

## **The effect of perceived school climate and teacher efficacy in behavior management on job satisfaction and burnout: A longitudinal study**

**Olli-Pekka Malinen<sup>a,\*</sup> and Hannu Savolainen<sup>b</sup>**

<sup>a</sup>Niilo Mäki Institute, P.O. Box 35, 40014 Jyväskylä, Finland

<sup>b</sup>University of Jyväskylä, Department of Education, P.O. Box 35, 40014 Jyväskylä, Finland

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\*Corresponding author. Tel.: +358 50 441 7505; Fax: +358 10 229 2991; E-mail address: olli-pekka.malinen@nmi.fi

Other author's email address: hannu.k.savolainen@jyu.fi (H. Savolainen)

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### **Abstract**

This study investigated how perceived school climate affects teachers' job satisfaction and burnout and how self-efficacy and collective efficacy in behavior management mediate the effect of perceived school climate on job satisfaction and burnout. The questions were answered using longitudinal questionnaire data collected from 642 Finnish lower secondary school teachers. A structural equation model revealed that school climate had a positive effect, partly mediated by self-efficacy, on job satisfaction. Collective efficacy in student discipline did not explain either job satisfaction or burnout. Self-efficacy in managing behavior had a positive effect on job satisfaction and a negative effect on burnout.

**Keywords:** school climate, teacher efficacy, behavior management, teachers, job satisfaction, burnout

## 1. Introduction

The academic learning outcomes of Finnish students have been found to be excellent in several international comparisons, but a number of research findings have suggested that the disciplinary climate is more challenging in Finnish schools than in many other countries (Martin & Mullis, 2013; OECD, 2010; OECD, 2014a). For example, in the Program for International Student Assessment (PISA) 2009 study, students' evaluations of the school disciplinary climate in Finland were more negative than in most other participating countries and regions (Sulkunen & Välijärvi, 2012). In addition, Finnish teachers participating in the Organisation for Economic Co-operation and Development (OECD) Teaching and Learning International Survey (TALIS) 2013 study did not give a positive assessment of their schools' discipline situations (OECD, 2014b, p. 403). Cross-cultural evidence suggests that poor school climate and negative student behavior can both be significant risk factors for lower teacher job satisfaction. In TALIS 2013 study, several indicators of school climate, such as positive teacher–teacher and teacher–student relations and opportunities to participate in school decisions, were systematically related to higher job satisfaction (OECD, 2014b, p. 416–417). In addition, having a higher percentage of students with behavior problems in class was associated with lower job satisfaction among teachers in 29 of the 34 participating countries and regions (OECD, 2014b, p. 191). In this respect, it appears essential for teachers to have a strong sense of efficacy in dealing with problematic student behavior.

The objective of this paper is to study how perceived school climate and teacher efficacy in managing student behavior affect teachers' job satisfaction and work-related burnout. A number of studies have already introduced models in which the relationships between some of these constructs have been investigated simultaneously (e.g. Collie, Shapka, & Perry, 2012; Grayson & Alvarez, 2008). However, none of the previous studies have included both collective efficacy and self-efficacy in the same model, even though this would have been reasonable, since they are considered strongly influence each other (Goddard, Hoy & Woolfolk Hoy, 2004). In addition, none of the previous studies have used collective teacher efficacy and teacher self-efficacy as a mediating

variables between school climate and job satisfaction and burnout. Furthermore, the previous studies have relied on cross-sectional data whereas this study utilized a longitudinal research design, which gives considerably stronger ground for building a model with causal relationships between the variables.

### 1.1 Job satisfaction

Job satisfaction, which can be defined as “a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experiences” (Locke, 1976, p. 1300), has been a topic of interest for both vocational and organizational psychology. In the former field, the emphasis has been on person-centered outcomes; the latter field has focused on organizational outcomes like employee turnover (Lent & Brown, 2006). Teachers’ job satisfaction has been found to be an important predictor of a person’s decision to leave the teaching profession (Skaalvik & Skaalvik, 2011). Job satisfaction is also related to negative effects such as burnout (Skaalvik & Skaalvik, 2009) and job stress (Klassen, Usher, & Bong, 2010). At the same time, several studies that include cross-cultural replications show that positive work conditions, autonomy, and feelings of both collective efficacy and self-efficacy predict teachers’ job satisfaction (Badri, Mohaidat, Ferrandino, & El Mourad, 2013; Caprara, Barbaranelli, Borgogni, & Steca, 2003; Klassen et al., 2010; Lent et al., 2011; Skaalvik & Skaalvik, 2009; Skaalvik & Skaalvik, 2014). There is also evidence that the quality of teacher–student relationships is positively related to teachers’ job satisfaction (Veldman, van Tartwijk, Brekelmans, & Wubbels, 2013). In summary, research thus far shows that teachers’ job satisfaction is related to social and organizational factors (work conditions, relationships, autonomy), cognitive factors (collective efficacy, self-efficacy), and affective factors (burnout, job stress).

## 1.2 Burnout

Working as a teacher can be very stressful. In Finland, the context of this study, the percentage of workers who experience a high level of stress was found to be highest in education in comparison with other occupational sectors (Kauppinen et al., 2010, p. 235). The large number of research reports from several countries suggests that there is a global interest in studying teacher burnout (Aloe, Amo, & Shanahan, 2014). According to Maslach, Schaufeli, and Leiter (2001), burnout is a “prolonged response to chronic emotional and interpersonal stressors on the job” (p. 397). Burnout is constructed from three factors: emotional exhaustion, a feeling of cynicism, and a sense of inefficiency (Maslach et al., 2001). Of these three components, exhaustion is considered to be the most central feature of burnout (Maslach et al., 2001).

Like job satisfaction, teacher burnout has been found to be associated with school-related social and organizational factors as well as teacher efficacy. Hakanen, Bakker, and Schaufeli (2006) found a significant path leading from job demands and available job resources to burnout. Fernet, Guay, Senécal, and Austin (2012) discovered that teachers’ perceptions of students’ disruptive behaviors and the principal’s leadership behavior affected burnout through the mediation of teacher self-efficacy. Brown (2012) conducted a literature review investigating the relationship between teacher self-efficacy and burnout. Her conclusion was that 10 of the 11 reviewed studies found a negative correlation between teacher self-efficacy and the exhaustion dimension of burnout.

Aloe, Amo, and Shanahan (2014) paid closer attention to the relationship between teachers’ classroom management self-efficacy and burnout in their meta-analysis of 16 individual studies. Eight of these studies were conducted in the United States, three in the Netherlands, two in Israel, and the rest in Spain, Turkey, and Norway. Their results indicated that self-efficacy in classroom management had a significant negative correlation with all three dimensions of burnout. Furthermore, Tsouloupas, Carson, Matthews, Grawitch, and Barber (2010) found that self-efficacy in behavior management partially mediated the effect of perceived student misbehavior on emotional exhaustion. Aloe and others (2014) acknowledged that a future direction for studying the

relationship of classroom management self-efficacy and burnout is the use of longitudinal datasets that would better allow for the evaluation of causal paths between these constructs.

### 1.3 School climate

School climate is considered an important research topic even though there is no universal agreement on how it should be defined (Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013). The beginning of empirical school climate research dates back to the 1950s (Cohen, McCabe, Michelli, & Pickeral, 2009). Some more recently used definitions include “shared beliefs, values, and attitudes that shape interactions between the students, teachers, and administrators” (Mitchell, Bradshaw, & Leaf, 2010, p. 272) and “the quality and character of school life” (National School Climate Center, 2007, p. 5). This paper concentrates on teachers’ perceptions of school climate. Consequently, in this study we follow a more teacher-oriented definition in which school climate refers to “the psychosocial context in which teachers work and teach” (Johnson, Stevens, & Zvoch, 2007, p. 834).

Regardless of the challenges related to defining and measuring (Anderson, 1982) school climate, it is widely seen as a valuable concept for the purposes of educational research and school reform. This is understandable, as school climate has been found to be connected to many significant outcomes. Studies have shown that positive school climate is associated with academic achievement, motivation for learning, reduced aggression, lower suspension rates, and many other positive student outcomes (Cohen et al., 2009; Thapa et al., 2013). Positive school climate has also been found to be connected to lower perceptions of stress and higher efficacy and job satisfaction among teachers (Collie, Shapka, & Perry, 2012; Hoy & Woolfolk, 1993; Lee, Dedrick, & Smith, 1991; Taylor & Tashakkori, 1995). In addition, the findings from a study conducted by Ingersoll (2001) suggested that positive school climate could be a way to reinforce teacher retention.

In North America, one indicator of the growing interest in addressing school climate can be seen in the fact that the U.S. Department of Education (2014) awarded more than \$40 million in

grants to school districts and states to improve school climate. In Finland, the need to pay more attention to school climate was raised in the aftermath of two deadly school shooting events in 2007 and 2008 (Ministry of the Interior, 2012, p. 63; Punamäki, Tirri, Nokelainen, & Marttunen, 2011). With research findings that indicate the significance of school climate and an increasing investment in its improvement, it appears that school climate research will continue to be a lively field of enquiry in the years ahead.

#### 1.4 Teacher efficacy in behavior management

Teacher self-efficacy is the evaluation of one's own capability as a teacher, whereas collective teacher efficacy refers to perceptions about the ability of the entire teaching workforce in a school to exert a positive influence on students (Goddard & Goddard, 2001). Even though teacher self-efficacy and collective efficacy are conceptually different, empirical findings suggest that a strong connection exists between these two constructs (Chan, 2008b; Goddard & Goddard, 2001; Skaalvik & Skaalvik, 2007). In empirical research, teacher self-efficacy is usually measured as a multidimensional construct (Chan, 2008a; Author et al., 2013; Skaalvik & Skaalvik, 2010; Tschannen-Moran & Woolfolk Hoy, 2007). These dimensions often represent efficacy in different aspects of teachers' work, such as instruction, collaboration, student engagement, and behavior management. A unifying feature of these different measurement scales is that they all contain a dimension dealing with efficacy in behavior management, which is in the focus of this study. Collective teacher efficacy, on the other hand, has often been conceptualized as a one-dimensional construct (Goddard & Goddard, 2001; Goddard, Hoy, & Woolfolk Hoy, 2000; Skaalvik & Skaalvik, 2007; Skaalvik & Skaalvik, 2010; Sørli & Torsheim, 2011; Ware & Kitsantas, 2007). However, in this study we follow the reasoning of Tschannen-Moran and Barr (2004), which posits that it is possible to divide collective teacher efficacy into two dimensions: instructional strategies and student discipline. In this study, we will concentrate on collective teacher efficacy in student discipline.

Dellinger, Bobbett, Olivier, and Ellett (2008) define teacher self-efficacy as a “teacher’s individual beliefs in their capabilities to perform specific teaching tasks at a specified level of quality in a specified situation” (p. 752). We apply their definition and define teacher self-efficacy in behavior management in this study as *teachers’ individual beliefs in their capabilities to prevent and manage disruptive student behavior in their school and classroom*. In this study, the definition of collective efficacy in student discipline is *teachers’ beliefs in the capability of the school faculty as a whole to prevent and manage disruptive student behavior*.

Self-efficacy and collective efficacy are considered to be based on the same four main sources of information: (1) mastery experiences, (2) vicarious experiences, (3) social persuasion, and (4) somatic and emotional states (Bandura, 1977; Tschannen-Moran & Woolfolk Hoy, 2007). The distinction between the formation of self-efficacy and collective efficacy is that for the latter construct, these information sources are experienced at a group level rather than at an individual level (Klassen, Tze, Betts, & Gordon, 2011). Bandura (2012) notes that a person’s sense of efficacy is also affected by the circumstances under which a given task is performed. For teachers, school’s climate can present circumstances that influence efficacy beliefs. From this perspective, teacher self-efficacy and collective efficacy are individual perceptions which are partly dependent on the contextual factors of the school. This led us to hypothesize that teachers’ efficacy beliefs may act as mediators between school climate and individual perceptions of job satisfaction and burnout.

### 1.5 Research aims

This study has three aims. The first aim is to examine the direct effect of perceived school climate on teachers’ job satisfaction and burnout. The second aim is to investigate the effect of teacher self-efficacy in behavior management and collective efficacy in student discipline on job satisfaction and burnout. The third aim is to study whether or not the two teacher efficacy constructs mediate the effect of school climate on job satisfaction.

## 2. Method

### 2.1 Participants and procedure

A non-random sample of 642 Finnish lower secondary school teachers from 38 schools participated in this study. The schools were located mainly in Eastern Finland. The participants' median year of birth was 1968, which at the time of the first round of data collection meant they were 45–46 years of age. Of those 642 participants, 63.8% had over 10 years of teaching experience and 72.8% were female. The gender distribution is consistent with national-level statistics showing that 74.6% of all compulsory school teachers in Finland are female (Kumpulainen, 2014).

The first questionnaire was launched in late September 2013, and a web link to it was electronically sent to 709 teachers in the 38 participating schools. Of those teachers, 571 filled out the questionnaire (80.5% response rate). The second questionnaire was delivered to 719 teachers in late January 2014 and 472 of them completed it (65.6% response rate). The third questionnaire was sent to 719 teachers in late April 2014 and 486 of them filled it in (67.6% response rate). In all, 365 of the participants responded to all three questionnaires and 522 participants responded to at least two of the three questionnaires.

The 38 schools where the data was collected had one to two classes that carried out a simple two-month, class-level intervention related to improving the classroom learning climate, either in Autumn 2013 or Spring 2014. The classes that participated in this intervention were nominated by the schools. The intervention was based on clear behavioral expectations for the students, positive behavior support, and, if needed, rapid actions in response to high rates of disruptive behavior. The intervention study provided the project team with access to the schools to collect additional data that was not directly related to the intervention. This additional data was used in this study and includes teacher evaluations of school climate, teacher efficacy, job satisfaction, and burnout. In each round of data collection for this study, the teachers were sent an email that contained a request to participate in the survey, information about the purpose of the study, and a description of the



procedure to secure the confidentiality of their responses. In addition, the email included an individualized web link to an electronic questionnaire. The front page of the questionnaire also informed participants about the purpose of the study and the data management procedure.

When the participants accessed the questionnaire through the individualized link, their email addresses were automatically coded into the dataset. The project's data management specialist identified the participants based on these email addresses and/or the names they provided in the questionnaire, after which he created a personal ID number for each participant. After the personal ID number was assigned, participants' names, email addresses, and other identifier information were removed from the dataset. After the final round of data collection, the personal ID numbers were used to merge the data from individual questionnaires into a single dataset that covered all three rounds of data collection. During all of these phases, the questionnaire data was saved and stored on a secured server located on the premises of the first author's affiliate institution.

## 2.2 Measures

The data for this study come from two sections of the electronic questionnaires: 1) the demographic information section and 2) the section that included five scales measuring school climate, teacher self-efficacy, collective teacher efficacy, burnout, and satisfaction with current job. The descriptives of the scales or sub-scales used in this study can be found in Table 1.

School climate was measured using the Revised School Level Environment Questionnaire (R-SLEQ) (Johnson et al., 2007). The version used in this study had 17 items that represent four dimensions of school climate: collaboration, student relations, decision making, and instructional innovation. The full R-SLEQ scale also has a fifth dimension, school resources, but it was not included in this study, as the variation of resources among Finnish schools is usually quite small. R-SLEQ responses were given on a 6-point scale ranging from "strongly disagree" to "strongly agree." In this study, Cronbach's alpha coefficient for the total R-SLEQ scale was 0.85. The Cronbach's alpha values for the four subscales were 0.73 for collaboration, 0.80 for student

relations, 0.81 for instructional innovation, and 0.55 for decision making. The reliability of the three-item decision making sub-scale was relatively low, which may be at least partially caused by the small number of items in this scale. However, a decision was made to include this sub-scale in the analysis. It was deemed crucial that a measure of school climate should include items dealing with leadership and decision making practices, which are essential elements of organizational climate in schools.

Teacher self-efficacy in managing student behavior was measured by the Finnish version of the Teacher Self-Efficacy for Inclusive Practices (TEIP) scale (Author et al., 2013; Sharma, Loreman, & Forlin, 2012). The total TEIP scale has 18 items that can be divided into three dimensions: efficacy in managing behavior, efficacy in instruction, and efficacy in collaboration. In this study, we used only the six items related to efficacy in managing behavior. In earlier studies, the Finnish version of the TEIP scale used a bipolar 6-point Likert-type scale. However, for this study, the rating scale was revised into a 9-point scale ranging from “None at all” to “A great deal.” The rating scale was adapted to more closely follow Bandura’s (2006; 2012) instructions that self-efficacy measures should have a unipolar rating scale and, preferably, a higher number of response options. The Cronbach’s alpha reliability for the efficacy in managing the behavior subscale was 0.85.

Collective teacher efficacy in student discipline was measured by the Collective Teacher Beliefs Scale (Tschannen-Moran & Barr, 2004). This scale has a total of 12 items that represent two dimensions of collective teacher efficacy: instructional strategies and student discipline. In this study, we only used six items that belong to the student discipline subscale. The Collective Teacher Beliefs Scale uses a 9-point rating scale, ranging from “None at all” to “A great deal.” Cronbach’s alpha coefficient for the student discipline subscale was 0.88.

The Collective Teacher Beliefs Scale was not previously available in Finnish. The scale was translated from English by applying the Translation, Review, Adjudication, Pre-testing and

Documentation (TRAPD) procedure that was developed for translating cross-national surveys such as the European Social Survey, which involved over 30 countries (European Social Survey, 2012). The TRAPD procedure is currently seen as a more preferable approach for international questionnaire translation than, for example, back-translation, a once-popular method (Harkness, 2013). In this study, the TRAPD approach was applied so that the scale was first translated by an experienced professional translator. The translation was then reviewed by the members of the research project team in collaboration with the translator. Next, the scale was piloted with a small group of compulsory school teachers. The leader of the research project team made the final decision about the translation after consulting with other people who were part of the process.

Job satisfaction was measured by a four-item scale developed for the purposes of this study. The items asked about the participants' satisfaction with their current job and can be translated from Finnish as follows: 1) "I am happy to come to work." 2) "I want to continue for a long time in my current workplace." 3) "My current job is rewarding." 4) "I enjoy being in my current job position." Responses were given on a 6-point scale ranging from "strongly disagree" to "strongly agree." The Cronbach's alpha for the job satisfaction scale was 0.84.

Burnout was measured with the five emotional exhaustion items in the Finnish version of the Bergen Burnout Indicator 15 (BBI-15) (Näätänen, Aro, Matthiesen, & Salmela-Aro, 2003). This scale also has six response options ranging from "strongly disagree" to "strongly agree." The Cronbach's alpha value for the five-item scale was 0.86.

Table 1 around here

### 2.3 Analyses

The two main analysis methods used in this study were confirmatory factor analysis (CFA) and structural equation modeling (SEM) with latent variables. Both analyses were conducted using the

Mplus package (version 7.11). The first step of the analysis was to conduct CFA for each scale individually to confirm the expected factor structure of the measurement instruments. The second step was to carry out CFA that included all individual CFA models and correlations between the latent variables. The third step was to build a structural model with latent variables to test the relationships between perceived school climate, teacher self-efficacy in managing behavior, collective teacher efficacy in student discipline, job satisfaction, and burnout. The following well-known fit indices were used to assess the goodness of fit of the CFA and SEM models: comparative fit index (CFI), Tucker Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), and the chi-square test. For the CFI and TLI indices, values greater than 0.90 were considered to indicate acceptable fit to the data, and values greater than 0.95 were taken as a threshold of good fit to the data (Hu & Bentler, 1999). For RMSEA and SRMR, values smaller than 0.08 and 0.06, respectively, were considered to indicate a good fit to the data (Hu & Bentler, 1999).

The school climate ratings used in the models came from the first round of data collection, which was launched in late September 2013. The ratings of teacher self-efficacy and collective teacher efficacy originated from the second round of data collection, which was administered in late January 2014. Finally, the data of the two job satisfaction measures come from the third round of data collection, which was carried out in late April 2014. The longitudinal design of this study is a major advantage compared with studies that rely on cross-sectional data. Temporal lag in the different measurements enables stronger assumptions concerning the direction of causality between the variables in the SEM model.

Addressing the issue of missing data is a common challenge in longitudinal datasets. This study applied the missing at random (MAR) approach (Muthén & Muthén, 1998–2010). If a respondent had missing information in some data collection point, the case was not automatically dropped from the entire model, as it would have been with a listwise deletion. Instead, the model

estimation was carried out with the full information maximum likelihood (FIML) approach. This ensured the maximal use of all available information. FIML has been shown to be an effective approach for dealing with missing information (Graham, Olchowski, & Gilreath, 2007). The CFA and SEM models were estimated with the maximum likelihood estimation with robust standards (MLR) method, which is more robust to issues of non-normality and non-independence of observations than the regular maximum likelihood (ML) method (Muthén & Muthén, 1998–2010).

As mentioned earlier in this paper, all 38 schools where the data were collected had one or two classes participating in a two-month intervention to improve the classroom learning climate. The results of the intervention study are not reported in this paper. School climate, which acts as the independent variable in our structural model, was measured before the intervention was carried out in each of the schools. Teacher job satisfaction and burnout were measured after the intervention had already been carried out in all the participating schools. Teacher self-efficacy and collective teacher efficacy in maintaining student discipline were measured when the intervention had been carried out in about half of the schools; in the remaining schools, the intervention had not yet been implemented. Consequently, it is possible that some variation exists in the level of teacher self-efficacy and collective efficacy in the area of maintaining student discipline, based on the timing of the classroom learning climate intervention in the participants' schools. However, in this current study we are not interested in the level of self-efficacy in managing behavior and collective efficacy in student discipline per se; rather, we investigated the process of how these teacher efficacy constructs mediate the effect of school climate on job satisfaction and burnout. Consequently, we decided to run the CFA models and the structural model using a dataset in which the responses from all 38 schools were pooled together. Finally, we wanted to test whether membership in one of the two intervention groups had any effect on model and ran a multi-group SEM to determine whether there were structural path differences across the two groups. Two models where the structural path beta estimates were freely estimated or fixed equal were run while assuming scalar invariance, i.e.

holding factor loadings and measured variable intercepts constant. Because the model was run with MLR estimation, a scaling correction (Muthén & Muthén 1998-2010) was used in the comparison of Chi-Square difference against the change in degrees of freedom.

### 3. Results

#### 3.1 Revised School Level Environment Questionnaire

First, we tested the factor structure of our school climate measure, the Revised School Level Environment Questionnaire. We used CFA to confirm the expected four-factor structure. The factor loadings for individual items varied between .37 and .77. One item, “Decisions about the school are made by the principal,” was removed from the model because of its low factor loading (.23). The fit indices showed an acceptable fit to the data ( $\chi^2$  (98, N = 487) = 205.13, CFI = 0.94, TLI = 0.92, RMSEA = 0.05, SRMR = 0.04) for the model with four factors that represented collaboration, student relations, instructional innovation, and decision making.

In the current study, school climate is conceptualized as an overall psychosocial context for teachers’ work. Therefore, we continued by testing a second-order factor model in which the four first-order factors were loaded into a second-order factor that represented this overall school climate. The loadings of the first-order factors on the second-order factor varied between .58 and .86, and the fit indices confirmed that this model also had an acceptable fit to the data ( $\chi^2$  (100, N = 487) = 206.52, CFI = 0.94, TLI = 0.92, RMSEA = 0.05, SRMR = 0.04). Consequently, we were confident that the second-order factor, *general school climate*, could be used as a variable in our subsequent models.

#### 3.2 Teacher self-efficacy in managing behavior scale

The second step was to use CFA to confirm the measurement model containing the behavior management items of the TEIP scale. In the model, all six items were loaded into a single factor

with loadings ranging from .48 to .89. The fit indices ( $\chi^2$  (9, N = 436) = 9.12, CFI = 1.00, TLI = 1.00, RMSEA = 0.01, SRMR = 0.02) showed that the model had excellent fit to the data.

### 3.3 Collective efficacy in student discipline scale

The third step of the data analysis was to confirm the measurement model containing the student discipline items of the Collective Teacher Beliefs Scale. In the model, all six items were set to load on one factor. In addition, two correlations between residuals of the variables were set free in order to improve the model fit to the data. After these modifications, the model had excellent fit to the data ( $\chi^2$  (7, N = 430) = 14.13, CFI = 0.99, TLI = 0.98, RMSEA = 0.05, SRMR = 0.02) with factor loading ranging between 0.65 and 0.81.

### 3.4 Job satisfaction scale

The fourth step in the data analysis was to conduct yet another CFA to test the structure of the four-item scale that measures satisfaction with current job. In the model, all four items were set to load on a single factor. The factor loading of the items ranged between .61 and .89, and the fit indices indicated a good fit to the data ( $\chi^2$  (2, N = 452) = 10.70, CFI = 0.98, TLI = 0.95, RMSEA = 0.10, SRMR = 0.02).

### 3.5 Burnout scale

The fifth step of the analysis strategy was to confirm the single-factor model of our burnout scale. In the model, one correlation between residuals of two variables was set free. After this minor modification, the model had good fit to the data ( $\chi^2$  (4, N = 452) = 11.42, CFI = 0.99, TLI = 0.98, RMSEA = 0.06, SRMR = 0.02) with factor loadings ranging from .68 to .78.

### 3.6 CFA with all individual CFA models

The sixth step in the data analysis was to test a CFA model that included all individual CFA models of the measurement scales. This model had an acceptable fit the data ( $\chi^2(612, N = 596) = 941.52$ , CFI = 0.94, TLI = 0.94, RMSEA = 0.03, SRMR = 0.05). The correlations between latent variables are presented in Table 2

### 3.7 Structural model

The final step of the data analysis was to build a structural model with the latent variables. First, we tested a hypothetical model (Figure 1) in which the second-order factor, *perceived general school climate*, has an effect on self-efficacy in behavior management, collective efficacy in student discipline, burnout, and job satisfaction. In addition, self-efficacy and collective efficacy have an effect on burnout and job satisfaction and are thus mediators of the effect of school climate on these variables. In the hypothetical model, there is also a correlational relationship between the constructs that were measured at the same time points i.e. between self-efficacy and collective efficacy, and between burnout and job satisfaction.

Figure 1 around here

The final structural model included only statistically significant ( $p < .05$ ) paths and correlations between latent variables. The final model (Figure 2) had acceptable fit to the data ( $\chi^2(613, N = 596) = 943.38$ , CFI = 0.94, TLI = 0.94, RMSEA = 0.03, SRMR = 0.05). School climate significantly predicted self-efficacy ( $\beta = .26, p < .001$ ) and collective efficacy ( $\beta = .51, p < .001$ ). School climate also directly predicted satisfaction with current job ( $\beta = .34, p < .001$ ). The significance of the indirect effects of school climate through self-efficacy on satisfaction with current job and burnout were calculated by using bootstrapping with 1000 draws. The analysis showed that school climate had an indirect effect on both job satisfaction ( $\beta = .085$  with 95% CI



ranging from .042 to .153) and burnout ( $\beta = -.093$  with 95% CI ranging from -.149 to -.038).

Teacher self-efficacy predicted both satisfaction with current job ( $\beta = .28$ ,  $p < .001$ ) and teacher burnout ( $\beta = -.36$ ,  $p < .001$ ). Teacher self-efficacy correlated moderately ( $r = .46$ ,  $p < .001$ ) with collective teacher efficacy. Satisfaction with current job correlated with burnout ( $r = -.28$ ,  $p < .001$ ).

Because the independent variable describes the climate at the school level and data is clustered across different schools, a similar analysis was carried out with the COMPLEX option of Mplus, which adjusts the model for the possible effects of clustering; however, that did not change the significance of the parameters or the model fit in any way. Furthermore, as the longitudinal data was taken from schools that had one to two classes participating in an experimental study with two groups, further analyses were carried out to test whether the path coefficients were similar in both groups. In a multi-group SEM two models were compared where the path coefficients were either fixed equal or freely estimated across the two groups while holding factor loadings and measured variable intercepts constant. Chi-square difference tests (with MLR scaling correction) showed that the model where paths were estimated freely was not significantly better than the model with fixed path coefficients (difference in chi-square 1.08 and  $df = 6$ ;  $p = .95$ ). Thus, the original model with all participants as one group holds.

Figure 2 around here

#### **4. Discussion**

The first aim of this study was to investigate the direct effect of perceived school climate on teacher job satisfaction and burnout. The second aim was to examine how the effect of perceived school climate on job satisfaction and burnout is mediated by teacher self-efficacy in behavior management and collective efficacy in student discipline. To achieve these aims, we tested a

structural model with longitudinal data that was collected from Finnish lower secondary school teachers at three time points during one school year.

The analysis showed that school climate had a positive effect on job satisfaction; teachers who evaluated school climate more positively at the beginning of the school year had higher job satisfaction at the end of the school year. However, school climate did not have a direct effect on teacher burnout. Teacher self-efficacy in managing behavior had a positive effect on job satisfaction and a negative effect on burnout. Collective efficacy in student discipline did not have a significant effect on either job satisfaction or burnout in our model.

Our finding that positive school climate and teacher self-efficacy in behavior management predict higher job satisfaction is in line with earlier research showing a connection between teachers' work conditions, self-efficacy, and job satisfaction. Considering the earlier findings (Caprara et al., 2003; Klassen et al., 2010), we expected that collective efficacy in behavior management would also predict job satisfaction. However, we did not find such a connection in our structural model. A potential explanation for this is that the earlier studies did not include both perceived school climate and self-efficacy in their models. The high regression coefficient from school climate to collective efficacy in student discipline and the moderate correlation between self-efficacy in behavior management and collective efficacy in student discipline indicate that collective efficacy has shared elements with both of these constructs. As a result of this commonality, collective efficacy in student discipline could not provide additional explanatory power to the model after accounting for the effect of school climate and self-efficacy in behavior management.

Contrary to our original hypothesis, school climate at the beginning of the school year did not directly predict burnout at the end of the school year. A potential interpretation of this result is that teacher burnout is primarily an individual-level phenomenon that is not directly related to organization-level factors such as school climate. This explanation appears viable at least in

Finland, where the differences between lower secondary schools are generally small. For example, in the PISA 2009 study, the between-school variation in student reading performance in Finnish lower secondary schools was smaller than in any other country or region (OECD, 2013). The Finnish lower secondary schools are also quite homogenous in the composition of their teaching force, and about 90% of full-time subject teachers are fully qualified for their positions (Kumpulainen, 2014).

Our finding that self-efficacy in behavior management predicted burnout, whereas collective efficacy did not, supports the claim that teacher burnout is mainly affected by individual-level factors, at least in a homogenous school system such as Finland's. Nevertheless, we maintain that there is a possibility that in educational contexts with larger between-school disparities, organizational factors such as school climate can have a stronger and more direct effect on teacher burnout. We also acknowledge the benefit of improving school climate in all educational contexts, as it has been shown to be connected to many important aspects of schooling (Thapa et al., 2013).

The relationship between self-efficacy and job satisfaction (Caprara, Barbaranelli, Steca, & Malone, 2006) as well as self-efficacy and burnout (Brown, 2012), and more particularly between self-efficacy in behavior management and burnout (Aloe et al., 2014), has already been documented in earlier literature. The limitation of the existing literature is that the findings are mostly based on cross-sectional data. The present study differs from the majority of earlier studies because it uses longitudinal data to examine the relationship between these constructs. The longitudinal design provides a foundation for stronger assumptions about the direction of the causality between self-efficacy, job satisfaction, and burnout. Based on our data, it is viable to claim that earlier teacher self-efficacy in behavior management affects later teacher job satisfaction and burnout.

#### 4.1 Limitations

The limitations of this study should be acknowledged. The first limitation is our sampling. The data came from schools that had volunteered to have one to two classes participate in a class-level

intervention study, and no structured sampling framework was applied in the school selection. Therefore, it is possible that the results are not fully generalizable to all Finnish lower secondary school teachers, and it is possible that the results are not fully generalizable to teachers working in other educational systems. The second limitation relates to the measurement instruments. The school climate measure used in this study has been found to be a valid instrument in earlier studies (Johnson et al., 2007). However, in this study we did not include the subscale of school resources, because there is very little variance in resources among Finnish schools. In this study, the measure covered teachers' perceptions of four dimensions of organizational climate: collaboration, student relations, decision making, and instructional innovation. While the exclusion might be considered a limitation, we are confident that these four dimensions already effectively capture essential elements of school climate. Our burnout scale measured only one of the three dimensions of burnout. Although emotional exhaustion is considered the most central feature of burnout (Maslach et al., 2001), it would have been beneficial to include measures of cynicism and the sense of inefficiency in our questionnaire as well. The third limitation is that in the SEM model, the prior variance in the Time 2 and 3 constructs was not controlled for.

#### 4.2 Practical implications

This study has several implications for teachers and teacher education. First, the results underscore the importance of supporting teachers' self-efficacy in behavior management, which is directly related to burnout and job satisfaction. In Finland and possibly in other countries as well, pre-service teacher education programs are primarily concentrated on learning subject-related pedagogical skills (subject teachers and classroom teachers) or skills and knowledge needed to respond to individual disabilities related to special educational needs (special education teachers). Very limited attention is given to day-to-day behavior management skills. Considering the findings of this study, this is an obvious weakness in the curricula of pre-service teacher education. Consequently, subject teachers in particular usually have a strong background in their teaching

subjects but much less knowledge about effective behavior management. However, the capability of building a positive classroom learning climate is at least as important as the mastery of content knowledge. This study also indicates that lower teacher self-efficacy in behavior management is a clear risk factor for reduced job satisfaction and increased burnout, which may eventually lead to poor teacher retention. Therefore, it is clear that a future goal for pre-service teacher education and professional development programs should be to help build a robust sense of efficacy in preventing and managing problematic student behavior.

In Finland, teachers are known to be very critical regarding their ability to deal with diversity, including problem behaviors, in their classrooms (Author et al., 2003; Author et al., 2012). One hypothesis as to why problem behaviors are so stressful is the tendency to assume that the ability to manage negative student behavior is a permanent personality characteristic of a good teacher. However, findings from interventions in behavior management (Epstein, Atkins, Cullinan, Kutash, & Weaver, 2008; Author et al., 2015; Oliver, Wehby, & Reschly, 2011) have suggested that behavior management is a learnable skill and that relatively small changes in responding to problem behaviors can create positive outcomes. Such knowledge and skills should then become an essential element of pre- and in-service teacher education programs. The most effective methods for building self-efficacy in behavior management may differ depending on the stage of a teacher's career. Observing examples of effective behavior management (vicarious experiences) and encouraging lectures (verbal persuasion) can be effective for student teachers and educators in the early stages of their careers. Experienced educators may benefit more from carrying out well-supported behavior interventions in their own classrooms (mastery experiences) and receiving emotional support when struggling with the emotions related to problematic student behavior (somatic and emotional states).

## **5. Conclusion**

This study provides additional evidence to support the view that perceived school climate and teacher self-efficacy in managing behavior are contributing factors in many significant teacher

outcomes, including job satisfaction and burnout. We see two directions for deepening our knowledge in this area. The first route forward is to carry out intervention studies that aim to build a more positive school climate and a stronger sense of teacher self-efficacy. A second direction for future studies is to determine how teachers' self-efficacy and other psychological characteristics influence important student outcomes such as classroom behavior. These are the two routes we are planning to take in our forthcoming research.

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