how to cope better; Makes us aware of how we are managing emotion	Emotion Coaching	Shows me how I took part in an emotional situation; Makes us aware of how we are managing emotion	Teacher sees emotional situations as an opportunity for learning and helps students to develop emotion regulation skills

Dimensions. Both the NZ and ESOL maps were found to have three dimensions, by which the arrangement of items within the three-dimensional space can be understood. These reflect the contrasts and gradations of meaning that the students were implicitly drawing on when they decided which items belonged together and which ones should be separated. In both maps, the dimensions were *emotion pedagogy; social pedagogy;* and *emotional stability.* An explanation of these dimensions is presented in Table 2.

Table 2.
MDS map dimensions

Dimension	Poles
D1: Emotion Pedagogy	D1+ Emotion coaching D1- Teaching attitude
D2: Social Pedagogy	D2+ Social engagement and growth D2- Teacher-student reciprocities
D3: Emotional Stability	D3+ Emotional Support D3- Behaviour Management

The first dimension, D1, was related to items which influence emotions in the classroom, ranging from active and explicit practices teachers use to address emotional situations to more inactive and non-explicit practices that manifest as personal qualities of the teacher.

The second dimension, D2, was related to items which focus on interpersonal aspects of teaching. D2 featured active teaching practices at one pole (D2+) and passive transmission between teacher and student at the other (D2-). Items on this dimension ranged from items in which the teacher takes an active role in promoting student-student and teacher-student relationships, to items that emphasized emotion contagion and passive transmission of feelings between teachers and students.

The third dimension, D3, was related to practices which influence the emotional stability of the classroom environment. This dimension ranged from practices which provide emotional support and foster students' emotional stability, to practices which help the teacher to manage classroom behavior, fostering emotional stability in the wider classroom environment.

Inter-map Comparison

Canonical correlation between sets of coordinates was used to compare dimensions between the two maps. Canonical correlation does not require rotation of the MDS solution prior to analysis, so maximizes the similarity of the maps' axes. According to this comparison, the dimensional characteristics of both maps were similar. All three dimensions were mutually recognizable across the two maps, each reaching statistical significance at $p<.001$ *($R_c = .89$, $R_2 = .78$, $R_3 = .59$).*

Correlations of each rotated dimension between the two maps can be found below, in Table 3. There was decreasing strength of correlation between the three dimensions, which supported the visual observations made using the above diagrams. D1 was strongly correlated between the NZ and ESOL maps (*r=.868, p<.01*). This aligned with visual examination of the two maps, which both featured emotion coaching practices at the D1+ pole and positive personal qualities of the teacher at the D1-pole. However, the clusters observed at the poles of dimensions two and three were slightly different between maps, which was also reflected in correlations. Both D2 and D3 were correlated with their respective counterparts between the two maps, but only moderately (D2/D2 *r=.308, p<.01*, D3/D3 *r =.595, p<.01*). Additionally, D2 of the ESOL map had a moderate correlation with D3 of the NZ map (*r=.447, p<.01*) and D3 of the ESOL map had moderate correlations with both D1 and D2 of the NZ map (*r=.447, p<.01* and *r=-.462, p<.01*, respectively).

Table 3.

Inter-map dimension correlations: NZ & ESOL maps

	D1NZ	D2NZ	D3NZ
D1ESOL	.868**	-.065	-.063
D2ESOL	-.203	.308**	.447**
D3ESOL	.447**	-.462**	.595**

***p<.01*

The NZ map featured two clear clusters at the D2- pole (*impact of teacher on sense of self* in the D1- hemisphere and *teacher's own emotion regulation* in the D1+ hemisphere). Another two clusters were evident at the D2+ pole (*pedagogical strategies to promote learning* in the D1- hemisphere and *develops strong classroom community* in the D1+ hemisphere). In comparison, the ESOL map featured the *emotion management (own and class)* cluster at the D2- pole and the *strong reciprocities within the classroom community* cluster at the D2+ pole. Some items that make up these clusters are comparable to those seen at the D2 poles of the NZ map, but were more dispersed around the poles in the ESOL map than in the NZ map, where they constituted much tighter item clusters.

The poles of D3 are also much clearer in the NZ map. In the D1+ hemisphere, the *attentive to students' emotions and needs* cluster sits at the D3+ pole, while in the D1- hemisphere the *warm and caring teacher-student relationship* cluster is dispersed around the D3+ pole and the *positive boundaries and classroom management* cluster sits at the D3- pole. In the ESOL map, the *warm, caring and attentive teacher-student relationship* cluster, which encompasses items from both clusters seen at the D3+ pole in the NZ map, sits near the D3+ pole in the D1+ hemisphere. The *pedagogical strategies to promote*

learning cluster, which appeared at the D2+ pole in the NZ map, is dispersed around the D3- pole in the ESOL map. This aligns with the correlation between the NZ map's D2 dimension and the ESOL D3 dimension. The cluster *positive boundaries and classroom management* which appeared in the NZ map did not feature in the ESOL map.

Statistical comparison of the overall maps was conducted and supported the above observations pertaining to similarity, but some notable differences were seen between the maps. Procrustes distance between the two maps was .13, and the correlation between corresponding item distances was .59.

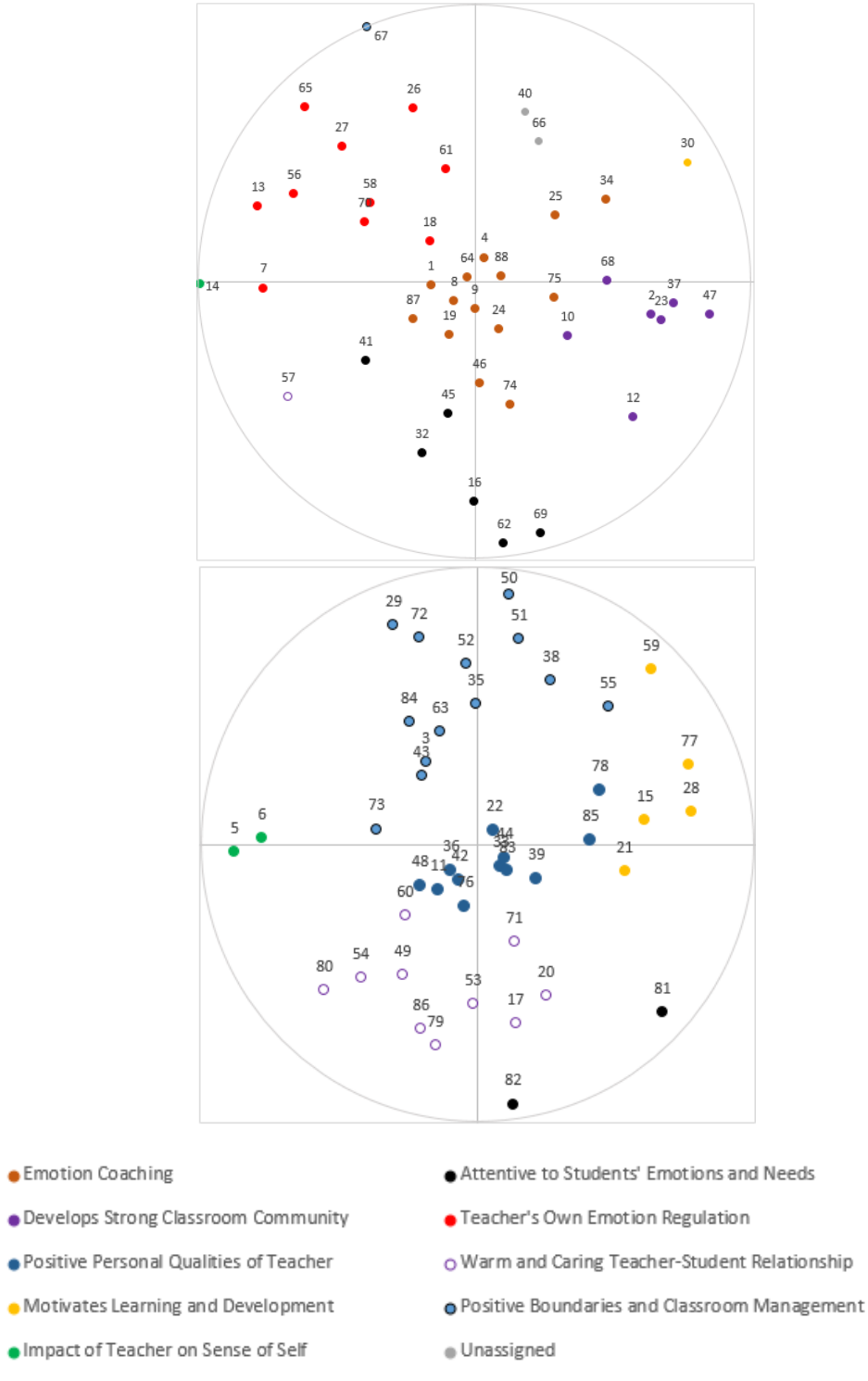
Combined Map

For further comparison, a combined map was developed by amalgamating the two data sets. A flattened version of the combined map is presented in Figure 3. When comparing the individual NZ and ESOL maps against the combined map, the NZ map was found to be more similar. Upon visual comparison, the diagrams show much more similar dimensional characteristics between the NZ and combined maps than the NZ and ESOL, or ESOL and combined, maps. The item poles across all three dimensions are comparable between the NZ and combined maps, and do not feature the inter-map differences observed and discussed above when comparing the NZ and ESOL maps.

Statistical comparison supported these visual observations. Canonical correlation was used to compare dimensions between the NZ and combined maps, and the NZ and ESOL maps. Comparing the NZ and combined maps, all three dimensions were highly correlated *(R_c = .97, R_2 = .96, R_3 = .92; p<.001).* In comparing the ESOL and combined maps, the correlations remained strong *(R_c = .96, R_2 = .88, R_3 = .69; p<.001),* but not to the degree that was observed in the NZ and combined maps comparison. Procrustes distance between the NZ and combined maps was .022, while between the ESOL and combined maps was .076.

Figure 3.

Split hemisphere views of the combined sample map. Top = Positive D1 hemisphere; Bottom = Negative D1 hemisphere (D1 centre; D2 horizontal; D3 vertical)



Discussion

Using MDS, a three-dimensional map was constructed depicting NZ secondary school students' perceptions of the similarity between 88 items related to teachers' social-emotional practices in two populations. Item clusters derived from students' ratings of inter-item similarity reflected themes that align with important teacher-level factors. Personal qualities (including positive beliefs about their own and their students' abilities), warm and caring teacher-student relationships, pedagogical strategies to promote learning, various demonstrations of emotional support (attentiveness to students' emotions and needs and emotion coaching practices), and development of a strong classroom community through facilitating positive relationships all emerged as distinct themes within the NZ map.

In addition, a second map was created using data collected with ESOL students studying at Massey University. This allowed for comparison between the two maps, which was useful for determining reliability and validity of the NZ map. Statistical comparison of the two maps indicated some differences between their structures. Although there were dimensional similarities between the maps when examined overall, differences were evident in the placement of items within the structure.

In the cluster arrangement of items in the two maps, three clusters were observed in both maps (*Pedagogical strategies to promote learning; Develops strong classroom community;* and *Emotion coaching*). While item makeup of these clusters was not identical within both maps, the items they contained within both maps were considered similar to a degree that they represented the same themes. All other clusters featured differences between the maps that affected the meaning drawn from the items they contained.

In most cases, a comparable cluster was evident between maps, if not matching. For example, the *Warm and caring teacher-student relationship* cluster in the NZ map was comparable to the *Warm, caring and attentive teacher-student relationship* cluster that appeared in the ESOL map – the difference being that the ESOL cluster encompassed teachers' attentiveness to students' emotions, which appeared as a separate cluster in the NZ map (*Attentive to students' emotions and needs*). Similarly, the *Teacher's own emotion regulation* cluster that featured in the NZ map was comparable to the *Emotion management (own and classroom)* cluster that appeared in the ESOL map. The difference in this case was that the ESOL cluster contained items that were more generally related to the teacher's intrinsic emotion regulation as well as their extrinsic regulation of students' emotions (thus representing more general emotion management).

In the NZ map, *Positive personal qualities of teacher* appeared as a cluster encompassing items related to the qualities of a teacher that make them likable. This was comparable to the ESOL map cluster *Positive managerial qualities of teacher* which encompassed many of the NZ items, but also featured several items related to how these positive qualities relate to classroom management, such as *'Rewards fairly'* and *'Is fair'.* In the ESOL map, *Positive engagement with the teaching role* also appeared as a distinct cluster, whereas in the NZ map, items making up this cluster (such as *Likes teaching, Has enjoyable teaching style*) featured within the *Positive personal qualities of teacher* cluster.

Finally, the cluster *Impact of teacher on sense of self* that appeared in the NZ map was comparable to *Strong reciprocities within the classroom community,* with the difference being that the NZ cluster was more specific to individual level effects of the teacher on sense of self, whereas the ESOL sample included classroom-level effects.

The NZ map featured one cluster that did not have a comparable counterpart in the ESOL map, namely *Positive boundaries and classroom management.* This cluster consisted of items such as *'Disciplines fairly'* and *'Good but strict'.* In the ESOL sample, these items were dispersed throughout three other clusters: *Positive managerial qualities of the teacher, Pedagogical strategies to promote student learning, and Emotion management (own and class)*. Each of these clusters related to classroom management, but it is interesting to note that unlike in the NZ map, classroom management in the sense of discipline, boundaries, behavioural expectations and consequences did not feature as a distinct cluster in the ESOL map.

In examining comparing dimensional characteristics of the two maps, D1 was very similar. Differences were noted, however, in D2 and D3. Generally, item clusters were more widely dispersed around poles in the ESOL map. Examination of the poles revealed, however, that there were similarities between the items at each pole between the two maps such that the dimension themes were comparable.

One key dimensional difference was that the *positive boundaries and classroom management* cluster that appeared at the D3- pole in the NZ map did not appear as a comparable cluster in the ESOL map. The D3- pole in the ESOL map instead featured the *pedagogical strategies to promote learning* cluster. The ESOL *pedagogical strategies to promote learning* cluster, however, subsumed some of the same items which were differentiated in the *positive boundaries and classroom management* cluster in the NZ map, such as *maintains clear teacher-student boundaries.*

Some of the observed differences may be attributable to inter-sample heterogeneity. The ESOL sample was made up of students who were currently in a tertiary setting and had completed their prior education in Asian school settings, whereas the NZ sample consisted of slightly younger students studying at high school. These

groups could have different perceptions of the meaning behind actions taken by teachers and these may have affected their perceptions of item similarity. For example, the emergence of the *Positive boundaries and classroom management* cluster in the NZ sample (which was missing from the ESOL sample) may be due to the differing educational experiences of the two samples. The ESOL sample is less likely to experience classroom management practices in their current tertiary environment, in contrast to the NZ sample of high school students. Such boundary and management-oriented practices may be less salient to the ESOL sample, therefore, and less likely to be rated as similar. Whereas tertiary students tend to be independent and autonomous of adults, high school students are likely to have different social-emotional needs possibly including greater boundary setting and management from teachers.

Furthermore, the differences discussed between *Teacher's own emotion regulation* and *Emotion management (own and class)* and *Impact of teacher on sense of self* and *Strong reciprocities within the classroom community* highlight a potential influence of collective versus individualistic cultural backgrounds. In particular, the ESOL sample took a more general approach, including classroom and individual level items, whereas the NZ sample were more specific in isolating items that applied to individual members of the classroom community compared to those that applied to the collective. This could represent a cultural tendency for Asian cultures to think more collectively than European NZ culture, which tends to be more individualistic (Triandis, 2018).

In addition to differing cultural and educational backgrounds, however, language provides a valuable explanation for the differences observed between maps. Previous research comparing teachers' SE practice maps created in two different cultures (namely samples of NZ and German teachers) reported greater similarity between maps and

concluded that teachers' practices were not perceived in a culture-specific manner (Harvey et al., 2012). Notably, items used in that study were translated into German so both samples were completing the measure using their first language. This suggests that language is likely to have influenced participants' grouping choices in the current study, where items were not translated into Asian participants' first languages. The reduced English language comprehension with ESOL students could potentially lead them to make similarity rankings according to face similarity of items (such as two items containing the same word). In comparison, most NZ students use English as their primary language, and are therefore likely to better understand item meaning, and thus make similarity rankings according to their underlying meanings rather than semantic similarity.

Reliability of the NZ map was indicated by its similarity to a combined map. When the two data sets were combined, the NZ map was more representative of the resulting combined map, indicating that the NZ map had greater reliability. Reliability was inferred as combining the two data sets resulted in doubling the size of the sample with less effect on outcome when compared with the NZ map than the ESOL map. This suggests there was a greater consistency of responses among the NZ sample compared to the NZ sample, which led to the NZ data dominating the combined map. Greater consistency suggests that the NZ map was based on data with consistent inter-rater agreement than within the ESOL sample. This finding again supports the notion that ESOL students' lack of familiarity with the English language may have influenced their similarity ratings.

The absence of gaps in the arrangement of items over the surface of the three-dimensional map structure demonstrates that the items provide good coverage of the concept of teachers' SE practices within the dimensions measured. In addition, the

coherence of individual clusters demonstrates that items were able to be distinguished in such a way that they can be inferred to represent distinct underlying aspects within the overall construct of teacher's SE practices.

Limitations and Future Directions

The cultural context of the classroom is important to consider. The findings of this research demonstrate the potential for some differences to emerge in respondents' similarity ratings that may be influenced by the educational experiences they have. However, a large cross-cultural similarity was found despite the markedly different populations studied, and items formed a coherent map in both samples. This supports the findings of Harvey and Evans (2012) who reported cross-cultural agreement in perceptions of item similarity, and suggests that the pool of items used may be successfully applied cross-culturally.

Considering the NZ context within which this study took place, the sample consisted of students from mainstream NZ classrooms, typically made up of a mix of students of New Zealand European, Māori, Pasifika, Asian, and other mixed ethnicities. Other educational contexts in NZ have very different cultural makeups, which could affect the social-emotional practices exhibited by teachers.

In Māori teaching contexts, for example, the teacher-student relationship is often much more familial than in mainstream classrooms. Students refer to their teachers as "Whaea" (mum/aunty) or "Matua" (Dad/Uncle). Accordingly, the relationship teacher-student relationship is very different in these contexts than in a mainstream NZ classroom, where there is likely much more separation between teacher and student. Thus, both the practices used by teachers and their effects on students are likely to be very different in a traditional Māori classroom (H. Valentine, personal communication, 15 February 2018). Although Māori students took part in this study, it is important to remember that they

were students studying in mainstream schools, and care should be taken when applying the map created in this study to interpretation of data collected within non-mainstream NZ classrooms. Although previous research has found cross-cultural consistency in perceptions of SE practice similarity (Harvey & Evans, 2012), the differences observed in the current study suggest that this is dependent on items being presented in participants' first languages. Translation may therefore be a necessary precursor to applying these items within a Māori educational setting, where the primary spoken language may be Te Reo Māori.

Application of the CEEQ-S to the NZ context will facilitate further research examining the relationships between teachers' social-emotional practices and students' social, emotional, and behavioural strengths and difficulties. It is hoped that future studies will draw valuable findings regarding the nature of this relationship that will be beneficial to both teachers and students. Potential benefits stemming from this research have particular implications for teaching and teacher education. According to American research, many teachers report feeling underprepared for dealing with student's emotional needs (Schonert-Reichl et al., 2017). Considering emotions have long been recognized as central to good teaching practice, as expressed in Hargreaves' quote in opening paragraphs of this article, it is essential that our discussion of teaching practice moves beyond the classroom discipline, boundaries, and instructional styles that characterize existing measures.

Conclusion

This study successfully used MDS to create a stable and reliable map depicting NZ secondary school students' perceptions of the similarity of 88 items that have previously been found to be effective for measuring students' perceptions of their teachers' social-emotional practices. This map can be used to facilitate analysis of data gained when using

these items in questionnaire format using the CEEQ-S with a NZ sample. By identifying the items students observe their teachers frequently performing together within the map, patterns of teachers' practices can be identified, and an understanding may be gained of what these practices mean from the students' perspectives. This addresses the lack of existing questionnaires for measuring students' perceptions of teachers' emotional practices, which was a barrier to further research. Having created a tool that emphasizes emotion and enables students' perspectives to be heard, we hope that its future application will ensure teachers can become more equipped to understand how their social-emotional practices might impact on students.

References

Ahn, H. J. (2005). Teachers' discussions of emotion in child care centers. *Early Childhood Education Journal*, *32*(4), 237–242. https://doi.org/10.1007/s10643-004-1424-6

Ahn, H. J., & Stifter, C. (2006). Child care teachers' response to children's emotional expression. *Early Education & Development*, *17*(2), 253–270. https://doi.org/10.1207/s15566935eed1702

Andersen, R. J., Evans, I. M., & Harvey, S. T. (2012). Insider views of the emotional climate of the classroom: What New Zealand children tell us about their teachers' feelings. *Journal of Research in Childhood Education*, *26*(2), 199–220. https://doi.org/10.1080/02568543.2012.657748

Beard, K. S., Hoy, W. K., & Woolfolk Hoy, A. (2010). Academic optimism of individual teachers: Confirming a new construct. *Teaching and Teacher Education*, *26*(5), 1136–1144. https://doi.org/10.1016/j.tate.2010.02.003

Bimler, D., & Kirkland, J. (2007). Constructing personality maps, mapping personality constructs: multidimensional scaling recovers the big five factors from internal and external structure. *The Spanish Journal of Psychology*, *10*(1), 68–83. https://doi.org/10.1017/S1138741600006326

Bronfenbrenner, U. (1979). *The ecology of human development*. Harvard University Press.

Chia, N. (2014). *Student mapping of Singaporean teachers' social-emotional skills*. Massey University, Albany, New Zealand.

Ciucci, E., Baroncelli, A., & Toselli, M. (2015). Meta-emotion philosophy in early childhood teachers: Psychometric properties of the Crèche Educator Emotional Styles Questionnaire. *Early Childhood Research Quarterly*, *33*, 1–11. https://doi.org/10.1016/j.ecresq.2015.04.006

Eccles, J. S., & Roeser, R. W. (2011). Schools as developmental contexts during adolescence. *Journal of Research on Adolescence*, *21*(1), 225–241. https://doi.org/10.1111/j.1532-7795.2010.00725.x

Ferguson, R. F., & Danielson, C. (2014). How framework for teaching and Tripod 7Cs evidence distinguish key components of effective teaching. In T. J. Kane, K. A. Kerr, & R. C. Pianta (Eds.), *Designing Teacher Evaluation Systems: New Guidance from the Measures of Effective Teaching Project* (pp. 98–133). John Wiley & Sons, Inc. https://doi.org/10.1093/acprof

Fraser, B. J., McRobbie, C., & Fisher, D. L. (1996). Development, validation and use of personal and class forms of a new classroom environment instrument. In *Proceedings Western Australian Institute for educational research forum 1996.* http://www.waier.org.au/forums/1996/fraser.html

Fraser, B. J., & Walberg, H. J. (2005). Research on teacher-student relationships and learning environments: Context, retrospect and prospect. *International Journal of*

Educational Research, 43(1), 103–109. https://doi.org/10.1016/j.ijer.2006.03.001

Garner, P. W. (2010). Emotional competence and its influences on teaching and learning. *Educational Psychology Review*, *22*(3), 297–321. https://doi.org/10.1007/s10648-010-9129-4

Gottman, J. M., Katz, L. F., & Hooven, C. (1996). Parental meta-emotion philosophy and the emotional life of families: Theoretical models and preliminary data. *Journal of Family Psychology*, *10*(3), 243–268. https://doi.org/10.1037/0893-3200.10.3.243

Han, S. (2016). *South-Korean teachers' social-emotional practices and their association with student connectedness*. Massey University, New Zealand.

Hargreaves, A. (1998). The emotional practice of teaching. *Teaching and Teacher Education, 14*(8), 835–854. https://doi.org/10.1016/S0742-051X(98)00025-0

Harvey, S. T., Bimler, D., Evans, I. M., Kirkland, J., & Pechtel, P. (2012). Mapping the classroom emotional environment. *Teaching and Teacher Education, 28*(4), 628–640. https://doi.org/10.1016/j.tate.2012.01.005

Harvey, S. T., & Evans, I. M. (2003). Understanding the emotional environment of the classroom. In D. Fraser & R. Openshaw (Eds.), *Informing Our Practice* (pp. 182–195). Palmerston North, New Zealand: Kanuka Grove Press.

Jaworska, N., & Chupetlovska-Anastasova, A. (2009). A review of multidimensional scaling (MDS) and its utility in various psychological domains. *Tutorials in Quantitative Methods for Psychology*, *5*(1), 1–10.

Kirkland, J., Bimler, D., Drawneek, A., McKim, M., & Schölmerich, A. (2004). An alternative approach for the analyses and interpretation of attachment sort items. *Early Child Development and Care, 174*(7–8), 701–719. https://doi.org/10.1080/0300443042000187185

Knoblauch, D., & Woolfolk Hoy, A. (2008). "Maybe I can teach those kids." The influence of contextual factors on student teachers' efficacy beliefs. *Teaching and Teacher Education, 24*(1), 166–179. https://doi.org/10.1016/j.tate.2007.05.005

McLaughlin, C. (2008). Emotional well-being and its relationship to schools and classrooms: A critical reflection. *British Journal of Guidance & Counseling*, *36*(4), 353–366. https://doi.org/10.1080/03069880802364486

Meece, J. L., Anderman, E. M., & Anderman, L. H. (2006). Classroom goal structure, student motivation, and academic achievement. *Annual Review of Psychology*, *57*, 487–503. https://doi.org/10.1146/annurev.psych.56.091103.070258

Midgley, C. (2002). *Goals, goal structures, and patterns of adaptive learning*. Mahwah, New Jersey: Erlbaum.

Rowe, E. W., Kim, S., Baker, J. A., Kamphaus, R. W., & Horne, A. M. (2010). Student personal perception of classroom climate: Exploratory and confirmatory factor analyses. *Educational and Psychological Measurement, 70*(5), 858–879. https://doi.org/10.1177/0013164410378085

Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, Cognition, and Personality*, *9*(3), 185–211. https://doi.org/10.1016/S0962-1849(05)80058-7

Schonert-Reichl, K. A., Kitil, M. J., & Hanson-Peterson, J. (2017). *Building a foundation for great teaching: A report prepared for CASEL*. Retrieved from http://www.casel.org/wp-content/uploads/2017/02/SEL-TEd-Full-Report-for-CASEL-2017-02-14-R1.pdf

Triandis, H. C. (2018). *Individualism and collectivism* (1st ed.). Routledge.

Wentzel, K. R., & Wigfield, A. (2007). Motivational interventions that work: Themes and remaining issues. *Educational Psychologist*, *42*(4), 261–271. https://doi.org/10.1080/00461520701621103

Zimmer-Gembeck, M. J., Chipuer, H. M., Hanisch, M., Creed, P. A., & McGregor, L. (2006). Relationships at school and stage-environment fit as resources for adolescent engagement and achievement. *Journal of Adolescence*, *29*(6), 911–933. https://doi.org/10.1016/j.adolescence.2006.04.008

Chapter Eight: Study Two Manuscript

Students' perceptions of teachers' social-emotional practices: Investigation of relationships with students' strengths and difficulties

Education shapes not only students' academic learning, but their social-emotional development. In adolescence, a period fraught with emotional stressors, teachers' roles in providing social and emotional support may become increasingly important for students' psychological health. Teachers cannot be expected to achieve this, however, without adequate knowledge of the skills and practices which they can employ to best support their students. This research contributes to the development of an evidence base for teachers' use of social-emotional practices to best support student development. Survey responses from 358 students were analysed to investigate relationships between students' perceptions of teachers' use of social-emotional practices, students' connectedness and social, emotional and behavioural strengths and difficulties. Findings indicated teachers' use of social-emotional practices may have a positive influence on students' connectedness to teachers and, in turn, on students' functioning. Limitations to these positive relationships emphasise the importance of a holistic approach to promoting wellbeing in adolescence.

Keywords: teaching; social-emotional learning; emotion; adolescence

Introduction

The role of a teacher in influencing student development is increasingly being acknowledged as encompassing not only academic, but also social-emotional development (Eccles & Roeser, 2011). The school has long been recognised as a context for child development (Bronfenbrenner, 1979), and interest in students' social-emotional development has grown substantially within educational research over recent decades. Concepts such as school

connectedness and teacher-student relationships have been investigated to uncover the teacher-student factors that contribute to positive student outcomes (Eccles & Roeser, 2011).

School connectedness, or the feeling of belonging students have to school and their teachers, has been linked to numerous positive academic, social, and emotional outcomes in adolescent students (Bond et al., 2007; Cederbaum et al., 2017; Foster et al., 2017; Lester et al., 2013; Markham et al., 2010; Oldfield et al., 2016; Shochet et al., 2006; Sulkowski & Simmons, 2018). Specifically, in adolescent samples, positive school connectedness has been linked to increased likelihood of school completion (Bond et al., 2007), reductions in risky sexual behaviours (Cederbaum et al., 2017; Markham et al., 2010), increased prosocial behaviour (Oldfield et al., 2016), less vulnerability to psychological distress as a result of peer victimisation (Sulkowski & Simmons, 2018), and reduced likelihood of future depressive and anxiety symptoms (Lester et al., 2013; Shochet et al., 2006).

Furthermore, school connectedness has been found to serve a protective function for at-risk adolescents. In a sample of "at-risk" youth consisting of students who had been perpetrators and/or victims of peer bullying, and students who lived in under-resourced communities with high levels of poverty, connectedness to school was related to decreased likelihood of students experiencing depressive symptoms, suicidal ideation, social anxiety, and risky sexual behaviours. In addition, connectedness was associated with higher self-esteem (Foster et al., 2017).

Positive teacher-student relationships have also been associated with positive student outcomes including emotional wellbeing (García-Moya et al., 2015), behavioural functioning (Obsuth et al., 2017), student engagement and academic achievement (Gelisli et al., 2017; Klem & Connell, 2004).

In addition to emerging research regarding the ways teacher-student relationships and connectedness can positively benefit students' social-emotional development, there has been

increasing emphasis within the education sector on efforts to explicitly incorporate students' social-emotional development in learning. Social and emotional learning (SEL) has become widespread in school curricula; SEL is defined as "the processes through which individuals acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage their emotions, feel and show empathy for others, establish and achieve positive goals, develop and maintain positive relationships, and make responsible decisions." (Schonert-Reichl et al., 2017, p. 5). SEL is increasingly being incorporated into school programmes as a component of curriculum; however, this is mostly confined within pre-secondary education (Hamedani & Darling-Hammond, 2015). Research to date has found SEL programmes tend to be more efficacious with students of younger age groups than adolescents (Tan et al., 2017; Yeager, 2017; Yeager et al., 2018).

Despite these efforts, adolescents experience increased vulnerability to psychological distress. It is important to consider, therefore, what may be lacking in the current approach to supporting adolescents' social-emotional development. In addressing the reduced efficacy of SEL programmes in adolescence, Yeager et. al. (2018) pointed to a lack of recognition of the developmental stage needs of adolescents. Others have emphasised the importance of increasing teachers' knowledge of child and adolescent development, which helps teachers to enhance their teaching for the benefit of students' social, emotional, and academic outcomes (Schonert-Reichl et al., 2017). Adolescents are highly sensitive, for example, to their social contexts and seek social acceptance, respect, and autonomy. Lack of recognition of these social needs in application of traditional lesson-based SEL programmes has been proposed as one barrier to their effectiveness (Yeager, 2017).

On this basis, it is important that teacher education equip teachers with the necessary skills and knowledge for recognising students' social-emotional needs, and for tailoring their practice in an age-appropriate manner. Social-emotional aspects of teaching have traditionally

been under-recognised in initial teacher education; commentary emerging from within the education sector has recognised a gap between theory and practice. An American study examining teacher education courses found that very few addressed any of the five identified components of students' social-emotional learning. Accordingly, teachers reported feeling underprepared in their first years of teaching (Schonert-Reichl et al., 2017). Implications of this affect both students and teachers, with higher stress and burnout for teachers, and poorer teacher-competence in incorporating beneficial practices in their classroom teaching (Schonert-Reichl et al., 2017).

Teachers' feelings of unpreparedness are unsurprising, given students' needs are often complex and may be affected by wide-ranging social and contextual factors such as poverty, family relationship problems, domestic violence and abuse, peer relationship problems and bullying. This list is not exhaustive, yet any one of these factors may influence a student's behaviour in the classroom and require the teacher to adapt their practices. Managing students' social, emotional and behavioural needs and supporting their healthy development therefore pose numerous challenges for teachers in a profession where training does not meet the needs for teachers to understand and manage social factors contributing to their students' behaviours.

One avenue for improving students' social-emotional development that has not been widely investigated is the everyday social-emotional practices teachers may employ. Rather than requiring a separate area of curricula (such as SEL), assisting teachers to tailor their everyday practices to meet students' needs may be an important precursor to addressing current difficulties with supporting students' social-emotional development.

A prerequisite to incorporating this into teacher education, however, is to understand how social-emotional practices affect their students. Investigations of the specific day-to-day practices teachers may engage to contribute to school connectedness and positive student functioning remain scarce in literature. Emerging research has indicated that teachers' use of

positive social-emotional practices (specific practices that have an emotional impact on students), may significantly affect the student-teacher relationship and students' connectedness to school. In a sample of 14-year-old female South Korean students, Han (2016) found that students' endorsement of teachers' use of social-emotional practices, particularly relationship-building practices, were positively related to students' self-reported teacher- and school-connectedness. In another study, students' perceptions of teachers' active listening were associated with indicators of positive relationships (Thompson, 2018). Such studies, however, have typically been overshadowed by research on school connectedness and climate that do not investigate specific teacher behaviours, and by efforts to incorporate SEL which have not proven successful for adolescents.

The current study aims to contribute to the development of an evidence-base for social-emotional teaching practice with adolescents. Such an evidence-base will provide a foundation to improve the incorporation of social and emotional competence in teacher education. In the long-term, it is hoped that the benefits of expanding current knowledge in this area will benefit both students and teachers by increasing teacher competence and reducing likelihood of stress, burnout, and job dissatisfaction.

Method

Sample

The sample consisted of secondary school students recruited via classrooms of teachers who had volunteered to be involved in the study. Nineteen teachers consented for their students to take part. Of these teachers, 13 were New Zealand European, one Māori, one New Zealand European/Māori, one New Zealand European/Latino, one New Zealand European/Canadian, one British, and one German. Five teachers were male and 14 female. Their ages ranged from 22-60+.

A total of 398 students responded to the survey. Two respondents named teachers who had not consented to being involved in the study, and a further 61 gave incomplete responses to a degree that impeded analysis. The resulting final data set consisted of 335 individual survey respondents. The respondents' ages ranged from 16-18 (M = 16.4 years). Gender was reported as female by 53.4% (N=179), male by 45.1% (N=151), and other by 1.5% (N=5) of participants. 80.9% (N=271) of participants were New Zealand European or New Zealander, 19.7% (N=66) Māori, 5.1% (N=17) Chinese, and 17.3 (N=60) other/mixed ethnicities. English was reported as the first language of 93.7% of survey respondents.

Demographic data of the final sample of teachers can be found in Table 1, below. The demographic data is comprised of the 335 students' responses across 19 teachers. The students' personal perceptions of teacher practices (and variations among them) were of interest in this study, rather than the behaviour of individual teachers, so responses were not aggregated or analysed at the level of teachers. Two respondents did not name their teachers, so age and ethnicity data were not obtained for the teachers on which these responses were based.

Table 1.

Teacher demographic data for final sample

	N	*%*
Gender		
Female	247	73.7
Male	88	26.3
Age		
20-24	66	22
25-29	8	2.4
30-34	48	16
35-39	15	5
40-44	29	9.7
45-49	33	11
50-54	42	14

55-59	41	13.7
60+	18	6
Ethnicity		
NZ European	233	69.6
Māori	14	4.2
NZ European/Māori	7	2.1
NZ European/Latino	24	7.2
NZ European/Canadian	15	4.5
British	22	6.6
German	18	5.4

Measures

The questionnaire consisted of the following four measures:

Classroom Emotional Environment Questionnaire-Student Version (CEEQ-S). Students' perceptions of teachers' practices were measured using the CEEQ-S. The CEEQ-S consists of 88 items describing social-emotional practices used by teachers and their emotional effects on students and asks respondents to indicate how frequently they observe each item occurring in their classroom experiences with their teacher. Responses are on a 1-5 scale (1=Never, 5=Always).

Items making up the CEEQ-S were derived from focus groups with New Zealand teachers and were validated for use within a New Zealand secondary school sample in previous research by the current authors (in review). In the validation study, students arranged items according to their similarity, and multidimensional scaling was used to produce a three-dimensional map. This map provided a visual representation of item relationships as perceived by students and revealed that the items could grouped into nine clusters with distinct meanings: *emotion coaching; positive boundaries and classroom management; develops strong classroom community; positive personal qualities of teacher; warm and caring teacher-student*

relationship; impact of teacher on sense of self; attentive to students' emotions and needs; pedagogical strategies to promote learning; and *teacher's own emotion regulation.*

Across the three-dimensional map structure, there were no obvious gaps in the spatial arrangement of items, suggesting the items provided good content coverage of the concepts. The map is a useful tool which may be used in the current study as a lens through which CEEQ-S data can be analysed, offering a working model of students' conceptual understandings of the CEEQ-S items and can thus be used to infer meaning from students perceptions of their teachers' practices.

Avoidance and Fusion Questionnaire for Youth-8 Item Version (AFQ-Y8). The AFQ-Y8 was used to measure psychological flexibility. The measure includes 8 items designed to measure psychological inflexibility and asks respondents to rate how true each item is as it applies to them on a 5-point scale ranging from 0 (Not at all True) to 4 (Completely True). The measure was reverse scored in the present study to gain a measure of psychological flexibility. The AFQ-Y8 is a widely used measure for this purpose and has demonstrated good reliability and validity in past research (Salazar et al., 2018). It has been recommended over the longer AFQ-Y for research with adolescents (Livheim et al., 2016).

School Connectedness Scale (SCS). The SCS is a 25-item questionnaire which was designed as a school connectedness scale for use with adolescents (Lohmeier & Lee, 2011). Two factors from the SCS (negative connectedness and connection to adults in school) were used to measure students' experiences of negative and positive connectedness within their school environment. The first factor, negative connectedness, is made up of 17 items, and the second, connection to adults in school, is made up of eight items. Students were asked to rate each item on a five-point scale ranging from one (Not at all True) to five (Completely True). Developers of the SCS reported high internal consistencies in both urban ($\alpha = .81$) and suburban ($\alpha = .93$) American high school populations. Factor loadings were strong for all seven factors making up

the total questionnaire. In the two factors used in this study, all items had factor loadings >.32 reported by the developers. Despite having not been used widely in research to date, the SCS demonstrated promising psychometric properties and offered more comprehensive measurement of school connectedness than other existing measures. Moreover, the strong factor loadings allowed for isolation of specific factors of interest to the present research.

Strengths and Difficulties Questionnaire (SDQ). The SDQ was used to measure students' social, emotional, and behavioural strengths and difficulties. The SDQ is made up of 25 items measuring five scales: emotional problems, conduct problems, hyperactivity/inattention, peer relationship problems and prosocial behaviours. A total difficulties score can also be derived from the sum of the first four scales (Goodman, 1997). Items were responded to on a 3-point scale ranging from 0 (Not at all True) to 2 (Certainly True). The SDQ has been used extensively in past studies and demonstrated good psychometric properties across many cultures (Goodman, 2001).

Procedure

Recruitment. Principals of local secondary schools were contacted with a request for their school's involvement in the study. In schools where permission was gained from principals, teachers of Year 12 and Year 13 classrooms were sent an invitation to allow their students to participate in the study. Informed consent was gained from those teachers who wished to have their students involved, and times were organised for the researcher to attend a class to administer the survey. All students in the class were offered the opportunity to complete the survey during class time.

Survey Administration. The researcher introduced the purpose of the research, outlined participants' rights and gave verbal instructions to students prior to giving access to the online survey. Instructions included emphasising the importance of giving honest and accurate answers while avoiding peer influence. Teachers were asked to be absent for the duration of

the survey, to encourage students to feel comfortable in giving honest answers related to their teacher's practices. All students were then given access to the survey via a URL written on their classroom whiteboard. Students were able to access the survey on any device including laptops, tablets, or smartphones. Use of electronic devices enabled students to maintain response privacy in the classroom and students were able to shift to more discrete positions around the classroom if they wished.

Total administration time of the survey was approximately 25-35 minutes. Students were told to continue with a quiet activity should they finish before others. Teachers were invited to re-enter the classroom and resume teaching once students had finished completing the questionnaire.

Data Analysis. Data were analysed using SPSS. MDS was performed to develop a map with the correlation between any two items' scores as the index of similarity. This map was compared against the conceptual map created by the authors (in review), with the intention of the conceptual map providing a lens for analysis of the current data. The MDS solution produced in this previous study using the same items found students' reports of item similarity produced nine distinct clusters of items. It was expected that a similar cluster structure would be found in the map produced in the current study. Visual inspection of the maps indicated there were some similarities in clustering of items. Canonical correlation between sets of coordinates was used to compare dimensions between the two maps. Canonical correlation does not require rotation of the MDS solution prior to analysis, so maximises the similarity of the maps' axes.

Subsequently, EFA was used to determine the number of factors emerging from CEEQ-S data. Owing to the use of EFA, there was no fixed number of factors expected to be extracted from the data. Once factors were extracted using SPSS, item loadings were examined to establish the apparent meaning underlying the factors.

Further analysis was conducted to examine how the factors extracted from CEEQ-S data related to teacher-student relationship and student outcome variables. Correlations were examined between all variables, and correlations of interest were subject to further analysis using simple linear regression.

Results and Discussion Part I: Interpretation of the CEEQ-S

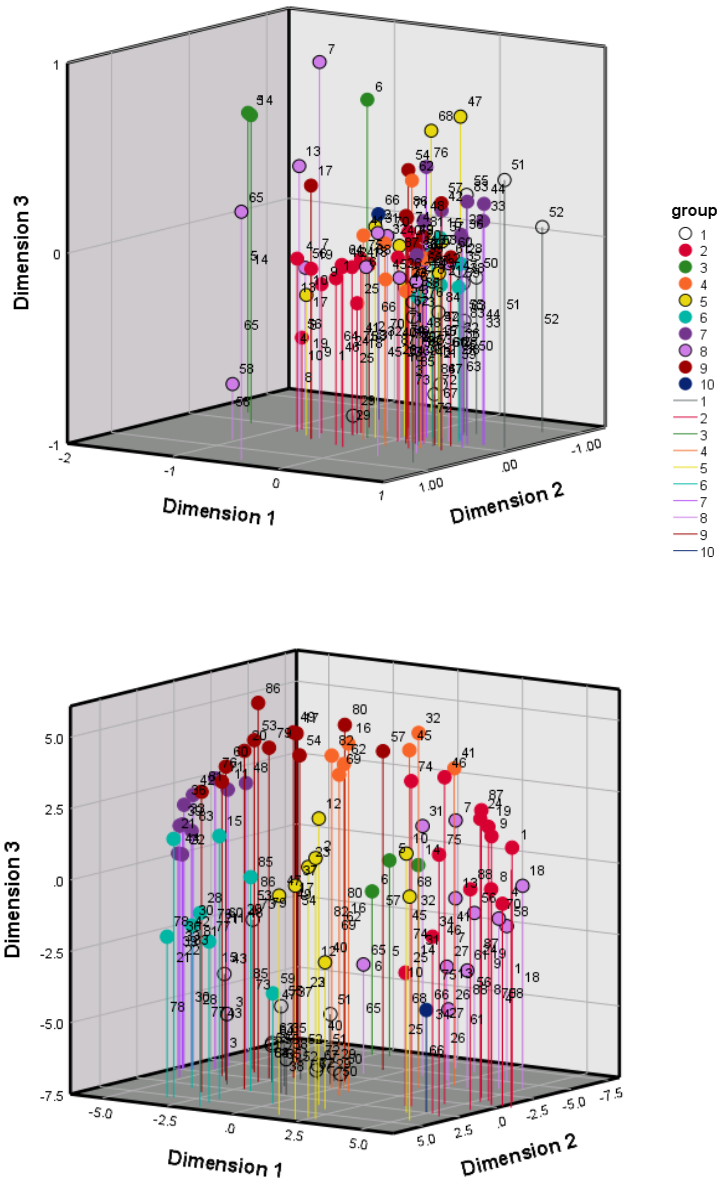
Part One focussed on interpretation of the CEEQ-S, using MDS to construct a map depicting the relationships between students' perceptions of teachers' practices, based on students' frequency ratings (items that were rated as frequently co-occurring across the sample would appear in clusters). This map was then compared to the conceptual model created by the authors (in review). Further analysis was then conducted using EFA.

Results

Multidimensional Scaling. Items were plotted using MDS, with students' frequency ratings as the index of similarity (such that the higher the correlation between two items, the closer they would appear in the similarity matrix). A three-dimensional solution was created, based on goodness-of-fit (stress values for 2D, 3D and 4D solutions were 0.194, 0.153 and 0.134, respectively). Though the fit continued to improve above 3D, a 3D solution was deemed adequate for the aim of examining cluster arrangements, and most practical for plotting and comparing with the 3D conceptual model. A scatterplot of the current study's 3D similarity matrix can be seen below, in Figure 1, with a scatterplot of the conceptual model for comparison. Items in both plots have been colour-coded to represent membership of the conceptual groups; see Figure 2 for details.

Figure 1.

Scatterplots depicting three-dimensional MDS solutions for CEEQ-S items using (a) current data, with the correlation between any two item responses as the index of similarity; and (b) students' ratings of items' conceptual similarity as the index of similarity. Points coloured to indicate group membership, with same numbering as in Figure 2.



Upon visual appraisal of the two scatterplots, clear clustering of items is observable in Figure 1(b) (the conceptual map). Conceptually related items also tend to appear in proximity to one another in Figure 1(a), but boundaries between clustering boundaries are less clear. There was

also differing relationships between clusters in the current study solution, and less spatial divergence of items.

According to canonical correlation, there were two recognisable dimensions shared between the current map and the model produced by the authors (in review), with no significant correlation in a third dimension *(R_c = .700, R_2 = .536, R_3 = .038).* R_c and R_2 were significant at p<.001.

Correlations of dimensions between the two maps are presented below, in Table 2. Each dimension of the current MDS solution was correlated with its counterpart from the conceptual model, the strongest correlation being between dimension one of the two solutions. There were also significant correlations between different dimensions across the two solutions, as detailed in the table below.

Table 2.

Inter-Map Dimension Correlations

	D1a	D2a	D3a
D1b	-.503**	.385**	-.027
D2b	.073	-.268*	.276**
D3b	-.208	-.219*	.340**

Note: D1a, D2a, D3a correspond to the three dimensions of the conceptual map (current authors, in review). D1b, D2b and D3b correspond to the dimensions of the map produced in the current study.

** p<.05; **p<.01*

Exploratory Factor Analysis. Two unrotated factors were extracted, accounting for 52.1% of the total variance. The first factor was dominant, accounting for 46.4%, while the second accounted for 5.7%. Item loadings are shown below, in Figure 2. Additional components extracted from factor analysis accounted for less than 3% of variance each and did not appear to represent meaningful factors.

Bartlett factor scores were calculated for each of the two factors for use in subsequent analysis. Bartlett factor analysis provides scores for each individual on a factor based on weighted scoring of items, according to their loading on the factor (Distefano et al., 2009).

Analysis of item loadings within factors was facilitated by comparison with item clusters from the conceptual map, for which interpretation of clusters had been conducted in collaboration with experts from education and psychology fields. This analysis revealed unique and meaningful interpretations for the two factors, as follows.

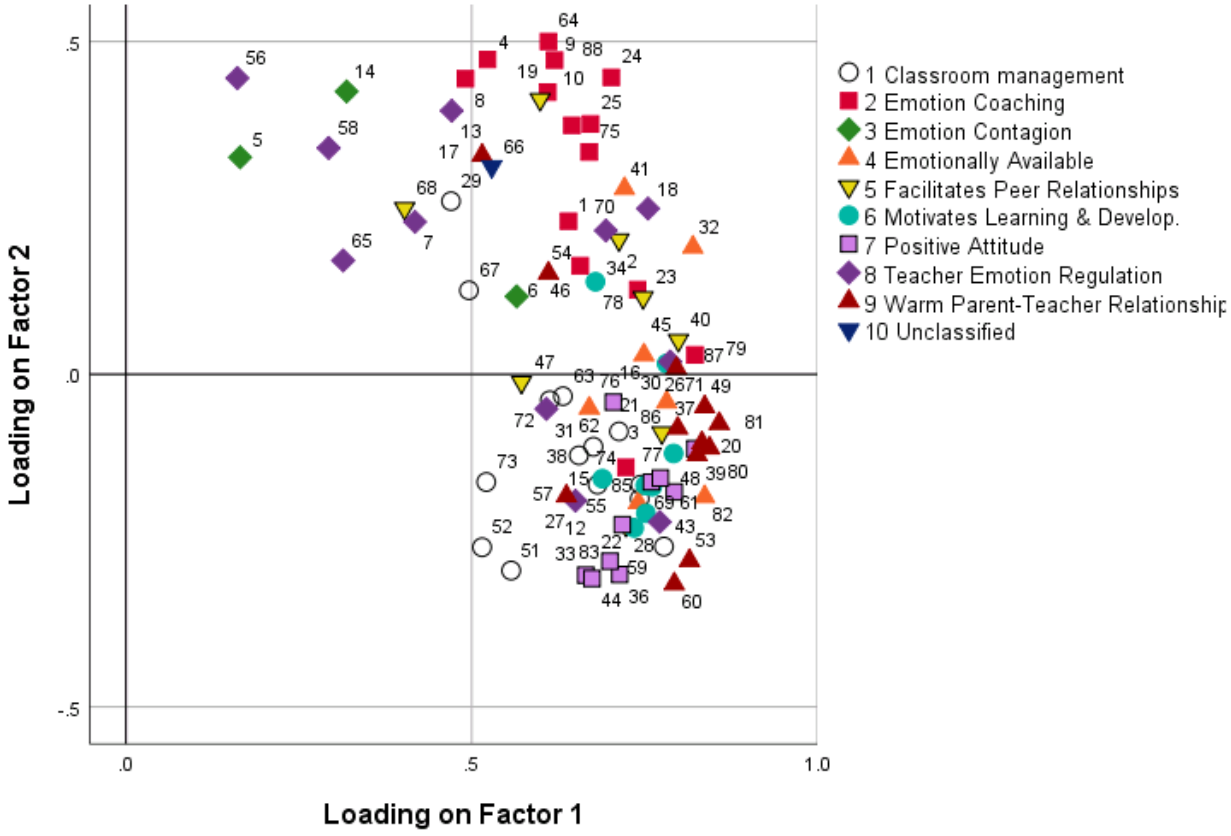
Factor 1. All items loaded positively on factor one. Bartlett factor scores for this factor were highly correlated with a CEEQS total score, derived by summing item scores (r=.996, p<.001). Within this factor, of the ten items with the highest positive loadings (above .800), six were from the *warm and caring teacher-student relationship* cluster, two were from the *attentive to students' emotions and needs* cluster, and one each from the *emotion coaching* and *positive personal qualities of the teacher* clusters. Factor One may therefore represent an ideal teacher in terms of how they use social-emotional practices to build relationships with their students, with items arranged according to their relevance to this relationship-building.

Factor 2. Of nine items that had factor loadings above .4 on Factor two, seven were items that appeared in the *emotion coaching* cluster in the conceptual map. The remaining two were from the *teacher's own emotion regulation* and *impact of teacher on sense of self* clusters. The *teacher's own emotion regulation* item which loaded onto Factor 2 *(acts differently to how they feel)* could also be interpreted as having an emotion coaching element as it may indicate modelling of emotion regulation. Items with the strongest negative loadings were related to the teacher's positive attitude, classroom management, boundaries, and use of pedagogical strategies to promote learning. Overall, item loadings decreased in accordance with their decreasing emphasis on emotions, ranging from explicit emotion coaching practices through to more learning- and relationship-focussed practices that did not mention emotions directly.

Factor two therefore represented teachers' use of emotion-coaching practices and attention to individual students' emotions.

Figure 2.

Scatter plot depicting factor loadings of each item for Factor 1 (GSEP) and Factor 2 (EC)



Reliability. Internal consistency of CEEQ-S items was very high (α=*.98*).

Discussion

The CEEQ-S data gained from students in the current research highlighted both similarities and differences between students' conceptual understanding of teachers' social-emotional practices and their perceptual experience of these practices in the classroom. The earlier conceptual model was reflected in the current study's MDS solution in that items previously identified as conceptually similar appeared in close proximity to each other. This suggests students recognise practices frequently co-occurring in a pattern that aligns with their conceptual distinction of SE practices.

There were differences between the earlier model and current map, however, in that there were not clear cluster boundaries, meaning the distinction between groups of items was less obvious. Accordingly, results of factor analysis found one dominant and one smaller factor. Consequently, the data from the current study did not enable distinction of underlying aspects of teachers' practices. This finding suggests that the conceptual categories students' understood within the SE practices construct were not reflected in the variation and co-variation of these practices. Nonetheless, two meaningful factors were extracted from students' responses in the current study.

Factor One was a general representation of the practices making up the CEEQ-S. Therefore, despite the lack of distinction of underlying aspects, Factor One can be understood as encompassing the nine distinct item clusters found in prior research: *emotion coaching; positive boundaries and classroom management; develops strong classroom community; positive personal qualities of teacher; warm and caring teacher-student relationship; impact of teacher on sense of self; attentive to students' emotions and needs; pedagogical strategies to promote learning;* and *teacher's own emotion regulation.*

Factor Two, which was related to teachers' use of emotion coaching, demonstrated the value of using the conceptual map to facilitate data analysis. Item loadings on the second factor had clear parallels with the emotion coaching cluster observed within the conceptual map (Edwards et al., in review). This enabled the researcher to derive meaning from this factor based on students' ratings of item similarity and expert opinions underlying themes informing spatial groupings of these items.

Results and Discussion Part II: Relationships between students' perceptions of teachers' practices and students' strengths and difficulties.

Results

Descriptive statistics for each variable are presented below, in Table 3.

Table 3.

Descriptive statistics (M, SD) for each variable

	M	*SD*
Negative Connectedness	35.99	11.68
Connection to Adults in School	27.68	6.85
Psychological Flexibility	19.60	7.30
Emotional Problems	4.36	2.51
Conduct Problems	1.83	1.79
Hyperactivity/Inattention	4.59	2.23
Peer Relationship Problems	2.35	1.89
Prosocial Behaviour	6.74	2.11
Total Difficulties	13.11	5.74

Bartlett Factors scores for students' perceptions of teachers' practices were normalised to *M=0.00, SD =1.00*. The mean CEEQ-S total score, however, which correlated strongly with the GSEP factor score *(r=.996, p<.001)*, was 327.74 (SD = 61.18). This compares to a minimum possible total score of 88, and maximum of 440.

Correlations between all teacher- and student- variables are presented below, in Table 4. An outline of relationships of interest follows.

Connectedness. Correlations between connectedness variables and perceived teachers' practices differed between the two CEEQ-S variables. The strongest correlations were observed between students' perceptions of teachers' general use of SE practices (GSEP; Factor 1) and connectedness variables. GSEP had a moderate positive correlation with students' positive connectedness (*r=.458, p<.01*), and a weak negative correlation with students' negative connectedness (*r=-.287, p<.01*). Weaker significant correlations were observed in the opposite directions for teachers' use of emotion coaching (EC; Factor 2). EC was correlated negatively with positive connectedness (*r=-.136, p<.05*) and positively with negative

connectedness (*r=.196, p<.01*). Scatter plots depicting these relationships can be seen in Figures 3 and 4.

Table 4.

Summary of correlations for CEEQS factors and all student variables

	1	2	3	4	5	6	7	8	9	10	11
1. GSEP	-	.000	-.287**	.458**	-.070	-.026	-.151**	-.106	-.122*	.288**	-.130*
2. EC	.000	-	.196**	-.136*	-.176**	.152**	.216**	.080	.162**	-.046	.214**
3. NC	-.287**	.196**	-	-.425**	-.353**	.346**	.569**	.369**	.351**	-.213**	.584**
4. C	.458**	-.136*	-.425*	-	.028	-.123*	-.251**	-.225**	-.216**	.310**	-.290**
5. PF	-.070	-.176**	-.353**	.028	-	-.594**	-.315**	-.264**	-.268**	-.095	-.545**
6. EP	-.026	.152**	.346**	-.123*	-.594**	-	.315**	.220**	.374**	.137*	.741**
7. CP	-.151**	.216**	.569**	-.251**	-.315**	.315**	-	.437**	.330**	-.207**	.720**
8. H/I	-.106	.080	.369**	-.225**	-.264**	.220**	.437**	-	.077	-.127*	.644**
9. PRP	-.122*	.162**	.351**	-.216**	-.268**	.374**	.330**	.077	-	-.181**	.623**
10. PB	.288**	-.046	-.213**	.310**	-.095	.137*	-.207**	-.127*	-.181**	-	-.114*
11. TD	-.130*	.214**	.584**	-.290**	-.545**	.741**	.720**	.644*	.623**	-.114*	-

Note. The top two rows (dark grey shading) pertain to CEEQ-S variables, the following two (mid grey shading) pertain to connectedness variables, and the final seven (light grey shading) pertain to students' strengths and difficulties. GSEP=General Social-Emotional Practices (Factor 1); EC=Emotion Coaching (Factor 2); NC=Negative Connectedness; C=Connection to adults at school; PF=Psychological Flexibility; EP=Emotional Problems; CP=Conduct Problems; H/I=Hyperactivity/Inattention; PRP=Peer Relationship Problems; PB=Prosocial Behaviour; TD=Total Difficulties.

**p<.05; **p<.01*

Figure 3.

Scatter plot with fit line of students' connection to adults in school by teachers' use of general social-emotional practices (Factor 1), and emotion coaching (Factor 2)

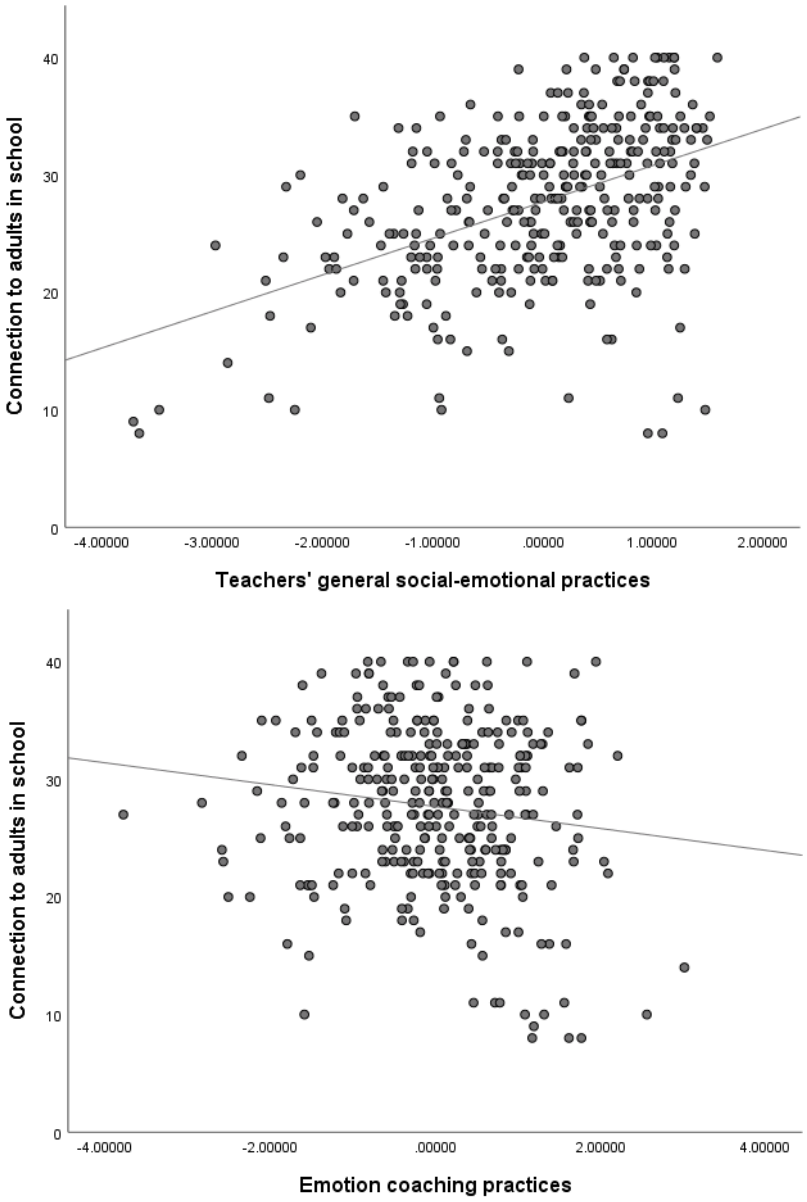
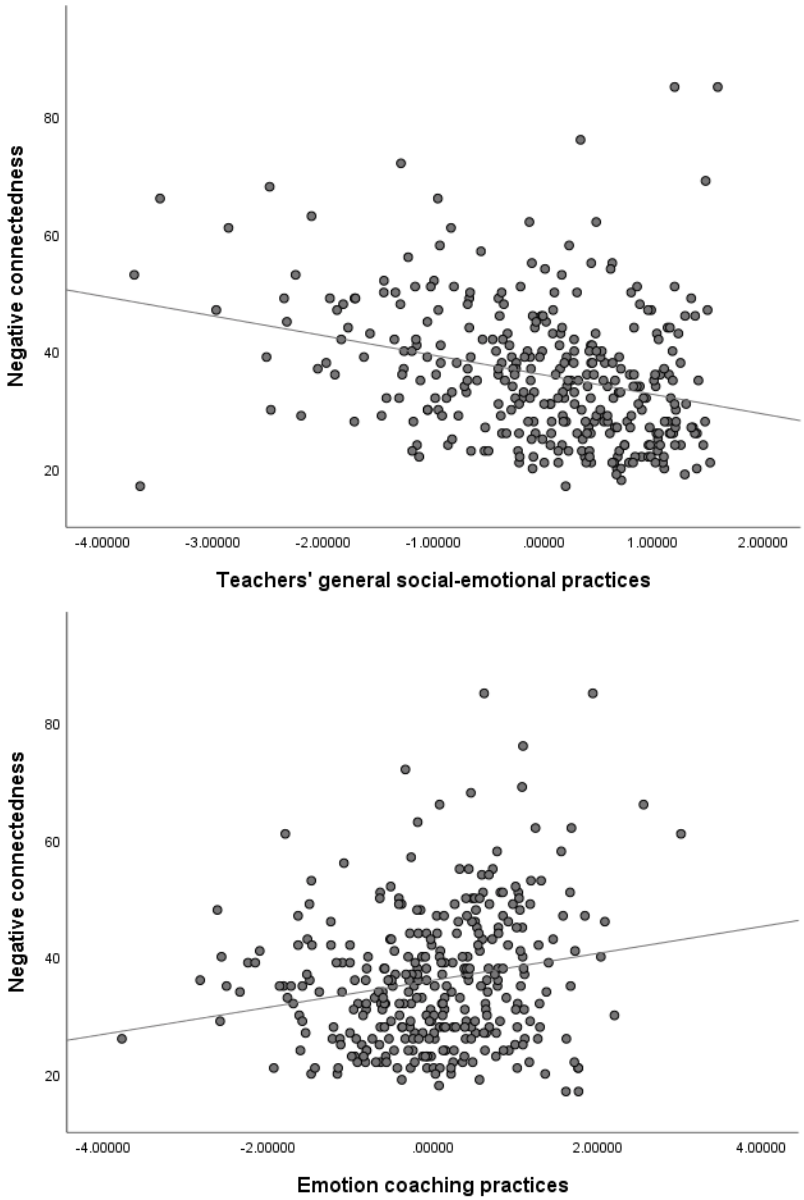


Figure 4.

Scatter plot with fit line of students' negative connectedness by teachers' use of general social-emotional practices (Factor 1) and emotion coaching (Factor 2)



Weak to moderate positive correlations were observed between negative connectedness and all indicators of difficulty in students' emotional, social, and behavioural functioning (emotional problems, conduct problems, hyperactivity/inattention, peer relationship problems, and total difficulties), while weak negative correlations were observed with indicators of positive functioning (psychological flexibility and prosocial behaviour). Conversely, connection to

teachers had weak negative correlations with all indicators of difficulty and a weak positive correlated with prosocial behaviour. Psychological flexibility did not correlate significantly with connection to adults in school. See Table 3 for correlation coefficients.

Students' Strengths and Difficulties.

Emotional Functioning. Neither students' psychological flexibility nor emotional problems were significantly correlated with GSEP. Both were correlated with EC; psychological flexibility had a very weak negative correlation (*r=-.176, p<.01*), while emotional problems showed a very weak positive correlation (*r=.152, p<.01*).

Students' psychological flexibility had a weak negative correlation with conduct problems *(r=-.315, p<.01),* hyperactivity/inattention *(r=-.264, p<.01),* and peer relationship problems *(r=-.268, p<.01),* and moderate negative correlations with students' emotional problems *(r=-.594, p<.01)* and total difficulties *(r=-.545, p<.01).*

Behavioural Functioning. Conduct problems had a very weak negative correlation with GSEP (*r=-.151, p<.01*), and a weak positive correlation with EC (*r=.216, p<.01*). Hyperactivity/Inattention showed no significant correlation with either teachers' practice variable.

Social Functioning. Students' peer relationship problems had a very weak negative correlation with GSEP (*r=-.122, p<.05*), and a very weak positive correlation with EC (*p=.162, p<.01*). Prosocial behaviour had a weak positive correlation with GSEP (*r=.288, p<.01*), showing no significant correlation with EC.

Total Difficulties. Students' total difficulties had a very weak negative correlation with GSEP (*r=.130, p<.05*), and a weak positive correlation with EC (*r=.214, p<.01*).

Discussion

The primary aim of this study was to investigate how students' perceptions of teachers' practices related to student variables, including psychological flexibility, connectedness, and

social, emotional, and behavioural strengths and difficulties. Psychological flexibility was negatively correlated with students' social, emotional and behavioural difficulties, supporting its use as an indicator of social-emotional wellbeing in adolescents.

With consideration of the mean total CEEQ-S score (324.74, compared to a minimum possible total score of 88 and a maximum of 440), students' CEEQ-S responses indicated they frequently perceive teachers using social-emotional practices. This is an important finding which should be of reassurance to teachers, considering past research findings that teachers describe feeling unprepared and unskilled in the realm of supporting students' social-emotional needs (Schonert-Reichl et al., 2017). This finding suggests teachers involved in this study have existing strengths in conveying positive social-emotional practices in their classroom teaching.

In regard to the relationship between perceived teachers' practices and connectedness, perceptions of teachers' general use of SE practices were positively associated with connectedness and inversely related to negative connectedness. Overall, therefore, students who perceived their teachers as more frequently using general social-emotional practices were more likely to experience positive connection to teachers and less likely to experience negative connectedness.

The opposite associations were observed in relation to teachers' use of emotion coaching practices. That is, emotion coaching was positively associated with negative connectedness and negatively associated with positive connectedness. Two possible explanations have been surmised for this. First, teachers' use of emotion coaching practices may have a negative effect on students' connectedness. Students at this developmental stage may prefer teachers to focus on academic aspects of learning, or balance academic and emotion-focussed practices. The correlations seen between connectedness and emotion coaching may reflect students disliking teachers devoting too much time to regulating and managing emotions at the expense of academic learning. The final years of secondary school

are often associated with high academic pressure for students with numerous exams and the influence academic achievement may have on one's future in terms of career prospects and university entrance. It would be unsurprising, therefore, for students to place high value on teachers providing quality academic instruction and support.

When considering the developmental stage of adolescents in context, it is also plausible that they may be averse to teachers using emotion-coaching practices due to the social implications. Developing identity and social relationships are key goals at this stage of development. One recent study found that students' experiences of peer victimisation are positively associated with students' perceptions of teacher unfairness (Gini et al., 2018). Considering this, our findings make particular sense when considered contextually. In an individualistic culture such as New Zealand's (and in fact most Western cultures), independence is socially valued. Many of the emotion coaching practices measured within the CEEQ-S relate to teacher-student interactions that students may perceive as likely to lead to social judgment and criticism. It would be unsurprising, for example, for adolescents to consider as socially undesirable, one's teacher actively helping one express emotion verbally. Desire for social acceptance and positive social regard may therefore also contribute to students' less positive feelings toward teachers who frequently engage in emotion coaching practices.

Similarly, in considering how emotion coaching practices may be carried out, it is sensible that students' relationships with their teachers may be negatively impacted by a more patronising or manipulative style of emotion coaching. In the absence of warmth and empathy, some practices within the emotion coaching cluster, such as "shows me how I took part in an emotional situation" or "teaches us how to express our emotions with words" may be perceived as negative, or even punitive by some adolescents.

Alternatively, the correlations observed may reflect teachers' use of emotion coaching and emotion regulation practices influenced by students' needs. Students who reported negative connectedness were more likely than those who reported positive connectedness to experience emotional, social, and behavioural difficulties, and thus may garner more support from their teachers. This explanation was supported by correlations between teachers' use of emotion coaching practices and students' emotional, behavioural, and social functioning. Psychological flexibility, an indicator of positive psychological functioning, was negatively correlated with emotion coaching practices, while emotional difficulties were positively correlated. This suggests that teachers use such practices more frequently with students who experience greater emotional problems and difficulty regulating their emotions with psychological flexibly. In addition, conduct problems, hyperactivity/inattention, peer relationship problems, and total difficulties were all positively associated with teachers' use of emotion coaching practices, suggesting teachers are more likely to use these practices in interaction with students who exhibit difficulties across all of the emotional, behavioural, and social domains of functioning.

In investigating the relationships between student-perceived teachers' practices and students' psychological flexibility, strengths and difficulties, students' perceptions of teachers' general use of SE practices werenegatively associated with conduct problems, peer relationship problems, and total difficulties, and positively associated with prosocial behaviour. No relationship was observed with psychological flexibility, emotional difficulties, or hyperactivity/inattention. These findings support the notion that teachers who are perceived to use positive SE practices may have positive influences on their students' functioning; however, for more conclusive evidence, further research is required to examine how this relationship may change over time. That is, based on cross-sectional findings, the direction of influence cannot be determined, and it is equally plausible that students' pre-existing social-emotional

strengths and difficulties may influence the degree of social-emotional attention garnered by teachers.

The lack of correlations between teachers' general use of SE practices and emotional difficulties and psychological flexibility suggests there may be limitations to the positive benefits of teachers' social-emotional practices, particularly in the domain of students' emotional functioning. Theoretical understandings of child development in context offer insight into this finding. The school context is one of many social contextual factors that interact and influence development according to Bronfenbrenner's (1979) ecological theory. Families, peers, neighbours, and community groups in which an individual interacts are all components of the mesosystem that directly influence child development. Adolescents are particularly sensitive to peer influences and may be subject to any number of stressors in their lives within- and outside of school that may moderate the effect of their teacher's practices. Existing research that emphasises the various influences on adolescents' sense of belongingness in school. Uslu and Gizir (2017) found that while the teacher-student relationship was the most significant predictor of adolescents' belongingness to school, peer relationships and family involvement both in school and at home also all had significant relationships with students' belongingness.

Students' perceptions of teachers' practices may also be influenced by their representations of the teacher-student relationship. Grounded in attachment theory, the construct of representations describes the effect that a students' feelings and beliefs about a relationship may have on shaping their behaviour and perceptions of behaviour within that relationship (Liu et al., 2018; Ryan et al., 1994). Whereas the current study investigated perceptions of specific behaviour, representations are general and more over-arching; similar to 'working models' described in attachment theory to describe the mental model of relationships a person applies to make sense of the events that occur within that relationship

(Ryan et al., 1994). If a students' representation of teachers is grounded in a primary function of academic teaching and behaviour management, therefore, they are likely to perceive their teachers' practices through this model, and see these goals as the function of the teachers' practices. As another example, students who hold representations of teachers as unsupportive and uncaring may not perceive supportive practices in the ways they were intended by the teacher, but rather see them as patronising. The effect of representations on students' perceptions depends on the nature of the representation, but these examples demonstrate the bidirectional relationship of the teacher-student relationship, and highlight why students' perceptions of teachers' practices cannot be fully understood in absence of additional contextual information.

While we did not find support for a relationship between teachers' general use of social-emotional practices and students' psychological flexibility, our findings did align with past research demonstrating that teacher-student relationships are associated with positive student functioning. Negative connectedness was positively associated with, and positive connectedness negatively associated with, all indicators of student difficulty (conduct problems, peer relationship problems, emotional problems, hyperactivity/inattention, and total difficulties). In terms of positive indicators of functioning, negative connectedness was inversely related to both prosocial behaviour and psychological flexibility, while positive connectedness was associated with prosocial behaviour but not psychological flexibility. Based on these results, it appears that the absence of a negative teacher-student relationship may be more predictive of psychological flexibility than presence of a positive relationship.

Moreover, our data showed a relationship between frequent use of general social-emotional practices by teachers and students' positive connectedness in school. In turn, connectedness was associated with more positive indicators of student functioning. The weaker direct associations between students' perceptions of teachers' practices and student functioning

suggests that school connectedness may be a mediating variable between perceived teachers' practices and student variables. In addition, it is likely that other factors, such as difficulties students experience in other life contexts mediate this relationship. Further research is necessary to investigate this suggestion.

Limitations and Future Directions

Given the cross-sectional design of the current study, it would be useful to replicate this research at other developmental stages, and with a longitudinal design, to determine how the relationships between perceived teachers' practices and students' strengths and difficulties may differ according to developmental stage. Moreover, a longitudinal design would allow for more specific conclusions to be drawn regarding the direction of influence; that is, whether perceived teachers' practices influence students' strengths and difficulties, or if it is bi-directional and interactional.

The current study investigated only dyadic teacher-student relationships (the relationship between one teacher and one student). In high school contexts, where students often see multiple teachers each day, dyadic teacher-student relationships are only one component of the larger global system (Liu et al., 2018). This point limited the ability to make conclusions regarding the wider factors that may influence a students' development within the school system.

Future research may also work to further validate the CEEQ-S. The very high internal consistency may indicate a review of the items may be beneficial. Previous research (current authors, in review) investigated students' conceptual understandings of the 88 items based on similarity. The resulting map suggested there were nine clear clusters of items that were found to represent distinct areas of teachers' social-emotional practices. In the current study, in which data were based on students' perceptual experiences in the classroom rather than their more abstract conceptual understandings, less distinction was found between the practices.

Moreover, factor analysis results identified only two factors, one of which was dominant and represented a general social-emotional practices score with all items showing high loadings. While this may be an accurate representation of students' experiences at this age level, where the focus on social-emotional aspects of learning may be decreasing, it would be useful to investigate this further.

Qualitative research may be valuable for investigating the practices and qualities that students at this age value in a teacher, to gain more understanding of the negative correlation between connectedness and emotion coaching. If, as surmised, this relationship was influenced by students' adverse reactions to emotion-coaching practices, it would be useful to gain qualitative data to help understand how teachers can best balance necessary academic and social-emotional demands to build a positive teacher-student relationship. Alternatively, qualitative research may reveal that students do in fact value their teachers' efforts to engage in emotion coaching but have specific preferences for how this is carried out in a way that respects their independence and does not impact negatively on their social relationships.

Furthermore, students' qualitative data gained is likely to provide the richest insight into understanding what practices are most efficacious in supporting students. Such research is also likely to align with adolescents' desire for autonomy and respect, the importance of which was emphasised by Yeager (2017). Enabling students to have a voice that is not confined to quantitative survey data is likely to be beneficial for validating their own abilities to express their needs.

Conclusion

This research has provided insight into the potential benefits of teachers' use of social-emotional practices. Based on our findings, it appears that teachers who use social-emotional practices are likely to build more positive relationships with students. In turn, thesemay have positive impacts on students' social, emotional, and behavioural functioning. Teachers should

endeavour to build positive relationships with their students through incorporation of social-emotional practices which include attending to students' emotions and needs, creating safe emotional environments in the classroom, and fostering supportive teacher-student and student-student relationships.

Our findings also indicate, however, that there are likely limitations to a teacher's ability to foster positive development for all students within the context of a secondary school classroom. Teachers, while they may have a positive influence on a student, cannot be expected to "fix" the various difficulties their students may face. Consistent with Bronfenbrenner's (1979) theory, a child's development is influenced by a whole system of people, not any one person or group. Accordingly, we argue for a whole-society approach and focus on supporting families and communities together with schools to strengthen all facets of an individual's mesosystem. Until such a holistic approach can be achieved, teachers are likely to continue to experience high stress and burnout. It is of critical importance, therefore, that policymakers and government look holistically to improve youth wellbeing. Likewise, teachers' wellbeing in a high-stress career should be prioritised.

References

Bond, L., Butler, H., Thomas, L., Carlin, J., Glover, S., Bowes, G., & Patton, G. (2007). Social and school connectedness in early secondary school as predictors of late teenage substance use, mental health, and academic outcomes. *Journal of Adolescent Health, 40* (4), 9–18. https://doi.org/10.1016/j.jadohealth.2006.10.013

Bronfenbrenner, U. (1979). *The ecology of human development*. Harvard University Press.

Cederbaum, J. A., Rodriguez, A. J., Sullivan, K., & Gray, K. (2017). Attitudes, norms, and the effect of social connectedness on adolescent sexual risk. *Journal of School Health, 87*(8), 575–583. https://doi-org.ezproxy.massey.ac.nz/10.1111/josh.12532

Distefano, C., Zhu, M., & Mîndrilă, D. (2009). Understanding and using factor scores: Considerations for the applied researcher. *Practical Assessment, Research & Evaluation, 14*(20), 1–11. https://doi.org/10.7275/da8t-4g52

Eccles, J. S., & Roeser, R. W. (2011). Schools as developmental contexts during adolescence. *Journal of Research on Adolescence, 21*(1), 225–241. https://doi.org/10.1111/j.1532-7795.2010.00725.x

Foster, C. E., Horwitz, A., Thomas, A., Opperman, K., Gipson, P., Burnside, A., Stone, D.M., & King, C. A. (2017). Connectedness to family, school, peers, and community in socially vulnerable adolescents. *Children and Youth Services Review, 81*, 321–331. https://doi.org/10.1016/j.childyouth.2017.08.011

García-Moya, I., Brooks, F., Morgan, A., & Moreno, C. (2015). Subjective well-being in adolescence and teacher connectedness: A health asset analysis. *Health Education Journal, 74*(6), 641–654. https://doi.org/10.1177/0017896914555039

Gelisli, Y., Baidrahmanov, D. K., Beisenbaeva, L., & Sultanbek, M. (2017). Determination of the high school students' attitudes towards their teachers. *International Journal of Instruction, 10*(4), 361–378. https://doi.org/10.12973/iji.2017.10421a

Gini, G., Marino, C., Pozzoli, T., & Holt, M. (2018). Associations between peer victimization, perceived teacher unfairness, and adolescents' adjustment and well-being. *Journal of School Psychology, 67*, 56–68. https://doi.org/10.1016/j.jsp.2017.09.005

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry, 38*(5), 581–586. https://doi-org.ezproxy.massey.ac.nz/10.1111/j.1469-7610.1997.tb01545.x

Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire. *Journal of the American Academy of Child and Adolescent Psychiatry, 40*(11), 1337–1345. https://doi.org/10.1097/00004583-200111000-00015

Hamedani, M. G., & Darling-Hammond, L. (2015). Social, emotional, and academic learning in high school: How three urban high schools engage, educate, and empower youth. *Scope*, 1–15.

Han, S. (2016). *South-Korean teachers' social-emotional practices and their association with student connectedness*. Massey University, New Zealand.

Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health, 74*(7), 262–273. https://doi-org.ezproxy.massey.ac.nz/10.1111/j.1746-1561.2004.tb08283.x

Lester, L., Waters, S., & Cross, D. (2013). The relationship between school connectedness and mental health during the transition to secondary school: A path analysis. *Australian Journal of Guidance and Counselling, 23*(2), 157–171. https://doi-org.ezproxy.massey.ac.nz/10.1017/jgc.2013.20

Liu, P. P., Savitz-Romer, M., Perella, J., Hill, N. E., & Liang, B. (2018). Student representations of dyadic and global teacher-student relationships: Perceived caring, negativity, affinity, and differences across gender and race/ethnicity. *Contemporary Educational Psychology, 54*, 281–296. https://doi.org/10.1016/j.cedpsych.2018.07.005

Livheim, F., Tengström, A., Bond, F. W., Andersson, G., Dahl, J. A., & Rosendahl, I. (2016). Psychometric properties of the Avoidance and Fusion Questionnaire for Youth: A psychological measure of psychological inflexibility in youth. *Journal of Contextual Behavioral Science, 5*(2), 103–110. https://doi.org/10.1016/j.jcbs.2016.04.001

Lohmeier, J. H., & Lee, S. W. (2011). A school connectedness scale for use with adolescents. *Educational Research and Evaluation, 17*(2), 85–95. https://doi.org/10.1080/13803611.2011.597108

Markham, C. M., Lormand, D., Gloppen, K. M., Peskin, M. F., Flores, B., Low, B., & House, L. D. (2010). Connectedness as a predictor of sexual and reproductive health outcomes for youth. *Journal of Adolescent Health, 46*(3), 23–41. https://doi.org/10.1016/j.jadohealth.2009.11.214

Obsuth, I., Murray, A. L., Malti, T., Sulger, P., Ribeaud, D., & Eisner, M. (2017). A non-bipartite propensity score analysis of the effects of teacher–student relationships on adolescent problem and prosocial behavior. *Journal of Youth and Adolescence, 46*(8), 1661–1687. https://doi.org/10.1007/s10964-016-0534-y

Oldfield, J., Humphrey, N., & Hebron, J. (2016). The role of parental and peer attachment relationships and school connectedness in predicting adolescent mental health outcomes. *Child and Adolescent Mental Health, 21*(1), 21–29. https://doi.org/ 10.1111/camh.12108

Ryan, R. M., Stiller, J. D., & Lynch, J. H. (1994). Representations to teachers, parents, and friends as predictors of academic motivation and self esteem. *The Journal of Early Adolescence, 14*(2), 226–249. http://dx.doi.org/10.1177/027243169401400207

Salazar, D. M., Ruiz, F. J., Suárez-Falcón, J. C., Barreto-Zambrano, M. L., Gómez-Barreto, M. P., & Flórez, C. L. (2018). Psychometric properties of the Avoidance and Fusion Questionnaire – Youth in Colombia. *Journal of Contextual Behavioral Science, 12*, 1–9. https://doi.org/10.1016/j.jcbs.2018.11.008

Schonert-Reichl, K. A., Kitil, M. J., & Hanson-Peterson, J. (2017). *Building a foundation for great teaching: A report prepared for CASEL*. http://www.casel.org/wp-content/uploads/2017/02/SEL-TEd-Full-Report-for-CASEL-2017-02-14-R1.pdf

Shochet, I. M., Dadds, M. R., Ham, D., & Montague, R. (2006). School connectedness is an underemphasized parameter in adolescent mental health: Results of a community

prediction study. *Journal of Clinical and Adolescent Psychology*, *35*(2), 170–179. https://doi.org/10.1207/s15374424jccp3502_1

Sulkowski, M. L., & Simmons, J. (2018). The protective role of teacher–student relationships against peer victimization and psychosocial distress. *Psychology in the Schools*, *55*(2), 137–150. https://doi.org/10.1002/pits.22086

Tan, K., Sinha, G., Shin, O. J., & Wang, Y. (2017). Patterns of social-emotional learning needs among high school freshmen students. *Children and Youth Services Review*, *86*, 217–225. https://doi.org/10.1016/j.childyouth.2018.01.033

Thompson, C. S. (2018). The construct of 'respect' in teacher-student relationships: Exploring dimensions of ethics of care and sustainable development. *Journal of Leadership Education*, *17*(3), 42–60.

Uslu, F., & Gizir, S. (2017). School belonging of adolescents: The role of teacher–student relationships, peer relationships and family involvement. *Kuram ve Uygulamada Egitim Bilimleri*, *17*(1), 63–82. https://doi.org/10.12738/estp.2017.1.0104

Yeager, D. S. (2017). Social and emotional learning programs for adolescents. *The Future of Children*, *27*(1), 73–94.

Yeager, D. S., Dahl, R. E., & Dweck, C. S. (2018). Why interventions to influence adolescent behavior often fail but could succeed. *Perspectives on Psychological Science*, *13*(1), 101–122.

Chapter Nine: Study Three – Considerations of Gender

Introduction

Gender differences have been a common subject of debate in psychology, education, and wider social sciences research (Hyde, 2014). Theories have existed for centuries suggesting that men and women differ on psychological and social variables such as personality, experience of emotions, and social behaviour. A review by Hyde (2014), however, suggested that there are many more similarities than differences between males and females and expressed caution toward emphasising gender differences in social sciences.

The stereotypes that emerge from an emphasis on gender differences could have implications for social policy, which, if unsupported by research evidence, may be unhelpful or unnecessary. As an example, educational researchers have investigated the idea that gender matching of students and teachers is associated with better student outcomes. Despite its prevalence as a stereotype, particularly in boys' education, there is little support for the idea that students learn better from a teacher of the same gender (Cho, 2012; Francis et al., 2008). The existence of the stereotype, however, may influence teacher recruitment in schools and teacher education programmes, with the potential effect of creating an unnecessarily gender-biased recruitment system.

In regard to gender differences in students' experiences of school connectedness, most research currently supports the notion that there are differences in the ways students experience school connectedness based on gender. Tosolt (2010) reported female students place greater emphasis on academically focussed caring behaviours (such as the teacher taking time to help students with an academic task) as an indicator of teacher care than male students. In contrast, male students emphasised interpersonally focussed caring behaviours as more important than academic care and put greater emphasis on interpersonal care than did female students. Tosolt (2010) concluded that belonging to a "historically-underserved social group" (p. 150) predicted

the likelihood that individuals would emphasise the importance of academic care over interpersonal care. Interestingly, Tosolt (2010) acknowledged that the behaviours emphasised as more indicative of teachers' care were not those that would be stereotypically expected of boys and girls. Boys' emphasis of interpersonally caring behaviours was surprising and could indicate either a generally greater desire for these behaviours compared to girls, or boys' greater likelihood of feeling they do not receive interpersonal care, whereas girls do.

Another study investigated students' perceptions of the frequency and importance of four types of teacher support: emotional (providing a sense of care), informational (providing information or assisting to develop one's understanding of a topic), instrumental (providing resources and material support), and appraisal (providing constructive feedback and reinforcement) (Tennant et al., 2015). Tennant and colleagues (2015) found that girls rated emotional and appraisal support as more important than boys, whereas there were no differences between genders regarding the importance of instructional or informational support. In terms of students' perceptions of the frequency of their teachers' support, however, it was found that there was no difference between genders in the perception of teachers' frequency in offering any type of support (Tennant et al., 2015). Uslu and Gizir (2017) also investigated the relationships between teacher support and school belongingness in adolescents and found teacher-student relationships were the most important predictor of school belonging regardless of gender, whereas peer and family influences differed between genders.

One study found different effects of student-teacher interactions on students' amotivation (i.e. lack of motivation) between genders. Girls' amotivation was more strongly affected by perceptions of teachers' intimidation and negative conditional regard than boys, whereas boys' amotivation was more strongly related to perceptions of teachers' controlling use of praise (Koka & Sildala, 2018). Motivation has also been linked to school connectedness in terms of affiliative motivation, defined as "a stable and enduring tendency to want to form

and maintain relationships with others" (Nickerson et al., 2011, p. 830). According to Hill and Werner (2006), affiliative motivation serves a protective function against aggression in both male and female students who have low attachment to school, whereas among students with high attachment, the protective function of affiliative motivation was observed only in male students.

The current study aims to investigate whether there were any gender differences in students' perception of teachers' social-emotional practices and the relationships with students' strengths and difficulties. Findings from this study will provide more insight into the argument of potential gender differences (or lack thereof) in how students experience teachers' practices and school connectedness.

Method

Sample, Measures, and Data Collection

Data for this study were drawn from the data collected for the previous study (Edwards et al., in review). To reduce repetition, the information regarding participants, materials, and data collection has been omitted from this chapter.

Data Analysis

Data were split according to gender. Five participants who responded "other" to gender were excluded from this analysis due to insufficient numbers to include as a separate subsample. This resulted in a female subsample consisting of 179 participants and a male subsample consisting of 151 participants. A power calculation determined a minimum sample of 123 participants was determined to be appropriate for analysis of correlations (α=.05, β=.2, r=.25). Descriptive statistics (M, SD) were compared in addition to correlations between all variables.

Results

Descriptive statistics for each variable are presented below, in Table 1. There were no significant differences in the frequency of perceived teachers' practices according to gender.

There were some significant differences in student variables according to gender, however. Male students were found to report higher levels of negative connectedness than female students (*t = 2.041, p<.05*). Female students reported higher emotional problems (*t = -3.652, p<.001*), whereas male students reported higher conduct problems (*t = 2.716, p<.01*). Male students also reported higher levels of peer relationship problems (*t = 3.741, p<.001*) and lower levels of prosocial behaviour (*t = -5.241, p<.001*).

Table 1.

Descriptive statistics (M, SD) for each variable according to gender

	Females		Males	
	M	*SD*	*M*	*SD*
GSEP	-.031	1.06	.012	0.94
EC	-.013	1.00	.005	1.02
Negative Connectedness*	34.66	10.36	37.28	12.95
Connection to Adults in School	27.14	6.61	28.29	7.19
Psychological Flexibility	19.15	7.10	20.29	7.42
Emotional Problems**	4.79	2.59	3.80	2.28
Conduct Problems**	1.58	1.52	2.11	2.02
Hyperactivity/Inattention	4.61	2.24	4.54	2.23
Peer Relationship Problems**	1.99	1.65	2.75	2.04
Prosocial Behaviour**	7.26	1.84	6.07	2.23
Total Difficulties	12.92	5.12	13.20	6.37

*Difference in means significant between genders, *p<.05*; ***p<.01*

Differences between the correlations of student and teacher variables is presented below, in Table 2.

Table 2.

Comparison of correlations for CEEQS factors and all student variables according to gender (grey rows=female sub-sample; white rows=male sub-sample)

	1	2	3	4	5	6	7	8	9	10	11
1. GSEP	-	-.007	-.311**	.478**	-.064	-.010	-.135	-.115	-.220**	.201**	-.146
	-	-.001	-.302**	.439**	-.057	-.067	-.197*	-.107	-.042	.421**	-.137
2. EC	-.007	-	.153*	-.098	-.152*	.095	.176*	-.022	.188*	-.121	.142
	-.001	-	.235**	-.184*	-.204*	.241**	.262**	.198**	.150	.024	.287**
3. NC	-.311**	-.153*	-	-.508**	-.343**	.326**	.511**	.359**	.335**	-.138	.576**
	-.302**	.235**	-	-.399**	-.400**	.469**	.591**	.373**	.349**	-.233**	.597**
4. C	.478**	-.098	-.508**	-	.012	-.010	-.159*	-.156*	-.240**	.301**	-.201**
	.439**	-.184*	-.399**	-	.031	-.239**	-.372**	-.314**	-.239**	.406**	-.385**
5. PF	-.064	-.152*	-.343**	.012	-	-.592**	-.210**	-.256**	-.335**	-.062	-.576**
	-.057	-.204*	-.400**	.031	-	-.580**	-.454**	-.270**	-.528**	-.070	-.529**
6. EP	-.010	.095	.326**	-.010	-.592**	-	.173*	.154*	.375**	.094	.741**
	-.067	.241**	.469**	-.236**	-.580**	-	.569**	.318**	.496**	.055	.809**
7. CP	-.135	.176*	.511**	-.159*	-.210**	.173*	-	.342**	.188*	-.174*	.576**
	-.197*	.262**	.591**	-.372**	-.454**	.569**	-	.536**	.378**	-.187*	.830**
8. H/I	-.115	-.022	.359**	-.156*	-.256**	.154*	.342**	-	.038	-.102	.625**
	-.107	.198*	.373**	-.314**	-.270**	.318**	.536**	-	.120	-.173*	.672**
9. PRP	-.220**	.188*	.335**	-.240**	-.335**	.375**	.188*	0.38	-	-.123	.582**
	-.042	.150	.349**	-.239**	-.258**	.496**	.378**	.120	-	-.169*	.660**
10. PB	.201**	-.121	-.138	.301**	-.062	.094	-.174*	-.102	-.123	-	-.087
	.421**	.042	-.233**	.406**	-.070	.055	-.187*	-.173*	-.169*	-	-.155
11. TD	-.146	.142	.576**	-.201**	-.576**	.741**	.576**	.625**	.582**	-.087	-
	-.137	.287**	.597**	-.385**	-.529**	.809**	.803**	.672**	.660**	-.155	-

Note. GSEP=General Social-Emotional Practices (Factor 1); EC=Emotion Coaching (Factor 2); NC=Negative Connectivity; C=Connection to adults at school; PF=Psychological Flexibility; EP=Emotional Problems; CP=Conduct Problems; H/I=Hyperactivity/Inattention; PRP=Peer Relationship Problems; PB=Prosocial Behaviour; TD=Total Difficulties.

**p<.05; **p<.01*. P values have not been corrected for multiple comparisons, as this in an exploratory rather than confirmatory study.

Relationships between perceived teachers' practices and student connectedness

Correlations of similar strength were found between students' perceptions of teachers' general use of social-emotional practices (GSEP) and connectedness variables for both male and female sub-samples. The correlations observed between emotion coaching (EC) and

connectedness variables were slightly stronger in the male sub-sample than the female sub-sample. A weak positive correlation (r=.235, p<.01) and a very weak positive (r=.153, p<.05) correlation were found between EC and negative connectedness in the female and male sub-samples, respectively. There was no correlation between EC and connection to adults in school in the female subsample, whereas a very weak negative correlation was found in the male sub-sample (r=-.184, p<.05). However, the differences between these correlations did not reach statistical significance.

Relationships between perceived teachers' practices and students' strengths and difficulties

Significant differences were found between the two subsamples when comparing the correlations of EC and students' hyperactivity/inattention (r_{males}=.198, p<.01; $r_{females}$=-.022; z=2, p<.05). In addition, there were significant subsample differences in the correlations between GSEP and prosocial behaviour (r_{males}=.421, p<.01; $r_{females}$=.201, p<.01; z=2.2, p<.05).

Correlations between connectedness and student variables by gender

All correlations between connectedness variables (negative connectedness and connection to adults in school) and student variables (psychological flexibility, emotional problems, conduct problems, hyperactivity/inattention, peer relationship problems, prosocial behaviour and total difficulties), were either equal between subsamples or trended toward greater strength in the male subsample. Significant differences were found between the two samples in the correlations between connection to adults in school and emotional problems (r_{males}=-.239, p<.01; $r_{females}$=-.010; z=2.09, p<.05), and connection to adults in school and conduct problems (r_{males}=-.372, p<.01; $r_{females}$=-.159, p<.05; z=2.06, p<.05).

Differences in correlations between student variables according to gender

Overall, a trend toward stronger correlations between student variables in the male subsample was also observed. Significant differences were found in the correlations between psychological flexibility and conduct problems (r_{males}=-.454, p<.01; $r_{females}$=-.210, p<.01;

z=2.48, p<.05), psychological flexibility and peer relationship problems (r_{males}=-.528, p<.01; $r_{females}$=-.335, p<.01; z=2.14, p<.05), emotional problems and conduct problems (r_{males}=.569, p<.01; $r_{females}$=.173, p<.05; z=4.22, p<.01), and conduct problems and hyperactivity/inattention (r_{males}=.536, p<.01; $r_{females}$=.342, p<.01; z=2.17, p<.05). A significant subsample difference was also found in the correlation between conduct problems and total difficulties (r_{males}=.830, p<.01; $r_{females}$=.576, p<.01; z=4.76, p<.01).

Discussion

Our results suggest there may be some gender differences in students' perceptions of teachers' practices, but to a limited degree. Though there was a trend toward stronger correlations between perceived teachers' practices and student variables in males compared to females, few of these differences reached statistical significance. We found no significant differences between genders in the relationships between students' perceptions of teachers' practices and connectedness. These findings suggest that teachers' social-emotional practices were experienced with similar influence on teacher-student relationships.

A small number of correlations were significantly stronger in males than females. While there were no differences between genders in the relationships between perceived teachers' practices and student connectedness, there were differences between teachers' emotion coaching practices and students' hyperactivity/inattention, and students' perceptions of teachers' general social-emotional practices and students' prosocial behaviours. Hyperactivity/inattention was not correlated with emotion coaching practices in the female subsample, whereas there was a weak positive correlation in the male subsample. There was no significant difference, however, in mean levels of hyperactivity/inattention across genders. This may suggest that teachers are more inclined to use emotion coaching practices in response to hyperactive or inattentive behaviours from boys than girls, despite there being no differences in the average level of these behaviours in our sample. This may reflect the influence of gender

stereotyping; males are stereotypically considered more aggressive than females (Kollmayer et al., 2018). Kollmayer and colleagues (2018) acknowledged such stereotypes can influence teachers' practices and interactions with students; our findings suggest teachers may respond to hyperactive/inattentive behaviours more frequently with male students.

It is understandable such a stereotype exists, given evidence exists for greater levels of hyperactivity and externalising behaviour in boys than girls in some populations, such as among persons with Attention Deficit Hyperactivity Disorder (ADHD) (Gershon, 2002). It may be that despite no difference between genders in levels of hyperactivity/inattention in our sample, male students may be more likely to exhibit hyperactivity than inattention, which is more visible and may sensibly require a more immediate response.

Alternatively, a stronger relationship between teachers' emotion coaching practices and hyperactivity/inattention in male students could suggest boys are more susceptible to experiencing hyperactivity/inattention when teachers use emotion-coaching practices frequently. This suggestion may align with developmental values of male students, whereby emotion-coaching practices may be less socially valued in male populations than female populations. These findings are consistent with the findings of Tennant et al. (2015), who reported female students rated emotional support as more important than did male students.

The greater predictive relationship between general social-emotional practices and prosocial behaviour in boys compared to girls also warrants attention. This finding may suggest that prosocial behaviour may be more effectively encouraged as a result of teachers' general use of social-emotional practices in boys than girls. However, the direction of the relationship cannot be determined by our analysis. An alternative explanation, therefore, may be that teachers' practices are more influenced by students' prosocial behaviours in boys than girls. That is, teachers may respond to prosocial behaviour with positive social-emotional practices more frequently in boys than girls. Again, this suggested practice may reflect stereotype effects,

as females tend to be stereotyped as more caring, nurturing and relational than males (Kollmayer et al., 2018). As a result, teachers may expect prosocial behaviour more normatively from female students, and thus be less likely to differentiate their interactions with female students according to this variable. In contrast, teachers may expect male students to be less normatively prosocial, and thus be more likely to respond in a rewarding manner to those students who demonstrate prosocial behaviours in the classroom.

The protective influence of connection to adults in school was stronger for both emotional difficulties and conduct problems in boys than girls. There was no significant difference, however, in the correlations of these student variables with negative connectedness. It appears, therefore, that while a negative relationship with a teacher does not influence emotional and behavioural functioning differently between genders, a positive relationship may have greater influence on males. An explanation for this finding cannot be determined from the data in the current study. It may, however, reflect the importance of interpersonal care emphasised by boys in research by Tosolt (2010). As was discussed in the introduction to this chapter, Tosolt (2010) found that boys emphasised interpersonal care as more important than did girls. Our findings may accordingly suggest that boys experience more positive benefit in some domains than girls as a result of positive connections with teachers.

In examining the relationships between student variables, four of the five relationships found to be significantly stronger in males than females were relationships between conduct problems and other variables. There was a greater protective relationship between psychological flexibility and conduct problems in males than females, as well as greater predictive relationships between conduct problems and emotional problems, hyperactivity/inattention, and total difficulties. These findings may suggest that males who experience emotional difficulties may be more likely to act out behaviourally, thus exhibiting conduct problems. Conversely, however, it may be that males who experience conduct

problems also experience greater emotional distress as a result. It is important to remember the earlier discussed gender stereotyping and consider how this may influence males and females to experience social, emotional and behavioural difficulties. Males are stereotypically considered more aggressive than females, however it is not often considered that this stereotype may cause some males to experience anxiety should they have difficulty regulating their emotions without engaging in externalising behaviour. They may, for example, feel that aggression is inevitable as a male and worry about the impacts this may have on their social and romantic relationships.

Moreover, as emphasised by Yeager et al. (2018), adolescent behaviour is often motivated by the developmental drive for social acceptance. Bullying, for example, may be motivated by the social reward of being perceived as "tough" (Yeager et al., 2018). This relates back to the characterisation of psychological inflexibility as a rigid adherence to rules which may be incongruent with one's values, and as a result lead to psychological distress (Levin et al., 2014). In the case of conduct problems motivated by a developmental drive for social status, it may be that aggression is socially but not personally valued, and leads to incongruence between behaviour and values for some males. According to this notion, it would be sensible that males who experience more conduct problems may also experience more emotional distress as a result.

Males may also, however, more strongly benefit from efforts to increase psychological flexibility. In addition to conduct problems, psychological flexibility was more strongly protective against peer relationship problems in males than females. Males may experience greater difficulty with peer relationships and behavioural functioning due to greater propensity toward physical aggression (possibly motivated by developmental drive for social acceptance) and lower interest in people (Hyde, 2014). The resulting behaviours, however, may be incongruent with individuals' personal values, as highlighted above, and lead to anxiety and

emotional distress. In turn, greater difficulty in these areas may lead to greater sensitivity to the benefits of psychological flexibility.

Limitations and future directions

The data collected for this study enabled analysis of only one demographic variable: student gender. Other demographic variables may also be of interest, such as culture, socioeconomic status, and school type (such as single sex or co-educational; public or private). Teacher demographic variables would also be interesting to consider, including gender, age and culture.

In addition, the cross-sectional and correlational design of this study limited the conclusions that were able to be drawn. As discussed in previous paragraphs, the direction of relationships could not be determined, so in almost all cases there are multiple possible explanations for the observed findings. Future research may endeavour to investigate which explanations are more plausible by applying a longitudinal design.

Conclusion

Findings from this study generally align with the gender similarities hypothesis, whereby males and females were found to be similar on most variables (Hyde, 2014). In our study, few significant differences were found in the relationships between students' perceptions of teachers' practices and student variables when comparing male and female students. Where differences were evident, however, they were stronger in male students in all cases. Those differences that were significant tended to relate to social and behavioural functioning variables, suggesting that teachers may respond more to social and behavioural strengths and difficulties in boys when compared to girls, and that behavioural difficulties may have stronger effects on other areas of difficulty in boys than girls. Though our analysis was correlational and thus did not enable determination of direction in any relationships, various possible explanations were offered in the discussion section of this article. Briefly, we suggested that in most cases involving relationships with teachers' variables, teachers may be influenced by

popular stereotypes of gender and thus respond more strongly to male students' social and behavioural difficulties. Alternatively, male students' behavioural and social functioning may generally be more influenced by perceived teachers' practices.

Chapter Ten: Overall Discussion and Conclusion

The aim of this thesis was to investigate the research question *'how do students' perceptions of teachers' social-emotional practices relate to students' strengths and difficulties?'.* To achieve this aim, three independent studies were completed. Study One sought to understand New Zealand secondary school students' conceptual understandings of 88 items developed in previous research to depict social-emotional practices commonly used by teachers. This study was a precursor to studies two and three, enabling the items to be used in a self-report survey format with students. Study two then focussed on correlational analysis of survey data, including students' perceptions of teachers' social-emotional practices and students' strengths and difficulties. Finally, insights gained in study two were deepened in study three, which sought to investigate possible differences in relationships between perceived teachers' practices and students' strengths and difficulties according to student gender.

The use of MDS in study one was a unique approach which was of significant value; MDS is not a widely used statistical method but is both efficient and effective for examining conceptual relationships. The construction of a three-dimensional map depicting item relationships, with students' ratings of item similarity as the basis for comparison, enabled examination of the themes underlying students' grouping of similar items. This then provided a lens for analysis of survey data, by facilitating comparison between students' endorsement of frequently perceived social-emotional practices and their conceptual understanding of these items.

Within the wider research aim, there was a specific interest in study two in examining the relationships of perceived social-emotional practices with students' psychological flexibility as a potential strength. Based on existing literature, psychological flexibility was proposed as a more appropriate construct for minimising adolescents' vulnerability to developing mental health difficulties than traditional measures of emotion regulation. Emotion

regulation has more traditionally been considered according to strategies such as cognitive reappraisal, suppression and situation selection; however, this framework promotes the view the some emotions are negative, and our experience of them should be avoided or minimised (Kashdan & Rottenberg, 2010; Werner & Gross, 2010).

Study two findings supported the view that psychological flexibility was an appropriate construct relating to students' emotional wellbeing; students' psychological flexibility was negatively correlated with all measures of students' social-emotional difficulties (emotional problems, peer relationship problems, hyperactivity/inattention, and conduct problems).

In regard to the relationships between perceived teachers' practices and students' strengths and difficulties, results demonstrated that, as expected, students' perceptions of their teachers using social-emotional practices frequently were associated with students' connectedness. In addition, teachers' social-emotional practices and students' connectedness were both associated with indicators of positive functioning in social and behavioural domains. Interestingly, however, there were no relationships between teachers' use of social-emotional practices and students' psychological flexibility or emotional difficulties. Moreover, there was a positive correlation between teachers' use of emotion coaching practices and students' emotional difficulties, and a negative correlation between emotion coaching practices and positive student variables such as connectedness and psychological flexibility. While these associations were surprising, they may reflect developmental stage. Verschueren and Kooman (2012) argued that the teacher-student relationship most strongly resembled a parent-child attachment relationship when children were young or vulnerable. This meant there was a greater need for emotional and regulatory support in the teacher-student relationship at younger ages. Given our study sample consisted of 16-18 year-olds, it is sensible to consider students may have responded unfavourably to teachers' use of emotion coaching practices.

Equally plausible, however, is the possibility that the negative correlation between students' perceptions of emotion coaching practices and students' connectedness and psychological flexibility reflects teachers responding appropriately to greater student need. That is, it is sensible to consider that teachers may engage in more frequent emotion coaching with students who they perceive to have less psychological flexibility, or who appear less connected. This is in line with the positive correlation found between perceived emotion coaching and students' emotional difficulties.

Previous research has highlighted teachers' lack of confidence in their abilities to manage and support students' social-emotional needs in the classroom – unsurprisingly, given many teacher education programmes do not strongly incorporate social-emotional factors of teaching and learning (Schonert-Reichl et al., 2017). The findings of this research should be of reassurance to teachers in two ways. First, findings showed students did report frequently observing teachers using social-emotional practices, and that this perception was related to students' connectedness. This highlights the existing abilities of teachers to interact with their students in such a manner that their students notice their use of positive social-emotional practices.

Secondly, findings demonstrate the limitations of putting too much expectation onto one social context when considering developmental influences during adolescence. School is widely recognised as one of the most important social contexts for development; Bronfenbrenner (1979) proposed that school, along with family and peer groups, is an essential component of the mesosystem that directly affects an individual's development. This expectation can lead to significant pressure for teachers, who are thought to occupy an important role in not only their students' academic learning, but their social and emotional development (Eccles & Roeser, 2011). The lack of relationship between perceived teachers' practices and students' psychological flexibility demonstrates, however, that teachers cannot

be expected to have an all-reaching influence. The numerous other systemic social contexts and influences contributing to adolescent development are likely to moderate a teachers' influence on students' social-emotional functioning. While students' perceptions of teachers' social-emotional practices were related to students' strengths and difficulties in some areas, the lack of relationship in some areas offers an important reminder that a teacher is just one factor within a large system of developmental influences.

The above commentary is not to say that teachers' social-emotional practices cannot have an influence on student development; our findings have demonstrated perceived teachers' practices have a significant relationship with students' functioning across social-emotional domains, and particularly with students' sense of connectedness to teachers. In accordance with past research, student connectedness was related to strengths and difficulties such that positive connectedness was associated with fewer difficulties and greater strengths, whereas negative connectedness was associated with greater difficulties and fewer strengths.

Limitations and directions for future research

The cross-sectional nature of the current research limited the ability to make conclusions as to whether the aforementioned relationships were a reflection of teachers' influence on students' strengths and difficulties or vice versa. While findings provided valuable initial insights into the nature of students' emotional experiences in classrooms, future research deepening these insights through longitudinal research would be of great value.

The ability to draw such conclusions was also limited by the focus on dyadic teacher-student relationships, without consideration of wider social-contextual factors which may influence students' social-emotional strengths and difficulties. Social-contextual factors become increasingly complex during adolescence; individuals gain more independence from their parents and become more susceptible to peer influences (Oldfield et al., 2016); and the nature of the school environment becomes more complex as students generally have multiple

teachers, less time with individual teachers, and some have greater engagement with extra-curricular activities. The interaction between contexts, therefore, may be of greater influence on development during adolescence than earlier life stages, when children are more likely to engage in less complex environments and have less independence.

Finally, this research investigated only a small demographic in terms of age range (16-18-year olds). Time constraints on the current research project limited the viability of conducting the research with younger age groups. The ethical requirements (in particular, gaining parental consent for each participant under age 16) and other procedures that would be involved in conducting the research with a younger sample (such as running a pilot survey to test the suitability of their comprehension level), were not feasible within a two-year part-time doctoral research project. It would be of great interest, however, to conduct this research across developmental stages with necessary adaptations according to participants' ages and ability levels. Data gained from research across age groups would provide insight into how the role of a teacher changes as students progress through schooling.

Conclusion

The findings from this research have provided initial insights into an area that has not been well-recognised in prior research; the relationships between specific day-to-day social-emotional practices of teachers and students' strengths and difficulties. The implementation of MDS methods to develop a three-dimensional map depicting students' conceptual understandings of teachers' social-emotional practices from the perspective of students was an important step toward facilitating further research in this area. Having also applied this model as a lens for analysis of survey data collected from 355 secondary school students, important insights were gained regarding students' perceptions of their teachers use of social-emotional practices in the classroom, and how this perception relates to students' strengths and difficulties. Findings demonstrated psychological flexibility was a useful construct which

related to students' social-emotional functioning, supporting its use in this population as an alternative to more traditional concepts of emotion regulation. In addition, findings demonstrated a relationship between students' perceptions of teachers' social-emotional practices and students' connectedness to school, and in turn between connectedness and students' positive social-emotional functioning.

It remains unknown how relationships between perceived teachers' practices and students' social-emotional functioning may differ according to age and change over time. Further research using a longitudinal approach would enable more specific conclusions to be drawn regarding the direction of influence within the relationships between perceived teachers' practices and student variables. Moreover, research with other age groups would provide insights into how the relationships change over time. As such, there remains significant opportunity to extend this research in many directions to deepen the insight gained and maximise benefit for students and teachers alike. It is hoped the work conducted in this thesis to develop the CEEQ-S for use with New Zealand students will facilitate such work to continue.

References

Ahmed, S. P., Bittencourt-Hewitt, A., & Sebastian, C. L. (2015). Neurocognitive bases of emotion regulation development in adolescence. *Developmental Cognitive Neuroscience*, *15*, 11–25. https://doi.org/10.1016/j.dcn.2015.07.006

Ahn, H. J. (2005). Teachers' discussions of emotion in child care centers. *Early Childhood Education Journal*, *32*(4), 237–242. https://doi.org/10.1007/s10643-004-1424-6

Ahn, H. J., & Stifter, C. (2006). Child care teachers' response to children's emotional expression. *Early Education & Development*, *17*(2), 253–270. https://doi.org/10.1207/s15566935eed1702

Aldao, A., Nolen-hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology : A meta-analytic review. *Clinical Psychology Review*, *30*(2), 217–237. https://doi.org/10.1016/j.cpr.2009.11.004

Andersen, R. J., Evans, I. M., & Harvey, S. T. (2012). Insider views of the emotional climate of the classroom: What New Zealand children tell us about their teachers' feelings. *Journal of Research in Childhood Education*, *26*(2), 199–220. https://doi.org/10.1080/02568543.2012.657748

Assor, A., Roth, G., & Deci, E. L. (2004). The emotional cost of parents' conditional regard: a self-determination theory analysis. *Journal of Personality*, *72*(1), 47–88. http://dx.doi.org/10.1111/j.0022-3506.2004.00256.x

Baghjari, F., Saadati, H., & Esmaeilinasab, M. (2017). The relationship between cognitive emotion-regulation strategies and resiliency in advanced patients with cancer. *International Journal of Cancer Management*, *10*(10), 1–6. http://dx.doi.org/10.5812/ijcm.7443

Bailey, C. S., Denham, S. A., Curby, T. W., & Bassett, H. H. (2016). Emotional and organizational supports for preschoolers' emotion regulation: Relations with school adjustment. *Emotion*, *16*(2), 263–279. http://dx.doi.org/10.1037/a0039772

Beard, K. S., Hoy, W. K., & Woolfolk Hoy, A. (2010). Academic optimism of individual teachers: Confirming a new construct. *Teaching and Teacher Education*, *26*(5), 1136–1144. https://doi.org/10.1016/j.tate.2010.02.003

Benita, M., Levkovitz, T., & Roth, G. (2016). Integrative emotion regulation predicts adolescents' prosocial behavior through the mediation of empathy. *Learning and Instruction, 50*, 14-20. https://doi.org/10.1016/j.learninstruc.2016.11.004

Best, P., Manktelow, R., & Taylor, B. (2014). Online communication, social media and adolescent wellbeing : A systematic narrative review. *Children and Youth Services Review*, *41*, 27–36. https://doi.org/10.1016/j.childyouth.2014.03.001

Bimler, D., & Kirkland, J. (2007). Constructing personality maps, mapping personality constructs: multidimensional scaling recovers the big five factors from internal and external structure. *The Spanish Journal of Psychology*, *10*(1), 68–83. https://doi.org/10.1017/S1138741600006326

Blakemore, S. J. (2008). The social brain in adolescence. *Nature Reviews Neuroscience*, *9*, 267–277.

Blum, R. W. (2005). A case for school connectedness. *Educational Leadership, 62*(7), 16–20.

Bonanno, G. A., Papa, A., Lalande, K., Westphal, M., & Coifman, K. (2004). The importance of being flexible: The ability to both enhance and suppress emotional expression predicts long-term adjustment. *Psychological Science, 15*(7), 482–487. https://doi.org/10.1111/j.0956-7976.2004.00705.x

Bond, L., Butler, H., Thomas, L., Carlin, J., Glover, S., Bowes, G., & Patton, G. (2007). Social and school connectedness in early secondary school as predictors of late teenage substance use, mental health, and academic outcomes. *Journal of Adolescent Health, 40* (4), 9–18. https://doi.org/10.1016/j.jadohealth.2006.10.013

Borkovec, T. D., & Inz, J. (1990). The nature of worry in generalized anxiety disorder: A predominance of thought activity. *Behaviour Research and Therapy, 28*(2), 153–158. https://doi.org/10.1016/0005-7967(90)90027-G

Borkovec, Thomas D., Alcaine, O. M., & Behar, E. (2004). Avoidance theory of worry and generalised anxiety disorder. In R. G. Heimberg, C. L. Turk, & D. S. Mennin (Eds.), *Generalized anxiety disorder: advances in research and practice* (pp. 77–108). The Guilford Press.

Boulanger, J. L., Hayes, S. C., & Pistorello, J. (2010). Experiential avoidance as a functional conceptual concept. In A. M. Kring & D. M. Sloan (Eds.), *Emotion regulation and psychology: a transdiagnostic approach to etiology and treatment* (pp. 107–136). The Guilford Press.

Boyes, M. E., Hasking, P. A., & Martin, G. (2016). Adverse life experience and psychological distress in adolescence: Moderating and mediating effects of emotion regulation and rumination. *Stress and Health, 32*(4), 402–410.

Bronfenbrenner, U. (1979). *The Ecology of Human Development*. Harvard University Press.

Brumariu, L. E. (2015). Parent–child attachment and emotion regulation. In G. Bosmans & K. A. Kerns (Eds.), Attachment in middle childhood: Theoretical advances and new directions in an emerging field. New directions for child and adolescent development (pp. 31–45). Wiley.

Brumariu, L. E., Kerns, K. A., & Seibert, A. (2012). Mother-child attachment, emotion regulation, and anxiety symptoms in middle childhood. *Personal Relationships, 19*(3), 569–585.

Burns, E. E., Fischer, S., Jackson, J. L., & Harding, H. G. (2012). Child abuse & neglect: Deficits in emotion regulation mediate the relationship between childhood abuse and later eating disorder symptoms. *Child Abuse & Neglect*, *36*(1) 32–39. https://doi.org/10.1016/j.chiabu.2011.08.005

Burroughs, M. D., & Barkauskas, N. J. (2017). Educating the whole child: social-emotional learning and ethics education. *Ethics and Education*, *12*(2) 218–232. https://doi.org/10.1080/17449642.2017.1287388

Callear, A. (2014). *Children's Emotion Regulation Inventory (ChERI): Measure development, item domains, and summary profiles*. Massey University, Palmerston North, New Zealand.

Campbell-Sills, L., Barlow, D. H., Brown, T. A., & Hofmann, S. G. (2006). Effects of

suppression and acceptance on emotional responses of individuals with anxiety and mood disorders. *Behaviour Research and Therapy*, *44*(9), 1251–1263.

Campbell-Sills, L., Elllard, K. K., & Barlow, D. H. (2014). Emotion regulation in anxiety disorders. In J. J. Gross (Ed.), *Handbook of Emotion Regulation* (2nd ed., pp. 393–412). The Guilford Press.

Carpenter, R. W., & Trull, T. J. (2013). Components of emotion dysregulation in borderline personality disorder: A review. *Current Psychiatry Reports*, *15*(1), 1–13.

Carthy, T., Horesh, N., Apter, A., & Gross, J. J. (2010). Patterns of emotional reactivity and regulation in children with anxiety disorders. *Journal of Psychopathology and Behavioral Assessment*, *32*(1), 23–36. http://doi.org/10.1007/s10862-009-9167-8

Cederbaum, J. A., Rodriguez, A. J., Sullivan, K., & Gray, K. (2017). Attitudes, norms, and the effect of social connectedness on adolescent sexual risk. *Journal of School Health*, *87*(8), 575–583. https://doi-org.ezproxy.massey.ac.nz/10.1111/josh.12532

Chia, N. (2014). *Student mapping of Singaporean teachers' social-emotional skills*. Massey University, Albany, New Zealand.

Cho, I. (2012). The effect of teacher-student gender matching: Evidence from OECD countries. *Economics of Education Review*, *31*(3), 54–67. https://doi.org/10.1016/j.econedurev.2012.02.002

Cicchetti, D., Ackerman, B. P., & Izard, C. E. (1995). Emotions and emotion regulation in developmental psychopathology. *Development and Psychopathology*, *7*(1), 1–10. https://doi.org/10.1017/S0954579400006301

Cioffi, D., & Holloway, J. (1993). Delayed costs of suppressed pain. *Journal of Personality and Social Psychology*, *64*(2), 274–282.

Ciucci, E., Baroncelli, A., & Toselli, M. (2015). Meta-emotion philosophy in early childhood teachers: Psychometric properties of the Crèche Educator Emotional Styles Questionnaire. *Early Childhood Research Quarterly*, *33*, 1–11. https://doi.org/10.1016/j.ecresq.2015.04.006

Cole, S. W., Yoo, D. J., & Knutson, B. (2012). Interactivity and reward-related neural activation during a serious videogame. *PLoS ONE*, *7*(3), 1–10. http://doi.org/10.1371/journal.pone.0033909

Colle, L., & Del Giudice, M. (2011). Patterns of attachment and emotional competence in middle childhood. *Social Development*, *20*(1), 51–72. http://doi.org/10.1111/j.1467-9507.2010.00576.x

Cooper, M. L., Shaver, P. R., & Collins, N. L. (1998). Attachment styles, emotion regulation, and adjustment in adolescence. *Journal of Personality and Social Psychology*, *74*(5), 1380–1397.

Crone, E. A., & Dahl, R. E. (2012). Understanding adolescence as a period of social-affective engagement and goal flexibility. *Nature Reviews Neuroscience*, *13*(9), 636–650. http://doi.org/10.1038/nrn3313

Curtis, A. C. (2015). Defining adolescence. *Journal of Adolescent and Family Health*, *7*(2), 1-39. https://scholar.utc.edu/jafh/vol7/iss2/2

Dahl, R. E. (2016). The developmental neuroscience of adolescence: Revisiting, refining, and extending seminal models. *Developmental Cognitive Neuroscience, 17*, 101–102. http://dx.doi.org/10.1016/j.dcn.2015.12.016

Denham, S. A., Bassett, H. H., & Zinsser, K. (2012). Early childhood teachers as socializers of young children's emotional competence. *Early Childhood Education Journal*, *40*(3), 137–143.

Denham, S. A., Mitchell-Copeland, J., Strandberg, K., Auerbach, S., & Blair, K. (1997). Parental contributions to preschoolers' emotional competence: Direct and indirect effects. *Motivation and Emotion*, *21*(1), 65–86. http://doi.org/10.1023/A:1024426431247

Distefano, C., Zhu, M., & Mîndrilă, D. (2009). Understanding and using factor scores: Considerations for the applied researcher. *Practical Assessment, Research & Evaluation, 14*(20), 1–11. https://doi.org/10.7275/da8t-4g52

Durie, M. (1994). *Whaiora Māori mental health* (2nd Ed). Oxford University Press.

Eccles, J. S., & Roeser, R. W. (2011). Schools as developmental contexts during adolescence. *Journal of Research on Adolescence*, *21*(1), 225–241. https://doi.org/10.1111/j.1532-7795.2010.00725.x

Eisenberg, N., Cumberland, a, Spinrad, T. L., Fabes, R. a, Shepard, S. a, Reiser, M., Murphy, B.C., Loyosa, S.H., & Guthrie, I. K. (2001). The relations of regulation and emotionality to children's externalizing and internalizing problem behavior. *Child Development, 72*(4), 1112–1134.

Erikson, E. (1969). *Identity, youth and crisis*. W. W. Norton.

Ernst, M. (2014). The triadic model perspective for the study of adolescent motivated behavior. *Brain and Cognition, 89*, 104-111. https://doi.org/10.1016/j.bandc.2014.01.006

Fabes, R. A., Leonard, S. A., Kupanoff, K., & Martin, C. L. (2001). Parental coping with children's negative emotions: Relations with children's emotional and social responding. *Child Development*, *72*(3), 907–920.

Fanti, K. A., Demetriou, A. G., & Hawa, V. V. (2012). A longitudinal study of cyberbullying: Examining riskand protective factors. *European Journal of Developmental Psychology*, *9*(2), 168–181. http://dx.doi.org/10.1080/17405629.2011.643169

Ferguson, R. F., & Danielson, C. (2014). How framework for teaching and Tripod 7Cs evidence distinguish key components of effective teaching. In T. J. Kane, K. A. Kerr, & R. C. Pianta (Eds.), *Designing Teacher Evaluation Systems: New Guidance from the Measures of Effective Teaching Project* (pp. 98–133). John Wiley & Sons, Inc. https://doi.org/10.1093/acprof

Foster, C. E., Horwitz, A., Thomas, A., Opperman, K., Gipson, P., Burnside, A., Stone, D.M., & King, C. A. (2017). Connectedness to family, school, peers, and community in socially vulnerable adolescents. *Children and Youth Services Review, 81*, 321–331. https://doi.org/10.1016/j.childyouth.2017.08.011

Francis, B., Skelton, C., Carrington, B., Hutchings, M., Read, B., & Hall, I. (2008). A perfect

match? Pupils' and teachers' views of the impact of matching educators and learners by gender. *Research Papers in Education*, *23*(1), 21–36. https://doi.org/10.1080/02671520701692510

Fraser, B. J., McRobbie, C., & Fisher, D. L. (1996). Development, validation and use of personal and class forms of a new classroom environment instrument. In *Proceedings Western Australian Institute for educational research forum 1996.* http://www.waier.org.au/forums/1996/fraser.html

Fraser, B. J., & Walberg, H. J. (2005). Research on teacher-student relationships and learning environments: Context, retrospect and prospect. *International Journal of Educational Research*, *43(1)*, 103–109. https://doi.org/10.1016/j.ijer.2006.03.001

Freeston, M. H., Dugas, M. J., & Ladouceur, R. (1996). Thoughts, images, worry, and anxiety. *Cognitive Therapy and Research*, *20*(3), 265–273.

García-Moya, I., Brooks, F., Morgan, A., & Moreno, C. (2015). Subjective well-being in adolescence and teacher connectedness: A health asset analysis. *Health Education Journal*, *74*(6), 641–654. https://doi.org/10.1177/0017896914555039

Gardner, S. E., Betts, L. R., Stiller, J., & Coates, J. (2017). The role of emotion regulation for coping with school-based peer-victimisation in late childhood. *Personality and Individual Differences*, *107*, 108–113. https://doi.org/10.1016/j.paid.2016.11.035

Garner, P. W. (2010). Emotional competence and its influences on teaching and learning. *Educational Psychology Review*, *22*(3), 297–321. https://doi.org/10.1007/s10648-010-9129-4

Gelisli, Y., Baidrahmanov, D. K., Beisenbaeva, L., & Sultanbek, M. (2017). Determination of the high school students' attitudes towards their teachers. *International Journal of Instruction*, *10*(4), 361–378. https://doi.org/10.12973/iji.2017.10421a

Gershon, J. (2002). Meta-analytic review of gender differences in ADHD. *Journal of Attention Disorders*, *5*(3), 143–154. http://dx.doi.org/10.1177/108705470200500302

Gini, G., Marino, C., Pozzoli, T., & Holt, M. (2018). Associations between peer victimization, perceived teacher unfairness, and adolescents' adjustment and well-being. *Journal of School Psychology*, *67*, 56–68. https://doi.org/10.1016/j.jsp.2017.09.005

Goldin, P. R., McRae, K., Ramel, W., & Gross, J. J. (2008). The neural bases of emotion regulation: Reappraisal and suppression of negative emotion. *Biological Psychiatry*, *63*(6), 577–586. https://doi.org/10.1016/j.biopsych.2007.05.031

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry*, *38*(5), 581–586. https://doi-org.ezproxy.massey.ac.nz/10.1111/j.1469-7610.1997.tb01545.x

Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire. *Journal of the American Academy of Child and Adolescent Psychiatry*, *40*(11), 1337–1345. https://doi.org/10.1097/00004583-200111000-00015

Gottman, J. M., Katz, L. F., & Hooven, C. (1996). Parental meta-emotion philosophy and the emotional life of families: Theoretical models and preliminary data. *Journal of Family Psychology*, *10*(3), 243–268.

Greco, L. A., Lambert, W., & Baer, R. A. (2008). Psychological inflexibility in childhood and adolescence: Development and evaluation of the Avoidance and Fusion Questionnaire for Youth. *Psychological Assessment*, *20*(2), 93–102. http://dx.doi.org/10.1037/1040-3590.20.2.93

Gross, J. J. (1998a). Antecedent- and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology*, *74*(1), 224–237.

Gross, J. J. (1998b). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, *2*(3), 271–299.

Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology*, *39*, 281–291. http://doi.org/10.1017.S0048577201393198

Gross, J. J. (2014). Emotion regulation: Conceptual and empirical foundations. In J. J. Gross (Ed.), *Handbook of Emotion Regulation* (2nd ed., pp. 3–20). The Guilford Press.

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, *85*(2), 348–362. http://dx.doi.org/10.1037/0022-3514.85.2.348

Gross, J. J., & Levenson, R. W. (1993). Emotional suppression: Physiology, self-report, and expressive behaviour. *Journal of Personality and Social Psychology*, *64*(6), 970–986.

Gross, J. J., & Levenson, R. W. (1997). Hiding feelings: the acute effects of inhibiting negative and positive emotion. *Journal of Abnormal Psychology*, *106*(1), 95–103.

Gross, J., & Muaoz, R. F. (1995). Emotion regulation and mental health. *Clinical Psychology Science and Practice*, *2*(2), 151–164. https://doi.org/10.1111/j.1468-2850.1995.tb00036.x

Gullone, E., & Taffe, J. (2012). The emotion regulation questionnaire for children and adolescents (ERQ–CA): A psychometric evaluation. *Psychological Assessment*, *24*(2), 409–417.

Hamedani, M. G., & Darling-Hammond, L. (2015). Social, emotional, and academic learning in high school: How three urban high schools engage, educate, and empower youth. *Scope*, 1–15.

Han, S. (2016). *South-Korean teachers' social-emotional practices and their association with student connectedness*. Massey University, New Zealand.

Hargreaves, A. (1998). The emotional practice of teaching. *Teaching and Teacher Education*, *14*(8), 835–854. https://doi.org/10.1016/S0742-051X(98)00025-0

Harvey, S. T., Bimler, D., Evans, I. M., Kirkland, J., & Pechtel, P. (2012). Mapping the classroom emotional environment. *Teaching and Teacher Education*, *28*(4), 628–640. https://doi.org/10.1016/j.tate.2012.01.005

Harvey, S. T., & Evans, I. M. (2003). Understanding the emotional environment of the classroom. In D. Fraser & R. Openshaw (Eds.), *Informing Our Practice* (pp. 182–195). Palmerston North, New Zealand: Kanuka Grove Press.

Hayes, L. L., & Ciarrochi, J. (2015). *The thriving adolescent: Using Acceptance and Commitment Therapy and positive psychology to help teens manage emotions, achieve*

goals, and build connection. Context Press.

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour Research and Therapy*, *44*(1), 1–25. https://doi.org/10.1016/j.brat.2005.06.006

Hayes, S. C., & Wilson, K. G. (1994). Acceptance and commitment therapy: Altering the verbal support for experiential avoidance. *The Behavior Analyst*, *17*(2), 289–303.

Hayes, S. C., Wilson, K. G., Gifford, E. V, Follette, V. M., & Strosahl, K. (1996). Experimental avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology*, *64*(6), 1152–1168.

Hazen, E. P., Goldstein, M. A., & Goldstein, M. C. (2011). *Mental health disorders in adolescence: A guide for parents, teachers and professionals*. Rutgers University Press.

Hill, L. G., & Werner, N. E. (2006). Affiliative motivation, school attachment, and aggression in school. *Psychology in the Schools*, *43*(2), 231–246. http://dx.doi.org/10.1002/pits.20140

Hyde, J. S. (2014). Gender similarities and differences. *Annual Review of Psychology*, *65*, 373–398. https://doi.org/10.1146/annurev-psych-010213-115057

Jarvinen, D. W., & Nicholls, J. G. (1996). Adolescents' social goals, beliefs about the causes of social success, and satisfaction in peer relations. *Developmental Psychology*, *32*(3), 435–441. http://dx.doi.org/10.1037/0012-1649.32.3.435

Jaworska, N., & Chupetlovska-Anastasova, A. (2009). A review of multidimensional scaling (MDS) and its utility in various psychological domains. *Tutorials in Quantitative Methods for Psychology*, *5*(1), 1–10.

Jennings, P. A., & Greenberg, M. T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of Educational Research*, *79*(1), 491–525. http://dx.doi.org/10.3102/0034654308325693

Jones, S., Eisenberg, N., Fabes, R. A., & MacKinnon, D. P. (2002). Parents' reactions to elementary school children's negative emotions: Relations to social and emotional functioning at school. *Merrill-Palmer Quarterly-Journal of Developmental Psychology*, *48*(2), 133–159.

Joorman, J., & Siemer, M. (2014). Emotion regulation in mood disorders. In J. J. Gross (Ed.), *Handbook of Emotion Regulation* (2nd ed., pp. 413–427). The Guilford Press.

Josephs, R. A., Mehta, P. H., & Carré, J. M. (2011). Gender and social environment modulate the effects of testosterone on social behavior: Comment on Eisenegger et al. *Trends in Cognitive Sciences*, *15*(11), 509–510. https://doi.org/10.1016/j.tics.2011.09.002

Josephs, R. A., Sellers, J. G., Newman, M. L., & Mehta, P. H. (2006). The mismatch effect: When testosterone and status are at odds. *Journal of Personality and Social Psychology*, *90*(6), 999–1013. http://dx.doi.org/10.1037/0022-3514.90.6.999

Joyce, H. D. (2015). School connectedness and student-teacher relationships: A comparison of sexual minority youths and their peers. *Children and Schools*, *37*(3), 185-192. https://doi.org/10.1093/cs/cdv012

Kashdan, T. B., Barrios, V., Forsyth, J. P., & Steger, M. F. (2006). Experiential avoidance as a generalized psychological vulnerability: Comparisons with coping and emotion regulation strategies. *Behaviour Research and Therapy*, *44*(9), 1301–1320. https://doi.org/10.1016/j.brat.2005.10.003

Kashdan, T. B., & Rottenberg, J. (2010). Psychological flexibility as a fundamental aspect of health. *Clinical Psychology Review*, *30*(7), 865–878. https://doi.org/10.1016/j.cpr.2010.03.001

Kirkland, J., Bimler, D., Drawneek, A., McKim, M., & Schölmerich, A. (2004). An alternative approach for the analyses and interpretation of attachment sort items. *Early Child Development and Care*, *174*(7–8), 701–719. https://doi.org/10.1080/0300443042000187185

Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health*, *74*(7), 262–273. https://doi-org.ezproxy.massey.ac.nz/10.1111/j.1746-1561.2004.tb08283.x

Knoblauch, D., & Woolfolk Hoy, A. (2008). "Maybe I can teach those kids." The influence of contextual factors on student teachers' efficacy beliefs. *Teaching and Teacher Education*, *24*(1), 166–179. https://doi.org/10.1016/j.tate.2007.05.005

Koka, A., & Sildala, H. (2018). Gender differences in the relationships between perceived teachers' controlling behaviors and amotivation in physical education. *Journal of Teaching in Physical Education*, *37*(2), 197–208.

Kollmayer, M., Schober, B., & Spiel, C. (2018). Gender stereotypes in education: Development, consequences, and interventions. *European Journal of Developmental Psychology*, *15*(4), 361–377. https://doi.org/10.1080/17405629.2016.1193483

LeDoux, J. E. (1996). *The emotional brain: The mysterious underpinnings of emotional life*. Simon & Schuster.

Lee, K. H., Siegle, G. J., Dahl, R. E., Hooley, J. M., & Silk, J. S. (2014). Neural responses to maternal criticism in healthy youth. *Social Cognitive and Affective Neuroscience*, *10*(7), 902–912.

Lester, L., Waters, S., & Cross, D. (2013). The relationship between school connectedness and mental health during the transition to secondary school: A path analysis. *Australian Journal of Guidance and Counselling*, *23*(2), 157–171. https://doi-org.ezproxy.massey.ac.nz/10.1017/jgc.2013.20

Levin, M. E., Maclane, C., Daflos, S., Seeley, J. R., Hayes, S. C., Biglan, A., & Pistorello, J. (2014). Examining psychological inflexibility as a transdiagnostic process across psychological disorders. *Journal of Contextual Behavioral Science*, *3*(3), 155–163. https://doi.org/10.1016/j.jcbs.2014.06.003

Lieberman, M. D., Inagaki, T. K., Tabibnia, G., & Crockett, M. J. (2011). Subjective responses to emotional stimuli during labeling, reappraisal, and distraction. *Emotion*, *11*(3), 468–480.

Linehan, M. (1987). Dialectical Behavior Therapy for borderline personality disorder: Theory and method. *Bulletin of the Menninger Clinic*, *51*(3), 261–276.

Liu, P. P., Savitz-Romer, M., Perella, J., Hill, N. E., & Liang, B. (2018). Student

representations of dyadic and global teacher-student relationships: Perceived caring, negativity, affinity, and differences across gender and race/ethnicity. *Contemporary Educational Psychology, 54*, 281–296. https://doi.org/10.1016/j.cedpsych.2018.07.005

Livheim, F., Tengström, A., Bond, F. W., Andersson, G., Dahl, J. A., & Rosendahl, I. (2016). Psychometric properties of the Avoidance and Fusion Questionnaire for Youth: A psychological measure of psychological inflexibility in youth. *Journal of Contextual Behavioral Science, 5*(2), 103–110. https://doi.org/10.1016/j.jcbs.2016.04.001

Livingstone, K. M., & Isaacowitz, D. M. (2015). Situation selection and modification for emotion regulation in younger and older adults. *Social Psychological and Personality Science, 6*(8), 904–910.

Lohmeier, J. H., & Lee, S. W. (2011). A school connectedness scale for use with adolescents. *Educational Research and Evaluation, 17*(2), 85–95. https://doi.org/10.1080/13803611.2011.597108

Markham, C. M., Lormand, D., Gloppen, K. M., Peskin, M. F., Flores, B., Low, B., & House, L. D. (2010). Connectedness as a predictor of sexual and reproductive health outcomes for youth. *Journal of Adolescent Health, 46*(3), 23–41. https://doi.org/10.1016/j.jadohealth.2009.11.214

Markovitch, N., Netzer, L., & Tamir, M. (2017). What you like is what you try to get: Attitudes toward emotions and situation selection. *Emotion, 17*(4), 728-739. https://doi.org/10.1037/emo0000272

Martin, R. E., & Ochsner, K. N. (2016). The neuroscience of emotion regulation development: Implications for education. *Current Opinion in Behavioral Sciences, 10*, 142-148. https://doi.org/10.1016/j.cobeha.2016.06.006

Mazzer, K., Boersma, K., & Linton, S. J. (2019). A longitudinal view of rumination, poor sleep and psychological distress in adolescents. *Journal of Affective Disorders, 245*, 686–696. https://doi.org/10.1016/j.jad.2018.11.053

McLaughlin, C. (2008). Emotional well-being and its relationship to schools and classrooms: A critical reflection. *British Journal of Guidance & Counseling, 36*(4), 353–366. https://doi.org/10.1080/03069880802364486

Meece, J. L., Anderman, E. M., & Anderman, L. H. (2006). Classroom goal structure, student motivation, and academic achievement. *Annual Review of Psychology, 57*, 487–503. https://doi.org/10.1146/annurev.psych.56.091103.070258

Meeus, W. (2018). *Adolescent development: Longitudinal research into the self, personal relationships and psychopathology* (1st ed.). Routledge.

Mennin, D. S., Holaway, R. M., Fresco, D. M., Moore, M. T., & Heimberg, R. G. (2007). Delineating components of emotion and its dysregulation in anxiety and mood psychopathology. *Behaviour Therapy, 38*(3), 284–302. https://doi.org/10.1016/j.beth.2006.09.001

Midgley, C. (2002). *Goals, goal structures, and patterns of adaptive learning*. Erlbaum.

Morris, A. S., Silk, J. S., Steinberg, L., Myers, S. S., & Robinson, L. R. (2007). The role of the family context in the development of emotion regulation. *Social Development, 16*(2),

361–388. http://dx.doi.org/10.1111/j.1467-9507.2007.00389.x

Mowrer, O.H. (1960). Learning Theory and Behavior. Wiley.

Newman, B. M., Newman, P. R., Griffen, S., O'Connor, K., & Spas, J. (2007). The relationship of social support to depressive symptoms during the transition to high school. *Adolescence*, *42*(167), 441–459.

Newman, M. G., & Llera, S. J. (2011). A novel theory of experiential avoidance in generalized anxiety disorder: A review and synthesis of research supporting a contrast avoidance model of worry. *Clinical Psychology Review*, *31*(3), 371–382. https://doi.org/10.1016/j.cpr.2011.01.008

Nickerson, A. B., Hopson, L. M., & Steinke, C. M. (2011). School connectedness in community and residential treatment schools: The influence of gender, grades, and engagement in treatment. *Children and Youth Services Review*, *33*(6), 829–837. https://doi.org/10.1016/j.childyouth.2010.12.004

Obsuth, I., Murray, A. L., Malti, T., Sulger, P., Ribeaud, D., & Eisner, M. (2017). A non-Obsuth, I., Murray, A. L., Malti, T., Sulger, P., Ribeaud, D., & Eisner, M. (2017). A non-bipartite propensity score analysis of the effects of teacher–student relationships on adolescent problem and prosocial behavior. *Journal of Youth and Adolescence*, *46*(8), 1661–1687. https://doi.org/10.1007/s10964-016-0534-y

Ochsner, K. N., & Gross, J. J. (2014). The neural bases of emotion and emotion regulation: A valuation perspective. In J. J. Gross (Ed.), *Handbook of Emotion Regulation* (2nd ed., pp. 23–42). The Guilford Press.

Oldfield, J., Humphrey, N., & Hebron, J. (2016). The role of parental and peer attachment relationships and school connectedness in predicting adolescent mental health outcomes. *Child and Adolescent Mental Health*, *21*(1), 21–29. https://doi.org/ 10.1111/camh.12108

Ostby, Y., Tamnes, C. K., Fjell, A. M., Westlye, L. T., Due-Tonnessen, P., & Walhovd, K. B. (2009). Heterogeneity in subcortical brain development: A structural magnetic resonance imaging study of brain maturation from 8 to 30 years. *Journal of Neuroscience*, *29*(38), 11772–11782.

Paus, T. (2005). Mapping brain maturation and cognitive development during adolescence. *Trends in Cognitive Sciences*, *9*(2), 60–68. https://doi.org/10.1016/j.tics.2004.12.008

Peper, J. S., & Dahl, R. E. (2013). The teenage brain: Surging hormones-brain-behavior interactions during puberty. *Current Directions in Psychological Science*, *22*(2), 134–139. http://dx.doi.org/10.1177/0963721412473755

Perlman, S. B., & Pelphrey, K. A. (2011). Developing connections for affective regulation: Age-related changes in emotional brain connectivity. *Journal of Experimental Child Psychology*, *108*(3), 607–620. https://doi.org/10.1016/j.jecp.2010.08.006

Pfeifer, J. H., & Allen, N. B. (2012). Arrested development? Reconsidering dual-systems models of brain function in adolescence and disorders. *Trends in Cognitive Sciences*, *16*(6), 322–329. https://doi.org/10.1016/j.tics.2012.04.011

Phillips, M. L., Drevets, W. C., Rauch, S. L., & Lane, R. (2003). Neurobiology of emotion perception I: The neural basis of normal emotion perception. *Biological Psychiatry*, *54*(5), 504–514. https://doi.org/10.1016/S0006-3223(03)00168-9

Pisetsky, E. M., Haynos, A. F., Lavender, J. M., Crow, S. J., & Peterson, C. B. (2017). Associations between emotion regulation difficulties, eating disorder symptoms, non-suicidal self-injury, and suicide attempts in a heterogeneous eating disorder sample. *Comprehensive Psychiatry*, *73*, 143–150. https://doi.org/10.1016/j.comppsych.2016.11.012

Pitama, S., Robertson, P., Cram, F., Gillies, M., Huria, T., & Dallas-Katoa, W. (2007). Meihana model: A clinical assessment framework. *New Zealand Journal of Psychology*, *36*(3), 118–125.

Poulou, M. (2005). The prevention of emotional and behavioural difficulties in schools: Teachers' suggestions. *Educational Psychology in Practice*, *21*(1), 37–52. http:dx.doi.org/10.1080/02667360500035181

Rae, T., Cowell, N., & Field, L. (2017). Supporting teachers' well-being in the context of schools for children with social, emotional and behavioural difficulties. *Emotional and Behavioural Difficulties*, *22*(3), 200–218. https://doi.org/10.1080/13632752.2017.1331969

Raio, C. M., Orederu, T. A., Palazzolo, L., Shurick, A. A., & Phelps, E. A. (2013). Cognitive emotion regulation fails the stress test. *Proceedings of the National Academy of Sciences*, *110*(37), 15139–15144.

Rochford, T. (2004). Whare Tapa Wha: A Maori model of a unified theory of health. *The Journal of Primary Prevention*, *25*, 41–57.

Roth, G., & Assor, A. (2012). The costs of parental pressure to express emotions: Conditional regard and autonomy support as predictors of emotion regulation and intimacy. *Journal of Adolescence*, *35*(4), 799–808. https://doi.org/10.1016/j.adolescence.2011.11.005

Roth, G., Assor, A., Niemiec, C. P., Deci, E. L., & Ryan, R. M. (2009). The emotional and academic consequences of parental conditional regard: Comparing conditional positive regard, conditional negative regard, and autonomy support as parenting practices. *Developmental Psychology*, *45*(4), 1119–1142. https://doi.org/10.1037/a0015272

Rothbart, M. K., Sheese, B. E., & Posner, M. I. (2014). Temperament and emotion regulation. In J. J. Gross (Ed.), *Handbook of Emotion Regulation* (2nd ed., pp. 305–320). The Guilford Press.

Rowe, E. W., Kim, S., Baker, J. A., Kamphaus, R. W., & Horne, A. M. (2010). Student personal perception of classroom climate: Exploratory and confirmatory factor analyses. *Educational and Psychological Measurement*, *70*(5), 858–879. https://doi.org/10.1177/0013164410378085

Ryan, R. M., Stiller, J. D., & Lynch, J. H. (1994). Representations to teachers, parents, and friends as predictors of academic motivation and self esteem. *The Journal of Early Adolescence*, *14*(2), 226–249. http://dx.doi.org/10.1177/027243169401400207

Sadock, B. J., Sadock, V. A., & Ruiz, P. (2015). *Kaplan & Sadock's Synopsis of Psychiatry* (11th ed.). Wolters Kluwer.

Salazar, D. M., Ruiz, F. J., Suárez-Falcón, J. C., Barreto-Zambrano, M. L., Gómez-Barreto, M. P., & Flórez, C. L. (2018). Psychometric properties of the Avoidance and Fusion Questionnaire – Youth in Colombia. *Journal of Contextual Behavioral Science*, *12*, 1–9.

https://doi.org/10.1016/j.jcbs.2018.11.008

Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, Cognition, and Personality*, *9*(3), 185–211. https://doi.org/10.1016/S0962-1849(05)80058-7

Sands, M., & Isaacowitz, D. M. (2016). Situation selection across adulthood: the role of arousal. *Cognition and Emotion, 31*(4), 791-798. https://doi.org/10.1080/02699931.2016.1152954

Schäfer, J. Ö., Naumann, E., Holmes, E. A., Tuschen-Caffier, B., & Samson, A. C. (2017). Emotion regulation strategies in depressive and anxiety symptoms in youth: A meta-analytic review. *Journal of Youth and Adolescence*, *46,* 261–276. http://dx.doi.org/10.1007/s10964-016-0585-0

Schonert-Reichl, K. A., & Hymel, S. (2007). Educating the heart as well as the mind: Social and emotional learning for school and life success. *Education Canada, 47*(2), 20–25.

Schonert-Reichl, K. A., Kitil, M. J., & Hanson-Peterson, J. (2017). *Building a foundation for great teaching: A report prepared for CASEL*. http://www.casel.org/wp-content/uploads/2017/02/SEL-TEd-Full-Report-for-CASEL-2017-02-14-R1.pdf

Shapero, B. G., Abramson, L. Y., & Alloy, L. B. (2016). Emotional reactivity and internalizing symptoms: Moderating role of emotion regulation. *Cognitive Therapy and Research*, *40*(3), 328–340.

Shochet, I. M., Dadds, M. R., Ham, D., & Montague, R. (2006). School connectedness is an underemphasized parameter in adolescent mental health: Results of a community prediction study. *Journal of Clinical and Adolescent Psychology*, *35*(2), 170–179. https://doi.org/10.1207/s15374424jccp3502_1

Shochet, I. M., Smyth, T., & Homel, R. (2007). The impact of parental attachment on adolescent perception of the school environment and school connectedness. *Australian and New Zealand Journal of Family Therapy*, *28*(2), 109–118.

Shortt, J. W., Stoolmiller, M., Smith-Shine, J. N., Mark Eddy, J., & Sheeber, L. (2010). Maternal emotion coaching, adolescent anger regulation, and siblings' externalizing symptoms. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *51*(7), 799–808.

Simon, E., & Verboon, P. (2016). Psychological inflexibility and child anxiety. *Journal of Child and Family Studies*, *25*(12), 3565–3573.

Sloan, E., Hall, K., Moulding, R., Bryce, S., Mildred, H., & Staiger, P. K. (2017). Emotion regulation as a transdiagnostic treatment construct across anxiety, depression, substance, eating and borderline personality disorders: A systematic review. *Clinical Psychology Review*, *57,* 141–163. https://doi.org/10.1016/j.cpr.2017.09.002

Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008). Cyberbullying: Its nature and impact in secondary school pupils. *The Journal of Child Psychology and Psychiatry, 49*(4), 376–385.

Steinberg, L. (2005). Cognitive and affective development in adolescence. *Trends in Cognitive Sciences*, *9*(2), 69–74. https://doi.org/10.1016/j.tics.2004.12.005

Stikkelbroek, Y., Bodden, D. H. M., Kleinjan, M., Reijnders, M., & van Baar, A. L. (2016).

Adolescent depression and negative life events, the mediating role of cognitive emotion regulation. *Plos One*, *11*(8), 1–16.

Sulkowski, M. L., & Simmons, J. (2018). The protective role of teacher–student relationships against peer victimization and psychosocial distress. *Psychology in the Schools*, *55*(2), 137–150. https://doi.org/10.1002/pits.22086

Sutton, R. E., Mudrey-Camino, R., & Knight, C. C. (2009). Teachers' emotion regulation and classroom management. *Theory Into Practice*, *48*(2), 130–137. http://dx.doi.org/10.1080/00405840902776418

Svaldi, J., Griepenstroh, J., Tuschen-caf, B., & Ehring, T. (2012). Emotion regulation deficits in eating disorders: A marker of eating pathology or general psychopathology? *Psychiatry Research*, *197*, 103–111. https://doi.org/10.1016/j.psychres.2011.11.009

Szentágotai-Tătar, A., & Miu, A. C. (2016). Individual differences in emotion regulation, childhood trauma and proneness to shame and guilt in adolescence. *PLoS ONE*, *11*. https://doi.org/10.1371/journal.pone.0167299

Tamnes, C. K., Walhovd, K. B., Dale, A. M., Østby, Y., Grydeland, H., Richardson, G., Westlye, L.T., Roddy, J.C., Hagler, D.J., Due-Tønnesen, P., Holland, D., & Fjell, A. M. (2013). Brain development and aging: Overlapping and unique patterns of change. *NeuroImage*, *68*, 63–74. https://doi.org/10.1016/j.neuroimage.2012.11.039

Tan, K., Sinha, G., Shin, O. J., & Wang, Y. (2017). Patterns of social-emotional learning needs among high school freshmen students. *Children and Youth Services Review*, *86*, 217–225. https://doi.org/10.1016/j.childyouth.2018.01.033

Tang, Y.-Y. (2015). *The neuroscience of mindfulness: How the body and mind work together to change our behaviour*. Springer Nature.

Tang, Y. Y., Hölzel, B. K., & Posner, M. I. (2015). The neuroscience of mindfulness meditation. *Nature Reviews Neuroscience*, *16*(4), 213–225.

Tennant, J. E., Demaray, M. K., Malecki, C. K., Terry, M. N., Clary, M., & Elzinga, N. (2015). Students' ratings of teacher support and academic and social-emotional well-being. *School Psychology Quarterly*, *30*(4), 494–512. http://dx.doi.org/10.1037/spq0000106

Thompson, C. S. (2018). The construct of 'respect' in teacher-student relationships: Exploring dimensions of ethics of care and sustainable development. *Journal of Leadership Education*, *17*(3), 42–60.

Thompson, R. A. (2014). Socialisation of emotion and emotion regulation in the family. In J. J. Gross (Ed.), *Handbook of Emotion Regulation* (2nd ed., pp. 173–186). The Guilford Press.

Tillfors, M., Toll, C., Branting, M., Boersma, K., & Jansson-Fröjmark, M. (2015). Allowing or fighting social anxiety: The role of psychological inflexibility in a non-clinical population. *Journal for Person-Oriented Research*, *1*(3), 151–161. http://dx.doi.org/10.17505/jpor.2015.16

Tosolt, B. (2010). Gender and race differences in middle school students' perceptions of caring teacher behaviors. *Multicultural Perspectives*, *12*(3), 145–151.

Triandis, H. C. (2018). *Individualism and Collectivism* (1st ed.). Routledge.

Troy, A. S., Shallcross, A. J., Brunner, A., Friedman, R., & Jones, M. C. (2018). Cognitive reappraisal and acceptance: Effects on emotion, physiology, and perceived cognitive costs. *Emotion*, *18*(1), 58–74. http://dx.doi.org/10.1037/emo0000371

Tull, M. T., Jakupcak, M., & Roemer, L. (2010). Emotion suppression: A preliminary experimental investigation of its immediate effects and role in subsequent reactivity to novel stimuli. *Cognitive Behaviour Therapy*, *39*(2), 114–125.

Uslu, F., & Gizir, S. (2017). School belonging of adolescents: The role of teacher–student relationships, peer relationships and family involvement. *Kuram ve Uygulamada Egitim Bilimleri*, *17*(1), 63–82. https://doi.org/10.12738/estp.2017.1.0104

Vaillancourt, T., DeCatanzaro, D., Duku, E., & Muir, C. (2009). Androgen dynamics in the context of children's peer relations: An examination of the links between testosterone and peer victimization. *Aggressive Behavior*, *35*(1), 103–113. http://dx.doi.org/10.1002/ab.20288

Valiente, C., Fabes, R. A., Eisenberg, N., & Spinrad, T. L. (2004). The relations of parental expressivity and support to children's coping with daily stress. *Journal of Family Psychology*, *18*(1), 97–106. http://dx.doi.org/10.1037/0893-3200.18.1.97

Vannikov-lugassi, M., Shalev, H., & Soffer-dudek, N. (2020). From brooding to detachment: Rumination longitudinally predicts an increase in depersonalization and derealisation. *Psychology and Psychotherapy: Theory, Research and Practice*. https://doi.org/10.1111/papt.12279

Vassilopoulos, S. P. (2008). Social anxiety and ruminative self-focus. *Journal of Anxiety Disorders*, *22*(5), 860–867. https://doi.org/10.1016/j.janxdis.2007.08.012

Verschueren, K. (2015). Middle childhood teacher-child relationships: Insights from an attachment perspective and remaining challenges. In G. Bosmans & K. A. Kerns (Eds.), *Attachment in middle childhood: Theoretical advances and new directions in an emerging field. New Directions for Child and Adolescent Development* (pp. 77–91), Wiley.

Verschueren, K., & Koomen, H. M. Y. (2012). Teacher – child relationships from an attachment perspective. *Attachment & Human Development*, *14*(3), 205–211. http://dx.doi.org/10.1080/14616734.2012.672260

Viana, A. G., Dixon, L. J., Stevens, E. N., & Ebesutani, C. (2016). Parental emotion socialization strategies and their interaction with child interpretation biases among children with anxiety disorders. *Cognitive Therapy and Research*, *40*(5), 717–731.

Viddal, K. R., Berg-Nielsen, T. S., Belsky, J., & Wichstrøm, L. (2017). Change in attachment predicts change in emotion regulation particularly among 5-HTTLPR short-allele homozygotes. *Developmental Psychology*, *53*(7), 1316–1329.

Wegner, D. M., & Zanakos, S. (1994). Chronic thought suppression. *Journal of Personality*, *62*(4), 615–640. https://doi.org/10.1111/j.1467-6494.1994.tb00311.x

Wentzel, K. R., & Wigfield, A. (2007). Motivational interventions that work: Themes and remaining issues. *Educational Psychologist*, *42*(4), 261–271. https://doi.org/10.1080/00461520701621103

Werner, K., & Gross, J. J. (2010). Emotion regulation and psychopathology: A conceptual framework. In A. M. Kring & D. M. Sloan (Eds.), *Emotion regulation and psychology: A transdiagnostic approach to etiology and treatment* (pp. 13–37). The Guilford Press.

Wheeler, M. S., Arnkoff, D. B., & Glass, C. R. (2017). The neuroscience of mindfulness: How mindfulness alters the brain and facilitates emotion regulation. *Mindfulness, 8*, 1471–1487. http://dx.doi.org/10.1007/s12671-017-0742-x

Wilcox, C. E., Pommy, J. M., & Adinoff, B. (2016). Neural circuitry of impaired emotion regulation in substance use disorders. *American Journal of Psychiatry, 173*(4), 344-361. https://doi.org/10.1176/appi.ajp.2015.15060710

Williams, S. R., & Woodruff-Borden, J. (2015). Parent emotion socialization practices and child self-regulation as predictors of child anxiety: The mediating role of cardiac variability. *Child Psychiatry and Human Development*, *46*(4), 512–522. http://dx.doi.org/10.1007/s10578-014-0492-0

Wolgast, M., Lundh, L. G., & Viborg, G. (2011). Cognitive reappraisal and acceptance: An experimental comparison of two emotion regulation strategies. *Behaviour Research and Therapy*, *49*(12), 858–866. https://doi.org/10.1016/j.brat.2011.09.011

Woodward, L. J., Lu, Z., Morris, A. R., & Healey, D. M. (2016). Preschool self regulation predicts later mental health and educational achievement in very preterm and typically developing children. *The Clinical Neuropsychologist*, *31*(2), 404-422. https://doi.org/10.1080/13854046.2016.1251614

World Health Organisation (WHO). (2014). *Adolescence: A Period Needing Special Attention*. http://apps.who.int/adolescent/second-decade/

Yeager, D. S. (2017). Social and emotional learning programs for adolescents. *The Future of* Yeager, D. S. (2017). Social and emotional learning programs for adolescents. *The Future of Children*, *27*(1), 73–94.

Yeager, D. S., Dahl, R. E., & Dweck, C. S. (2018). Why interventions to influence adolescent behavior often fail but could succeed. *Perspectives on Psychological Science*, *13*(1), 101–122.

Zeman, J., Cassano, M., Perry-Parrish, C., & Stegall, S. (2006). Emotion regulation in children and adolescents. *Journal of Developmental & Behavioral Pediatrics*, *27*(2), 155–168.

Zhan, J., Wu, X., Fan, J., Guo, J., Zhou, J., Ren, J., Liu, C., & Luo, J. (2017). Regulating anger under stress via cognitive reappraisal and sadness. *Frontiers in Psychology*, *8*, 1–13. https://doi.org/10.3389/fpsyg.2017.01372

Zimmer-Gembeck, M. J., Chipuer, H. M., Hanisch, M., Creed, P. A., & McGregor, L. (2006). Relationships at school and stage-environment fit as resources for adolescent engagement and achievement. *Journal of Adolescence*, *29*(6), 911–933. https://doi.org/10.1016/j.adolescence.2006.04.008

Zimmer-Gembeck, M. J., & Skinner, E. A. (2011). The development of coping across childhood and adolescence: An integrative review and critique of research. *International Journal of Behavioral Development*, *35*(1), 1–17. http://dx.doi.org/10.1177/0165025410384923

Appendices

Appendix A. Information Sheet-Study One

MASSEY UNIVERSITY
INSTITUTE OF EDUCATION
TE KURA O TE MATĀURANGA

Student Mapping of the Classroom Emotional Environment

Information Sheet

My name is Amy Edwards and I'm currently working on my Doctorate in Clinical Psychology at Massey University. My thesis supervisors are Dr. Shane Harvey (Clinic Director and Clinical Psychologist at the Turitea Psychology Clinic at Massey University), Dr. Kirsty Ross (Clinical Psychologist at the Turitea Psychology Clinic and Massey University), and Dr. David Bimler (Researcher/ Statistician at Institute of Education, Massey University).

Some Background

In this study, items containing students' perceptions of teacher emotional interactions will be compared. The aim will be to develop a three-dimensional map showing the similarity of items, from which we will be able to conduct further research to identify key behaviours of teachers and develop social-emotional practice profiles. This study is based on a model developed by Harvey & Evans (2012).

This study will contribute to a larger research project examining the relationships between teachers' practices, students' emotion regulation, and students' anxiety. This phase of the project will develop a questionnaire that will be used in the second phase, to be conducted in intermediate schools in 2018.

I would appreciate your input in understanding teachers' practices and invite you to take part in this project.

The Next Step

If you choose to participate, you will get an instruction sheet and a deck of cards. You will be asked to sort these cards by similarity. The task will take about 60 min. In reimbursement for your time, you will receive a $20 café voucher.

I am looking for 30 Year 12 and 13 students to take part. This is the minimum number required for the type of statistical analysis I'm using.

When I receive everybody's responses, the data will be analysed to create a map of how closely these behaviours relate. The concept is the same as a geographical map that shows in physical space how close two towns are.

Information gathered

All information gathered (e.g. consent forms and raw response sheets) will be kept confidential. Only you, my supervisors and I will have access and these will be stored in a locked cabinet in Dr. Shane Harvey's office and retained for review purposes. After five years, this information will be destroyed.

When the study is complete, I will distribute a summary of the research findings. I will be available to discuss these results with you if you wish.

Your rights

You are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- Ask any questions about the study at any time during participation
- Provide information on the understanding that your name will not be used unless you give permission to the researcher
- Be given access to a summary of the project findings when it is concluded

Who to contact

If you would like to know more, please do not hesitate to contact me directly, or you can reach my supervisors with any queries or concerns:

Amy Edwards

Amy.Edwards.4@uni.massey.ac.nz

06 356 9099 ext 85592

Dr. Shane Harvey

S.T.Harvey@massey.ac.nz

06 356 9099, ext 84967

Dr. Kirsty Ross

K.J.Ross@massey.ac.nz

Dr. David Bimler

D.Bimler@massey.ac.nz

"This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named above are responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), please contact Professor John O'Neill, Director, Research Ethics, telephone 06 350 5249, email humanethics@massey.ac.nz".

Appendix B. Consent Form – Study One

Student Mapping of the Classroom Emotional Climate

PARTICIPANT CONSENT FORM - INDIVIDUAL

☐ I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

☐ I agree to participate in this study under the conditions set out in the Information Sheet.

Signature: _____

Full Name – printed: _____

Date: _____

Gender: _____

Age: _____

Ethnicity _____

Appendix C. Low Risk Ethics Notification (Study One)

MASSEY UNIVERSITY
UNIVERSITY OF NEW ZEALAND

Date: 12 June 2017

Dear Amy Edwards

Re: Ethics Notification - **4000017972 - Student mapping of the classroom emotional climate**

Thank you for your notification which you have assessed as Low Risk.

Your project has been recorded in our system which is reported in the Annual Report of the Massey University Human Ethics Committee.

The low risk notification for this project is valid for a maximum of three years.

If situations subsequently occur which cause you to reconsider your ethical analysis, please contact a Research Ethics Administrator.

Please note that travel undertaken by students must be approved by the supervisor and the relevant Pro Vice-Chancellor and be in accordance with the Policy and Procedures for Course-Related Student Travel Overseas. In addition, the supervisor must advise the University's Insurance Officer.

A reminder to include the following statement on all public documents:
"This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named in this document are responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you want to raise with someone other than the researcher(s), please contact Dr Brian Finch, Director - Ethics, telephone 06 3569099 ext 86015, email humanethics@massey.ac.nz. "

Please note, if a sponsoring organisation, funding authority or a journal in which you wish to publish requires evidence of committee approval (with an approval number), you will have to complete the application form again, answering "yes" to the publication question to provide more information for one of the University's Human Ethics Committees. You should also note that such an approval can only be provided prior to the commencement of the research.

Yours sincerely

Research Ethics Office, Research and Enterprise
Massey University, Private Bag 11 222, Palmerston North, 4442, New Zealand **T** 06 350 5573; 06 350 5575 **F** 06 355 7973
E humanethics@massey.ac.nz **W** http://humanethics.massey.ac.nz

Human Ethics Low Risk notification

Dr Brian Finch
Chair. Human Ethics Chairs' Committee and Director (Research Ethics)

Appendix D. GOPA Instruction Sheet

Student Mapping of the Classroom Emotional Environment

Instruction Sheet for Card Sort

In front of you, you have a deck of 88 cards. Each card has a specific behaviour listed on it along with an identification number (for ease of transcribing). The purpose of this exercise is to use your own judgment in determining how alike or different each of these items is. You may use whatever strategy makes the most sense to you.

This project involves four steps. Please complete each one before moving on. Before moving to the next step, please record your groupings on the enclosed record sheet.

1) Sort all of the cards into 8 (and up to 16) different groups based on similarities of the items. Use your own judgment on what similarities should unite each grouping. The piles do not have to be equal and a pile can be any number of items.

2) Starting with any of the piles created in (1), choose which of the remaining piles has the most *opposite* meaning. Continue until all piles have been linked to their opposite.

3) Using the piles created in step (1), divide each pile into (#) subgroups.

4) Again beginning with your step (1) piles, combine these piles into larger groupings according to similarity.

Appendix E. GOPA Response Sheet

GOPA Response Page

Phase **one** – grouping	Phase **three** – partition
Make up **at least 8 (and up to 16)** different groups of similar items. A group may have a single item. Keep each group's item numbers on the same line. **Please print neatly**. Do NOT number groups.	Copy all numbers from Phase 1 onto the same line but this time put item numbers within brackets. These brackets will show sub groups, that is how the most similar items go together. A sub group may have a single item within brackets.
Example: 7 22 1 43 78 12	(12 43 22) (1 7) (78)

Phase **two** – opposites

Look over the phase 1 groups to find are the most different. Record these "opposites" by entering any one item number from each group on the spaces below. Try to find at least two sets of opposites. Use your own judgment. Leave the item groups intact, do NOT move items around.

Opposite set 1: ____, ____# Opposite set 2: ____, ____# Opposite set 3: ____, ____#

Opposite set 4: ____, ____# Opposite set 5: ____, ____# Opposite set 6: ____, ____#

Phase **four** – adding

This time join together the most similar groups in phase 1. Physically place these similar Phase 1 item groups together and enter any one item number from each joining group onto

the spaces below. Only some groups will join up, many will not. Try to make at least two merges. If there are more than three, continue showing item pairs.

Merger a) _____, _____# Merger b) _____, _____# Merger c) _____, _____#

Merger d) _____, _____# Merger e) _____, _____# Merger f) _____, _____#

Appendix F. GOPA Cards

1. Addresses emotional situation immediately	2. Encourages us to build enjoyable friendships with other students
3. Rewards fairly	4. Tells stories using examples of how others have responded emotionally
5. My behaviour is affected by what my teacher believes about me	6. I care what this teacher thinks about me
7. We can always tell how our teacher feels	8. Shows me how I took part in an emotional situation (e.g., started an argument or reacted to it)
9. Makes us aware of how we are managing emotion	10. Makes us aware of how others feel
11. Likeable	12. Makes our class a safe place to be
13. We mirror how our teacher feels	14. My self esteem is related to how this teacher feels about me

15. Is actively concerned with our learning	16. Takes our problems seriously
17. Tells us about themselves	18. Adapts his/her emotions to suit the situation (e.g. caring with a sad student)
19. Talks us through emotional situations that have affected us (e.g. student death/ bullying)	20. Has a good relationship with us
21. Believes in our potential	22. Believes in what they do as teachers
23. Encourages us to support each other	24. Helps me/us solve emotional problems
25. My teacher helps me to think before I act	26. His/her positive responses are appropriate to the situation
27. Controls their own negative reactions well	28. Encourages us to learn new things

29. Consistently enforces consequences	30. The way this teacher responds makes me work better
31. I can talk to my teacher irrespective of his/her mood	32. Understands how we feel
33. Enjoys teaching	34. Explains the best way to respond to things
35. Clear and reasonable expectations of us	36. Positive
37. Helps us work together	38. Has clear class routines and structures
39. Has enjoyable teaching style	40. Is aware of the class mood
41. Is aware of my emotions	42. Enthusiastic

\

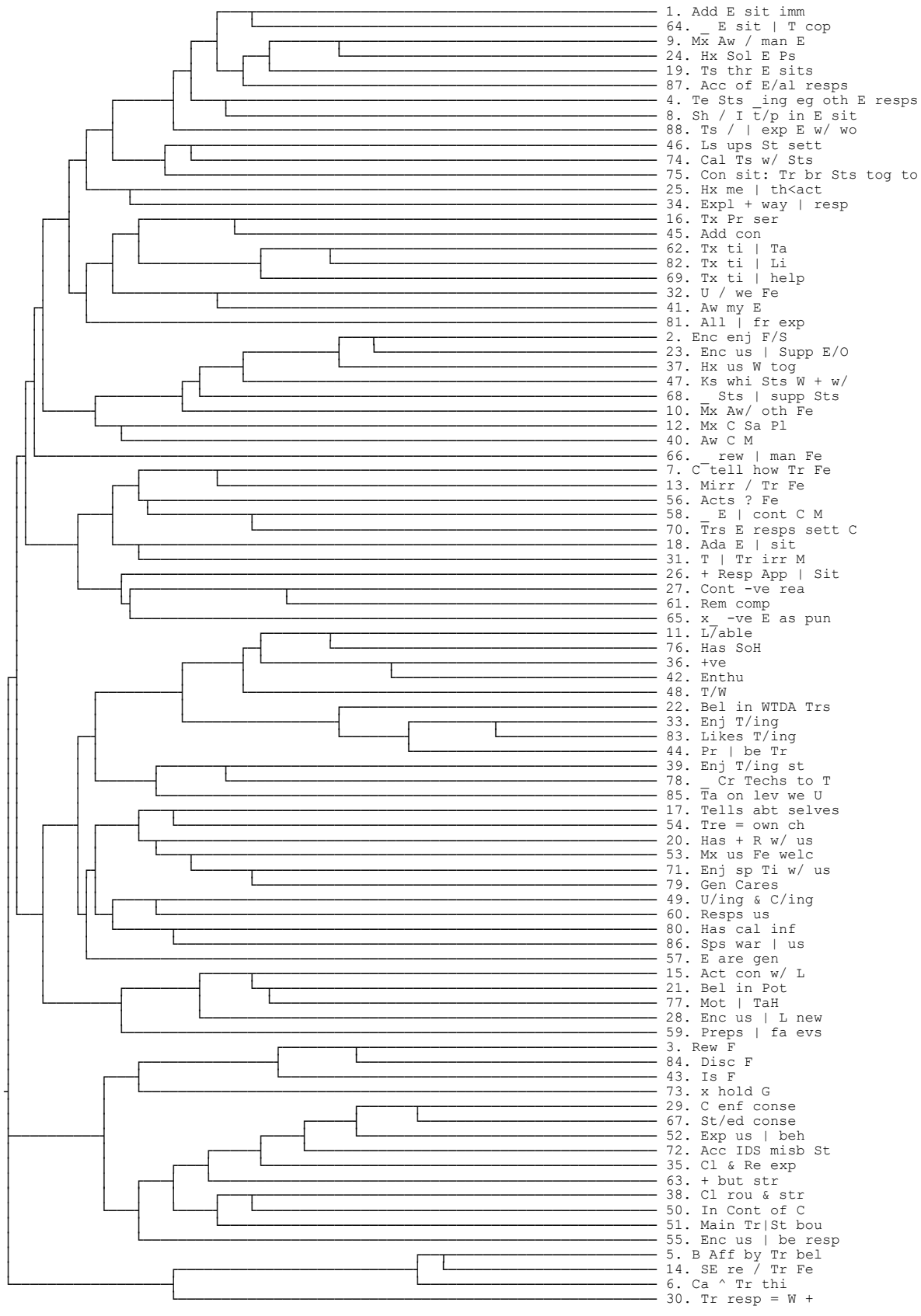
43. Is fair	44. Proud to be a teacher
45. Addresses our concerns	46. If a student is upset, my teacher lets them go and settle down
47. Knows which other students I work well with	48. Trustworthy
49. Understanding and caring	50. Is in control of the class
51. Maintains clear teacher-student boundaries with us	52. Expects us to behave
53. Makes us feel welcome	54. Treats us like his/her own children
55. Encourages us to be responsible	56. Acts as if they are feeling something different to what they are
57. Emotions are genuine	58. Uses own emotion to control the mood of the class

59. Prepares us to face upcoming events (e.g. exams)	60. Respects us
61. Remains composed in difficult situations	62. Takes time to talk
63. Good but strict	64. Uses emotional situations to teach us how to cope better
65. Doesn't use negative emotion (e.g., shame, guilt-trip) as punishment	66. Uses rewards to manage how we feel
67. Stated consequences for certain behaviours or emotion	68. Uses students to support other students (e.g., student mediators, class monitors)
69. Takes time to help us	70. My teacher's emotional responses settles the class down
71. Enjoys spending time with us	72. Accurately identifies the misbehaving student

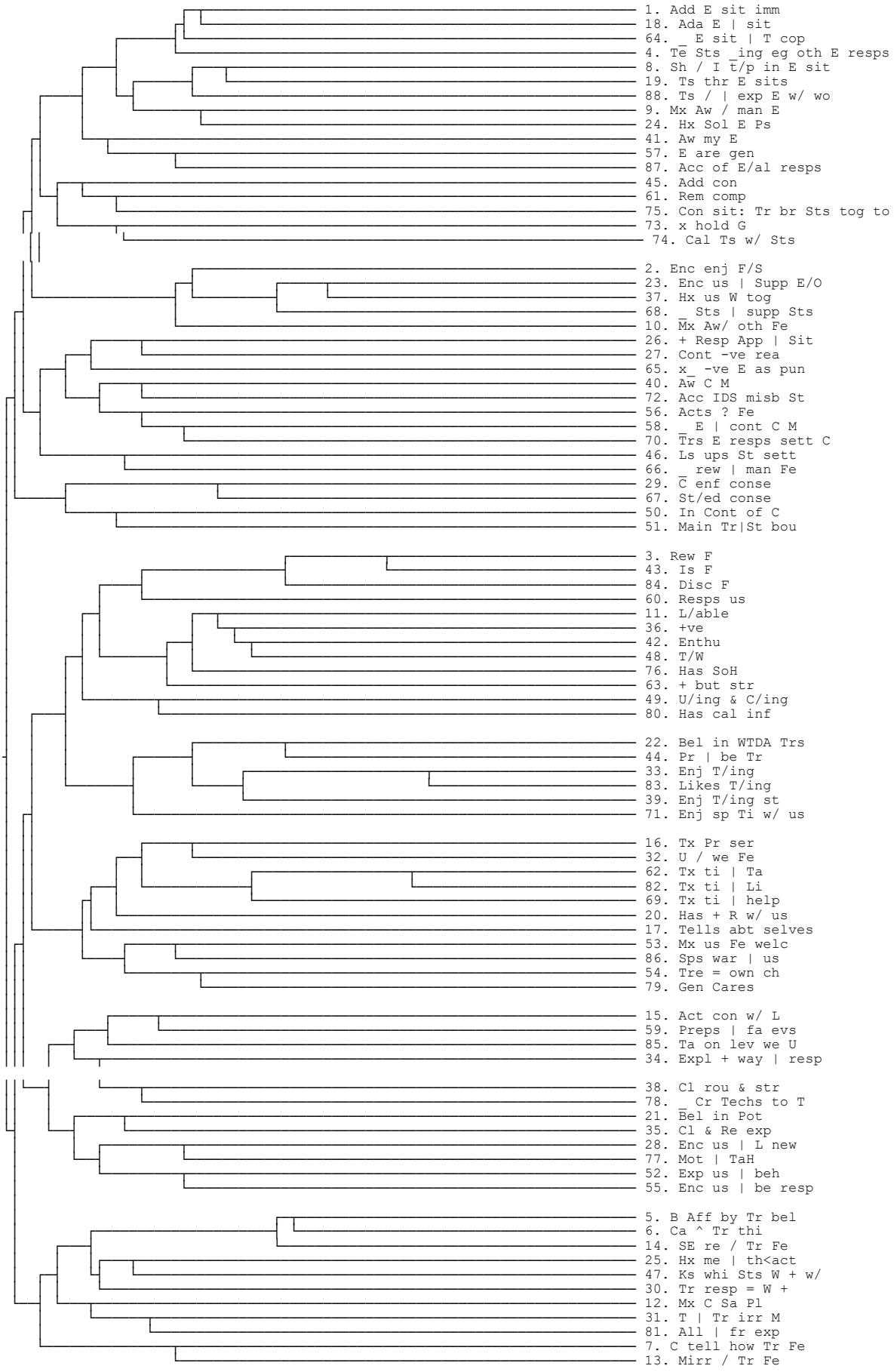
73. Doesn't hold a grudge	74. Calmly talks with students having difficulties
75. In conflict situations between students, my teacher brings them together to talk it through	76. Has sense of humour
77. Motivates us to take on the task at hand	78. Uses creative techniques to teach
79. Genuinely cares about us	80. Has a calming influence
81. Allows us to freely express ourselves	82. Takes time to listen
83. Likes teaching	84. Disciplines fairly
85. Talks to us on a level we understand	86. Speaks warmly to us
87. Is accepting of our emotional responses	88. Teaches us how to express our emotions with words

Appendix G. Supplementary Data (Study One)

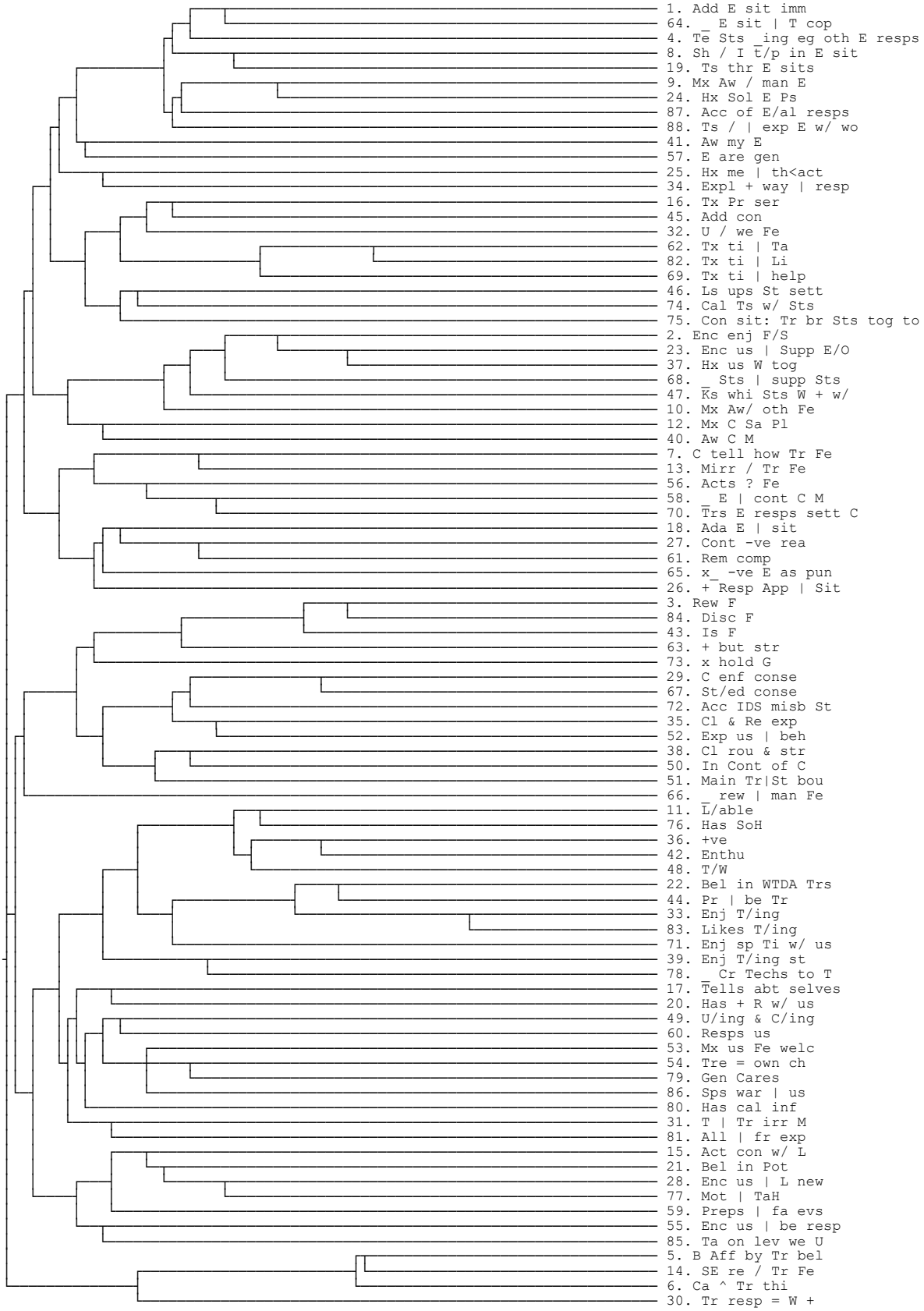
Dendrogram from 31 NZ students



Dendrogram from 31 ESOL students



Dendrogram from 31 NZ and 31 ESOL students, combined



Appendix H. Letter to Schools (Study Two Initial School Contact)

Tēnā Koe,

My name is Amy Edwards. I am a student at Massey University, Palmerston North, and am currently working on my Doctorate in Clinical Psychology. I am writing to you to request permission to conduct research with students from your school. The title of my research project is *Emotions in the classroom: Exploring relationships between teachers' social-emotional practices and student outcomes.*

I am working under the supervision of Dr. Shane Harvey (Director, Turitea Psychology Clinic, Massey University), Dr. Kirsty Ross (Senior Psychlogist, Turitea Psychology Clinic, Massey University), and Dr. David Bimler (Institute of Education, Massey University).

What is my research about?

Research has found students' perceptions of their teachers' use of social-emotional practices relates to the students liking of and connectedness to their teachers. In addition, school connectedness has been linked to positive academic, social, and psychological functioning in adolescents. These findings from past research suggest that teachers' use of social-emotional practices may have a role in fostering adolescents' healthy development. My research aim is to investigate this role in relation to students' psychological flexibility and social, emotional, and behavioural strengths and difficulties.

An ability to be psychologically flexible, and able to regulate emotion in a way that helps us moves toward goals, is beneficial for wellbeing. It is important, therefore, to understand how development of psychological flexibility can be supported in young people. Currently, research examining the development of emotion regulation has focussed primarily on parents' influences. While this is beneficial, it is important to also consider other influential adults who may also have an impact. Little research has examined teachers' roles in influencing students' emotional development. My research aims to address this by examining how students' perceptions of teachers' practices are related to their connectedness to school, their psychological flexibility and social, emotional, and behavioural strengths and difficulties.

Why is this important?

School can be associated with high levels of anxiety and emotional pressure, particularly in later years where adolescents are facing the academic pressure of exams while also making decisions as to where their lives will head following secondary school. It is hoped the findings of this research will help teachers to best support students to develop skills to respond to challenges they face throughout their school years in ways that have the best outcomes for their wellbeing.

Who are we looking for?

We are aiming to collect data from at least 180 Year 12 and 13 students. If you grant permission for your school to be involved in the project, all teachers who have a Year 12 or 13 form class will be invited to attend a brief information session, and give their consent to their students reporting on their teaching practices. Teachers will be under no obligation to give consent. Then, the researcher will organise an appropriate time to come into the school and speak to those students who may be interested in taking part to share information about the study. Students who wish to take part will be provided with a link to an electronic questionnaire to complete the survey in their own time, outside of school.

What is involved?

Each child who takes part in the study will fill out four questionnaires:

- The Classroom Emotional Environment Questionnaire-Student Version (CEEQ-S) contains 88 items related to students' perceptions of their teacher's practices
- The School Connectedness Scale (SCS) contains 25 items related to students' feelings about school and teachers
- The Avoidance and Fusion Questionnaire for Youth (AFQ-Y8) contains 8 items related to emotion-related beliefs and behaviours
- The Strengths and Difficulties Questionnaire (SDQ) contains 25 items related to students' emotional, social, and behavioural strengths and difficulties

No students' academic learning will be disadvantaged by this study. The questionnaires will be sent to students via an electronic link, and they will fill out the questionnaires at home, in their own time.

What is required of your school/staff?

Your school's involvement in this project should not be burdensome for any of your staff or students. Individual teachers can volunteer for their students to report on their practices, but no teachers are obliged to do so. I will be offering an information session for teachers, however teachers can alternatively provide their consent for their students' involvement based on written information.

Feedback

We want this project to be as beneficial as possible for all students, teachers, and schools who are involved. A summary of the overall study findings will be available to participants upon request at the end of the study.

In addition, your school will receive a summary of the data collected from students within your school, so that you can see how your students perceive your teachers' practices, and the effects this has on students' emotional strengths and difficulties. I will also offer a teachers' workshop where I will explain the implications of the findings, so that teachers can apply the findings to their professional development.

Individual teachers may request a summary of findings collected from students within their class. The students will not be identifiable from this summary, but it is hoped that this may be useful feedback for those teachers who want it.

Contact Details

If you have any further questions about this research, please don't hesitate to contact the researcher, or any member of the supervision team, using the following contact details:

Researcher

Amy Edwards

Amy.Edwards.4@uni.massey.ac.nz

Supervisors

Dr. Kirsty Ross

K.J.Ross@massey.ac.nz
(06) 356 9099 ext. 84968

Dr. David Bimler

D.Bimler@massey.ac.nz

Prof. Margaret Walshaw

M.A.Walshaw@massey.ac.nz

Appendix I. Study Two Teacher Information Sheet

Emotions in the classroom: Exploring the relationships between teachers' social-emotional practices and student outcomes

Teacher Information Sheet

Tēnā Koe

My name is Amy Edwards. I am a student at Massey University, Palmerston North, and am currently working on my Doctorate in Clinical Psychology. My research project is called *Emotions in the classroom: Exploring the relationships between teachers' practices and students' social-emotional outcomes.*

I am working under the supervision of Dr. Kirsty Ross (Senior Psychologist, Turitea Psychology Clinic, Massey University), Dr. David Bimler (Institute of Education, Massey University), and Prof. Margaret Walshaw (Institute of Education, Massey University).

What is my research about?

Research shows how we regulate emotions can impact wellbeing. Specifically, being psychologically flexible, and able to regulate emotion in a way that helps us moves toward goals, is beneficial. It is important, therefore, to understand how development of psychological flexibility can be supported in young people. Currently, research examining the development of emotion regulation has focussed primarily on parents' influences. While this is beneficial, it is important to also consider other influential adults who may also have an impact. Little research has examined teachers' roles in influencing students' emotional development. My research aims to address this by examining how students' perceptions of teachers' practices are related to students' psychological (in)flexibility and social, emotional, and behavioural strengths and difficulties.

Why is this important?

School can be associated with high anxiety and emotional pressure. For teachers, it can be difficult to know how best to manage students' emotions in the classroom and to understand their role in students' social-emotional development. It is hoped the findings of this research will help teachers to support students develop important skills for wellbeing and success.

Who are we looking for?

We are aiming to collect data from at least 180 Year 12/13 students. If you consent to your students taking part and reporting on your social-emotional practices, the researcher will come to one of your classes to provide information to all students in that class with the opportunity

for them to take part. The students will fill out the survey during that class, or work on something quiet if they do not wish to take part.

What is your involvement?

Your involvement in this study is voluntary and will not impact your job in any way.

Should you consent, students who take part from your class will report on their perceptions of your social-emotional practices. That is, any practices that involve interactions between yourself and the student with an emotional impact. The purpose of this is not to identify "good" or "bad" teachers, or to identify what you are doing wrong. All items that students will respond to related to your practice are positively framed, and students will indicate whether they observe the practice on a 1-5 scale (Never, Rarely, Sometimes, Often, Always). We expect that there will be significant variety across teachers in the practices observed by students.

You will be asked to leave the room while the students fill out the electronic survey, to ensure their privacy. The researcher will be present for this time.

Personal feedback can be provided based on the data collected from students within your class if you wish. This is entirely voluntary and dependent on multiple students in your class taking part so individual students cannot be identified. Please note again that the aim of this study is not to identify good or bad teachers. Feedback will be an opportunity to see what positive practices you use and how these relate to student outcomes, with the potential to see how your practices compare against other teachers. If you feel any discomfort as a result of the feedback given, please feel free to contact any member of the research team if you wish to discuss further.

To enhance the professional development opportunities from this research, the researcher will be offering a PD workshop at your school at the culmination of the study that you are welcome to attend.

What is involved?

Each student who takes part in the study will fill out four questionnaires:

- The Classroom Emotional Environment Questionnaire-Student Version (CEEQ-S) contains 88 items related to students' perceptions of their teacher's practices
- The School Connectedness Scale (SCS) contains 25 items related to students' connectedness to their teacher
- The Avoidance and Fusion Questionnaire for Youth (AFQ-Y8) contains 8 items related to emotion-related beliefs and behaviours
- The Strengths and Difficulties Questionnaire (SDQ) contains 25 items related to students' emotional, social, and behavioural strengths and difficulties

The total time required to fill out all three questionnaires is estimated to be 15-20 minutes. The researcher will provide information to students prior to the survey, so the total class time required is likely to be 25 minutes.

How will the data we collect be used?

No students' names will be collected; all data is anonymous. In addition, the researcher will not be able to identify which teachers are being reported on in each questionnaire, **unless you wish to receive personal feedback** on the findings collected from within your class. If you wish to receive personal feedback, please indicate so on the consent form attached.

Demographic data, including students' age, gender, ethnicity, and school will be collected, in addition to their teacher's gender, age range, and ethnicity. This will enable us to examine how well our sample represents New Zealand society.

All data will be stored securely for ten years, then destroyed.

What's next?

If you are willing for your students to take part, please fill out the attached consent form and return it to the researcher via email (see below for email address). The researcher will then contact you to organise an appropriate time to visit one of your Year 12 or 13 classes.

Contact Details

If you have any further questions about this research, please don't hesitate to contact the researcher, or any member of the supervision team, using the following contact details:

Researcher

Amy Edwards
School of Psychology
Massey University
Palmerston North
New Zealand
06 356 9099 ext 85593
Email: Amy.Edwards.4@uni.massey.ac.nz

Supervisors

Dr. Kirsty Ross

K.J.Ross@massey.ac.nz
06 356 9099 ext. 84968

Dr. David Bimler

D.Bimler@massey.ac.nz

Prof. Margaret Walshaw

M.A.Walshaw@massey.ac.nz

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 18/03. If you have any concerns about the conduct of this

research, please contact Dr Rochelle Stewart-Withers, Chair, Massey University Human Ethics Committee: Southern B, telephone 06 356 9099 x 83657, email humanethicsouthb@massey.ac.nz

Consent Form

- ☐ I consent for students in my class to report on the social-emotional practices they observe in my teaching.
- ☐ I wish to receive personal feedback on the results collected from within my class.

  Note: If you wish to receive personal feedback, the students in your class who complete the survey will be asked to give your name

Name: ……. School: ……

Email: …….

Signed: …… Date: ……....

Appendix J. Student Information Sheet & Consent

MASSEY UNIVERSITY
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES
TE KURA PUKENGA TANGATA

Relationships between teaching styles and emotions in the classroom: Student survey

Information Sheet

Kia Ora! Thank you for your interest in taking part in my survey.
Your contribution to this research would be greatly appreciated.

What is involved?
Completing the survey will take approximately 20-25 minutes. There are four sections to the survey. You will find instructions at the beginning of each new section. Your responses will help us to understand the relationships between the ways that your teacher interacts with you, your feelings about school, and your strengths and difficulties at school. Please do your best to give honest and accurate responses.

Who is doing this research?
My name is Amy Edwards and I am studying toward my Doctorate in Clinical Psychology at Massey University. I am being supervised by Dr. Shane Harvey, Dr. Kirsty Ross, and Dr. David Bimler.

Who can participate?
We are looking for at least 180 Year 12 and 13 students from local secondary schools to respond to this survey.

Your rights as a participant:
You are under no obligation to accept this invitation to take part in this research. If you do decide to take part, your completion of the survey implies your consent. You have the right to decline to answer any question, or pull out of the survey at any time. In order to protect your privacy, the survey is anonymous. You will be asked to identify your school, but this will in no way reveal your identity as many students from each school have been invited to take part.

In addition, some teachers have asked for feedback on how the students in their class responded, to help them develop good skills. If your teacher has asked for feedback, you will be asked to name them. The feedback offered to teachers will be general, not specific to any one student, and will only be available to your teacher if other students in your class have taken part. You are not required to give your own name when completing the survey so neither the researcher or your teacher will see your name. Your teacher will not know which students took part in the survey and will have no idea if you took part.

Data collected from this survey will be stored securely at Massey for 10 years, after which it will be destroyed.

If you are upset or feel uncomfortable as a result of any part of this survey, please talk to your parent(s)/caregivers, teacher, or a school guidance counsellor. Your school staff can help you access further support if it is needed.

Contact information
If you have any further questions, please feel free to contact the researcher or supervisor(s):

Researcher
Amy Edwards
School of Psychology
Massey University
Palmerston North
New Zealand
06 356 9099 ext 85592
Email: Amy.Edwards.4@uni.massey.ac.nz

Supervisors
Dr. Shane Harvey, School of Psychology
+64 6 3569-099 ext 84967
S.T.Harvey@massey.ac.nz

Dr. Kirsty Ross, School of Psychology
K.J.Ross@massey.ac.nz

Dr. David Bimler, Institute of Education
D.Bimler@massey.ac.nz
Te Kunenga ki Pūrehuroa
Massey University School of Psychology – Te Kura Hinengaro Tangata
Palmerston North, New Zealand
T +64 6 3569-099 ext 85071 : W psychology.massey.ac.nz

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 18/03.

If you have any concerns about the conduct of this research, please contact Dr Rochelle Stewart-Withers, Chair, Massey University Human Ethics Committee: Southern B, telephone 06 356 9099 x 83657, email humanethicsouthb@massey.ac.nz

Consent

Respondent Consent

Thank you for participating in this questionnaire.
Your participation implies consent.
You have the right to decline to answer any particular question.

I have read and understood the information sheet for this study and consent to collection of my responses.
(Please click on the 'Yes' choice if you wish to proceed.)

- ○ Yes
- ○ No

Appendix K. MUHEC Ethics Approval (Study Two)

Date: 02 May 2018

Dear Amy Edwards

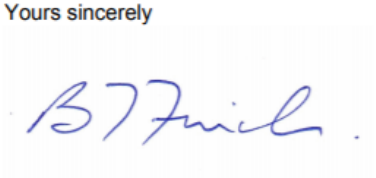
Re: Ethics Notification - **SOB 18/03 - Exploring relationships between students' perceptions of teachers' practices and student connectedness, psychological flexibility, and strengths and difficulties.**

Thank you for the above application that was considered by the Massey University Human Ethics

Approval is for three years. If this project has not been completed within three years from the date of this letter, reapproval must be requested.

If the nature, content, location, procedures or personnel of your approved application change, please advise the Secretary of the Committee.

Yours sincerely



Dr Brian Finch
Chair, Human Ethics Chairs' Committee and Director (Research Ethics)

Appendix L. Supplementary Data (Study Two)

Supplementary Data

Supplementary Table 1

Item loadings on both factors, arranged in descending order according to loading on Factor 1.

	Factor 1	Factor 2
79. Genuinely cares about us	.858	-.074
20. Has a good relationship with us	.844	-.111
49. Understanding and caring	.837	-.049
82. Takes time to listen	.837	-.184
81. Allows us to freely express ourselves	.833	-.103
80. Has a calming influence	.826	-.121
39. Has an enjoyable teaching style	.823	-.112
87. Is accepting of our emotional responses	.823	.029
32. Understands how we feel	.820	.191
53. Makes us feel welcome	.815	-.280
40. Is aware of the class mood	.799	.051
86. Speaks warmly to us	.798	-.081
71. Enjoys spending time with us	.796	.009
11. Likeable	.793	-.177
60. Respects us	.793	-.315
77. Motivates us to the task at hand	.792	-.119
26. His/her positive responses are appropriate to the situation	.787	.019
16. Takes our problems seriously	.782	-.042
30. The way this teacher responds makes me work better	.782	.016
43. Is fair	.778	-.259
37. Helps us work together	.775	-.088
48. Trustworthy	.773	-.156
61. Remains composed in difficult situations	.772	-.222
21. Believes in our potential	.761	-.169
42. Enthusiastic	.760	-.162
18. Adapts his or her emotions to suit the situation (eg. Caring with a sad student)	.755	.249
28. Encourages us to learn new things	.752	-.209
85. Talks to us on a level we understand	.751	-.167
45. Addresses our concerns	.749	.029
23. Encourages us to support each other	.748	.115

84. Disciplines fairly	.744	-.166
35. Clear and reasonable expectations of us	.743	-.187
69. Takes time to help	.741	-.193
34. Explains the best way to respond to things	.740	.127
59. Prepares us for future events (eg. Exams)	.735	-.231
12. Makes our class a safe place to be	.723	-.227
74. Calmly talks with students having difficulties	.723	-.140
41. Is aware of my emotions	.721	.279
22. Believes in what they do as teachers	.718	-.226
36. Positive	.714	-.301
2. Encourages us to build enjoyable friendships with other students	.713	.202
3. Rewards fairly	.713	-.086
76. Has a sense of humour	.705	-.042
24. Helps me/us solve emotional problems	.702	.446
83. Likes teaching	.700	-.281
70. My teacher's emotional responses settle the class down	.694	.216
15. Is actively concerned with our learning	.689	-.157
55. Encourages us to be responsible	.682	-.166
78. Uses creative technologies to teach	.679	.139
50. Is in control of the class	.676	-.109
44. Proud to be a teacher	.674	-.307
25. Helps me think before I act	.672	.376
62. Takes time to talk	.670	-.051
75. In conflict situations between students, my teacher brings them together to talk it through	.670	.334
33. Enjoys teaching	.665	-.302
46. If a student is upset, my teacher lets them go and settle down	.657	.163
38. Has clear class routines and structures	.655	-.122
27. Controls their own negative reactions well	.650	-.190
88. Teaches us how to express our emotions with words	.645	.374
1. Addresses emotional situation immediately	.640	.230
57. Emotions are genuine	.637	-.183
63. Good but strict	.632	-.033
9. Makes us aware of how we are managing emotion	.620	.472
72. Accurately identifies the misbehaving student	.613	-.039
54. Treats us like his/her own children	.611	.152
64. Uses emotional situations to teach us how to cope better	.611	.500

19. Talks us through emotional situations that have affected us (eg. Student death/bullying)	.610	.424
31. I can talk to my teacher irrespective of his or her mood	.608	-.052
10. Makes us aware of how others feel	.599	.413
47. Knows which other students I work well with	.572	-.012
6. I care what this teacher thinks of me	.565	.117
51. Maintains clear teacher-student boundaries	.557	-.295
66. Uses rewards to manage how we feel	.529	.312
4. Tells stories using examples of how others have responded emotionally	.523	.473
73. Doesn't hold a grudge	.521	-.162
17. Tells us about themselves	.515	.329
52. Expects us to behave	.515	-.260
67. States consequences for certain behaviours or emotion	.496	.126
8. Shows me how I took part in an emotional situation	.491	.444
13. We mirror how our teacher feels	.471	.396
29. Consistently enforces consequences	.470	.260
7. We can always tell how our teacher feels	.418	.229
68. Uses students to support other students (eg. Student mediators, student monitors)	.403	.249
14. My self-esteem is related to how this teacher feels about me	.319	.425
65. Doesn't use negative emotion (eg. Shame, guilt trip) as punishment	.314	.171
58. Uses own emotion to control the mood of the class	.293	.340
5. My behaviour is affected by what my teacher believes about me	.165	.326
56. Acts as if they are feeling something different to what they are	.161	.445

Appendix M. Case Study

Note: The following case study, based on Article Two presented earlier in this thesis, was submitted for examination during the researcher's clinical internship year, in accordance with course requirements.

Case Study Six: Research

Students' perceptions of teachers' social-emotional practices: Application of the CEEQ-S and investigation of relationships with connectedness and student outcomes

This case study was completed during the period of an internship as part of a Doctor of Clinical Psychology and represents the work of Amy Edwards under the supervision of Kirsty Ross.

Name: Amy Edwards, Intern Psychologist, Clinical Psychology Services-Healthy Aging and Rehabilitation, MidCentral DHB

Student ID: 16128147

Supervisor: Kirsty Ross, Senior Clinical Psychologist, Massey University Psychology Clinic

Word Count: 7568

Candidate: _____ Supervisor: _____

Date: _____ Date: _____

Introduction

The role of a teacher in influencing student development is increasingly being acknowledged as encompassing not only academic, but also social-emotional development (Eccles & Roeser, 2011). School has long been recognised as a context for child development (Bronfenbrenner, 1979), and interest in students' social-emotional development has grown substantially within educational research over recent decades. Concepts such as school connectedness and teacher-student relationships have been investigated to uncover the teacher-student factors that contribute to positive student outcomes (Eccles & Roeser, 2011).

School connectedness, or the feeling of belonging students have to school and their teachers, has been linked to numerous positive academic, social, and emotional outcomes in adolescent students (Bond et al., 2007; Cederbaum, Rodriguez, Sullivan, & Gray, 2017; Foster et al., 2017; Lester et al., 2013; Markham et al., 2010; Oldfield et al., 2016; Shochet et al., 2006; Sulkowski & Simmons, 2018). Specifically, in adolescent samples, positive school connectedness has been linked to increased likelihood of school completion (Bond et al., 2007), reductions in risky sexual behaviours (Cederbaum et al., 2017; Markham et al., 2010), increased prosocial behaviour (Oldfield et al., 2016), less vulnerability to psychological distress experiences as a result of peer victimisation (Sulkowski & Simmons, 2018), and reduced likelihood of future depressive and anxiety symptoms (Lester et al., 2013; Shochet et al., 2006).

Furthermore, school connectedness has been found to serve a protective function for at-risk adolescents. In a sample of "at-risk" youth consisting of students who had been perpetrators and/or victims of peer bullying, and students who lived in under-resourced communities with high levels of poverty, high levels of connectedness to school were related to decreased likelihood of students experiencing depressive symptoms and suicidal ideation, as well as social anxiety and risky sexual behaviours. In addition, connectedness to school was associated with higher self-esteem (Foster et al., 2017).

A similar and related concept, teacher-student relationships have also been associated with positive student outcomes, including emotional wellbeing (García-Moya, Brooks, Morgan, & Moreno, 2015) and behavioural functioning (Obsuth et al., 2017).

In addition to increasing research emerging regarding the ways teacher-student relationships and connectedness can positively benefit students' social-emotional development, there has been increasing emphasis within the education sector on efforts to explicitly incorporate students' social-emotional development in learning. Social and emotional learning (SEL) has become widespread in school curricula; defined as "the processes through which individuals acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage their emotions, feel and show empathy for others, establish and achieve positive goals, develop and maintain positive relationships, and make responsible decisions." (Schonert-Reichl, Kitil, & Hanson-Peterson, 2017, p. 5). Theory underlying SEL recognises five key competencies underpinning students' outcomes at school: self-awareness; social awareness; self-management; relationship skills; and responsible decision making (Schonert-Reichl et al., 2017). SEL is increasingly being incorporated into school programmes as a component of curriculum; however, this is mostly confined within pre-secondary education (Hamedani & Darling-Hammond, 2015).

Research to date has found SEL programmes tend to be more efficacious with students of younger age groups than adolescents (Tan, Sinha, Shin, & Wang, 2017b; Yeager, 2017; Yeager et al., 2018). In addressing why this is so, researchers have pointed to a lack of recognition of the developmental stage needs of adolescents (Yeager et al., 2018). It has been indicated that knowledge of child and adolescent development helps teachers to enhance their teaching for the benefit of students' social, emotional, and academic outcomes

(Schonert-Reichl et al., 2017). Adolescents are highly sensitive, for example, to their social contexts and seek social acceptance, respect, and autonomy. Lack of recognition of these social needs in application of traditional lesson-based SEL programmes has been proposed as one barrier to their effectiveness (Yeager, 2017).

In addition, research has demonstrated the importance of considering modes of sharing information; adolescents' neural activity in response to critical maternal feedback showed increased activity in brain regions related to anger and decreased activation in areas related to planning, suggesting resistance to suggestions of behaviour change (Lee et al., 2014). In contrast, adolescents who received information regarding adherence to cancer drugs through an interactive video game responded with brain activity indicating pleasure and reward; emotions also associated with motivation to learn (Cole et al., 2012). These findings demonstrate the importance of considering adolescents' needs in tailoring approaches to teaching; using methods of teaching social-emotional skills that convey respect and encourage students to have a sense of autonomy may be more efficacious than traditional instructional-based approaches.

To enhance the efficacy of teachers in positively influencing their students' social-emotional development, it is important that teacher education programmes incorporate training on how to manage students' emotions and practice in a way that facilitates students' social-emotional development. Teachers must be able to recognise students' emotions and understand the relationships between emotion, emotion regulation and behaviour in order to respond to student emotion in the classroom most effectively. Teachers who are competent in doing so have been found to be more able to support students to effectively communicate their emotions and needs, model positive emotion regulation, understand and manage challenging behaviours and student conflicts, and motivate students' learning than teachers who lack such competence (Jennings & Greenberg, 2009).

Despite its importance, however, social-emotional aspects of teaching have traditionally been under-recognised in initial teacher education, and commentary emerging from within the education sector has recognised a gap between theory and practice. A US Study examining teacher education courses found that very few addressed any of the five identified components of students' social-emotional learning. Accordingly, teachers reported feeling underprepared in their first years of teaching (Schonert-Reichl et al., 2017). Implications of this affect both students and teachers, with higher stress and burnout for teachers, and poorer teacher-competence in incorporating beneficial practices in their classroom teaching (Schonert-Reichl et al., 2017).

Students' needs are often complex and may be affected by wide-ranging social and contextual factors such as poverty, family relationship problems, domestic violence and abuse, peer relationship problems and bullying, and pressures associated with the perceived demand on adolescents to make important life decisions. This list is not exhaustive, yet any one of these factors may influence a student's behaviour in the classroom and require the teacher to adapt their practices. Managing students' social, emotional and behavioural needs and supporting their healthy development therefore poses numerous challenges for teachers in an industry where training does not currently reflect the requisite skills, and adequate support is not offered for teachers to understand and manage social factors contributing to their students' behaviours.

A prerequisite to improving teacher education, however, is to understand how social-emotional practices affect their students. What remains scarce in literature is investigation of the specific day-to-day practices teachers may engage to contribute to school connectedness and positive student functioning. Emerging research has indicated that teachers' use of positive social-emotional practices (specific practices that have an emotional impact on students), may significantly affect the student-teacher relationship and students' connectedness to school. In a sample of 14-year-old female South Korean students, Han (2016) found that students'

endorsement of teachers' use of social-emotional practices, particularly relationship-building practices, were positively related to students' self-reported teacher- and school-connectedness. In another study, students' perceptions of teachers' active listening was associated with indicators of positive relationships (Thompson, 2018). Such studies investigating day-to-day practices, however, have typically been overshadowed by research on school connectedness and climate that do not address the specific teacher behaviours leading to students' social-emotional development, and by efforts to incorporate SEL which have not proven successful for adolescents.

The current study aims to address this and contribute to the development of an evidence-base for social-emotional teaching practice with adolescents. Such an evidence-base will provide a foundation to improve the incorporation of social and emotional competence in teacher education. In the long-term, it is hoped that the benefits of expanding current knowledge in this area will benefit both students and teachers by increasing teacher competence and reducing likelihood of stress, burnout, and job dissatisfaction – leading to more positive student outcomes.

Method

Sample

The sample consisted of secondary school students recruited via classrooms of teachers who had volunteered to be involved in the study, due to the nature of the survey asking students to report on their teacher's practices. Nineteen teachers consented for their students to take part. Of these teachers, 13 were New Zealand European, one Māori, one New Zealand European/Māori, one New Zealand European/Latino, one New Zealand European/Canadian, one British, and one German. Five teachers were male, and 14 female. Their ages ranged from 22-60+.

A total of 398 students responded to the survey. Two respondents named teachers who had not consented to being involved in the study, and a further 61 gave incomplete responses to a degree that impeded analysis. The resulting final data set consisted of 335 individual survey respondents. The respondents' ages ranged from 16-18 (M = 16.4 years). Gender was reported as female by 53.4% (N=179), male by 45.1% (N=151), and other by 1.5% (N=5) of participants. 80.9% (N=271) of participants were New Zealand European or New Zealander, 19.7% (N=66) Māori, 5.1% (N=17) Chinese, and 17.3 (N=60) other/mixed ethnicities. English was reported as the first language of 93.7% of survey respondents.

Data analysis treated each student's response as pertaining to a unique teacher, given that it was not the teacher's intended practices that were of interest, but students' unique personal perceptions of those practices. The final demographic data for teachers is presented below, in Table 1. Two respondents did not name their teachers, so age and ethnicity data were not obtained for the teachers on which these responses were based.

Table 1. Teachers' demographic details for final sample

Demographic Data	**Percentage of sample**
Gender	
Female	73.7 (n = 247)
Male	26.3 (n = 88)
Age	
20-24	22 (n = 66)
25-29	2.4 (n = 8)
30-34	16 (n = 48)
35-39	5 (n = 15)
40-44	9.7 (n = 29)

45-49	11 (n = 33)
50-54	14 (n 42)
55-59	13.7 (n = 41)
60+	6 (n = 18)
Ethnicity	
New Zealand European	69.6 (n = 233)
Māori	4.2 (n = 14)
New Zealand European/Māori	2.1 (n = 7)
New Zealand European/Latino	7.2 (n = 24)
New Zealand European/Canadian	4.5 (n = 15)
British	6.6 (n = 22)
German	5.4 (n = 18)

Measures

The questionnaire consisted of the following four measures:

Classroom Emotional Environment Questionnaire-Student Version (CEEQ-S). Students' perceptions of teachers' practices were measured using the CEEQ-S. The CEEQ-S consists of 88 items describing social-emotional practices used by teachers and their emotional effects on students and asks respondents to indicate how frequently they observe each item occurring in their classroom experiences with their teacher. Responses are on a 1-5 scale (1=Never, 5=Always). Items making up the CEEQ-S were derived from focus groups with New Zealand teachers and were validated for use within a New Zealand secondary school sample by Edwards et. al. (in review). In the validation study, students ranked the items according to their similarity, and multidimensional scaling was used to produce a three-dimensional map which determined the items offered complete content coverage of teachers' social-emotional

practices. The map also revealed the items were able to be grouped into nine clusters with distinct meanings: *emotion coaching; positive boundaries and classroom management; develops strong classroom community; positive personal qualities of teacher; warm and caring teacher-student relationship; impact of teacher on sense of self; attentive to students' emotions and needs; pedagogical strategies to promote learning;* and *teacher's own emotion regulation.* In addition, the map may be used in the current study as a lens through which CEEQ-S data can be analysed; the map offers a working model of students' conceptual understandings of the CEEQ-S items and can thus be used to infer meaning from students perceptions of their teachers' practices.

Avoidance and Fusion Questionnaire for Youth-8 Item Version (AFQ-Y8). The AFQ-Y8 was used to measure psychological flexibility. The measure includes 8 items designed to measure psychological inflexibility and asks respondents to rate how true each item is as it applies to them on a 5-point scale ranging from 0 (Not at all True) to 4 (Completely True). The measure was reverse scored in the present study to gain a measure of psychological flexibility. The AFQ-Y8 is a widely used measure for this purpose and has demonstrated good reliability and validity in past research (Salazar et al., 2018). It has been recommended over the longer AFQ-Y for research with adolescents (Livheim et al., 2016).

School Connectedness Scale (SCS). The SCS was designed as a school connectedness scale for use with adolescents (Lohmeier & Lee, 2011). Two factors from the SCS (negative connectedness and connection to adults in school) were used to measure students' experiences of negative and positive connectedness within their school environment. The first factor, negative connectedness, is made up of 17 items, and the second, connection to adults in school, is made up of 8 items. Students were asked to rate each item on a 5-point scale ranging from 1 (Not at all True) to 5 (Completely True). Developers of the SCS reported high internal consistencies in both urban ($\alpha = .81$) and suburban ($\alpha = .93$) American high school populations.

Factor loadings were strong for all seven factors making up the total questionnaire. In the two factors used in this study, all items had factor loadings >.32 reported by the developers. Despite having not been used widely in research to date, the SCS demonstrated promising psychometric properties and offered more comprehensive measurement of school connectedness than other existing measures. Moreover, the strong factor loadings allowed for isolation of specific factors of interest to the present research.

Strengths and Difficulties Questionnaire (SDQ). The SDQ was used to measure students' social, emotional, and behavioural strengths and difficulties. The SDQ is made up of 25 items measuring five scales: emotional problems, conduct problems, hyperactivity/inattention, peer relationship problems and prosocial behaviours. A total difficulties score can also be derived from the sum of the first four scales. Items were responded to on a 3-point scale ranging from 0 (Not at all True) to 2 (Certainly True).

Procedure

Recruitment. Principals of local secondary schools were contacted with a request for their school's involvement in the study. In schools were permission was gained from principals, teachers of Year 12 and Year 13 classrooms were sent an invitation to have their students take part in the study. Informed consent was gained from those teachers who wished to have their students involved, and times were organised for the researcher to attend a class to administer the survey. All students in the class were offered the chance to take part in the survey during class time.

Survey Administration. The researcher introduced the purpose of the research, outlined participants' rights (including the voluntary nature of the survey and an assurance that anonymity would be maintained), and gave verbal instructions to students prior to giving access to the online survey. Instructions included emphasising the importance of giving honest and accurate answers, and of not being influenced by, or trying to influence, their peers. Teachers

were asked to leave the room for the duration of the survey, to encourage students to feel comfortable giving honest answers related to their teacher's practices. All students were then given access to the survey via a URL written on their classroom whiteboard. Students were able to access the survey on any device including laptops, tablets, or smartphones. Use of electronic devices enabled students to keep their responses private from their peers. Students were also welcomed to shift to more discrete positions around the classroom to maximise their privacy if they wished. For privacy in terms of their choice to take part or not, students were told they could have their devices on their desks and use them for some other quiet activity should they not wish to take part.

Total administration time was approximately 25-35 minutes. Students were told to continue with a quiet activity should they finish before others. Teachers were invited to re-enter the classroom and resume teaching once students had finished filling out the questionnaire.

Data Analysis. Data were analysed using SPSS. Exploratory Factor Analysis (EFA) was used to determine the number of factors emerging from CEEQ-S data. Owing to the use of EFA, there was no fixed number of factors expected to be extracted from the data. However, the MDS solution produced by Edwards et al. (in review) using the same items found students' reports of item similarity produced nine distinct clusters of items. It was expected, therefore, that CEEQ-S data would produce a similar number of factors. Multidimensional Scaling (MDS) was also conducted in the current study and results were compared against the conceptual map created by Edwards et. al. (in review).

Further analysis was conducted to examine how the factors extracted from CEEQ-S data related to teacher-student relationship and student outcome variables. Correlations were examined between all variables, and correlations of interest were subject to further analysis using simple linear regression.

Results and Discussion Part I: Interpretation of the CEEQ-S

Results

Exploratory Factor Analysis. Two factors were extracted, accounting for 52.1% of the total variance. The first factor was dominant, accounting for 46.4%, while the second accounted for 5.7%. Item loadings are shown below, in Table 1. Bartlett factor scores were calculated for each factor for use in subsequent analysis. Bartlett factor analysis provides scores for each individual on a factor based on weighted scoring of items, according to their loading on the factor (Distefano et al., 2009).

Analysis of item loadings within factors was facilitated by comparison with item clusters from the conceptual map, for which interpretation of clusters had been conducted in collaboration with experts from education and psychology fields. This analysis revealed unique and meaningful interpretations for the two factors, as follows.

Factor 1. All items loaded positively on factor one. Bartlett factor scores for this factor were highly correlated with a CEEQS total score, derived by summing item scores ($r=.996$, $p<.001$). Factor one therefore represents a general social-emotional practice score.

Factor 2. Of nine items that had factor loadings above .4 on Factor two, seven were items that appeared in the *emotion coaching* cluster in the Edwards et. al. (in review) conceptual map. The remaining two were from the *teacher's own emotion regulation* and *impact of teacher on sense of self* clusters. The *teacher's own emotion regulation* item which loaded onto Factor 2 *(acts differently to how they feel)* could also be interpreted as having an emotion coaching element as it may indicate modelling of emotion regulation. Items with the strongest negative loadings were related to the teacher's positive attitude, classroom management, boundaries, and use of pedagogical strategies to promote learning. Overall, item loadings decreased in accordance with their decreasing emphasis on emotions, ranging from explicit emotion coaching practices through to more learning- and relationship-focussed practices that did not

mention emotions directly. Factor two therefore represents the level of attention devoted to emotion coaching in the classroom.

Table 1. Item loadings on both factors, arranged in descending order according to loading on Factor 1.

	Factor 1	Factor 2
79. Genuinely cares about us	.858	-.074
20. Has a good relationship with us	.844	-.111
49. Understanding and caring	.837	-.049
82. Takes time to listen	.837	-.184
81. Allows us to freely express ourselves	.833	-.103
80. Has a calming influence	.826	-.121
39. Has an enjoyable teaching style	.823	-.112
87. Is accepting of our emotional responses	.823	.029
32. Understands how we feel	.820	.191
53. Makes us feel welcome	.815	-.280
40. Is aware of the class mood	.799	.051
86. Speaks warmly to us	.798	-.081
71. Enjoys spending time with us	.796	.009
11. Likeable	.793	-.177
60. Respects us	.793	-.315
77. Motivates us to the task at hand	.792	-.119
26. His/her positive responses are appropriate to the situation	.787	.019
16. Takes our problems seriously	.782	-.042
30. The way this teacher responds makes me work better	.782	.016
43. Is fair	.778	-.259
37. Helps us work together	.775	-.088
48. Trustworthy	.773	-.156
61. Remains composed in difficult situations	.772	-.222
21. Believes in our potential	.761	-.169
42. Enthusiastic	.760	-.162
18. Adapts his or her emotions to suit the situation (eg. Caring with a sad student)	.755	.249
28. Encourages us to learn new things	.752	-.209
85. Talks to us on a level we understand	.751	-.167
45. Addresses our concerns	.749	.029
23. Encourages us to support each other	.748	.115
84. Disciplines fairly	.744	-.166
35. Clear and reasonable expectations of us	.743	-.187

69. Takes time to help	.741	-.193
34. Explains the best way to respond to things	.740	.127
59. Prepares us for future events (eg. Exams)	.735	-.231
12. Makes our class a safe place to be	.723	-.227
74. Calmly talks with students having difficulties	.723	-.140
41. Is aware of my emotions	.721	.279
22. Believes in what they do as teachers	.718	-.226
36. Positive	.714	-.301
2. Encourages us to build enjoyable friendships with other students	.713	.202
3. Rewards fairly	.713	-.086
76. Has a sense of humour	.705	-.042
24. Helps me/us solve emotional problems	.702	.446
83. Likes teaching	.700	-.281
70. My teacher's emotional responses settle the class down	.694	.216
15. Is actively concerned with our learning	.689	-.157
55. Encourages us to be responsible	.682	-.166
78. Uses creative technologies to teach	.679	.139
50. Is in control of the class	.676	-.109
44. Proud to be a teacher	.674	-.307
25. Helps me think before I act	.672	.376
62. Takes time to talk	.670	-.051
75. In conflict situations between students, my teacher brings them together to talk it through	.670	.334
33. Enjoys teaching	.665	-.302
46. If a student is upset, my teacher lets them go and settle down	.657	.163
38. Has clear class routines and structures	.655	-.122
27. Controls their own negative reactions well	.650	-.190
88. Teaches us how to express our emotions with words	.645	.374
1. Addresses emotional situation immediately	.640	.230
57. Emotions are genuine	.637	-.183
63. Good but strict	.632	-.033
9. Makes us aware of how we are managing emotion	.620	.472
72. Accurately identifies the misbehaving student	.613	-.039
54. Treats us like his/her own children	.611	.152
64. Uses emotional situations to teach us how to cope better	.611	.500
19. Talks us through emotional situations that have affected us (eg. Student death/bullying)	.610	.424
31. I can talk to my teacher irrespective of his or her mood	.608	-.052

10. Makes us aware of how others feel	.599	.413
47. Knows which other students I work well with	.572	-.012
6. I care what this teacher thinks of me	.565	.117
51. Maintains clear teacher-student boundaries	.557	-.295
66. Uses rewards to manage how we feel	.529	.312
4. Tells stories using examples of how others have responded emotionally	.523	.473
73. Doesn't hold a grudge	.521	-.162
17. Tells us about themselves	.515	.329
52. Expects us to behave	.515	-.260
67. States consequences for certain behaviours or emotion	.496	.126
8. Shows me how I took part in an emotional situation	.491	.444
13. We mirror how our teacher feels	.471	.396
29. Consistently enforces consequences	.470	.260
7. We can always tell how our teacher feels	.418	.229
68. Uses students to support other students (eg. Student mediators, student monitors)	.403	.249
14. My self-esteem is related to how this teacher feels about me	.319	.425
65. Doesn't use negative emotion (eg. Shame, guilt trip) as punishment	.314	.171
58. Uses own emotion to control the mood of the class	.293	.340
5. My behaviour is affected by what my teacher believes about me	.165	.326
56. Acts as if they are feeling something different to what they are	.161	.445

Multidimensional Scaling.

A usable MDS solution was not able to be obtained using the CEEQ-S data from the current study, as data did not produce item clusters as were observed in the previous research by Edwards et. al. (in review).

Reliability. Internal consistency of CEEQ-S items was very high (α=.98). Due to this being so high, and the potential that responses were skewed toward consistently high or low responses, the distribution of scores on the CEEQ-S was examined. Fig. 1, below, which shows the frequency of CEEQ-S total scores, demonstrates that there was a trend toward high scores, but overall scores were distributed across an appropriate range (M=327.74, SD=61.18).

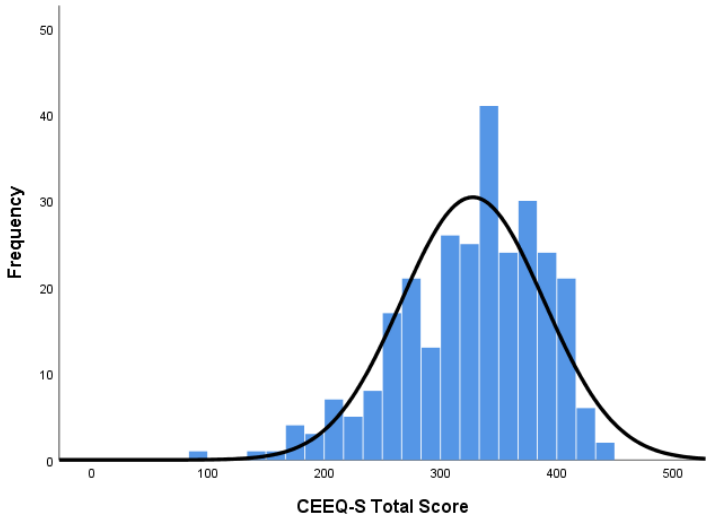


Fig 1. Histogram showing frequency of scores on the CEEQ-S (total score; sum of all items)

Discussion

Interestingly, the CEEQ-S data gained from students in the current research, based on their perceptions of teachers in practice, differed from the data gained in previous research based on students' conceptual understanding of teachers' SE practices. The data from the current study did not enable distinction of underlying aspects of the teachers' practices variable by replicating the conceptual map created by Edwards et. al. (in review). This suggests that students at this age do not apply the same conceptual interpretation of teachers' SE practices to their perception of daily interactions with teachers in the classroom. Nonetheless, two meaningful factors were extracted from students' responses in the current study.

Factor One was a general representation of all the practices making up the CEEQ-S. Therefore, despite the lack of distinction of underlying aspects, Factor One can be understood as encompassing the nine distinct item clusters found in prior research: *emotion coaching; positive boundaries and classroom management; develops strong classroom community; positive personal qualities of teacher; warm and caring teacher-student relationship; impact of teacher on sense of self; attentive to students' emotions and needs; pedagogical strategies to promote learning;* and *teacher's own emotion regulation.*

Factor Two, which was related to students' perceptions of teachers' use of emotion coaching, demonstrated the value of using the conceptual map to facilitate data analysis, despite the unexpected level of difference between the conceptual map and our findings. Item loadings on the second factor had clear parallels with the emotion coaching cluster observed within the conceptual map. This enabled the researcher to derive meaning from this factor based on students' ratings of item similarity and expert opinions underlying themes informing spatial groupings of these items, (Edwards et. al., in review).

The very high internal consistency of the CEEQ-S items coupled with the low number of factors and discrepancies with the earlier derived conceptual model raised some questions for the accuracy of CEEQ-S data for measuring students' perceptions of teachers' practices. Further analysis was conducted to address the main aim of this study: to investigate how students' perceptions of teachers' practices relate to students' strengths and difficulties. Results of this analysis are presented below and their support for the validity of the CEEQ-S is discussed.

Results and Discussion Part II: Relationships between teachers' practices and students' strengths and difficulties.

Results

Descriptive statistics for each variable are presented below, in table 2.

Table 2.

Descriptive statistics (M, SD) for each variable

	M	*SD*
GSEP	.000	1.00
EC	.000	1.00
Negative Connectedness	35.99	11.68
Connection to Adults in School	27.68	6.85
Psychological Flexibility	19.60	7.30
Emotional Problems	4.36	2.51
Conduct Problems	1.83	1.79

Hyperactivity/Inattention	4.59	2.23
Peer Relationship Problems	2.35	1.89
Prosocial Behaviour	6.74	2.11
Total Difficulties	13.11	5.74

Correlations between all teacher- and student- variables are presented below, in Table 3. An outline of relationships of interest follows.

Table 3.

Summary of correlations for CEEQS factors and all student variables

	1	2	3	4	5	6	7	8	9	10	11
1. GSEP	-	.000	-.287**	.458**	-.070	-.026	-.151**	-.106	-.122*	.288**	-.130*
2. EC	.000	-	.196**	-.136*	-.176**	.152**	.216**	.080	.162**	-.046	.214**
3. NC	-.287**	.196**	-	-.425**	-.353**	.346**	.569**	.369**	.351**	-.213**	.584**
4. C	.458**	-.136*	-.425*	-	.028	-.123*	-.251**	-.225**	-.216**	.310**	-.290**
5. PF	-.070	-.176**	-.353**	.028	-	-.594**	-.315**	-.264**	-.268**	-.095	-.545
6. EP	-.026	.152**	.346**	-.123*	-.594**	-	.315**	.220**	.374**	.137*	.741**
7. CP	-.151**	.216**	.569**	-.251**	-.315**	.315**	-	.437**	.330**	-.207**	.720
8. H/I	-.106	.080	.369**	-.225**	-.264**	.220**	.437**	-	.077	-.127*	.644**
9. PRP	-.122*	.162**	.351**	-.216**	-.268**	.374**	.330**	.077	-	-.181**	.623**
10. PB	.288**	-.046	-.213**	.310**	-.095	.137*	-.207**	-.127*	-.181**	-	-.114*
11. TD	-.130*	.214**	.584**	-.290**	-.545**	.741**	.720**	.644*	.623**	-.114*	-

Note. GSEP=General Social-Emotional Practices (Factor 1); EC=Emotion Coaching (Factor 2); NC=Negative Connectedness; C=Connection to adults at school; PF=Psychological Flexibility; EP=Emotional Problems; CP=Conduct Problems; H/I=Hyperactivity/Inattention; PRP=Peer Relationship Problems; PB=Prosocial Behaviour; TD=Total Difficulties.

*p<.05; **p<.01

Connectedness. Correlations between connectivity variables and teachers' practices differed between the two CEEQ-S variables. The strongest correlations were observed between teachers' general use of SE practices (GSEP; Factor 1) and connectedness variables. GSEP had a moderate positive correlation with students' connection to adults in school (r=.458, p<.01), and a weak negative correlation with students' negative connectedness (r=-.287, p<.01). Weaker significant correlations were observed in the opposite directions for students' perceptions of teachers' use of emotion coaching (EC; Factor 2). EC was correlated negatively

with connection to adults in school (r=-.136, p<.05) and a positively with negative connectedness (r=.196, p<.01). Scatter plots depicting these relationships can be seen in Figs. 3-4.

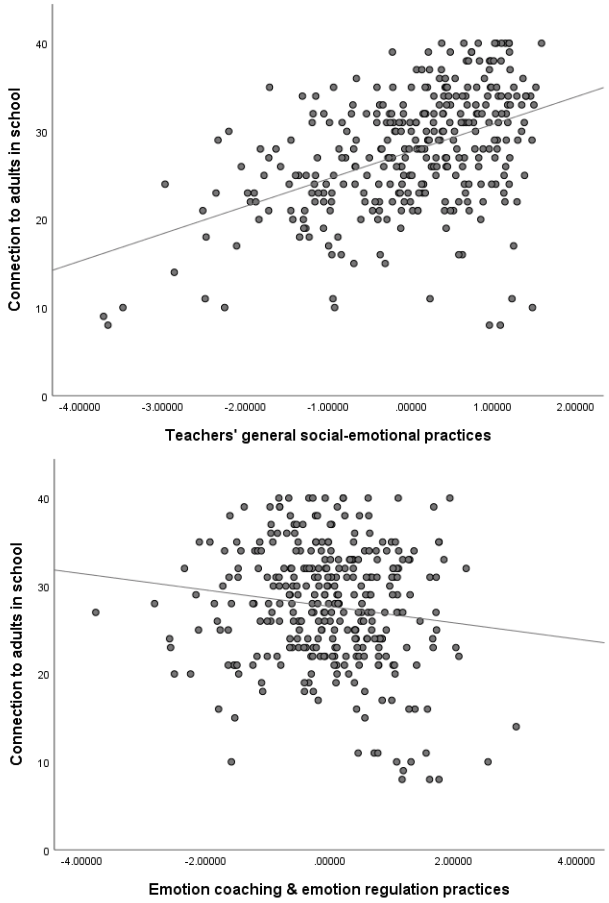


Fig. 3. Scatter plot with fit line of students' connection to adults in school by students' perceptions of teachers' use of general social-emotional practices (Factor 1; left), and emotion coaching (Factor 2; right)

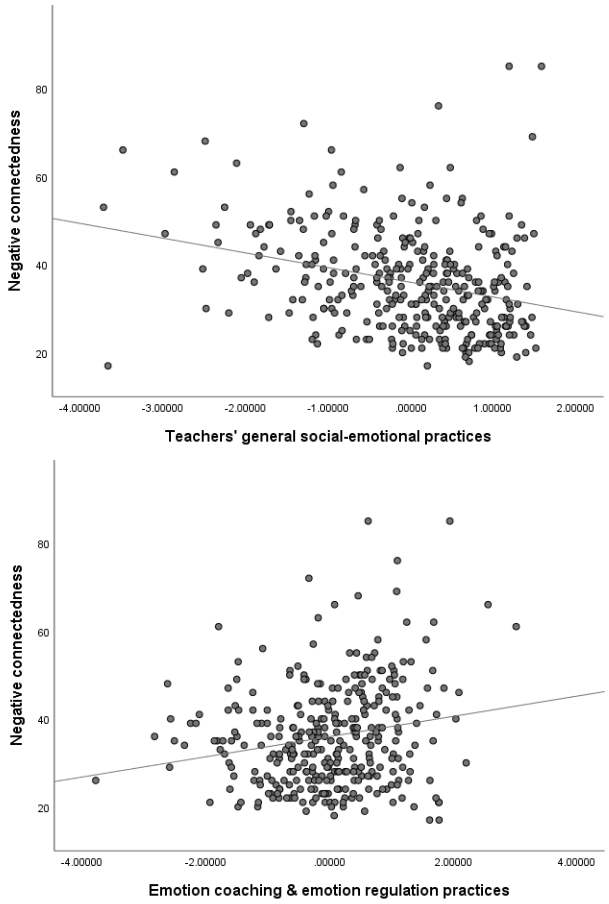


Fig. 4. Scatter plot with fit line of students' negative connectedness by students' perceptions of teachers' use of general social-emotional practices (Factor 1; left) and emotion coaching (Factor 2; right)

Weak to moderate positive correlations were observed between negative connectedness and all indicators of difficulty in students' emotional, social, and behavioural functioning (emotional problems, conduct problems, hyperactivity/inattention, peer relationship problems, and total difficulties), while weak negative correlations were observed with indicators of positive functioning (psychological flexibility and prosocial behaviour). Conversely, connection to adults in school had weak negative correlations with all indicators of difficulty and a weak positive correlated with prosocial behaviour. Psychological flexibility did not correlate significantly with connection to adults in school. Please see Table 2 for correlation coefficients.

Students' Strengths and Difficulties.

Emotional Functioning. Neither students' psychological flexibility nor emotional problems were significantly correlated with GSEP. Both were correlated with EC; psychological flexibility had a very weak negative correlation ($r=-.176$, $p<.01$), while emotional problems showed a very weak positive correlation ($r=.152$, $p<.01$).

Behavioural Functioning. Conduct problems had a very weak negative correlation with GSEP ($r=-.151$, $p<.01$), and a weak positive correlation with EC ($r=.216$, $p<.01$). Hyperactivity/Inattention showed no significant correlation with either teachers' practice variable.

Social Functioning. Students' peer relationship problems had a very weak negative correlation with GSEP ($r=-.122$, $p<.05$), and a very weak positive correlation with EC ($p=.162$, $p<.01$). Prosocial behaviour had a weak positive correlation with GSEP ($r=.288$, $p<.01$), showing no significant correlation with EC.

Total Difficulties. Students' total difficulties had a very weak negative correlation with GSEP ($r=.130$, $p<.05$), and a weak positive correlation with EC ($r=.214$, $p<.01$).

Discussion

Past research has found that teacher-student relationships are associated with positive student outcomes, including emotional wellbeing (García-Moya et al., 2015) and behavioural functioning (Obsuth et al., 2017), as well as academic achievement (Gelisli, Baidrahmanov, Beisenbaeva, & Sultanbek, 2017). The results of the current study supported that notion in most regards, with negative connectedness positively associated with, and positive connectedness negatively associated with, all indicators of student difficulty (conduct problems, peer relationship problems, emotional problems, hyperactivity/inattention, and total difficulties). In terms of positive indicators of functioning, negative connectedness was inversely related to

both prosocial behaviour and psychological flexibility, while positive connectedness was associated with prosocial behaviour but not psychological flexibility. Based on these results, it appears that the absence of a negative teacher-student relationship may be more predictive of psychological flexibility than presence of a positive relationship.

The primary aim of this study was to investigate how teachers' practices related to student variables, including connectedness, psychological flexibility, and social, emotional, and behavioural strengths and difficulties. Investigating these relationships revealed interesting findings. In the case of the relationship between teachers' practices and connectedness, teachers' general use of SE practices was positively associated with connectedness and inversely related to negative connectedness, whereas the opposite associations were observed in relation to students' perceptions of teachers' use of emotion coaching practices. That is, perceived emotion coaching was positively associated with negative connectedness and negatively associated with positive connectedness.

Two possible explanations have been surmised for the latter relationships. First, students' perceptions of teachers' use of emotion coaching practices may have a negative effect on students' connectedness. Students at this developmental stage may prefer teachers to focus on academic aspects of learning, or balance academic and emotion-focussed practices. The correlations seen between connectedness and emotion coaching may reflect students disliking teachers devoting too much time to regulating and managing emotions at the expense of academic learning. The final years of secondary school are often associated with high academic pressure for students with numerous exams and the influence academic achievement may have on one's future in terms of career prospects and university entrance. It would be unsurprising, therefore, for students to place high value on teachers providing quality academic instruction and support.

When considering the developmental stage of adolescents in context, it is also plausible that they may be averse to teachers using emotion-coaching practices due to the social implications. Developing identity and social relationships are key goals at this stage of development. One study has found that students' experiences of peer victimisation are positively associated with students' perceptions of teacher unfairness (Gini, Marino, Pozzoli, & Holt, 2018). Considering this, our findings make sense when considered contextually. In an individualistic culture such as New Zealand's (and in fact most Western cultures), independence is socially valued. Many of the emotion coaching practices measured within the CEEQ-S relate to teacher-student interactions that students may perceive as likely to lead to social judgment and criticism. It would be unsurprising, for example, for adolescents to consider having a teacher actively help you to express your emotions verbally as socially undesirable. Desire for social acceptance and positive social regard may therefore also contribute to students' less positive feelings toward teachers who frequently engage in emotion coaching practices.

Alternatively, the correlations observed may reflect students' perceptions of teachers' use of emotion coaching and emotion regulation practices influenced by students' needs. Students who reported negative connectedness were more likely than those who reported positive connectedness to experience emotional, social, and behavioural difficulties, and thus may garner more support from their teachers. This explanation was supported by correlations between students' perceptions of teachers' use of emotion coaching practices and students' emotional, behavioural, and social functioning. Psychological flexibility, an indicator of positive psychological functioning, was negatively associated with the second factor, while emotional difficulties were positively correlated. This suggests that teachers use such practices more frequently with students who experience greater emotional problems and difficulty regulating their emotions with psychological flexibly. In addition, conduct problems,

hyperactivity/inattention, peer relationship problems, and total difficulties were all positively associated with students' perceptions of teachers' use of emotion coaching practices, suggesting teachers are more likely to use these practices in interaction with students who exhibit difficulties across all of the emotional, behavioural, and social domains of functioning.

In investigating the relationships between teachers' practices and students' psychological flexibility, strengths and difficulties, teachers' general use of SE practices was negatively associated with conduct problems, peer relationship problems, and total difficulties, and positively associated with prosocial behaviour. No relationship was observed with psychological flexibility, emotional difficulties, or hyperactivity/inattention. These findings support the notion that teachers who use positive SE practices may have positive influences on their students' functioning; however, for more conclusive evidence, further research is required to examine how this relationship may change over time.

There were limitations to the positive benefits of teachers' social-emotional practices, particularly in the domain of students' emotional functioning. Theoretical understandings of child development in context offer insight into this. The school context is one of many social contextual factors that interact and influence development according to Bronfenbrenner's (1979) ecological theory. Families, peers, neighbours, and community groups in which an individual interacts are all components of the mesosystem that directly influence child development. Adolescents are particularly sensitive to peer influences and may be subject to any number of stressors in their lives within- and outside of school that may moderate the effect of their teacher's practices. This aligns with existing research that emphasises the various influences on adolescents' sense of belongingness in school. Uslu and Gizir (2017) found that while the teacher-student relationship was the most significant predictor of adolescents' belongingness to school, peer relationships and family involvement both in school and at home also all had significant relationships with students' belongingness.

Students' perceptions of teachers' practices may also be influenced by their representations of the teacher-student relationship. Grounded in attachment theory, the construct of representations describes the effect that a students' feelings and beliefs about a relationship may have on shaping their behaviour and perceptions of behaviour within that relationship (Liu, Savitz-Romer, Perella, Hill, & Liang, 2018; Ryan, Stiller, & Lynch, 1994). Whereas the current study investigated perceptions of specific behaviour, representations are general and more over-arching; similar to 'working models' described in attachment theory to describe the mental model of relationships a person applies to make sense of the events that occur within that relationship (Ryan et al., 1994). If a students' representation of teachers is that they should serve a primary function of academic teaching and behaviour management, therefore, they are likely to perceive their teachers' practices through this model and see these goals as the function of the teachers' practices. As another example, students who hold representations of teachers as unsupportive and uncaring may not perceive supportive practices in the ways they were intended by the teacher, but rather see them as patronising or sarcastic. The effect of representations on students' perceptions depends on the nature of the representation, but these examples demonstrate the bidirectional relationship of the teacher-student relationship and highlight why students' perceptions of teachers' practices cannot be fully understood in absence of additional contextual information.

Furthermore, the current study investigated only dyadic teacher-student relationships (the relationship between one teacher and one student). In high school contexts, where students often see multiple teachers each day, dyadic teacher-student relationships are only one component of the larger global system (Liu et al., 2018).

Limitations and Future Directions

The administration of the survey may have had some influence over students' responses. Students filled out the survey in class, where they may have been inclined to peer influences

or potential aversion to rating their teacher's practices in a way that could be construed as negative. Time and budget constraints in the current research prevented the survey from being administered at home. In addition, it was decided in collaboration with the schools involved that the likelihood of students filling the survey out in their own time was low, so the potential for beneficial feedback for schools and teachers would be maximised by administering the survey during class time. Strategies were employed to minimise the influence of peers and the school environment (asking teachers to leave the room, reminding students of their anonymity, and encouraging students not to share their answers with their peers). Students were also invited to move around the classroom to find a private seating position, or copy the URL and choose to fill it out at home if they wished. It cannot be known, however, how effective these strategies were, and it is expected that some students were nonetheless influenced by the context of survey administration. Future research may benefit from investigating practical methods for conducting the survey outside of classrooms to minimise this influence.

In addition, the current study was cross-sectional, again due to time and budget constraints. It would be useful to replicate this research at other developmental stages, and with a longitudinal design, to determine whether the teacher may have a stronger influence on students' relationships and functioning over time. Further research investigating the utility of the CEEQ-S with younger participants may be necessary, however, as a precursor to working with younger samples. The mental demand of responding to a long survey may influence the responses gained, so consideration may be given to shortening the CEEQ-S, as well as ensuring item wordings are matched to participants' comprehension levels.

Future research may also work to further validate the CEEQ-S. The very high internal consistency may indicate a review of the items would be useful. A study by Edwards et al. (in review) investigated students' conceptual understandings of the 88 items based on similarity. The resulting map suggested the 88 items offered complete content coverage without

significant overlap, as indicated by the spatial arrangement of the items around a three-dimensional map. In addition, there were nine clear clusters of items that were found to represent distinct areas of teachers' social-emotional practices. This conceptual map was not replicated in the current study, however, in which data was based on students' perceptual experiences in the classroom, rather than their more abstract conceptual understandings. An MDS map created in the current study for comparison with the conceptual map indicated no cluster arrangement and much closer arrangement of items, suggesting less distinction between the practices. This was supported by the factor analysis results which identified only two factors, one of which was dominant and represented a general social-emotional practice score with all items showing high loadings. While this may be an accurate representation of students' experiences at this age level, where the focus on social-emotional aspects of learning may be decreasing, it would be useful to investigate this further.

Qualitative research may be valuable for investigating the practices and qualities that students at this age value in a teacher, to gain more understanding of the negative correlation between connectedness and emotion coaching found in the current study. If, as surmised, this relationship was influenced by students' adverse reactions to emotion-coaching practices, it would be useful to gain qualitative data to help understand how teachers can best balance necessary academic and social-emotional demands to build a positive teacher-student relationship. Alternatively, qualitative research may reveal that students do in fact value their teachers' efforts to engage in emotion coaching, but have specific preferences for how this is carried out in a way that respects their independence and does not impact negatively on their social relationships.

Furthermore, qualitative research with students may be an effective method to gain specific insights into how teachers can best adapt their practices to their students' needs despite the limitations of other contextual influences on development. Qualitative data gained directly

from students is likely to provide the richest insight into understanding what practices will be most efficacious in supporting students. Such research is also likely to align with adolescents' desire for autonomy and respect, the importance of which was emphasised by Yeager (2017). Enabling students to have a voice that is not confined to quantitative survey data is likely to be beneficial for validating their own abilities to express their needs.

Conclusion

This research has provided insight into the potential benefits of teachers' use of social-emotional practices. Teachers who use social-emotional practices may build more positive relationships with students and have positive influences on their students' social-emotional development. While more research is necessary, this is a positive finding regarding the potential day-to-day practices teachers can apply across curricula. According to our findings, students perceive their teachers using positive social-emotional practices frequently, and this is associated with positive teacher-student relationships and indicators of positive student functioning.

Our findings also indicate, however, that there are likely limitations to a teacher's ability to foster positive development for all students within the context of a secondary school classroom. Teachers, while they may certainly have a positive influence on a student, cannot be expected to "fix" the various difficulties their students may face. This research demonstrates it is unrealistic to look only within the school to achieve best developmental support for youth. We need to consider a whole-society approach and focus on supporting families and communities together with schools to strengthen all facets of an individual's mesosystem. Until such a holistic approach can be achieved, teachers are likely to continue to experience high stress and burnout if they are subject to the pressure of an expectation that they will produce positive outcomes in all students, regardless of what else may be going on in their students' lives. It is of critical importance, therefore, for both students and teachers, that policymakers

and government look holistically to improve youth wellbeing. Until such a change can be achieved, it should be a priority to consider what measures may be necessary to ensure teachers' wellbeing in a high-stress career, such as increasing non-contact time for planning and potential collegial supervision (Rae et al., 2017).

Moreover, consistent with past research, our findings suggest that adolescents' developmental stage and the importance of social acceptance may influence their responses to some social-emotional practices. More research is required to understand the specific nature of this influence, but teachers should be mindful that the practices that are valued by students may change as they progress through secondary school.

Reflections

While my research was primarily based in an educational context, it offered valuable learnings for my clinical practice, encouraging me to think of how therapeutic gains may be maximised by approaching clinical work from a holistic viewpoint. In the case of this research, a major finding was the limitations of a teacher's potential influence on student functioning, acknowledging there are wide-ranging factors which interrelate and influence development. Similarly, within my clinical experiences to date, I have come to appreciate the wide-ranging factors which influence a person's wellbeing. Increasingly, models of mental health and wellbeing are moving toward a holistic perspective. Māori models of health, such as *Te Whare Tapa Wha* and the *Meihana Model* consider wellbeing as an integration of several dimensions, including physical, psychological, social and spiritual wellbeing (Pitama et al., 2007).

Having spent my internship within a physical health-dominant rehabilitation ward, I have developed a strong insight into the necessity of working holistically to maximise health gains. Many individuals who are admitted for rehabilitation following a health event such as a stroke, fall or surgery face a challenging and multi-faceted rehabilitation journey. Physical rehabilitation is commonly considered a priority for most patients in, however from a

psychological perspective, this is often limited by individuals' anxiety and low mood in the context of adjustment to an acute injury or illness. Spiritual experiences and challenges are also common, with many people reflecting on near-death experiences and changes in their perspectives on life. Additionally, individuals frequently present with complex social backgrounds and require significant support to plan for a new way of living, with increased need for supports. Addressing any one area (physical, psychological, social or spiritual wellbeing) in isolation, without adequate consideration of the others, would likely result in sub-optimal rehabilitation outcomes.

Moreover, the limitations teachers face aligns with the limitations any professional may face in a mental or physical health setting should they be unable to access multi-disciplinary support. For the reasons described above, I have learned the immense value of working effectively as a multidisciplinary team and acknowledging the unique expertise of professions across health services. I believe gains in both physical and mental health contexts could be maximised by appropriate recognition and utilisation of all allied health and medical professions. Considering an even more holistic approach, movement toward inter-sector collaboration could enable greater opportunity for early intervention. Facilitating collaboration between educational and health sectors could enable health professionals to support teachers to support student health from a prevention-oriented framework.

While some of these ideals reflect a desire for systemic change (such as increasing inter-sector collaboration), I have gained a strong perspective of my clinical values for holistic care and multi-disciplinary healthcare which I can apply within my personal clinical practice. I believe those in health care hold a professional responsibility to make a personal effort to maximise health gains for those with whom they work. Respect of the diversity of knowledge held by multi-disciplinary colleagues and efforts to conceptualise mental health using holistic models are ways I can personally ensure I incorporate these values into my clinical practice.

References

Bond, L., Butler, H., Thomas, L., Carlin, J., Glover, S., Bowes, G., & Patton, G. (2007). Social and school connectedness in early secondary school as predictors of late teenage substance use, mental health, and academic outcomes. *Journal of Adolescent Health, 40* (4), 9–18. https://doi.org/10.1016/j.jadohealth.2006.10.013

Bronfenbrenner, U. (1979). *The ecology of human development*. Harvard University Press.

Cederbaum, J. A., Rodriguez, A. J., Sullivan, K., & Gray, K. (2017). Attitudes, norms, and the effect of social connectedness on adolescent sexual risk. *Journal of School Health, 87*(8), 575–583. https://doi-org.ezproxy.massey.ac.nz/10.1111/josh.12532

Distefano, C., Zhu, M., & Mîndrilă, D. (2009). Understanding and using factor scores: Considerations for the applied researcher. *Practical Assessment, Research & Evaluation, 14*(20), 1–11. https://doi.org/10.7275/da8t-4g52

Eccles, J. S., & Roeser, R. W. (2011). Schools as developmental contexts during adolescence. *Journal of Research on Adolescence, 21*(1), 225–241. https://doi.org/10.1111/j.1532-7795.2010.00725.x

Foster, C. E., Horwitz, A., Thomas, A., Opperman, K., Gipson, P., Burnside, A., Stone, D.M., & King, C. A. (2017). Connectedness to family, school, peers, and community in socially vulnerable adolescents. *Children and Youth Services Review, 81*, 321–331. https://doi.org/10.1016/j.childyouth.2017.08.011

García-Moya, I., Brooks, F., Morgan, A., & Moreno, C. (2015). Subjective well-being in adolescence and teacher connectedness: A health asset analysis. *Health Education Journal, 74*(6), 641–654. https://doi.org/10.1177/0017896914555039

Gelisli, Y., Baidrahmanov, D. K., Beisenbaeva, L., & Sultanbek, M. (2017). Determination of the high school students' attitudes towards their teachers. *International Journal of Instruction, 10*(4), 361–378. https://doi.org/10.12973/iji.2017.10421a

Gini, G., Marino, C., Pozzoli, T., & Holt, M. (2018). Associations between peer victimization, perceived teacher unfairness, and adolescents' adjustment and well-being. *Journal of School Psychology, 67*, 56–68. https://doi.org/10.1016/j.jsp.2017.09.005

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry, 38*(5), 581–586. https://doi-org.ezproxy.massey.ac.nz/10.1111/j.1469-7610.1997.tb01545.x

Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire. *Journal of the American Academy of Child and Adolescent Psychiatry, 40*(11), 1337–1345. https://doi.org/10.1097/00004583-200111000-00015

Hamedani, M. G., & Darling-Hammond, L. (2015). Social, emotional, and academic learning in high school: How three urban high schools engage, educate, and empower youth. *Scope*, 1–15.

Han, S. (2016). *South-Korean teachers' social-emotional practices and their association with student connectedness*. Massey University, New Zealand.

Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health, 74*(7), 262–273. https://doi-org.ezproxy.massey.ac.nz/10.1111/j.1746-1561.2004.tb08283.x

Lester, L., Waters, S., & Cross, D. (2013). The relationship between school connectedness and mental health during the transition to secondary school: A path analysis. *Australian Journal of Guidance and Counselling, 23*(2), 157–171. https://doi-org.ezproxy.massey.ac.nz/10.1017/jgc.2013.20

Liu, P. P., Savitz-Romer, M., Perella, J., Hill, N. E., & Liang, B. (2018). Student representations of dyadic and global teacher-student relationships: Perceived caring, negativity, affinity, and differences across gender and race/ethnicity. *Contemporary Educational Psychology, 54*, 281–296. https://doi.org/10.1016/j.cedpsych.2018.07.005

Livheim, F., Tengström, A., Bond, F. W., Andersson, G., Dahl, J. A., & Rosendahl, I. (2016). Psychometric properties of the Avoidance and Fusion Questionnaire for Youth: A psychological measure of psychological inflexibility in youth. *Journal of Contextual Behavioral Science, 5*(2), 103–110. https://doi.org/10.1016/j.jcbs.2016.04.001

Lohmeier, J. H., & Lee, S. W. (2011). A school connectedness scale for use with adolescents. *Educational Research and Evaluation, 17*(2), 85–95. https://doi.org/10.1080/13803611.2011.597108

Markham, C. M., Lormand, D., Gloppen, K. M., Peskin, M. F., Flores, B., Low, B., & House, L. D. (2010). Connectedness as a predictor of sexual and reproductive health outcomes for youth. *Journal of Adolescent Health, 46*(3), 23–41. https://doi.org/10.1016/j.jadohealth.2009.11.214

Obsuth, I., Murray, A. L., Malti, T., Sulger, P., Ribeaud, D., & Eisner, M. (2017). A non-bipartite propensity score analysis of the effects of teacher–student relationships on adolescent problem and prosocial behavior. *Journal of Youth and Adolescence, 46*(8), 1661–1687. https://doi.org/10.1007/s10964-016-0534-y

Oldfield, J., Humphrey, N., & Hebron, J. (2016). The role of parental and peer attachment relationships and school connectedness in predicting adolescent mental health outcomes. *Child and Adolescent Mental Health, 21*(1), 21–29. https://doi.org/ 10.1111/camh.12108

Ryan, R. M., Stiller, J. D., & Lynch, J. H. (1994). Representations to teachers, parents, and friends as predictors of academic motivation and self esteem. *The Journal of Early Adolescence, 14*(2), 226–249. http://dx.doi.org/10.1177/027243169401400207

Salazar, D. M., Ruiz, F. J., Suárez-Falcón, J. C., Barreto-Zambrano, M. L., Gómez-Barreto, M. P., & Flórez, C. L. (2018). Psychometric properties of the Avoidance and Fusion Questionnaire – Youth in Colombia. *Journal of Contextual Behavioral Science, 12*, 1–9. https://doi.org/10.1016/j.jcbs.2018.11.008

Schonert-Reichl, K. A., Kitil, M. J., & Hanson-Peterson, J. (2017). *Building a foundation for great teaching: A report prepared for CASEL*. http://www.casel.org/wp-content/uploads/2017/02/SEL-TEd-Full-Report-for-CASEL-2017-02-14-R1.pdf

Shochet, I. M., Dadds, M. R., Ham, D., & Montague, R. (2006). School connectedness is an underemphasized parameter in adolescent mental health: Results of a community

prediction study. *Journal of Clinical and Adolescent Psychology*, *35*(2), 170–179. https://doi.org/10.1207/s15374424jccp3502_1

Sulkowski, M. L., & Simmons, J. (2018). The protective role of teacher–student relationships against peer victimization and psychosocial distress. *Psychology in the Schools*, *55*(2), 137–150. https://doi.org/10.1002/pits.22086

Tan, K., Sinha, G., Shin, O. J., & Wang, Y. (2017). Patterns of social-emotional learning needs among high school freshmen students. *Children and Youth Services Review*, *86*, 217–225. https://doi.org/10.1016/j.childyouth.2018.01.033

Thompson, C. S. (2018). The construct of 'respect' in teacher-student relationships: Exploring dimensions of ethics of care and sustainable development. *Journal of Leadership Education*, *17*(3), 42–60.

Uslu, F., & Gizir, S. (2017). School belonging of adolescents: The role of teacher–student relationships, peer relationships and family involvement. *Kuram ve Uygulamada Egitim Bilimleri*, *17*(1), 63–82. https://doi.org/10.12738/estp.2017.1.0104

Yeager, D. S. (2017). Social and emotional learning programs for adolescents. *The Future of Children*, *27*(1), 73–94.

Yeager, D. S., Dahl, R. E., & Dweck, C. S. (2018). Why interventions to influence adolescent behavior often fail but could succeed. *Perspectives on Psychological Science*, *13*(1), 101–122.

Appendix N. DRC16 Form (Manuscript One)

DRC 16

MASSEY UNIVERSITY
GRADUATE RESEARCH SCHOOL

STATEMENT OF CONTRIBUTION
DOCTORATE WITH PUBLICATIONS/MANUSCRIPTS

We, the candidate and the candidate's Primary Supervisor, certify that all co-authors have consented to their work being included in the thesis and they have accepted the candidate's contribution as indicated below in the *Statement of Originality*.

Name of candidate:	Amy Edwards
Name/title of Primary Supervisor:	Dr. Kirsty Ross
Name of Research Output and full reference:	
Mapping teachers' social emotional practices: Students' per	
In which Chapter is the Manuscript /Published work:	Chapter Seven
Please indicate:	
• The percentage of the manuscript/Published Work that was contributed by the candidate:	85%
and	
• Describe the contribution that the candidate has made to the Manuscript/Published Work:	
Amy took the primary role in research design, data collection and analysis, and independently wrote the manuscript. Dr. David Bimler provided assistance for analytic procedures considered beyond the scope of a DClinPsych thesis. All supervisors proof-read the manuscript and provided editing advice.	
For manuscripts intended for publication please indicate target journal:	
Educational Review	
Candidate's Signature:	Amy Edwards Digitally signed by Amy Edwards Date: 2020.04.28 13:17:44 +12'00'
Date:	28.04.20
Primary Supervisor's Signature:	Dr Kirsty Ross Digitally signed by Dr Kirsty Ross Date: 2020.04.28 13:23:40 +12'00'
Date:	28 April 2020

(This form should appear at the end of each thesis chapter/section/appendix submitted as a manuscript/ publication or collected as an appendix at the end of the thesis)

GRS Version 4– January 2019

Appendix O. DR16 Form (Manuscript Two)

DRC 16

MASSEY UNIVERSITY
GRADUATE RESEARCH SCHOOL

STATEMENT OF CONTRIBUTION
DOCTORATE WITH PUBLICATIONS/MANUSCRIPTS

We, the candidate and the candidate's Primary Supervisor, certify that all co-authors have consented to their work being included in the thesis and they have accepted the candidate's contribution as indicated below in the *Statement of Originality*.

Name of candidate:	Amy Edwards
Name/title of Primary Supervisor:	Dr. Kirsty Ross
Name of Research Output and full reference:	
Students' perspectives of teachers' practices: Investigation c	
In which Chapter is the Manuscript /Published work:	Chapter Eight
Please indicate:	
• The percentage of the manuscript/Published Work that was contributed by the candidate:	85%
and	
• Describe the contribution that the candidate has made to the Manuscript/Published Work:	
Amy took the primary role in research design, data collection and analysis, and independently wrote the manuscript. Dr. David Bimler provided assistance for analytic procedures considered beyond the scope of a DClinPsych thesis. All supervisors proof-read the manuscript and provided editing advice.	
For manuscripts intended for publication please indicate target journal:	
Journal of Educational Research	
Candidate's Signature:	Amy Edwards Digitally signed by Amy Edwards Date: 2020.04.28 13:19:50 +12'00'
Date:	28.04.20
Primary Supervisor's Signature:	Dr Kirsty Ross Digitally signed by Dr Kirsty Ross Date: 2020.04.28 13:23:08 +12'00'
Date:	28 April 2020

(This form should appear at the end of each thesis chapter/section/appendix submitted as a manuscript/ publication or collected as an appendix at the end of the thesis)

GRS Version 4– January 2019