Effects of Self-Efficacy and Attributions on Teachers' Well-Being:
A Mediational Analysis

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Whereas several studies in the field of achievement motivation have focused on students, there are surprisingly little research on motivation in teachers, which is surprising given high levels of burnout, low job satisfaction, and a high dropout rates among instructors. Prior research suggests that teachers' self-efficacy plays an important role in predicting job satisfaction (Moe et al., 2010; Caprara, Barbaranelli et al., 2003), quitting intentions, and burnout (Skaalvik & Skaalvik, 2009, 2010) among teachers. Other studies show that although teachers' stress levels are very high (Borg & Riding, 1991), the way they attribute occupational stress can greatly influence their psychological well-being (e.g., Manassero et al., 2006). Furthermore, Bandura's (1986, 1994) social cognitive theory proposes that self-efficacy influences the types of causal attributions individuals make for situational events. Therefore, the present study evaluated the effects of both teacher's self-efficacy and the way they attribute their occupational stress on burnout, job satisfaction, and quitting intentions based on the assumption that teachers' attributions should mediate the relationship between self-efficacy and adjustment outcomes.

Teachers' self-efficacy

Self-efficacy is, defined by Bandura as "people's beliefs about their capacities to produce designated levels of performance and exercise influence over events that affect their lives" (Bandura, 1994, p. 71). Therefore, self-efficacy represents people's beliefs about how capable they are to conduct certain tasks. The present study followed the model of Tschannen-Moran et al. (1998) and categorized teachers' self-efficacy into *student engagement*, *instructional strategies*, and *classroom management*. Prior studies have shown that high self-efficacy in teachers predicts better use of time, lower criticism, encouragement of student autonomy and responsibility for learning, and greater persistence when dealing with students' academic and behavioral problems (Gibson & Dembo, 1984; Woodfolk & Hoy, 1990). It has recently also been found that teaching capabilities do not guarantee teachers' job satisfaction (Moe et al., 2010) - that being able to teach is not sufficient to enjoy the profession. Concerning teachers' emotions, it has also found that positive emotions such as pride and happiness, as well as a high level of self-efficacy, are needed for teachers to experience greater job satisfaction (Skaalvik & Skaalvik, 2009).

Teachers' causal attributions

In motivational studies, "attributions" are defined as an individual's perceived cause of success or failure. According to Weiner's attribution theory (1985), all perceived causes could be qualified with respect to three underlying dimensions. *Locus of causality* refers to attributions being either internal or external to the individual, *stability* concerns the extent of fluctuation over time (corresponds to expectancy), and *controllability* reflects how much control people believe they have over an outcome. Prior research has shown that the way teachers attribute their occupational stress is associated with different levels of burnout (Manassero et al., 2006) with attributions to more stable, internal, uncontrollable, intentional, and global factors predicting greater burnout. Finally, McCormik (1997) also found that teachers who were satisfied with their job tended to attribute their stress to more internal and controllable factors and thus were more willing to take responsibility for their stress.

The present study

The first purpose of this study was to simultaneously test the effects of self-efficacy and attributions on burnout, job satisfaction, and intentions to quit in teachers. The second purpose was to examine whether teachers' attributions for their stress mediated the effects of teachers' self-efficacy on adjustment outcomes. In the research literature on teacher motivation, research findings are varied concerning the relationships between self-efficacy, causal attributions, and teaching outcomes. For example, Bandura's (1994) theory suggests that self-efficacy influences causal attributions due to its dispositional, personality-oriented nature, a finding supported by Brady and Woolfson (2008)'s study showing self-efficacy, experience, and attitudes towards students' disabilities to predict teachers' attributions for their students' academic difficulties. However, another model evaluated by De Jesus and Lens (2005) assumed teachers' attributions to influence their self-efficacy, which in turn predicted expectancy for success and intrinsic motivation. Reyna and Weiner (2001) further suggested that attributions, especially the dimension of controllability, influenced self-efficacy in teachers. Therefore, the present study also evaluated

attributions as mediators of the effects of self-efficacy on adjustment in teachers in an attempt to contribute to presently mixed research findings.

Method

Participants

Practicing teachers (N = 536) were recruited from across the provinces of Ontario and Quebec in Canada through mass emails and announcements from teacher unions and school principals to complete a web-based questionnaire assessing demographic variables as well as self-efficacy, attributions for vocational stress, burnout, job satisfaction, and quitting intentions. Participants included teachers from primary schools (51.1%, n = 258), secondary schools (42.8%, n = 216), and CEGEPs (Quebec equivalent to grades 12-13; 6.1%, n = 31). The mean age of teachers was 41.89 years (SD = 9.95), 85.2% were female, 90.6% were Caucasian, and most had a bachelor's (72.5%), or a master's degree (24.2%). The mean years of teaching experience was 12.87 (SD = 8.64).

Measures

Self-efficacy. Tschannen-Moran and Woolfolk Hoy's (2001) *Teachers' Sense of Efficacy Scale (short form)* was administered and contained 12 items evaluating three types of self-efficacy: *instructional strategies*, *classroom management*, and *student engagement*. A 9-point Likert scale was used, ranging from 1 = *nothing* to 9 = *a great deal* (Instructional Strategies: four items, M = 30.26, SD = 3.68, α = .88; Classroom Management: four items, M = 29.56, SD = 4.46, α = .88; Student Engagement: four items, M = 26.69, SD = 4.67, α = .76).

Attributions. A modified version of CDS-II scale (McAuley et al., 1992) was used in which teachers' (not students') attributions were assessed concerning the causes of their occupational stress. The Likert scale was anchored from 1 to 9, with each item having unique anchors. The attributional factors that were evaluated included *locus of causality* (three items, M = 11.30, SD = 6.90, α = .88), *stability* (three items, M = 12.78, SD = 5.53, α = .60), *external control* (three items, M = 18.56, SD = 6.35, α = .87), and *personal control* (three items, M = 13.64, SD = 6.74, α = .90).

Burnout. The Maslach Burnout Inventory (MBI; Maslach & Jackson, 1986) was also administered and assessed three symptoms of burnout: *emotional exhaustion* (nine items, M = 22.09, SD = 11.37, α = .92), *depersonalization* (five items, M = 4.86, SD = 4.68, α = .68), and *personal accomplishment* (eight items, M = 38.67, SD = 5.88, α = .74).

Job satisfaction and intentions to quit. Moe et al.'s (2010) scale assessing teachers' job satisfaction includes five questions rated on a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*; M = 25.31, SD = 6.92, α = .89). A 3-item measure of teachers' quitting intention developed by Hackett et al. (2001) was also employed (M = 5.30, SD = 2.94, α = .86).

Results

Analyses

Regression analyses controlling for teachers' teaching experiences, highest level of education, teaching levels, and gender were conducted on three subcategories of burnout, job satisfaction, and quitting intentions as dependent variables. Results showed no significant predictive relationship between teachers' self-efficacy and causal attributions, thus the prerequisite for subsequent mediational (SEM) analysis was not satisfied and the mediational hypothesis was not supported.

Regression

Results showed teachers' self-efficacy regarding Student Engagement and Classroom Management to both negatively and significantly predict teachers' Emotional Exhaustion, R^2 = .13, $F(7, 365) = 7.93$, $p < .01$. Including the attribution dimension variables added another 4% of the variability explained, R^2 = .17 (significant increase, $F_{inc}(4, 361) = 4.53$, $p < .01$), and showed Internality to positively predict Emotional Exhaustion, β = .23, $p < .0$, and Personal Control to negatively predict it, β = -.25, $p < .01$. All self-efficacy variables significantly and positively predicted teachers' sense of Personal Accomplishment (25% of the variability), with self-efficacy concerning Student Engagement being the strongest predictor, β = .30, $p < .01$, and self-efficacy for Instructional Strategies, β = .18, $p < .01$, and Classroom Management, β = .12, $p < .05$, predicting less strongly. Our results further showed

only teachers' self-efficacy pertaining to Student Engagement to significantly predict lower levels of Depersonalization, $\beta = -.32$, $p < .01$ (all subscales of self-efficacy predicted 18% of variability), with the attributional dimension of Personal Control significantly and negatively predicting Depersonalization in the second step, $\beta = -.15$, $p = .05$, and Internality positively predicting of Depersonalization, $\beta = .18$, $p < .05$ (significant increment in variance explained with attribution measures; $F_{inc}(4, 362) = 2.60$, $p < .05$).

Self-efficacy regarding both Student Engagement and Classroom Management significantly predicted 13% of the variability in job satisfaction, with Student Engagement again being a positive predictor, $\beta = .27$, $p < .01$. When the attribution variables were added (significant increase of 7% in variability explained; $F_{inc}(4, 367) = 8.24$, $p < .01$), External Control was found to negatively predict job satisfaction, $\beta = -.13$, $p < .05$, whereas Personal Control positively predicted job satisfaction, $\beta = .23$, $p < .01$.

Finally, teachers' self-efficacy regarding Student Engagement, and the attributional variable of Personal Control, were again the most important predictors of teachers' quitting intentions (self-efficacy variables predicted 11% of the variability, attribution variables contributed significantly, $F_{inc}(4, 361) = 4.21$, $p < .01$). Self-efficacy concerning Student Engagement subscale emerged as the biggest self-efficacy predictor, $\beta = -.37$, $p < .01$, followed by Instructional Strategies, $\beta = .20$, $p < .01$, with Personal Control being a negative predictor, $\beta = -.22$, $p < .01$,and Internality a positive predictor of quitting intentions, $\beta = .17$, $p < .05$ (see Table1 for more detail).

Conclusion

All in all, our results showed that teachers' self-efficacy regarding student engagement was the most significant predictor of adjustment in teachers, followed by self-efficacy concerning classroom management. In other words, the higher a teachers' self-efficacy for engaging their students and keeping them on-task, the lower the possibility of burnout, the higher their job satisfaction, and weaker their intentions to leave the profession were. Over and above the effects of teachers' self-efficacy, the attribution variable reflecting a belief in personal control over the cause of one's stress as a teacher was also found to be a significant and negative predictor for teachers' Emotional Exhaustion, Depersonalization, and quitting intentions, and a strong positive predictor of job satisfaction. Thus, when teachers attributed their occupational stress to factors that were controllable by themselves, they tended to experience less burnout, higher job satisfaction, and they were also less willing to quit.

Our results also showed that teachers' self-efficacy and attributions for stress both predicted the adjustment outcomes, and that their effects did not overlap. These results thus imply that an increase in teachers' self-efficacy for student engagement and classroom management, and to a lesser extent instructional effectiveness, should lead to a positive change in their psychological adjustment and persistence. Moreover, if these teachers can also attribute the stress to personally controllable, their adjustment levels are likely to be even better. Therefore, attempts to change either one of these motivational variables – to increase teachers' self-efficacy or to encourage them to attribute their stress to controllable factors –should lead to a significant and positive change in their adjustment levels.

Finally, it is important to note that one set of finding directly contradicted our study hypotheses: Stronger tendencies to perceive occupational stress as due to *internal* factors predicted *higher* levels of burnout. One likely explanation for these results may be including personal control as a simultaneous predictor alongside internality which may have effectively removed the beneficial elements of internality leaving the uncontrollable elements of internality to be assessed. Nevertheless, this finding lends supports Weiner's critique of Rotter's locus of control theory such that Internality and Controllability are not the same construct, as attributions that are internal to an individual can be either personally controllable (e.g., effort) or uncontrollable (e.g., ability). To sum up, whereas self-efficacy and causal attributions predicted better adjustment and behavioral intentions in teachers, these effects were primarily observed for self-efficacy regarding one's ability to motivate students and attributions for occupational stress that were personally controllable in nature. The findings therefore suggest that professional development programs in which teachers are informed of effective ways of motivating students (e.g., value enhancement; Brophy, 2008) and themselves (e.g., attribution change programs; Hall et al., 2011) can help to reduce burnout, improve job satisfaction, and lower attrition rates in this increasingly challenging profession.

(Word count: 1998)

Table 1
Regression analyses.

	Predictor	Emotional Exhaustion	Personal Accomplishment	Depersonalization	Job satisfaction	Intentions to quit
Step 1	SE: Student Engagement	-.25**	.30**	-.32**	.27**	-.37**
	SE: Instructional Strategies	.06	.18**	.01	-.09	.20**
	SE: Classroom Management	-.22**	.12*	-.12	.19**	-.06
	R^2	.13**	.25**	.16**	.13**	.11**
Step 2	Student Engagement	-.23**	.29**	-.31**	.24**	-.35**
	Instructional Strategies	.09	.19**	-.00	-.04	.17**
	Classroom Management	-.20**	.11	-.10	.16**	-.04
	Internality	.23**	-.09	.18*	-.07	.17*
	External Control	.08	-.03	.08	-.02	.06
	Stability	.03	-.06	.04	-.13*	.10
	Personal Control	-.25*	.07	-.15*	.23**	-.22**
	R^2	.17**$^{\Delta}$	.26**	.18**$^{\Delta}$	.20**$^{\Delta}$	.15**$^{\Delta}$

*$p < .05$ **$p < .01$

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