Teachers' Social Goals, Self-Efficacy, and Well-Being: A Motivational Perspective on Teacher- Student Relationships and Classroom Climate

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Abstract

Existing research on the social aspect of the teaching profession and classroom environments has consistently highlighted the educational and occupational benefits of positive teacher-student relationships. However, teachers' social motivation remains underexplored with limited research having specifically examined the types and effects of teachers' personal goal orientations as they pertain to connecting with students. The present dissertation attempted to differentiate teachers' social goal orientations to better elucidate relations with teacher well-being and classroom outcomes. The three empirical manuscripts included aimed to (1) assess the relationships between teachers' social goals, instructional self-efficacy, and classroom engagement with longitudinal data, (2) differentiate teachers' underlying reasons for building relationships with students and explore potentially differential impacts of social goal subtypes on classroom engagement and teacher-student relationship quality, and (3) examine the roles of social mastery-approach and social work-avoidance goals in teachers' psychological adjustment as informed by the job demands-resources model. Main study findings indicated that teachers who prioritized developing teacher-student relationships (social goals) and, more specifically, emphasized developing their ability to foster meaningful relationships with students (social mastery-approach goals) felt more confident in varied teaching tasks, perceived greater student engagement and more positive teacher-student relationships, and reported better work engagement and psychological adjustment. In contrast, teachers who aimed mainly to fulfill minimum requirements for interacting with students (social work-avoidance goals) reported higher levels of burnout and lower levels of work engagement, job satisfaction, and well-being. Study contributions to theoretical advancement, scale development, and teacher professional development pertaining to teacher-student relationship building were discussed.

Résumé

Les recherches existantes sur l'aspect social de la profession enseignante et des environnements de classe ont constamment mis en évidence les avantages éducatifs et professionnels de relations positives entre enseignants et élèves. Cependant, la motivation sociale des enseignants reste sous-explorée avec des recherches limitées ayant spécifiquement examiné les types et les effets des orientations des objectifs personnels des enseignants en ce qui concerne la connexion avec les élèves. La présente thèse a tenté de différencier les orientations des objectifs sociaux des enseignants afin de mieux élucider les relations avec le bien-être des enseignants et les résultats en classe. Les trois manuscrits empiriques inclus visaient à (1) évaluer les relations entre les objectifs sociaux des enseignants, l'auto-efficacité pédagogique et l'engagement en classe avec des données longitudinales, (2) différencier les raisons sous-jacentes des enseignants pour établir des relations avec les élèves et explorer les impacts potentiellement différentiels des sous-types d'orientation vers les objectifs sociaux sur l'engagement en classe et la qualité de la relation enseignant-élève, et (3) examiner les rôles des orientations vers les objectifs de maîtrise sociale-approche et de travail social-évitement dans l'adaptation psychologique des enseignants, comme indiqué par le Job Demands-Ressources (JD-R) Modèle. Les principaux résultats de l'étude ont indiqué que les enseignants qui accordaient la priorité au développement de relations enseignants-élèves (objectifs sociaux) et, plus spécifiquement, mettaient l'accent sur le développement de leur capacité à favoriser des relations significatives avec les élèves (objectifs de maîtrise sociale-approche) se sentaient plus confiants dans des tâches d'enseignement variées, percevaient un plus grand engagement et des relations enseignant-élève plus positives, et ont signalé un meilleur engagement au travail et une meilleure adaptation psychologique. En revanche, les enseignants qui visaient principalement à satisfaire aux exigences minimales

d'interaction avec les élèves (objectifs d'évitement du travail social) ont signalé des niveaux d'épuisement professionnel, d'engagement au travail, de satisfaction au travail et de bien-être inférieurs. Les contributions de l'étude à l'avancement théorique, au développement d'échelles et au développement professionnel des enseignants concernant l'établissement de relations enseignants-élèves ont été discutées.

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Preface and Contributions of Authors

I am the primary author of each paper and primarily responsible for the overall research process from idea generation and proposal writing to ethics approval, data collection, statistical analysis, and manuscript writing. The Introduction (Chapter 1) and Discussion (Chapter 5) were completed independently by myself and incorporated feedback from my doctoral supervisor, Dr. Nathan C. Hall. Content in Chapter 1 was also informed by feedback from my comprehensive exam external examiner Dr. Susanne Lajoie. The empirical papers outlined in Chapters 2 to 4 were co-authored by Dr. Hall and other members of Dr. Hall's research group, with the corresponding contributions outlined below. Lastly, committee members Dr. Steve Shaw and Dr. Lajoie provided feedback on the entirety of the dissertation document. The contributions made by myself and co-authors on each of the three empirical chapters are detailed below.

Chapter 2

Citation. Chang, C.-F., Hall, N. C., Lee, S. Y., & Wang, H. (in press). Teachers' social goals and classroom engagement: The mediating role of teachers' self-efficacy. *International Journal of Educational Research.*

Contributions. I was responsible for the literature review, data analysis, and scholarly writing of this manuscript. Dr. Nathan C. Hall provided feedback on the plan of analysis and results, and the final draft of the manuscript, with Dr. Hui Wang and So Yeon Lee advising on strategies for data analysis. An abbreviated version of this paper was presented in a roundtable session at the 2019 annual meeting of the American Educational Research Association (AERA).

Chapter 3

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I was primarily responsible for the development of research questions, literature review, data collection, data analyses, and scholarly writing with Dr. Nathan C. Hall providing specific feedback on each of these activities. An abbreviated version of this manuscript was accepted to the 2022 AERA annual meeting with Phoenix T. M. Horrocks included as coauthor on the conference paper due to assistance with proofreading.

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Contributions. I was principally responsible for the development of research questions, ethics submission, data collection, analyses, and scholarly writing. Dr. Nathan C. Hall reviewed my work at each stage of development and provided detailed feedback on the final manuscript. Phoenix T. M. Horrocks provided feedback on the manuscript discussion section and assisted in improving argumentation throughout the manuscript. An initial version of this manuscript was presented at the 2021 AERA annual meeting with Drs. Hui Wang and Sonia Rahimi included as coauthors on the conference paper due to providing feedback on initial project development and proofreading.

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Chapter 1

Introduction

On any given school day, teachers enter classrooms to not only deliver knowledge but to also build relationships with students. Teacher education programs provide student teachers pedagogical content knowledge (PCK; Shulman, 1986) for promoting student learning, however emerging research highlights teachers' non-cognitive and social-psychological abilities for promoting students' holistic development (i.e., A[affective]PCK; van Uden et al., 2013). This focus on social-emotional competencies in teachers is also aligned with the development of students' social-emotional skills as advocated by the Organisation for Economic Co-operation and Development (OECD; Chernyshenko et al., 2018).

Studies have increasingly indicated teachers' social-emotional support and initiatives as key to positive classroom climates (Jennings & Greenberg, 2009) and student-centered teaching (Lee et al., 2017; Madni et al., 2015). More specifically, teachers' interpersonal expertise and warm characteristics have been shown to foster student learning, engagement, and achievement while also helping students maintain emotional well-being (Jennings & Greenberg, 2009; Wentzel et al., 2010). Although teachers can make a difference in students' lives by playing the role of a change agent, caregiver, role model, or mentor at critical points in their childhood, young adulthood, or school transitions (Ellerbrock & Kiefer, 2013; McHugh et al., 2013; Spilt et al., 2011), they may not be adequately equipped to effectively perform such roles due to lack of motivation or insufficient training in how to foster meaningful relationships with their students.

Various studies on teacher attrition and burnout have consistently attributed discouraging trends to student challenges including disruptive behaviours and lack of motivation to learn (Aloe et al., 2014; Fitchett et al., 2018). Among North American pre-kindergarten through 12th grade teachers, nearly one-fifth leave their careers within the first five years of employment (Gray & Taie, 2015), with attrition estimates fluctuating around 30-60% over the past decade

(Roness, 2011; Karsenti & Collin, 2013). Simply put, if teachers are not prepared to handle interpersonal challenges with students, such as building positive relationships, managing misbehaviour, or modelling prosocial behaviour, their well-being and teaching performance are likely to be undermined leading to burnout (Aldrup et al., 2018; Bakker et al., 2007; Collie et al., 2012; Simões & Calheiros, 2019) and attrition (Karsenti & Collin, 2013).

Given that teachers' readiness and competencies related to social interactions with students are crucial to instructional quality, student learning, and teacher adjustment, more research is needed to understand teachers' motivation with respect to why and how they attempt to develop connections with students and how this social motivation relates to their instructional outcomes and psychological adjustment. However, current findings on teachers' social motivation is scattered, with existing research being derived from varied theoretical traditions. Accordingly, an overview of relevant theories and motivational constructs pertaining to teacher-student relationship is provided below, with a specific focus on goal orientation theory that underlies the subsequent dissertation studies examining the structure and effects of teachers' social goals. It is anticipated that the present research will highlight the significance of teachers' social endeavours and expertise in the classroom and draw attention to potentially relevant institutional supports and systemic changes.

Theoretical Perspectives on Teacher-Student Relationships

Attachment Theory and Teacher Caring

The critical role of relationship-building in human development is perhaps most notably addressed in *attachment theory* which asserts that a child's sense of security and emotional bond with a caregiver is a basic component for optimal human development (Bowlby, 1969, 1982). Emotional security, defined as perceived comfort and support from caregivers, is thus necessary

for fostering a child's independence and curiosity to explore their environment and represents a key indicator of relationship quality across cultures (Ainsworth, 1979; Roorda et al., 2011). Moreover, this concept of emotional attachment is differentiated from the related constructs of dependency and sociability. Whereas dependency involves a constant need for external support from another individual, sociability refers to a general interest and enthusiasm for connecting with people (Bergin & Bergin, 2009). In contrast, secure attachments indicate that one's psychological needs for belonging, affection, and responsiveness from others are fulfilled, with early development of secure attachments providing the necessary foundation for future dyadic relationships (e.g., friendships, romantic relationships).

Once children attach securely with their caregivers, they develop trust and begin to internalize their values resulting in schemas of dyadic relationships (i.e., mental representations or internal working models) that are generalized to evaluate if others are trustworthy (Baldwin, 1992; Bretherton & Munholland, 2008). Securely attached children form a positive self-concept and approach new people and environments as positive challenges. Conversely, children who feel insecure in their relationships with caregivers develop ambivalent relational schemas resulting in avoidant, disorganized, or resistant behaviours in social contexts (Bergin & Bergin, 2009; Wentzel, 2016). Moreover, research indicates that not only parents but teachers can be viewed by children as primary attachment figures who can foster feelings of emotional security through caring instructional behaviours that can help to bolster their social skills (Kesner, 2000).

Accordingly, attachment theory has been used to inform research on not only parenting behaviours but also teacher-student relationships. For example, Wubbels and colleagues (2014) suggest that "teacher-student relationships can be understood as the generalized interpersonal meaning students and teachers attach to their interactions with each other" (p. 364). Motivated by

their need for attachment, students are also affected by teachers' values and beliefs associated with their teaching profession (Pianta et al., 2003). Greater internalization by students of their teachers' values (e.g., expectations concerning responsible behaviour), in turn, results in better relationship quality and exchange of ideas that is necessary for student learning (Bergin & Bergin, 2009). However, findings also show this internalization process to be moderated by the interpersonal experiences of students and teachers (e.g., attachment history, relational styles; Pianta et al., 2003; Riley, 2009), with internalization of adaptive values being more likely when emotionally secure relationships have been established. Empirical findings further show preschool and elementary school students to prefer teachers characterized as caring, warm, respectful, sensitive, and trustworthy help providers (Pianta & Nimetz, 1991). Similarly, secondary school teachers and students report that effective teachers are close to students, understand their concerns, and trust their students when problems occur (Beishuizen et al., 2001), with these findings observed in both traditional and technology-enhanced classroom settings (Lemley et al, 2014). College students also report caring teachers to be respectful, available, and willing to help even outside of class (Straits, 2007).

A solid foundation of emotional attachment with either parents or teachers has been shown to correspond with positive school outcomes including greater social competence with classmates as well as academic motivation (Bergin & Bergin, 2009; Weinfield et al., 1999). When students are taught by "authoritative" educators who maintain high academic standards while also developing emotionally secure relationships in class, students are found to benefit in terms of developing prosocial behaviours, experiencing a more caring classroom climate, and demonstrating greater knowledge gains (Bergin & Bergin, 2009). Several studies have shown teacher-student relationships characterized by warmth, trust, and respect to correspond with

greater student success in terms of cognitive gains (e.g., grades; Hughes et al., 2008), social and psychological adjustment (e.g., interpersonal competence and satisfactions, stress regulation; Hughes, 2012), as well as better classroom management (e.g., reduced misconduct, referrals for special education; for reviews, see Bergin & Bergin, 2009; Hughes, 2012). Conversely, teachers who are more emotionally alienated toward students tend to experience poorer relationship quality (Wentzel, 2016) that, in turn, has detrimental effects on both students (e.g., poor emotional well-being and achievement; for a meta-analysis, see Roorda et al., 2011) and teachers (e.g., lower self-efficacy, higher depression and frustration; for a review, see Spilt et al., 2011). Extant research has further shown that daily experiences of negative emotional connections with students can contribute to poorer well-being and greater burnout in teachers as well as a more negativity being expressed toward students (Byrne, 1994; Jennings & Greenberg, 2009).

Students who experience secure emotional connections with teachers are thus significantly more likely to demonstrate critical gains in both learning outcomes and as well as psycho-social adjustment. However, although research based on attachment theory and teacher caring is useful for defining the specific nature and consequences of adaptive emotional connections between teachers and students, this research is limited in that it does not address the specific reasons for why teachers want to build meaningful relationships – it does not provide insight into teachers' *motivation* for developing adaptive emotional connections with students. To further explore teachers' individual differences in social motivation, we must instead focus on other theories from the achievement motivation literature including *self-determination theory* (i.e., psychological need satisfaction) and *achievement goal theory* as outlined below.

Self-Determination Theory and Teacher Relatedness

Consistent with the focus of attachment theory on teacher caring, *self-determination theory* (SDT) posits that basic psychological needs should be fulfilled to serve human functioning in the face of new situations and challenges (Deci & Ryan, 2000). Specifically, the social motivation component of this theory hypothesizes a need for "relatedness" referring to a sense of belongingness that makes individuals feel content with relationships with significant others or a group of people. In educational settings, students typically derive satisfaction of this psychological need from their teachers that, in turn, serves to "develop their cognitive abilities and competence, to gain independence and autonomy, and to connect positively with adults and peers" (Meece, 2003, p. 112). Students can thus have their basic need for relatedness satisfied in class with teachers' provisions of social-emotional support (Ryan & Deci, 2000).

Following from research on students' psychological need for relatedness in the classroom, emerging literature shows teachers' perceptions of relatedness to also correspond with work satisfaction, career engagement, and instructional quality (Furrer et al., 2014; Klassen et al., 2012; Ryan & Deci, 2000). For example, research by Klassen et al. (2012) shows that teachers who perceive their need for relatedness with students to be satisfied report greater engagement and psychological well-being (e.g., more enjoyment, less anger, anxiety, and burnout), and even more so than their perceived relatedness with colleagues. Subsequent research consistently indicates that teachers' relatedness with students contributes to not only teachers' work commitment (Collie et al., 2020) and daily teaching enthusiasm (Aldrup et al., 2017) but also student motivation and achievement (Guay et al., 2019). Similarly, when teachers perceive their need for relatedness with students to be fulfilled, they are much more intrinsically motivated to adjust their teaching methods to accommodate students' needs (Collie et al., 2016;

Pelletier et al., 2002) and engage in teaching activities more generally (i.e., autonomous motivation to teach, Deci & Ryan, 1985; Pelletier et al., 2002) that, in turn, fosters teacher behaviours that promote students' in-class engagement, autonomous motivation, and self-regulated learning (Katz & Shahar, 2015; Roth et al., 2007).

Following directly from self-determination theory research in classrooms, *autonomy-supportive teaching* has been examined as an instructional method for improving perceptions of relatedness in students and teachers; a student-centered teaching practice that provides students freedom of choice with accompanying hands-on pedagogical and motivational support from the instructor (Deci & Ryan, 1985; Reeve, 2009). International studies with elementary to high school students show autonomy support by teachers to help fulfill the psychological need of relatedness in students thereby contributing to stronger teacher-student relationships as well as better learning and psychological outcomes in students (Bakadorova & Raufelder, 2018; Gurland & Evangelista, 2015; Katz et al., 2009; Maulana et al., 2016; Patrick et al, 2007; Perlman, 2015). In a higher education context, studies further demonstrate the specific effects of teachers' *relatedness support* (e.g., talking to individual students in each class, creating a welcoming classroom climate) on several student outcomes (e.g., motivation and engagement, Ambikairajah et al., 2021; relatedness satisfaction and achievement, Bürgermeister et al., 2016). Taken together, teaching methods based on self-determination theory have been found to contribute significantly to teacher-student relatedness and mitigate an otherwise controlling classroom environment that can inhibit volition and impair opportunities for meaningful connections with students (Deci & Ryan, 2002; Vansteenkiste & Ryan, 2013).

Despite the importance of self-determination theory for highlighting the importance of individual differences in teachers' perceived relatedness with students given the far-reaching

benefits of emotionally supportive teacher-student relationships, this perspective does not as clearly address the potentially differing reasons that teachers may have for *why* they invest effort in developing meaningful interpersonal interactions with students. Whereas this approach does additionally propose a five-part differentiation between controlled vs. autonomous motivation subtypes that reflects varied reasons for pursuing an academic activity (e.g., intrinsic = passion; integrated = personal values; extrinsic = external reward), these subtypes are considered secondary by-products of the satisfaction of psychological needs (i.e., intrinsic motivation resulting from relatedness satisfaction). In contrast, individual differences in the reasons underlying instructional behaviours have been consistently examined from an achievement goal perspective, with this approach having recently been adapted to address teachers' motivations for developing emotionally supportive relationships with students.

Achievement Goal Theory: Teachers' Social Goal Orientations

When applying *achievement goal theory* to how instructors approach developing relationships with students, the construct of teachers' social goal orientation directly addresses teachers' own desires and underlying reasons for wanting to foster meaningful connections with students (Butler, 2012). Achievement goal theory was originally used to understand student motivation, with this approach differentiating between students' goals focused on learning and mastery or demonstrating their abilities (Ames, 1992). This dichotomous framework was subsequently expanded into a 2 x 2 framework to clarify mixed findings by introducing the second dimension of either approaching success or wanting to avoid failure (Elliot, 1999). This framework thus not only captured how students define their competencies and educational experiences, but also predicted their academic behaviour (e.g., learning strategies, persistence; Elliot, 1999). However, the mastery-avoidance subtype has consistently been omitted when this

theory is applied to student populations largely due to the conceptual ambiguity of "not wanting to lose a skill" (Elliot & Murayama, 2008). The resulting trichotomous framework thus has for decades served as the dominant conceptual approach for understanding student motivation internationally (for meta-analytic reviews, see Huang, 2012; Strunk et al., 2021).

Research on motivation in teachers has also adopted the trichotomous goal framework, with work by Butler (2007) supplementing this tripartite approach with a fourth goal of work avoidance (i.e., investing no more effort than necessary) based on research with adolescents on task alienation (Nicholls et al., 1985). Accordingly, teachers' *mastery-approach* goals involve an intrapersonal orientation focused on developing teaching competencies, *ability-approach* (i.e., performance-approach) goals involve demonstrating one's teaching skills, *ability-avoidance* goals involve avoiding displays of incompetence, and *work avoidance* goals reflect investing the minimum effort required for teaching. Research to date has illustrated consistent benefits of teachers' mastery goals (e.g., greater self-efficacy, Nitsche et al., 2011; mastery-oriented instruction, lower burnout, Retelsdorf et al., 2010; greater student interest, Butler & Shibaz, 2014), drawbacks of both teachers' ability-avoidance goals (e.g., lower self-efficacy, perceiving help-seeking as threating, Nitsche et al., 2011; performance-oriented instruction and promotion of surface learning, Retelsdorf & Günther, 2011) and work avoidance goals (e.g., greater burnout, Retelsdorf et al., 2010; lower student mastery goals, Dresel et al., 2013), as well as mixed results for teachers' ability-approach goals (e.g., higher self-efficacy, Nitsche et al., 2011; performance-oriented instruction, promotion of surface learning, Retelsdorf & Günther, 2011).

Recently, researchers have expanded achievement goal theory to incorporate social or relational goals to better capture the interpersonal nature of educational activities (Butler, 2012; Martin & Dowson, 2009; Ryan & Shim, 2006). Given that teachers work in a socially intensive

classroom environment where mastering interpersonal dynamics is considered a job requirement, Butler (2012) further revised her achievement goal framework to incorporate teachers' social goals as the fifth subtype defined as teachers' aims for building caring relationships with students. Findings concerning teachers' social goals have contributed significantly to explaining the extent of emotional and motivational support teachers provide to students, over and above the consistently beneficial effects of mastery-approach goals for teaching (Butler & Shibaz, 2014; George & Richardson, 2019; Wang et al., 2017). These results thus signal the need for continued research on the conceptual structure and effects of teachers' social goals, specifically with respect to the potential usefulness of further differentiating between the reasons for *why* teachers pursue social goals (e.g., to improve mastery of interpersonal interactions in class, or perform social competencies to achieve popularity).

Despite emerging research on teachers' social goals, the structure and correlates of this construct remain underexplored. First, existing goal studies have mostly assessed teachers' social goals using a unidimensional measure, neglecting the potential of applying a more differentiated 2 x 2 goal framework specifically suggested by achievement goal theory (i.e., four social goal subtypes including mastery-approach, mastery-avoidance, ability-approach, ability-avoidance; Elliot, 1999). Moreover, current studies are limited in having examined mainly the impact of social goals on teachers' behaviours and instructional methods (e.g., mastery-oriented instruction, social support; Butler & Shibaz, 2014; Wang et al., 2017) with little research addressing the effects of teachers' social goals on student outcomes, teacher-student relationships, and teachers' own psychological adjustment. Lastly, there is a lack of longitudinal research in which relations between teachers' social goals and critical outcomes are assessed (George & Richardson, 2019). In other words, unanswered questions in existing research on

teachers' social goals include: How do teachers' social goals impact their students, classroom dynamics, and their personal well-being? Are there empirically distinct subtypes of social goals in teachers and how do they relate to student and teacher outcomes? How do other motivational processes (e.g., self-efficacy) intersect with teachers' social goals to predict student and teacher outcomes?

Therefore, the purpose of this dissertation was to unpack the structure and effects of teachers' social goals on classroom outcomes and teacher well-being within the context of K-12 education. Informed by multiple theoretical frameworks and two empirical studies across three research manuscripts submitted to peer-reviewed educational research journals, this dissertation examined the importance of teachers' motivation to connect with students in terms of its potential multidimensional structure, relations with student development, and consequences for teachers' own career-related psychological adjustment (e.g., burnout). Anticipated results were expected to provide evidence to inform theory development as well as professional development initiatives for teachers concerning the critical role of teachers' social motivation for both student engagement and their own psychological adjustment.

Overview of Chapters

Chapter 2 presents a longitudinal examination of the relationships between teachers' social goals utilizing a previously developed unidimensional measure, and teachers' perceived engagement in their students over six months. The same set of measures was administered at each time point to assess teachers' social goals, three subtypes of self-efficacy, and perceived behavioural and emotional engagement in their students. A proposed mediation model was examined via cross-lagged analyses and structural equation modelling (SEM) to explore teachers' self-efficacy beliefs as a mediational variable potentially underlying the effects of

teachers' social goals on classroom outcomes. Whereas findings showed that perceived student classroom involvement, as per behavioural and emotional indicators, could be enhanced by teachers' social goal orientations via teachers' self-efficacy for student engagement and classroom management, the unidimensional structure of social goals was insufficient to address the extent to which differing reasons for teachers' motivation to connect with students could have moderated the study findings.

Chapter 3 reports findings from a follow-up, cross-sectional data collection exploring the feasibility of a multidimensional measure of teachers' social goals and potential relations between social goal subtypes, self-efficacy beliefs, and classroom outcomes including teacher-student relationships and perceived student engagement. Exploratory and confirmatory analyses were conducted to assess the number and overlap of potential social goal subtypes as informed by the 2 x 2 framework proposed in *achievement goal theory* (Elliot, 1999; mastery-approach, mastery-avoid, ability-approach, ability-avoid). SEM results demonstrated teachers' social mastery-approach goals to better predict teaching self-efficacy than the other goal subtypes, with greater self-efficacy, in turn, corresponding with higher levels of teacher-student relationship quality and classroom engagement. Although the results showed a differentiated assessment of teachers' social goals to be useful for predicting student outcomes (relationship quality, engagement), they did not address how teachers' social goal subtypes correspond with their well-being at work in terms of their occupational adjustment and psychological well-being.

To address this research gap, Chapter 4 presents a final cross-sectional analysis based on the data collection outlined in Chapter 3, reporting relationships between mastery-approach goals and additional unexplored variables including work avoidance (i.e., not wanting to invest more time in developing relationships with students than necessary) and teachers' career-related

psychological adjustment. Informed by the *job demands-resources model* (Demerouti et al., 2001), this mediational analysis examined how competing social goal constructs served as psychological precursors to engagement and burnout as mediational variables that, in turn, predicted teachers' subjective well-being, job satisfaction, and organizational commitment. Findings suggested that teachers with stronger social mastery-approach goals were more engaged with their work and, as a result, experienced greater well-being, job satisfaction, and occupational commitment. By contrast, teachers' social avoidance goals corresponded with higher levels of burnout as well as lower levels of teacher engagement and adjustment.

Chapter 5 provides an overall discussion summarizing the theoretical and practical contributions of the findings reported in the dissertation manuscripts. Limitations from each study reported in the chapters are addressed (e.g., sample size, internal validity, confounding variables) as are implications for future research (e.g., scale calibration). Finally, this section outlines practical applications with respect to teacher training and professional development efforts (e.g., orientation content addressing the importance adopting adaptive motivational perspectives on developing emotionally supportive teacher-student relationships).

References

Ainsworth, M. S. (1979). Infant–mother attachment. *American Psychologist*, *34*(10), 932–937. https://doi.org/10.1037/0003-066X.34.10.932

Aldrup, K., Klusmann, U., & Lüdtke, O. (2017). Does basic need satisfaction mediate the link between stress exposure and well-being? A diary study among beginning teachers. *Learning and Instruction*, *50*, 21–30. https://doi.org/10.1016/j.learninstruc.2016.11.005

Aldrup, K., Klusmann, U., Lüdtke, O., Göllner, R., & Trautwein, U. (2018). Student misbehavior and teacher well-being: Testing the mediating role of the teacher-student relationship. *Learning and Instruction*, *58*, 126–136. https://doi.org/10.1016/j.learninstruc.2018.05.006

Aloe, A. M., Amo, L. C., & Shanahan, M. E. (2014). Classroom management self-efficacy and burnout: A multivariate meta-analysis. *Educational Psychology Review*, *26*(1), 101–126. https://doi.org/10.1007/s10648-013-9244-0

Ambikairajah, A., Ambikairajah, R., & Ambikairajah, E. (2021). The impact of improving feelings of relatedness on motivation and engagement for tertiary students. *International Journal of Mathematical Education in Science and Technology*, *52*(5), 721–730. https://doi.org/10.1080/0020739X.2019.1703149

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, *84*(3), 261–271. https://doi.org/10.1037/0022-0663.84.3.261

Bakadorova, O., & Raufelder, D. (2018). The essential role of the teacher-student relationship in students' need satisfaction during adolescence. *Journal of Applied Developmental Psychology*, 58, 57–65. https://doi.org/10.1016/j.appdev.2018.08.004

Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement, particularly when job demands are high. *Journal of Educational*

Psychology, *99*(2), 274–284. https://doi.org/10.1037/0022-0663.99.2.274

Baldwin, M. W. (1992). Relational schemas and the processing of social information. *Psychological Bulletin*, *112*(3), 461–484. https://doi.org/10.1037/0033-2909.112.3.461

Beishuizen, J. J., Hof, E., Putten, C. M. V., Bouwmeester, S., & Asscher, J. J. (2001). Students' and teachers' cognitions about good teachers. *British Journal of Educational Psychology*, *71*(2), 185–201. https://doi.org/10.1348/000709901158451

Bergin, C., & Bergin, D. (2009). Attachment in the classroom. *Educational Psychology Review*, *21*(2), 141–170. https://doi.org/10.1007/s10648-009-9104-0

Bowlby, J. (1969). *Attachment and loss. Volume I: attachment.* Basic Books.

Bowlby, J. (1982). Attachment and loss: Retrospect and prospect. *American Journal of Orthopsychiatry*, *52*(4), 664–678. https://doi.org/10.1111/j.1939-0025.1982.tb01456.x

Bürgermeister, A., Ringeisen, T., & Raufelder, D. (2016). Fostering students' moderation competence: The interplay between social relatedness and perceived competence. *Teaching in Higher Education*, *21*(8), 990–1005. https://doi.org/10.1080/13562517.2016.1209183

Butler, R. (2007). Teachers' achievement goal orientations and associations with teachers' help seeking: Examination of a novel approach to teacher motivation. *Journal of Educational Psychology*, *99*(2), 241–252. https://doi.org/10.1037/0022-0663.99.2.241

Butler, R. (2012). Striving to connect: Extending an achievement goal approach to teacher motivation to include relational goals for teaching. *Journal of Educational Psychology*, *104*(3), 726–742. https://doi.org/10.1037/a0028613

Butler, R., & Shibaz, L. (2014). Striving to connect and striving to learn: Influences of relational and mastery goals for teaching on teacher behaviors and student interest and help seeking. *International Journal of Educational Research*, *65*, 41–53.

https://doi.org/10.1016/j.ijer.2013.09.006

Butler, R., & Shibaz, L. (2014). Striving to connect and striving to learn: Influences of relational and mastery goals for teaching on teacher behaviors and student interest and help seeking. *International Journal of Educational Research*, *65*, 41–53. https://doi.org/10.1016/j.ijer.2013.09.006

Byrne, B. M. (1994). Burnout: Testing for the validity, replication, and invariance of causal structure across elementary, intermediate, and secondary teachers. *American Educational Research Journal*, *31*(3), 645–673. https://doi.org/10.3102/00028312031003645

Chernyshenko, O., M. Kankaraš and F. Drasgow (2018), Social and emotional skills for student success and wellbeing. *OECD Education Working Papers*, No. 173. Paris, France: OECD Publishing. https://doi.org/10.1787/db1d8e59-en

Collie, R. J., Bostwick, K. C. P., & Martin, A. J. (2020). Perceived autonomy support, relatedness with students, and workplace outcomes: An investigation of differences by teacher gender. *Educational Psychology*, *40*(3), 253–272. https://doi.org/10.1080/01443410.2019.1663791

Collie, R. J., Shapka, J. D., & Perry, N. E. (2012). School climate and social-emotional learning: Predicting teacher stress, job satisfaction, and teaching efficacy. *Journal of Educational Psychology*, *104*(4), 1189–1204. https://doi.org/10.1037/a0029356

Collie, R. J., Shapka, J. D., Perry, N. E., & Martin, A. J. (2016). Teachers' psychological functioning in the workplace: Exploring the roles of contextual beliefs, need satisfaction, and personal characteristics. *Journal of Educational Psychology*, *108*(6), 788–799. https://doi.org/10.1037/edu0000088

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human*

behavior. Plenum Press.

Deci, E. L., & Ryan, R. M. (2000). The" what" and" why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research.* University of Rochester Press.

Deci, E. L., & Ryan, R. M. (2014). Autonomy and need satisfaction in close relationships: Relationships motivation theory. In N. Weinstein (Ed.), *Human Motivation and Interpersonal Relationships: Theory, Research, and Applications* (pp. 53–73). Springer Netherlands. https://doi.org/10.1007/978-94-017-8542-6_3

Demerouti, E., Nachreiner, F., Bakker, A. B., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, *86*(3), 499–512. https://doi.org/10.1037/0021-9010.86.3.499

Dresel, M., Fasching, M. S., Steuer, G., Nitsche, S., & Dickhäuser, O. (2013). Relations between teachers' goal orientations, their instructional practices and student motivation. *Psychology*, *4*(7), 572–584. https://doi.org/10.4236/psych.2013.47083

Ellerbrock, C. R., & Kiefer, S. M. (2013). Extending a community of care beyond the ninth grade: A follow-up study. *Journal of Educational Research*, *106*(4), 319–331. https://doi.org/10.1080/00220671.2012.692728

Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational Psychologist*, *34*(3), 169–189. https://doi.org/10.1207/s15326985ep3403_3

Elliot, A. J., & Murayama, K. (2008). On the measurement of achievement goals: Critique, illustration, and application. *Journal of Educational Psychology*, *100*(3), 613–628.

https://doi.org/10.1037/0022-0663.100.3.613

Fitchett, P. G., McCarthy, C. J., Lambert, R. G., & Boyle, L. (2018). An examination of US first-year teachers' risk for occupational stress: Associations with professional preparation and occupational health. *Teachers and Teaching*, *24*(2), 99–118. https://doi.org/10.1080/13540602.2017.1386648

Furrer, C. J., Skinner, E. A., & Pitzer, J. R. (2014). The influence of teacher and peer relationships on students' classroom engagement and everyday motivational resilience. In D. Shernoff, & J. Bempechat (Eds.), *National Society for the Study of Education yearbook: Engaging youth in schools: Evidence-based models to guide future innovations* (pp. 101–123). New York, NY: Teachers College Record.

George, S. V., & Richardson, P. W. (2019). Teachers' goal orientations as predictors of their self-reported classroom behaviours: An achievement goal theoretical perspective. *International Journal of Educational Research*, *98*, 345–355. https://doi.org/10.1016/j.ijer.2019.09.011

Gray, L., & Taie, S. (2015). *Public school attrition and mobility in the first five years: Results from the first through fifth waves of the 2007–08 Beginning Teacher Longitudinal Study*. (NCES 2015–337). U.S. Department of Education: National Center for Education Statistics. Retrieved [12/10/2020] from https:// nces.ed.gov/pubs2015/2015337.pdf

Guay, F., Stupnisky, R., Boivin, M., Japel, C., & Dionne, G. (2019). Teachers' relatedness with students as a predictor of students' intrinsic motivation, self-concept, and reading achievement. *Early Childhood Research Quarterly*, *48*, 215–225. https://doi.org/10.1016/j.ecresq.2019.03.005

Gurland, S. T., & Evangelista, J. E. (2015). Teacher–student relationship quality as a function of

children's expectancies. *Journal of Social and Personal Relationships*, *32*(7), 879–904. https://doi.org/10.1177/0265407514554511

Huang, C. (2012). Discriminant and criterion-related validity of achievement goals in predicting academic achievement: A meta-analysis. *Journal of Educational Psychology*, *104*(1), 48–73. https://doi.org/10.1037/a0026223

Hughes, J. N. (2012). Teacher–student relationships and school adjustment: Progress and remaining challenges. *Attachment & Human Development*, *14*(3), 319–327. https://doi.org/10.1080/14616734.2012.672288

Hughes, J. N., Luo, W., Kwok, O.-M., & Loyd, L. K. (2008). Teacher-student support, effortful engagement, and achievement: A 3-year longitudinal study. *Journal of Educational Psychology*, *100*(1), 1. https://doi.org/10.1037/0022-0663.100.1.1

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. https://doi.org/10.3102/0034654308325693

Karsenti, T., & Collin, S. (2013). Why are new teachers leaving the profession? Results of a Canada-wide survey. *Education*, *3*, 141–149. https://doi.org/10.5923/j.edu.20130303.01

Katz, I., & Shahar, B.-H. (2015). What makes a motivating teacher? Teachers' motivation and beliefs as predictors of their autonomy-supportive style. *School Psychology International*, *36*(6), 575–588. https://doi.org/10.1177/0143034315609969

Katz, I., Kaplan, A., & Gueta, G. (2009). Students' needs, teachers' support, and motivation for doing homework: A cross-sectional study. *The Journal of Experimental Education*, *78*(2), 246–267. https://doi.org/10.1080/00220970903292868

Kesner, J. E. (2000). Teacher characteristics and the quality of child–teacher relationships.

Journal of School Psychology, *38*(2), 133–149. https://doi.org/10.1016/S0022-4405(99)00043-6

Klassen, R. M., Perry, N. E., & Frenzel, A. C. (2012). Teachers' relatedness with students: An underemphasized component of teachers' basic psychological needs. *Journal of Educational Psychology*, *104*(1), 150–165. https://doi.org/10.1037/a0026253

Lee, W. C., Chen, V. D.-T., & Wang, L.-Y. (2017). A review of research on teacher efficacy beliefs in the learner-centred pedagogy context: Themes, trends and issues. *Asia Pacific Education Review*, *18*(4), 559–572. https://doi.org/10.1007/s12564-017-9501-x

Lemley, J. B., Schumacher, G., & Vesey, W. (2014). What learning environments best address 21st-century students' perceived needs at the secondary level of instruction? *NASSP Bulletin*, *98*(2), 101–125. https://doi.org/10.1177/0192636514528748

Madni, A., Baker, E. L., Chow, K. A., Delacruz, G. C., & Griffin, N. C. (2015). Assessment of teachers from a social psychological perspective. *Review of Research in Education*, *39*(1), 54–86. https://doi.org/10.3102/0091732X14558203

Martin, A. J., & Dowson, M. (2009). Interpersonal relationships, motivation, engagement, and achievement: Yields for theory, current issues, and educational practice. *Review of Educational Research*, *79*(1), 327–365. https://doi.org/10.3102/0034654308325583

Maulana, R., Helms-Lorenz, M., Irnidayanti, Y., & van de Grift, W. (2016). Autonomous motivation in the Indonesian classroom: Relationship with teacher support through the lens of self-determination theory. *Asia-Pacific Education Researcher*, *25*(3), 441–451. https://doi.org/10.1007/s40299-016-0282-5

McHugh, R. M., Horner, C. G., Colditz, J. B., & Wallace, T. L. (2013). Bridges and barriers: Adolescent perceptions of student–teacher relationships. *Urban Education*, *48*(1), 9–43.

https://doi.org/10.1177/0042085912451585

Meece, J. L. (2003). Applying learner-centered principles to middle school education. *Theory Into Practice*, *42*(2), 109–116. https://doi.org/10.1207/s15430421tip4202_4

Nicholls, J. G., Patashnick, M., & Nolen, S. B. (1985). Adolescents' theories of education. *Journal of Educational Psychology*, *77*(6), 683–692. https://doi.org/10.1037/0022-0663.77.6.683

Nitsche, S., Dickhäuser, O., Fasching, M. S., & Dresel, M. (2011). Rethinking teachers' goal orientations: Conceptual and methodological enhancements. *Learning and Instruction*, *21*(4), 574–586. https://doi.org/10.1016/j.learninstruc.2010.12.001

Patrick, H., Knee, C. R., Canevello, A., & Lonsbary, C. (2007). The role of need fulfillment in relationship functioning and well-being: A self-determination theory perspective. *Journal of Personality and Social Psychology*, *92*(3), 434–457. https://doi.org/10.1037/0022-3514.92.3.434

Pelletier, L. G., Séguin-Lévesque, C., & Legault, L. (2002). Pressure from above and pressure from below as determinants of teachers' motivation and teaching behaviors. *Journal of Educational Psychology*, *94*(1), 186–196. https://doi.org/10.1037/0022-0663.94.1.186

Perlman, D. J. (2015). Help motivate the amotivated by being a supportive teacher. *Physical Education and Sport Pedagogy*, *20*(2), 204–214. https://doi.org/10.1080/17408989.2013.868876

Pianta, R. C., & Nimetz, S. L. (1991). Relationships between children and teachers: Associations with classroom and home behavior. *Journal of Applied Developmental Psychology*, *12*(3), 379–393. https://doi.org/10.1016/0193-3973(91)90007-Q

Pianta, R., Hamre, B., & Stuhlman, M. (2003). Relationships between teachers and children. In

W. M. Reynolds, G. E. Miller, & I. B. Weiner (Eds.), *Handbook of psychology: Vol. 7. Educational psychology* (pp. 199–234). Hoboken, NJ: Wiley. https://doi.org/10.1002/0471264385.wei0710

Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist*, *44*(3), 159–175. https://doi.org/10.1080/00461520903028990

Retelsdorf, J., & Günther, C. (2011). Achievement goals for teaching and teachers' reference norms: Relations with instructional practices. *Teaching and Teacher Education*, *27*(7), 1111–1119. https://doi.org/10.1016/j.tate.2011.05.007

Retelsdorf, J., Butler, R., Streblow, L., & Schiefele, U. (2010). Teachers' goal orientations for teaching: Associations with instructional practices, interest in teaching, and burnout. *Learning and Instruction*, *20*(1), 30–46. https://doi.org/10.1016/j.learninstruc.2009.01.001

Riley, P. (2009). An adult attachment perspective on the student–teacher relationship & classroom management difficulties. *Teaching and Teacher Education*, *25*(5), 626–635. https://doi.org/10.1016/j.tate.2008.11.01

Roness, D. (2011). Still motivated? The motivation for teaching during the second year in the profession. *Teaching and Teacher Education*, *27*(3), 628–638. https://doi.org/10.1016/j.tate.2010.10.016

Roorda, D. L., Koomen, H. M. Y., Spilt, J. L., & Oort, F. J. (2011). The influence of affective teacher–student relationships on students' school engagement and achievement: A meta-analytic approach. *Review of Educational Research*, *81*(4), 493–529. https://doi.org/10.3102/0034654311421793

Roth, G., Assor, A., Kanat-Maymon, Y., & Kaplan, H. (2007). Autonomous motivation for teaching: How self-determined teaching may lead to self-determined learning. *Journal of Educational Psychology*, *99*(4), 761. https://doi.org/10.1037/0022-0663.99.4.761

Ryan, A. M., & Shim, S. S. (2006). Social achievement goals: The nature and consequences of different orientations toward social competence. *Personality and Social Psychology Bulletin*, *32*(9), 1246–1263. https://doi.org/10.1177/0146167206289345

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68–75. https://doi.org/10.1037/0003-066X.55.1.68

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational researcher*, *15*(2), 4-14. https://doi.org/10.3102/0013189X015002004

Simões, F., & Calheiros, M. M. (2019). A matter of teaching and relationships: Determinants of teaching style, interpersonal resources and teacher burnout. *Social Psychology of Education*, *22*(4), 991–1013. https://doi.org/10.1007/s11218-019-09501-w

Spilt, J. L., Koomen, H. M. Y., & Thijs, J. T. (2011). Teacher wellbeing: The importance of teacher–student relationships. *Educational Psychology Review*, *23*(4), 457–477. https://doi.org/10.1007/s10648-011-9170-y

Straits, W. (2007). "She's teaching me": Teaching with care in a large lecture course. *College Teaching*, *55*(4), 170–175. https://doi.org/10.3200/CTCH.55.4.170-175

Strunk, K. K., Lester, W. S., Lane, F. C., Hoover, P. D., & Betties, J. S. (2021). Testing the mastery-avoidance construct in achievement goal theory: A meta-analytic confirmatory factor analysis (MA-CFA) of two achievement goals scales. *Educational Psychology*, *41*(4), 383–400. https://doi.org/10.1080/01443410.2020.1824268

van Uden, J. M., Ritzen, H., & Pieters, J. M. (2013). I think I can engage my students. Teachers' perceptions of student engagement and their beliefs about being a teacher. *Teaching and Teacher Education*, *32*, 43–54. https://doi.org/10.1016/j.tate.2013.01.004

Vansteenkiste, M., & Ryan, R. M. (2013). On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *Journal of Psychotherapy Integration*, *23*(3), 263–280. https://doi.org/10.1037/a0032359

Wang, H., Hall, N. C., Goetz, T., & Frenzel, A. C. (2017). Teachers' goal orientations: Effects on classroom goal structures and emotions. *British Journal of Educational Psychology*, *87*(1), 90–107. https://doi.org/10.1111/bjep.12137

Weinfield, N. S., Sroufe, L. A., Egeland, B., & Carlson, E. A. (1999). The nature of individual differences in infant–caregiver attachment. In *Handbook of attachment: Theory, research, and clinical applications* (pp. 68–88). The Guilford Press.

Wentzel, K. R. (2016). Teacher-student relationships. In K. R. Wentzel & D. B. Miele (Eds.), *Handbook of Motivation at School* (pp. 211–230). Routledge.

Wentzel, K. R., Battle, A., Russell, S. L., & Looney, L. B. (2010). Social supports from teachers and peers as predictors of academic and social motivation. *Contemporary Educational Psychology*, *35*(3), 193–202. https://doi.org/10.1016/j.cedpsych.2010.03.002

Wubbels, T., Brekelmans, J. M. G., den Brok, P. J., Wijsman, L., Mainhard, T., & van Tartwijk, J. W. F. (2014). Teacher-student relationships and classroom management. In E. Emmer & E. J. Sabornie (Eds.), *Handbook of Classroom Management (2nd Edition)* (pp. 363–386). Routledge.

Chapter 2

Teachers' Social Goals and Classroom Engagement:

The Mediating Role of Teachers' Self-efficacy

Abstract

In response to limited research exploring teachers' motivational orientations underlying their efforts to develop meaningful relationships with students, the present longitudinal study with Canadian practising teachers ($N = 497$) investigated the effects of teachers' social goals on perceived classroom engagement as mediated by their self-efficacy beliefs across six months. Cross-lagged analyses showed teachers' social goals at Time 1 to predict their self-efficacy (for student engagement) and their students' classroom engagement (emotional) at Time 2. Structural equation models showed teachers' self-efficacy for engaging students to most strongly mediate the effects of their social goals on students' classroom engagement. Implications for teacher training and professional development are discussed.

Developing healthy teacher-student relationships has consistently been a focus in educational research due to the benefits of prosocial dynamics in classroom settings (Cornelius-White, 2007; Hughes, 2011; Jennings & Frank, 2015; Whitley, 2010). Teachers characterized by warmth, trust, respect, and proximity are not only favored by students but also have a positive impact on students' learning (e.g., academic achievement; Li, 2018; Roorda, Koomen, Spilt, & Oort, 2011) and psychological adjustment (e.g., peer acceptance, engagement, attendance, and motivation; Cornelius-White, 2007; Furrer, Skinner, & Pitzer, 2014). As for teachers, their efforts to develop healthy relationships with students and prosocial classroom dynamics can also protect their own psychological well-being (e.g., lower burnout and negative emotions; Klassen, Perry, & Frenzel, 2012; Spilt, Koomen, & Thijs, 2011) and facilitate their perceptions of professional competence (Klassen et al., 2012; Pianta, 2006).

Teaching activities entail extensive interactions with students across varied contexts and thus rely on teachers' professional and social abilities to promote strong teacher-student relationships and engaging classroom environments. However, teachers' personal motivation to develop meaningful relationships with their students remains underexamined in motivational research on teachers, particularly as compared to constructs related to perceived teaching competencies (e.g., self-efficacy). Despite this fact, self-determination theory suggests that optimal teaching should satisfy students' psychological needs for relatedness (i.e., belongingness) thereby promoting their academic engagement and performance (Bakadorova & Raufelder, 2018; Deci & Ryan, 2014). Moreover, teachers' personal reasons for striving to build meaningful social relationships with students have recently been explored (i.e., social goal orientations), with existing research having focused primarily on the effects of teachers' social

goals on instructional methods and the provision of social-emotional support (Butler, 2012; Butler & Shibaz, 2014).

However, there to date remains limited research on how teachers' social goals correspond with other motivational beliefs that are directly related to teachers' instructional competencies (e.g., teaching self-efficacy). Existing research clearly identifies personal achievement goals as a critical motivational antecedent for success in both educational and occupational contexts (Payne, Youngcourt, & Beaubien, 2007), with long-standing research addressing teacher caring as the fundamental to teaching (Noddings, 1984, 2015; Wentzel, 1997) and competency development (Collier, 2005). Accordingly, unlike competency-based motivational constructs, teachers' social goal orientations should also impact instructional and student outcomes over time. To address this research gap, the present longitudinal study explored how teachers' social goals relate to teaching self-efficacy and perceived classroom engagement over two-time points, and further, the extent to which teachers' self-efficacy beliefs mediate relations between teachers' social goals and classroom engagement. By exploring the effects of teachers' social goals, this study thus aims to look beyond general descriptors of the instructor (e.g., "warm demander") or classroom environment (e.g., "prosocial climate") to examine teachers' personal reasons for attempting to develop meaningful relationships with their students.

Teachers' Social Goal Orientations

Achievement Goal Theory has long been used to explain students' motivation for learning and academic success, with early conceptualizations positing two main types of goals underlying students' achievement-related behaviors (Ames, 1992). Whereas *mastery goals* refer to the desire for learning and comprehension, *performance goals* reflect the desire to demonstrate and compare academic abilities with others. Over the past two decades, this model was expanded

into a 2 x 2 framework (Elliot, 1999) that incorporated a second *approach vs. avoidance* dimension to represent not only students' pursuit of personal learning gains (mastery-approach goals) and demonstrating abilities (performance-approach goals), but also learning-related perfectionism (mastery-avoidance goals) and fear of failure (performance-avoidance goals). Additionally, it has further been proposed that the social aspect of goals, referred to *social goals*, should be incorporated to reflect the interpersonal aspects of the learning process (e.g., social development goals; Ryan & Shim, 2008).

Accordingly, Butler (2012) proposed a five-factor goal framework for understanding instructors' motivation for teaching that explicitly included a social engagement component. According to this approach, *mastery-approach goals* reflect teachers' strivings to develop professional competencies, *ability-approach goals* focus on demonstrating competence to students, and *ability-avoidance goals* reflect teachers' desires to not appear lacking in teaching competencies. *In contrast, work-avoidance goals* were proposed to represent teachers' motivation to not invest more time on instructional practices than necessary, with *relational goals* (i.e., social goals) proposed as a critical fifth goal profile reflecting teachers' strivings to establish close and caring relationships with students. Beyond replicating the social goals focus of the student achievement goals framework (e.g., Ryan & Shim, 2008), the assessment of social goals in teachers is consistent with long-standing definitions of good teaching as rooted in teacher caring (Noddings, 1984), "warm demander pedagogy" (Kleinfeld, 1975), and related social motivation constructs including teachers' need for relatedness (e.g., Klassen et al., 2012), motivation for autonomy support (e.g., Ciani, Ferguson, Bergin, & Hilpert, 2010; Deci & Ryan, 2014), and prosocial goal pursuit (e.g., Spera & Wentzel, 2003).

Research findings on teachers' social goals further illustrate the critical importance of assessing teachers' motivation with respect to developing supportive and caring relationships with students. In a large survey of K-12 in-service Israeli teachers (N = 272) and their students (N = 1,790), Butler (2012) found that teachers who reported higher levels of striving to support and connect with students to also provide more social support and use more mastery-oriented teaching approaches. More specifically, the students of teachers who more strongly endorsed social goals also reported greater use of instructional methods that addressed their individual problems (social support), recognized their learning efforts (mastery approaches), and challenged their capabilities (i.e., higher homework demands). A follow-up longitudinal study with practising K-12 teachers in Canada (N = 495) similarly showed higher levels on Butler's measure of social goals to correspond with greater use of mastery-oriented teaching approaches over time, with teachers who reported stronger social goals also reporting higher levels of teaching-related enjoyment (Wang, Hall, Goetz, & Frenzel, 2017). Whereas both studies showed teaching goals reflecting content mastery to correspond with better outcomes, and teaching goals that instead indicate preoccupation with instructional abilities or work avoidance have negative consequences, teachers' social goals were consistently found to more strongly predict better instructional practices and emotional well-being.

In addition to findings showing teachers' social goals to correspond with specific teaching methods and emotions, recent evidence suggests links with student learning outcomes. In their study with teachers (N = 51) and students (N = 1,281) from middle schools in Israel, Butler and Shibaz (2014) found that teachers who more strongly endorsed social goals were more likely to be perceived by students as socially supportive (i.e., provide greater assistance) who, in turn, were more likely to ask for help when needed. In summary, recent findings clearly

show teachers' social goals to predict better instructional practices, teaching emotions, and student learning outcomes. However, empirical research to date has not yet examined how teachers' social goals intersect with more commonly explored teacher motivation variables over time (i.e., instructional self-efficacy), and has not examined student outcomes of teachers' social goals beyond learning, such as student motivation or observed classroom engagement.

Self-efficacy in Teachers

Self-efficacy represents a core construct in Bandura's (1977) Social-cognitive Theory and refers to a competency-based belief "that one can successfully execute the behaviour required to produce outcomes" (p. 193; see also Schunk, 2008). According to this theory, self-efficacy beliefs are proposed to result in specific behavioural outcomes (e.g., persistence) that, in turn, should lead to changes in one's social environment (e.g., achievement) that further inform one's self-efficacy beliefs (i.e., triadic reciprocity; Bandura, 1977). Accordingly, self-efficacy is commonly recognized as a critical motivational antecedent of optimal student development and has for decades been empirically linked to better student outcomes including self-regulated learning, emotional well-being, task persistence, and academic performance (for reviews, see Pajares, 1996; Zimmerman, 2000).

Inspired by Bandura's theory, Tschannen-Moran and Woolfolk Hoy (2001) developed a model of teacher motivation highlighting the role of teachers' self-efficacy in both teacher and student development. In their theoretical framework, teacher self-efficacy is specifically defined as "a judgment of his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated" (Tschannen-Moran & Woolfolk Hoy, 2001, p. 783). More specifically, teachers' self-efficacy for *student engagement* focuses on one's ability to motivate students to learn, for *instructional strategies* on

being able to effectively use versatile teaching strategies, and for *classroom management* on perceived confidence in managing students' disruptive behaviour. This model further proposes reciprocal interactions between teachers' self-efficacy beliefs and environmental feedback in that these motivational beliefs should not only predict student outcomes (e.g., learning, achievement) but also be impacted by classroom factors (e.g., verbal persuasion, task difficulty; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998).

Empirical findings consistently show higher levels of teaching self-efficacy to correspond with quality instructions (e.g., the provision of instructional and emotional support; Ozkel, 2014; Sosa & Gomez, 2012) as well as optimal student outcomes (e.g., student motivation and academic achievement; for systematic reviews, see Klassen & Tze, 2014; Zee & Koomen, 2016). Emerging research also suggests a link between greater self-efficacy and better psychological well-being in teachers (e.g., job satisfaction and work commitment: Klassen & Chiu, 2010, 2011; lower burnout: Skaalvik & Skaalvik 2010), particularly for higher levels of self-efficacy concerning teachers' ability to motivate their students to learn (Wang, Hall, & Rahimi, 2015). Moreover, international research on teacher self-efficacy has examined both teaching practices and student outcomes, with teachers who report greater self-efficacy tending to use more mastery- and autonomy-supportive techniques (e.g., Turkey: Ozkel, 2014; Norway: Throndsen & Turmo, 2013; U.S.: Woolfolk, Rosoff, & Hoy, 1990) that typically lead to better student performance (e.g., Ross, 1992; Throndsen & Turmo, 2013), especially for at-risk students (e.g., marginalized students: Sosa & Gomez, 2012; special education: Whitley, 2010).

Mediating Role of Teachers' Self-efficacy Beliefs

In terms of the potential relations between social goals and self-efficacy beliefs in teachers, task-specific self-efficacy has consistently demonstrated relationships with related

motivational constructs in educational and occupational research, including achievement goals and psychological needs (e.g., social relatedness). For example, occupational research suggests that higher levels of psychological need satisfaction (i.e., autonomy, competence, relatedness) predict greater self-efficacy levels (e.g., Moen & Skaalvik, 2008; Moen, Skaalvik, & Hacker, 2009). Similarly, mastery-approach goals have repeatedly been shown to predict greater self-efficacy in both occupational and academic settings (e.g., Midgley et al., 1998), with meta-analytic findings from Payne et al. (2007) further showing adults' personal goal orientations to predict more task-specific self-efficacy beliefs. Nevertheless, even though building caring relationships requires teachers' "response ability" (Noddings, 2012), more specific abilities along with predominant social concerns can be amplified by teachers' attentiveness to students (Colliers, 2005).

Research with students has also found self-efficacy to significantly mediate of the effects of students' achievement goals on their learning and performance (e.g., Fan, Meng, Billings, Litchfield, & Kaplan, 2008; Phan, 2009). Thus, despite scattered findings with students suggesting that self-efficacy beliefs may precede achievement goals (e.g., Diseth, 2011; Diseth, Danielsen, & Samdal, 2012), existing research more consistently indicates that students' goals predict more specific beliefs about their academic competencies that, in turn, more proximally contribute to critical academic outcomes. With respect to research with teachers, cross-sectional findings from Nitsche et al. (2011) showed teachers' mastery goals to predict greater teaching self-efficacy, and performance-avoidance goals to correspond with lower teaching self-efficacy levels. However, given that these findings were based on cross-sectional data not affording causal assertions, and that mediational pathways were not assessed, additional research utilizing

a longitudinal design to investigate the potential impact of teachers' social goals on classroom outcomes as mediated by their self-efficacy beliefs is needed.

The Present Study

Despite the critical nature of teachers' efforts to develop empathetic and supportive relationships with students, teachers' social goals have to date remained relatively underexplored in research on teacher motivation. Following from emerging findings highlighting the importance of teachers' social goals for student learning (e.g., Butler & Shibaz, 2014), the present study examined both longitudinal and cross-sectional relations between teachers' motivation to build supportive relationships with students (i.e., social goals), their self-efficacy beliefs, and critical student outcomes (perceived classroom engagement). More specifically, cross-lagged analyses were conducted to determine directional relations between the study variables over time, with follow-up cross-sectional mediational models evaluated based on teachers' responses to different student cohorts.

Whereas most existing studies have not assessed teachers' social goals longitudinally (e.g., Butler, 2012; Butler & Shibaz, 2014), the present study assessed teachers' social goals at multiple time points to more robustly examine proposed directional relations with teachers' self-efficacy beliefs and students' classroom engagement (as well as between self-efficacy beliefs and classroom engagement as per the triadic reciprocity assumptions of Bandura's theory). In contrast to studies employing more general measures of teacher self-efficacy (e.g., Kilday et al., 2016; Skaalvik & Skaalvik, 2010), this study further assessed teachers' self-efficacy specific to three teaching domains as proposed by Tschannen-Moran and Woolfolk Hoy (2001) to provide greater specificity concerning potential mediation roles in the effects of social goals on student engagement. This paper additionally explored teachers' perceptions of students' classroom

engagement to expand upon existing studies that have to date examined the effects of teacher teachers' social goals on teaching-related practices and emotions (e.g., Butler, 2012; Wang et al., 2017) or student learning (e.g., Butler & Shibaz, 2014). Students' classroom engagement has not only been identified as a correlate of learning outcomes (Skinner & Belmont, 1993), but also as a strong indicator of teacher performance, student motivation, and classroom dynamics (Furlong & Christenson, 2008; Skinner & Pitzer, 2012). To further optimize our assessment of teachers' perceived classroom engagement as the study outcome, we administered the multi-componential measure developed by Skinner, Kindermann, and Furrer (2009) in which students' behavioral engagement (e.g., on-task behavior, class participation) is differentiated from their emotional engagement behaviors (e.g., displays of enthusiasm, interest)[1].

Hypothesis 1: Teachers' Social Goal Orientations Predict Teaching Self-efficacy and Perceived Classroom Engagement

Our first study hypothesis is based on prior research showing teachers' social goals to predict more mastery-approach and student-supportive teaching behaviors (e.g., Butler, 2012; Butler & Shibaz, 2014; Wang et al., 2017). Accordingly, teachers' social goals can be reasonably expected to predict higher levels of self-efficacy for teaching behaviors (*Hypothesis 1a*). This hypothesis is also informed by meta-analytic findings with adult populations showing

[1] Teachers' reports of student engagement have been found to be significantly correlated with both observed on-task engagement in students (r = .35-.40) as well as students' self-reported engagement (r = .24-37; Skinner, Kindermann, & Furrer, 2009). Teachers' perceptions of student engagement are thus assessed as informative proximal correlates of students' in-class engagement levels (cf. the critical role of teachers' self-perception: van der Heijden et al., 2018).

achievement goals to predict more specific motivational beliefs on work-related tasks (e.g., self-efficacy, task strategies; Payne et al., 2007), with teacher caring also having been proposed in a theoretical review as a critical antecedent of teacher efficacy (Collier, 2005). Additionally, following from existing research and theoretical assertions that teacher caring contributes to student-centered teaching and satisfaction of students' psychological needs (e.g., relatedness, autonomy; Bakadorova & Raufelder, 2018; Cornelius-White, 2007; Deci & Ryan, 2014; Furrer et al., 2014), teachers who reported stronger social goals were also expected to observe greater learning-related engagement in their students (*Hypothesis 1b*).

Hypothesis 2: Teaching Self-efficacy Predicts Perceived Classroom Engagement

The second study hypothesis is consistent with findings showing teachers' self-efficacy to positively predict instructional effectiveness and student learning outcomes (for a review, see Klassen & Tze, 2014). Although the reverse directional relationship is also possible in that teachers' self-efficacy beliefs can indeed be impacted by classroom factors as per Bandura's assumption of reciprocity (e.g., live modelling, verbal persuasion, task difficulty; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998), our hypothesis asserts a stronger directional effect of teachers' self-efficacy on students' classroom engagement as found in recent studies with teachers utilizing stratified sampling methods (e.g., Pan, 2014).

Hypothesis 3: Teaching Self-efficacy Mediates the Relationships between Social Goals and Perceived Classroom Engagement

The last study hypothesis follows directly from the preceding hypotheses in more specifically suggesting that teachers' self-efficacy beliefs should significantly mediate the direct effects of teachers' social goals on their perceptions of classroom engagement. This hypothesis is supported by theoretical assertions that personal goals impact subsequent competence beliefs and

performance in teachers (e.g., Collier, 2005; Klassen & Tze, 2014) and in achievement settings more generally (e.g., Payne et al., 2007). This hypothesis is further informed by empirical findings with students showing self-efficacy beliefs to mediate effects of social goals on learning and achievement outcomes (Fan et al., 2008; Midgley et al., 1998; Phan, 2009).

Method

Participants and Procedure

Practising teachers (N = 497) from the Canadian provinces of Ontario and Quebec participated in the web-based questionnaire via recruitment emails distributed by teachers' unions and participating school principals. The age of participants ranged from 23 to 68 years (M = 41.33, SD = 9.74), with females accounting for most participants (85.5%). Teachers from primary schools (49.5%, Grades 1-6), secondary schools (40.6%, Grade 7-11/12), and junior colleges (5.8%, Grades 12/13) were recruited with the average teaching experience being 12.9 years (SD = 8.7). The web-based questionnaire asked about participants' demographic information (e.g., age, gender, and teaching experience) and included self-report measures of teachers' social goal orientations (Butler, 2012), teaching self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2001), and teachers' perceived classroom engagement (Skinner et al., 2009). Participating teachers were requested to complete the questionnaire in the winter semester and in the fall semester after six months with respect to a new student cohort (81.1% retention). Participating teachers were compensated with a cash prize draw for $500 after each study phase.

Study Measures

Social Goal Orientations

Teachers' social goals were measured using a four-item, five-point measure (1 = *do not agree at all* to 5 = *agree completely*) developed by Butler (2012) that assessed the degree of

importance teachers placed on relational goals with students ($\alpha_{T1/T2}$ = .82/.84; Butler, 2012: α = .86). Sample items included "As a teacher, building relationships with students is most important for me" and "I would feel most successful as a teacher if I saw that I was developing closer and better relationships with students in my classes." Confirmatory factor analysis (CFA) further showed the present scale to fit the present data well (CFI = .999, TLI = .994, RMSEA = .040, SRMR = .01).

Teaching Self-efficacy

Teachers' self-efficacy was assessed using three, four-item measures assessed on a nine-point scale (1= *nothing* to 9 = *a great deal*) developed by Tschannen-Moran and Woolfolk Hoy (2001). The first scale assessed teachers' confidence concerning their ability to promote student engagement ($\alpha_{T1/T2}$ = .76/.79; e.g., "How much can you do to help your students value learning"), the second scale assessed their confidence concerning their use of instructional strategies ($\alpha_{T1/T2}$ = .76/.82; e.g., "How much can you use a variety of assessment strategies"), and the third scale assessed their confidence with respect to classroom behavior management ($\alpha_{T1/T2}$ = .88/.86; e.g., "How much can you do to calm a student who is disruptive or noisy"). Results of a three-factor CFA showed satisfactory fit indices (CFI = .966, TLI = .956, RMSEA = .050, SRMR = .041).

Perceived Classroom Engagement

Teachers' perceived behavioral and emotional engagement in their students was measured using two five-item, four-point scales (1 = *not at all true* to 4 = *very true*) developed by Skinner et al. (2009). The first measure assessed perceived student behavioral engagement ($\alpha_{T1/T2}$ = .78/.82; e.g., "In my class, students tend to work as hard as they can"), and the second assessed student emotional engagement ($\alpha_{T1/T2}$ = .88/.90; e.g., "In class, my students appear happy"). The

corresponding two-factor CFA indicated acceptable fit indices (CFI = .950, TLI = .934, RMSEA = .070, SRMR = .039).

Results

Preliminary Analyses

Boxplot and Little's MCAR tests revealed no extreme outliers and indicated that missing data varied at random (Time 1: $\chi^2 = 485.85$, $df = 503$, $p = .70$; Time 2: $\chi^2 = 541.76$, $df = 494$, $p = .07$). Table 1 provides descriptive statistics for the study variables (e.g., means, standard deviations, internal reliability), with correlations between the study variables outlined in Table 2. At both time points, teachers reported high levels of social goals and higher levels of self-efficacy for instructional strategies than for student engagement or classroom management. Teachers also perceived greater emotional engagement than behavioral engagement in their students. Zero-order correlations at both Time 1 and Time 2 showed teachers' social goals to be positively correlated with self-efficacy for student engagement and classroom management, as well as both perceived classroom engagement measures. Lastly, all three types of self-efficacy positively correlated with perceived behavioral and emotional classroom engagement.

Cross-lagged SEM Analyses

Structural equation modelling (SEM) was conducted to examine the cross-lagged relations between social goals, three measures of teaching self-efficacy, and two measures of classroom engagement at Time 1 and Time 2 (see Figure 1). To control for potential response bias, error terms corresponding to the same items at both time points were allowed to correlate. M*plus* 7.0 was used for all SEM analyses using a maximum likelihood estimator (Muthén, L. K. & Muthén, B., 1998-2015). Model fit for all SEM analyses was assessed with chi-square goodness-of-fit test, comparative fit index (CFI > .90), Tucker–Lewis index (TLI > .90), root

mean square error of approximation (RMSEA < .07), and standardized root mean square residual (SRMR < .08; Hu & Bentler, 1999; Steiger, 2007).[2]

The cross-lagged model fit the data well (CFI = .930, TLI = .922, RMSEA = .041, SRMR = .049), with six large autoregressive paths indicating substantial construct stability over time. Multiple significant cross-paths were also observed showing social goals at Time 1 to predict both teaching self-efficacy (student engagement) and classroom engagement (emotional) at Time 2, controlling for baseline levels of each respective measure ($\beta = .18$, $p < .001$; $\beta = .12$, $p = .002$). As such, the present results support Hypothesis 1a and lb in showing teachers' social goals to predict their self-efficacy beliefs and perceived classroom engagement over time. However, these cross-lagged findings do not support Hypothesis 2 in that teaching self-efficacy at Time 1 did not significantly predict teachers' perceptions of classroom engagement at Time 2.

Mediational SEM Analyses

Based on the directional relationships from social goals to self-efficacy and classroom engagement observed in the preceding cross-lagged analysis, two mediational models were tested at Time 1 and Time 2, respectively. Whereas the Time 1 model examining the proposed mediational pathway (social goals → self-efficacy → classroom engagement) assessed teachers'

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[2] Preliminary analyses showed significant initial differences in social goals as a function of gender and grade level of instruction, with females reporting stronger social goals ($M = 3.93$, $SD = .80$) than males ($M = 3.55$, $SD = .85$), $t(470) = 3.58$, $p < .001$, and primary school teachers reporting stronger social goals ($M = 4.07$, $SD = .70$) than secondary school teachers ($M = 3.70$, $SD = .84$) and post-secondary educators ($M = 3.25$, $SD = .96$; $F(2, 81.82) = 17.20$, $p < .001$). As the cross-lagged model including gender and grade levels as covariates showed nearly identical significant autoregressive and cross-variable paths as a more parsimonious model with covariates excluded (change in effect sizes ranged from 0 to 1.2 %), findings based on the more parsimonious model are presented.

responses concerning students they taught in the winter semester, the Time 2 model examined these relationships with respect to teachers' responses concerning a different student cohort they taught in the fall semester. Both direct and indirect paths from teachers' social goals to classroom engagement were included in the Time 1 and 2 models.[3]

Time 1 Model

Results from the Time 1 model are outlined in Figure 2 with the proposed mediational model providing a sufficient fit with study data (CFI = .932, TLI = .922, RMSEA = .052, SRMR = .050). Teachers who more strongly endorsed social goals tended to report greater teaching self-efficacy for student engagement ($\beta = .35$, $p < .001$) and classroom behavior management ($\beta = .20$, $p < .001$) that, in turn, corresponded to higher levels of perceived *behavioral* engagement in their students (path from self-efficacy for student engagement: $\beta = .42$, $p < .001$; path from self-efficacy for classroom management: $\beta = .27$, $p = .001$). Moreover, higher teaching self-efficacy concerning student engagement corresponded with greater perceived *emotional* engagement in students ($\beta = .41$, $p < .001$). Teaching self-efficacy for instructional strategies was not significantly predicted by teachers' social goals ($\beta = .05$, $p = .41$) and did not significantly predict perceived behavioral engagement ($\beta = -.04$, $p = .66$) or emotional engagement ($\beta = -.01$, $p = .93$). As for the direct paths from teachers' social goals to classroom engagement, teachers' social goals did not significantly predict perceived behavioral engagement ($\beta = -.01$, $p = .82$) nor emotional engagement in students ($\beta = .08$, $p = .18$).

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[3]As supplemental mediational analyses including both gender and grade level of instruction as covariates in both the Time 1 and Time 2 models indicated the same significant paths and effect sizes as the model that excluded covariates. Findings for only the more parsimonious model are presented.

Time 2 Model

Results from the Time 2 model are presented in Figure 3, with the data fitting the mediational model well (CFI = .941, TLI = .933, RMSEA = .052, SRMR = .047). Social goals were again found to positively predict both teaching self-efficacy with respect to student engagement (β = .35, p < .001) and classroom behavior management (β = .16, *p* < .01), with both self-efficacy measures, in turn, predicting greater perceived *behavioral* engagement (path from self-efficacy for student engagement: β = .44, *p* < .001; path from self-efficacy for classroom behavior management: β = .29, *p* = .001). Similarly, teachers' perceptions of *emotional* engagement in their students were also positively predicted by greater self-efficacy for student engagement (β = .44, *p* < .001) and for classroom management (β = .18, *p* = .04). Although teachers' social goals did marginally predict higher teaching self-efficacy with respect to instructional strategies in the Time 2 model (β = .12, *p* = .04), this self-efficacy measure once again did not significantly predict perceived behavioral engagement (β = -.06, *p* = .48) nor emotional engagement in students (β = -.05, *p* = .42). The direct paths from teachers' social goals to their perceived behavioral engagement (β = -.01, *p* = .86) and emotional engagement in students were not significant (β = .08, *p* = .13).

Mediation Effects

Supplemental analyses of both direct and indirect effects were used to examine Hypothesis 3 concerning the proposed mediational role of teacher's self-efficacy. All standardized direct, indirect, and total effects from Time 1 and 2 are presented in Table 3. Analysis of Time 1 data showed teaching self-efficacy for student engagement to have a significant and substantial mediating effect between teachers' social goals and their perceptions of students' behavioral (β = .15, *p* < .001) and emotional engagement (β = .14, *p* < .001).

Analysis of Time 2 data consistently showed teachers' self-efficacy for student engagement to significantly mediate relations between social goals and perceived behavioral ($\beta = .14$, $p < .001$) and emotional engagement in students ($\beta = .15$, $p < .001$). Although teaching self-efficacy concerning classroom behavior management also contributed to significant indirect effects of teachers' social goals on *behavioral* classroom engagement at both Time 1 ($\beta = .05$, $p < .01$) and Time 2 ($\beta = .05$, $p < .05$), there was no significant mediation of the relationship between social goals and *emotional* classroom engagement via teachers' self-efficacy for classroom management. Teachers' self-efficacy for instructional strategies did not show mediating effects at either Time 1 or Time 2.

Discussion

Hypothesis 1: Social Goals Predict Teaching Self-efficacy and Classroom Engagement

Hypothesis 1a was partially supported by the results of cross-lagged analyses showing teachers who reported stronger social goal orientations at Time 1 to also report greater self-efficacy for engaging students in learning activities at Time 2. Our cross-sectional mediational models similarly showed that teachers who reported stronger goals of establishing meaningful relationships with students also consistently reported greater confidence in their ability to involve students in learning activities and, to a lesser extent, manage students' disruptive behaviors at both Time 1 and Time 2. Additionally, the Time 2 model further indicated that greater social goal orientations were associated with higher ratings of teachers' self-efficacy for instructional strategies. These results highlight teachers' motivation to connect with their students as a critical antecedent of their confidence in their teaching abilities, especially their perceived abilities to engage students in learning and also manage problematic behavior in the classroom. These effects of teachers' social goals thus align closely with previous findings showing goal

orientations to predict self-efficacy beliefs in achievement settings (Payne et al., 2007) and teachers' caring characteristics to foster teaching efficacy (Collier, 2005).

The cross-lagged effects of teachers' social goals on self-efficacy for student engagement also provided partial support for Hypothesis 1b in showing teachers who were more motivated to develop meaningful relationships with students to also be more likely to subsequently observe greater emotional involvement in their students. This result is consistent with existing research by Butler (2012) showing teachers' social goals to predict greater student-perceived social-emotional support from their teachers. Our results also align with findings from Wang et al. (2017) showing teachers' social goals to predict greater use of mastery-oriented instruction, as well as research showing mastery-oriented instructional techniques to facilitate greater interest in learning among students (Schiefele, 2017). However, direct effects of teachers' social goals on perceived student engagement were not observed in our cross-sectional SEM analyses, highlighting the importance of self-efficacy beliefs as a mediational variable.

Hypothesis 2 & 3: Teaching Self-efficacy Mediates Effects of Social Goals on Classroom Engagement

Concerning the hypothesized direct and mediational effects of teaching self-efficacy on classroom engagement, our findings partially supported both Hypotheses 2 and 3. More specifically, study findings showed teachers' self-efficacy beliefs pertaining to student engagement and, to a lesser extent, classroom management to not only predict higher levels of teachers' perceived classroom engagement but to also mediate the benefits of social goals on classroom engagement. In other words, a strong teaching focus on social goals contributed to stronger self-efficacy beliefs for engaging students and maintaining classroom discipline that, in turn, increased teachers' likelihood of perceiving their students as behaviorally and emotionally

engaged. In particular, whereas higher self-efficacy for motivating students predicted greater emotional and behavioral engagement in students as observed by teachers, higher self-efficacy for managing classroom behavior corresponded mainly with a greater likelihood of perceiving behavioral engagement in students.

Expanding on existing studies showing substantial positive associations between teaching self-efficacy and student learning (e.g., academic performance: Posnanski, 2002; students' prosocial behaviors: Zee, de Jong, & Koomen, 2016a) as well as teacher outcomes (e.g., job satisfaction, Klassen & Chiu, 2010), the present results showed teacher self-efficacy for student engagement to play the most critical role in teachers' perceptions of their students' classroom engagement as compared to the other two types. Our findings suggest that teachers who are more confident in employing a holistic approach to teaching that looks beyond students' grades to motivational variables that underlie learning (e.g., interest, value; Zimmerman, 2013) are more likely to see greater behavioral and emotional engagement in their students. This assertion is consistent with studies showing teaching self-efficacy specific to student engagement to correspond with greater instructional support and more adaptive teaching strategies (e.g., autonomy support, Ozkal, 2014; interpersonal behavior, van Uden, Ritzen, & Pieters, 2013) and is also consistent with long-standing conceptualizations of teaching efficacy as reflecting one's ability to motivate students (Gibson & Dembo, 1984; Tschannen-Moran & Woolfolk Hoy, 2001).

In addition, our results showed teaching self-efficacy for classroom management to correspond with greater perceived emotional engagement (Time 2 model) and behavioral engagement in students (Time 1 and 2 models). This pattern of results aligns with prior research showing teachers' perceived capacity to keep their teaching environment organized and under control to correspond with better outcomes (e.g., student self-regulation, lower teacher burnout;

for a review, see O'Neill & Stephenson, 2011). Concerning the non-significant effects of teachers' self-efficacy pertaining to instructional strategies on classroom engagement, this result is consistent with findings showing teacher self-efficacy for student engagement to better predict student learning outcomes than teacher self-efficacy for instructional strategies (e.g., academic achievement; Maguire, 2011; Mohamadi & Asadzadeh, 2012). Nevertheless, teachers' self-efficacy beliefs pertaining to their ability to conduct various teaching strategies have previously been found to correspond to the external evaluations of teaching performance for pre-service teachers (e.g., Jamil, Downer, & Pianta, 2012) and to also predict objective indicators of student performance (e.g., kindergarten students, Brown, 2012).

Study Limitations and Implications

With respect to potential study limitations, it is important to note that empirical relations in the present research may have been inflated due to common method variance such that all measures were assessed using a self-report questionnaire (Koch, 2015). Accordingly, future studies that assess objective indicators of the study variables are recommended to provide greater confidence in the study findings (e.g., independent observer ratings of student engagement in class; van Uden et al., 2013). For example, whereas teacher-perceived student engagement correlates positively with students' self-reported engagement and grades (e.g., Fredricks, Blumenfeld, & Paris, 2004; Skinner et al., 2009), follow-up studies in which student reports and outputs are assessed are required to more concretely demonstrate the effects of teachers' social goals and self-efficacy beliefs on student engagement outcomes.

Concerning the six-month lag between study phases, it is possible that the contextual differences between the phases could have impacted the study findings (e.g., greater teacher/student enthusiasm in the fall vs. winter semester). Similarly, it is important to consider

that six months may not have been a sufficiently long duration to observe substantial long-term changes in the study variables (e.g., teachers' self-efficacy for instructional strategies and social goal orientations, as suggested by strong auto-regressive paths in Figure 1). Thus, consistent with research highlighting limitations of two-wave longitudinal designs for detecting causal effects (Singer & Willett, 2003), future replication efforts employing three or more assessments are needed to provide stronger empirical for the causal assertions of the present study.

Moreover, the present motivational model did not include assessments of teachers' competencies with respect to specific instructional strategies. More specifically, student-centered pedagogies have long been found to have a significant positive impact on students' class participation as well as their motivation and learning outcomes (e.g., autonomy-supportive instruction: Niemiec & Ryan, 2009; mastery-oriented classroom goal structures: Meece, Anderman, & Anderman, 2006), with studies showing teachers' goal orientations to correspond with these teaching methods (e.g., Dresel, Fasching, Steuer, Nitsche, & Dickhäuser, 2013; Katz & Shahar, 2015). Future studies are thus encouraged to further expand upon the current research by assessing teachers' perceived competence with respect to multiple types of effective instructional techniques to better evaluate the mediational role of teachers' instructional self-efficacy on relations between teachers' social goals and classroom outcomes.

These limitations notwithstanding, the study findings are in line with common assertions in educational research that teachers' "strivings to connect are at the heart of effective teaching" (Butler, 2012, p. 726) as well as effective professional development programs for teachers that focus on developing teachers' self-efficacy beliefs (e.g., Althauser, 2015; Bray-Clark & Bates, 2003; Posnanski, 2002). Moreover, the findings in the present study further suggests that teachers' social goals should be more explicitly highlighted in teacher professional development

programs as a critical precursor to teaching-related self-efficacy. More specifically, teacher education programs often assume that teachers intrinsically value their jobs due to the opportunity to help students become productive and thoughtful citizens (see Watt, Richardson, & Smith, 2017) and thus overlook teachers' needs to develop the interpersonal skills required to develop meaningful relationships, deal with conflict, and manage social dynamics in the classroom (Jennings & Frank, 2015; Ryan et al., 2015). Our results reiterate that teacher education programs should clearly underscore the importance of emotionally connecting with students in addition to instruction on specific pedagogical techniques. Whereas this could be accomplished by referring specifically to teachers' social goal orientations, related constructs could also be discussed such as teachers' self-efficacy beliefs pertaining to emotional support (Zee et al., 2016b), relationship building (Hagenauer et al., 2015), peer-relation management (Ryan et al., 2015), and student-oriented teaching strategies (Kilday, Lenser, & Miller, 2016).

Our findings further suggest that social-constructivist views and styles of instruction should continue to be encouraged in teacher development initiatives given the extent to which teachers' interpersonal motivation and skills, as well as their emotional well-being, underlie the success of their instructional practices (e.g., autonomy support, Niemiec & Ryan, 2009; emotional-regulation learning, Eckert et al., 2015; social-emotional learning, Jennings & Frank, 2015). Similarly, teacher education programs are also recommended to highlight pre-service teachers' affective pedagogical content knowledge (APCK; van Uden et al., 2013), in addition to more technical pedagogical content knowledge (PCK; e.g., Althauser, 2015; Shulman, 1986), given empirical links between teachers' interpersonal orientations and student engagement outcomes. This suggestion is supported by Mansfield and Beltman (2014) who showed only a small proportion of teaching-related goals expressed by pre-service teachers to involve

developing social relationships (~20%) and no differences in the endorsement of social goals between teacher-education students and early career teachers. In other words, if student teachers do not value social goals for teaching during their training, findings suggest that they are unlikely to being valuing it as practising teachers.

Taken together, the present longitudinal study findings across both cross-lagged and cohort-specific mediational models show how a focus on building positive teacher-student relationships can serve as a critical antecedent of teaching self-efficacy and, in turn, students' classroom engagement. Considering the benefits of meaningful teacher-student relationships for not only motivating students in general but also supporting disadvantaged students in particular (Pianta, Hamre, & Allen, 2012; Roorda et al., 2011), these results reiterate the importance of teacher education, professional development, and educational policy initiatives that support teachers' social motivation and their social-emotional competencies as they pertain to students.

References

Althauser, K. (2015). Job-embedded professional development: Its impact on teacher self-efficacy and student performance. *Teacher Development*, *19*(2), 210–225. https://doi.org/10.1080/13664530.2015.1011346

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, *84*(3), 261–271. https://doi.org/10.1037/0022-0663.84.3.261

Bakadorova, O., & Raufelder, D. (2018). The essential role of the teacher-student relationship in students' need satisfaction during adolescence. *Journal of Applied Developmental Psychology*, 58, 57–65. https://doi.org/10.1016/j.appdev.2018.08.004

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215. https://doi.org/10.1037/0033-295X.84.2.191

Bray-Clark, N., & Bates, R. (2003). Self-efficacy beliefs and teacher effectiveness: Implications for professional development. *Professional Educator*, *26*(1), 13–22.

Brown, T. J. (2012). *Effects of teacher efficacy on student academic and social emotional achievement* (Publication No. 3519287) [Doctoral dissertation, Walden University]. ProQuest Dissertations Publishing.

Butler, R. (2012). Striving to connect: Extending an achievement goal approach to teacher motivation to include relational goals for teaching. *Journal of Educational Psychology, 104*(3)*,* 726-742. https://doi.org/10.1037/a0028613

Butler, R., & Shibaz, L. (2014). Striving to connect and striving to learn: Influences of relational and mastery goals for teaching on teacher behaviors and student interest and help seeking. *International Journal of Educational Research*, *65*, 41–53. https://doi.org/10.1016/j.ijer.2013.09.006

Ciani, K., Ferguson, Y., Bergin, D., & Hilpert, J. (2010). Motivational Influences on School-Prompted Interest. *Educational Psychology, 30*(4), 377–393. https://doi.org/10.1080/01443411003660232

Collier, M. D. (2005). An ethic of caring: The fuel for high teacher efficacy. *The Urban Review*, *37*(4), 351–359. https://doi.org/10.1007/s11256-005-0012-4

Cornelius-White, J. (2007). Learner-centered teacher-student relationships are effective: A meta-analysis. *Review of Educational Research*, *77*(1), 113–143. https://doi.org/10.3102/003465430298563

Deci, E. L., & Ryan, R. M. (2014). Autonomy and need satisfaction in close relationships: Relationships motivation theory. In N. Weinstein (Ed.), *Human Motivation and Interpersonal Relationships: Theory, Research, and Applications* (pp. 53–73). https://doi.org/10.1007/978-94-017-8542-6_3

Diseth, Å. (2011). Self-efficacy, goal orientations and learning strategies as mediators between preceding and subsequent academic achievement. *Learning and Individual Differences, 21*(2), 191–195. https://doi.org/10.1016/j.lindif.2011.01.003

Diseth, Å., Danielsen, A. G., & Samdal, O. (2012). A path analysis of basic need support, self-efficacy, achievement goals, life satisfaction and academic achievement level among secondary school students. *Educational Psychology*, *32*(3), 335–354. https://doi.org/10.1080/01443410.2012.657159

Dresel, M., Fasching, M. S., Steuer, G., Nitsche, S., & Dickhäuser, O. (2013). Relations between teachers' goal orientations, their instructional practices and student motivation. *Psychology*, *4*(7), 572–584. https://doi.org/10.4236/psych.2013.47083

Eckert, M., Ebert, D. D., Lehr, D., Sieland, B., Jazaieri, H., & Berking, M. (2015). Teachers' emotion regulation skills facilitate implementation of health-related intentions. *American Journal of Health Behavior*, *39*(6), 874–881. https://doi.org/10.5993/AJHB.39.6.15

Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational Psychologist*, *34*(3), 169–189. https://doi.org/10.1207/s15326985ep3403_3

Fan, J., Meng, H., Billings, R. S., Litchfield, R. C., & Kaplan, I. (2008). On the role of goal orientation traits and self-efficacy in the goal-setting process: Distinctions that make a difference. *Human Performance*, *21*(4), 354–382. https://doi.org/10.1080/08959280802347122

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, *74*(1), 59-109. https://doi.org/10.3102/00346543074001059

Furlong, M. J., & Christenson, S. L. (2008). Engaging students at school and with learning: A relevant construct for all students. *Psychology in the Schools*, *45*(5), 365–368. https://doi.org/10.1002/pits.20302

Furrer, C. J., Skinner, E. A., & Pitzer, J. R. (2014). The influence of teacher and peer relationships on students' classroom engagement and everyday motivational resilience. In D. Shernoff, & J. Bempechat (Eds.), *National Society for the Study of Education yearbook: Engaging youth in schools: Evidence-based models to guide future innovations* (pp. 101–123). New York, NY: Teachers College Record.

Gibson, S., & Dembo, M. H. (1984). Teacher efficacy: A construct validation. *Journal of Educational Psychology, 76*(4), 569–582. https://doi.org/10.1037/0022-0663.76.4.569

Hagenauer, G., Hascher, T., & Volet, S. E. (2015). Teacher emotions in the classroom: Associations with students' engagement, classroom discipline and the interpersonal teacher-student relationship. *European Journal of Psychology of Education*, *30*(4), 385–403. https://doi.org/10.1007/s10212-015-0250-0

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Hughes, J. N. (2011). Longitudinal effects of teacher and student perceptions of teacher-student relationship qualities on academic adjustment. *The Elementary School Journal*, *112*(1), 38–60. https://doi.org/10.1086/660686

Jamil, F. M., Downer, J. T., & Pianta, R. C. (2012). Association of pre-service teachers' performance, personality, and beliefs with teacher self-efficacy at program completion. *Teacher Education Quarterly, 39*(4), 119-138. Retrieved May 3, 2020, from www.jstor.org/stable/23479655

Jennings, P. A., & Frank, J. L. (2015). Inservice preparation for educators. In J. A. Durlak, C. E. Domitrovich, R. P. Weissberg, & T. P. Gullotta (Eds.), *Handbook of social and emotional learning: Research and practice* (p. 422–437). The Guilford Press.

Katz, I., & Shahar, B.-H. (2015). What makes a motivating teacher? Teachers' motivation and beliefs as predictors of their autonomy-supportive style. *School Psychology International*, *36*(6), 575–588. https://doi.org/10.1177/0143034315609969

Kilday, J. E., Lenser, M. L., & Miller, A. D. (2016). Considering students in teachers' self-efficacy: Examination of a scale for student-oriented teaching. *Teaching and Teacher Education*, *56*, 61–71. https://doi.org/10.1016/j.tate.2016.01.025

Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology*, *102*(3), 741. https://doi.org/10.1037/a0019237

Klassen, R. M., & Chiu, M. M. (2011). The occupational commitment and intention to quit of practicing and pre-service teachers: Influence of self-efficacy, job stress, and teaching context. *Contemporary Educational Psychology, 36*, 114–129. https://doi.org/10.1016/j.cedpsych.2011.01.002

Klassen, R. M., & Tze, V. M. C. (2014). Teachers' self-efficacy, personality, and teaching effectiveness: A meta-analysis. *Educational Research Review*, *12*, 59–76. https://doi.org/10.1016/j.edurev.2014.06.001

Klassen, R. M., Perry, N. E., & Frenzel, A. C. (2012). Teachers' relatedness with students: An underemphasized component of teachers' basic psychological needs. *Journal of Educational Psychology*, *104*(1), 150–165. https://doi.org/10.1037/a0026253

Kleinfeld, J. (1975). Effective teachers of Eskimo and Indian students. *School Review, 83*, 301–344.

Koch, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration*, *11*(4), 1-10. http://dx.doi.org/10.4018/ijec.2015100101

Li, Y. (2018). Teacher–student relationships, student engagement, and academic achievement for non-Latino and Latino youth. *Adolescent Research Review*, *3*(4), 375–424. https://doi.org/10.1007/s40894-017-0069-9

Maguire, K. (2011). *The role of teacher efficacy in student academic achievement in mathematics* (Publication No. 3449809) [Doctoral dissertation, Walden University]. ProQuest Dissertations Publishing.

Mansfield, C. F., & Beltman, S. (2014). Teacher motivation from a goal content perspective: Beginning teachers' goals for teaching. *International Journal of Educational Research*, *65*, 54–64. https://doi.org/10.1016/j.ijer.2013.09.010

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

Midgley, C., Kaplan, A., Middleton, M., Maehr, M. L., Urdan, T., Anderman, L. H., … Roeser, R. (1998). The development and validation of scales assessing students' achievement goal orientations. *Contemporary Educational Psychology*, *23*(2), 113–131. https://doi.org/10.1006/ceps.1998.0965

Moen, F., & Skaalvik, E. (2008). The triggering effect of business coaching on performance psychology. *The International Journal of Coaching in Organizations*, *4*, 93–116.

Moen, F., Skaalvik, E., & Hacker, C. M. (2009). Performance psychology among business executives in an achievement oriented environment. *Mission of the Journal of Excellence*, *13*(2), 78–96.

Mohamadi, F.S., Asadzadeh, H. (2012). Testing the mediating role of teachers' self-efficacy beliefs in the relationship between sources of efficacy information and students achievement. *Asia Pacific Education Review, 13,* 427–433. https://doi.org/10.1007/s12564-011-9203-8

Muthén, L. K., & Muthén, B. (1998-2015). *Mplus user's guide* (7th ed.). Los Angeles, CA: Author.

Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and Research in Education*, *7*(2), 133–144. https://doi.org/10.1177/1477878509104318

Nitsche, S., Dickhäuser, O., Fasching, M. S., & Dresel, M. (2011). Rethinking teachers' goal orientations: Conceptual and methodological enhancements. *Learning and Instruction*, *21*(4), 574–586. https://doi.org/10.1016/j.learninstruc.2010.12.001

Noddings, N. (1984). *Caring: A feminine approach to ethics and moral education.* Berkeley, CA: University of California Press.

Noddings, N. (2012). The caring relation in teaching. *Oxford Review of Education*, *38*(6), 771–781. https://doi.org/10.1080/03054985.2012.745047

Noddings, N. (2015). *The challenge to care in schools: An Alternative Approach to Education, 2nd Editon*. Teachers College Press.

O'Neill, S. C., & Stephenson, J. (2011). The measurement of classroom management self-efficacy: A review of measurement instrument development and influences. *Educational Psychology*, *31*(3), 261–299. https://doi.org/10.1080/01443410.2010.545344

Ozkal, N. (2014). Sense of professional self-efficacy beliefs and learner autonomy support behaviour of middle school teachers. *The Anthropologist*, *18*(2), 575–581. https://doi.org/10.1080/09720073.2014.11891575

Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research*, *66*(4), 543–578. https://doi.org/10.3102/00346543066004543

Pan, Y.-H. (2014). Relationships among teachers' self-efficacy and students' motivation, atmosphere, and satisfaction in physical education. *Journal of Teaching in Physical Education*, *33*(1), 68–92. https://doi.org/10.1123/jtpe.2013-0069

Payne, S. C., Youngcourt, S. S., & Beaubien, J. M. (2007). A meta-analytic examination of the goal orientation nomological net. *Journal of Applied Psychology*, *92*(1), 128–150. https://doi.org/10.1037/0021-9010.92.1.128

Phan, H.P. (2009). Relations between goals, self-efficacy, critical thinking and deep processing strategies: A path analysis. *Educational Psychology*, 29, 777–799. https://doi.org/10.1080/01443410903289423

Pianta, R. C. (2006). Classroom management and relationships between children and teachers: Implications for research and practice. In C. S. Weinstein & C. M. Evertson (Eds.), *Handbook of classroom management: Research, practice, and contemporary issues* (pp. 685–709). Mahwah: Lawrence Erlbaum Associates Publishers.

Pianta, R. C., Hamre, B. K., & Allen, J. P. (2012). Teacher-student relationships and engagement: Conceptualizing, measuring, and improving the capacity of classroom interactions. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 365–386). New York, NY: Springer Science.

Posnanski, T. J. (2002). Professional development programs for elementary science teachers: An analysis of teacher self-efficacy beliefs and a professional development model. *Journal of Science Teacher Education*, *13*(3), 189–220. https://doi.org/10.1023/A:1016517100186

Roorda, D. L., Koomen, H. M. Y., Spilt, J. L., & Oort, F. J. (2011). The influence of affective teacher–student relationships on students' school engagement and achievement: A meta-

analytic approach. *Review of Educational Research*, *81*(4), 493–529. https://doi.org/10.3102/0034654311421793

Ross, J. A. (1992). Teacher efficacy and the effects of coaching on student achievement. *Canadian Journal of Education / Revue Canadienne de l'éducation*, *17*(1), 51–65. https://doi.org/10.2307/1495395

Ryan, A. M., & Shim, S. S. (2008). An exploration of young adolescents' social achievement goals and social adjustment in middle school. *Journal of Educational Psychology*, *100*(3), 672-687. https://doi.org/10.1037/0022-0663.100.3.672

Ryan, A. M., Kuusinen, C. M., & Bedoya-Skoog, A. (2015). Managing peer relations: A dimension of teacher self-efficacy that varies between elementary and middle school teachers and is associated with observed classroom quality. *Contemporary Educational Psychology*, *41*, 147–156. https://doi.org/10.1016/j.cedpsych.2015.01.002

Schiefele, U. (2017). Classroom management and mastery-oriented instruction as mediators of the effects of teacher motivation on student motivation. *Teaching and Teacher Education, 64*, 115-126. https://doi.org/10.1016/j.tate.2017.02.004

Schunk, D. H., Pintrich, P. R., & Meece, J. L. (2008). *Motivation in education: Theory, research, and applications.* Upper Saddle River, NJ: Pearson/Merrill Prentice Hall.

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational researcher*, *15*(2), 4-14. https://doi.org/10.3102/0013189X015002004

Singer, J. D., & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence.* Oxford University Press, New York.

Skaalvik, E. M., & Skaalvik, S. (2010). Teacher self-efficacy and teacher burnout: A study of relations. *Teaching and Teacher Education*, *26*(4), 1059–1069. https://doi.org/10.1016/j.tate.2009.11.001

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85*(4), 571-581. http://dx.doi.org/10.1037/0022-0663.85.4.571

Skinner, E. A., & Pitzer, J. R. (2012). Developmental dynamics of student engagement, coping, and everyday resilience. In Christenson S., Reschly A., Wylie C. (Eds), *Handbook of research on student engagement* (pp. 21–44). New York, NY: Springer.

Skinner, E. A., Kindermann, T. A., & Furrer, C. J. (2009). A motivational perspective on engagement and disaffection: Conceptualization and assessment of children's behavioral and emotional participation in academic activities in the classroom. *Educational and Psychological Measurement*, *69*(3), 493–525. https://doi.org/10.1177/0013164408323233

Sosa, T., & Gomez, K. (2012). Connecting teacher efficacy beliefs in promoting resilience to support of Latino students. *Urban Education*, *47*(5), 876–909. https://doi.org/10.1177/0042085912446033

Spera, C., & Wentzel, K. R. (2003). Congruence between students' and teachers' goals: Implications for social and academic motivation. *International Journal of Educational Research*, *39*(4), 395–413. https://doi.org/10.1016/j.ijer.2004.06.006

Spilt, J. L., Koomen, H. M. Y., & Thijs, J. T. (2011). Teacher wellbeing: The importance of teacher–student relationships. *Educational Psychology Review*, *23*(4), 457–477. https://doi.org/10.1007/s10648-011-9170-y

Steiger, J. H. (2007). Understanding the limitations of global fit assessment in structural equation modeling. *Personality and Individual Differences*, *42*(5), 893–898. https://doi.org/10.1016/j.paid.2006.09.017

Throndsen, I., & Turmo, A. (2013). Primary mathematics teachers' goal orientations and student achievement. *Instructional Science*, *41*(2), 307–322. https://doi.org/10.1007/s11251-012-9229-2

Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, *17*(7), 783–805. https://doi.org/10.1016/S0742-051X(01)00036-1

Tschannen-Moran, M., Woolfolk Hoy, A., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research*, *68*(2), 202–248. https://doi.org/10.3102/00346543068002202

van der Heijden, H. R. M. A., Beijaard, D., Geldens, J. J. M., & Popeijus, H. L. (2018). Understanding teachers as change agents: An investigation of primary school teachers' self-perception. *Journal of Educational Change*, *19*(3), 347–373. https://doi.org/10.1007/s10833-018-9320-9

van Uden, J. M., Ritzen, H., & Pieters, J. M. (2013). I think I can engage my students. Teachers' perceptions of student engagement and their beliefs about being a teacher. *Teaching and Teacher Education*, *32*, 43–54. https://doi.org/10.1016/j.tate.2013.01.004

Wang, H., Hall, N. C., & Rahimi, S. (2015). Self-efficacy and causal attributions in teachers: Effects on burnout, job satisfaction, illness, and quitting intentions. *Teaching and Teacher Education*, *47*, 120–130. https://doi.org/10.1016/j.tate.2014.12.005

Wang, H., Hall, N. C., Goetz, T., & Frenzel, A. C. (2017). Teachers' goal orientations: Effects on classroom goal structures and emotions. *British Journal of Educational Psychology*, *87*(1), 90–107. https://doi.org/10.1111/bjep.12137

Watt, H. M. G., Richardson, P. W., & Smith, K. (2017). Why teach? How teachers' motivations matter around the world. In H. M. G. Watt, P. W. Richardson, & K. Smith (Eds.), *Global Perspectives on Teacher Motivation* (pp. 1–21). https://doi.org/10.1017/9781316225202.001

Wentzel, K. R. (1997). Student motivation in middle school: The role of perceived pedagogical caring. *Journal of Educational Psychology*, *89*(3), 411–419. https://doi.org/10.1037/0022-0663.89.3.411

Whitley, J. (2010). Modelling the influence of teacher characteristics on student achievement for Canadian students with and without learning disabilities. *International Journal of Special Education*, *25*(3), 88–97.

Woolfolk, A. E., Rosoff, B., & Hoy, W. K. (1990). Teachers' sense of efficacy and their beliefs about managing students. *Teaching and Teacher Education*, *6*(2), 137–148. https://doi.org/10.1016/0742-051X(90)90031-Y

Zee, M., & Koomen, H. M. Y. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational Research*, *86*(4), 981–1015. https://doi.org/10.3102/0034654315626801

Zee, M., de Jong, P. F., & Koomen, H. M. Y. (2016a). Teachers' self-efficacy in relation to individual students with a variety of social–emotional behaviors: A multilevel

investigation. *Journal of Educational Psychology*, *108*(7), 1013–1027. https://doi.org/10.1037/edu0000106

Zee, M., Koomen, H. M. Y., Jellesma, F. C., Geerlings, J., & de Jong, P. F. (2016b). Inter- and intra-individual differences in teachers' self-efficacy: A multilevel factor exploration. *Journal of School Psychology*, *55*, 39–56. https://doi.org/10.1016/j.jsp.2015.12.003

Zimmerman, B. J. (2000). Self-efficacy: An essential motive to learn. *Contemporary Educational Psychology*, *25*(1), 82–91. https://doi.org/10.1006/ceps.1999.1016

Zimmerman, B. J. (2013). From cognitive modeling to self-regulation: A social cognitive career path. *Educational Psychologist*, *48*(3), 135–147. https://doi.org/10.1080/00461520.2013.794676

Table 1

Psychometric Properties of Study Variables

Variable	*n*		*M*		*SD*		α		Items	Actual range	
	T1	T2	T1	T2	T1	T2	T1	T2		T1	T2
Social goals	473	403	3.90	3.79	0.82	0.84	.82	.84	4	1-5	1.25-5
Self-efficacy											
Student engagement	497	412	6.67	6.69	1.16	1.18	.76	.79	4	2.5-9	2.5-9
Instructional strategies	497	412	7.58	7.51	0.92	1.01	.76	.82	4	3.5-9	2.5-9
Classroom management	497	412	7.40	7.37	1.10	0.99	.88	.86	4	2.25-9	3.75-9
Classroom engagement											
Behavioural	454	381	2.97	2.97	0.49	0.53	.78	.82	5	1.4-4	1-4
Emotional	453	382	3.39	3.40	0.50	0.53	.88	.90	5	2-4	1-4

Note. T1 = Time 1; T2 = Time 2.

Table 2

Zero-order Correlations among Study Variables

	1	2	3	4	5	6
1. Social goals	—	.31**	.02	.16**	.14**	.21**
2. SE: Student engagement	.31**	—	.51**	.55**	.47**	.41**
3. SE: Instructional strategies	.09	.49**	—	.53**	.31**	.23**
4. SE: Classroom management	.14**	.59**	.55**	—	.42**	.30**
5. CE: Behavioural	.12*	.45**	.26**	.42**	—	.63**
6. CE: Emotional	.22**	.48**	.26**	.37**	.68**	—

Notes. SE = self-efficacy; CE = classroom engagement. Values above/below diagonal represent

Time 1 vs. Time 2 coefficients, respectively; *$p < .05$; **$p < .01$.

Table 3

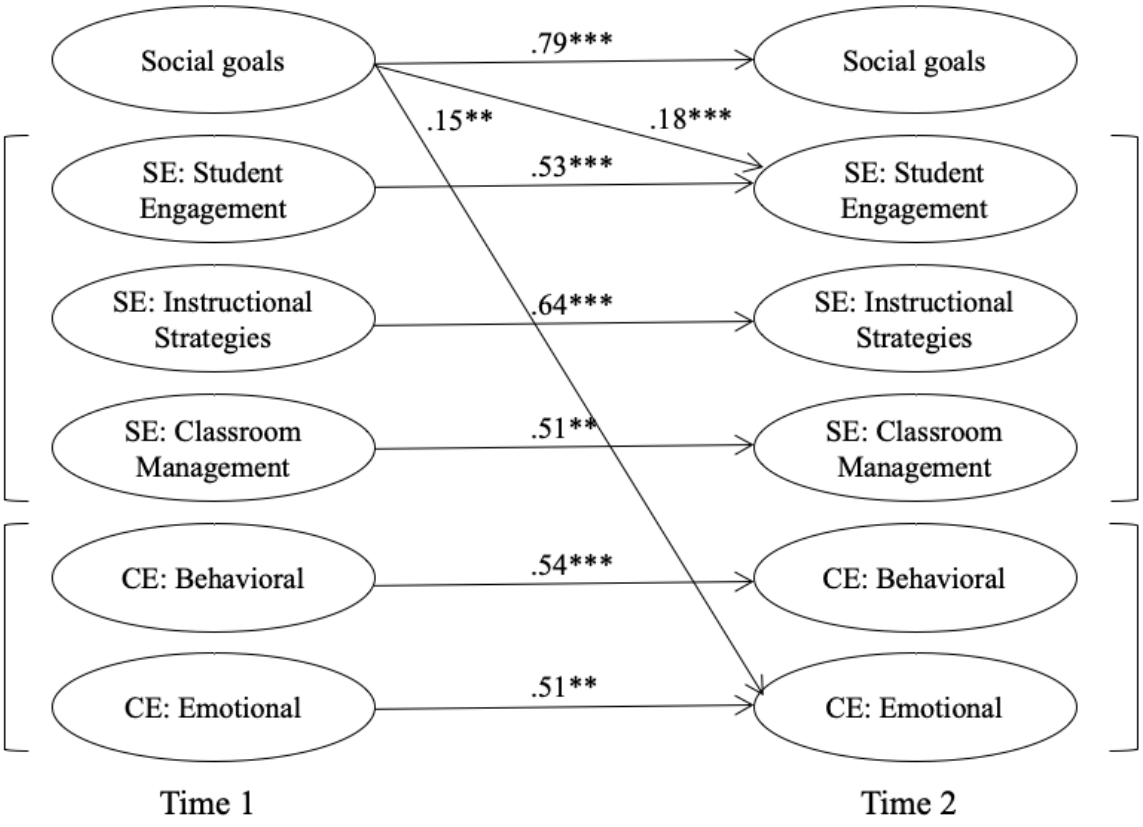
Standardized Direct, Indirect, and Total Effects

	CE: Behavioural		CE: Emotional	
	β	*SE*	β	*SE*
Time 1				
Social goals				
Total effect	0.19***	0.05	0.23***	0.05
Total indirect effect	0.20***	0.04	0.16***	0.03
Specific indirect effects				
via SE: Student engagement	0.15***	0.04	0.14***	0.04
via SE: Instructional strategies	-0.00	0.01	0.00	0.01
via SE: Classroom management	0.05**	0.02	0.01	0.02
Direct effect	-0.01	0.06	0.08	0.06
R^2	.36		.23	
Time 2				
Social goals				
Total effect	0.17**	0.06	0.26***	0.05
Total indirect effect	0.18***	0.04	0.18***	0.04
Specific indirect effects				
via SE: Student engagement	0.14***	0.04	0.15***	0.04
via SE: Instructional strategies	-0.01	0.01	-0.01	0.01
via SE: Classroom management	0.05*	0.02	0.03	0.02
Direct effect	-0.01	0.06	0.08	0.06
R^2	.36		.34	

Note. *$p < .05$, **$p < .01$. SE: self-efficacy; CE = classroom engagement.

Figure 1

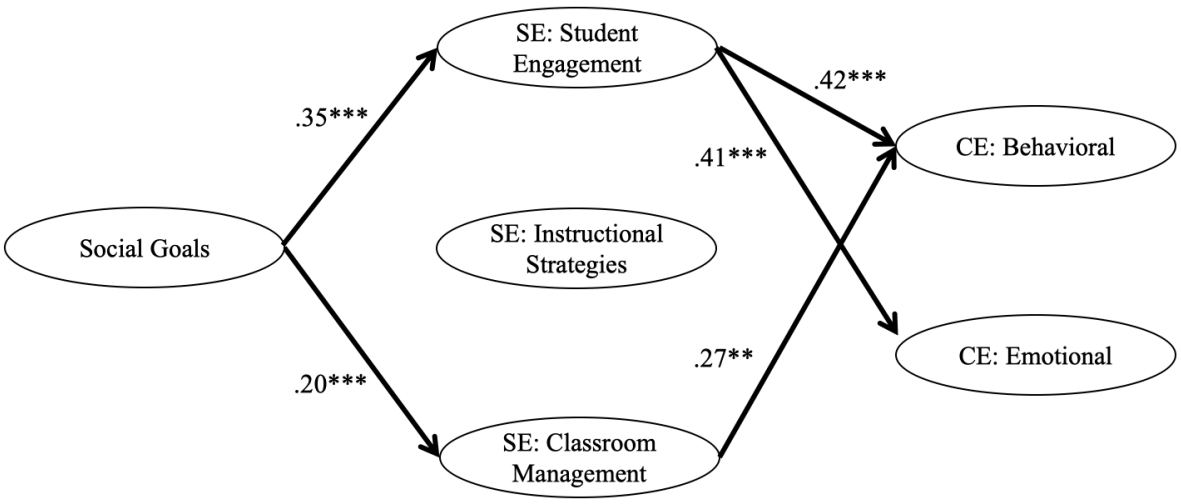
Cross-lagged Model



Note. Results of cross-lagged analyses for social goal orientations, self-efficacy (SE), and classroom engagement (CE) with only significant paths presented (*$p < .05$, **$p < .01$, ***$p \leq .001$).

Figure 2

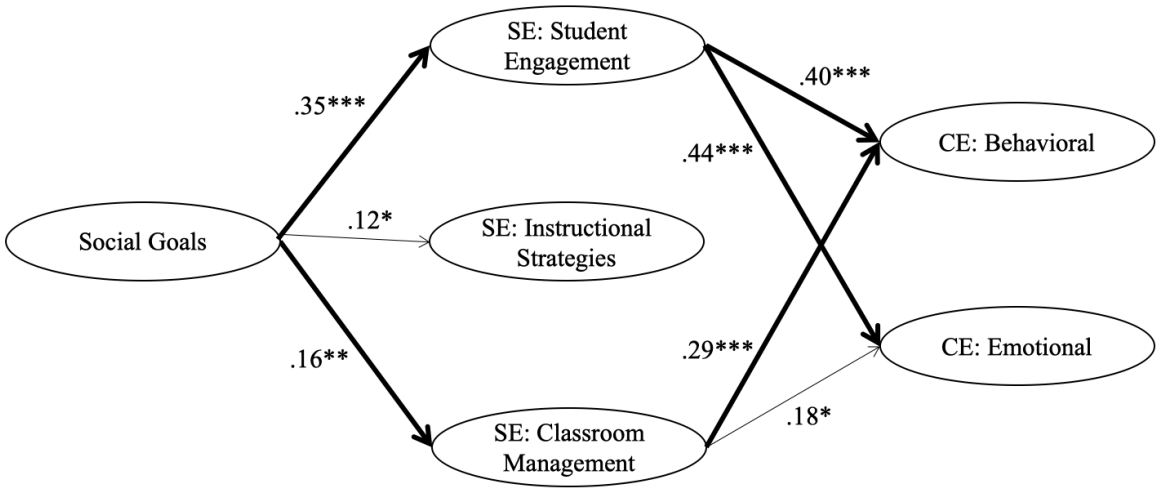
Mediational Model at Time 1



Note. Teachers' social goals, teaching self-efficacy (SE), and classroom engagement (CE) at Time 1 with only significant standardized parameters presented (*$p < .05$, **$p < .01$, ***$p \leq .001$). Bolded lines indicate significant indirect effects.

Figure 3

Mediational Model at Time 2



Note. Teachers' social goals, teaching self-efficacy (SE), and classroom engagement (CE) at Time 2 with only significant standardized parameters presented (*$p < .05$, **$p < .01$, ***$p \leq .001$). Bolded lines indicate significant indirect effects.

Bridging Manuscript (Chapter 2-3)

The two-wave longitudinal study in Chapter 2 provided empirical evidence of teachers' social goals serving as an antecedent to other motivational variables (i.e., self-efficacy beliefs) and classroom engagement outcomes. Following from initial cross-lagged analyses, two subsequent mediational SEM analyses – each pertaining to a different student cohort – further showed teachers' self-efficacy beliefs to serve as a mediator of the relationship between teachers' social goals and perceived classroom engagement. As hypothesized, findings indicated that teachers who believed developing supportive teacher-student relationships to be an important aspect of their teaching activities reported greater levels of self-efficacy for motivating students and managing classroom behaviour that, in turn, predicted better perceived behavioural and emotional engagement in students. Moreover, similar findings were observed in a revised version of the manuscript reported in Chapter 2 in which the two mediational models were collapsed into a single model with teachers' social goals at Time 1 predicting instructional self-efficacy and perceived classroom engagement assessed at Time 2.

However, this study was limited in that the unidimensional social measure did not assess teachers' underlying reasons for why they believed developing meaningful relationships with students to be important. Moreover, in examining only students' learning-related engagement as an outcome variable, this study did not allow for the effects of teachers' social goals to be assessed on other relevant psychosocial student outcomes such as classroom climate. To address these research limitations, Chapter 3 presented findings from a follow-up cross-sectional study that aimed to differentiate the reasons underlying teachers' social goals by employing the 2 x 2 framework based on achievement goal theory. As informed by causal evidence from Chapter 2, the mediational analysis modelled teachers' social goals as an antecedent of their self-efficacy

beliefs and, in turn, student outcomes. However, the student outcomes assessed included not only student engagement but also a critical indicator of classroom climate – teachers' perceived quality of their teacher-student relationships. Therefore, the manuscript outlined in Chapter 3 aimed to empirically examine if teachers' social goals could be conceptualized in greater detail to reflect why they aimed to develop emotional connections with students, and if these social goal subtypes potentially had differential effects on teachers' self-efficacy, student engagement, and teacher-student relationship quality.

Chapter 3

Differentiating Teachers' Social Goals:

Implications for Teacher-student Relationships and Classroom Engagement

Abstract

Whereas developing meaningful connections with students has long been documented as critical for promoting classroom engagement, teachers' differing motives for building relationships with students remain underexplored. This study examined teachers' social achievement goals from a multidimensional perspective in relation to teachers' self-efficacy, teacher-student relationships, and perceived classroom engagement. Results from practising K-12 teachers (N = 154) from across Canada showed three distinct goal orientations including social mastery-approach, social mastery-avoidance, and social ability goals (combining social ability-approach and social ability-avoidance goals). Teachers who aimed to develop better social skills with students (social mastery-approach goals) reported higher self-efficacy, better relationships with students, and greater classroom engagement. In contrast, social goal orientations focused on not losing connections with students (social mastery-avoidance goals) or being well-liked (social ability goals) did not correspond with self-efficacy or classroom outcomes. Implications concerning integrative pedagogies and growth mindsets pertaining to relationship building were discussed.

With rapid shifts in employment landscapes and technological development, education is increasingly not only about curricula but holistic growth and the development of life-long learning competencies. According to the 21st-century skills suggested by a recent OECD report (Chernyshenko et al., 2018), students are expected to have high levels of non-cognitive skills (e.g., collaboration, social awareness, self-regulation) to overcome learning challenges and foster resilience. As such, teachers' social-emotional support is critical to model prosocial behaviours, enhance social learning, and promote well-being in students and themselves (Jennings & Greenberg, 2009). Research has consistently found that learning is optimized when students are in classroom environments in which they feel safe and trusted, and where their opinions and identities are respected (e.g., Bergin & Bergin, 2009; Shindler et al., 2016). Teachers also consistently demonstrate caring for students by investing effort to engage them through mastery-oriented instruction, acknowledging students' efforts, and tailoring their assistance (Block & Burns, 1976; Ciani et al., 2010; Kiefer et al., 2014), with each practice requiring a solid foundation of positive teacher-student interactions (Cornelius-White, 2007; Roorda et al., 2011). In contrast, if teachers fail to engage their students or accomplish their interpersonal goals, they themselves are at the risk of feeling unsatisfied with their jobs, experiencing greater burnout, and leaving the teaching profession (e.g., Collie et al., 2017; Spilt et al., 2011; Veldman et al., 2016).

Although existing research has examined teacher caring and perceived autonomy support for building positive classroom climates (e.g., Ciani et al., 2010; Deci & Ryan, 2014; Pianta et al., 2012), there is limited research on teachers' underlying motivation for developing close connections with students (social achievement goals); namely the *qualities* of their social motivation (i.e., reasons). In contrast, existing research has explored teachers' social motivation as a fixed personality trait (teacher caring; Cornelius-White, 2007) or with respect to context-

driven instructional skills (autonomy-supportive teaching; Awang-Hashim et al., 2017; Niemiec & Ryan, 2009). Although previous studies have employed multidimensional conceptualizations of teachers' instructional goal orientations (e.g., mastery/ability vs. approach/avoidance dimensions) and found differential effects on both instructional behaviours and student learning (Butler, 2007; Butler & Shibaz, 2008), teachers' social goals have yet to be evaluated from a quality-oriented lens. To address this research gap, the present study explored the effects of teachers' social goals, as assessed from a multidimensional perspective focused on underlying reasons, on teachers' self-efficacy as well as their perceived quality of relationships with their students and classroom engagement.

Social Motivation in Teachers: An Achievement Goals Perspective

Effective classroom instruction is impacted by not only teachers' goals to master or demonstrate instructional proficiency but also their social goals aimed at developing meaningful relationships with students and a supportive learning environment. Whether during or outside of class, students value teachers' efforts and commitment to reach out to them, to understand their lived experiences, and to fulfill their relatedness needs especially when they encounter learning-related challenges (McHugh et al., 2013). Although teachers' social motivation in regards to building relationships with students has received increasing attention in teacher motivation research in recent years, existing studies have focused mainly on teachers' affective needs (relatedness; Deci & Ryan, 2000), perceived interpersonal competencies (self-efficacy; Veldman et al., 2017), interpersonal appraisals (attributional bias toward students; Miller & Ross, 1975), or the overall perceived importance of fostering teacher-student connections (relational goals; Butler, 2012). For example, recent research has operationalized teachers' relational goals as the

perceived importance of achieving a "personal connection" with students, and developing positive, friendly, or partner-like teacher-student relationships (Daumiller et al., 2019, 2021).

Teachers' social goals have to date been predominantly assessed as one of five key instructional goal orientations proposed by Butler (2012); a critical teaching goal addressing the importance of building meaningful teacher-student relationships. In contrast to this general social goal construct, the other goals proposed by Butler focus specifically on teaching practices as inspired by the 2 x 2 goal orientation model developed by Elliot (1999; see Elliot, 2005, for a review). According to this model, individuals in achievement settings are motivated to either improve or demonstrate their competencies (mastery vs. performance focus) and to either approach success or avoid failure (Elliot & Harackiewicz, 1996). This four-factor achievement goals framework has typically been reduced to a trichotomous model (excluding mastery-avoidance goals) that has been widely used to predict academic development in students (e.g., Skaalvik, 2018), with students' social goals being additionally incorporated to better predict student outcomes (e.g., Ryan & Shim, 2006, 2008).

Following from this approach, Ryan and Shim (2006) applied the trichotomous model to differentiate college students' *social goals* of wanting to develop close relationships with peers. Factor analytic results showed students' social goals to be subdivided according to three factors, namely focusing on developing social skills, demonstrating social abilities, and avoiding demonstrations of social ineptitude. Moreover, students' social development goals predicted better social adjustment (i.e., positive relations, social acceptance, personal growth), whereas social demonstration-approach and avoidance goals had negative effects on student well-being outcomes. In a follow-up study with sixth graders (Ryan & Shim, 2008), social demonstration-approach goals were again associated with poorer outcomes including more aggressive

behaviours and less prosocial acts as assessed by teachers. Although students who tried to avoid being socially undesirable (i.e., social demonstration-avoidance goals) showed less aggressive behaviours, they were more self-conscious and were more likely to be perceived as socially withdrawn by their teachers. Accordingly, just as the application of the achievement goal framework contributes to a more nuanced understanding of social goals in students, it may similarly prove beneficial in helping us to better understand the structure of teachers' social goals and how they impact instructional effectiveness and teacher development.

Teachers' Social Goals and Classroom Outcomes

Teachers' motivation to develop meaningful relationships with students, assessed as teachers' social goals based on the achievement goals framework, has been repeatedly demonstrated to correspond with more adaptive teaching practices and student learning. Extant literature shows that teachers who are more motivated to foster deeper connections with students provide greater social-emotional support as perceived by both themselves and their students, and use more mastery-oriented instructional methods that focus on student improvement (Butler, 2012; Butler & Shibaz, 2014; Wang et al., 2017) and foster students' needs for relatedness and autonomy (Butler, 2012; George & Richardson, 2019). Studies have also shown greater social goals in teachers to correspond with students viewing help-seeking as self-beneficial rather than self-threatening in nature (Butler & Shibaz, 2014) as well as better self-rated teaching quality (Daumiller et al., 2019). Teachers' social goals have also been found to positively correspond with teachers' own emotional well-being (e.g., positive affect, Daumiller et al., 2019; teaching-related enjoyment, Wang et al., 2017).

However, recent findings also show mixed effects of relational goals, with Daumiller et al. (2021) showing that although stronger relational goals in post-secondary instructors

correspond with lower student boredom, they also corresponded with significantly poorer self-assessed learning in students and lower evaluations of teaching effectiveness. Nevertheless, recent research on teachers' relational goals suggests that examining latent profiles across multiple goal subtypes may help to account for otherwise mixed results. Specifically, Watt et al. (2021) found relational goals to overlap considerably with mastery-oriented instructional goals, and that assessing these goal subtypes in combination (i.e., as "task" goals) showed a consistent pattern of results whereby profiles high on task goals predicted greater instructional support and more positive school climates. Accordingly, whereas teachers' overall social goal orientations are consistently associated with positive outcomes, recent findings highlight the importance of further exploring teachers' social goal orientations, namely the extent to which different social goal subtypes (e.g., focusing on mastery vs. demonstrating ability) may differentially correspond with classroom and well-being outcomes.

A Multidimensional Approach to Teachers' Social Goals

As noted above, *teachers' instructional goals* have previously been differentiated according to a 2 x 2 framework (Elliot, 1999) with *students' social goals* having similarly been differentiated to explore potentially differing reasons for developing social connections in class (e.g., Ryan & Shim, 2006). Similarly, *teachers' social goals* could also be examined based on their underlying qualities (e.g., mastery/ability focus vs. approach/avoidance tendency). In other words, it is possible that teachers' general instructional goal orientations could each be assessed in a more domain-specific manner, with each goal orientation (e.g., mastery-approach goals) being further specified as pertaining to developing relationships with students (e.g., social mastery-approach goals). For example, *social mastery-approach goals* would entail teachers' desires to improve their social skills and relationships with students (i.e., a growth mindset

toward interpersonal competencies). As a subset of overall instructional mastery-approach goals, teachers' social mastery-approach goals would similarly be expected to correspond with varied positive outcomes (e.g., autonomous help-seeking, more mastery-supportive instruction, greater motivation for professional development, fewer sick days; Butler, 2007; Nitsche et al., 2013; Retelsdorf et al., 2010; Retelsdorf & Günther, 2011).

In contrast, teachers' *social mastery-avoidance goals* would pertain to wanting to avoid losing meaningful connections with students or a fear of not developing sufficient social skills. Although this goal type is similar to mastery-approach goals, it should not be as beneficial due to being fear-based in nature. However, due to this goal subtype not having been previously examined in existing studies on teachers' achievement goals (e.g., excluded in Butler, 2007), the potential classroom consequences of this goal orientation are unclear. The third goal subtype, *social ability-approach goals*, entails a focus on demonstrating social skills to gain a positive reputation among students (teacher goals research typically replaces the term "performance" with "ability" to focus more on showing competencies than being evaluated; see Butler, 2007). As previous studies show teachers' ability-approach goals (e.g., demonstrating instructional competencies) to have both negative outcomes (e.g., performance-oriented teaching practices such as competition, superficial learning outcomes; Retelsdorf et al., 2010; Retelsdorf & Günther, 2011) and positive outcomes (e.g., greater mastery goals in students, Dresel et al., 2013; greater teaching self-efficacy, Nitsche et al., 2011), the potential net consequences of this goal subtype for teachers are uncertain.

Lastly, *social ability-avoidance goals* involve teachers' intentions to avoid negative perceptions from students or feeling like a failure if disliked by students. This teaching-related goal orientation tends to have negative instructional consequences (e.g., performance vs.

learning-focused instruction, Retelsdorf & Günther, 2011; lower autonomy support, Butler & Shibaz, 2008) as well as poorer outcomes for teachers (e.g., lower self-efficacy, Nitsche et al., 2011; lower help-seeking, Butler, 2007; Nitsche et al., 2011; greater burnout, Nitsche et al., 2013; Retelsdorf et al., 2010). However, as previous research has also found the ability-approach and ability-avoidance teaching goal orientations to load together as a single ability-focused variable (e.g., predicting greater teaching-related anxiety and anger; Wang et al., 2017), it is unclear if and how this specific orientation would independently correspond with classroom outcomes when applied to teachers' social goals. Taken together, existing research applying achievement goal theory to teachers' instructional approaches suggests that differentiating teachers' social motivation according to distinct underlying reasons should help us to better understand the effects of teachers' social goals on both classroom outcomes (e.g., instructional effectiveness, student learning) and teacher development (e.g., self-efficacy, well-being).

The Mediational Role of Teachers' Self-efficacy

Self-efficacy has consistently been recognized in the motivation literature as a crucial competency-based motivational contributor to progress and performance in educational settings. As postulated in Bandura's social-cognitive theory, self-efficacy is the perceived confidence to conduct behaviours required for desired outcomes (Bandura, 1977). In educational research, self-efficacy in teachers has been defined as teachers' beliefs concerning their competencies to promote student learning, motivation, and achievement through effective instruction (cf. personal self-efficacy; see Bandura, 1986; Enochs & Riggs, 1990). According to Tschannen-Moran and Woolfolk Hoy (2001), teacher self-efficacy pertains mainly to three domains: motivating students to learn (student engagement), using diverse teaching techniques (instructional strategies), and managing student misbehaviour (classroom management). Although teachers'

self-efficacy for building relationships with students is not proposed by the authors as a self-efficacy subtype (see Veldman et al., 2016 for recommendations to incorporate this domain), it nevertheless shares the same overarching focus as teachers' social goals on promoting student development by creating an emotionally supportive classroom environment. Accordingly, teachers' social goals and self-efficacy beliefs should intersect to better explain classroom outcomes, with self-efficacy beliefs having been consistently examined in motivation research as a mediator of the effects of goal orientations on academic outcomes for students (e.g., Fan et al., 2008; Midgley et al., 1998) as well as teachers (e.g., Gorozidis & Papaioannou, 2011).[4]

Whereas achievement goal orientations reflect "wanting" to succeed, self-efficacy indicates the belief that one "can" accomplish a set goal based on existing competencies. Although limited research has explored the causal relationship between these two constructs, goal orientations have consistently been proposed as plausible antecedents in achievement settings (see Midgley et al., 1998). For example, in a substantial meta-analysis by Payne et al. (2007) on the antecedents and consequences of goal orientations, the authors found consistent empirical support for their *nomological framework* theorizing specifically that trait goal orientations serve an antecedent of domain-specific self-efficacy in predicting long-term job performance. Existing studies have also examined self-efficacy as a consequence (rather than

[4] Teacher self-efficacy has also been consistently examined as a moderator of relations between related teacher motivation variables and their teaching methods as well as career aspirations (e.g., Dresel et al., 2013; Thomson & Palermo, 2018). Given that neither mediation or nor moderation effects can be conclusively examined in cross-sectional data, the present study assessed self-efficacy as a mediator to replicate and expand upon the analytical model by Chang et al. (under review) in which self-efficacy was evaluated as a mediator of teachers' social goal effects on student engagement.

predictor) of instructional goals in teachers (e.g., Gorozidis & Papaioannou, 2011; Nitsche et al., 2011). Related research on teachers' values similarly suggests that self-efficacy serves as a mediating variable such that teachers' a priori reasons for choosing a teaching career (e.g., altruistic, external; Watt et al., 2017) necessarily serve as an antecedent to their later, context-specific self-efficacy beliefs formed by real-world occupational experiences (see Payne et al., 2007). Qualitative studies also show teachers who prioritize building relationships with students to report higher teaching effectiveness and instructional self-efficacy (e.g., Moseley et al., 2014; Nitsche et al., 2013), particularly with respect to difficult students (Veldman et al., 2016), and better student outcomes (e.g., resilience; Sosa et al., 2012). Similarly, longstanding research on the fundamental role of teacher caring (i.e., striving for interpersonal connections) has consistently theorized that positive teacher-student relationships should have beneficial effects on teachers' perceived confidence and responsibility for their teaching activities (e.g., Collier, 2005; Noddings, 1984).

Quantitative studies have commonly examined teacher self-efficacy as a consequence of contextual determinants and teachers' instructional beliefs. For example, Zee et al. (2016) demonstrated that students' misbehaviours have a detrimental effect on teachers' instructional self-efficacy, with Simões and Calheiros (2019) showing teacher self-efficacy to mediate the negative effects of students' misbehaviours on perceived classroom climate and teacher well-being. Teacher self-efficacy has also been found to mediate the effects of institutional supports (e.g., colleagues, principal) on teaching effectiveness (Sehgal et al., 2017), with Skaalvik and Skaalvik (2010) showing teacher self-efficacy to mediate effects of contextual variables (e.g., time pressure, autonomy) on job satisfaction. Similarly, teacher self-efficacy mediated the benefits of constructivist teaching beliefs on expectations for teaching success in work by Wang

et al. (2015), and has been suggested in a recent literature review to potentially mediate the positive effects of teachers' beliefs about student-centered pedagogies on effective teaching (Lee et al., 2017; see also Five, 2003).

With respect to empirical research from an achievement goal perspective, whereas teacher self-efficacy is often assessed as a more fluid and context-oriented construct (e.g., Duffin et al. 2012; Zee et al., 2016), teachers' goals have been examined as stable motivational beliefs that predict career entry (e.g., Mansfield & Beltman, 2014). Similarly, recent research has examined the distal effects of teachers' social goals on perceived student engagement as mediated by the proximal effects of teachers' self-efficacy beliefs. More specifically, preliminary findings showing teachers self-efficacy pertaining to motivating students and managing classroom disruptions to significantly mediate the effects of teachers' general social goals on classroom engagement as rated by teachers (Chang et al., under review). However, as this recent research utilized the aforementioned unidimensional measure of teachers' social goals developed by Butler (2012), the extent to which teachers' instructional self-efficacy mediates the effects of their social goals as assessed from a multidimensional perspective has yet to be examined.

The Present Study

Given the current lack of research examining differentiated assessments of teachers' social goals to develop meaningful relationships with students, the nature and mechanisms of effects of teachers' social goals on classroom outcomes remain unclear. As suggested in extant literature focusing on teacher caring and motivational processes, teachers' social goals play a significant role in carrying out effective instruction (e.g., mastery-oriented teaching) and supporting students' social-emotional needs and academic persistence (e.g., Butler, 2012; Butler & Shibaz, 2014). Recent research with students also highlights the added value of a

differentiated assessment of social goals for predicting student outcomes (e.g., Ryan & Shim, 2006, 2008), with preliminary findings with teachers showing effects of a unidimensional measure of teachers' social goals on classroom engagement to be mediated by self-efficacy beliefs (Chang et al., under review). Accordingly, the present research aimed to develop and evaluate a multidimensional assessment of teachers' social goals as informed by the original 2 x 2 achievement goal framework proposed by Elliot (1999), and further assess potentially differential impacts of distinct social goal subtypes on classroom outcomes as mediated by teachers' self-efficacy beliefs.

Moreover, two classroom outcomes were additionally included in this paper following from recent suggestions to extend the scope of research on teachers' goals beyond teaching practices and student learning (Butler & Shibaz, 2014). More specifically, quality of teacher-student relationships was assessed as an affective classroom outcome corresponding to the psychological well-being of both teachers and students (e.g., Ang, 2005; Jennings & Greenberg, 2009). Students' classroom engagement (Skinner et al., 2009) was also evaluated as a behavioural outcome indicative of students' academic persistence and achievement motivation (Furlong & Christenson, 2008; Skinner & Pitzer, 2012).[5] Study hypotheses concerning the

[5] Teacher-reported relationships with students have been shown to correspond significantly with student reports (r = .27-.38, Gehlbach et al., 2012), with teacher-reported relationship quality positively predicting students' academic outcomes (Gehlbach et al., 2011; Wu et al., 2010). Teacher-reported student engagement is also significantly correlated with students' on-task engagement as reported by external observers (r = .35-.40) and students themselves (r = .24-37; Skinner et al., 2009). Teachers' self-rated student relationship quality and engagement are thus evaluated in this study as proxies for student outcomes.

differentiated social goal measures and mediational roles of self-efficacy beliefs are outlined below.

Hypothesis 1: Social Goals Predict Self-efficacy and Classroom Outcomes

The four subtypes of teachers' social goals were hypothesized to predict teacher self-efficacy (*Hypothesis 1a*). Based on existing research on teachers' instructional goal orientations and self-efficacy beliefs (e.g., Nitsche et al., 2011), social mastery-approach goals were expected to most positively predict self-efficacy whereas social ability-avoidance goals should be a negative predictor. Given a lack of research on teachers' social mastery-avoidance goals, and mixed findings for social ability-approach goals, there were no hypotheses for these subtypes. Teachers' differentiated social goals were also expected to predict teacher-student relationships and classroom engagement (*Hypothesis 1b*). Social mastery-approach goals were expected to most strongly predict positive relationships with students and greater student engagement, opposite relations were expected for social ability-avoidance goals, and social ability-approach goals were expected to correspond with greater student engagement but not relationship quality (see Butler & Shibaz, 2008).

Hypothesis 2: Self-efficacy Mediates Effects of Social Goals on Classroom Outcomes

Teacher self-efficacy was expected to predict better teacher-student relationships and greater students' classroom engagement (*Hypothesis 2a*). In addition, consistent with previous research showing self-efficacy beliefs to mediate social goal effects in teachers (e.g., Chang et al., under review; Gorozidis & Papaioannou, 2011), teachers' self-efficacy beliefs were further expected to mediate the aforementioned hypothesized effects of teachers' social goal subtypes on relationship quality and classroom engagement (*Hypothesis 2b*).

Method

Participants and Procedure

Canadian practising teachers (N = 154) employed primarily in the province of Quebec (89.60%) were recruited in the 2020 winter semester to complete an online questionnaire via emails distributed by co-operating teacher associations. Participants' average age was 41.80 years (SD = 10.17; range: 23 to 68 years) with an average of 15.03 years of teaching experience (SD = 8.95). Most participants were female (81.82%, n = 126) and employed across both primary schools (52.60%, n = 81) and secondary schools (42.42%, n = 65). The online questionnaire assessed demographic information and self-reported measures of teachers' social goals, self-efficacy, perceived teacher-student relationships, and perceived classroom engagement. Participants were entered into three cash prize draws of $50 as compensation for study participation, and reviewed consent information outlining study objectives, confidentiality of responses, and freedom to withdraw prior to completing the questionnaire.

Study Measures

Multidimensional Social Goals

Five measures of teachers' social goals were assessed in this study. First, the unidimensional social goals measure established by Butler (2012) was administered to evaluate the general importance teachers placed on developing meaningful connections with students. Second, three subtypes of social goals including mastery-approach, ability-approach, and ability-avoidance goals were assessed using scales adapted from the student measure of social goals developed by Ryan and Shim (2006). For example, each measure was adapted by replacing "friendships" with "student relationships" and "my friends" with "my students," or replacing "popular" with "well-liked" or "respected" for ability-oriented goals. Finally, an additional

measure of social mastery-avoidance goals was developed for this study based on the tenets of this achievement goal subtype proposed by Elliot (1999). Preliminary cognitive interviews were conducted prior to data collection with three practising teachers to ensure comprehension and clarity of each new study measure.

The unidimensional social goals measure and the specific social goal subtypes (see Appendix A) were each assessed using a four-item, five-point scale (1 = *do not agree at all*; 5 = *agree completely*). The *general social goals* scale items reflected the overall importance placed by teachers on developing meaningful relationships with students (M = 3.66, SD = 0.67, α = .73; e.g., "As a teacher, building relationships with students is most important for me"; Butler, 2012). The *social mastery-approach goals* items more specifically concerned teachers' efforts to improve their ability to connect with students (e.g., "In general, I try to develop my social skills with students") while the *social mastery-avoidance goals* items reflecting teachers' aims to avoid losing connections or not connecting with every student (e.g., "I feel unsuccessful if I do not develop meaningful relationships with each of my students"). The *social ability-approach goals* items assessed teachers' motivation to demonstrate their social competence to students (e.g., "I want to be viewed by my students as a 'cool' teacher"), and the *social ability-avoidance goals* scale assessed teachers' efforts to avoid looking socially incompetent or not being accepted by their students (e.g., "I feel unsuccessful if my students dislike me").

Construct validity for the four specific social goal measures developed for this study were assessed via iterative confirmatory factor analyses (CFA) to verify the hypothesized goal

subtypes.[6] Specific items were removed based on CFA results showing marginal loadings on the assumed latent factor ($\lambda <$. 40) including one social mastery-avoidance item, one social ability-approach item, and two social ability-avoidance items. Although the remaining item loadings proved acceptable (λ = .45-.75), an additional social ability-approach item was removed based on modification indices showing a significant cross-loading on the social mastery-approach variable. CFA results further showed social ability-approach and -avoidance goals to demonstrate a very high latent correlation (.85, $p < .001$), thus requiring that they need to be merged into a single social ability dimension due to multicollinearity. With these modifications applied, the final trichotomous model indicated a good fit to the data, $\chi^2(41) = 58.96$, $p = .034$; CFI = .94; TLI = .93; RMSEA = .05; SRMR = .05.

As outlined in Appendix A, the final three social goals subscales assessed in the main analyses included *social mastery-approach goals* consisting of the four original items ($M = 4.22$, $SD = 0.50$, $\alpha = .65$), *social mastery-avoidance goals* (three items; $M = 3.34$, $SD = 0.80$, $\alpha = .70$), and *social ability goals* (four items including both approach and avoidance dimensions; $M = 3.20$, $SD = 0.63$, $\alpha = .64$).[7] Correlational data in support of convergent validity between the social goal subtypes and the general social goals measure initially developed by Butler (2012) is presented in Table 1. As anticipated, the three social goals subtypes were positively correlated

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[6] All the structural equational models were examined with the following standards (Byrne, 2010; Hu & Bentler, 1999): chi-square goodness-of-fit test, comparative fit index (CFI > .90), Tucker–Lewis index (TLI > .90), root mean square error of approximation (RMSEA < .08), and standardized root mean square residual (SRMR < .08).

[7] Lower internal reliability scores for teachers' mastery and ability avoidance goals are consistent with those reported in previous research (e.g., αs = 0.66-0.70; Butler, 2012).

with the general goals measure, with the mastery social goal measures being more strongly correlated with the general measure as compared to social ability goals.

Self-efficacy Beliefs

Teachers' self-efficacy beliefs pertaining to motivating students, using varied instructional strategies, and managing challenging classroom behaviour were assessed using a tripartite measure developed by Tschannen-Moran and Woolfolk Hoy (2001). This 12-item, nine-point measure (1= *nothing*; 9 = *a great deal*) included four items per subscale and was assessed as a single variable (M = 6.87, SD = 0.90, α = .85) due to high inter-correlations among the subscales (rs = .46-.57, $p < .001$; for related research using a composite teacher self-efficacy measure, see Zee & Koomen, 2017). Sample self-efficacy scale items included "How much can you do to get students to believe they can do well in schoolwork?" (student engagement), "How well can you implement alternative strategies in your classroom?" (instructional strategies), and "How much can you do to calm a student who is disruptive or noisy?" (classroom management).

Perceived Teacher-student Relationship Quality

Teachers' perceived quality of their relationships with students was assessed using a 14-item, five-point measure developed by Ang (2005; 1 = *almost never true at all true*; 5 = *almost always true*). Five scale items measured teachers' satisfaction with their relationships with students (e.g., "I enjoy the students I have in my class"), five items assessed perceived student willingness to request assistance (e.g., "If my students have a problem at home, they are likely to ask for my help"), and four items measured perceived conflict with students (e.g., "If a difficult student is absent, I feel relieved"). Due to low-moderate correlations between the three subscales (rs = |.19-.48|, ps = .000-.021), a follow-up CFA evaluating a second-order model with overall teacher-student relationship quality predicted by the three latent subscale variables was

evaluated. As this second-order model showed good model fit (χ^2 = 77.90, *df* = 51, *p* = .009; CFI = .96; TLI = .94; RMSEA = .06; SRMR = .07), it was subsequently used in the main analyses below to improve model parsimony (vs. evaluating relations with the three subscales independently; composite measure: *M* = 3.76, *SD* = 0.48, α = .82).[8]

Perceived Classroom Engagement

Teachers' perceptions of their students' classroom engagement were assessed using a measure developed by Skinner et al. (2009) that consisted of 10 four-point items (1 = *not at all true*; 4 = *very true*; *M* = 3.05, *SD* = 0.46, α = .90). This scale included five items concerning students' behavioural engagement (e.g., "In my class, my students do more than required") as well as five items assessing students' emotional engagement (e.g., "When working on classwork, my students seem to enjoy it"). CFA results indicated satisfactory fit for the one-factor model (χ^2 = 67.72, *df* = 34, *p* = .001; CFI = .95, TLI = .94, RMSEA = .08, SRMR = .04).

Results

Preliminary Analyses

Table 1 provides descriptive statistics and correlations for all study measures. Initial differences in the three social goal subtypes were additionally examined as a function of teachers' gender, grade level of instruction, years of experience, and the shift to online learning due to COVID (before vs. after March 13th, 2020) to determine potential covariates for our main analyses. Social mastery-avoidance goal levels were found to differ significantly by gender and

[8] The following student conflict items were removed due to insufficient item loadings < .40: "My students frustrate me more than in other classes I have taught" and "I cannot wait for this year to be over so that I no longer need to teach these students."

grade of instruction, with females reporting stronger social mastery-avoidance social goals (M = 3.41, SD = .78) than males (M = 3.01, SD = .86), $t(151) = -2.35$, $p = .020$, and primary school teachers reporting stronger social mastery-avoidance goals (M = 3.54, SD = .74) than secondary school teachers (M = 3.05, SD = .78), $t(144) = 3.93$, $p < .001$. Social ability goals were also found to differ according to grade of instruction, with primary school teachers reporting stronger social ability goals (M = 3.33, SD = .63) than secondary school teachers (M = 3.02, SD = .60), $t(144) = 3.03$, $p = .003$. No initial differences were found in social mastery-approach goals, with no social goals measures showing significant differences as a function of years of experience, rs = |.04-.11|, $p > .05$, or online learning due to COVID, ts(152) = |.76-1.41|, $p > .05$.

In terms of initial differences across endogenous variables, years of experience was positively related to self-efficacy, $r = .24$, $p = .004$, with primary school teachers reporting higher classroom engagement (M = 3.14, SD = .53) than secondary school teachers (M = 2.93, SD = .35), $t(136) = 2.84$, $p = .005$. Interestingly, teachers reported slightly better student relationship quality after shifting to online learning due to COVID (M = 3.88, SD = .44) as compared to prior (M = 3.70, SD = .48), $t(144) = -2.14$, $p = .034$. None of the endogenous variables differed as a function of gender, $ts(145) = |.20\text{-}1.49|$, $p > .05$, nor did self-efficacy and relationship quality differ as a function of grade of instruction, $ts(138) = |1.55\text{-}1.69|$, $p > .05$. Self-efficacy and classroom engagement did not differ as a function of COVID, $ts(146) = |.15\text{-}.83|$, $p > .05$, and relationship quality and classroom engagement were not correlated with years of experience, rs = |.02-.15|, $p > .05$.

Mediational Analysis

Structural Equation Model

The proposed mediational model examined the effects of teachers' differentiated social goals on self-efficacy and, in turn, teacher-student relationship quality and perceived classroom engagement using M*plus* 7.0 software with maximum likelihood estimation (Muthén, L. K. & Muthén, B., 1998-2015). Given the limited sample size, item parceling was used for all endogenous variables to reduce the number of estimated parameters (i.e., self-efficacy, relationship quality subtypes, classroom engagement). Unidimensional latent variables were predicted by two parceled manifest variables that averaged across items combined based either on item order (e.g., parcel 1: items 1-3, parcel 2: items 4-5 for satisfaction with relationship quality), with the multidimensional self-efficacy variable predicted by two parcels consisting of equal representation from each subscale (parcel 1: first half of items from each subscale; parcel 2: second half of items from each subscale).

Figure 1 outlines the results of the final mediational model[9] that demonstrated a good fit to the data: $\chi^2(171) = 224.98$, $p = .004$, CFI = .952, TLI = .942, RMSEA = .045, SRMR = .062. Teachers who were more motivated to develop their social skills with students (mastery-

[9] Equivalent mediational analyses including gender, grade level of instruction, years of experience, or before vs. during online learning due to COVID as covariates, respectively, showed the same significant paths and comparable effect sizes as the model that excluded covariates (changes in effect sizes ranged from -1% to 2%). Fit for the final hypothesized mediational model that included direct and indirect paths via self-efficacy from goals to outcomes (Model 1) was also compared to a reduced version that excluded direct, non-mediated paths (Model 2: $\chi^2 = 246.76$, $df = 177$, $p < .001$, CFI = .939, RMSEA = .051). The difference in chi-square values was statistically significant, $\Delta\chi^2(\Delta df) = 21.78(6)$; $p = .001$, showing Model 1 to fit the data better than the more restricted Model 2.

approach goals) reported greater teaching self-efficacy (β = .52, p = .003) that, in turn, was associated with higher perceived relationship quality (β = .55, p < .001) and classroom engagement (β = .63, p < .001). In contrast, self-efficacy was not significantly predicted by social mastery-avoidance goals (β = -.14, p = .456) or social ability goals (β = -.11, p = .502). No direct effects of the social goals subtypes on either relationship quality or classroom engagement were statistically significant, including social mastery-approach goals (β = .26, p = .175; β = .07, p = .681, respectively), social mastery-avoidance goals (β = .23, p = .198; β = .23, p = .132, respectively), and social ability goals (β = .01, p = .965; β = -.07, p = .595, respectively). As for latent effect sizes, the total explained variances for the outcome measures were large in magnitude (relationship quality: 66%; classroom engagement: 51%).

Mediating Effects with Bootstrap Resampling Method

A bias-corrected bootstrapping with 5,000 iterations (95% confidence intervals; Preacher & Hayes, 2008) was additionally conducted to examine the mediational role of teacher's self-efficacy in the effects of teachers' social goals on relationship quality and classroom engagement. Intervals that do not contain zeros indicate robust statistical significance for a given effect while accounting for potential floor or ceiling effects. Standardized confidence intervals for direct, indirect, and total effects are shown in Table 2. Results showed self-efficacy beliefs to significantly mediate the relationship between social mastery-approach goals and relationship quality (β = .29, p = .007, CI = .08/.61) as well as classroom engagement (β = .33, p = .006, CI = .09/.75). There were no significant indirect effects of social mastery-avoidance goals nor social ability goals on relationship quality via teachers' self-efficacy (β = -.08, p = .464, CI = -.39/.15; β = -.09, p = .465, CI = -.29/.15, respectively). Similarly, no significant indirect relationships between either social mastery-avoidance goals or social ability goals and classroom engagement

via teachers' self-efficacy were observed (β = -.06, p = .502, CI = -.48/.16; β = -.07, p = .500, CI = -.32/.17, respectively).

Discussion

Hypothesis 1: Effects of Teachers' Social Goals on Self-efficacy and Classroom Outcomes

Study findings provided partial support for *Hypothesis 1a* in that although teachers' social mastery-approach goals positively corresponded with their self-efficacy beliefs as expected, teachers' social mastery-avoidance and social ability goals did not correspond with their self-efficacy beliefs with social mastery-approach goals held constant. Teachers who reported a greater focus on improving their abilities to develop caring relationships with students (mastery-approach goals) were more likely to perceive themselves as more capable educators than those who were concerned about failing to connect with every student (mastery-avoidance goals) or how their social competencies were viewed by students (ability goals). Whereas the results of social mastery-approach goals are aligned with findings from Nitsche et al. (2011), the findings for social ability goals are not as negative as previously observed for instructional ability goals.

This lacking detrimental relationship (e.g., on relationship quality) may be due to the two ability goal subtypes factor analyzing into a single dimension (as in Wang et al., 2017) with the inclusion of ability-approach goals possibly mitigating the clear negative effects of ability-avoidance goals found in previous research on instructional goal orientations (e.g., Butler, 2007; Butler & Shibaz, 2008; Nitsche et al., 2011). However, the present social ability measure was not negatively associated with the composite ability approach/avoidance scale assessed by Wang et al. (2017) with respect to instructional goal orientations (e.g., greater negative affect). Accordingly, this further suggests that our present lack of negative findings for social ability

goals in teachers may be due to the focus of the goals being social vs. pedagogical in nature. More specifically, perhaps teachers being preoccupied with conveying social abilities in class is understandably less detrimental for pedagogy-related outcomes (e.g., student engagement) due to it being less relevant than being preoccupied with demonstrating one's pedagogical abilities. In contrast, it is possible that negative implications of teachers' social ability goals may instead be found for outcomes that do not directly pertain to student outcomes or teaching methods, such as personal well-being (e.g., due to teachers' ability goals being associated with negative feedback and help-seeking being perceived as more psychologically threatening; Butler, 2007).

Consistent with *Hypothesis 1b*, teachers' social mastery-approach goals were also most strongly associated with better levels of both perceived teacher-student relationship quality and classroom engagement. This finding is consistent with previous results demonstrating the benefits of teachers' efforts to develop emotionally supportive relationships with students on students' positive affect, personal development, and academic achievement (i.e., teachers as a change agent; see Lochman, 2003; McHugh et al., 2013). However, this hypothesis was only partially supported mainly due to findings for teachers' social ability goals. Although zero-order correlations showed both teachers' social mastery-approach and mastery-avoidance goals to correspond with better teacher-student relationships and classroom engagement (both subtypes emphasize making interpersonal connections), social ability goals were only weakly correlated with better relationship quality and were unrelated to classroom engagement.

This finding is contrary to previous studies suggesting that teachers' ability-approach goals may be beneficial for student motivation, for example, due to greater teaching self-efficacy (Nitsche et al., 2011) or through the use of mastery-oriented methods (e.g., math instruction; Dresel et al., 2013). Once again, this finding may be due to the ability goals measure collapsing

the approach and avoidance dimensions, with the typically negative effects of ability-avoidance goals preventing the potential benefits of ability-approach goals from being observed. However, it is also possible that teachers' social ability goals did not show significant effects due to our mediating self-efficacy variable not assessing specific types of teaching. Whereas the potential student benefits of teachers' social ability-approach goals may be observed following mastery-oriented instruction, our self-efficacy measure more generally assessed teachers' perceived ability to use *varied* teaching methods (i.e., instructional strategies subscale) thus potentially obscuring beneficial effects that would otherwise have been observed with a more specific indicator of adaptive instruction (e.g., focusing on student improvement).

Hypothesis 2: Mediational Role of Teachers' Self-efficacy Beliefs

Hypothesis 2a was fully supported as teacher-perceived relationship quality and classroom engagement were both positively associated with teacher self-efficacy. These results thus indicate that teachers who have greater confidence in their ability to motivate students, apply various pedagogical techniques, and manage misbehaviour were more likely to perceive more meaningful relationships with their students and observe greater student involvement. This pattern of results is consistent with substantial existing research showing teachers' perceived competency for facilitating student learning to consistently contribute to positive teacher-student relationships (Hajovsky et al., 2020) as well as student achievement and well-being (for reviews, see Klassen & Tze, 2014; Zee & Koomen, 2016).

Hypothesis 2b further proposed that teachers' self-efficacy beliefs should serve a mediating role in the relationships between the three subtypes of teachers' social goals and the two classroom outcomes assessed. Scattered previous research suggests a positive link between teachers' general social goals and specific instructional outcomes such as social-emotional

support (Butler & Shibaz, 2008) and mastery-oriented instruction (Butler, 2012; Wang et al., 2017). Our findings extend these findings on teachers' general social goals in showing a specific social goal subtype, namely mastery-approach goals (aiming to enhance social abilities), to additionally account for teachers' perceptions of critical student outcomes via higher levels of teacher self-efficacy. In other words, teachers who focused on improving their ability to develop meaningful connections with students tended to feel more confident in their teaching abilities that, in turn, contributed to teachers perceiving stronger relationships with their students and greater levels of in-class engagement. However, *Hypothesis 2b* was only partially supported, as teachers who focused instead on failing to connect with every student (social mastery-avoidance goals) or showcasing their social competences (social ability goals) did not show similar positive links with self-efficacy or classroom outcomes.

Overall, our findings suggest that the underlying reasons for why teachers strive to build relationships with students are important to consider, with the benefits of teachers' social goals being mainly evident when they reflect an incremental or growth mindset (Dweck, 2000, 2014; Elliot, 1999). Expanding upon existing research showing teachers' instructional mastery-approach goals to correspond to various psychological benefits for teachers (e.g., Nitsche et al., 2013; Retelsdorf et al., 2010; Wang et al., 2017) as well as students (e.g., Butler & Shibaz, 2008, 2014), the present findings clearly demonstrate the potential benefits of teachers' social mastery-approach goals for not only confidence in their teaching abilities (self-efficacy beliefs) but also affective and learning-related classroom outcomes (relationship quality, student engagement).

Study Implications and Limitations

Assisting students' holistic development has become increasingly important given the increased emphasis on students' non-cognitive competencies and teachers' relationships with

difficult students (Chernyshenko et al., 2018; Moseley et al., 2014). The present findings suggest that teachers may be able to achieve such critical classroom outcomes by focusing on their potential to improve their relationships with that, in turn, should correspond with greater confidence in carrying out effective teaching. To better promote teachers' social-learning competencies, existing research consistently highlights the importance of integrating content on teachers' interpersonal skills into teacher education and professional development programs (see Jennings et al., 2017; Mihalas et al., 2009). In addition to training teachers to administer curricula and ensure students' cognitive gains (i.e., test scores), greater attention should be paid to teachers' knowledge concerning students' psychological needs and cultural background (Sosa & Gomez, 2012) as well as their own social-emotional competences (relationship building, emotion regulation; Furrer et al., 2014; Jennings & Greenberg, 2009). Relatedly, greater professional development content pertaining to motivationally adaptive instructional methods that rely on building meaningful student relationships is encouraged (e.g., mastery-learning and autonomy-supportive teaching techniques; Ciani et al., 2010; Ozkal 2014), as is teacher training to better address the emotional needs of marginalized students through culturally-sensitive and asset-based teaching approaches (see Gay, 2002; López, 2017; Sylva et al., 2016).

Professional development and teacher training programs are further suggested to promote teachers' mastery-approach goals by encouraging them to adopt growth mindsets not only in response to teaching challenges, but also concerning their relationships with students (i.e., incremental beliefs; Dweck, 2006). Following from intervention studies showing teachers' efforts to encourage growth mindsets in class to improve students' motivation, prosocial behaviours, and achievement (e.g., Blackwell et al., 2007; Yeager et al., 2013), interventions aimed at promoting incremental beliefs in teachers themselves have shown instructional benefits.

Although these interventions generally address how teachers can view student intelligence as malleable and encourage mastery-oriented instruction (e.g., focusing on student effort and improvement over time; Richardson et al., 2020; Seaton, 2018), it is reasonable to expect that encouraging teachers to adopt incremental beliefs about their own ability to connect with students should have similar instructional benefits. Moreover, these benefits should be especially evident when teachers additionally incorporate an incremental mindset into their on-going classroom practices (e.g., everyday social interactions; Jaffe, 2020; Seaton, 2018), promote fair educational environments that allow for equitable student participation (Thomas et al., 2019).

The present study thus incorporates multiple strengths that allow for clear practical implications, including the development of a multidimensional social goals measure for teachers validated through cognitive interviewing and factor analysis and demonstrated relations with not only related motivational variables (self-efficacy) but also critical classroom outcomes (relationship quality, classroom engagement). However, study limitations are also important to acknowledge when considering the generalizability of the findings observed. First, although the low reliabilities of the three social goal measures are consistent with prior research (Butler, 2012), more research is needed to develop better scale items that reflect teachers' experiences concerning their reasons for developing meaningful relationships with students (e.g., in-depth focus groups).

For example, as it is possible that our ability-approach and -avoidance subscales did not differentiate due to ultimately including only two items per measure, future research on the efficacy of more elaborated self-report social goals measures is recommended to better ascertain if these subscales are indeed differentiated or best assessed as a single variable. Relatedly, future research in which more substantial self-report measures are assessed could afford the

differentiation required to conduct profile analyses across social goal subtypes and provide a complementary person-centered perspective to the present variable-centered approach. Similarly, it is possible that better differentiated social goal subscales (e.g., that more clearly separate ability-approach vs. ability-avoidance goals) could also show more differentiated relations with subtypes of teachers' self-efficacy (e.g., as assessed in Chang et al., under review) and potentially mitigate the multicollinearity between self-efficacy subscales that required the use of a unidimensional measure in the current study.

A second issue pertains to the cross-sectional nature of the study data. Whereas our mediational SEM analysis allowed us to assess theoretically proposed direct and indirect relations between teachers' social goal orientations, self-efficacy, classroom outcomes, it does not provide substantive evidence as to causal relationships between the study variables. Accordingly, follow-up longitudinal studies are needed to further examine the directional nature of these relationships (e.g., diary studies) and the extent to which common variance due to cross-sectional assessment may have inflated relations between study variables. Moreover, as the present study relied exclusively on self-report measures, future research is recommended to more objectively measure both teachers' social goals (e.g., real-time, experience sampling methods) and classroom outcomes (e.g., student perceptions, independent observations) and to assess additional classroom variables that may be impacted by teachers' social goals (e.g., student achievement, teacher well-being). Finally, whereas it was theoretically assumed in the present study that teachers' social goals represented a more domain-specific subset of their broader instructional goals, more research is needed to support this assertion. For example, future studies in which existing domain-general, instructional goal orientation measures (e.g., Butler, 2012) are assessed alongside domain-specific measures of teachers' social goals could help determine if

the latter are indeed conceptually nested within the former (e.g., using multi-level analyses) thus providing greater empirical support for basing hypotheses concerning teachers' social goals on findings for more general instructional goals.

In sum, the current study demonstrated the importance of differentiating teachers' social goals according to their underlying reasons, with three resulting social goal orientations showing different relations with teaching-related confidence and student outcomes. Whereas social mastery-approach goals emphasizing the continuous development of social skills were optimal for teacher self-efficacy as well as perceived teacher-student relationship quality and student engagement, the remaining social goal subtypes showed little or no relation with these critical variables. These findings thus illustrate the importance of developing teacher training and professional development programs that encourage teachers to focus on improving their interpersonal competencies with students (i.e., a growth mindset) as well as adopting integrative pedagogies that can help teachers connect with learners from diverse social-cultural backgrounds and better support the emotional needs of their class.

References

Ang, R. P. (2005). Development and validation of the teacher-student relationship inventory using exploratory and confirmatory factor analysis. *The Journal of Experimental Education*, *74*(1), 55–74. https://doi.org/10.3200/JEXE.74.1.55-74

Awang-Hashim, R., Thaliah, R., & Kaur, A. (2017). A cultural insight into the development of teacher autonomy support scale: A self-determination theory perspective. *Journal for Multicultural Education*, *11*(4), 287–305. https://doi.org/10.1108/JME-09-2016-0050

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215. https://doi.org/10.1037/0033-295X.84.2.191

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Bergin, C., & Bergin, D. (2009). Attachment in the classroom. *Educational Psychology Review*, *21*(2), 141–170. https://doi.org/10.1007/s10648-009-9104-0

Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development*, *78*(1), 246–263. https://doi.org/10.1111/j.1467-8624.2007.00995.x

Block, J. H., & Burns, R. B. (1976). Mastery learning. *Review of Research in Education*, *4*, 3–49.

Butler, R. (2007). Teachers' achievement goal orientations and associations with teachers' help seeking: Examination of a novel approach to teacher motivation. *Journal of Educational Psychology*, *99*(2), 241–252. https://doi.org/10.1037/0022-0663.99.2.241

Butler, R. (2012). Striving to connect: Extending an achievement goal approach to teacher motivation to include relational goals for teaching. *Journal of Educational Psychology*, *104*(3), 726–742. https://doi.org/10.1037/a0028613

Butler, R., & Shibaz, L. (2008). Achievement goals for teaching as predictors of students' perceptions of instructional practices and students' help seeking and cheating. *Learning and Instruction*, *18*(5), 453–467. https://doi.org/10.1016/j.learninstruc.2008.06.004

Butler, R., & Shibaz, L. (2014). Striving to connect and striving to learn: Influences of relational and mastery goals for teaching on teacher behaviors and student interest and help seeking. *International Journal of Educational Research*, *65*, 41–53. https://doi.org/10.1016/j.ijer.2013.09.006

Byrne, B. M. (2010). *Structural equation modeling with AMOS*. New York, NY: Routledge.

Chang, C.-F., Hall, N. C., Lee, S. Y., & Wang, H. (under review). Teachers' social goals and classroom engagement: The mediating role of teachers' self-efficacy. Invited resubmission to *International Journal of Educational Research*.

Chernyshenko, O. S., Kankaraš, M., & Drasgow, F. (2018). Social and emotional skills for student success and wellbeing: Conceptual framework for the OECD study on social and emotional skills. OECD Education Working Papers, No. 173. *OECD Publishing*. https://doi.org/10.1787/db1d8e59-en

Ciani, K., Ferguson, Y., Bergin, D., & Hilpert, J. (2010). Motivational influences on school-prompted interest. *Educational Psychology*, *30*(4), 377–393. https://doi.org/10.1080/01443411003660232

Collie, R. J., Perry, N. E., & Martin, A. J. (2017). School context and educational system factors impacting educator stress. In T. M. McIntyre, S. E. McIntyre, & D. J. Francis (Eds.),

Educator Stress: An Occupational Health Perspective (pp. 3–22). https://doi.org/10.1007/978-3-319-53053-6_1

Collier, M. D. (2005). An ethic of caring: The fuel for high teacher efficacy. *The Urban Review*, *37*(4), 351–359. https://doi.org/10.1007/s11256-005-0012-4

Cornelius-White, J. (2007). Learner-centered teacher-student relationships are effective: A meta-analysis. *Review of Educational Research*, *77*(1), 113–143. https://doi.org/10.3102/003465430298563

Daumiller, M., Dickhäuser, O., & Dresel, M. (2019). University instructors' achievement goals for teaching. *Journal of Educational Psychology*, *111*(1), 131–148. https://doi.org/10.1037/edu0000271

Daumiller, M., Janke, S., Hein, J., Rinas, R., Dickhäuser, O., & Dresel, M. (2021). Do teachers' achievement goals and self-efficacy beliefs matter for students' learning experiences? Evidence from two studies on perceived teaching quality and emotional experiences. *Learning and Instruction, 76*, 101458. *https://doi.org/10.1016/j.learninstruc.2021.101458*

Deci, E. L., & Ryan, R. M. (2000). The" what" and" why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Deci, E. L., & Ryan, R. M. (2014). Autonomy and need satisfaction in close relationships: Relationships motivation theory. In N. Weinstein (Ed.), *Human motivation and interpersonal relationships: Theory, research, and applications* (pp. 53–73). https://doi.org/10.1007/978-94-017-8542-6_3

Dresel, M., Fasching, M. S., Steuer, G., Nitsche, S., & Dickhäuser, O. (2013). Relations between teachers' goal orientations, their instructional practices and student motivation. *Psychology*, *4*(7), 572–584. https://doi.org/10.4236/psych.2013.47083

Duffin, L. C., French, B. F., & Patrick, H. (2012). The Teachers' Sense of Efficacy Scale: Confirming the factor structure with beginning pre-service teachers. *Teaching and Teacher Education*, *28*(6), 827–834. https://doi.org/10.1016/j.tate.2012.03.004

Dweck, C. S. (2000). *Self-theories: Their role in motivation, personality, and development*. Psychology Press.

Dweck, C. S. (2006). *Mindset: A new psychology of success*. Random House.

Dweck, C. S. (2014). Teachers' mindsets: "Every Student has Something to Teach Me." *Educational Horizons*, *93*(2), 10–14. https://doi.org/10.1177/0013175X14561420

Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational Psychologist*, *34*(3), 169–189. https://doi.org/10.1207/s15326985ep3403_3

Elliot, A. J. (2005). A conceptual history of the achievement goal construct. In A. J. Elliot, & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 52–72). Guilford Publications.

Elliot, A. J., & Harackiewicz, J. M. (1996). Approach and avoidance achievement goals and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology, 70*(3), 461–475. https://doi.org/10.1037/0022-3514.70.3.461

Enochs, L., & Riggs, I. (1990). Further development of an elementary science teaching efficacy belief instrument: A preservice elementary scale. *School Science and Mathematics, 90*(8), 694–706.

Fan, J., Meng, H., Billings, R. S., Litchfield, R. C., & Kaplan, I. (2008). On the role of goal orientation traits and self-efficacy in the goal-setting process: Distinctions that make a difference. *Human Performance*, *21*(4), 354–382. https://doi.org/10.1080/08959280802347122

Fives, H. (2003). *What is teacher efficacy and how does it relate to teachers' knowledge? A theoretical review*. Paper presented at the American Educational Research Association Annual Conference, Chicago.

Furlong, M. J., & Christenson, S. L. (2008). Engaging students at school and with learning: A relevant construct for all students. *Psychology in the Schools*, *45*(5), 365–368. https://doi.org/10.1002/pits.20302

Furrer, C. J., Skinner, E. A., & Pitzer, J. R. (2014). The influence of teacher and peer relationships on students' classroom engagement and everyday motivational resilience. In D. Shernoff, & J. Bempechat (Eds.), *National Society for the Study of Education yearbook: Engaging youth in schools: Evidence-based models to guide future innovations* (pp. 101–123). New York, NY: Teachers College Record.

Gay, G. (2002). Preparing for culturally responsive teaching. *Journal of Teacher Education*, *53*(2), 106–116. https://doi.org/10.1177/0022487102053002003

Gehlbach, H., Brinkworth, M. E., & Harris, A. (2011). *Social motivation in the secondary classroom: assessing teacher-student relationships and student outcomes.* Paper presented at the American Educational Research Association, New Orleans, LA.

Gehlbach, H., Brinkworth, M. E., & Harris, A. D. (2012). Changes in teacher–student relationships. *British Journal of Educational Psychology*, *82*(4), 690–704. https://doi.org/10.1111/j.2044-8279.2011.02058.x

George, S. V., & Richardson, P. W. (2019). Teachers' goal orientations as predictors of their self-reported classroom behaviours: An achievement goal theoretical perspective. *International Journal of Educational Research*, *98*, 345–355. https://doi.org/10.1016/j.ijer.2019.09.011

Gorozidis, G., & Papaioannou, A. (2011). Teachers' self-efficacy, achievement goals, attitudes and intentions to implement the new Greek physical education curriculum. *European Physical Education Review*, *17*(2), 231–253. https://doi.org/10.1177/1356336X11413654

Hajovsky, D. B., Chesnut, S. R., & Jensen, K. M. (2020). The role of teachers' self-efficacy beliefs in the development of teacher-student relationships. *Journal of School Psychology*, *82*, 141–158. https://doi.org/10.1016/j.jsp.2020.09.001

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Jaffe, E. (2020). Mindset in the classroom: Changing the way students see themselves in mathematics and beyond. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, *93*(5), 255–263. https://doi.org/10.1080/00098655.2020.1802215

Jennings, P. A., Brown, J. L., Frank, J. L., Doyle, S., Oh, Y., Davis, R., Rasheed, D., DeWeese, A., DeMauro, A. A., Cham, H., & Greenberg, M. T. (2017). Impacts of the CARE for Teachers program on teachers' social and emotional competence and classroom interactions. *Journal of Educational Psychology*, *109*(7), 1010–1028. https://doi.org/10.1037/edu0000187

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. https://doi.org/10.3102/0034654308325693

Kiefer, S. M., Ellerbrock, C., & Alley, K. (2014). The role of responsive teacher practices in supporting academic motivation at the middle level. *RMLE Online*, *38*(1), 1–16. https://doi.org/10.1080/19404476.2014.11462114

Klassen, R. M., & Tze, V. M. C. (2014). Teachers' self-efficacy, personality, and teaching effectiveness: A meta-analysis. *Educational Research Review*, *12*, 59–76. https://doi.org/10.1016/j.edurev.2014.06.001

Lee, W. C., Chen, V. D.-T., & Wang, L.-Y. (2017). A review of research on teacher efficacy beliefs in the learner-centred pedagogy context: Themes, trends and issues. *Asia Pacific Education Review, 18*(4), 559–572. https://doi.org/10.1007/s12564-017-9501-x

Lochman, J. E. (2003). Commentary: School contextual influences on the dissemination of interventions. *School Psychology Review*, *32*(2), 174–177. https://doi.org/10.1080/02796015.2003.12086190

López, F. A. (2017). Altering the trajectory of the self-fulfilling prophecy: Asset-based pedagogy and classroom dynamics. *Journal of Teacher Education*, *68*(2), 193–212. https://doi.org/10.1177/0022487116685751

Mansfield, C. F., & Beltman, S. (2014). Teacher motivation from a goal content perspective: Beginning teachers' goals for teaching. *International Journal of Educational Research*, *65*, 54–64. https://doi.org/10.1016/j.ijer.2013.09.010

McHugh, R. M., Horner, C. G., Colditz, J. B., & Wallace, T. L. (2013). Bridges and barriers: Adolescent perceptions of student–teacher relationships. *Urban Education*, *48*(1), 9–43. https://doi.org/10.1177/0042085912451585

Midgley, C., Kaplan, A., Middleton, M., Maehr, M. L., Urdan, T., Anderman, L. H., Anderman, E., & Roeser, R. (1998). The development and validation of scales assessing students' achievement goal orientations. *Contemporary Educational Psychology*, *23*(2), 113–131. https://doi.org/10.1006/ceps.1998.0965

Mihalas, S., Morse, W. C., Allsopp, D. H., & Alvarez McHatton, P. (2009). Cultivating caring relationships between teachers and secondary students with emotional and behavioral disorders: Implications for research and practice. *Remedial and Special Education*, *30*(2), 108–125. https://doi.org/10.1177/0741932508315950

Miller, D. T., & Ross, M. (1975). Self-serving biases in the attribution of causality: Fact or fiction? *Psychological Bulletin*, *82*(2), 213–225. https://doi.org/10.1037/h0076486

Moseley, C., Bilica, K., Wandless, A., & Gdovin, R. (2014). Exploring the relationship between teaching efficacy and cultural efficacy of novice science teachers in high-needs schools. *School Science and Mathematics*, *114*(7), 315–325. https://doi.org/10.1111/ssm.12087

Muthén, L. K., & Muthén, B. (1998-2015). *Mplus user's guide* (7th ed.). Los Angeles, CA: Author.

Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and Research in Education*, *7*(2), 133–144. https://doi.org/10.1177/1477878509104318

Nitsche, S., Dickhäuser, O., Fasching, M. S., & Dresel, M. (2011). Rethinking teachers' goal orientations: Conceptual and methodological enhancements. *Learning and Instruction*, *21*(4), 574–586. https://doi.org/10.1016/j.learninstruc.2010.12.001

Nitsche, S., Dickhäuser, O., Fasching, M. S., & Dresel, M. (2013). Teachers' professional goal orientations: Importance for further training and sick leave. *Learning and Individual Differences*, *23*, 272–278. https://doi.org/10.1016/j.lindif.2012.07.017

Noddings, N. (1984). *Caring: A feminine approach to ethics and moral education.* Berkeley, CA: University of California Press.

Ozkal, N. (2014). Sense of professional self-efficacy beliefs and learner autonomy support behaviour of middle school teachers. *The Anthropologist*, *18*(2), 575–581. https://doi.org/10.1080/09720073.2014.11891575

Payne, S. C., Youngcourt, S. S., & Beaubien, J. M. (2007). A meta-analytic examination of the goal orientation nomological net. *Journal of Applied Psychology*, *92*(1), 128–150. https://doi.org/10.1037/0021-9010.92.1.128

Pianta, R. C., Hamre, B. K., & Allen, J. P. (2012). Teacher-student relationships and engagement: Conceptualizing, measuring, and improving the capacity of classroom interactions. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (p. 365–386). Springer. https://doi.org/10.1007/978-1-4614-2018-7_17

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*(3), 879–891. https://doi.org/10.3758/BRM.40.3.879

Retelsdorf, J., & Günther, C. (2011). Achievement goals for teaching and teachers' reference norms: Relations with instructional practices. *Teaching and Teacher Education*, *27*(7), 1111–1119. https://doi.org/10.1016/j.tate.2011.05.007

Retelsdorf, J., Butler, R., Streblow, L., & Schiefele, U. (2010). Teachers' goal orientations for teaching: Associations with instructional practices, interest in teaching, and burnout. *Learning and Instruction*, *20*(1), 30–46. https://doi.org/10.1016/j.learninstruc.2009.01.001

Richardson, D. S., Bledsoe, R. S., & Cortez, Z. (2020). Mindset, motivation, and teaching practice: Psychology applied to understanding teaching and learning in STEM disciplines. *CBE Life Sciences Education*, *19*(3), 1–7. https://doi.org/10.1187/cbe.19-11-0238

Roorda, D. L., Koomen, H. M. Y., Spilt, J. L., & Oort, F. J. (2011). The influence of affective teacher–student relationships on students' school engagement and achievement: A meta-analytic approach. *Review of Educational Research*, *81*(4), 493–529. https://doi.org/10.3102/0034654311421793

Ryan, A. M., & Shim, S. S. (2006). Social achievement goals: The nature and consequences of different orientations toward social competence. *Personality and Social Psychology Bulletin*, *32*(9), 1246–1263. https://doi.org/10.1177/0146167206289345

Ryan, A. M., & Shim, S. S. (2008). An exploration of young adolescents' social achievement goals and social adjustment in middle school. *Journal of Educational Psychology*, *100*(3), 672–687. https://doi.org/10.1037/0022-0663.100.3.672

Seaton, F. S. (2018). Empowering teachers to implement a growth mindset. *Educational Psychology in Practice*, *34*(1), 41–57. https://doi.org/10.1080/02667363.2017.1382333

Sehgal, P., Nambudiri, R., & Mishra, S. K. (2017). Teacher effectiveness through self-efficacy, collaboration and principal leadership. *International Journal of Educational Management*, *31*(4), 505–517. https://doi.org/10.1108/IJEM-05-2016-0090

Shindler, J., Jones, A., Williams, A. D., Taylor, C., & Cardenas, H. (2016). The school climate-student achievement connection: If we want achievement gains, we need to begin by improving the climate. *Journal of School Administration Research and Development*, *1*(1), 9–16.

Simões, F., & Calheiros, M. M. (2019). A matter of teaching and relationships: Determinants of teaching style, interpersonal resources and teacher burnout. *Social Psychology of Education*, *22*(4), 991–1013. https://doi.org/10.1007/s11218-019-09501-w

Skaalvik, E. M., & Skaalvik, S. (2010). Teacher self-efficacy and teacher burnout: A study of relations. *Teaching and Teacher Education*, *26*(4), 1059–1069. https://doi.org/10.1016/j.tate.2009.11.001

Skaalvik, E. M. (2018). Mathematics anxiety and coping strategies among middle school students: Relations with students' achievement goal orientations and level of performance. *Social Psychology of Education*, *21*(3), 709–723. https://doi.org/10.1007/s11218-018-9433-2

Skinner, E. A., & Pitzer, J. R. (2012). Developmental dynamics of student engagement, coping, and everyday resilience. In Christenson S., Reschly A., Wylie C. (Eds), *Handbook of research on student engagement* (pp. 21–44). Springer. https://doi.org/10.1007/978-1-4614-2018-7_2

Skinner, E. A., Kindermann, T. A., & Furrer, C. J. (2009). A motivational perspective on engagement and disaffection: Conceptualization and assessment of children's behavioral

and emotional participation in academic activities in the classroom. *Educational and Psychological Measurement*, *69*(3), 493–525. https://doi.org/10.1177/0013164408323233

Sosa, T., & Gomez, K. (2012). Connecting teacher efficacy beliefs in promoting resilience to support of Latino students. *Urban Education*, *47*(5), 876–909. https://doi.org/10.1177/0042085912446033

Spilt, J. L., Koomen, H. M. Y., & Thijs, J. T. (2011). Teacher wellbeing: The importance of teacher–student relationships. *Educational Psychology Review*, *23*(4), 457–477. https://doi.org/10.1007/s10648-011-9170-y

Sylva, K., Ereky-Stevens, K., Pastori, G., Slot, P. L., & Lerkkanen, M.-K. (2016). *Integrative Report on a culture-sensitive quality & curriculum framework*. EU CARE project. https://dspace.library.uu.nl/handle/1874/342308

Thomas, K. J., Cunha, J. M. de, Souza, D. A. de, & Santo, J. (2019). Fairness, trust, and school climate as foundational to growth mindset: A study among Brazilian children and adolescents. *Educational Psychology*, *39*(4), 510–529. https://doi.org/10.1080/01443410.2018.1549726

Thomson, M. M., & Palermo, C. J. (2018). Using an expectancy-value model to understand teaching motivation among nontraditional preservice teachers: A phenomenological study approach. *Action in Teacher Education*, *40*(2), 151–168. https://doi.org/10.1080/01626620.2018.1424050

Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, *17*(7), 783–805. https://doi.org/10.1016/S0742-051X(01)00036-1

Veldman, I., Admiraal, W., Mainhard, T., Wubbels, T., & van Tartwijk, J. (2017). Measuring teachers' interpersonal self-efficacy: Relationship with realized interpersonal aspirations, classroom management efficacy and age. *Social Psychology of Education*, *20*(2), 411–426. https://doi.org/10.1007/s11218-017-9374-1

Veldman, I., Admiraal, W., van Tartwijk, J., Mainhard, T., & Wubbels, T. (2016). Veteran teachers' job satisfaction as a function of personal demands and resources in the relationships with their students. *Teachers and Teaching*, *22*(8), 913–926. https://doi.org/10.1080/13540602.2016.1200546

Wang, H., Hall, N. C., Goetz, T., & Frenzel, A. C. (2017). Teachers' goal orientations: Effects on classroom goal structures and emotions. *British Journal of Educational Psychology*, *87*(1), 90–107. https://doi.org/10.1111/bjep.12137

Wang, Y.-L., Tsai, C.-C., & Wei, S.-H. (2015). The sources of science teaching self-efficacy among elementary school teachers: A mediational model approach. *International Journal of Science Education*, *37*(14), 2264–2283. https://doi.org/10.1080/09500693.2015.1075077

Watt, H. M. G., Butler, R., & Richardson, P. W. (2021). Antecedents and consequences of teachers' goal profiles in Australia and Israel. *Learning and Instruction*, *76*, 101491. https://doi.org/10.1016/j.learninstruc.2021.101491

Watt, H. M. G., Richardson, P. W., & Smith, K. (2017). Why teach? How teachers' motivations matter around the world. In H. M. G. Watt, P. W. Richardson, & K. Smith (Eds.), *Global Perspectives on Teacher Motivation* (pp. 1–21). Cambridge University Press. https://doi.org/10.1017/9781316225202.001

Wu, J.-Y., Hughes, J. N., & Kwok, O.-M. (2010). Teacher–student relationship quality type in elementary grades: Effects on trajectories for achievement and engagement. *Journal of School Psychology*, *48*(5), 357–387. https://doi.org/10.1016/j.jsp.2010.06.004

Yeager, D. S., Trzesniewski, K. H., & Dweck, C. S. (2013). An implicit theories of personality intervention reduces adolescent aggression in response to victimization and exclusion. *Child Development*, *84*(3), 970–988. https://doi.org/10.1111/cdev.12003

Zee, M., & Koomen, H. M. Y. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational Research*, *86*(4), 981–1015. https://doi.org/10.3102/0034654315626801

Zee, M., & Koomen, H. M. Y. (2017). Similarities and dissimilarities between teachers' and students' relationship views in upper elementary school: The role of personal teacher and student attributes. *Journal of School Psychology*, *64*, 43–60. https://doi.org/10.1016/j.jsp.2017.04.007

Zee, M., de Jong, P. F., & Koomen, H. M. Y. (2016). Teachers' self-efficacy in relation to individual students with a variety of social–emotional behaviors: A multilevel investigation. *Journal of Educational Psychology*, *108*(7), 1013–1027. https://doi.org/10.1037/edu0000106

Table 4

Psychometric Properties and Correlations among Study Measures

Variable	*N*	*M*	*SD*	*α*	Item	Actual range	*r*					
							1	2	3	4	5	6
Social Goals												
1. General social goals	153	3.66	0.67	.73	4	1.5–5	—					
2. Mastery-approach goals	154	4.22	0.50	.65	4	2.8–5	.54***	—				
3. Mastery-avoidance goals	154	3.34	0.80	.70	3	1.3–5	.59***	.45***	—			
4. Ability goals	154	3.20	0.63	.64	4	1.5–5	.43***	.38***	.41***	—		
5. Self-efficacy	148	6.87	0.90	.85	12	4.2–9	.16*	.27**	.13	.11	—	
6. Relationship quality	146	3.76	0.48	.82	12	2.5–5	.46***	.39***	.35***	.21*	.52***	—
7. Classroom engagement	146	3.05	0.46	.90	10	1.4–4	.29***	.31***	.28**	.14	.61***	.56***

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

Table 5

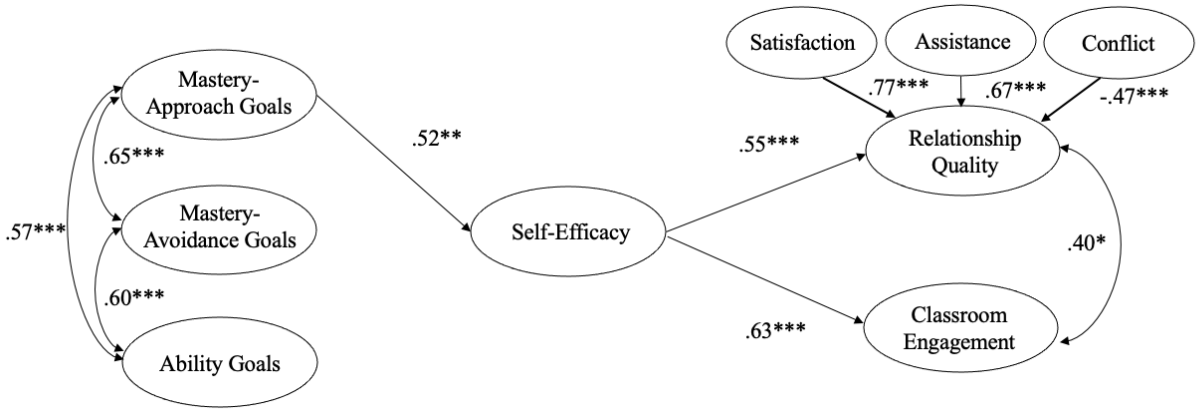
Standardized Direct, Indirect, and Total Effects for the Mediational Model

	Relationship quality		Classroom engagement	
	β	SE	β	SE
Social mastery-approach goals				
Total effect	0.55**	0.19	0.40*	0.17
Total indirect effect	0.29**	0.11	0.33**	0.12
via self-efficacy (95% CI)	(0.08/0.61)		(0.09/0.75)	
Direct effect	0.26	0.19	0.07	0.16
Social mastery-avoidance goals				
Total effect	0.16	0.21	0.14	0.18
Total indirect effect	-0.08	0.10	-0.09	0.12
via self-efficacy (95% CI)	(-0.39/0.15)		(-0.48/0.16)	
Direct effect	0.23	0.18	0.23	0.15
Social ability goals				
Total effect	-0.05	0.20	-0.14	0.16
Total indirect effect	-0.06	0.09	-0.07	0.10
via self-efficacy (95% CI)	(-0.29/0.15)		(-0.32/0.17)	
Direct effect	0.08	0.18	-0.07	0.13
R^2	.66		.51	

Note. *$p < .05$, **$p < .01$.

Figure 4

Mediational Structural Equation Model



Note. Results of structural equational modelling for teachers' social goal orientations, self-efficacy, teacher-student relationship quality, and classroom engagement with only significant paths in standardized coefficients presented (*$p < .05$, **$p < .01$, ***$p < .001$).

Appendix A

Social Mastery-Approach Goals

1. In general, I try to develop my social skills with students.
2. I enjoy student relationships that help me learn new things about myself.
3. I feel successful when I learn something new about how to connect with my students.
4. It is important to improve the quality of my relationships with my students.

Social Mastery-Avoidance Goals

1. I feel unsuccessful if I do not develop meaningful relationships with each of my students.
2. If I do not establish personal connections with all of my students I feel I have failed as a teacher.
3. It is important to maintain close relationships with each of my students.

Social Ability Goals

1. I want to be viewed by my students as a "cool" teacher.
2. It is important that I am well-liked by my students.
3. I feel unsuccessful if my students dislike me.
4. I try not to develop a bad reputation with my students.

Bridging Manuscript (Chapter 3-4)

The findings outlined in Chapter 3 provided empirical support for a newly developed self-report measure differentiating between subtypes of teachers' social goals based on the 2x2 framework in achievement goal theory, with CFA results showing a three-factor model of social mastery-approach, social mastery-avoidance, and social ability goals (combining ability-approach and avoidance due to multicollinearity) to fit the data well. However, although social mastery-approach goals corresponded with greater self-efficacy and better classroom outcomes as hypothesized, no other subtype corresponded with either the mediator or outcome suggesting that additional, more predictive social goal subtypes should be examined. It is possible that assessing teachers' differentiated social goals alongside more traditional measures of teachers' instructional goals (e.g., comparing mastery-oriented social goals vs. teaching goals) might help us to better understand the unique contributions of teachers' social goal subtypes. However, this study is more significantly limited with respect to the scope of outcomes assessed. Whereas this study did examine an additional student outcome in relation to teachers' social goals, namely quality of teacher-student relationships as well as perceived student engagement (as assessed in Chapter 2), the analysis presented did not examine how teachers' social goals correspond with critical outcomes in teachers themselves (e.g., psychological well-being).

To address these research gaps, Chapter 4 examined teachers' own psychological adjustment as critical outcomes of teachers' social goal subtypes, and evaluated a mediational model proposed by job demands-resources theory in which motivational resources and demands are hypothesized to influence well-being and occupational commitment via career engagement and burnout as mediators. Based on findings from Chapters 2 and 3, social mastery-approach goals were evaluated as a motivational resource expected to positively associated with teachers'

psychological adjustment. However, as the other subtypes assessed in Chapter 3 were not significantly predictive, an alternate goal subtype, namely social work-avoidance (not investing more effort in student relationships than necessary), was assessed to reflect a contrasting motivational approach in which student relationships were viewed simply as job demands. Overall, the model presented in Chapter 4 expanded on Chapter 3 by further exploring the benefits of teachers' mastery-approach goals on their psychological adjustment, in comparison to a notably different social goal subtype, based on an alternate mediational framework derived from occupational psychology research in which employee well-being is prominently featured.

Chapter 4

Exploring Teachers' Social Goal Orientations with the Job Demands-Resources Model

Abstract

Positive teacher-student relationships are recognized as critical social resources promoting dyadic well-being and adaptive instruction. This study applied the Job Demands-Resources Model to investigate how teachers' social goal orientations impacted their well-being, job satisfaction, and school commitment, with burnout and engagement as mediating variables. Results of structural equation modelling showed Canadian teachers (N = 154) with stronger social work-avoidance goals (putting minimum effort into teacher-student relationships) to be less engaged and experience greater burnout that, in turn, led to lower well-being and job satisfaction. In contrast, social mastery-approach goals (attempting to improve teacher-student relationships) predicted greater engagement and psychological adjustment.

Approximately 30-60% of teachers are estimated to leave their careers due to demotivation and burnout within the first five years of employment across the US, England, and Australia (Karsenti & Collin, 2013; Roness, 2011). Teacher attrition matters across job markets regardless of teacher shortages (e.g., US, Australia) or surplus (e.g., Hong Kong, Singapore) as substantial investments in teacher training and professional development are required to produce excellent teachers being lost when teachers leave the profession (Darling-Hammond, 2003; Organisation for Economic Co-operation and Development, 2005). Burnout has also been examined as a key contributing factor in teachers' decisions to leave their profession (Karsenti & Collin, 2013; Kyriacou, 2001), with various studies having explored the effects of accumulated stress on teacher burnout (Kokkinos, 2007; Manassero et al., 2006; McCormick & Shi, 1999). Research has further shown that interpersonal challenges with students (e.g., dealing with misbehaviour) to be consistently reported by both novice and senior teachers as contributing to greater burnout (e.g., Aloe et al., 2014; Fitchett et al., 2018; Van Droogenbroeck et al., 2014). More specifically, poor teacher-student relationships, and limited relationship management and collaboration skills, have been found to correspond with greater teacher burnout and poorer teacher well-being (Aldrup et al., 2018; Collie et al., 2012; Simões & Calheiros, 2019; Spilt et al., 2011) and ultimately teacher attrition (Craig, 2017; McCormick & Barnett, 2011).

Conversely, prior research shows significant positive relationships between quality teacher-student relationships and enhanced teacher performance and work adjustment. For example, findings indicate that teachers who develop more meaningful connections tend to observe not only better student outcomes (e.g., academic motivation and performance; Roorda et al., 2011) but also higher levels of motivation and well-being in themselves (e.g., self-efficacy, positive emotions; Collie et al., 2017; Spilt et al., 2011). To further understand how teachers

approach teacher-student relationships, social motivation researchers have proposed multiple relevant constructs including relatedness (Deci & Ryan, 2000), interpersonal self-efficacy (Veldman et al., 2017), and social/relational goal orientations (Butler, 2012). Whereas relatedness pertains to perceptions of closeness with students and self-efficacy reflects perceived interpersonal competencies, social goals instead involving teachers' willingness to actively initiate and develop relationships with students. Similar to the observed benefits of teacher relatedness (e.g., lower burnout; Collie et al., 2017) and relational self-efficacy (e.g., better classroom management; Veldman et al., 2017), teachers with stronger social goal have been found to use more mastery-oriented instruction and provide greater social support for students (Butler, 2012). However, existing research on teachers' social goal orientations has to date examined only a single, omnibus construct (e.g., perceived importance of developing meaningful student relationships; Wang et al., 2017) with teacher well-being outcomes having been typically overlooked.

Informed by the Job Demands-Resources (JD-R) model, scattered research has examined how teachers' work demands and resources impact their psychological well-being with respect to motivational and impairment pathways (e.g., Bakker et al., 2007; Hakanen et al., 2006). However, as studies based on the JD-R framework have to date examined only the influence of external demands and resources concerning job settings (e.g., workload, school climate), the effects of teachers' internal psychological resources (e.g., motivation, personality factors) on their well-being remains unexplored. Given existing research showing teachers' social motivation for engaging with students to impact classroom outcomes, it is possible that teachers' social goal orientations should help teachers buffer interpersonal classroom demands and serve as an internal resource for protecting teacher well-being. Following the JD-R model, the present

study thus aimed to examine teachers' social goals pertaining to developing meaningful relationships with students and explore how contrasting social goal orientations impact teachers' work engagement and burnout, and in turn, their well-being, job satisfaction, and school commitment.

Teachers' Social Goals: An Overview of Theory and Research

Building upon seminal work by Ames (1992) on individual differences in goal orientations toward mastery as opposed to skill demonstration, Elliot (1999) incorporated a second theoretical dimension of goals aimed at approaching success vs. avoiding failure resulting in a 2 x 2 achievement goal framework. This 2 x 2 framework has to date been widely applied to explain student learning and performance (e.g., for reviews, see Bardach et al., 2020; Huang, 2012) and has also been expanded on by Butler (2007) who further proposed work avoidance as a critical, maladaptive goal orientation reflecting teachers' potential desires to meet only the minimum work requirement. To date, teachers' goal orientations pertaining to their pedagogical practices have been explored in teacher motivation research and empirically linked to their use of specific instructional methods (mastery-/performance-oriented teaching, Butler, 2012; provision of support, Butler & Shibaz, 2014), work adjustment (help seeking, Butler, 2007; occupational stress, Nitsche et al., 2013; Retelsdorf et al., 2010), student learning (deep/surface learning, Retelsdorf & Günther, 2011), and student motivation (achievement goals, Dresel et al. 2013; interest, Butler & Shibaz, 2014).

Although teachers' instructional goal orientations are known to play a critical role in teacher effectiveness and adjustment, there is a lack of research that utilizes a multidimensional lens to examine teachers' social goals as to their underlying reasons for approaching teacher-student relationships. Safe and prosocial learning environments are critical for meeting the

interpersonal needs of both teachers and students (e.g., trust, belongingness; Van Maele & Van Houtte, 2015), and to facilitate meaningful social exchanges required for deep understanding and social learning (Deci & Ryan, 2014). However, the extent to which teachers' social goals can be conceptually differentiated similar to their instructional goal orientations (e.g., mastery approach vs. work avoidance), and the possible differentiated relationships between social goal subtypes and classroom outcomes, has received limited empirical attention.

Existing research on teachers' social goals has defined the construct as reflecting the extent to which teachers attempt to develop caring and close relationships with students, with this construct typically assessed using an approach-oriented, *unidimensional* measure (e.g., perceived importance of building quality relationships with students; Butler, 2012). Empirical findings indicate that teachers who report higher levels on such generalized measures of social goals are more likely to use instructional methods that satisfy students' basic psychological needs (e.g., providing relatedness, structure, and autonomy support; George & Richardson, 2019), promote content mastery as opposed to competition (e.g., addressing students' efforts and interests), and provide greater social-emotional support to struggling students (Butler, 2012). Findings also show teachers who report stronger unidimensional social goals to also report greater emotional well-being, namely more enjoyment while teaching (Wang et al., 2017).

Following from studies examining teachers' social goals as a unidimensional variable, a recent study assessed teachers' social goals from a *multidimensional* perspective based on the 2 x 2 achievement goals framework proposed by Elliot (1999). In this study, the researchers explored teachers' motivation to connect with students with respect to *social mastery-approach goals* (improving their ability to develop teacher-student relationships), *social mastery-avoidance goals* (avoiding declines in teacher-student relationships), and *social ability goals*

(maintaining a good reputation among students; Chang & Hall, under review). Results revealed that teachers who aimed to improve their interpersonal competencies with students report greater self-efficacy for teaching, better quality relationships with students, and a higher likelihood of observing students' in-class engagement. In contrast, social mastery-avoidance and ability goals did not predict any teacher self-efficacy or classroom outcomes. Thus, whereas preliminary findings suggest that a multidimensional perspective on teachers' social goals may be useful for better explaining classroom outcomes, research that further explores teachers' work avoidance as it pertains to developing relationships with students is currently lacking.

Social Mastery-Approach vs. Work-Avoidance Goals in Teachers

Research by Butler (2007) applying *achievement goal theory* to understand teachers' goals for instructional proficiency defines mastery-approach goals as an implicit orientation reflecting a growth mindset (see Dweck & Yeager, 2019); a focus on approaching teaching success by improving one's instructional competencies (see also Butler & Shibaz, 2008). Not surprisingly, teachers' instructional mastery-approach goals have consistently been found to correspond with various benefits for teachers with respect to both their teaching strategies (e.g., autonomous help-seeking, mastery-oriented teaching approaches; Butler, 2007; Retelsdorf et al., 2010; Retelsdorf & Günther, 2011) and personal well-being (e.g., lower absenteeism and burnout; Nitsche et al., 2013; Retelsdorf et al., 2010). Consistent with these results, Chang and Hall (under review) found that teachers who endorsed higher levels of mastery-approach goals specifically with respect to the developing meaningful relationships with students (*social mastery-approach goals*) reported not only greater teaching-related confidence (self-efficacy) but also reported better teacher-student relationships and greater student engagement in class.

However, relations between teachers' social mastery-approach goals and their personal well-being (e.g., burnout) has not yet been examined.

In contrast to this prototypic goal orientation subtype, Butler (2007) further expanded her model of goal orientations in teachers beyond the 2 x 2 framework to include an avoidance-related goal construct capturing teachers' desire to conduct their teaching responsibilities with minimal effort (i.e., instructional work avoidance; cf. academic-alienation, Nicholls et al., 1985; Nolen, 1988). This concept of work avoidance thus differs conceptually from other goal subtypes focused on failure avoidance (mastery- or ability-avoidance) in instead focusing on avoiding unnecessary work engagement (e.g., Butler, 2012). Although research on work avoidance in educational settings is limited, findings on work avoidance goals in students tend to reveal a negative pattern of outcomes (e.g., lower grades and engagement, more negative affect) due to this goal orientation corresponding with lower levels of motivation and expenditure of effort to learn (King & McInerney, 2014; Nicholls et al., 1985).

Among teachers, instructional work avoidance goals are associated with maladaptive teaching behaviours (e.g., encouraging student comparisons, seeking expedient help), poorer teacher well-being (e.g., greater burnout, lower teaching interest), and maladaptive student outcomes (e.g., motivation; see Butler, 2007, 2012; Dresel et al., 2013; Retelsdorf et al., 2010). Although this goal construct has yet to be adapted to teachers' motivation to engage with students, teachers' *social work-avoidance goals*, representing to what the extent teachers attempt to avoid making connections with students (e.g., viewing it as additional work), should additionally predict teacher adjustment and classroom outcomes. In summary, the assessment of teachers' mastery-approach and work-avoidance social goals pertaining to connecting with

students is expected to contribute to our understanding of how teachers' social motivation impacts not only student outcomes but also teacher development.

Teachers' Social Motivation and the Job Demands-Resources Model

The *job demands-resources* model (JD-R) provides a useful heuristic for understanding how job characteristics and psychological variables (e.g., motivation) influence employee burnout and work engagement (Demerouti et al., 2001) and, in turn, their work performance and well-being (e.g., Llorens et al., 2006). More specifically, the JD-R model proposes two competing psychological processes at play in occupational settings. Whereas job demands (requiring physical and psychological efforts) are proposed to contribute to greater burnout and maladjustment due to health impairment, job resources (occupational rewards/security, adaptive psychological processes) are assumed to buffer the impact of job demands by reducing burnout and improving persistence due to greater personal motivation and occupational support (Demerouti et al., 2001; Hobfoll, 2002).

Despite job demands and resources having been initially conceptualized as objective organizational variables (e.g., work hours, autonomy, career training), emerging research highlights the importance of considering employees' psychological resources at an individual level (e.g., Bakker et al., 2008; Judge et al., 2000; Xanthopoulou et al., 2007, 2009). Following from the *conservation of resources theory* (Hobfoll, 1989, 2002), the JD-R model proposes that employees strive to maintain or gain psychological resources to retain their personal satisfaction and growth (i.e., perceived autonomy, self-efficacy) despite the negative effects of demanding work environments (Xanthopoulou et al., 2007; for a meta-analytic review, see Crawford et al., 2010). The benefits of individuals' psychological resources for better adapting to challenging work contexts should then translate into better occupational well-being, as suggested by studies

based on the JD-R framework showing greater personal motivation in employees to contribute to lower burnout (e.g., self-efficacy; Xanthopoulou et al., 2007) and greater psychological resilience to correspond with stronger work engagement (e.g., Salmela-Aro & Upadyaya, 2018).

Research with teachers based on the JD-R model shows long-term job demands (e.g., work overload, student misbehaviour) to contribute to greater burnout (Hakanen et al., 2006) and lower work engagement (Bakker et al., 2007). In contrast, greater job resources (e.g., autonomy, supervisor support, positive climate) have been found to promote higher levels of work-related engagement and well-being in teachers (e.g., work commitment, Bakker et al., 2007; job satisfaction, Veldman et al., 2016). In occupational settings, psychological needs satisfaction (e.g., autonomy, feedback promoting competency) and self-efficacy have been consistently found to serve as adaptive psychological resources that bolster work engagement in employees (for a review, see Schaufeli & Taris, 2014). Similarly, longitudinal research with teachers shows work engagement levels to be predicted by self-efficacy up to eight months later (Simbula et al., 2011). However, despite the critical role of interpersonal relationships in teachers' everyday classroom activities, the research literature on this topic is scattered in that it adopts various motivational perspectives and is limited by not exploring psychological outcomes beyond burnout or engagement.

Concerning the role of social motivational variables as teachers' personal resources, existing findings show teachers who find connecting with students to be personally motivating to also report greater work engagement (Runhaar et al., 2013), with Veldman et al. (2016) showing teachers who report greater self-efficacy for developing positive relationships with students to feel more satisfied with their jobs. Results from Frisby et al (2016) similarly demonstrated that post-secondary teachers who perceived greater rapport with students also reported greater self-

efficacy for engaging students, performing varied teaching techniques, and managing disruptive classroom behaviour, as well as more positive emotions toward their jobs, students, and institutions. Related research on teachers' psychological resources in response to job demands has similarly found teachers' efficacy beliefs pertaining to classroom management and teacher caring for students to protect against teacher burnout (see Aloe et al., 2014; Teven, 2007, in tertiary education). Thus, although maintaining positive relationships with students reflects a typical teaching demand that requires continual management and effort (Veldman et al., 2016; e.g., emotional labor, Wang et al., 2019), teachers' motivational beliefs concerning their relationships with students may serve as a psychological resource, with the potential benefits of teachers' social goal orientations having not yet been explored from a JD-R perspective.

The Present Study

Given the job requirement for teachers to establish rapport with students and the corresponding role of teachers' social motivation to connect with students, the current study aimed to explore how teachers' social goal orientations correspond with their psychological adjustment as informed by the JD-R model (e.g., Hakanen et al., 2006). Moreover, as it is possible that more adaptive social goals could serve as stronger job resources (e.g., social mastery-approach goals) than other typically maladaptive goal orientations (e.g., social work-avoidance goals, that may act more similarly to job demands), the present research also explored the potentially differential effects of contrasting subtypes of teachers' social goal orientations on well-being and occupational outcomes.

As per the prototypic *motivational process* outlined in the JD-R model, teachers' goals to develop the abilities to form meaningful relationships with students (social mastery-approach) were hypothesized to be positively associated with work engagement (Hypothesis 1a) and

negatively associated with burnout (Hypothesis 1b). In contrast, social work-avoidance was hypothesized to be negatively associated with work engagement (Hypothesis 2a) and positively associated with burnout (Hypothesis 2b) based on previous findings showing this goal orientation to predict negative outcomes for teachers (e.g., Butler, 2007, 2012). Although teachers may report avoiding unnecessary relationship-building with students as a way of preserving their psychological resources, this social goal orientation is instead expected to follow the *health impairment process* proposed for job demands in the JD-R model due to teachers viewing developing student relationships as an excessive job requirement.

According to the mediational structure of the JD-R model, job demands and resources are expected to correspond with greater work engagement and burnout that, in turn, should be associated with additional psychological adjustment outcomes. Teachers' work engagement was thus hypothesized to positively correspond with general well-being, job satisfaction, and organizational commitment (Hypothesis 3a), and to mediate the effects of teachers' social goals on these adjustment variables (Hypothesis 3b). By contrast, teacher burnout was expected to negatively correspond to all adjustment outcomes (Hypothesis 4a) and to also mediate the relationships between teachers' social goals and the psychological adjustment variables (Hypothesis 4b).

Method

Participants and Procedure

K-12 Canadian teachers (N = 154) from Quebec (89.6%) and other provinces (e.g., Nova Scotia: 5.2%) were recruited by email distributed through local teacher unions and associations to complete the web-based study survey. The age of participants ranged from 23 to 68 years (M = 41.80. SD = 10.17) with an average of 15.03 years of teaching experience (SD = 8.95). Teacher

participants were primarily female (81.8%, n = 126) and taught at primary schools (52.2%, n = 81) or secondary schools (42.6%, n = 65). The online survey consisted of demographic variables and self-reported measures assessing teachers' social goal orientations, burnout, work engagement, well-being, job satisfaction, and school commitment. Participants were compensated by being entered into a random draw for one of three $50 cash prizes. Participants were informed prior to the survey concerning the study aims, confidentiality of responses, and their right to withdraw from the study at any time.

Measures

Social Goal Orientations

Teachers' social goals were assessed using two four-item, five-point Likert scales developed for this study assessing contrasting approach versus avoidance orientations pertaining to developing meaningful teacher-student relationships (1 = *do not agree at all*; 5 = *agree completely*; see Appendix B for item descriptions). *Social mastery-approach goals* were assessed using items measuring the importance teachers placed on enhancing their interpersonal abilities to connect with students (M = 4.22, SD = 0.50, α = .65). In contrast, the *social work-avoidance goals* measure reflected teachers' attempts to invest no more effort than necessary in connecting with students[10] (M = 2.11, SD = 0.69, α = .71). Although moderate internal reliability was observed for both social goal orientation measures, these reliability levels are consistent with

[10] Two items that assessed simply avoiding a task had lower factor loadings (λ = .53-.54) than the two remaining items that indicated more specific reasons for avoiding teaching tasks (λ = .68-.75). More specifically, the latter two items specifying reasons for work avoidance included "Trying to develop personal relationships with students often requires too much effort" and "Focusing too much on relationships with students takes time away from other tasks."

those observed for the teaching-specific goal orientation measures in previous research (e.g., .66-.70, Butler & Shibaz, 2008; Butler, 2012).

Work Engagement

Work engagement refers to the extent to which individuals voluntarily utilize personal resources to fulfill the tasks demanded one's occupation (Christian et al., 2011). Teachers' work engagement were assessed using a 16-item, seven-point measure (0 = *never;* 6 = *always*) developed by Klassen et al. (2013) that measured teachers' engagement concerning their cognitions (e.g., "I try my hardest to perform well while teaching"), emotions (e.g., "I am excited about teaching"), student interactions (e.g., "In class, I show warmth to my students"), and interactions with colleagues (e.g., "At school, I connect well with my colleagues"). The composite measure demonstrated high internal reliability (α = .92, M = 4.92, SD = 0.62) equivalent to previous assessments of this scale (α = .91; Klassen et al., 2013).

Occupational Burnout

As proposed by Maslach et al. (1986), burnout represents the consequence of accumulated occupational stress, most notably with respect to emotional exhaustion referring to feelings of fatigue derived from depletion of one's emotional energies. This component of teacher burnout was assessed using the modified, nine-item, seven-point emotional exhaustion subscale from the Maslach Burnout Inventory (MBI; Maslach et al.) that replaced the phrase "recipients" with "students" (*0 = never; 6 = every day*; e.g., "I feel used up at the end of the workday"). The present measure demonstrated strong internal reliability (α = .95, M = 2.55, SD = 1.43) consistent with previous studies on teacher burnout (e.g., α = .89 in Van Droogenbroeck et al., 2014).

Psychological Adjustment

Teachers' *general well-being* was assessed using an eight-item scale assessing teachers' positivity and life satisfaction developed by Diener et al. (2010; e.g., "I lead a purposeful and meaningful life") that showed high internal reliability (α = .90, *M* = 6.12, *SD* = 0.68) comparable to prior research (α = .87, Diener et al., 2010). A five-item measure of *job satisfaction* from Moè et al. (2010) was also administered to examine teachers' personal assessments of job quality (e.g., "The conditions of my job are excellent"), with this scale showing good reliability (α = .88, *M* = 4.64, *SD* = 1.35) consistent with existing research (α = .83, Moè, 2016). Lastly, a five-item measure of *occupational/school commitment* assessing teachers' emotional attachment to their school (Collie et al., 2016; e.g., "My school has a great deal of personal meaning for me") showed stronger reliability (α = .90, *M* = 5.25, *SD* = 1.35) than observed in prior research (α = .75, Collie & Martin, 2017). All well-being scales were rated on a seven-point Likert scale (1 = *strongly disagree;* 7 = *strongly agree*).

Results

Preliminary Analyses

Table 6 displays descriptive statistics and zero-order correlations for the study variables. As expected, teachers' social mastery-approach and work-avoidance goals were negatively interrelated with the two goals measures significantly correlated in the expected directions with work engagement and general well-being. Social work-avoidance goals were additionally positively associated with burnout and negatively associated with job satisfaction and school commitment.

Initial difference tests were additionally conducted on teachers' social goal orientations to identify potential covariates for our main SEM analyses, including teachers' gender, years of

teaching experience, grade level of instruction, and pandemic-related closures (data collected before/after Quebec school closures on March 13, 2020). Results showed teachers' social work-avoidance goals to vary as a function of gender, with male teachers (M = 2.37, SD = .67) reporting stronger avoidance goals than female teachers (M = 2.05, SD = .69), $t(150) = 2.19$, p = .030). Higher levels of avoidance goals were also reported by secondary school teachers (M = 2.27, SD = .65) compared to their primary school counterparts (M = 2.03, SD = .70), $t(143) = -2.10$, p = .038. Teachers' social mastery-approach goals did not differ according to teacher gender or grade level of instruction, with neither social goal orientation affected by years of experience or pandemic-related school closures.

Mediational SEM Analysis

Structural equation modelling (SEM) was conducted to evaluate teachers' social goal orientations as informed by the JD-R model, with social mastery-approach and work-avoidance goals (proxies for job resources vs. demands, respectively) predicting burnout and work engagement as mediators that, in turn, predict overall well-being, job satisfaction, and school commitment as psychological adjustment outcomes. The SEM analyses modelled both direct effects of social goals on adjustment outcomes and indirect mediated effects via burnout and engagement simultaneously, with latent covariances between the social goal measures, between the mediators, and among the adjustment variables also included. The covariates of gender and grade level of instruction were not incorporated in the final model as the parameter values, explained variances, and fit indices remained nearly identical to a more parsimonious model with covariates excluded (e.g., explained variances varying from 0%-1.3%).

To further maximize model parsimony (see Bandalos, 2002), two parcels were created for the manifest indicators of each latent variable (based on item order), with the exception of the

latent goal measures that were each assessed using the original four items as indicators. Bootstrapping with 5,000 iterations of resampling (Preacher & Hayes, 2008) and the ML estimator was utilized to produce unbiased 95% confidence intervals (CIs) to better account for univariate normality in the M*plus* 7.0 software (Muthén, L. K. & Muthén, B. O., 2012). Significant direct and indirect effects were determined based on confidence intervals that did not include zeros, with the following standards applied for assessing model fit (Byrne, 2010; Hu & Bentler, 1999): comparative fit index (CFI > .90), Tucker–Lewis index (TLI > .90), root mean square error of approximation (RMSEA < .08), and standardized root mean square residual (SRMR < .08).

As shown in Figure 5, the SEM mediational model evaluating teachers' social goals based on the JD-R model demonstrated good fit: $\chi^2[114] = 159.51$, $p = .003$, RMSEA = .051 [.030, .069], SRMR = .049, CFI = .960, TLI = .947. Social mastery-approach goals predicted greater work engagement ($\beta = .32$, $p = .017$) that, in turn, predicted higher levels of well-being ($\beta = .54$, $p < .001$), job satisfaction ($\beta = .49$, $p < .001$), and school commitment ($\beta = .36$, $p = .010$). In contrast, social work-avoidance goals predicted lower work engagement ($\beta = -.27$, $p = .041$) that, in turn, predicted lower psychological adjustment. Social work-avoidance goals also predicted greater burnout ($\beta = .44$, $p = .005$) that subsequently predicted lower well-being ($\beta = -.25$, $p = .048$) and job satisfaction ($\beta = -.33$, $p = .004$). The extent of observed variance explained in well-being, job satisfaction, and school commitment were moderate to large in magnitude (35%, 32%, and 14% respectively; Cohen, 1988).

Confidence intervals were used to detect significant indirect paths due to limited sample size. Bootstrap analysis showed work engagement to significantly mediate the relationship between social mastery-approach goals and well-being ($\beta = .17$, $SE = .09$, $p = .071$, 95% CI =

[0.02, 0.39]), job satisfaction (β = .16, *SE* = .09, *p* = .073, 95% CI = [0.02, 0.36]), and work commitment (β = .11, *SE* = .08, *p* = .151, 95% CI = [0.01, 0.30]). Work engagement also mediated the relationship between social work-avoidance goals and well-being (β = -.15, SE = .09, *p* = .112, 95% CI = [-0.364, -0.004]) as well as job satisfaction (β = -.13, *SE* = .07, *p* = .058, 95% CI = [-0.284, -0.004]). Finally, burnout mediated the relationship between social work-avoidance goals and job satisfaction (β = -.14, *SE* = .07, *p* = .045, 95% CI = [-0.30, -0.03]).

Two nested SEM models were also assessed to further validate the utility of the hypothesized JD-R model, with the first model removing direct paths from social goals to psychological adjustment (χ^2[120] = 166.07, *p* = .003, RMSEA = .050 [.030, .067], CFI = .960), and the second removing direct paths and additionally exchanging the positions of mediators (burnout, engagement) and adjustment outcomes (χ^2[118] = 177.12, *p* < .001, RMSEA = .057 [.039, .074], CFI = .948). Chi-square difference tests revealed that the first mediation-only model was equivalent to the main model that included direct paths ($\Delta\chi^2$[Δdf] = 6.56[6], *p* = .363), whereas the second model swapping mediator/outcome ordering provided a poorer fit to the data ($\Delta\chi^2$[Δdf] = 17.61[4], *p* = .001). These results are thus consistent with our main fully recursive model in showing a fully mediated model with effects of social goals on psychological adjustment mediated entirely through work engagement and burnout to fit the data equally well.

Discussion

The present study examined teachers' social goal orientations as critical job resources or demands that were expected to correspond with psychological adjustment outcomes by way of motivational and health impairment processes as proposed in *the job demands-resources* (JD-R) model. Whereas the motivational model assumed positive relationships between social mastery-approach goals and well-being, job satisfaction, as well as school commitment via greater work

engagement and lower burnout, the health impairment process was expected to show negative relationships with social work-avoidance goals and occupational outcomes via these mediating variables. Study findings were largely consistently with these hypothesized indirect pathways, with results corresponding to each mediational process proposed by the JD-R model outlined below.

Teachers' Social Mastery-Approach Goals and the Motivational Process

In line with extant literature based on the JD-R models, teachers' social approach goals were expected to serve as a personal psychological resource corresponding with greater work engagement (Hypothesis 1a) and, in turn, psychological adjustment (Hypotheses 3a, 3b). Consistent with these hypotheses, teachers who aimed to improve their relationships with students indeed tended to report higher levels of engagement (e.g., effort, positive emotions, warm and collegial interactions) and, in turn, greater well-being, job satisfaction, and school commitment. These findings are aligned with previous studies demonstrating the psychological benefits of teachers' motivation to connect with students (e.g., interpersonal aspirations: Runhaar et al., 2013; Veldman et al., 2016; rapport with students: Frisby et al., 2016; Simões & Calheiros, 2019). Moreover, our findings are consistent with growth mindset research in showing that teachers who believed they could *improve* their ability to foster teacher-student connections were more motivated at work and experienced psychological benefits as a result (see Dweck & Yeager, 2019). Our findings also expand upon previous findings based on a unidimensional conceptualization of teachers' social goals (Butler, 2012) in showing how a more specific measure further reflecting teachers' desire to improve their social skills with students can impact not only student outcomes and instruction, but also teacher well-being and persistence.

Contrary to our expectations, teachers' social approach goals did not correspond with lower burnout (Hypotheses 1b, 4b), although higher levels of teacher burnout were significantly associated with lower general well-being and job satisfaction (largely supporting Hypothesis 4a). As proposed in the JD-R model (i.e., *conversation of resources theory*), the need for personal resources increases when the job demands are high (Hobfoll, 2002). Accordingly, this inconsistent result might be explained by having not examined potential moderating variables such as the extent of student misbehaviours or occupational support. More specifically, greater psychological benefits of teachers' social goals should be observed then among teachers who are at greater risk of burnout due to high levels of student misbehaviour (see Aldrup et.al., 2018), or teachers who are lacking administrative support (see Bakker et al., 2007). Prior studies addressing specific workload and emotional demands consistently show high job demands combined with low job resources (e.g., autonomy, social support) to contributed to the highest burnout levels among employees (e.g., Bakker et al., 2005), with the buffering effect of personal resources (e.g., self-efficacy, optimism) expected to be most evident in such circumstances (Xanthopoulou et al., 2007).

Teachers' Social Work-Avoidance Goals and the Health Impairment Process

As expected, socially avoidant teachers reported less engagement in their jobs and felt more emotionally drained if they focused instead on just investing the minimum effort required for interacting with students and perceived developing meaningful interactions more as an unwanted job demand (Hypothesis 2a, 2b). Expected indirect relationships between social work-avoidance goals and lower levels of well-being and job satisfaction via lower work engagement levels were also observed (Hypothesis 3a). These findings are consistent with previous research showing teachers' work avoidance goals to have detrimental effects on instructional practices

and teacher well-being (e.g., performance-oriented teaching, lower interest, greater burnout; see Retelsdorf & Günther, 2011; Retelsdorf et al., 2010). The mediational pathway via engagement is also aligned with findings showing lower levels of teacher engagement to correspond with lower organizational commitment (see Hakanen et al., 2006) and potentially lower job performance (see Bakker et al., 2008). However, as our mediational analyses showed work engagement to mediate the relationships between social work-avoidance goals and well-being as well as well job satisfaction, but not school commitment, Hypothesis 3b was only partially supported. Accordingly, this result suggests that other factors that are more closely related to school commitment in teachers may serve as better mediators of the negative effects of social work-avoidance on this important outcome (e.g., principals' autonomy support, relatedness with colleagues; see Collie et al., 2016).

Concerning the expected mediated relationship between social work-avoidance goals and work adjustment via burnout, Hypothesis 4b was partially supported. Whereas greater burnout corresponded directly with lower overall well-being and job satisfaction (partially supporting Hypothesis 4a), burnout was found to significantly mediate only the effects of social work-avoidance goals on job satisfaction. This overall lack of significant mediated effects for teacher burnout may be due to emotional exhaustion in teachers being linked not only to difficult student interactions (Bakker et al., 2007, Fitchett et al., 2018), but also challenging interactions with other school personnel (e.g., value misalignment with school administrators; Wang & Hall, 2019) or structural issues often faced by educators (e.g., job insecurity; Hughes, 2001; Richter et al., 2015).

With respect to the notable lack of relations between teacher burnout and school commitment, research on teachers has often shown weak relations between teacher adjustment

(e.g., well-being, instructor-student rapport) and organizational commitment (see Frisby et al, 2016; Hakanen et al., 2006). It has been proposed that this lack of relationship may be due to teachers who remain committed to their belief that their schools should be supporting their psychological and instructional needs (see Collie et al., 2016). Alternatively, it is also possible that whereas burnout may lead to lower commitment in some teachers, this same commitment may in fact *contribute* to burnout in other teachers (i.e., prolonging exposure to instructional challenges) thus potentially counteracting the otherwise negative impact of burnout on commitment. However, as this assertion of contradictory effects is speculative in nature and the present study was cross-sectional by design, further longitudinal research is needed to disentangle how competing causal relationships could be nullifying burnout-commitment relations in teachers.

Limitations and Practical Implications

Despite observed support for the study hypotheses concerning teachers' social goals and well-being outcomes, specific limitations should be considered with respect to the internal validity and generalizability of the present findings. For example, it is possible that lower internal consistency for the social goal measures, specifically social mastery-approach goals, may have contributed to fewer significant relations for this variable. As lower internal reliability levels have also been found in previous research on teachers' goal orientations (e.g., Butler & Shibaz, 2008), future studies aimed at improving these measures might benefit from focusing on teachers' goal orientations specific to individual students (see Zee et al., 2016). For example, whereas an instructor may adopt a social mastery-approach orientation with more withdrawn students, they may instead adopt a social work-avoidance approach with a student exhibiting more disruptive classroom behaviour.

Following from our preliminary findings showing differences in social goal orientations as a function of teachers' genders and grade level of instruction, future studies are also encouraged to further examine how such demographic and contextual may impact relations between teachers' social goals and occupational outcomes. For example, a larger sample size with more male and nonbinary instructors is needed to replicate the present findings based on predominantly female instructors, as are studies that address how students' age, development, and grade of instruction (e.g., primary vs. secondary education) moderate social goal effects. Greater recruitment of teachers of colour would also help to better understand the social motivation of marginalized instructors, as would research into how specific structural parameters influence teachers' social goals by way of school cultures (e.g., public/private schools, social-economic ranking of school districts). In addition, as the cross-sectional design of this study did not permit us to explore the causal nature of relationships of the study variables (e.g., how burnout might impact social goals or work commitment over time), further longitudinal investigations on teachers' interpersonal demands and resources are needed to validate the direction of relationship as proposed in the JD-R model. Lastly, as the present data was based entirely on self-report measures, it is possible that response bias and common method variances may have impacted our findings. Despite the validity and reliability of measure utilized in the current study, future research is encouraged to incorporate more objective indicators to better measure teachers' interpersonal behaviours as they pertain to establishing rapport and developing meaningful connections with students (e.g., eye contact, humor, after-class discussions, etc.).

These limitations notwithstanding, our findings have multiple practical implications given the expected benefits of encouraging teachers to replace social work-avoidance goals (seeing relationship-building as a demand) with more mastery-oriented social goals (emphasizing

potential improvements and teacher-student relationship skills). Given research showing that managing difficult relationships with students is among the most stressful tasks for teachers (Fitchett et al., 2018; McCormick & Barnett, 2011), it is not surprising that some teachers may wish to protect their psychological resources by withdrawing from interpersonal activities that could be interpreted as additional demands. Therefore, teachers' interpersonal beliefs play a critical role in how they view interpersonal demands and the extent to which they believe they can improve their abilities to manage difficult student interactions.

More specifically, studies suggest that adaptive attributional appraisals (Claessens et al., 2016) and growth mindsets (Matteucci et al., 2017) pertaining to how teachers view their relationships with students can represent effective personal resources for promoting personal adjustment (e.g., positive teacher-student relationships, job satisfaction) and student outcomes (e.g., academic achievement; see Shindler et al., 2016). Students will inevitably exhibit undesirable behaviours in class. However, if teachers attribute such behaviors to factors that are internal to I and personally controllable (vs. blaming the students' characteristics), these types of attributions can benefit their instruction and psychological adjustment (Gibbs & Miller, 2014; Matteucci et al., 2017; Wang & Hall, 2018). Accordingly, informing teachers of how growth-oriented social goals that emphasize personal improvement can potentially bolster their well-being could help to improve the efficacy of teacher training initiatives, by better equipping teachers for the often overlooked social-emotional challenges of developing meaningful connections with their students (see Brooks & Goldstein, 2008). For example, in the growth mindset training developed by Seaton (2018), personal reflection and structured debriefing exercises were used to help teachers become more aware of the importance of improving their personal resources and how to integrate these beliefs into their practices (e.g., explicating how

teachers' growth-oriented expectations and feedback can impact student progress). Educational and professional initiatives for teachers that address the benefits of adopting an adaptive motivational perspective on the effort required to develop positive student-teacher relationships are thus expected to improve teacher well-being, instructional outcomes, and student development.

Conclusion

Taken together, the present results contribute to the educational literature by showing teachers' social mastery-approach and work-avoidance goals to serve as potential antecedents of teacher adjustment via the mediators of teacher engagement and burnout. Accordingly, this study extends previous findings based on *the job demands-resources* theory in which the role of teachers' psychological resources is lacking, and also research literature on teacher motivation by exploring a multifaceted conceptualization of social goals of developing meaningful connections with students. In contrast to the significant relations observed between teachers' social mastery-approach goals and psychological adjustment via work engagement, social work-avoidance goals were found to be additionally related to poorer teachers' adjustment through lower levels of work engagement and greater burnout. Whereas prior studies have focused on the positive effects of a unidimensional conceptualization of teachers' social goals (i.e., the perceived importance of building relationships with students; Butler, 2012; Runhaar et al., 2013), these results highlight the importance of differentiating the reasons underlying teachers' social motivation given clearly differential implications of teachers' social goals focused on mastery as opposed to work avoidance for their psychological adjustment.

References

Aldrup, K., Klusmann, U., Lüdtke, O., Göllner, R., & Trautwein, U. (2018). Student misbehavior and teacher well-being: Testing the mediating role of the teacher-student relationship. *Learning and Instruction*, *58*, 126–136. https://doi.org/10.1016/j.learninstruc.2018.05.006

Aloe, A. M., Amo, L. C., & Shanahan, M. E. (2014). Classroom management self-efficacy and burnout: A multivariate meta-analysis. *Educational Psychology Review*, *26*(1), 101–126. https://doi.org/10.1007/s10648-013-9244-0

Bakker, A. B., Demerouti, E., & Euwema, M. C. (2005). Job resources buffer the impact of job demands on burnout. *Journal of Occupational Health Psychology*, *10*(2), 170–180. https://doi.org/10.1037/1076-8998.10.2.170

Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement, particularly when job demands are high. *Journal of Educational Psychology*, *99*(2), 274–284. https://doi.org/10.1037/0022-0663.99.2.274

Bakker, A. B., Schaufeli, W. B., Leiter, M. P., & Taris, T. W. (2008). Work engagement: An emerging concept in occupational health psychology. *Work & Stress*, *22*(3), 187–200. https://doi.org/10.1080/02678370802393649

Bandalos, D. L. (2002). The effects of item parceling on goodness-of-fit and parameter estimate bias in structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, *9*(1), 78–102. https://doi.org/10.1207/S15328007SEM0901_5

Bardach, L., Oczlon, S., Pietschnig, J., & Lüftenegger, M. (2020). Has achievement goal theory been right? A meta-analysis of the relation between goal structures and personal achievement goals. *Journal of Educational Psychology*, *112*(6), 1197–1220. https://doi.org/10.1037/edu0000419

Brooks, R., & Goldstein, S. (2008). The mindset of teachers capable of fostering resilience in students. *Canadian Journal of School Psychology*, *23*(1), 114–126. https://doi.org/10.1177/0829573508316597

Butler, R. (2007). Teachers' achievement goal orientations and associations with teachers' help seeking: Examination of a novel approach to teacher motivation. *Journal of Educational Psychology*, *99*(2), 241–252. https://doi.org/10.1037/0022-0663.99.2.241

Butler, R. (2012). Striving to connect: Extending an achievement goal approach to teacher motivation to include relational goals for teaching. *Journal of Educational Psychology*, *104*(3), 726–742. https://doi.org/10.1037/a0028613

Butler, R., & Shibaz, L. (2008). Achievement goals for teaching as predictors of students' perceptions of instructional practices and students' help seeking and cheating. *Learning and Instruction*, *18*(5), 453–467. https://doi.org/10.1016/j.learninstruc.2008.06.004

Butler, R., & Shibaz, L. (2014). Striving to connect and striving to learn: Influences of relational and mastery goals for teaching on teacher behaviors and student interest and help seeking. *International Journal of Educational Research*, *65*, 41–53. https://doi.org/10.1016/j.ijer.2013.09.006

Byrne, B. M. (2010). *Structural equation modeling with AMOS*. New York, NY: Routledge.

Claessens, L., van Tartwijk, J., Pennings, H., van der Want, A., Verloop, N., den Brok, P., & Wubbels, T. (2016). Beginning and experienced secondary school teachers' self- and student schema in positive and problematic teacher–student relationships. *Teaching and Teacher Education*, *55*, 88–99. https://doi.org/10.1016/j.tate.2015.12.006

Christian, M. S., Garza, A. S., & Slaughter, J. E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel*

Psychology, *64*(1), 89–136. https://doi.org/10.1111/j.1744-6570.2010.01203.x

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed). Lawrence Erlbaum Associates.

Collie, R. J., & Martin, A. J. (2017). Teachers' sense of adaptability: Examining links with perceived autonomy support, teachers' psychological functioning, and students' numeracy achievement. *Learning and Individual Differences*, *55*, 29–39. https://doi.org/10.1016/j.lindif.2017.03.003

Collie, R. J., Perry, N. E., & Martin, A. J. (2017). School context and educational system factors impacting educator stress. In T. M. McIntyre, S. E. McIntyre, & D. J. Francis (Eds.), *Educator Stress: An Occupational Health Perspective* (pp. 3–22). Springer International Publishing. https://doi.org/10.1007/978-3-319-53053-6_1

Collie, R. J., Shapka, J. D., & Perry, N. E. (2012). School climate and social-emotional learning: Predicting teacher stress, job satisfaction, and teaching efficacy. *Journal of Educational Psychology*, *104*(4), 1189–1204. https://doi.org/10.1037/a0029356

Collie, R. J., Shapka, J. D., Perry, N. E., & Martin, A. J. (2016). Teachers' psychological functioning in the workplace: Exploring the roles of contextual beliefs, need satisfaction, and personal characteristics. *Journal of Educational Psychology*, *108*(6), 788–799. https://doi.org/10.1037/edu0000088

Craig, C. J. (2017). International teacher attrition: Multiperspective views. *Teachers and Teaching*, *23*(8), 859–862. https://doi.org/10.1080/13540602.2017.1360860

Crawford, E. R., LePine, J. A., & Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: A theoretical extension and meta-analytic test. *Journal of Applied Psychology*, *95*(5), 834–848. https://doi.org/10.1037/a0019364

Darling-Hammond, L. (2003). Keeping good teachers: Why it matters, what leaders can do. *Educational Leadership*, *60*(8), 6–13.

Deci, E. L., & Ryan, R. M. (2000). The" what" and" why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Deci, E. L., & Ryan, R. M. (2014). Autonomy and need satisfaction in close relationships: Relationships motivation theory. In N. Weinstein (Ed.), *Human Motivation and Interpersonal Relationships: Theory, Research, and Applications* (pp. 53–73). Springer Netherlands. https://doi.org/10.1007/978-94-017-8542-6_3

Demerouti, E., Nachreiner, F., Bakker, A. B., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, *86*(3), 499–512. https://doi.org/10.1037/0021-9010.86.3.499

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research*, *97*(2), 143–156. https://doi.org/10.1007/s11205-009-9493-y

Dresel, M., Fasching, M. S., Steuer, G., Nitsche, S., & Dickhäuser, O. (2013). Relations between teachers' goal orientations, their instructional practices and student motivation. *Psychology*, *4*(7), 572–584. https://doi.org/10.4236/psych.2013.47083

Dweck, C. S., & Yeager, D. S. (2019). Mindsets: A view from two eras. *Perspectives on Psychological Science*, *14*(3), 481–496. https://doi.org/10.1177/1745691618804166

Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational Psychologist*, *34*(3), 169–189. https://doi.org/10.1207/s15326985ep3403_3

Fitchett, P. G., McCarthy, C. J., Lambert, R. G., & Boyle, L. (2018). An examination of US first-year teachers' risk for occupational stress: Associations with professional preparation and occupational health. *Teachers and Teaching*, *24*(2), 99–118. https://doi.org/10.1080/13540602.2017.1386648

Frisby, B. N., Beck, A.-C., Bachman, A. S., Byars, C., Lamberth, C., & Thompson, J. (2016). The influence of instructor-student rapport on instructors' professional and organizational outcomes. *Communication Research Reports*, *33*(2), 103–110. https://doi.org/10.1080/08824096.2016.1154834

George, S. V., & Richardson, P. W. (2019). Teachers' goal orientations as predictors of their self-reported classroom behaviours: An achievement goal theoretical perspective. *International Journal of Educational Research*, *98*, 345–355. https://doi.org/10.1016/j.ijer.2019.09.011

Gibbs, S., & Miller, A. (2014). Teachers' resilience and well-being: A role for educational psychology. *Teachers and Teaching*, *20*(5), 609–621. https://doi.org/10.1080/13540602.2013.844408

Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology*, *43*(6), 495–513. https://doi.org/10.1016/j.jsp.2005.11.001

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, *44*(3), 513–524. https://doi.org/10.1037/0003-066X.44.3.513

Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology*, *6*(4), 307–324. https://doi.org/10.1037/1089-2680.6.4.307

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis:

Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Huang, C. (2012). Discriminant and criterion-related validity of achievement goals in predicting academic achievement: A meta-analysis. *Journal of Educational Psychology*, *104*(1), 48–73. https://doi.org/10.1037/a0026223

Hughes, R. E. (2001). Deciding to leave but staying: Teacher burnout, precursors and turnover. *The International Journal of Human Resource Management*, *12*(2), 288–298. https://doi.org/10.1080/713769610

Judge, T. A., Bono, J. E., & Locke, E. A. (2000). Personality and job satisfaction: The mediating role of job characteristics. *Journal of Applied Psychology*, *85*(2), 237–249. https://doi.org/10.1037/0021-9010.85.2.237

Karsenti, T., & Collin, S. (2013). Why are new teachers leaving the profession? Results of a Canada-wide survey. *Education*, *3*, 141–149. https://doi.org/10.5923/j.edu.20130303.01

King, R. B., & McInerney, D. M. (2014). The work avoidance goal construct: Examining its structure, antecedents, and consequences. *Contemporary Educational Psychology*, *39*(1), 42–58. https://doi.org/10.1016/j.cedpsych.2013.12.002

Klassen, R. M., Yerdelen, S., & Durksen, T. L. (2013). Measuring teacher engagement: Development of the Engaged Teachers Scale (ETS). *Frontline Learning Research*, *1*(2), 33–52. https://doi.org/10.14786/flr.v1i2.44

Kokkinos, C. M. (2007). Job stressors, personality and burnout in primary school teachers. *British Journal of Educational Psychology*, *77*(1), 229–243. https://doi.org/10.1348/000709905X90344

Kyriacou, C. (2001). Teacher stress: Directions for future research. *Educational Review*, *53*(1),

27–35. https://doi.org/10.1080/00131910120033628

Llorens, S., Bakker, A. B., Schaufeli, W., & Salanova, M. (2006). Testing the robustness of the job demands-resources model. *International Journal of Stress Management*, *13*(3), 378–391. https://doi.org/10.1037/1072-5245.13.3.378

Manassero, M., Garcia Buades, E., Torrens, G., Ramis, C., Vazquez, A., & Ferrer, V. A. (2006). Teacher burnout: Attributional aspects. *Psychology in Spain*, *10*(1), 66–74.

Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach burnout inventory.* Manual (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.

Matteucci, M. C., Guglielmi, D., & Lauermann, F. (2017). Teachers' sense of responsibility for educational outcomes and its associations with teachers' instructional approaches and professional wellbeing. *Social Psychology of Education*, *20*(2), 275–298. https://doi.org/10.1007/s11218-017-9369-y

McCormick, J., & Barnett, K. (2011). Teachers' attributions for stress and their relationships with burnout. *International Journal of Educational Management*, *25*(3), 278–293. https://doi.org/10.1108/09513541111120114

McCormick, J., & Shi, G. (1999). Teachers' attributions of responsibility for their occupational stress in the People's Republic of China and Australia. *British Journal of Educational Psychology*, *69*(3), 393–407. https://doi.org/10.1348/000709999157798

Moè, A. (2016). Harmonious passion and its relationship with teacher well-being. *Teaching and Teacher Education*, *59*, 431–437. https://doi.org/10.1016/j.tate.2016.07.017

Moè, A., Pazzaglia, F., & Ronconi, L. (2010). When being able is not enough. The combined value of positive affect and self-efficacy for job satisfaction in teaching. *Teaching and Teacher Education*, *26*(5), 1145–1153. https://doi.org/10.1016/j.tate.2010.02.010

Muthén, L. K., & Muthén, B. (1998-2015). *Mplus user's guide* (7th ed.). Los Angeles, CA: Author.

Nicholls, J. G., Patashnick, M., & Nolen, S. B. (1985). Adolescents' theories of education. *Journal of Educational Psychology*, *77*(6), 683–692. https://doi.org/10.1037/0022-0663.77.6.683

Nitsche, S., Dickhäuser, O., Fasching, M. S., & Dresel, M. (2011). Rethinking teachers' goal orientations: Conceptual and methodological enhancements. *Learning and Instruction*, *21*(4), 574–586. https://doi.org/10.1016/j.learninstruc.2010.12.001

Nitsche, S., Dickhäuser, O., Fasching, M. S., & Dresel, M. (2013). Teachers' professional goal orientations: Importance for further training and sick leave. *Learning and Individual Differences*, *23*, 272–278. https://doi.org/10.1016/j.lindif.2012.07.017

Nolen, S. B. (1988). Reasons for studying: Motivational orientations and study strategies. *Cognition and Instruction*, *5*(4), 269–287. https://doi.org/10.1207/s1532690xci0504_2

Organisation for Economic Co-operation and Development (OECD). (2005). *Teachers matter: Attracting, developing and retaining effective teachers*. Paris: OECD Publishing.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*(3), 879–891. https://doi.org/10.3758/BRM.40.3.879

Retelsdorf, J., & Günther, C. (2011). Achievement goals for teaching and teachers' reference norms: Relations with instructional practices. *Teaching and Teacher Education*, *27*(7), 1111–1119. https://doi.org/10.1016/j.tate.2011.05.007

Retelsdorf, J., Butler, R., Streblow, L., & Schiefele, U. (2010). Teachers' goal orientations for teaching: Associations with instructional practices, interest in teaching, and burnout.

Learning and Instruction, *20*(1), 30–46. https://doi.org/10.1016/j.learninstruc.2009.01.001

Richter, A., Näswall, K., Lindfors, P., & Sverke, M. (2015). Job insecurity and work–family conflict in teachers in Sweden: Examining their relations with longitudinal cross-lagged modeling. *PsyCh Journal*, *4*(2), 98–111. https://doi.org/10.1002/pchj.88

Roness, D. (2011). Still motivated? The motivation for teaching during the second year in the profession. *Teaching and Teacher Education*, *27*(3), 628–638. https://doi.org/10.1016/j.tate.2010.10.016

Roorda, D. L., Koomen, H. M. Y., Spilt, J. L., & Oort, F. J. (2011). The influence of affective teacher–student relationships on students' school engagement and achievement: A meta-analytic approach. *Review of Educational Research*, *81*(4), 493–529. https://doi.org/10.3102/0034654311421793

Runhaar, P., Sanders, K., & Konermann, J. (2013). Teachers' work engagement: Considering interaction with pupils and human resources practices as job resources. *Journal of Applied Social Psychology*, *43*(10), 2017–2030. https://doi.org/10.1111/jasp.12155

Salmela-Aro, K., & Upadyaya, K. (2018). Role of demands-resources in work engagement and burnout in different career stages. *Journal of Vocational Behavior*, *108*, 190–200. https://doi.org/10.1016/j.jvb.2018.08.002

Schaufeli, W. B., & Taris, T. W. (2014). A critical review of the job demands-resources model: Implications for improving work and health. In G. F. Bauer & O. Hämmig, *Bridging Occupational, Organizational and Public Health* (pp. 43–68). Springer Netherlands. https://doi.org/10.1007/978-94-007-5640-3_4

Seaton, F. S. (2018). Empowering teachers to implement a growth mindset. *Educational Psychology in Practice*, *34*(1), 41–57. https://doi.org/10.1080/02667363.2017.1382333

Shindler, J., Jones, A., Williams, A. D., Taylor, C., & Cardenas, H. (2016). The school climate-student achievement connection: If we want achievement gains, we need to begin by improving the climate. *Journal of School Administration Research and Development*, *1*(1), 9–16. https://doi.org/10.32674/jsard.v1i1.1905

Simbula, S., Guglielmi, D., & Schaufeli, W. B. (2011). A three-wave study of job resources, self-efficacy, and work engagement among Italian schoolteachers. *European Journal of Work and Organizational Psychology*, *20*(3), 285–304. https://doi.org/10.1080/13594320903513916

Simões, F., & Calheiros, M. M. (2019). A matter of teaching and relationships: Determinants of teaching style, interpersonal resources and teacher burnout. *Social Psychology of Education*, *22*(4), 991–1013. https://doi.org/10.1007/s11218-019-09501-w

Sosa, T., & Gomez, K. (2012). Connecting teacher efficacy beliefs in promoting resilience to support of Latino students. *Urban Education*, *47*(5), 876–909. https://doi.org/10.1177/0042085912446033

Spilt, J. L., Koomen, H. M. Y., & Thijs, J. T. (2011). Teacher wellbeing: The importance of teacher–student relationships. *Educational Psychology Review*, *23*(4), 457–477. https://doi.org/10.1007/s10648-011-9170-y

Van Droogenbroeck, F., Spruyt, B., & Vanroelen, C. (2014). Burnout among senior teachers: Investigating the role of workload and interpersonal relationships at work. *Teaching and Teacher Education*, *43*, 99–109. https://doi.org/10.1016/j.tate.2014.07.005

Van Maele, D., & Van Houtte, M. (2015). Trust in school: A pathway to inhibit teacher burnout? *Journal of Educational Administration*, *53*(1), 93–115. https://doi.org/10.1108/JEA-02-2014-0018

Veldman, I., Admiraal, W., Mainhard, T., Wubbels, T., & van Tartwijk, J. (2017). Measuring teachers' interpersonal self-efficacy: Relationship with realized interpersonal aspirations, classroom management efficacy and age. *Social Psychology of Education*, *20*(2), 411–426. https://doi.org/10.1007/s11218-017-9374-1

Veldman, I., Admiraal, W., van Tartwijk, J., Mainhard, T., & Wubbels, T. (2016). Veteran teachers' job satisfaction as a function of personal demands and resources in the relationships with their students. *Teachers and Teaching*, *22*(8), 913–926. https://doi.org/10.1080/13540602.2016.1200546

Wang, H., & Hall, N. C. (2018). A systematic review of teachers' causal attributions: Prevalence, correlates, and consequences. *Frontiers in Psychology*, *9*, 2305. https://doi.org/10.3389/fpsyg.2018.02305

Wang, H., Hall, N. C., & Taxer, J. L. (2019). Antecedents and consequences of teachers' emotional labor: A systematic review and meta-analytic investigation. *Educational Psychology Review*. https://doi.org/10.1007/s10648-019-09475-3

Wang, H., Hall, N. C., Goetz, T., & Frenzel, A. C. (2017). Teachers' goal orientations: Effects on classroom goal structures and emotions. *British Journal of Educational Psychology*, *87*(1), 90–107. https://doi.org/10.1111/bjep.12137

Wang, H., & Hall, N. C. (2019). When "I care" is not enough: An interactional analysis of teacher values, value congruence, and well-being. *Teaching and Teacher Education*, *86*, 102906. https://doi.org/10.1016/j.tate.2019.102906

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management*, *14*(2), 121–141. https://doi.org/10.1037/1072-5245.14.2.121

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational Behavior*, *74*(3), 235–244. https://doi.org/10.1016/j.jvb.2008.11.003

Zee, M., de Jong, P. F., & Koomen, H. M. Y. (2016). Teachers' self-efficacy in relation to individual students with a variety of social–emotional behaviors: A multilevel investigation. *Journal of Educational Psychology*, *108*(7), 1013–1027. https://doi.org/10.1037/edu0000106

Table 6

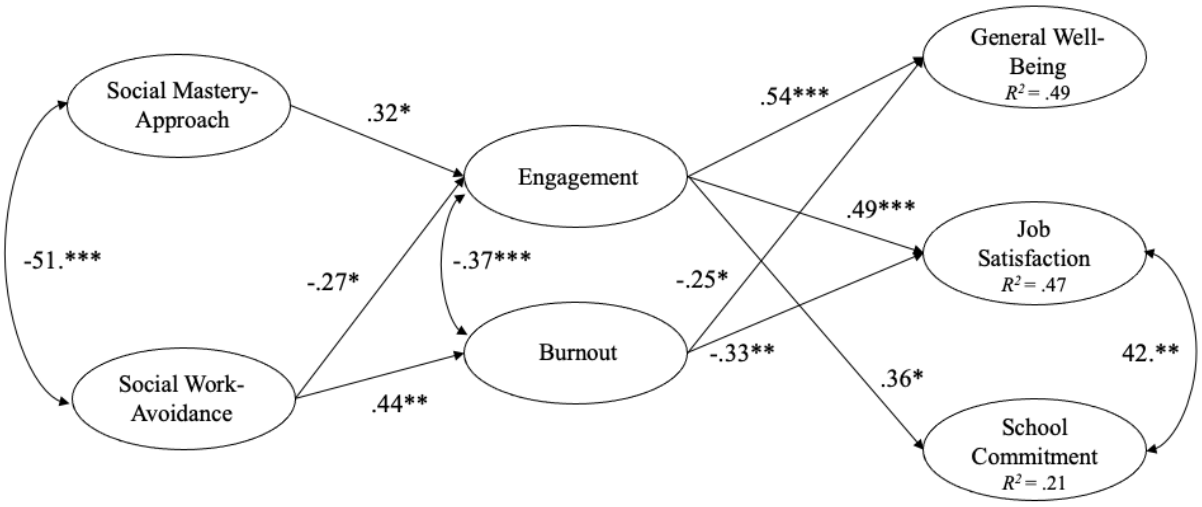
Descriptive Statistics and Correlations among Study Measures

Variable	*n*	*M*	*SD*	*α*	# items	Actual range	*r*					
							1	2	3	4	5	6
1. Social mastery-approach goals	154	4.22	0.50	.65	4	2.8–5	-					
2. Social work-avoidance goals	153	2.11	0.69	.71	4	1–4	-.37**	-				
3. Burnout (exhaustion)	146	2.55	1.43	.95	9	2.8–6	-.00	.28**	-			
4. Work engagement	141	4.92	0.62	.92	16	0–6	.34**	-.38**	-.32**	-		
5. General well-being	142	6.12	0.68	.90	8	3.5–7	.20*	-.31**	-.42**	55**	-	
6. Job satisfaction	142	4.64	1.35	.88	5	1.4–7	.05	-.25**	-.49**	45**	.36**	-
7. School commitment	141	5.10	1.25	.86	5	1.8–7	.03	-.29**	-.23**	36**	.33**	.45**

Note. *$p < .05$, **$p < .01$.

Figure 5

SEM Analysis of Teachers' Social Goal Orientations based on JD-R Model



Note. Model includes both direct and indirect effects of teachers' social goal orientations, and covariances between dependent variables. Only statistically significant standardized parameters and latent R^2 are presented. *$p < .05$, **$p < .01$, ***$p \leq .001$.

Appendix B

Social Mastery-Approach Goals

1. In general, I try to develop my social skills with students.
2. I enjoy student relationships that help me learn new things about myself.
3. I feel successful when I learn something new about how to connect with my students.
4. It is important to improve the quality of my relationships with my students.

Social Work-Avoidance Goals

1. It is important not to spend more time than necessary on "connecting" with students.
2. I try not to spend too much time building relationships with "difficult" students.
3. Trying to develop personal relationships with students often requires too much effort.
4. Focusing too much on relationships with students takes time away from other tasks.

Chapter 5

General Discussion

Teachers' efforts to develop emotional connections with students have consistently been shown to promote profound learning and personal growth in students (Furrer et al., 2014; Hughes, 2011; Jennings & Frank, 2015; McHugh et al., 2013). As illustrated in the research literature on effective instruction, teacher motivation, and teacher burnout, positive classroom climates and emotionally supportive teacher-student relationships as fostered by caring and empathy for students are also key to supporting teachers' performance and well-being (Aldrup et al., 2018; Collie et al., 2012; Simões & Calheiros, 2019; Spilt et al., 2011). Moreover, as the qualities of effective instruction are of significant concern to educational administrators, teachers' development of emotionally adaptive connections with students is additionally a topic of interest from a broader educational perspective given clear system-wide implications for both student outcomes and teacher retention (Darling-Hammond, 2003).

Although a growing number of researchers have examined teachers' motivation for sustaining and improving personal relationships with their students, these efforts have to date been limited by exploring this concept from a psychological needs perspective (e.g., satisfaction of need for relatedness in self-determination theory; Klassen et al., 2012) or from a unidimensional motivational perspective focused on the perceived importance of this teaching component (i.e., social goals; Butler, 2012). Accordingly, the current research literature on teachers' social motivation provides little insight to why teachers choose what types of connections they want to have with students as part of their interpersonal teaching requirements (e.g., setting classroom rules, dealing with conflicts), thus ignoring the critical role of agency in how educators approach this essential aspect of the teaching profession. In other words, whereas existing research has explored teachers' perceived importance for developing meaningful student relationships (e.g., social goals) and if they believe they have succeeded in these relational

efforts (e.g., relatedness, quality of teacher-student relationships), it has not examined potential individual differences in the reasons *why* teachers strive to make these emotional connections.

Therefore, this dissertation aimed to expand our current understanding of teachers' motivation to build meaningful relationships with students (i.e., social achievement goals) in providing substantial evidence across multiple data collection efforts. Study findings support the causal precedence and motivational mechanisms of teachers' social goals in showing them to predict classroom engagement (Chapter 2). Study findings also showed the utility of assessing teachers' social goals according to underlying subtypes (i.e., reasons) and their respective implications for additional student outcomes (Chapter 3) as well as for teachers' own psychological adjustment (Chapter 4). This dissertation thus attempted to fill existing research gaps by highlighting the structure and effects of teachers' social goals given the potential implications how teachers interact with their students on a daily basis. The results across chapters provide theoretical contributions to how we conceptualize teachers' motivation and well-being, methodological contributions pertaining to how to measure and analyze teachers' social goals, as well as practical contributions for how professional development initiatives can address teachers' social motivation. Finally, the present research suggests several directions for future studies concerning the nature and implications of teachers' social goals and how to better care for students as well as teachers.

Contributions to Research

The present dissertation advanced the field of teacher motivation by providing important theoretical and methodological insights into teachers' social goal orientations. Firstly, whereas previous studies were limited with respect to providing empirical evidence for the relations between social goals, self-efficacy, and student outcomes, Chapter 2 provided findings

suggesting that social goals did precede teachers' self-efficacy beliefs and perceived classroom engagement thus serving as a significant antecedent to teaching-related confidence and student learning outcomes. Aligned with the long-standing literature on ethics of care in teachers (Noddings, 1984, 2012), teachers who emphasize building caring relationships with students have been found to be more likely to enhance instructional effectiveness by perceiving higher levels of teaching confidence (i.e., teacher self-efficacy) as well as use of more mastery-oriented teaching approaches (e.g., providing constructive feedback and emotional support; Butler, 2012; Wang et al., 2017). Our findings contribute to this research in showing teachers' motivation to connect with student to further lead to greater behavioural and emotional engagement in students. In addition, the proposed mediational role of teachers' self-efficacy beliefs was supported by cross-lagged analyses and demonstrated using a bootstrapping with 95% confidence intervals. The notably thorough nature of this mediational investigation is uncommon in existing research on teachers' social motivation in which social goals in teachers have been assessed in direct correspondence with instructional behaviours (e.g., Butler, 2012) or in SEM models without robust bootstrapped intervals (e.g., George & Richardson, 2019).

Given the underexplored nature of subtypes of social motivation in teachers, Chapter 3 further examined multiple underlying reasons for why teachers adopt social goals by incorporating the classic 2 x 2 achievement goal framework (Elliot, 1999; Elliot & McGregor, 2001). Findings showed the four subscales to factor analyze into three subtypes of social goals underlying teachers' attempts to connect with students. Expanding upon the unidimensional social goals measure typically used to assess teachers' perceived importance of building meaningful relationships with students (Butler, 2012), the subtypes of teachers' social goals entailed specific underlying reasons including (1) improving interpersonal skills and

relationships with students (social mastery-approach), (2) not failing to build meaningful relationships with every student (social mastery-avoidance), and (3) demonstrating (or not failing to demonstrate) interpersonal skills to students to maintain one's reputation (social ability). These new measures were tested for content, construct, convergent, and predictive validity with findings showing social mastery-approach goals to be the primary predictor of better teacher-student relationships and classroom engagement via teachers' self-efficacy.

Our findings thus represent a significant advance in the assessment of teachers' social goals by expanding on the previous unidimensional measure to examine more specific reasons underlying teachers' attempts to build connections with students. Additionally, the newly developed measure of social mastery-approach goals was in fact found to correlate more strongly with teacher self-efficacy ($r = .27$, $p = .001$) as compared to the general social goals measure ($r = .16$, $p = .047$) showing enhanced predictive utility for this more specific social goal measure. Similarly, further conceptualizing teachers' social goals as abilities that can be improved also contributes to self-theories research on incremental beliefs in teachers. Whereas incremental beliefs are consistently associated with adaptive outcomes (Dweck, 2006; Elliot, 1999), this dissertation highlights how this conceptualization could be extended to encompass teachers' beliefs in the importance of improving their interpersonal competencies (i.e., social mastery-approach goals). In other words, the present findings expand on research from social goals and self-theories perspectives in demonstrating how a finer differentiation of teachers' social goals can contribute to a more nuanced understanding of how teacher motivation impacts educational outcomes.

To further explore relations between more specific subtypes of teachers' social goals and well-being outcomes, Chapter 4 adopted a widely used job demands-resources theory (JD-R)

from occupational psychology (see Demerouti et al., 2001) to understand the impacts of two opposing social goal subtypes on teachers' psychological adjustment. Accordingly, two substantive findings were revealed in which the proposed motivational vs. impairment processes outlined in this theory were supported. Whereas results showed teachers' social mastery-approach goals to positively correspond with their overall well-being, job satisfaction, and school commitment via greater work engagement, teachers' social work-avoidance goals (a newly developed measure assessing teachers' motivation to avoiding investing more time than necessary developing connections with students) were found to have detrimental effects on teachers' well-being and work satisfaction, via not only lower levels of work engagement but greater levels of burnout.

These findings thus contribute to continuing research based on the JD-R model in showing how examining a more nuanced perspective of multiple motivation subtypes could impact well-being in occupational settings. More specifically, although social mastery-approach goals would reasonably be viewed by teachers as motivational resources, social work-avoidance goals could also be perceived by teachers as potentially beneficial for preserving their energy or psychological resources. Instead, the present results showed this latter social goal subtype to act as would occupational demands in the JD-R model thereby expanding on prior research based on this model that has to date limited the assessment of job demands to external, social-environmental antecedents of teacher well-being (e.g., workload, supervisor support, Bakker et al., 2007). Therefore, this research contributes to the JD-R literature in demonstrating how teachers' well-being can be impacted by social-psychological variables that may serve as either resources or demands. These findings also contribute to social goals research in showing the JD-R model to propose multiple empirically supported pathways for how teachers' differentiated

social goals can impact not only classroom and student outcomes but also teachers' own psychological adjustment.

Implications for Practice

Concerning the potential practical benefits afforded by the study results, the findings suggest that teachers should be informed about the crucial role of their social goal orientations in how they interact with students, how they teach, and their personal psychological adjustment. More specifically, whereas teacher-student relationship quality and teacher caring is often discussed in professional development programs due to their impact on student learning and positive classroom climates (e.g., Noddings, 1984; Jennings & Greenberg, 2009), the present results further suggest that strengthening teachers' beliefs that they can improve their interpersonal abilities with students could motivate them to more effectively engage with and develop stronger relationships with students in class. Similarly, given teachers' potential hesitancy to attend professional development sessions (Christesen & Turner, 2014), it is possible that encouraging teachers to believe their social competencies can be improved could motivate them to continue developing affective pedagogical content knowledge (APCK, van Uden et al., 2013) by signing up for additional workshops. Moreover, as study findings showed multiple other reasons for developing relationships with students to not correspond with better student outcomes, professional development initiatives could also discourage these motivational approaches while focusing instead on interpersonal improvement. For example, teachers' social goals pertaining to demonstrating social skills and not connecting meaningfully with every student were found to be unrelated to productive classroom climates as compared to teachers' goals aimed at mastering their social skills with students.

More importantly, teacher retention, commitment, and well-being could be better promoted by encouraging teachers to consider the role of mastery-focused social goals in their daily teaching activities (developing one's interpersonal potential) given the potential benefits for their own well-being and persistence. Conversely, social goals focused on viewing students as demands, and avoiding any unnecessary work of interacting more with them than necessary, were not found to protect teachers' psychological resources by reducing workloads but were instead detrimental for teachers' psychological health. When applied to developing relationships with students, social work-avoidance goals were in fact associated with greater burnout and, in turn, lower levels of well-being and job satisfaction. As this particular result might be counterintuitive for some teachers (e.g., new teachers with limited experience pertaining to the integral nature of positive teacher-student interactions), teacher education and orientation programs may benefit from discussing this finding to dissuade future educators from the unsupported belief that avoiding student interactions can preserve their motivation or well-being.

Therefore, there is considerable potential for institutional initiatives to enhance teachers' social-emotional competences, instructional effectiveness, and personal development by explicitly addressing the importance of their social motivation and centering relationships with students as critical to teaching success. Moreover, it is important to consider informing teachers of related social motivation constructs not limited to teachers' social-learning goals (i.e., aiming to learn and develop social skills with students) such as a growth mindset toward interpersonal connections (i.e., believing one can continuously improve on relationship-building with students; Bergin & Bergin, 2009; Dweck, 2006) as well as instructional self-efficacy for student engagement (Tschannen-Moran & Woolfolk Hoy, 2001). Institutions could similarly incorporate discussion of additional social-emotional competencies such as self-awareness, emotion

regulation, and structured interactions (e.g., Furrer et al., 2014; Jennings & Greenberg, 2009) into programs for promoting classroom management skills to leverage teachers' empathy, flexibility, and self-care for coping with interpersonal conflicts.

There is also the potential to modify existing interventions that encourage teachers to adopt more motivating and interpersonally supportive instructional practices for students by further encouraging them to reflect on their own social goals. For example, in a study by Linnenbrink (2005), teachers were informed how to develop course outlines for students that implemented mastery-approach goals, performance-approach goals, or both mastery- and performance-approach goals to evaluate the effects of teacher-supported classroom goals structures on student outcomes. While finalizing the teaching plans, the teachers and researcher also discussed how to use specific teaching techniques that best promote specific goal orientations in students. It is possible that additionally encouraging teachers to reflect on their own social goals during such goal-enhancement training (e.g., emphasizing mastery-approach social goals) could help these programs promote not only better student learning behaviours and achievement but also better teacher outcomes such as greater motivation and well-being.

Similarly, instructional training that explains how to encourage incremental beliefs about intelligence in students could be modified to alternatively focus on teachers' own potential for social growth. Considering the effectiveness of mindset interventions for students as implemented by teachers (see Blackwell et al., 2007; Yeager et al., 2013), teacher-oriented mindset interventions could also prove effective by adopting similar feedback-driven protocols (e.g., active learning, reflection, articulation, discussion) but with an emphasis on teachers' own beliefs about how their interpersonal competencies with students can be improved. For example, findings from Seaton (2018) show that teachers who attended six training sessions encouraging

them to adopt growth mindsets pertaining to their instructional methods observed sustainable changes in the feedback and language they used to impact student motivation. A similarly structured intervention could prove effective for encouraging teachers to adopt incremental mindsets (i.e., social mastery-approach goals) and corresponding strategies about developing more emotionally supportive relationships with students. In a similar manner, other types of teacher professional development programs based on motivation and emotion research could also be adapted to also address teachers' own social motivation (e.g., autonomy-supportive teaching workshops, Ciani et al., 2010; social-emotional learning programs, Jennings & Greenberg, 2009) to contribute to not only student outcomes but also motivation and well-being in teachers themselves.

Research Limitations and Future Directions

Building on the suggested directions for future studies outlined in Chapters 2 through 4, four additional research suggestions are discussed below to help move this field of research on social motivation forward. First, the characteristics of the K-12 teacher samples described in Chapter 2 through Chapter 4 were comparable to the Canadian teacher population with respect to gender and age, with equivalent representation for both primary and secondary school levels. Despite of such comparability, the samples sizes in Chapters 3 and 4 was relatively small thus compromising the potential power of the structural equation models applied to analyze study variables at the latent level. Thus, in addition to future studies adopting a longitudinal design to assess relations between teachers' social goals and critical outcomes (e.g., well-being), it is critical these studies recruit a larger sample size (e.g., 250-450 teacher participants; Kyriazos, 2018; Wang & Hall, 2021; Wolf et al., 2013) to achieve the recommended statistical power for latent analyses of variable relations over time. Moreover, whereas Chapter 2 reported a two-

wave longitudinal design, it is often recommended that studies administer three or more waves of observations to better detect transient factors (e.g., changing moods; Newsom, 2015), such as the development of teachers' social motivation over the course of an academic term. As such, the proposed mediation models could be further verified by controlling for variances of the same constructs at an earlier time point to identify whether a given effect is directional or bidirectional in nature.

Second, the exploration of the multidimensional nature of teachers' social goals showed teachers' underlying reasons for what they want to achieve in their relationships with students to have clear implications for both student development and their personal well-being. However, these more nuanced goal measures should continue to be improved in future studies to better evaluate their effectiveness. Although Chapters 3 and 4 outlined evidence for the content, convergent, structural, and predictive validity of the social goal subtypes, the findings were limited with respect to internal validity. More specifically, the internal reliabilities of teachers' social mastery-approach goals and social ability goals were mediocre (αs = .65 and .64, respectively), with social mastery-avoidance goals reaching a more acceptable reliability level (α = .70). Therefore, future research may benefit from investigating teachers' responses to open-ended questions in which they explain how they perceive their interpersonal goals with students and how they define success and failure in social interactions (as those done with college students in Ryan & Shim, 2006). It would be useful for future studies to evaluate longer subscale versions in relation to both positive and negative outcomes (e.g., teacher-student conflicts: Koomen et al., 2012; negative emotions: Frenzel, 2014) to more substantially validate their internal structure and predictive utility. Moreover, tests for longitudinal invariance are recommended to better understand whether the social goal measures change in reliability and

validity over multiple time points (e.g., Granziera & Perera, 2019), as are multi-group assessments comparing responses from teachers from different educational settings (e.g., private vs. public schools) or countries (e.g., cultural invariance, Klassen et al., 2009; Tsigilis et al., 2019).

Third, although the present findings highlight potential improvement in teachers' social competencies and the corresponding malleability of teachers' motivation as suggested by interventional innovations (e.g., self-efficacy enhancement, Althauser, 2015; Bray-Clark & Bates, 2003; mindset interventions, Seaton, 2018), Chapter 4 found that some teachers are indeed willing to protect their psychological resources by not developing close student connections. Further research is needed to explore why teachers may choose to adopt this maladaptive perspective, for example, how student misbehaviours or depersonalization of students due to burnout (e.g., Maslach et al., 1986) may contribute to teachers attempting to preserve their energy by avoiding relationship-related challenges. Moreover, future research could explore how contextual features (e.g., high-needs schools; Moseley et al., 2014) or interpersonal factors (e.g., adopting reference norms in class; Retelsdorf & Günther, 2011) may serve as antecedents or moderators of social work-avoidance goals in teachers to expand our current understanding of why this social motivation approach is so particularly detrimental to teachers' persistence and well-being.

Lastly, additional research is needed to develop and evaluate the effectiveness of teachers' professional development workshops and education programs in which the aforementioned findings of this dissertation concerning teachers' social goals are incorporated. The specific findings of teachers' social goals in relation to their self-efficacy and the various student and teacher outcomes assessed warrant the development of programs for promoting

instructional effectiveness and teacher retention in which teachers' social motivation is specifically addressed. As educating teachers on how to develop supportive teacher-student relationships and social skills is important for both learning and well-being, teacher interventions are encouraged to address both the benefits of social mastery-approach goals and the risks (e.g., social work-avoidance) or non-effectiveness of other social goal approaches (e.g., ability focus) to help support their productivity and positivity for interacting with students. Given the clear implications of adaptive social goals for promoting adaptive teaching motivation (e.g., social-learning goals, teaching self-efficacy) and student-centered instruction (e.g., mastery-oriented, autonomy-supportive, cultural-sensitive, and asset-based teaching approaches), intervention efforts that highlight the importance of teachers' social motivation for their daily interactions with students should help to promote both student and teacher development by reiterating the ethics of genuine care in the teaching profession.

References

Aldrup, K., Klusmann, U., Lüdtke, O., Göllner, R., & Trautwein, U. (2018). Student misbehavior and teacher well-being: Testing the mediating role of the teacher-student relationship. *Learning and Instruction*, *58*, 126–136. https://doi.org/10.1016/j.learninstruc.2018.05.006

Althauser, K. (2015). Job-embedded professional development: Its impact on teacher self-efficacy and student performance. *Teacher Development*, *19*(2), 210–225. https://doi.org/10.1080/13664530.2015.1011346

Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement, particularly when job demands are high. *Journal of Educational Psychology*, *99*(2), 274–284. https://doi.org/10.1037/0022-0663.99.2.274

Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development*, *78*(1), 246–263. https://doi.org/10.1111/j.1467-8624.2007.00995.x

Bray-Clark, N., & Bates, R. (2003). Self-efficacy beliefs and teacher effectiveness: Implications for professional development. *Professional Educator*, *26*(1), 13–22.

Butler, R. (2012). Striving to connect: Extending an achievement goal approach to teacher motivation to include relational goals for teaching. *Journal of Educational Psychology*, *104*(3), 726–742. https://doi.org/10.1037/a0028613

Christesen, E., & Turner, J. (2014). Identifying teachers attending professional development by their stages of concern: Exploring attitudes and emotions. *The Teacher Educator*, *49*(4), 232–246. https://doi.org/10.1080/08878730.2014.933641

Ciani, K., Ferguson, Y., Bergin, D., & Hilpert, J. (2010). Motivational influences on school-prompted interest. *Educational Psychology*, *30*(4), 377–393. https://doi.org/10.1080/01443411003660232

Collie, R. J., Shapka, J. D., & Perry, N. E. (2012). School climate and social-emotional learning: Predicting teacher stress, job satisfaction, and teaching efficacy. *Journal of Educational Psychology*, *104*(4), 1189–1204. https://doi.org/10.1037/a0029356

Darling-Hammond, L. (2003). Keeping good teachers: Why it matters, what leaders can do. *Educational Leadership*, *60*(8), 6–13.

Demerouti, E., Nachreiner, F., Bakker, A. B., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, *86*(3), 499–512. https://doi.org/10.1037/0021-9010.86.3.499

Dweck, C. S. (2006). *Mindset: A new psychology of success*. Random House.

Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational Psychologist*, *34*(3), 169–189. https://doi.org/10.1207/s15326985ep3403_3

Elliot, A. J., & McGregor, H. A. (2001). A 2 × 2 achievement goal framework. *Journal of Personality and Social Psychology*, *80*(3), 501–519. https://doi.org/10.1037/0022-3514.80.3.501

Frenzel, A. C. (2014). Teacher emotions. In R. Pekrun & L. Linnenbrink-Garcia (Eds.), *International handbook of emotions in education* (pp. 494–519). New York: Routledge.

Furrer, C. J., Skinner, E. A., & Pitzer, J. R. (2014). The influence of teacher and peer relationships on students' classroom engagement and everyday motivational resilience. In D. Shernoff, & J. Bempechat (Eds.), *National Society for the Study of Education yearbook:*

Engaging youth in schools: Evidence-based models to guide future innovations (pp. 101–123). New York, NY: Teachers College Record.

George, S. V., & Richardson, P. W. (2019). Teachers' goal orientations as predictors of their self-reported classroom behaviours: An achievement goal theoretical perspective. *International Journal of Educational Research*, *98*, 345–355. https://doi.org/10.1016/j.ijer.2019.09.011

Granziera, H., & Perera, H. N. (2019). Relations among teachers' self-efficacy beliefs, engagement, and work satisfaction: A social cognitive view. *Contemporary Educational Psychology*, *58*, 75–84. https://doi.org/10.1016/j.cedpsych.2019.02.003

Hughes, J. N. (2011). Longitudinal effects of teacher and student perceptions of teacher-student relationship qualities on academic adjustment. *The Elementary School Journal*, *112*(1), 38–60. https://doi.org/10.1086/660686

Jennings, P. A., & Frank, J. L. (2015). Inservice preparation for educators. In J. A. Durlak, C. E. Domitrovich, R. P. Weissberg, & T. P. Gullotta (Eds.), *Handbook of social and emotional learning: Research and practice* (p. 422–437). The Guilford Press.

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. https://doi.org/10.3102/0034654308325693

Klassen, R. M., Bong, M., Usher, E. L., Chong, W. H., Huan, V. S., Wong, I. Y. F., & Georgiou, T. (2009). Exploring the validity of a teachers' self-efficacy scale in five countries. *Contemporary Educational Psychology*, *34*(1), 67–76. https://doi.org/10.1016/j.cedpsych.2008.08.001

Klassen, R. M., Perry, N. E., & Frenzel, A. C. (2012). Teachers' relatedness with students: An underemphasized component of teachers' basic psychological needs. *Journal of Educational Psychology*, *104*(1), 150–165. https://doi.org/10.1037/a0026253

Koomen, H. M. Y., Verschueren, K., van Schooten, E., Jak, S., & Pianta, R. C. (2012). Validating the Student-Teacher Relationship Scale: Testing factor structure and measurement invariance across child gender and age in a Dutch sample. *Journal of School Psychology*, *50*(2), 215–234. https://doi.org/10.1016/j.jsp.2011.09.001

Kyriazos, T. A. (2018). Applied psychometrics: Sample size and sample power considerations in factor analysis (EFA, CFA) and SEM in general. *Psychology*, *09*(08), 2207. https://doi.org/10.4236/psych.2018.98126

Linnenbrink, E. A. (2005). The dilemma of performance-approach goals: The use of multiple goal contexts to promote students' motivation and learning. *Journal of Educational Psychology*, *97*(2), 197–213. https://doi.org/10.1037/0022-0663.97.2.197

Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach burnout inventory.* Manual (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.

McHugh, R. M., Horner, C. G., Colditz, J. B., & Wallace, T. L. (2013). Bridges and barriers: Adolescent perceptions of student–teacher relationships. *Urban Education*, *48*(1), 9–43. https://doi.org/10.1177/0042085912451585

Moseley, C., Bilica, K., Wandless, A., & Gdovin, R. (2014). Exploring the relationship between teaching efficacy and cultural efficacy of novice science teachers in high-needs schools. *School Science and Mathematics*, *114*(7), 315–325. https://doi.org/10.1111/ssm.12087

Newsom, J. T. (2015). *Longitudinal structural equation modeling: A comprehensive introduction*. Routledge.

Noddings, N. (1984). *Caring: A feminine approach to ethics and moral education*. Berkeley, CA: University of California Press.

Noddings, N. (2012). The caring relation in teaching. *Oxford Review of Education*, *38*(6), 771–781. https://doi.org/10.1080/03054985.2012.745047

Retelsdorf, J., & Günther, C. (2011). Achievement goals for teaching and teachers' reference norms: Relations with instructional practices. *Teaching and Teacher Education*, *27*(7), 1111–1119. https://doi.org/10.1016/j.tate.2011.05.007

Ryan, A. M., & Shim, S. S. (2006). Social achievement goals: The nature and consequences of different orientations toward social competence. *Personality and Social Psychology Bulletin*, *32*(9), 1246–1263. https://doi.org/10.1177/0146167206289345

Seaton, F. S. (2018). Empowering teachers to implement a growth mindset. *Educational Psychology in Practice*, *34*(1), 41–57. https://doi.org/10.1080/02667363.2017.1382333

Simões, F., & Calheiros, M. M. (2019). A matter of teaching and relationships: Determinants of teaching style, interpersonal resources and teacher burnout. *Social Psychology of Education*, *22*(4), 991–1013. https://doi.org/10.1007/s11218-019-09501-w

Spilt, J. L., Koomen, H. M. Y., & Thijs, J. T. (2011). Teacher wellbeing: The importance of teacher–student relationships. *Educational Psychology Review*, *23*(4), 457–477. https://doi.org/10.1007/s10648-011-9170-y

Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, *17*(7), 783–805. https://doi.org/10.1016/S0742-051X(01)00036-1

Tsigilis, N., Gregoriadis, A., Theodorakis, N. D., & Evaggelinou, C. (2019). Teachers' self-efficacy and its association with their quality of relationships with pre and early

adolescents: A hierarchical linear modelling approach. *Education 3-13*, *47*(1), 64–73. https://doi.org/10.1080/03004279.2017.1399153

van Uden, J. M., Ritzen, H., & Pieters, J. M. (2013). I think I can engage my students. Teachers' perceptions of student engagement and their beliefs about being a teacher. *Teaching and Teacher Education*, *32*, 43–54. https://doi.org/10.1016/j.tate.2013.01.004

Wang, H., & Hall, N. C. (2021). Exploring relations between teacher emotions, coping strategies, and intentions to quit: A longitudinal analysis. *Journal of School Psychology*, *86*, 64–77. https://doi.org/10.1016/j.jsp.2021.03.005

Wang, H., Hall, N. C., Goetz, T., & Frenzel, A. C. (2017). Teachers' goal orientations: Effects on classroom goal structures and emotions. *British Journal of Educational Psychology*, *87*(1), 90–107. https://doi.org/10.1111/bjep.12137

Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample size requirements for structural equation models: An evaluation of power, bias, and solution propriety. *Educational and Psychological Measurement*, *73*(6), 913–934. https://doi.org/10.1177/0013164413495237

Yeager, D. S., Trzesniewski, K. H., & Dweck, C. S. (2013). An implicit theories of personality intervention reduces adolescent aggression in response to victimization and exclusion. *Child Development*, *84*(3), 970–988. https://doi.org/10.1111/cdev.12003

Bibliography

Ainsworth, M. S. (1979). Infant–mother attachment. *American Psychologist*, *34*(10), 932–937. https://doi.org/10.1037/0003-066X.34.10.932

Aldrup, K., Klusmann, U., Lüdtke, O., Göllner, R., & Trautwein, U. (2018). Student misbehavior and teacher well-being: Testing the mediating role of the teacher-student relationship. *Learning and Instruction*, *58*, 126–136. https://doi.org/10.1016/j.learninstruc.2018.05.006

Aloe, A. M., Amo, L. C., & Shanahan, M. E. (2014). Classroom management self-efficacy and burnout: A multivariate meta-analysis. *Educational Psychology Review*, *26*(1), 101–126. https://doi.org/10.1007/s10648-013-9244-0

Althauser, K. (2015). Job-embedded professional development: Its impact on teacher self-efficacy and student performance. *Teacher Development*, *19*(2), 210–225. https://doi.org/10.1080/13664530.2015.1011346

Ambikairajah, A., Ambikairajah, R., & Ambikairajah, E. (2021). The impact of improving feelings of relatedness on motivation and engagement for tertiary students. *International Journal of Mathematical Education in Science and Technology*, *52*(5), 721–730. https://doi.org/10.1080/0020739X.2019.1703149

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, *84*(3), 261–271. https://doi.org/10.1037/0022-0663.84.3.261

Ang, R. P. (2005). Development and validation of the teacher-student relationship inventory using exploratory and confirmatory factor analysis. *The Journal of Experimental Education*, *74*(1), 55–74. https://doi.org/10.3200/JEXE.74.1.55-74

Awang-Hashim, R., Thaliah, R., & Kaur, A. (2017). A cultural insight into the development of teacher autonomy support scale: A self-determination theory perspective. *Journal for Multicultural Education*, *11*(4), 287–305. https://doi.org/10.1108/JME-09-2016-0050

Bakadorova, O., & Raufelder, D. (2018). The essential role of the teacher-student relationship in students' need satisfaction during adolescence. *Journal of Applied Developmental Psychology*, 58, 57–65. https://doi.org/10.1016/j.appdev.2018.08.004

Bakker, A. B., Demerouti, E., & Euwema, M. C. (2005). Job resources buffer the impact of job demands on burnout. *Journal of Occupational Health Psychology*, *10*(2), 170–180. https://doi.org/10.1037/1076-8998.10.2.170

Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement, particularly when job demands are high. *Journal of Educational Psychology*, *99*(2), 274–284. https://doi.org/10.1037/0022-0663.99.2.274

Bakker, A. B., Schaufeli, W. B., Leiter, M. P., & Taris, T. W. (2008). Work engagement: An emerging concept in occupational health psychology. *Work & Stress*, *22*(3), 187–200. https://doi.org/10.1080/02678370802393649

Baldwin, M. W. (1992). Relational schemas and the processing of social information. *Psychological Bulletin*, *112*(3), 461–484. https://doi.org/10.1037/0033-2909.112.3.461

Bandalos, D. L. (2002). The effects of item parceling on goodness-of-fit and parameter estimate bias in structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, *9*(1), 78–102. https://doi.org/10.1207/S15328007SEM0901_5

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215. https://doi.org/10.1037/0033-295X.84.2.191

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Bardach, L., Oczlon, S., Pietschnig, J., & Lüftenegger, M. (2020). Has achievement goal theory been right? A meta-analysis of the relation between goal structures and personal achievement goals. *Journal of Educational Psychology*, *112*(6), 1197–1220. https://doi.org/10.1037/edu0000419

Beishuizen, J. J., Hof, E., Putten, C. M. V., Bouwmeester, S., & Asscher, J. J. (2001). Students' and teachers' cognitions about good teachers. *British Journal of Educational Psychology*, *71*(2), 185–201. https://doi.org/10.1348/000709901158451

Bergin, C., & Bergin, D. (2009). Attachment in the classroom. *Educational Psychology Review*, *21*(2), 141–170. https://doi.org/10.1007/s10648-009-9104-0

Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development*, *78*(1), 246–263. https://doi.org/10.1111/j.1467-8624.2007.00995.x

Block, J. H., & Burns, R. B. (1976). Mastery learning. *Review of Research in Education*, *4*, 3–49.

Bowlby, J. (1969). *Attachment and loss. Volume I: attachment.* Basic Books.

Bowlby, J. (1982). Attachment and loss: Retrospect and prospect. *American Journal of Orthopsychiatry*, *52*(4), 664–678. https://doi.org/10.1111/j.1939-0025.1982.tb01456.x

Bray-Clark, N., & Bates, R. (2003). Self-efficacy beliefs and teacher effectiveness: Implications for professional development. *Professional Educator*, *26*(1), 13–22.

Brooks, R., & Goldstein, S. (2008). The mindset of teachers capable of fostering resilience in students. *Canadian Journal of School Psychology*, *23*(1), 114–126.

https://doi.org/10.1177/0829573508316597

Brown, T. J. (2012). *Effects of teacher efficacy on student academic and social emotional achievement* (Publication No. 3519287) [Doctoral dissertation, Walden University]. ProQuest Dissertations Publishing.

Bürgermeister, A., Ringeisen, T., & Raufelder, D. (2016). Fostering students' moderation competence: The interplay between social relatedness and perceived competence. *Teaching in Higher Education*, *21*(8), 990–1005. https://doi.org/10.1080/13562517.2016.1209183

Butler, R. (2007). Teachers' achievement goal orientations and associations with teachers' help seeking: Examination of a novel approach to teacher motivation. *Journal of Educational Psychology*, *99*(2), 241–252. https://doi.org/10.1037/0022-0663.99.2.241

Butler, R. (2012). Striving to connect: Extending an achievement goal approach to teacher motivation to include relational goals for teaching. *Journal of Educational Psychology*, *104*(3), 726–742. https://doi.org/10.1037/a0028613

Butler, R., & Shibaz, L. (2008). Achievement goals for teaching as predictors of students' perceptions of instructional practices and students' help seeking and cheating. *Learning and Instruction*, *18*(5), 453–467. https://doi.org/10.1016/j.learninstruc.2008.06.004

Butler, R., & Shibaz, L. (2014). Striving to connect and striving to learn: Influences of relational and mastery goals for teaching on teacher behaviors and student interest and help seeking. *International Journal of Educational Research*, *65*, 41–53. https://doi.org/10.1016/j.ijer.2013.09.006

Byrne, B. M. (1994). Burnout: Testing for the validity, replication, and invariance of causal structure across elementary, intermediate, and secondary teachers. *American Educational Research Journal*, *31*(3), 645–673. https://doi.org/10.3102/00028312031003645

Byrne, B. M. (2010). *Structural equation modeling with AMOS*. New York, NY: Routledge.

Chang, C.-F., Hall, N. C., Lee, S. Y., & Wang, H. (in press). Teachers' social goals and classroom engagement: The mediating role of teachers' self-efficacy. *International Journal of Educational Research*.

Chernyshenko, O. S., Kankaraš, M., & Drasgow, F. (2018). Social and emotional skills for student success and wellbeing: Conceptual framework for the OECD study on social and emotional skills. OECD Education Working Papers, No. 173. *OECD Publishing*. https://doi.org/10.1787/db1d8e59-en

Christesen, E., & Turner, J. (2014). Identifying teachers attending professional development by their stages of concern: Exploring attitudes and emotions. *The Teacher Educator*, *49*(4), 232–246. https://doi.org/10.1080/08878730.2014.933641

Christian, M. S., Garza, A. S., & Slaughter, J. E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel Psychology*, *64*(1), 89–136. https://doi.org/10.1111/j.1744-6570.2010.01203.x

Ciani, K., Ferguson, Y., Bergin, D., & Hilpert, J. (2010). Motivational influences on school-prompted interest. *Educational Psychology*, *30*(4), 377–393. https://doi.org/10.1080/01443411003660232

Claessens, L., van Tartwijk, J., Pennings, H., van der Want, A., Verloop, N., den Brok, P., & Wubbels, T. (2016). Beginning and experienced secondary school teachers' self- and student schema in positive and problematic teacher–student relationships. *Teaching and Teacher Education*, *55*, 88–99. https://doi.org/10.1016/j.tate.2015.12.006

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed). Lawrence Erlbaum Associates.

Collie, R. J., & Martin, A. J. (2017). Teachers' sense of adaptability: Examining links with perceived autonomy support, teachers' psychological functioning, and students' numeracy achievement. *Learning and Individual Differences*, *55*, 29–39. https://doi.org/10.1016/j.lindif.2017.03.003

Collie, R. J., Bostwick, K. C. P., & Martin, A. J. (2020). Perceived autonomy support, relatedness with students, and workplace outcomes: An investigation of differences by teacher gender. *Educational Psychology*, *40*(3), 253–272. https://doi.org/10.1080/01443410.2019.1663791

Collie, R. J., Perry, N. E., & Martin, A. J. (2017). School context and educational system factors impacting educator stress. In T. M. McIntyre, S. E. McIntyre, & D. J. Francis (Eds.), *Educator Stress: An Occupational Health Perspective* (pp. 3–22). https://doi.org/10.1007/978-3-319-53053-6_1

Collie, R. J., Shapka, J. D., & Perry, N. E. (2012). School climate and social-emotional learning: Predicting teacher stress, job satisfaction, and teaching efficacy. *Journal of Educational Psychology*, *104*(4), 1189–1204. https://doi.org/10.1037/a0029356

Collie, R. J., Shapka, J. D., Perry, N. E., & Martin, A. J. (2016). Teachers' psychological functioning in the workplace: Exploring the roles of contextual beliefs, need satisfaction, and personal characteristics. *Journal of Educational Psychology*, *108*(6), 788–799. https://doi.org/10.1037/edu0000088

Collier, M. D. (2005). An ethic of caring: The fuel for high teacher efficacy. *The Urban Review*, *37*(4), 351–359. https://doi.org/10.1007/s11256-005-0012-4

Cornelius-White, J. (2007). Learner-centered teacher-student relationships are effective: A meta-analysis. *Review of Educational Research*, *77*(1), 113–143. https://doi.org/10.3102/003465430298563

Craig, C. J. (2017). International teacher attrition: Multiperspective views. *Teachers and Teaching*, *23*(8), 859–862. https://doi.org/10.1080/13540602.2017.1360860

Crawford, E. R., LePine, J. A., & Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: A theoretical extension and meta-analytic test. *Journal of Applied Psychology*, *95*(5), 834–848. https://doi.org/10.1037/a0019364

Darling-Hammond, L. (2003). Keeping good teachers: Why it matters, what leaders can do. *Educational Leadership*, *60*(8), 6–13.

Daumiller, M., Dickhäuser, O., & Dresel, M. (2019). University instructors' achievement goals for teaching. *Journal of Educational Psychology*, *111*(1), 131–148. https://doi.org/10.1037/edu0000271

Daumiller, M., Janke, S., Hein, J., Rinas, R., Dickhäuser, O., & Dresel, M. (2021). Do teachers' achievement goals and self-efficacy beliefs matter for students' learning experiences? Evidence from two studies on perceived teaching quality and emotional experiences. *Learning and Instruction, 76*, 101458. https://doi.org/10.1016/j.learninstruc.2021.101458

Deci, E. L., & Ryan, R. M. (1985). I*ntrinsic motivation and self-determination in human behavior*. Plenum Press.

Deci, E. L., & Ryan, R. M. (2000). The" what" and" why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research.* University of

Rochester Press.

Deci, E. L., & Ryan, R. M. (2014). Autonomy and need satisfaction in close relationships: Relationships motivation theory. In N. Weinstein (Ed.), *Human Motivation and Interpersonal Relationships: Theory, Research, and Applications* (pp. 53–73). Springer Netherlands. https://doi.org/10.1007/978-94-017-8542-6_3

Demerouti, E., Nachreiner, F., Bakker, A. B., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, *86*(3), 499–512. https://doi.org/10.1037/0021-9010.86.3.499

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research*, *97*(2), 143–156. https://doi.org/10.1007/s11205-009-9493-y

Diseth, Å. (2011). Self-efficacy, goal orientations and learning strategies as mediators between preceding and subsequent academic achievement. *Learning and Individual Differences, 21*(2), 191–195. https://doi.org/10.1016/j.lindif.2011.01.003

Diseth, Å., Danielsen, A. G., & Samdal, O. (2012). A path analysis of basic need support, self-efficacy, achievement goals, life satisfaction and academic achievement level among secondary school students. *Educational Psychology*, *32*(3), 335–354. https://doi.org/10.1080/01443410.2012.657159

Dresel, M., Fasching, M. S., Steuer, G., Nitsche, S., & Dickhäuser, O. (2013). Relations between teachers' goal orientations, their instructional practices and student motivation. *Psychology*, *4*(7), 572–584. https://doi.org/10.4236/psych.2013.47083

Duffin, L. C., French, B. F., & Patrick, H. (2012). The Teachers' Sense of Efficacy Scale: Confirming the factor structure with beginning pre-service teachers. *Teaching and Teacher Education*, *28*(6), 827–834. https://doi.org/10.1016/j.tate.2012.03.004

Dweck, C. S. (2000). *Self-theories: Their role in motivation, personality, and development*. Psychology Press.

Dweck, C. S. (2006). *Mindset: A new psychology of success*. Random House.

Dweck, C. S. (2014). Teachers' mindsets: "Every Student has Something to Teach Me." *Educational Horizons*, *93*(2), 10–14. https://doi.org/10.1177/0013175X14561420

Dweck, C. S., & Yeager, D. S. (2019). Mindsets: A view from two eras. *Perspectives on Psychological Science*, *14*(3), 481–496. https://doi.org/10.1177/1745691618804166

Eckert, M., Ebert, D. D., Lehr, D., Sieland, B., Jazaieri, H., & Berking, M. (2015). Teachers' emotion regulation skills facilitate implementation of health-related intentions. *American Journal of Health Behavior*, *39*(6), 874–881. https://doi.org/10.5993/AJHB.39.6.15

Ellerbrock, C. R., & Kiefer, S. M. (2013). Extending a community of care beyond the ninth grade: A follow-up study. *Journal of Educational Research*, *106*(4), 319–331. https://doi.org/10.1080/00220671.2012.692728

Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational Psychologist*, *34*(3), 169–189. https://doi.org/10.1207/s15326985ep3403_3

Elliot, A. J. (2005). A conceptual history of the achievement goal construct. In A. J. Elliot, & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 52–72). Guilford Publications.

Elliot, A. J., & Harackiewicz, J. M. (1996). Approach and avoidance achievement goals and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology, 70*(3), 461–475. https://doi.org/10.1037/0022-3514.70.3.461

Elliot, A. J., & McGregor, H. A. (2001). A 2 × 2 achievement goal framework. *Journal of Personality and Social Psychology*, *80*(3), 501–519. https://doi.org/10.1037/0022-3514.80.3.501

Elliot, A. J., & Murayama, K. (2008). On the measurement of achievement goals: Critique, illustration, and application. *Journal of Educational Psychology*, *100*(3), 613–628. https://doi.org/10.1037/0022-0663.100.3.613

Enochs, L., & Riggs, I. (1990). Further development of an elementary science teaching efficacy belief instrument: A preservice elementary scale. *School Science and Mathematics, 90*(8), 694–706.

Fan, J., Meng, H., Billings, R. S., Litchfield, R. C., & Kaplan, I. (2008). On the role of goal orientation traits and self-efficacy in the goal-setting process: Distinctions that make a difference. *Human Performance*, *21*(4), 354–382. https://doi.org/10.1080/08959280802347122

Fitchett, P. G., McCarthy, C. J., Lambert, R. G., & Boyle, L. (2018). An examination of US first-year teachers' risk for occupational stress: Associations with professional preparation and occupational health. *Teachers and Teaching*, *24*(2), 99–118. https://doi.org/10.1080/13540602.2017.1386648

Fives, H. (2003). *What is teacher efficacy and how does it relate to teachers' knowledge? A theoretical review*. Paper presented at the American Educational Research Association Annual Conference, Chicago.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, *74*(1), 59-109. https://doi.org/10.3102/00346543074001059

Frenzel, A. C. (2014). Teacher emotions. In R. Pekrun & L. Linnenbrink-Garcia (Eds.), *International handbook of emotions in education* (pp. 494–519). New York: Routledge.

Frisby, B. N., Beck, A.-C., Bachman, A. S., Byars, C., Lamberth, C., & Thompson, J. (2016). The influence of instructor-student rapport on instructors' professional and organizational outcomes. *Communication Research Reports*, *33*(2), 103–110. https://doi.org/10.1080/08824096.2016.1154834

Furlong, M. J., & Christenson, S. L. (2008). Engaging students at school and with learning: A relevant construct for all students. *Psychology in the Schools*, *45*(5), 365–368. https://doi.org/10.1002/pits.20302

Furrer, C. J., Skinner, E. A., & Pitzer, J. R. (2014). The influence of teacher and peer relationships on students' classroom engagement and everyday motivational resilience. In D. Shernoff, & J. Bempechat (Eds.), *National Society for the Study of Education yearbook: Engaging youth in schools: Evidence-based models to guide future innovations* (pp. 101–123). New York, NY: Teachers College Record.

Gay, G. (2002). Preparing for culturally responsive teaching. *Journal of Teacher Education*, *53*(2), 106–116. https://doi.org/10.1177/0022487102053002003

Gehlbach, H., Brinkworth, M. E., & Harris, A. (2011). *Social motivation in the secondary classroom: assessing teacher-student relationships and student outcomes.* Paper presented at the American Educational Research Association, New Orleans, LA.

Gehlbach, H., Brinkworth, M. E., & Harris, A. D. (2012). Changes in teacher–student relationships. *British Journal of Educational Psychology*, *82*(4), 690–704. https://doi.org/10.1111/j.2044-8279.2011.02058.x

George, S. V., & Richardson, P. W. (2019). Teachers' goal orientations as predictors of their self-reported classroom behaviours: An achievement goal theoretical perspective. *International Journal of Educational Research*, *98*, 345–355. https://doi.org/10.1016/j.ijer.2019.09.011

Gibbs, S., & Miller, A. (2014). Teachers' resilience and well-being: A role for educational psychology. *Teachers and Teaching*, *20*(5), 609–621. https://doi.org/10.1080/13540602.2013.844408

Gibson, S., & Dembo, M. H. (1984). Teacher efficacy: A construct validation. *Journal of Educational Psychology, 76*(4), 569–582. https://doi.org/10.1037/0022-0663.76.4.569

Gorozidis, G., & Papaioannou, A. (2011). Teachers' self-efficacy, achievement goals, attitudes and intentions to implement the new Greek physical education curriculum. *European Physical Education Review*, *17*(2), 231–253. https://doi.org/10.1177/1356336X11413654

Granziera, H., & Perera, H. N. (2019). Relations among teachers' self-efficacy beliefs, engagement, and work satisfaction: A social cognitive view. *Contemporary Educational Psychology*, *58*, 75–84. https://doi.org/10.1016/j.cedpsych.2019.02.003

Gray, L., & Taie, S. (2015). *Public school attrition and mobility in the first five years: Results from the first through fifth waves of the 2007–08 Beginning Teacher Longitudinal Study*. (NCES 2015–337). U.S. Department of Education: National Center for Education Statistics. Retrieved [12/10/2020] from https:// nces.ed.gov/pubs2015/2015337.pdf

Guay, F., Stupnisky, R., Boivin, M., Japel, C., & Dionne, G. (2019). Teachers' relatedness with

students as a predictor of students' intrinsic motivation, self-concept, and reading achievement. *Early Childhood Research Quarterly*, *48*, 215–225. https://doi.org/10.1016/j.ecresq.2019.03.005

Gurland, S. T., & Evangelista, J. E. (2015). Teacher–student relationship quality as a function of children's expectancies. *Journal of Social and Personal Relationships*, *32*(7), 879–904. https://doi.org/10.1177/0265407514554511

Hagenauer, G., Hascher, T., & Volet, S. E. (2015). Teacher emotions in the classroom: Associations with students' engagement, classroom discipline and the interpersonal teacher-student relationship. *European Journal of Psychology of Education*, *30*(4), 385–403. https://doi.org/10.1007/s10212-015-0250-0

Hajovsky, D. B., Chesnut, S. R., & Jensen, K. M. (2020). The role of teachers' self-efficacy beliefs in the development of teacher-student relationships. *Journal of School Psychology*, *82*, 141–158. https://doi.org/10.1016/j.jsp.2020.09.001

Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology*, *43*(6), 495–513. https://doi.org/10.1016/j.jsp.2005.11.001

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, *44*(3), 513–524. https://doi.org/10.1037/0003-066X.44.3.513

Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology*, *6*(4), 307–324. https://doi.org/10.1037/1089-2680.6.4.307

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Huang, C. (2012). Discriminant and criterion-related validity of achievement goals in predicting academic achievement: A meta-analysis. *Journal of Educational Psychology*, *104*(1), 48–73. https://doi.org/10.1037/a0026223

Hughes, J. N. (2011). Longitudinal effects of teacher and student perceptions of teacher-student relationship qualities on academic adjustment. *The Elementary School Journal*, *112*(1), 38–60. https://doi.org/10.1086/660686

Hughes, J. N. (2012). Teacher–student relationships and school adjustment: Progress and remaining challenges. *Attachment & Human Development*, *14*(3), 319–327. https://doi.org/10.1080/14616734.2012.672288

Hughes, J. N., Luo, W., Kwok, O.-M., & Loyd, L. K. (2008). Teacher-student support, effortful engagement, and achievement: A 3-year longitudinal study. *Journal of Educational Psychology*, *100*(1), 1. https://doi.org/10.1037/0022-0663.100.1.1

Hughes, R. E. (2001). Deciding to leave but staying: Teacher burnout, precursors and turnover. *The International Journal of Human Resource Management*, *12*(2), 288–298. https://doi.org/10.1080/713769610

Jaffe, E. (2020). Mindset in the classroom: Changing the way students see themselves in mathematics and beyond. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, *93*(5), 255–263. https://doi.org/10.1080/00098655.2020.1802215

Jamil, F. M., Downer, J. T., & Pianta, R. C. (2012). Association of pre-service teachers' performance, personality, and beliefs with teacher self-efficacy at program completion. *Teacher Education Quarterly, 39*(4), 119-138. Retrieved May 3, 2020, from www.jstor.org/stable/23479655

Jennings, P. A., & Frank, J. L. (2015). Inservice preparation for educators. In J. A. Durlak, C. E. Domitrovich, R. P. Weissberg, & T. P. Gullotta (Eds.), *Handbook of social and emotional learning: Research and practice* (p. 422–437). The Guilford Press.

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. https://doi.org/10.3102/0034654308325693

Jennings, P. A., Brown, J. L., Frank, J. L., Doyle, S., Oh, Y., Davis, R., Rasheed, D., DeWeese, A., DeMauro, A. A., Cham, H., & Greenberg, M. T. (2017). Impacts of the CARE for Teachers program on teachers' social and emotional competence and classroom interactions. *Journal of Educational Psychology*, *109*(7), 1010–1028. https://doi.org/10.1037/edu0000187

Jong, R. de, Mainhard, T., Tartwijk, J. van, Veldman, I., Verloop, N., & Wubbels, T. (2014). How pre-service teachers' personality traits, self-efficacy, and discipline strategies contribute to the teacher–student relationship. *British Journal of Educational Psychology*, *84*(2), 294–310. https://doi.org/10.1111/bjep.12025

Judge, T. A., Bono, J. E., & Locke, E. A. (2000). Personality and job satisfaction: The mediating role of job characteristics. *Journal of Applied Psychology*, *85*(2), 237–249. https://doi.org/10.1037/0021-9010.85.2.237

Karsenti, T., & Collin, S. (2013). Why are new teachers leaving the profession? Results of a Canada-wide survey. *Education*, *3*, 141–149. https://doi.org/10.5923/j.edu.20130303.01

Katz, I., & Shahar, B.-H. (2015). What makes a motivating teacher? Teachers' motivation and beliefs as predictors of their autonomy-supportive style. *School Psychology International*, *36*(6), 575–588. https://doi.org/10.1177/0143034315609969

Katz, I., Kaplan, A., & Gueta, G. (2009). Students' needs, teachers' support, and motivation for doing homework: A cross-sectional study. *The Journal of Experimental Education*, *78*(2), 246–267. https://doi.org/10.1080/00220970903292868

Kesner, J. E. (2000). Teacher characteristics and the quality of child–teacher relationships. *Journal of School Psychology*, *38*(2), 133–149. https://doi.org/10.1016/S0022-4405(99)00043-6

Kiefer, S. M., Ellerbrock, C., & Alley, K. (2014). The role of responsive teacher practices in supporting academic motivation at the middle level. *RMLE Online*, *38*(1), 1–16. https://doi.org/10.1080/19404476.2014.11462114

Kilday, J. E., Lenser, M. L., & Miller, A. D. (2016). Considering students in teachers' self-efficacy: Examination of a scale for student-oriented teaching. *Teaching and Teacher Education*, *56*, 61–71. https://doi.org/10.1016/j.tate.2016.01.025

King, R. B., & McInerney, D. M. (2014). The work avoidance goal construct: Examining its structure, antecedents, and consequences. *Contemporary Educational Psychology*, *39*(1), 42–58. https://doi.org/10.1016/j.cedpsych.2013.12.002

Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology*, *102*(3), 741. https://doi.org/10.1037/a0019237

Klassen, R. M., & Chiu, M. M. (2011). The occupational commitment and intention to quit of practicing and pre-service teachers: Influence of self-efficacy, job stress, and teaching context. *Contemporary Educational Psychology, 36*, 114–129. https://doi.org/10.1016/j.cedpsych.2011.01.002

Klassen, R. M., & Tze, V. M. C. (2014). Teachers' self-efficacy, personality, and teaching effectiveness: A meta-analysis. *Educational Research Review*, *12*, 59–76. https://doi.org/10.1016/j.edurev.2014.06.001

Klassen, R. M., Bong, M., Usher, E. L., Chong, W. H., Huan, V. S., Wong, I. Y. F., & Georgiou, T. (2009). Exploring the validity of a teachers' self-efficacy scale in five countries. *Contemporary Educational Psychology*, *34*(1), 67–76. https://doi.org/10.1016/j.cedpsych.2008.08.001

Klassen, R. M., Perry, N. E., & Frenzel, A. C. (2012). Teachers' relatedness with students: An underemphasized component of teachers' basic psychological needs. *Journal of Educational Psychology*, *104*(1), 150–165. https://doi.org/10.1037/a0026253

Klassen, R. M., Yerdelen, S., & Durksen, T. L. (2013). Measuring teacher engagement: Development of the Engaged Teachers Scale (ETS). *Frontline Learning Research*, *1*(2), 33–52. https://doi.org/10.14786/flr.v1i2.44

Kleinfeld, J. (1975). Effective teachers of Eskimo and Indian students. *School Review, 83*, 301–344.

Koch, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration*, *11*(4), 1-10. http://dx.doi.org/10.4018/ijec.2015100101

Kokkinos, C. M. (2007). Job stressors, personality and burnout in primary school teachers. *British Journal of Educational Psychology*, *77*(1), 229–243. https://doi.org/10.1348/000709905X90344

Koomen, H. M. Y., Verschueren, K., van Schooten, E., Jak, S., & Pianta, R. C. (2012). Validating the Student-Teacher Relationship Scale: Testing factor structure and

measurement invariance across child gender and age in a Dutch sample. *Journal of School Psychology*, *50*(2), 215–234. https://doi.org/10.1016/j.jsp.2011.09.001

Kyriacou, C. (2001). Teacher stress: Directions for future research. *Educational Review*, *53*(1), 27–35. https://doi.org/10.1080/00131910120033628

Kyriazos, T. A. (2018). Applied psychometrics: Sample size and sample power considerations in factor analysis (EFA, CFA) and SEM in general. *Psychology*, *09*(08), 2207. https://doi.org/10.4236/psych.2018.98126

Lee, W. C., Chen, V. D.-T., & Wang, L.-Y. (2017). A review of research on teacher efficacy beliefs in the learner-centred pedagogy context: Themes, trends and issues. *Asia Pacific Education Review*, *18*(4), 559–572. https://doi.org/10.1007/s12564-017-9501-x

Lemley, J. B., Schumacher, G., & Vesey, W. (2014). What learning environments best address 21st-century students' perceived needs at the secondary level of instruction? *NASSP Bulletin*, *98*(2), 101–125. https://doi.org/10.1177/0192636514528748

Li, Y. (2018). Teacher–student relationships, student engagement, and academic achievement for non-Latino and Latino youth. *Adolescent Research Review*, *3*(4), 375–424. https://doi.org/10.1007/s40894-017-0069-9

Linnenbrink, E. A. (2005). The dilemma of performance-approach goals: The use of multiple goal contexts to promote students' motivation and learning. *Journal of Educational Psychology*, *97*(2), 197–213. https://doi.org/10.1037/0022-0663.97.2.197

Llorens, S., Bakker, A. B., Schaufeli, W., & Salanova, M. (2006). Testing the robustness of the job demands-resources model. *International Journal of Stress Management*, *13*(3), 378–391. https://doi.org/10.1037/1072-5245.13.3.378

Lochman, J. E. (2003). Commentary: School contextual influences on the dissemination of interventions. *School Psychology Review*, *32*(2), 174–177. https://doi.org/10.1080/02796015.2003.12086190

Loewenberg Ball, D., & Forzani, F. M. (2009). The work of teaching and the challenge for teacher education. *Journal of Teacher Education*, *60*(5), 497–511. https://doi.org/10.1177/0022487109348479

López, F. A. (2017). Altering the trajectory of the self-fulfilling prophecy: Asset-based pedagogy and classroom dynamics. *Journal of Teacher Education*, *68*(2), 193–212. https://doi.org/10.1177/0022487116685751

Madni, A., Baker, E. L., Chow, K. A., Delacruz, G. C., & Griffin, N. C. (2015). Assessment of teachers from a social psychological perspective. *Review of Research in Education*, *39*(1), 54–86. https://doi.org/10.3102/0091732X14558203

Maguire, K. (2011). *The role of teacher efficacy in student academic achievement in mathematics* (Publication No. 3449809) [Doctoral dissertation, Walden University]. ProQuest Dissertations Publishing.

Manassero, M., Garcia Buades, E., Torrens, G., Ramis, C., Vazquez, A., & Ferrer, V. A. (2006). Teacher burnout: Attributional aspects. *Psychology in Spain*, *10*(1), 66–74.

Mansfield, C. F., & Beltman, S. (2014). Teacher motivation from a goal content perspective: Beginning teachers' goals for teaching. *International Journal of Educational Research*, *65*, 54–64. https://doi.org/10.1016/j.ijer.2013.09.010

Martin, A. J., & Dowson, M. (2009). Interpersonal relationships, motivation, engagement, and achievement: Yields for theory, current issues, and educational practice. *Review of Educational Research*, *79*(1), 327–365. https://doi.org/10.3102/0034654308325583

Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach burnout inventory.* Manual (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.

Matteucci, M. C., Guglielmi, D., & Lauermann, F. (2017). Teachers' sense of responsibility for educational outcomes and its associations with teachers' instructional approaches and professional wellbeing. *Social Psychology of Education*, *20*(2), 275–298. https://doi.org/10.1007/s11218-017-9369-y

Maulana, R., Helms-Lorenz, M., Irnidayanti, Y., & van de Grift, W. (2016). Autonomous motivation in the Indonesian classroom: Relationship with teacher support through the lens of self-determination theory. *Asia-Pacific Education Researcher*, *25*(3), 441–451. https://doi.org/10.1007/s40299-016-0282-5

McCormick, J., & Barnett, K. (2011). Teachers' attributions for stress and their relationships with burnout. *International Journal of Educational Management*, *25*(3), 278–293. https://doi.org/10.1108/09513541111120114

McCormick, J., & Shi, G. (1999). Teachers' attributions of responsibility for their occupational stress in the People's Republic of China and Australia. *British Journal of Educational Psychology*, *69*(3), 393–407. https://doi.org/10.1348/000709999157798

McHugh, R. M., Horner, C. G., Colditz, J. B., & Wallace, T. L. (2013). Bridges and barriers: Adolescent perceptions of student–teacher relationships. *Urban Education*, *48*(1), 9–43. https://doi.org/10.1177/0042085912451585

Meece, J. L. (2003). Applying learner-centered principles to middle school education. *Theory Into Practice*, *42*(2), 109–116. https://doi.org/10.1207/s15430421tip4202_4

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

Midgley, C., Kaplan, A., Middleton, M., Maehr, M. L., Urdan, T., Anderman, L. H., Anderman, E., & Roeser, R. (1998). The development and validation of scales assessing students' achievement goal orientations. *Contemporary Educational Psychology*, *23*(2), 113–131. https://doi.org/10.1006/ceps.1998.0965

Mihalas, S., Morse, W. C., Allsopp, D. H., & Alvarez McHatton, P. (2009). Cultivating caring relationships between teachers and secondary students with emotional and behavioral disorders: Implications for research and practice. *Remedial and Special Education*, *30*(2), 108–125. https://doi.org/10.1177/0741932508315950

Miller, D. T., & Ross, M. (1975). Self-serving biases in the attribution of causality: Fact or fiction? *Psychological Bulletin*, *82*(2), 213–225. https://doi.org/10.1037/h0076486

Moè, A. (2016). Harmonious passion and its relationship with teacher well-being. *Teaching and Teacher Education*, *59*, 431–437. https://doi.org/10.1016/j.tate.2016.07.017

Moè, A., Pazzaglia, F., & Ronconi, L. (2010). When being able is not enough. The combined value of positive affect and self-efficacy for job satisfaction in teaching. *Teaching and Teacher Education*, *26*(5), 1145–1153. https://doi.org/10.1016/j.tate.2010.02.010

Moen, F., & Skaalvik, E. (2008). The triggering effect of business coaching on performance psychology. *The International Journal of Coaching in Organizations*, *4*, 93–116.

Moen, F., Skaalvik, E., & Hacker, C. M. (2009). Performance psychology among business executives in an achievement oriented environment. *Mission of the Journal of Excellence*, *13*(2), 78–96.

Mohamadi, F.S., Asadzadeh, H. (2012). Testing the mediating role of teachers' self-efficacy beliefs in the relationship between sources of efficacy information and students achievement. *Asia Pacific Education Review, 13,* 427–433. https://doi.org/10.1007/s12564-011-9203-8

Moseley, C., Bilica, K., Wandless, A., & Gdovin, R. (2014). Exploring the relationship between teaching efficacy and cultural efficacy of novice science teachers in high-needs schools. *School Science and Mathematics*, *114*(7), 315–325. https://doi.org/10.1111/ssm.12087

Muthén, L. K., & Muthén, B. (1998-2015). *Mplus user's guide* (7th ed.). Los Angeles, CA: Author.

Newsom, J. T. (2015). *Longitudinal structural equation modeling: A comprehensive introduction*. Routledge.

Nicholls, J. G., Patashnick, M., & Nolen, S. B. (1985). Adolescents' theories of education. *Journal of Educational Psychology*, *77*(6), 683–692. https://doi.org/10.1037/0022-0663.77.6.683

Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and Research in Education*, *7*(2), 133–144. https://doi.org/10.1177/1477878509104318

Nitsche, S., Dickhäuser, O., Fasching, M. S., & Dresel, M. (2011). Rethinking teachers' goal orientations: Conceptual and methodological enhancements. *Learning and Instruction*, *21*(4), 574–586. https://doi.org/10.1016/j.learninstruc.2010.12.001

Nitsche, S., Dickhäuser, O., Fasching, M. S., & Dresel, M. (2013). Teachers' professional goal orientations: Importance for further training and sick leave. *Learning and Individual Differences*, *23*, 272–278. https://doi.org/10.1016/j.lindif.2012.07.017

Noddings, N. (1984). *Caring: A feminine approach to ethics and moral education.* Berkeley, CA: University of California Press.

Noddings, N. (2012). The caring relation in teaching. *Oxford Review of Education*, *38*(6), 771–781. https://doi.org/10.1080/03054985.2012.745047

Noddings, N. (2015). *The challenge to care in schools: An Alternative Approach to Education, 2nd Editon*. Teachers College Press.

Nolen, S. B. (1988). Reasons for studying: Motivational orientations and study strategies. *Cognition and Instruction*, *5*(4), 269–287. https://doi.org/10.1207/s1532690xci0504_2

O'Neill, S. C., & Stephenson, J. (2011). The measurement of classroom management self-efficacy: A review of measurement instrument development and influences. *Educational Psychology*, *31*(3), 261–299. https://doi.org/10.1080/01443410.2010.545344

Organisation for Economic Co-operation and Development (OECD). (2005). *Teachers matter: Attracting, developing and retaining effective teachers*. Paris: OECD Publishing.

Ozkal, N. (2014). Sense of professional self-efficacy beliefs and learner autonomy support behaviour of middle school teachers. *The Anthropologist*, *18*(2), 575–581. https://doi.org/10.1080/09720073.2014.11891575

Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research*, *66*(4), 543–578. https://doi.org/10.3102/00346543066004543

Pan, Y.-H. (2014). Relationships among teachers' self-efficacy and students' motivation, atmosphere, and satisfaction in physical education. *Journal of Teaching in Physical Education*, *33*(1), 68–92. https://doi.org/10.1123/jtpe.2013-0069

Patrick, H., Knee, C. R., Canevello, A., & Lonsbary, C. (2007). The role of need fulfillment in relationship functioning and well-being: A self-determination theory perspective. *Journal*

of Personality and Social Psychology, *92*(3), 434–457. https://doi.org/10.1037/0022-3514.92.3.434

Payne, S. C., Youngcourt, S. S., & Beaubien, J. M. (2007). A meta-analytic examination of the goal orientation nomological net. *Journal of Applied Psychology*, *92*(1), 128–150. https://doi.org/10.1037/0021-9010.92.1.128

Pelletier, L. G., Séguin-Lévesque, C., & Legault, L. (2002). Pressure from above and pressure from below as determinants of teachers' motivation and teaching behaviors. *Journal of Educational Psychology*, *94*(1), 186–196. https://doi.org/10.1037/0022-0663.94.1.186

Perlman, D. J. (2015). Help motivate the amotivated by being a supportive teacher. *Physical Education and Sport Pedagogy*, *20*(2), 204–214. https://doi.org/10.1080/17408989.2013.868876

Phan, H. P. (2009). Relations between goals, self-efficacy, critical thinking and deep processing strategies: A path analysis. *Educational Psychology*, 29, 777–799. https://doi.org/10.1080/01443410903289423

Pianta, R. C. (2006). Classroom management and relationships between children and teachers: Implications for research and practice. In C. S. Weinstein & C. M. Evertson (Eds.), *Handbook of classroom management: Research, practice, and contemporary issues* (pp. 685–709). Mahwah: Lawrence Erlbaum Associates Publishers.

Pianta, R. C., & Nimetz, S. L. (1991). Relationships between children and teachers: Associations with classroom and home behavior. *Journal of Applied Developmental Psychology*, *12*(3), 379–393. https://doi.org/10.1016/0193-3973(91)90007-Q

Pianta, R. C., Hamre, B. K., & Allen, J. P. (2012). Teacher-student relationships and engagement: Conceptualizing, measuring, and improving the capacity of classroom

interactions. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (p. 365–386). Springer. https://doi.org/10.1007/978-1-4614-2018-7_17

Pianta, R., Hamre, B., & Stuhlman, M. (2003). Relationships between teachers and children. In W. M. Reynolds, G. E. Miller, & I. B. Weiner (Eds.), *Handbook of psychology: Vol. 7. Educational psychology* (pp. 199–234). Hoboken, NJ: Wiley. https://doi.org/10.1002/0471264385.wei0710

Posnanski, T. J. (2002). Professional development programs for elementary science teachers: An analysis of teacher self-efficacy beliefs and a professional development model. *Journal of Science Teacher Education*, *13*(3), 189–220. https://doi.org/10.1023/A:1016517100186

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*(3), 879–891. https://doi.org/10.3758/BRM.40.3.879

Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist*, *44*(3), 159–175. https://doi.org/10.1080/00461520903028990

Retelsdorf, J., & Günther, C. (2011). Achievement goals for teaching and teachers' reference norms: Relations with instructional practices. *Teaching and Teacher Education*, *27*(7), 1111–1119. https://doi.org/10.1016/j.tate.2011.05.007

Retelsdorf, J., Butler, R., Streblow, L., & Schiefele, U. (2010). Teachers' goal orientations for teaching: Associations with instructional practices, interest in teaching, and burnout. *Learning and Instruction*, *20*(1), 30–46. https://doi.org/10.1016/j.learninstruc.2009.01.001

Richardson, D. S., Bledsoe, R. S., & Cortez, Z. (2020). Mindset, motivation, and teaching practice: Psychology applied to understanding teaching and learning in STEM disciplines. *CBE Life Sciences Education*, *19*(3), 1–7. https://doi.org/10.1187/cbe.19-11-0238

Richter, A., Näswall, K., Lindfors, P., & Sverke, M. (2015). Job insecurity and work–family conflict in teachers in Sweden: Examining their relations with longitudinal cross-lagged modeling. *PsyCh Journal*, *4*(2), 98–111. https://doi.org/10.1002/pchj.88

Riley, P. (2009). An adult attachment perspective on the student–teacher relationship & classroom management difficulties. *Teaching and Teacher Education*, *25*(5), 626–635. https://doi.org/10.1016/j.tate.2008.11.01

Roness, D. (2011). Still motivated? The motivation for teaching during the second year in the profession. *Teaching and Teacher Education*, *27*(3), 628–638. https://doi.org/10.1016/j.tate.2010.10.016

Roorda, D. L., Koomen, H. M. Y., Spilt, J. L., & Oort, F. J. (2011). The influence of affective teacher–student relationships on students' school engagement and achievement: A meta-analytic approach. *Review of Educational Research*, *81*(4), 493–529. https://doi.org/10.3102/0034654311421793

Ross, J. A. (1992). Teacher efficacy and the effects of coaching on student achievement. *Canadian Journal of Education / Revue Canadienne de l'éducation*, *17*(1), 51–65. https://doi.org/10.2307/1495395

Roth, G., Assor, A., Kanat-Maymon, Y., & Kaplan, H. (2007). Autonomous motivation for teaching: How self-determined teaching may lead to self-determined learning. *Journal of Educational Psychology*, *99*(4), 761. https://doi.org/10.1037/0022-0663.99.4.761

Runhaar, P., Sanders, K., & Konermann, J. (2013). Teachers' work engagement: Considering interaction with pupils and human resources practices as job resources. *Journal of Applied Social Psychology*, *43*(10), 2017–2030. https://doi.org/10.1111/jasp.12155

Ryan, A. M., & Shim, S. S. (2006). Social achievement goals: The nature and consequences of different orientations toward social competence. *Personality and Social Psychology Bulletin*, *32*(9), 1246–1263. https://doi.org/10.1177/0146167206289345

Ryan, A. M., & Shim, S. S. (2008). An exploration of young adolescents' social achievement goals and social adjustment in middle school. *Journal of Educational Psychology*, *100*(3), 672–687. https://doi.org/10.1037/0022-0663.100.3.672

Ryan, A. M., Kuusinen, C. M., & Bedoya-Skoog, A. (2015). Managing peer relations: A dimension of teacher self-efficacy that varies between elementary and middle school teachers and is associated with observed classroom quality. *Contemporary Educational Psychology*, *41*, 147–156. https://doi.org/10.1016/j.cedpsych.2015.01.002

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68–75. https://doi.org/10.1037/0003-066X.55.1.68

Salmela-Aro, K., & Upadyaya, K. (2018). Role of demands-resources in work engagement and burnout in different career stages. *Journal of Vocational Behavior*, *108*, 190–200. https://doi.org/10.1016/j.jvb.2018.08.002

Schaufeli, W. B., & Taris, T. W. (2014). A critical review of the job demands-resources model: Implications for improving work and health. In G. F. Bauer & O. Hämmig, *Bridging Occupational, Organizational and Public Health* (pp. 43–68). Springer Netherlands. https://doi.org/10.1007/978-94-007-5640-3_4

Schiefele, U. (2017). Classroom management and mastery-oriented instruction as mediators of the effects of teacher motivation on student motivation. *Teaching and Teacher Education, 64*, 115-126. https://doi.org/10.1016/j.tate.2017.02.004

Schunk, D. H., Pintrich, P. R., & Meece, J. L. (2008). *Motivation in education: Theory, research, and applications.* Upper Saddle River, NJ: Pearson/Merrill Prentice Hall.

Seaton, F. S. (2018). Empowering teachers to implement a growth mindset. *Educational Psychology in Practice*, *34*(1), 41–57. https://doi.org/10.1080/02667363.2017.1382333

Sehgal, P., Nambudiri, R., & Mishra, S. K. (2017). Teacher effectiveness through self-efficacy, collaboration and principal leadership. *International Journal of Educational Management*, *31*(4), 505–517. https://doi.org/10.1108/IJEM-05-2016-0090

Shindler, J., Jones, A., Williams, A. D., Taylor, C., & Cardenas, H. (2016). The school climate-student achievement connection: If we want achievement gains, we need to begin by improving the climate. *Journal of School Administration Research and Development*, *1*(1), 9–16. https://doi.org/10.32674/jsard.v1i1.1905

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational researcher*, *15*(2), 4-14. https://doi.org/10.3102/0013189X015002004

Simbula, S., Guglielmi, D., & Schaufeli, W. B. (2011). A three-wave study of job resources, self-efficacy, and work engagement among Italian schoolteachers. *European Journal of Work and Organizational Psychology*, *20*(3), 285–304. https://doi.org/10.1080/13594320903513916

Simões, F., & Calheiros, M. M. (2019). A matter of teaching and relationships: Determinants of teaching style, interpersonal resources and teacher burnout. *Social Psychology of Education*, *22*(4), 991–1013. https://doi.org/10.1007/s11218-019-09501-w

Singer, J. D., & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence.* Oxford University Press, New York.

Skaalvik, E. M. (2018). Mathematics anxiety and coping strategies among middle school students: Relations with students' achievement goal orientations and level of performance. *Social Psychology of Education*, *21*(3), 709–723. https://doi.org/10.1007/s11218-018-9433-2

Skaalvik, E. M., & Skaalvik, S. (2010). Teacher self-efficacy and teacher burnout: A study of relations. *Teaching and Teacher Education*, *26*(4), 1059–1069. https://doi.org/10.1016/j.tate.2009.11.001

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85*(4), 571-581. http://dx.doi.org/10.1037/0022-0663.85.4.571

Skinner, E. A., & Pitzer, J. R. (2012). Developmental dynamics of student engagement, coping, and everyday resilience. In Christenson S., Reschly A., Wylie C. (Eds), *Handbook of research on student engagement* (pp. 21–44). Springer. https://doi.org/10.1007/978-1-4614-2018-7_2

Skinner, E. A., Kindermann, T. A., & Furrer, C. J. (2009). A motivational perspective on engagement and disaffection: Conceptualization and assessment of children's behavioral and emotional participation in academic activities in the classroom. *Educational and Psychological Measurement*, *69*(3), 493–525. https://doi.org/10.1177/0013164408323233

Sosa, T., & Gomez, K. (2012). Connecting teacher efficacy beliefs in promoting resilience to support of Latino students. *Urban Education*, *47*(5), 876–909. https://doi.org/10.1177/0042085912446033

Spera, C., & Wentzel, K. R. (2003). Congruence between students' and teachers' goals: Implications for social and academic motivation. *International Journal of Educational Research*, *39*(4), 395–413. https://doi.org/10.1016/j.ijer.2004.06.006

Spilt, J. L., Koomen, H. M. Y., & Thijs, J. T. (2011). Teacher wellbeing: The importance of teacher–student relationships. *Educational Psychology Review*, *23*(4), 457–477. https://doi.org/10.1007/s10648-011-9170-y

Steiger, J. H. (2007). Understanding the limitations of global fit assessment in structural equation modeling. *Personality and Individual Differences*, *42*(5), 893–898. https://doi.org/10.1016/j.paid.2006.09.017

Straits, W. (2007). "She's teaching me": Teaching with care in a large lecture course. *College Teaching*, *55*(4), 170–175. https://doi.org/10.3200/CTCH.55.4.170-175

Strunk, K. K., Lester, W. S., Lane, F. C., Hoover, P. D., & Betties, J. S. (2021). Testing the mastery-avoidance construct in achievement goal theory: A meta-analytic confirmatory factor analysis (MA-CFA) of two achievement goals scales. *Educational Psychology*, *41*(4), 383–400. https://doi.org/10.1080/01443410.2020.1824268

Sylva, K., Ereky-Stevens, K., Pastori, G., Slot, P. L., & Lerkkanen, M.-K. (2016). *Integrative Report on a culture-sensitive quality & curriculum framework*. EU CARE project. https://dspace.library.uu.nl/handle/1874/342308

Thomas, K. J., Cunha, J. M. de, Souza, D. A. de, & Santo, J. (2019). Fairness, trust, and school climate as foundational to growth mindset: A study among Brazilian children and adolescents. *Educational Psychology*, *39*(4), 510–529. https://doi.org/10.1080/01443410.2018.1549726

Thomson, M. M., & Palermo, C. J. (2018). Using an expectancy-value model to understand teaching motivation among nontraditional preservice teachers: A phenomenological study approach. *Action in Teacher Education*, *40*(2), 151–168. https://doi.org/10.1080/01626620.2018.1424050

Throndsen, I., & Turmo, A. (2013). Primary mathematics teachers' goal orientations and student achievement. *Instructional Science*, *41*(2), 307–322. https://doi.org/10.1007/s11251-012-9229-2

Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, *17*(7), 783–805. https://doi.org/10.1016/S0742-051X(01)00036-1

Tschannen-Moran, M., Woolfolk Hoy, A., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research*, *68*(2), 202–248. https://doi.org/10.3102/00346543068002202

Tsigilis, N., Gregoriadis, A., Theodorakis, N. D., & Evaggelinou, C. (2019). Teachers' self-efficacy and its association with their quality of relationships with pre and early adolescents: A hierarchical linear modelling approach. *Education 3-13*, *47*(1), 64–73. https://doi.org/10.1080/03004279.2017.1399153

van der Heijden, H. R. M. A., Beijaard, D., Geldens, J. J. M., & Popeijus, H. L. (2018). Understanding teachers as change agents: An investigation of primary school teachers' self-perception. *Journal of Educational Change*, *19*(3), 347–373. https://doi.org/10.1007/s10833-018-9320-9

Van Droogenbroeck, F., Spruyt, B., & Vanroelen, C. (2014). Burnout among senior teachers: Investigating the role of workload and interpersonal relationships at work. *Teaching and Teacher Education*, *43*, 99–109. https://doi.org/10.1016/j.tate.2014.07.005

Van Maele, D., & Van Houtte, M. (2015). Trust in school: A pathway to inhibit teacher burnout? *Journal of Educational Administration*, *53*(1), 93–115. https://doi.org/10.1108/JEA-02-2014-0018

van Uden, J. M., Ritzen, H., & Pieters, J. M. (2013). I think I can engage my students. Teachers' perceptions of student engagement and their beliefs about being a teacher. *Teaching and Teacher Education*, *32*, 43–54. https://doi.org/10.1016/j.tate.2013.01.004

Vansteenkiste, M., & Ryan, R. M. (2013). On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *Journal of Psychotherapy Integration*, *23*(3), 263–280. https://doi.org/10.1037/a0032359

Veldman, I., Admiraal, W., Mainhard, T., Wubbels, T., & van Tartwijk, J. (2017). Measuring teachers' interpersonal self-efficacy: Relationship with realized interpersonal aspirations, classroom management efficacy and age. *Social Psychology of Education*, *20*(2), 411–426. https://doi.org/10.1007/s11218-017-9374-1

Veldman, I., Admiraal, W., van Tartwijk, J., Mainhard, T., & Wubbels, T. (2016). Veteran teachers' job satisfaction as a function of personal demands and resources in the relationships with their students. *Teachers and Teaching*, *22*(8), 913–926. https://doi.org/10.1080/13540602.2016.1200546

Wang, H., & Hall, N. C. (2018). A systematic review of teachers' causal attributions: Prevalence, correlates, and consequences. *Frontiers in Psychology*, *9*, 2305. https://doi.org/10.3389/fpsyg.2018.02305

Wang, H., & Hall, N. C. (2019). When "I care" is not enough: An interactional analysis of teacher values, value congruence, and well-being. *Teaching and Teacher Education*, *86*, 102906. https://doi.org/10.1016/j.tate.2019.102906

Wang, H., & Hall, N. C. (2021). Exploring relations between teacher emotions, coping strategies, and intentions to quit: A longitudinal analysis. *Journal of School Psychology*, *86*, 64–77. https://doi.org/10.1016/j.jsp.2021.03.005

Wang, H., Hall, N. C., & Rahimi, S. (2015). Self-efficacy and causal attributions in teachers: Effects on burnout, job satisfaction, illness, and quitting intentions. *Teaching and Teacher Education*, *47*, 120–130. https://doi.org/10.1016/j.tate.2014.12.005

Wang, H., Hall, N. C., & Taxer, J. L. (2019). Antecedents and consequences of teachers' emotional labor: A systematic review and meta-analytic investigation. *Educational Psychology Review*. https://doi.org/10.1007/s10648-019-09475-3

Wang, H., Hall, N. C., Goetz, T., & Frenzel, A. C. (2017). Teachers' goal orientations: Effects on classroom goal structures and emotions. *British Journal of Educational Psychology*, *87*(1), 90–107. https://doi.org/10.1111/bjep.12137

Wang, Y.-L., Tsai, C.-C., & Wei, S.-H. (2015). The sources of science teaching self-efficacy among elementary school teachers: A mediational model approach. *International Journal of Science Education*, *37*(14), 2264–2283. https://doi.org/10.1080/09500693.2015.1075077

Watt, H. M. G., Butler, R., & Richardson, P. W. (2021). Antecedents and consequences of teachers' goal profiles in Australia and Israel. *Learning and Instruction*, *76*, 101491. https://doi.org/10.1016/j.learninstruc.2021.101491

Watt, H. M. G., Richardson, P. W., & Smith, K. (2017). Why teach? How teachers' motivations matter around the world. In H. M. G. Watt, P. W. Richardson, & K. Smith (Eds.), *Global Perspectives on Teacher Motivation* (pp. 1–21). Cambridge University Press. https://doi.org/10.1017/9781316225202.001

Weinfield, N. S., Sroufe, L. A., Egeland, B., & Carlson, E. A. (1999). The nature of individual differences in infant–caregiver attachment. In *Handbook of attachment: Theory, research, and clinical applications* (pp. 68–88). The Guilford Press.

Wentzel, K. R. (1997). Student motivation in middle school: The role of perceived pedagogical caring. *Journal of Educational Psychology*, *89*(3), 411–419. https://doi.org/10.1037/0022-0663.89.3.411

Wentzel, K. R. (2016). Teacher-student relationships. In K. R. Wentzel & D. B. Miele (Eds.), *Handbook of Motivation at School* (pp. 211–230). Routledge.

Wentzel, K. R., Battle, A., Russell, S. L., & Looney, L. B. (2010). Social supports from teachers and peers as predictors of academic and social motivation. *Contemporary Educational Psychology*, *35*(3), 193–202. https://doi.org/10.1016/j.cedpsych.2010.03.002

Whitley, J. (2010). Modelling the influence of teacher characteristics on student achievement for Canadian students with and without learning disabilities. *International Journal of Special Education*, *25*(3), 88–97.

Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample size requirements for structural equation models: An evaluation of power, bias, and solution propriety. *Educational and Psychological Measurement*, *73*(6), 913–934. https://doi.org/10.1177/0013164413495237

Woolfolk, A. E., Rosoff, B., & Hoy, W. K. (1990). Teachers' sense of efficacy and their beliefs about managing students. *Teaching and Teacher Education*, *6*(2), 137–148. https://doi.org/10.1016/0742-051X(90)90031-Y

Wu, J.-Y., Hughes, J. N., & Kwok, O.-M. (2010). Teacher–student relationship quality type in elementary grades: Effects on trajectories for achievement and engagement. *Journal of School Psychology*, *48*(5), 357–387. https://doi.org/10.1016/j.jsp.2010.06.004

Wubbels, T., Brekelmans, J. M. G., den Brok, P. J., Wijsman, L., Mainhard, T., & van Tartwijk, J. W. F. (2014). Teacher-student relationships and classroom management. In E. Emmer & E. J. Sabornie (Eds.), *Handbook of Classroom Management (2nd Edition)* (pp. 363–386). Routledge.

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management*, *14*(2), 121–141. https://doi.org/10.1037/1072-5245.14.2.121

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational Behavior*, *74*(3), 235–244. https://doi.org/10.1016/j.jvb.2008.11.003

Yeager, D. S., Trzesniewski, K. H., & Dweck, C. S. (2013). An implicit theories of personality intervention reduces adolescent aggression in response to victimization and exclusion. *Child Development*, *84*(3), 970–988. https://doi.org/10.1111/cdev.12003

Zee, M., & Koomen, H. M. Y. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational Research*, *86*(4), 981–1015. https://doi.org/10.3102/0034654315626801

Zee, M., & Koomen, H. M. Y. (2017). Similarities and dissimilarities between teachers' and students' relationship views in upper elementary school: The role of personal teacher and student attributes. *Journal of School Psychology*, *64*, 43–60. https://doi.org/10.1016/j.jsp.2017.04.007

Zee, M., de Jong, P. F., & Koomen, H. M. Y. (2016a). Teachers' self-efficacy in relation to individual students with a variety of social–emotional behaviors: A multilevel investigation. *Journal of Educational Psychology*, *108*(7), 1013–1027. https://doi.org/10.1037/edu0000106

Zee, M., Koomen, H. M. Y., Jellesma, F. C., Geerlings, J., & de Jong, P. F. (2016b). Inter- and intra-individual differences in teachers' self-efficacy: A multilevel factor exploration. *Journal of School Psychology*, *55*, 39–56. https://doi.org/10.1016/j.jsp.2015.12.003

Zimmerman, B. J. (2000). Self-efficacy: An essential motive to learn. *Contemporary Educational Psychology*, *25*(1), 82–91. https://doi.org/10.1006/ceps.1999.1016

Zimmerman, B. J. (2013). From cognitive modeling to self-regulation: A social cognitive career path. *Educational Psychologist*, *48*(3), 135–147. https://doi.org/10.1080/00461520.2013.794676