School Environment Factors as Predictors for Teachers' Teaching Efficacy, Teacher Stress and Job Satisfaction

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Abstract

The purpose of this study is identify how teachers' perceptions of school environment factors, and the extent to which these predict outcome variables - teaching efficacy, job satisfaction and teacher stress. It also investigates if teaching efficacy affects job satisfaction, and teacher stress impacts teaching efficacy and job satisfaction. The sample included 387 Vietnamese junior high school teachers. Participants completed one questionnaire for four sections about school environment, teaching efficacy, teacher stress, and job satisfaction. The results obtained from statistical analyses show that teachers had highly favourable and positive perceptions of school environment, teaching efficacy, job satisfaction, and highly negative stress. The results obtained from multiple regression analyses also indicated that the factors of school environment as the predictors for teachers' teaching efficacy, teacher stress and job satisfaction. Of the seven school environment factors investigated, teachers' perception of principal leadership, mission consensus, professional interest, affiliation and student support had the most powerful effect on outcome variables. Among the outcome variables, sense of teaching efficacy positively related to job satisfaction, while both types of teacher stress negatively related to job satisfaction and teaching efficacy. The findings of the present study have educational implications.

Keywords: school environment, teaching efficacy, teacher stress, job satisfaction

1. Introduction

School-level environment has been an internationally important research field among educational researchers. Many research studies on classroom learning environment have been conducted, but few school-level environment research investigations have been examined. The strength of an effective school always depends on all aspects of school-level environment (Collie, Shapka, & Perry, 2012). In recent years, four areas of research focused on teachers' perceptions of school environment, teaching efficacy, teacher stress, and job satisfaction have received more attention among researchers and policy makers (Shann, 1998; Tschannen-Moran & Hoy, 2007; Wilson, 2002). The research results have shown that school environment, teaching efficacy, teacher stress, and job satisfaction not only affect teachers in terms of motivation, engagement, and commitment to teaching, but also affect students in terms of learning responsibility and academic performance (Schaufeli & Bakker, 2004; Chen, 2007; Weiss, 1999). The findings of several studies show that students' greater academic achievement and aspirations are encouraged when teachers have lower

perceived stress and greater perceived teaching efficacy and job satisfaction (Caprara, Barbaranelli, Steca, & Malone, 2006; Ross, Hogaboam-Gray, & Hannay, 2001).

A powerful association between aspects of school-level environment and teachers' outcomes such as teaching efficacy, teacher stress, and job satisfaction has been found in recent research studies (Collie *et al*., 2012; Fisher & Fraser, 1990). In addition, school-level environment has the relationships with professional and organizational commitment (Tarter, Hoy, & Kottkamp, 1990), teacher retention (Miller, Brownell, & Smith, 1999). Apparently, a positive school environment results in an increase in teaching efficacy and teachers' job satisfaction (Taylor & Tashakkori, 1995), and a decrease in stress included student behavior stress and workload stress (Collie *et al*., 2012). Some international research studies indicate that school-level environment factors have been considered as key predictors of teachers' teaching competencies, stress and job satisfaction (Butt *et al.*, 2005). However, in the setting of Vietnamese junior high schools, the relationships among school-level environment, teaching competencies, teacher stress, and job satisfaction are rarely investigated. The purpose of this study is, therefore, to examine how teachers' perceptions of school-level environment factors and the extent to which these predict outcome variables - teaching efficacy, teacher stress, and job satisfaction. It also investigates if teaching efficacy affects job satisfaction, and teacher stress impacts teaching efficacy and job satisfaction. The results of this study may provide Vietnamese high school teachers as well as school leaders with potentially additional information to improve teachers' sense of efficacy and job satisfaction, and minimize teacher stress.

2. Literature Review

2.1. School-Level Environment

School-level environment is the construct used to refer as the "esprit de corps" (Perry, 1908, p.304), the "heart and soul" (Freiberg, 1999, p.11), and "the atmosphere, culture, resources, and social networks of a school" (Loukas & Murphy, 2007, p.293). In a systematically review of previous research studies on school-level environment, Cohen, McCabe, Michelli, and Pickeral (2009) established four aspects of school school-level environment. They are physical and social-emotional safety, quality of teaching and learning between individuals at a school, relationships and collaboration, and the structural environment (Cohen *et al*., 2009). These four aspects form school-level environment, and aspects of school-level environment affect the experiences of individuals within that organization (Cohen *et al*., 2009).

The findings of previous research showed that teachers' perceptions of school environment have been found to be associated with their sense of stress (E. Skaalvik & S. Skaalvik, 2009), teaching efficacy (Hoy & Woolfolk, 1993), job satisfaction (Butt *et al*., 2005; Taylor & Tashakkori, 1995), teachers' burnout (Grayson & Alvarez, 2008) and their work commitment (Collie, Shapka, & Perry, 2011). In addition, Riehl and Sipple's (1996) research reported that poor collegial relations influence negatively on teacher commitment and consequently lead to teacher burnout (McLaughlin, 1993). Based on the four factors of school-level environment established by Cohen *et al*., (2009), the present study identified seven factors of school-level environment, included student support (refers to a good relationship between teachers and students, and student behavior), affiliation (refers to assistance, advice and encouragement of colleagues), professional interest (refers to professional matters, work interest, and professional development), mission consensus (refers to staff consensus, and school goals), innovation (refers to planned change and experimentation), resource adequacy (refers to facilities, finance, equipment and resources), and principal leadership (refers to the ability of management and leadership), and hypothesized that these factors would be significant predictors of teachers' teaching efficacy, teacher stress, and job satisfaction of Vietnamese high school teachers.

2.2. Teaching Efficacy

Teachers' teaching efficacy refers to teachers' beliefs about their capabilities in carrying out a particular task successfully (Bandura, 1977). In the classroom, teaching efficacy has been defined as a teacher's *"judgment of his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated"* (Tschannen-Moran & Hoy, 2001, p.783). Teaching efficacy has been associated with efficacy for student engagement, efficacy for classroom management, and efficacy for instructional strategies (Klassen & Chiu, 2010; Hoy & Spero, 2005; Tsouloupas, Carson, Matthews, Grawitch, & Barber, 2010; Egyed & Short, 2006; Tschannen-Moran & Hoy, 2001). Efficacy for student engagement refers to teachers' ability to promote student motivation in learning, efficacy for classroom management refers to teachers' ability to control disruptive behavior and have students follow classroom rules, and efficacy for instructional strategies refers to teachers' ability to use effective strategies for teaching (Tschannen-Moran & Hoy, 2001). The sense of teaching efficacy construct has been linked with important outcomes for teachers, including the use of effective teaching efficacy (Klassen & Chiu, 2010; Hoy & Spero, 2005), better classroom management (Tsouloupas *et al*., 2010), and greater teacher well-being (Egyed & Short, 2006; Tschannen-Moran & Hoy, 2001). Teachers' sense of teaching efficacy has the relationship with school-level environment factors (Collie *et al*., 2012; Taylor & Tashakkori, 1995). Particularly, the greater sense of school-level environment factors has been associated with important outcomes for teachers, including the greater use of effective teaching strategies (Klassen & Chiu, 2010; Hoy & Spero, 2005), better classroom management strategies (Tsouloupas *et al*., 2010), and greater student engagement in learning (Egyed & Short, 2006; Tschannen-Moran & Hoy, 2001). In this study, three factors of teachers' teaching efficacy, which included efficacy for student engagement, efficacy for classroom management, and efficacy for instructional strategies were identified to examine their relationships with school-level environment factors, and investigate if teaching efficacy associates with job satisfaction, and teacher stress.

2.3. Teacher Stress

In comparison with other jobs, teaching is considered as a very stressful job (Al-Fudail & Mellar, 2008; Chaplain, 2008; De Nobile & McCormick, 2005; Kyriacou, 2001). Teachers' work stress reflects the experience of unpleasant emotions as a result of teaching work (Kyriacou, 2001). The profession of teaching may result in personal satisfaction but it also results in stress (Schwarzer & Hallum, 2008). Teachers' work stress not only come from the demands of administrators, colleagues, students, and parents but also comes from work overload, student misbehavior, level of conflict with students and colleagues, and a lack of recognition for accomplishments (Greenglass & Burke, 2003). Some research studies indicated that up to one third of teachers are stressed or extremely stressed (Geving, 2007; Thomas, Clark, & Lavery, 2003). Although there are many causes of teaching stress, two types of stress - stress related to students' behavior and discipline, and stress related to workload, have been investigated (Boyle, Borg, Falzon, & Baglioni Jr., 1995). Many research studies show that these two types of stress are associated with several negative outcomes for teachers, such as increased burnout, reduced sense of teaching efficacy, reduced job satisfaction, and reduced teaching commitment (Boyle *et al*., 1995; Betoret, 2006; Jepson & Forrest, 2006; Kyriacou, 2001; McCarthy, Lambert, O'Donnell, & Melendres, 2009; Klassen & Chiu, 2010; Klassen & Chiu, 2011). In addition, teachers with greater teacher stress have lower self-efficacy (Betoret, 2006; Schwarzer & Hallum, 2008; Skaalvik, 2007), poorer teacher-pupil relationship, and lower levels of effectiveness (Kokkinos, 2007; Kyriacou, 2001). In the present study, two types of teachers' stress - stress related to students' behavior and discipline, and stress related to workload were identified to examine their relationships with school-level environment factors, and investigate if teacher stress relates with teaching efficacy and job satisfaction.

2.4. Job Satisfaction

Job satisfaction refers to the degree to which teachers' job-related needs such as fulfillment, gratification, recognition for accomplishments, and satisfaction are being met (Evans, 1997). Job satisfaction is related with both extrinsic such as salary and benefits, promotion, status, a safe environment, and job security and intrinsic rewards such as performance (Lawler, & Porter, 1967). Some previous research indicate that teachers are satisfied with their teaching work such as professional interest, professional growth but dissatisfied with the performance of their job, such as working conditions, interpersonal relations, and salary (Butt *et al*., 2005; Crossman & Harris, 2006; Dinham & Scott, 1998). Teachers' job satisfaction has the relationship with their motivation, well-being, and commitment to teaching (Feather & Rauter, 2004; Vansteenkiste *et al*., 2007). In addition, teachers' job satisfaction is determined by their teaching efficacy and stress (Caprara, Barbaranelli, Borgogni, & Steca, 2003; Caprara *et al*., 2006; Collie *et al*., 2011), and both stress and teaching efficacy contributed to job satisfaction (Klassen & Chiu, 2010). The present study identified the job satisfaction measure to examine its associations with school-level environment factors, teaching efficacy and teacher stress.

3. Research Hypotheses

The review of literature shows that until now no known study has examined the relations among school-level environment factors, teaching efficacy, teacher stress, and job satisfaction in the setting of Vietnamese high school schools. The current study adds to the literature by reporting the results of an investigation to predict that school-level environment factors may be related to teachers' teaching efficacy, stress, and job satisfaction. It also investigates if teaching efficacy affects job satisfaction, and teacher stress impacts teaching efficacy and job satisfaction. Based on the review of literature, the present study will examine the following hypotheses:

Hypothesis 1: Teachers have highly positive perceptions of their school environment in terms of dimensions of student support, affiliation, professional interest, mission consensus, innovation, resource adequacy, and principal leadership.

Hypothesis 2: School environment factors influence on teacher's teaching efficacy, stress and their job satisfaction.

Hypothesis 3: Teaching efficacy, teacher stress, and job satisfaction are interrelated.

4. Research Method

4.1. Research Design

A correlational research design was utilized to identify how teachers' perceptions of school environment factors, and the extent to which these predict teaching efficacy, job satisfaction, and teacher stress. In addition, the interrelationships among the three outcome variables were examined. In the present study, school environment factors are predictor variables while teaching efficacy, job satisfaction and teacher stress are outcome variables.

4.2. Research Participants

The convenience sample used for this research study consisted of 387 classroom teachers in total (213 females [55 percent] and 174 males [45 percent]) from 7 Vietnamese junior high schools (Grades 10-12). The urban participants were 191 (49 percent) while the suburban participants were 196 (51 percent). The average years of teaching experience for participants was 6.38 (SD = 2.40) and the average age for participants was 33.72 years (SD = 7.75). The average age for female

participants was 32.73 years (SD = 7.07) while the average age for male participants was 35.37 years (SD = 8.53).

4.3. Research Instruments

4.3.1. School-Level Environment

Thirty six items from School Environment Scale developed by Fisher and Frase (1991) and five items developed by Taylor and Tashakkori (1995) were used to measure teachers' perceptions of school environment factors. Forty nine items of school environment included seven factors. The first factor, called **Student Support**, contained 6 items (e.g. Most students are helpful and cooperative to teachers; There are many disruptive, difficult students in this school; There are many noisy, badly-behaved students). The second factor, called **Affiliation**, consisted of 5 items (e.g. I am ignored by other teachers; I feel that I could rely on my colleagues for assistance if I needed it; My colleagues take notice of my professional views and options). The third factor, called **Professional Interest**, contained 6 items (e.g. Teachers avoid talking with each other about teaching and learning; Staff meetings are dominated by administrative matters rather than teaching and learning issues; many teachers attend in-service and other professional development courses). The fourth factor, called **Mission Consensus**, consisted of 5 items (e.g. The school mission statement and its associated goals are well understood by school staff; The organization of this school reflects its goals; Teachers regularly refer to the mission of the school when addressing school issues). The fifth factor, called **Innovation**, contained 7 items (e.g. It is difficult to change anything in this school; Teachers are encouraged to be innovative in this school; There is a great deal of resistance to proposals for curriculum change). The sixth factor, called **Resource Adequacy**, consisted of 7 items (e.g. the school or department library includes an adequate selection of books and periodicals; the supply of equipment and resources is inadequate; Video equipment, tapes and films are readily available and accessible). The final factor, called **Principal Leadership**, contained 5 items (e.g. Principal makes plans and carries them out; Principal is interested in innovation; Principal consults staff before making decisions). For each item of this instrument, respondents maked a 1, 2, 3, 4, or 5 for their response, the numbers corresponding to, SD (Strongly Disagree), D (Disagree), U (Undecided), A (Agree), SA (Strongly Agree), respectively. Table 1 describes the means, standard deviations, and alpha coefficient of this scale.

4.3.2. Teaching Efficacy

Teaching Efficacy Scale developed by Tschannen-Moran and Hoy (2001) was used to measure teaching efficacy of teachers. This scale consisted of 10 items that measure three factors of teaching efficacy. The first factor, called **Efficacy for Classroom Management**, comprised 3 items (How much can you do to control disruptive behavior in the classroom? How much can you do to calm a student who is disruptive or noisy? How much can you do to get children to follow classroom rules?). The second factor, called **Efficacy for Student Engagement**, included 3 items (How much can you do to motivate students who show low interest in school work? How much can you do to help your students to believe they can do well in school work? How much can you do to get students to believe they can do well in school work?). The third factor, called **Efficacy for Instructional Strategies**, consisted of 4 items (To what extent you can craft good questions for your students? To what extent can you use a variety of assessment strategies? To what extent can you provide an alternative explanation or example when students are confused? How much can you assist families in helping their children do well in school?). For each item of this scale, respondents maked a 1, 2, 3, 4, or 5 for their response, the numbers corresponding to, N (Never), HE (Hardly Ever), S (Sometimes), O (Often), VO (Very Often), respectively. Table 1 describes the means, standard deviations, and alpha coefficient of this scale.

4.3.3. Teacher Stress

Six items from the Teacher Stress Inventory (Boyle *et al.*, 1995) plus an additional item, class size, suggested by Gates (2007) were used to measure two factors of teacher stress. The first factor, called **Workload Stress**, comprised 4 items (How great a source of stress is having too much work to do? How a great a source of stress is having extra duties/responsibilities because of absent teachers? How great a source of stress is having a large class size? How great a source of stress is being responsible for students' achievement?). The second factor, called **Classroom Stress**, consisted of 3 items (How great a source of stress is having noisy students? How great a source of stress is maintaining class discipline? How great a source of stress is dealing with students' impolite behavior or rudeness?). For each item of this scale, respondents maked a 1, 2, 3, 4, or 5 for their response, the numbers corresponding to, No Stress, Mild Stress, Moderate Stress, Much Stress, and Extremely Stress, respectively. Table 1 describes the means, standard deviations, and alpha coefficient of this scale.

4.3.4. Job Satisfaction

Job Satisfaction Scale (Taylor & Tashakkori, 1995) was used to measure job satisfaction of teachers. This scale consisted of 4 items (Teacher ussually looks forward to each day, Teacher often feels satisfied with job, Teacher is happy just to get through day, Teacher would become a teacher again). For each item of this scale, respondents maked a 1 = Very unsatisfied, 2 = Dissatisfied, 3 = Neutral, 4 = Satisfied, or 5 = Very satisfied for their response. Table 1 describes the means, standard deviations, and alpha coefficient of this scale.

Table 1. The means, standard deviations (SD), and alpha coefficient (α) of independent and dependent variables

Variable	Mean[a]	SD	Alpha (α)	No. Items
Predictors				
School Environment				
Student Support	3.80	.77	.73	6
Affiliation	3.95	.79	.72	5
Professional Interest	4.21	.85	.79	6
Mission Consensus	3.77	.86	.75	5
Innovation	4.01	.89	.82	7
Resource Adequacy	3.37	.97	.86	7
Principal Leadership	4.23	.98	.76	5
Outcomes				
Job Satisfaction	3.42	1.03	.86	4
Teaching Efficacy				
Classroom Management	4.12	.89	.66	3
Student Engagement	3.87	.85	.68	3
Instructional Strategies	4.01	.96	.76	4
Teacher Stress				
Classroom Stress	3.97	.75	.66	3
Workload Stress	3.76	.80	.68	4

Note: n = 387

[a]4.20 - 5.00: Very high, 3.40 - 4.19: High, 2.60 - 3.39: Medium, 1.80 - 2.59: Low, 1.00 - 1.79: Very low

3.4. Procedure

These entire 387 classroom teachers were invited to participate in this study after the permission for access to the study was obtained from the principals of schools and the Department of Education and Training. All participants were clearly explained that they were free to withdraw from the research at any time. The privacy of participants was ensured concerning the information they supplied in the questionnaires. No questions or statements required the participants to provide their names and schools where they are teaching. Data were collected during the 2014-2015 school year, beginning in August 2014 and ending in January 2015. Participants completed the four questionnaires in 70 minutes. The co-researcher personally collected the completed questionnaires from the head teachers in each school. Since the way the data collected, the response rate was almost 100 percent for those teachers.

3.5. Data Analysis

The relationships among predictor variables - factors of school environment, and outcome variables - teaching efficacy, teacher stress and job satisfaction were investigated using the Pearson product-moment correlation coefficient. In addition, multiple regression analyses were conducted to determine if there were any associations among predictor variables and outcome variables. The relationships among outcome variables were also investigated. For all tests, the significance level was determined with $p < .05$.

4. Results

An analysis using Pearson's correlation coefficient (Table 2) shown that the bivariate correlations between predictor variables and outcome variables were statistically significant at the .01 and .05 levels (2-tailed) for all scales, except for the principal leadership and other scales – classroom management, student engagement, instructional strategies, classroom stress and workload stress. The largest relationships were between the professional interest and the classroom stress ($r = -.83$), and between the affiliation and the instructional strategies ($r = .77$). The smallest relationships was between the innovation and the student engagement ($r = .11$).

4.1. Teachers' Perceptions of School-Level Environment

Descriptive results (Table 1) show that teachers had highly positive perceptions of their school environment in terms of student support, affiliation, professional interest, mission consensus, innovation, resource adequacy, and principal leadership. As indicated in Table 1, all variables had a mean score over 3.70, except resource adequacy. The factor with the highest mean is principal leadership (M = 4.23, SD = .98), which is followed by professional interest (M = 4.21, SD = .85), innovation (M = 4.01, SD = .89), affiliation (M = 3.95, SD = .79), student support (M = 3.80, SD = .77), and mission consensus (M = 3.77, SD = .86). The factor with the lowest mean is resource adequacy (M = 3.37, SD = .97).

4.2. Effects of School-Level Environment Factors on Outcome Variables

Table 3 reports the results of the two multiple regression analyses on the predicted measures and dependent variables. The first model reports the results of multiple regression analyses performed to predict **teachers' job satisfaction.** This model with all seven predictors explained 50 percent of the variance in job satisfaction scale ($R^2 = .503$), $F = 54.589$, $p < .001$. The six factors of school environment were positively and statistically significant related to job satisfaction scale, with the beta value of student support ($\beta = .15$), affiliation ($\beta = .15$), professional interest ($\beta = .41$), mission consensus ($\beta = .31$), innovation ($\beta = .10$), and principal leadership ($\beta = .43$). The only resource adequacy ($\beta = .07$, $p > .05$) factor was not statistically significant with job satisfaction scale. The

results show that the principal leadership factor was the strongest predictor of teachers' job satisfaction while the innovation factor was the weakest predictor. Similarly, the second model reports the results of regression analyses performed to predict **teachers' classroom management** from school environment variables. This model with all seven predictors produced 43 percent of the variance in classroom management scale (R^2 = .430), F = 46.161, p < .001. The six variables of school environment were positively and statistically significant related to the classroom management scale, with the beta value of student support (β = .28), the affiliation (β = .24), the professional interest (β = .43), mission consensus (β = .33), innovation (β = .15), and resource adequacy (β = .22) . The only principal leadership (β = -.03, p > .05) factor was not statistically significant with classroom management scale. The results show that the professional interest factor was also the strongest predictor of teachers' classroom management, while the innovation factor was also the weakest predictor.

Table 4 reports the results of the two multiple regression analyses on the predicted measures and dependent variables. The third model reports the results of multiple regression analyses performed to predict **teachers' student engagement**. This model with all seven predictors explained 49 percent of the variance in student engagement scale (R^2 = .496), F = 37.321, p < .001. The six factors of school environment were positively and statistically significant related to student engagement scale, with the beta value of student support (β = .29), affiliation (β = .24), professional interest (β = .46), mission consensus (β = .23), innovation (β = .20), and resource adequacy (β = .23). The only principal leadership (β = -.05, p > .05) factor was not statistically significant with student engagement scale. The results show that the professional interest factor was the strongest predictor of teachers' student engagement while the innovation factor was the weakest predictor. Similarly, the fourth model reports the results of regression analyses performed to predict **teachers' instructional strategies** from school environment variables. This model with all seven predictors produced 53 percent of the variance in instructional strategies scale (R^2 = .535), F = 67.559, p < .001. The five variables of school environment were positively and statistically significant related to the instructional strategies scale, with the beta value of student support (β = .19), the affiliation (β = .17), the professional interest (β = .31), mission consensus (β = .19), innovation (β = .13). The resource adequacy (β = -.05, p > .05) and principal leadership (β = .01, p > .05) factors were not statistically significant with instructional strategies scale. The results show that the professional interest factor was also the strongest predictor of teachers' classroom management, while the innovation factor was also the weakest predictor.

Table 5 reports the results of the two multiple regression analyses on the predicted measures and dependent variables. The fifth model reports the results of multiple regression analyses performed to predict **teachers' classroom stress**. This model with all seven predictors explained 55 percent of the variance in classroom stress scale (R^2 = .553), F = 66.777, p < .001. The five factors of school environment were negatively and statistically significant related to classroom stress scale, with the beta value of student support (β = -.52), affiliation (β = -.13), professional interest (β = -.14), and mission consensus (β = -.12), innovation (β = -.10, p < .05). The resource adequacy (β = -.01, p > .05) and principal leadership (β = .06, p > .05) factors were not statistically significant with classroom stress scale. The results show that the student support factor was the strongest predictor of teachers' classroom stress while the innovation factor was the weakest predictor. Similarly, the sixth model reports the results of regression analyses performed to predict **teachers' workload stress** from school environment variables. This model with all seven predictors produced 41 percent of the variance in workload stress scale (R^2 = .414), F = 38.220, p < .001. The four variables of school environment were positively and statistically significant related to the workload stress scale, with the beta value of affiliation (β = .43), professional interest (β = .66, p < .001), the mission consensus (β = .16), and the innovation (β = .14, p < .05). The two variables of school environment were negatively and statistically significant related to the workload stress scale, with the beta value of student support (β = -.44), and the resource adequacy (β = -.14). The principal leadership (β = -

.04) factor was not statistically significant with instructional strategies scale. The results show that the professional interest factor was the strongest predictor of teachers' workload stress, while the resource adequacy factor was the weakest predictor.

Table 2. The relationship between predictor variables and outcome variables

Variable	Job Satisfaction	Teaching Efficacy			Teacher Stress	
		Classroom Management	Student Engagement	Instructional Strategies	Classroom	Workload
1	0.40**	0.22**	0.46**	0.73**	-0.76**	-0.18*
2	0.55**	0.49**	0.47**	0.77**	-0.75**	0.24**
3	0.66**	0.42**	0.62**	0.73**	-0.83**	0.26**
4	0.64**	0.38**	0.44**	0.64**	-0.70**	0.20*
5	0.29**	0.16*	0.11*	0.13*	-0.20**	-0.21**
6	0.19*	0.18*	0.16*	0.08	-0.05	-0.22**
7	0.68**	0.05	-0.07	-0.09	-0.09	-0.08

Note: n = 387 * p < .05 ** p < .01

Predictors: 1 = student support, 2 = affiliation, 3 = professional interest, 4 = mission consensus, 5 = innovation, 6 = resource adequacy, 7 = principal leadership

Table 3. Results from multiple regression analyses on job satisfaction and classroom management scales

	Model 1 Job Satisfaction Scale			Model 2 Classroom Management Scale		
	R^2	F	p	R^2	F	p
	.503	54.589	.000	.430	46.161	.000
Variable	β	t	p	β	t	p
Student Support	.148	2.643	.009	.284	3.859	.000
Affiliation	.152	2.971	.003	.238	3.551	.000
Professional Interest	.410	5.935	.000	.436	4.674	.000
Mission Consensus	.317	5.222	.000	.334	3.205	.000
Innovation	.102	1.436	.023	.156	2.642	.003
Resource Adequacy	.072	1.191	.234	.220	2.692	.007
Principal Leadership	.429	6.030	.043	-.030	-1.042	.298

a. Predictors: student support, affiliation, professional interest, mission consensus, innovation, resource adequacy, principal leadership

b. Dependent variables: job satisfaction, classroom management

* p < .05

Table 4. Results from multiple regression analyses on
student engagement and instructional strategies scales

	Model 3			Model 4		
	Student Engagement Scale			Instructional Strategies Scale		
	R^2	F	p	R^2	F	p
	.496	37.321	.000	.535	67.559	.000
Variable	B	t	p	β	t	p
Student Support	.294	9.008	.000	.191	2.918	.004
Affiliation	.243	6.770	.000	.177	2.439	.026
Professional Interest	.463	10.483	.000	.310	3.408	.001
Mission Consensus	.239	5.134	.000	.189	2.217	.007
Innovation	.206	2.123	.000	.133	2.177	.000
Resource Adequacy	.233	4.921	.004	-.051	-1.104	.058
Principal Leadership	-.050	-.200	.842	.011	.038	.970

a. Predictors: student support, affiliation, professional interest, mission consensus, innovation, resource adequacy, principal leadership

b. Dependent variables: student engagement, instructional strategies

[*] $p < .05$

Table 5. Results from multiple regression analyses on classroom stress and workload stress scales

	Model 5			Model 6		
	Classroom Stress Scale			Workload Stress Scale		
	R^2	F	p	R^2	F	p
	.553	66.777	.000	.414	38.220	.000
Variable	B	t	p	β	t	p
Student Support	-.528	-5.550	.000	-.447	-5.763	.000
Affiliation	-.133	-2.727	.007	.433	2.385	.018
Professional Interest	-.145	-2.207	.028	.661	8.826	.000
Mission Consensus	-.123	-2.141	.033	.159	2.419	.016
Innovation	-.106	-2.052	.015	.146	2.354	.008
Resource Adequacy	-.012	-.207	.836	-.141	-1.984	.048
Principal Leadership	.065	1.745	.082	-.047	-1.100	.272

a. Predictors: student support, affiliation, professional interest, mission consensus, innovation, resource adequacy, principal leadership

b. Dependent variables: classroom stress, workload stress

[*] $p < .05$

4.3. Associations among Outcome Variables

An analysis using Pearson's correlation coefficient (Table 6) shown that the bivariate correlations among outcome variables were statistically significant at the .01 and .05 levels (2-tailed) for all scales. The largest positive relationships were between the job satisfaction and student engagement ($r = .50$), classroom management ($r = .43$). The largest negative relationships were between the

classroom stress and classroom management (r = -.63), and student engagement (r = -.57). The smallest positive relationship was between the instructional strategies and classroom management (r = .14) and the smallest negative relationship was between instructional strategies and workload stress (r = -.15).

Table 6. The relationship among outcome variables

Variable	1	2	3	4	5	6
Job Satisfaction	-					
Classroom Stress	-0.34[**]	-				
Workload Stress	-0.39[**]	0.37[**]	-			
Classroom Management	0.43[**]	-0.63[**]	-0.43[**]	-		
Student Engagement	0.50[**]	-0.57[**]	-0.41[**]	0.23[**]	-	
Instructional Strategies	0.18[*]	-0.19[*]	-0.15[*]	0.14[*]	0.21[**]	-

Note: n = 387 [*] $p < .05$ [**] $p < .01$

Table 7. Results from multiple regression analyses on job satisfaction scale

	Model 7 Job Satisfaction Scale		
	R^2	F	p
	.271	47.414	.000
Variable	B	t	p
Classroom Management	.253	2.039	.042
Student Engagement	.730	5.806	.000
Instructional Strategies	.120	2.007	.009

a. Predictors: classroom management, student engagement, instructional strategies
b. Dependent variable: job satisfaction
[*] $p < .05$

Table 8. Results from multiple regression analyses on job satisfaction

	Model 8 Job Satisfaction Scale		
	R^2	F	p
	.267	69.925	.000
Variable	B	t	p
Classroom Stress	-.279	-2.268	.024
Workload Stress	-.768	-6.242	.000

a. Predictors: classroom stress, workload stress
b. Dependent variable: job satisfaction
[*] $p < .05$

Table 9. Results from multiple regression analyses on teaching efficacy scales

	Model 9 Classroom management scale			Model 10 Student engagement scale			Model 11 Instructional strategies scale		
	R^2	F	p	R^2	F	p	R^2	F	p
	.367	49.421	.000	.412	69.492	.000	.310	59.400	.000
Variable	β	T	p	β	t	p	β	t	p
Classroom Stress	-.178	-2.268	.024	-.235	-2.034	.033	-.323	-2.120	.020
Workload Stress	-.462	-6.242	.000	-.379	-3.148	.021	-.357	-3.227	.012

a. Predictors: classroom stress, workload stress

b. Dependent variables: classroom management, student engagement, instructional strategies

[*] p < .05

Table 7 reports the results of the multiple regression analysis on the predicted measures and one dependent variable. The seventh model reports the results of multiple regression analysis performed to predict *teachers' job satisfaction* from teaching efficacy factors. This model with all three predictors explained 27 percent of the variance in job satisfaction scale (R^2 = .271), F = 47.414, p < .001. The three factors of teaching efficacy were positively and statistically significant related to job satisfaction scale, with the beta value of classroom management (β = .25), student engagement (β = .73), and instructional strategies (β = .12). The results show that the student engagement factor was the strongest predictor of teachers' job satisfaction while the instructional strategies factor was the weakest predictor.

Table 8 reports the results of the multiple regression analysis on the predicted measures and one dependent variable. The eighth model reports the results of multiple regression analyses performed to predict *teachers' job satisfaction* from two teacher stress factors. This model with all two predictors explained 26 percent of the variance in job satisfaction scale (R^2 = .267), F = 69.925, p < .001. The two factors of teacher stress were negatively and statistically significant related to job satisfaction scale, with the beta value of classroom stress (β = -.28), and workload stress (β = -.76). The results show that the workload stress factor was the strong predictor of teachers' job satisfaction while the classroom stress factor was a weak predictor.

Table 9 reports the results of the three multiple regression analyses on the predicted measures and dependent variables. The ninth model reports the results of multiple regression analyses performed to predict *teachers' classroom management* from teacher stress factors. This model with all two predictors explained 36 percent of the variance in classroom management scale (R^2 = .367), F = 49.421, p < .001. The two factors of teacher stress were negatively and statistically significant related to classroom management scale, with the beta value of classroom stress (β = -.17), and workload stress (β = -.46). The results show that the workload stress factor was the strongest predictor of teachers' classroom management. Similarly, the tenth model reports the results of regression analysis performed to predict *teachers' student engagement*. This model with all two predictors produced 41 percent of the variance in student engagement scale (R^2 = .412), F = 69.492, p < .001. The two variables of teacher stress were negatively and statistically significant related to the student engagement scale, with the beta value of classroom stress (β = -.23), and workload stress (β = -.38). The results show that the workload stress was also the strongest predictors of teachers' student engagement. The final model reports the results of regression analysis performed to predict

teachers' instructional strategies. This model with all two predictors produced 31 percent of the variance in instructional strategies scale (R^2 = .310), F = 59.400, p < .001. The two variables of teacher stress were negatively and statistically significant related to the instructional strategies scale, with the beta value of classroom stress (β = -.32), and workload stress (β = -.35). The results show that the workload stress was also the strongest predictor of teachers' instructional strategies.

5. Discussion

The purpose of this study is identify how teachers' perceptions of school environment factors, and the extent to which these predict outcome variables - teaching efficacy, job satisfaction and teacher stress. It also examines the relations among dependent variables. Several key findings are discussed.

5.1. Teachers' Perceptions of Their School-Level Environment

The findings of the present study indicate that, in general, high school teachers favorably perceived their school-level environment. The research results indicate the validity of the hypothesis that teachers had highly positive perceptions of their school environment in terms of dimensions of student support, affiliation, professional interest, mission consensus, innovation, resource adequacy, and principal leadership. The results of the study show most teachers had good relationships with their students. Students behaved well towards their teachers, and teachers were respected by their students. These high school teachers reported highly that their colleagues had a positive professional commitment, and that teachers cooperated well with their colleagues in the current school. These findings were supported some previous research results of collegiality (Miller *et al*., 1999; Riehl & Sipple, 1996) and might explain to some extent these teachers' professional commitment to the teaching occupation. These high school teachers also felt that most of their colleagues had a clear understanding of school goals, and highly valued innovation, as well as positively perceived resource adequacy in their school. In addition, most high school teachers thought positively of their principals. These high school teachers perceived that principals had a positive leadership style in their schools, being interest in innovation, consulting effectively with staff before making decisions and recognizing staff members for doing good job at school. These are consistent with the findings of the previous research studies (Cresswell & Fisher, 1996; Fisher & Cresswell, 1998), which found that teachers perceived behavior of their principals as highly cooperative in the working environment. Based on the school-level environment factors as responded by teachers, the present study indicated that this group of high school teachers enjoyed their profession (Marlow, Inman, & Betancourt-Smith, 1995). These are consistent with results of previous studies that teachers' highly positive perceptions of their school environment are associated with teacher commitment, and school effectiveness (Latham, 1998; Miller *et al*., 1999; Shann, 1998).

5.2. Associations between School-Level Environment and Outcome Variables

The results indicated that teachers' school environment had positively and negatively significant influences on the three outcome variables – teaching efficacy, stress and job satisfaction. This finding shows that teachers closely associated with their school environment. Apparently, teachers are influenced directly by their perceptions of school environment factors, and this affects their teaching efficacy, stress, and job satisfaction.

5.2.1. Job Satisfaction

Of the school environment factors in the model, teachers' perceptions of all school environment factors predicted their job satisfaction. The results show that teachers with positive perceptions of school-level environment in terms of professional interest, affiliation, mission consensus, student support, resource adequacy, and principal leadership had greater job satisfaction. The strongest

predictor of job satisfaction was professional interest, followed by mission consensus, while the weakest predictor was the innovation. The findings highlight that factors of school environment play an important role for high school teachers' job satisfaction. This result is consistent with the findings of previous research studies (Butt *et al*., 2005; Collie *et al*., 2012; Cresswell & Fisher, 1996; Fisher & Fraser, 1990; Taylor & Tashakkori, 1995), which found that school environment factors affect teachers' job satisfaction. In the present study, the two factors of school-level environment with highest scores are principal leadership, and professional interest, and the correlation coefficients between principal leadership and job satisfaction is r = .68, and professional interest and job satisfaction is r = .66, with statistically significant (p < .01). The findings confirmed the effects of principal leadership and professional interest on teachers' job satisfaction. All of these school-level environment dimensions should be, therefore, promoted to increase teachers' job satisfaction. The results of this study show that administrators and policy makers need to find positive solutions to support high school teachers to improve their positive perceptions of school-level environment factors.

5.2.2. Teaching Efficacy

The results show that all of these factors of school-level environment, except for the principal leadership factor, influenced teachers' teaching efficacy. In general, teachers who perceived better school environment factors reported greater classroom management (ability to manage the classroom effectively), student engagement (ability to engage students in learning effectively), and usage of instructional strategies (ability to use teaching strategies effectively). The strongest predictor of teaching efficacy was also professional interest, while the weakest predictor was the innovation. These findings indicate the importance role of school-level environment factors for teachers' teaching efficacy in the working context. This means that teachers who had greater positive perceptions of school-level environment perceived greater management ability for classrooms, better engagement ability for student learning and greater usage of instructional strategies. This result is consistent with the findings of previous research studies (Butt *et al*., 2005; Caprara *et al*., 2006; Caprara *et al*., 2003; Collie *et al*., 2011; Collie *et al*., 2012; Fisher & Fraser, 1990), which indicated that factors of school-level environment impacted teachers' teaching efficacy at work. The results of this study show that in order to improve the effectiveness of school-level environment, educators and administrators should consider effects of teachers' perceptions of school environment factors on their teaching efficacy are fundamental to high school teachers' experience.

5.2.3. Teacher Stress

All of school-level environment factors, except for the principal leadership factor, predicted teachers' classroom stress and workload stress. Particularly, teachers who had greater student support, professional interest, and affiliation reported lower classroom stress. Similarly, teachers with greater student support had lower workload stress. In contrast, teachers with greater level of professional interest, and affiliation among colleagues for planning and teaching, greater mission consensus and innovation had greater workload stress. This result is consistent with the findings of previous research studies (Collie *et al*., 2012; Fisher & Fraser, 1990) that show that dimensions of school environment influence teacher stress. The present study expected that teachers' positive perceptions of school environment factors would be correlated to reduce levels of teacher stress. However, teachers who had greater professional interest, affiliation, and mission consensus had greater workload stress. According to Johnson (2003), more meetings, planning and teaching among classroom teachers in collaboration result in more workload stress. Collaboration among classroom teachers may lead to both negative and positive outcomes (Collie *et al*., 2012). The environment of collaboration determines the negative outcomes or positive outcomes. The finding shows that if affiliation is applied in a way that does not result in stress increase, then it will be positive for teachers. In contrast, it will have a negative influence on teachers' outcomes. These

findings highlight the importance of considering all possible effects when collaborative planning and teaching initiatives are implemented in school.

5.3. Inter-Correlations among Outcome Variables

5.3.1. Job Satisfaction

The results show that both teaching efficacy and types of stress had relationships with teachers' job satisfaction. Particularly, teachers' classroom stress and workload stress correlated negatively to job satisfaction and teaching efficacy, whereas teaching efficacy positively related to job satisfaction. This finding indicates teachers with greater teaching efficacy had greater job satisfaction, whereas teachers with greater stress had lower job satisfaction and teaching efficacy. These findings of the present study are consistent with previous research (Collie *et al*., 2012; Caprara *et al*., 2006; Klassen & Chiu, 2010). Undeniably, stress may be both negative and positive for teachers and their work performance (Kyriacou, 2001). Stress is important for survival because it motivate teachers into action (Selye, 1974). However, if the amount of stress becomes too great for teachers to cope with, teachers will have lower job satisfaction and confidence. The present study shows that the effects of student behavioral stress and workload stress may not associate negatively with teachers' job satisfaction if teachers have more confidence in their ability to engage students, manage the classroom, and use effective instructional strategies. These findings show that educators should, therefore, provide teachers with appropriate and effective pre-service and in-service professional development in managing classroom, engaging student learning and implementing effective teaching strategies to help teachers form their confidence.

5.3.2. Teacher Stress

The results show that both types of stress were negatively associated with teachers' teaching efficacy. This relationship indicates that teachers with greater student behavior stress and workload stress had lower teaching efficacy. In other words, high school teachers who experience more student behavior stress and workload stress reported less success in managing students' behavior, engaging students in learning, or applying effective instructional strategies in the classrooms. The results of this study validate the findings of previous research (Collie *et al*., 2012; Klassen & Chiu, 2010; Taylor & Tashakkori, 1995), which indicate there was a negatively significant relationship between teachers' teaching efficacy and their stress. Some research studies pointed out that teaching efficacy not only associated with teacher outcomes, such as teacher retention, teacher well-being, teacher effectiveness but also with students' academic performance (Caprara *et al*., 2006; Miller *et al*., 1999; Schwarzer & Hallum, 2008; Hoy & Spero, 2005). These findings provide educators with significant information to integrate different skills into teacher education programs to help teachers work effectively with their students and colleagues so that they have the lowest experience of student behavior stress and workload stress.

6. Conclusion

The purpose of this study is identify how teachers' perceptions of school environment factors, and the extent to which these predict outcome variables - teaching efficacy, job satisfaction and teacher stress. It also examines the relationships among outcome variables. The findings indicate that, in general, high school teachers favorably perceived their school-level environment. It also shows that factors of school-level environment have both positively and negatively significant relationships with teachers' teaching efficacy, tress, and job satisfaction. The best predictors of teachers' job satisfaction were principal leadership, and professional interest factors, while the best predictors of teachers' teaching efficacy, and stress were professional interest, student support, and affiliation factors. The results provide a strong confirmation of the importance of teachers' perceptions of

school-level environment for their work experiences. The present study supports the argument that teachers' perceptions of school-level environment factors determine to shape their experiences at work. In other words, teachers' perceptions of school-level environment are significantly related to their experiences of teaching efficacy, stress, and job satisfaction. The study also provides clear evidence for previous research on the inter-correlations among the three outcomes factors- teaching efficacy, stress, and job satisfaction (Klassen & Chiu, 2010; Collie *et al*., 2012). From the findings of the current study, teachers' perceptions of school-level environment should be considered as an important source of information to improve effectiveness of learning environment, in which two main activities of teaching and learning are operated (Fisher & Fraser, 1990; Collie *et al*., 2012). Educators and administrators may, based on the findings of this study, recognize which facets of school-level environment should be changed and improved, and then find effective solutions for improvement. These findings would be useful in shaping school policy regarding school reconstructing in the setting of Vietnamese high schools. It is likely that, from the findings of this study, establishing a possible school environment is the most necessary mandates of high school leaders. A positive school environment results in an increase in teachers' teaching efficacy, and job satisfaction and a decrease in stress included student behavior stress and workload stress (Collie *et al*., 2012; Taylor & Tashakkori, 1995). Therefore, a positive school environment should be established to improve teachers' teaching efficacy and job satisfaction, and minimize their stress.

References

[1] Al-Fudail, M., & Mellar, H. (2008). Investigating teacher stress when using technology. *Computers and Education, 51*(3), 1103-1110.

[2] Bandura, A. (1977). Self-efficacy: Towards a unifying theory of behavioural change. *Psychological Review*, *84*(2), 191-215.

[3] Betoret, F. D. (2006). Stressors, self-efficacy, coping resources, and burnout among secondary school teachers in Spain. *Educational Psychology, 26*(4), 519-539.

[4] Boyle, G. J., Borg, M. G., Falzon, J. M., & Baglioni Jr., A. J. (1995). A structural model of the dimensions of teacher stress. *British Journal of Educational Psychology, 65*(1), 49-67.

[5] Butt, G., Lance, A., Fielding, A., Gunter, H., Rayner, S., & Thomas, H. (2005). Teacher job satisfaction: Lessons from the TSW pathfinder project. *School Leadership and Management, 25*(5), 455-471.

[6] Caprara, G. V., Barbaranelli, C., Borgogni, L., & Steca, P. (2003). Efficacy Beliefs as Determinants of Teachers' Job Satisfaction. *Journal of Educational Psychology, 95*(4), 821-832.

[7] Caprara, G. V., Barbaranelli, C., Steca, P., & Malone, P. S. (2006). Teachers' self-efficacy beliefs as determinants of job satisfaction and students' academic achievement: A study at the school level. *Journal of School Psychology, 44*(6), 473–490.

[8] Chaplain, R. P. (2008). Stress and psychological distress among trainee secondary teachers in England. *Educational Psychology, 28*(2), 195-209.

[9] Chen, W. (2007). The structure of secondary school teacher job satisfaction and its relationship with attrition and work enthusiasm. *Chinese Education and Society, 40*(5), 17-31.

[10] Cohen, J., McCabe, L., Michelli, N. M., & Pickeral, T. (2009). School climate: Research, policy, practice, and teacher education. *Teachers College Record, 111*(1), 180-213.

[11] Collie, R. J., Shapka, J. D., & Perry, N. E. (2011). Predicting teacher commitment: The impact of school climate and social-emotional learning. *Psychology in the Schools, 48*(10), 1034-1048.

[12] Collie, R. J., Shapka, J. D., & Perry, N. E. (2012). School climate and social-emotional learning: predicting teacher stress, job satisfaction, and teaching efficacy. *Journal of Educational Psychology, 104*(4), 1189-1204.

[13] Cresswell, J., & Fisher, D. (1996, April 8-12). *Relationship between principal's interpersonal behavior with teachers and the school environment*. Paper presented at the annual meeting of the American Educational Research Association, New York, America. Retrieved from http://files.eric.ed.gov/fulltext/ED395392.pdf.

[14] Crossman, A., & Harris, P. (2006). Job satisfaction of secondary school teachers. *Educational Management Administration and Leadership, 34*(1), 29-46.

[15] De Nobile, J. J., & McCormick, J. (2005, Nov. 27– Dec. 1). *Job satisfaction and occupational stress in catholic primary schools.* Paper presented at the Annual Conference of the Australian Association for Research in Education, Sydney, Australia. Retrieved from http://www.aare.edu.au/data/publications/2005/den05203.pdf.

[16] Dinham, S., & Scott, C. (1998). A three-domain model of teacher and school executive career satisfaction. *Journal of Educational Administration, 36*(4), 362-378.

[17] Egyed, C. J., & Short, R. J. (2006). Teacher self-efficacy, burnout, experience and decision to refer a disruptive student. *School Psychology International, 27*(4), 462-474.

[18] Evans, L. (1997). Understanding teacher morale and job satisfaction. *Teaching and Teacher Education, 13*(8), 831-845.

[19] Feather, N. T., & Rauter, K. A. (2004). Organizational citizenship behaviors in relation to job status, job insecurity, organizational commitment and identification, job satisfaction, and work values. *Journal of Occupational and Organizational Psychology, 77*(1), 81-94.

[20] Fisher, D. L., & Cresswell, J. (1998). Actual and ideal principal interpersonal behavior. *Learning Environment Research, 1*(2), 231-247.

[21] Fisher, D. L., & Fraser, B. J. (1990). *Validity and use of the school-level environment questionnaire.* Paper presented at the Annual Meeting of the American Educational Research Association, Boston, MA. Retrieved from http://files.eric.ed.gov/fulltext/ED318757.pdf.

[22] Freiberg, H. J. (1999). Introduction. In H. J. Freiberg (Ed.), *School climate: Measuring, improving, and sustaining healthy learning environments* (pp.1-11). Philadelphia, PA: Falmer Press.

[23] Gates, G. S. (Ed.). (2007). *Emerging thought and research on student, teacher, and administrator stress and coping.* Charlotte, NC: Information Age Publishing.

[24] Geving, A. M. (2007). Identifying the types of student and teacher behaviours associated with teacher stress. *Teaching and Teacher Education, 23*(5), 624-640.

[25] Grayson, J. L., & Alvarez, H. K. (2008). School climate factors relating to teacher burnout: A mediator model. *Teaching and Teacher Education, 24*(5), 1349-1363.

[26] Greenglass, E. R., & Burke, R. J. (2003). Teacher stress. In M. F. Dollard, T. H. Winefield, & H. R. Winefield (Eds.), *Occupational stress in the service professions* (pp. 213-236). New York, NY: Taylor and Francis.

[27] Hoy, A. W., & Spero, R. B. (2005). Changes in teacher efficacy during the early years of teaching: A comparison of four measures. *Teaching and Teacher Education, 21*(4), 343-356.

[28] Hoy, W. K., & Woolfolk, A. E. (1993). Teachers' sense of efficacy and the organizational health of schools. *Elementary School Journal, 93*(4), 355-372.

[29] Jepson, E., & Forrest, S. (2006). Individual contributory factors in teacher stress: The role of achievement striving and occupational commitment. *British Journal of Educational Psychology, 76*(1), 183-197.

[30] Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology, 102*(3), 741-756.

[31] Kokkinos, C. M. (2007). Job stressors, personality, and burnout in primary school teachers. *British Journal of Educational Psychology, 77*(1), 229-243.

[32] Kyriacou, C. (2001). Teacher stress: Directions for future research. *Educational Review, 53*(1), 27-35.

[33] Latham, A. S. (1998). Teacher satisfaction. *Educational Leadership, 55*(5), 82-83.

[34] Lawler, E. E., & Porter, L. W. (1967). The effects of performance on job satisfaction. *Industrial Relations: A Journal of Economy and Society*, *7*(1), 20-28.

[35] Loukas, A., & Murphy, J. L. (2007). Middle school student perceptions of school climate: Examining protective functions on subsequent adjustment problems. *Journal of School Psychology, 45*(3), 293-309.

[36] Marlow, L., Inman, D., & Betancourt-Smith, M. (1995). Profiling the likely school leaver: An encouraging look at schools in a nine-state sample. *Education, 115*(3), 435-440.

[37] McCarthy, C. J., Lambert, R. G., O'Donnell, M., & Melendres, L. T. (2009). The relation of elementary teachers' experience, stress, and coping resources to burnout symptoms. *Elementary School Journal, 109*(3), 282-300.

[38] McLaughlin, M. W. (1993). What's matters most in teacher's workplace context? In J. W. Little & M.W. McLaughlin (Eds.), *Teachers' work: Individuals, colleagues, and context* (pp.79-103). New York: Teacher College Press.

[39] Miller, M. D., Brownell, M. T., & Smith, S. W. (1999). Factors that predict teachers staying in, leaving, or transferring from the special education classroom. *Exceptional Children, 65*(2), 201-218.

[40] Perry, A.C. (1908). *The management of a city school.* New York, NY: Macmillan.

[41] Riehl, C., & Sipple, J. W. (1996). Making the most of time and talent: Secondary school organizational climates, teaching task environment, and teacher commitment. *American Educational Research Journal, 33*(4), 873-901.

[42] Ross, J. A., Hogaboam-Gray, A., & Hannay, L. (2001). Effects of teacher efficacy on computer skills and computer cognitions of Canadian students in Grades K-3. *Elementary School Journal, 102*(2), 141-156.

[43] Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behaviour, 25*(3), 293-315.

[44] Schwarzer, R., & Hallum, S. (2008). Perceived teacher self-efficacy as a predictor of job stress and burnout: Mediation analyses. *Applied Psychology, 57*, 152-171.

[45] Selye, H. (1974). *Stress without distress.* Philadelphia, PA: Lippincott.

[46] Shann, M. H. (1998). Professional commitment and satisfaction among teachers in urban middle schools. *Journal of Educational Research, 92*(2), 67-73.

[47] Skaalvik, E. M., & Skaalvik, S. (2009). Does school context matter? Relations with teacher burnout and job satisfaction. *Teaching and Teacher Education, 25*(3), 518-524.

[48] Tarter, C.J, Hoy, W.K., & Kottkamp, R.B. (1990). School climate and organizational commitment. *Journal of Research and Development in Education, 23*, 236-242.

[49] Taylor, D. L., & Tashakkori, A. (1995). Decision participation and school climate as predictors of job satisfaction and teacher's sense of efficacy. *Journal of Experimental Education, 63*(3), 217-230.

[50] Thomas, N., Clark, V., & Lavery, J. (2003). Self-reported work and family stress of female primary teachers. *Australian Journal of Education, 47*(1), 73-87.

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

[52] Tschannen-Moran, M., & Hoy, A. W. (2007). The differential antecedents of self-efficacy beliefs of novice and experienced teachers. *Teaching and Teacher Education, 23*(6) 944-956. doi: 10.1016/j.tate.2006.05.003

[53] Tsouloupas, C. N., Carson, R. L., Matthews, R., Grawitch, M. J., & Barber, L. K. (2010). Exploring the association between teachers' perceived student misbehaviour and emotional exhaustion: The importance of teacher efficacy beliefs and emotion regulation. *Educational Psychology, 30*(2), 173-189.

[54] Vansteenkiste, M., Neyrinck, B., Niemiec, C. P., Soenens, B., De Witte, H., & Van den Broeck, A. (2007). On the relations among work value orientations, psychological need satisfaction and job outcomes: A self-determination theory approach. *Journal of Occupational & Organizational Psychology, 80*(2), 251-277.

[55] Weiss, E. M. (1999). Perceived workplace conditions and first-year teachers' morale, career choice commitment, and planned retention: A secondary analysis. *Teaching and Teacher Education, 15*(8), 861-879.

[56] Wilson, V. (2002). *Feeling the strain: An overview of the literature on teachers' stress* (SCRE Research Report No 109). Glasgow, Scotland: Scottish Council for Research in Education. Retrieved from http://217.35.77.12/research/scotland/education/109.pdf.

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