Teacher Self-Efficacy and Behaviour Support in Schools

by

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ABSTRACT

This study examined the relations between implementation of a school-wide approach to behaviour, School-wide Positive Behaviour Support (SWPBS) and teacher self-efficacy. Twenty-two teachers from schools implementing SWPBS and 40 teachers from schools not implementing SWPBS completed a questionnaire measuring aspects of self-efficacy. Differences in ratings of self-efficacy were examined using multilevel modeling. Results showed that teachers at SWPBS schools reported significantly higher perceptions of teacher self-efficacy when controlling for school-level effects. Results are discussed in terms of implications for future research and practice.
PREFACE

This study was conducted solely by the graduate student, under the advisement of her research supervisor. The graduate student conducted all data collection and was responsible for recruitment, analysis, and writing. This thesis is therefore representative of her work as the primary researcher and lead author. Ethics Approval was sought from the UBC Behavioural Research Ethics Board (BREB) prior to conducting this research. The UBC BREB certificate number is H09-01619.
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I would like to express my deepest gratitude to my research supervisor, Dr. Kent McIntosh for his continuous support, encouragement, and expertise throughout my degree. Kent epitomizes everything one could wish for in a supervisor, advisor, and professor.

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I am so thankful to my wonderful cohort; their support throughout this degree has been truly immeasurable. Many thanks to my parents, Lynne and Trevor, my brothers, Matt, Chris, and Patrick, and my wonderful friends. They have listened, distracted, and loved, and for that, I cannot thank them enough. Finally, I would like to thank my fiancé, Shane, for his humour, understanding, love, and many, many ferry rides. Thank you for believing in me.
CHAPTER 1: INTRODUCTION

A range of research shows the positive impact that teachers can have on student outcomes, including academic achievement, motivation, attachment to school, behaviour, and social skills (Hallinan, 2008; Montalvo, Mansfield, & Miller, 2007; Tschannen-Moran, Hoy, & Hoy, 1998). Yet the realities of today’s classrooms, including the prevalence of problem behaviour and an increasingly diverse range of student skills and needs, can challenge teachers’ abilities to complete their professional responsibilities (Day, Golench, MacDougal, & Beals-Gonzalez, 2002). Furthermore, many teachers often report feeling unprepared to work with children of varying abilities and create safe, positive environments to support students’ social competencies (Markow, Moessner, & Horowitz, 2006; Schaefer, 2003). Because the positive effects teachers can have on students have been well documented, it is important to examine factors that may affect teacher attitudes that they can enhance student outcomes.

Teacher Self-Efficacy

Teacher self-efficacy, defined as teachers’ perceptions of their ability to affect student outcomes, is an important factor that is related to many positive variables, such as academic achievement, motivation, and on-task behaviour in students (Ashton & Webb, 1986; Caprara, Barbaranelli, Steca, & Malone, 2006). Teacher self-efficacy is an indication of teachers’ feelings of professional effectiveness and preparation to meet the challenges of their classrooms, and research suggests that it is also a protective factor against job stress in the school (Schwarzer & Hallum, 2008; Tschannen-Moran, et al., 1998). Though there is much research showing that student outcomes are positively related with teacher self-efficacy, few studies have examined self-efficacy as a dependent variable (Hoy & Woolfolk, 1993; J. A. Ross & Bruce, 2007; Tschannen-Moran & Hoy, 2007). Given the value of teacher self-efficacy, further research is
warranted to explore factors that may affect this important construct. Varying definitions of teacher self-efficacy have emerged, primarily stemming from the work of researchers at the RAND Corporation (such as Armor, et al., 1976; Berman & McLaughlin, 1976) and Bandura (1977, 1993). The RAND Corporation’s definition was based on the premise that teacher self-efficacy was made up of two factors: personal teaching efficacy (PTE) and general teaching efficacy (GTE). Whereas PTE is a teacher’s evaluation of his or her personal level of ability to affect student performance, GTE is a teacher’s opinion of whether teachers are able to influence student performance when in competition with external factors, such as home life and social group (Armor, et al., 1976; Tschannen-Moran, et al., 1998). In other words, a teacher with high GTE would feel that he or she can positively affect student performance, regardless of factors such as student home environment or socio-economic status. Combined, PTE and GTE produce an overall teacher self-efficacy factor, which, from this theoretical view, is considered to be teachers’ perceptions of their influence on the motivation and learning of all students, including students who are unmotivated or display problem behaviour (Guskey, 1988).

Bandura’s work on self-efficacy provided a somewhat different theoretical stance (Tschannen-Moran, et al., 1998). Although he later applied his theory to teachers (1993), Bandura’s model was intended to describe self-efficacy of individuals in the general population. Bandura (1982) defined self-efficacy as the belief in one’s own ability to perform certain actions at a desired level in specific situations. As such, self-efficacy for certain tasks will vary from one environment to the next and will change with experience. For instance, a teacher may have a different level of perceived self-efficacy for academic instruction than for classroom management, and different perceptions of his or her ability to teach effectively based on the subject matter and the classroom makeup.
Following a review of the research stemming from these competing theories of teacher self-efficacy, Tschannen-Moran and colleagues (1998) developed a theory integrating the different viewpoints. Tschannen-Moran and colleagues proposed that teacher self-efficacy is composed of a person’s analysis of the teaching task and its context and an assessment of personal teaching competence. The process of analyzing the teaching task and its context emphasizes the idea that self-efficacy is context specific. This process may include consideration of the motivation and abilities of the students being taught, the environment of the school, and the resources and strategies available to the teacher. The second component of teacher self-efficacy, the assessment of personal teaching competence, requires individuals to reflect on and evaluate their current teaching ability. This evaluation contributes to, but is not synonymous with, one’s teacher self-efficacy. Rather, teacher self-efficacy refers to one’s perception of performance on some future task, when current level of functioning is considered in reference to the teaching task and its context. In addition, Tschannen-Moran and colleagues’ model proposes that, with time and experiences, teachers build a relatively stable sense of self-efficacy. A new challenge, however, such as the adoption of a new curriculum or initiative, may cause a teacher to reevaluate his or her perception of self-efficacy in the context of this new task. They also emphasized the recursive nature of self-efficacy, such that a higher perception of self-efficacy will lead to greater persistence on a task, which will often lead to higher performance, which in turn will contribute to an individual’s self-efficacy.

Both the RAND studies and more recent research have demonstrated the positive influence that teachers with a high sense of teacher self-efficacy can have on their students. Teacher self-efficacy has repeatedly been indicated to be a strong predictor of student achievement (Armor, et al., 1976; Ashton & Webb, 1986; Berman & McLaughlin, 1976; J. A.
Ross, 1992). Interestingly, more recent research (Caprara, et al., 2006) has provided evidence of a reciprocal relationship between academic achievement and teacher self-efficacy, in which achievement influences teacher self-efficacy, which in turn predicts academic achievement. Teacher self-efficacy has also been indicated to influence student motivation (Ashton & Webb, 1986). In addition to the influence of teacher self-efficacy on student outcomes, teachers with a high sense of self-efficacy are more likely to persist in teaching students with difficulties, set more ambitious goals for students, and support the inclusion of students with disabilities in the general education classroom. Research has also indicated that high teacher self-efficacy is related to job satisfaction and commitment to the school, whereas low teacher self-efficacy is linked to job stress and burnout (Allinder, 1995; Betoret, 2006; Caprara, et al., 2006; Coladarci, 1992; Schwarzer & Hallum, 2008).

Though many studies have reported positive student and teacher outcomes of teacher self-efficacy, there is much less research on factors that influence the construct. Bandura (1997) suggested that self-efficacy is influenced by the environment. Following Bandura’s suggestion, research in teacher self-efficacy has examined aspects of the teaching environment, such as organizational health (Tschannen-Moran & Hoy, 2007). Organizational health is characterized by: (a) institutional integrity (i.e., protection for teachers from external pressures), (b) the ability of the principal to influence superiors, (c) a concerned and caring principal, (d) availability of supplies and other resources, (e) a sense of morale and companionship among staff, and (f) a sustained focus on academic achievement (Hoy & Woolfolk, 1993). Several studies have indicated that factors related to the health of the school environment are also important to teacher self-efficacy (Hoy & Woolfolk, 1993). For instance, a study by Lee and colleagues (1991) indicated that a sense of community among staff strongly predicts levels of self-efficacy in
teachers. These findings have important implications for teacher and student outcomes. Ashton and Webb’s (1986) research indicated that teachers who work in an environment that promotes teacher self-efficacy are more likely to build positive relationships with students, and students will then have more positive experiences in school, have higher feelings of self-efficacy towards their academic performance, and will work harder. Therefore, to support teacher self-efficacy, it is important to enhance teachers’ work environments.

**Positive Behaviour Support**

School-wide Positive Behaviour Support (SWPBS; Sugai & Horner, 2009) is a promising approach for enhancing the school environment for students and teachers alike. SWPBS refers to an approach used in schools to promote a positive school environment that can facilitate success in teaching and learning, increase desired behaviours in students, and decrease instances of problem behaviours (Horner, Sugai, Todd, & Lewis-Palmer, 2005). In a SWPBS approach, school personnel select and implement research-validated interventions that are ecologically valid; that is, they are feasible and relevant to the target setting (McIntosh, Filter, Bennett, Ryan, & Sugai, 2010). Interventions are selected based on their relevance to the concerns regarding each school. To ensure that interventions are successfully addressing school goals, collecting data prior to and throughout implementation of interventions is central to SWPBS. SWPBS teams evaluate and modify interventions based on data, such as office discipline referrals (ODRs), suspensions, perceptions of school climate, and academic achievement (Sugai & Horner, 2009).

Several studies have examined the positive outcomes of SWPBS, such as decreases in ODRs, suspensions, and increases in academic performance. For instance, Nelson (1996) examined the effects of implementation of SWPBS in two schools over two years. Following
implementation, the number of ODRs decreased, as did suspensions, expulsions, and emergency removals, which were shown to increase in comparison schools over the same time period. Teacher reports also indicated improvements in behavioural and social adjustment, as well as school survival skills (work habits and social growth) and academic performance of target students (i.e., those students who were identified prior to implementation as displaying problem behaviours). Finally, teachers reported satisfaction with the program and agreed that there were shared procedures for addressing problem behaviours.

Other studies have shown that implementation of SWPBS reduces student assaults, disciplinary actions, and suspensions (Bradshaw, Mitchell, & Leaf, 2010; Lassen, Steele, & Sailor, 2006; Luiselli, Putnam, Handler, & Feinberg, 2005; McCurdy, Mannella, & Eldridge, 2003; Nelson, Martella, & Marchand-Martella, 2002; Taylor-Greene, et al., 1997), and increases academic performance (Horner, et al., 2009; Lassen, et al., 2006; Luiselli, et al., 2005; Nelson, et al., 2002). Studies have also demonstrated improvement in social adjustment of students exhibiting problem behaviours in schools implementing SWPBS (Nelson, et al., 2002). Further positive results have been demonstrated by Algozzine and Algozzine (2007), who examined the effect of SWPBS on students’ on-task behaviour in the classroom in comparison to a school that was not implementing SWPBS. The results indicated that students in the school implementing SWPBS displayed overall higher levels of on-task behaviour and lower levels of off-task behaviour than those in the comparison school.

SWPBS has also been shown to increase the organizational health of schools (Bradshaw, Koth, Bevans, Ialongo, & Leaf, 2008). In a randomized trial, Bradshaw and colleagues examined teachers’ perceptions of the organizational health of their schools following the implementation of SWPBS. This study indicated that teachers in schools implementing SWPBS
perceived their schools to have greater overall organizational health than before implementation. These teachers reported that they had more positive interactions and a greater sense of commitment to students.

**SWPBS and Teacher Self-Efficacy**

Very few studies have examined the relation between SWPBS and teacher outcomes, such as teacher self-efficacy. Based on previous findings that indicate a relation between SWPBS and an increase in perceived organizational health of schools, in addition to increases in achievement and positive student behaviour, it is possible that implementing SWPBS may be related to increases in teacher self-efficacy. In addition, teachers at SWPBS schools receive clear instruction regarding effective strategies for teaching expectations and dealing with problem behaviours. These additional instructional skills may also influence teacher self-efficacy. A study by Nelson (1996) indicated that teachers at SWPBS schools had a greater sense of self-efficacy, as they provided statistically significantly higher ratings of their ability to deal with problem behaviours. This study provides a first step at understanding the relationship between SWPBS and teacher self-efficacy, though data were not collected regarding the fidelity of implementation of SWPBS, such that it was possible that not all elements of SWPBS were being implemented, or SWPBS was implemented at different levels at each school.

Ross and Horner (2006) also examined the effect of SWPBS on teacher self-efficacy. Twenty teachers at four middle schools participated in the study; two of the schools were implementing SWPBS with high fidelity, and two with low fidelity. The results of this study indicated that implementation of SWPBS was positively related to teacher self-efficacy, such that teachers at the high implementing schools had significantly higher feelings of efficacy. As with Nelson’s (1996) study, several limitations of this study were noted. First, only 20 teachers
took part in the study, limiting its statistical power. Second, all schools were implementing SWPBS at differing levels of fidelity, such that there was no comparison of schools that were not implementing SWPBS. Third, the study only included teachers from middle schools, who may differ in experience when compared to teachers from elementary and high schools. And fourth, some researchers (Brouwers & Tomic, 2004; Woolfolk & Hoy, 1990, Guskey & Passaro, 1994) have questioned the validity of the factor structure of the measure used in Ross and Horner’s study, the Teacher Efficacy Scale (Gibson & Dembo, 1984). These results indicate that studies using more valid measurement of teacher self-efficacy are needed.

It is crucial to identify systems that may support teachers by increasing their feelings of self-efficacy and protecting them against stress. The purpose of the present study was to add to the research contributions of Nelson (1996) and Ross and Horner (2006) by examining the relations between SWPBS and teacher self-efficacy. Teacher self-efficacy is critical to many teacher and student outcomes in education, and it is therefore important to identify how it may be enhanced. Based on previous research, it was hypothesized that the experience of teaching in a school implementing SWPBS and potentially enhanced teaching skills as a result of implementation would be linked to higher teacher self-efficacy.
CHAPTER 2: METHOD

Setting

The setting was a rural school district with 28 schools (20 elementary schools) located in Western Canada. In the 2009 – 2010 academic year, approximately 14,000 students were enrolled in the district. The majority (95%) of students spoke English in the home. Sixteen percent of students in the district were of Aboriginal (First Nations, Métis, or Inuit) heritage, and 8% were identified for special education services.

Two schools implementing SWPBS (SWPBS schools) and three schools not implementing SWPBS (non-SWPBS schools) participated in the study. SWPBS schools were selected based on criteria that they had been implementing SWPBS for at least two years and had been evaluated to be implementing SWPBS with fidelity in both the previous year (2008-2009 academic year) and the year of data collection (2009-2010 academic year). Both schools had been implementing SWPBS for at least five years. Fidelity of implementation data were collected to confirm that the SWPBS schools were implementing SWPBS with fidelity. In 2008-2009, fidelity was measured through the School-wide Evaluation Tool (SET; Sugai, Lewis-Palmer, Todd, & Horner, 2001). The SET is a research-validated measure that is conducted by trained individuals who observe and rate specific features (e.g., expectations have been defined and taught to students) of a school’s SWPBS system. The SET has been shown to be a valid and reliable tool for the assessment of fidelity of implementation of SWPBS (Horner, et al., 2004). Schools are implementing SWPBS with fidelity if they receive an overall score of 80% or higher on the SET. Following data collection in the 2009-2010 academic year, the School-wide Benchmarks of Quality (BoQ; Kincaid, Childs, & George, 2005) measure from that year was used to confirm fidelity of implementation. The BoQ is a valid and reliable measure of the
degree to which a school is implementing SWPBS with fidelity (R. Cohen, Kincaid, & Childs, 2007). Similar to the SET, the items on the BoQ assess critical features of SWPBS, such as faculty commitment and the existence of school-wide expectations. A school is implementing SWPBS with fidelity if they receive a score of 70% or greater on the BoQ. All schools obtained a score of 80% or higher on the SET in 2008-2009 \( (M = 88\%) \) and a score of 70% or greater on the BoQ in 2009-2010 \( (M = 74\%) \).

Three non-SWPBS schools were selected based on the criteria that they were not implementing SWPBS and that their demographic information (See Table 1) was comparable to the SWPBS schools, with no statistically significant differences. School administrators confirmed that the schools were not implementing SWPBS. Based on the lack of a SWPBS team, school-wide expectations, and a school-wide acknowledgement system at each of the non-SWPBS schools, a score of 50% or higher on either the SET or the BoQ was not possible for these schools.
Table 1. Demographic information for respondents and SWPBS and non-SWPBS schools.

<table>
<thead>
<tr>
<th></th>
<th>SWPBS Schools</th>
<th>Non-SWPBS Schools</th>
<th>t or $\chi^2$</th>
<th>p</th>
</tr>
</thead>
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<tr>
<td><strong>Teacher Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Number of Teachers</td>
<td>16.5 (3.54)</td>
<td>17.67 (7.09)</td>
<td>0.21</td>
<td>.848</td>
</tr>
<tr>
<td>(SD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Number of Years</td>
<td>12.91 (9.10)</td>
<td>14.45 (8.80)</td>
<td>0.65</td>
<td>.516</td>
</tr>
<tr>
<td>Teaching (SD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male to Female Teacher Ratio</td>
<td>.29</td>
<td>.29</td>
<td>0.00</td>
<td>.984</td>
</tr>
<tr>
<td><strong>School Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Number of Students</td>
<td>293 (50.91)</td>
<td>350 (168.85)</td>
<td>0.45</td>
<td>.686</td>
</tr>
<tr>
<td>(SD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students of Aboriginal</td>
<td>29% (14.42)</td>
<td>12% (1.33)</td>
<td>-1.60</td>
<td>.353</td>
</tr>
<tr>
<td>Heritage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students who Speak English as a Second Language</td>
<td>8% (10.89)</td>
<td>6% (3.23)</td>
<td>-0.37</td>
<td>.769</td>
</tr>
<tr>
<td>Students Receiving Special Education</td>
<td>7% (2.82)</td>
<td>6% (2.82)</td>
<td>-0.52</td>
<td>.641</td>
</tr>
<tr>
<td>Teacher Ratings on the Teachers’ Sense of Efficacy Scale</td>
<td>7.47 (0.64)</td>
<td>6.91 (0.75)</td>
<td>-2.93</td>
<td>.005</td>
</tr>
</tbody>
</table>
Participants

A total of 62 teachers (48 female, 14 male) participated in the study. The sample included 22 teachers from SWPBS schools and 40 teachers from non-SWPBS schools, resulting in a mean participation rate of 73% across schools. The participants reported that they had been teaching for an average of 13.90 years. Table 1 shows demographic information for teacher a variables with no statistically significant differences between teachers at SWPBS and non-SWPBS schools.

Measure

The Teachers’ Sense of Efficacy Scale (TSES; Tschannen-Moran & Hoy, 2001) is a 24-item questionnaire that measures teacher self-efficacy. Teachers are asked to rate their perceptions of their efficacy on a nine-point Likert scale (1 = Nothing, 3 = Very Little, 5 = Some Influence, 7 = Quite a Bit, 9 = A Great Deal). The measure is based on Tshannen-Moran and colleagues’ (1998) model of teacher self-efficacy and measures teacher self-efficacy regarding one’s skills in managing the classroom, engaging students in learning, and using a variety of strategies in response to student understanding. The scale was created and revised throughout the course of three studies, resulting in a 24-item scale. The final scale was indicated to have small to moderate significant correlations with several other teacher self-efficacy scales, such as with the original RAND items (GTE $r = .18$ and PTE $r = .53$, $p < 0.01$) and was found to have strong internal consistency scores. The total scale score was used in analyses (sample Cronbach’s $\alpha = .921$). Previous research indicated that ratings on this scale tended to show an upward bias, with means around 7.10 being found in two earlier studies (Heneman III, Kimball, & Milanowski, 2006; Tschannen-Moran & Hoy, 2001)
Analyses

Prior to analyzing the data, assumptions of normality and homogeneity of variance were tested on each sample separately. Both samples were assessed to meet the criteria of normality and homogeneity of variance (SWPBS: *Shapiro-Wilk* = .96, *p* = .527; Non-SWPBS: *Shapiro-Wilk* = .97, *p* = .399; *Levene’s Test* = .38, *p* = .542). Results from a preliminary t-test can be seen in Table 1. In this analysis, teachers’ mean scores on the TSES were entered as the dependent variable, and SWPBS status was entered as the independent variable. In the dataset, teachers were nested within schools, which in turn were grouped within condition (SWPBS or non-SWPBS). The intraclass correlation (.142) and design effect (2.60) for the TSES indicated substantial level-2 variance, indicating that a nested design was needed to control for school-level variance (Peugh, 2010). As a result, multilevel modeling was conducted using Mplus 6.1 (Muthén & Muthén, 2010). Individual teacher TSES score was the level-1 dependent variable, SWPBS status was the level-2 independent variable, and school was the level-2 cluster variable. The effect size for TSES scores between teachers at SWPBS and non-SWPBS schools was calculated through the familiar metric of Cohen’s *d* (J. Cohen, 1988).
CHAPTER 3: RESULTS

Missing Data

Overall, 87% of participants had complete data for each variable, and data were missing for 11 cells in total (less than 1% of the data). Multiple imputation procedures were used to replace missing data using the multiple imputation software NORM (Schafer, 1999). Multiple imputation is a statistical procedure in which a dataset with missing values is subjected to a set of equations to generate multiple data sets, each with different values replacing the missing data (Baraldi & Enders, 2010).

Multilevel Analyses

Results of the multilevel modeling analysis are presented in Table 2. The results showed a statistically significant effect of SWPBS on teacher self-efficacy, $b = .53$, $p = .019$, such that teachers at SWPBS schools had higher ratings on the TSES when controlling for school effects. The effect size associated with the difference in self-efficacy ratings between teachers in SWPBS and non-SWPBS schools was large, $d = 0.80$).
Table 2. Parameter estimates for multilevel model.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimate</th>
<th>SE</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed Effects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>6.93</td>
<td>0.14</td>
<td>.00</td>
</tr>
<tr>
<td>SWPBS status</td>
<td>0.53</td>
<td>0.23</td>
<td>.019</td>
</tr>
<tr>
<td><strong>Random Effects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual Variance (level-1)</td>
<td>0.48</td>
<td>0.11</td>
<td>.00</td>
</tr>
<tr>
<td>Residual Variance (level-2)</td>
<td>0.01</td>
<td>0.02</td>
<td>.50</td>
</tr>
</tbody>
</table>
CHAPTER 4: DISCUSSION

The purpose of the present study was to examine perceptions of teacher self-efficacy at SWPBS and non-SWPBS schools. It was predicted that implementation of SWPBS, with its potential positive outcomes such as enhanced teaching capacity and increased social skills and achievement in students would be related to higher levels of teacher self-efficacy. Multilevel modeling analyses were conducted to examine the effect of SWPBS on teacher ratings on the TSES while controlling for school effects. Results indicated that teachers at SWPBS schools reported significantly higher levels of teacher self-efficacy than teachers at non-SWPBS schools. Analyses indicated that there was a large effect size (\(d = .80\)), indicating that the difference between ratings on the TSES by teachers at SWPBS and non-SWPBS schools was meaningful. It should be noted; however, that the mean ratings for teachers at both SWPBS and non-SWPBS schools were above the mid-range rating (5 = “Some Influence”), indicating that the majority of teachers felt that they had at least some influence on student outcomes. Previous research has indicated a negative skew in responses, such that the mean tends to be higher than the middle option of the scale (Heneman III, et al., 2006; Tschannen-Moran & Hoy, 2001).

These results indicated that teachers at SWPBS schools feel more capable to engage students in the classroom and use strategies to adapt to student needs; however, all teachers reported feeling at least somewhat able to influence student outcomes. This finding is consistent with previous research in this area (S. Ross & Horner, 2006).

Of note, when the mean ratings on the TSES from Tschannen-Moran and colleagues’ (2001) study (\(M = 7.10, \ SD = .94\)) is compared to the mean ratings from the samples in this study (\(M = 7.47, \ SD = .64\)), the difference results in a medium effect size (Cohen’s \(d = .40\)). There is only a small effect size found, however, when Tschannen-Moran’s sample is compared
to the current study’s mean for teachers from non-SWPBS schools ($M = 6.91, SD = .75, \text{Cohen’s } d = .21$). These observed differences indicate that teachers at SWPBS schools may not only have rated themselves as having higher levels of teacher self-efficacy than teachers at non-SWPBS schools in our sample, but also when compared to responses from teachers in other samples as well. This observation supports the meaningful implications of this study, such that SWPBS may be related to higher levels of teacher self-efficacy.

There were several key strengths of the study. First, the study included a strong, psychometrically sound measure of teacher self-efficacy. In addition, to minimize the effects of confounding variables, schools were matched demographically. In addition, to ensure the integrity of implementation of SWPBS, schools were required to have been implementing SWPBS with fidelity, as measured by research-validated tools, for at least two years. Finally, data was analyzed using strong statistical procedures.

Based on the emphasis of SWPBS on teaching strategies, and the relation between SWPBS and improved student behaviour, it is not surprising that teachers at SWPBS schools reported greater feelings of self-efficacy. Teachers at SWPBS schools may have reported higher ratings of teacher self-efficacy for several reasons. One possible explanation of these results relates to the model proposed by Tschannen-Moran and colleagues (1998), which states that teacher self-efficacy is based on one’s analysis of the teaching task and personal teaching competence. Analysis of the teaching task includes evaluating the motivation and abilities of the students, the school environment, and the resources and strategies available to the teacher. This model is supported by research findings that teacher self-efficacy is positively influenced by the organizational health of a school. For instance, a positive school culture and a shared sense of purpose among staff is related to higher feelings of teacher self-efficacy (Lee, et al., 1991).
Furthermore, research indicates that teacher self-efficacy is influenced by the academic achievement of students (Caprara, et al., 2006). Research indicates that these aspects of the teaching task and its context may be some of the positive outcomes related to SWPBS. For instance, SWPBS is linked to outcomes such as higher levels of academic achievement, on-task behaviour, perceived school safety, collegial affiliation, and overall organizational health (Bradshaw, Koth, Thornton, & Leaf, 2009; Horner, et al., 2009; Nelson, et al., 2002).

Furthermore, SWPBS can provide teachers with a shared sense of purpose. Research suggests that SWPBS is an effective approach to establishing a safe, positive instructional environment. That is, SWPBS increases positive, on-task behaviours in students, encourages students to be positive and active participants in learning, and allows teachers to spend more time engaging in instruction. Teachers are therefore able to focus more on instruction, rather than the classroom environment, leading to increased student academic engagement (Algozzine & Algozzine, 2007).

Based on Tschannen-Moran and colleagues’ 1998 model, the results of the current study suggest that the positive outcomes related to SWPBS, which contribute to creating an environment that is conducive to effective instruction and student learning, are important variables related to enhanced teacher self-efficacy. It is further posited that teachers at SWPBS schools may have reported greater efficacy in the classroom because less time is spent engaging in discipline, and more time can be spent on instruction, and thus have a positive appraisal of the teaching task and its context.

An additional factor that may have enhanced teacher self-efficacy in SWPBS schools is the approach’s emphasis on instruction (e.g., teaching expectations, routines, and social emotional skills). When SWPBS is implemented in a school, teachers are provided with effective instructional strategies, such that using SWPBS may have resulted in improved
instructional skills in general, which in turn may have led to teachers to report that they were better able to affect student outcomes. In addition, by using behaviour support strategies that are used and promoted by fellow teachers and administrators, teachers may have had more confidence in the effectiveness of the strategies that they were using. This hypothesis relates to Bandura’s concept of efficacy expectancy, or the RAND Corporation’s concept of personal teaching self-efficacy, such that teachers at SWPBS schools perceived themselves as more capable to personally influence student outcomes. Another possible explanation relates to the RAND Corporation’s general teaching self-efficacy. This reasoning posits that the use of an effective practice such as SWPBS, which resulted in positive outcomes for students, may have affected teachers’ perceptions about the ability of teachers to influence student outcomes when in competition with external factors. In other words, when teachers at SWPBS schools perceive that SWPBS has resulted in positive outcomes, they may be more likely to believe that they are able to have an impact on students, resulting in higher instructional self-efficacy.

**Limitations and Implications**

There are several limitations of this study that must be considered before assessing its contributions. First, participants were chosen by convenience sampling, based on schools that were already implementing or not implementing SWPBS, thus precluding any causal statements. In addition, there was no measure of teacher self-efficacy prior to SWPBS implementation. It is thus possible that teachers with higher levels of self-efficacy are more likely choose to work at SWPBS schools, or differences may be due to some unrelated variable. For instance, it is possible that teachers at non-SWPBS schools had taught at SWPBS schools in the past, which may have influenced their reported self-efficacy. Other considerations include the small number of schools, small number of teachers at SWPBS schools, and the unequal sample sizes of
participants in the SWPBS and non-SWPBS samples. These issues of design and sampling restrict generalization of these results of this study to the larger population. Another limiting aspect of this study was related to the method with which the constructs were examined. The study used only one self-report measure of teacher self-efficacy, which was not confirmed with other assessment methods. Finally, it is possible that any of the schools in the study were implementing other behaviour support programs, or were being affected by other changes that may have influenced teacher self-efficacy. These limitations are important considerations and should be considered in future research.

**Future Research**

Although the results of this study contribute to our understanding of the relation between SWPBS and teacher outcomes, further research in this area is necessary. In particular, future research would measure additional variables, such as academic achievement and student discipline data, to examine whether change in student outcomes may mediate the relation between SWPBS implementation and teacher outcomes. Furthermore, additional teacher outcomes, such as organizational health and burnout, should be evaluated. To overcome the limitations of this study, a randomized controlled trial with a larger sample size could be conducted, in which teacher self-efficacy is measured both before and after implementation of SWPBS.

As noted, the mean ratings for teachers at SWPBS and non-SWPBS schools were above the middle rating of 5 (Some Influence). Previous research has also indicated this finding. Heneman and colleagues (2006) suggested that future research examine whether this bias is due to a measurement bias, or to a true tendency for teachers to have higher than average levels of self-efficacy. The current research would support Heneman and colleagues’ suggestion that
further research is required in this area. Furthermore, the field of research related to teacher self-efficacy would benefit from a standardization study of the TSES, such that scores could be classified into practical categories (i.e., high, medium, and low teacher self-efficacy).

**Implications for Practice**

The results of this study contribute to current research on SWPBS and teacher self-efficacy and align with findings from studies by Nelson (1996) and Ross and Horner (2006). When taken together, these results suggest that teachers at SWPBS schools feel more prepared to engage students in learning and effectively teach and respond to students of varying abilities, compared to teachers at non-SWPBS schools. Previous research has shown that positive student and teacher outcomes are related to teacher self-efficacy, and therefore, increasing teacher self-efficacy should be a priority. The teacher outcomes related to SWPBS, in addition to student outcomes, make it an appealing approach for widespread adoption.
REFERENCES


### APPENDIX A: TEACHERS’ SENSE OF EFFICACY SCALE

<table>
<thead>
<tr>
<th>Teacher Beliefs</th>
<th>How Much Can You Do?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nothing (1)</td>
</tr>
<tr>
<td>1. How much can you do to get through to the most difficult students?</td>
<td>(1)</td>
</tr>
<tr>
<td>2. How much can you do to help your students think critically?</td>
<td>(1)</td>
</tr>
<tr>
<td>3. How much can you do to control disruptive behaviour in the classroom?</td>
<td>(1)</td>
</tr>
<tr>
<td>4. How much can you do to motivate students who show low interest in school work?</td>
<td>(1)</td>
</tr>
<tr>
<td>5. To what extent can you make your expectations clear about student behaviour?</td>
<td>(1)</td>
</tr>
<tr>
<td>6. How much can you do to get students to believe they can do well in school work?</td>
<td>(1)</td>
</tr>
<tr>
<td>7. How well can you respond to difficult questions from your students?</td>
<td>(1)</td>
</tr>
<tr>
<td>8. How well can you establish routines to keep activities running smoothly?</td>
<td>(1)</td>
</tr>
<tr>
<td>9. How much can you do to help your students value learning?</td>
<td>(1)</td>
</tr>
<tr>
<td>10. How much can you gauge student comprehension of what you have taught?</td>
<td>(1)</td>
</tr>
<tr>
<td>11. To what extent can you craft good questions for your students?</td>
<td>(1)</td>
</tr>
<tr>
<td>12. How much can you do to foster student creativity?</td>
<td>(1)</td>
</tr>
<tr>
<td>13. How much can you do to get children to follow classroom rules?</td>
<td>(1)</td>
</tr>
<tr>
<td>14. How much can you do to improve the understanding of a student who is failing?</td>
<td>(1)</td>
</tr>
<tr>
<td>Question</td>
<td>Nothing</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>15. How much can you do to calm a student who is disruptive or noisy?</td>
<td>(1)</td>
</tr>
<tr>
<td>16. How well can you establish a classroom management system with each group of students?</td>
<td>(1)</td>
</tr>
<tr>
<td>17. How much can you do to adjust your lessons to the proper level for individual students?</td>
<td>(1)</td>
</tr>
<tr>
<td>18. How much can you use a variety of assessment strategies?</td>
<td>(1)</td>
</tr>
<tr>
<td>19. How well can you keep a few problem students from ruining an entire lesson?</td>
<td>(1)</td>
</tr>
<tr>
<td>20. To what extent can you provide an alternative explanation or example when students are confused?</td>
<td>(1)</td>
</tr>
<tr>
<td>21. How well can you respond to defiant students?</td>
<td>(1)</td>
</tr>
<tr>
<td>22. How much can you assist families in helping their children do well in school?</td>
<td>(1)</td>
</tr>
<tr>
<td>23. How well can you implement alternative strategies in your classroom?</td>
<td>(1)</td>
</tr>
<tr>
<td>24. How well can you provide appropriate challenges for very capable students?</td>
<td>(1)</td>
</tr>
</tbody>
</table>
Dear School Administrator,

This is a request for you to take part in a study in your district. Please read the following form carefully. Sign and return one copy. Keep the other for your records. This research is being conducted to fulfill the requirements of a thesis for a Master’s degree.

**Purpose:**
The purpose of this study is to examine teachers’ feelings about teaching and stress. All teachers in your school are being invited to participate in this study. You are being invited to take part in this project because you are the principal of an elementary school in the district.

**Research Study Participation:**

1. Taking part in this part of the study means that you agree to allow the teachers in your school the opportunity to participate in the study by completing questionnaires of feelings about teaching and feelings of stress. These surveys would be completed at one time this year (January/February). It is not expected that all teachers in your school would choose to
participate, so your consent does not imply their consent, and they can freely choose.

2. These surveys would take approximately 10 to 15 minutes to complete and would be scheduled at yours and the teachers’ convenience.

3. To compensate them for their time, each teacher will receive a $5 gift card.

4. The teachers’ identity in this study will remain strictly confidential; only the investigators of the study (not the school district, not the Ministry of Education) will see their responses of you and the school’s personnel. Teachers’ responses will be completely anonymous and will not be linked to their names. All documents will be kept in a locked lab and password-protected computer files at the University of British Columbia. No individual or school will be identified by name in any reports of the completed study.

5. If at any time you have any concerns about your treatment or rights as a research participant, you may contact the Research Subject Information Line in the Office of Research Services at UBC at (604) 822-8598.

6. Your participation (and the teachers’ participation) in this study is entirely voluntary, and you may refuse to participate or withdraw from the study at any time without jeopardy to your employment or relationship with the school district.

If you have questions or concerns, please contact the Principal Investigator, Kent McIntosh.

Your signature below indicates that you consent to participate in this study and you have received a copy of this consent form (Pages 1-2) for your own records.

Participant’s signature (please sign):

Date:

________________________

________________________
Dear Teacher:

This is a request for you to take part in a study in your district. This research is being conducted to fulfill the requirements of a thesis for a Master’s degree. Only the investigators (not your administrator, the school district, or Ministry of Education) will have access to the information collected in this study. Please read the following form carefully. Sign and return one copy. Keep the other for your records.

**Purpose:**
The purpose of this study is to examine teachers’ feelings about classroom management and behaviour support in schools. All teachers in your school are being invited to participate in this study.

**Research Study Participation:**
Taking part in this portion of the study means that you agree to:

- a) Complete a 5 minute questionnaire regarding your feelings about teaching.
- b) Complete a 5 minute questionnaire regarding your feelings of stress.

**Potential Risks:**
Risks for your participation in this study are expected to be minimal.
**Potential Benefits:**
Benefits to you as an individual are not expected.

**Compensation:**
To compensate you for your time completing these questionnaires, you will receive a $5 gift card. If you choose to withdraw before completion, you will receive compensation for questionnaires completed to that point.

**Confidentiality:**
Your identity in this study will remain strictly confidential; only the investigators of this study will see your individual responses. Your information will be completely anonymous and your responses will not be linked to your name. All documents will be kept in a locked room and password-protected computer files at UBC. No individual or school will be identified by name in any reports of the study.

**Contact for concerns about the rights of research subjects:**
If at any time you have concerns about your treatment or rights as a research participant, you may contact the Research Subject Information Line in the UBC Office of Research Services at the University of British Columbia at (604) 822-8598.

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____________________________________________________
Participant Signature     Date

____________________________________________________
Participant name (printed)

____________________________________________________
Participant’s School