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# **School Process and Teacher Job Satisfaction at Alternative Schools: A Multilevel Study Using SASS 2007–08 Data**

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*This study examined the associations between public alternative schools' teacher job satisfaction and school processes. Based on a multilevel analysis of the national School and Staffing Survey 2007–08 data, we found that among the seven school processes, public alternative schools' administrative support, staff collegiality, career and working condition, and positive student behavior had positive associations with teacher job satisfaction. More importantly, we noticed that higher level factors (e.g., administrative/resource support from school level or above) presented more impacts on teacher job satisfaction. Other factors' impacts on teacher job satisfaction and relevant implications were discussed as well.*

## **INTRODUCTION**

U.S. schools have always struggled with high dropout rates. This is particularly true for many urban schools (Toppo, 2006). Although high school dropout rates have declined since the 1980s, falling from about 14 percent in 1980 to 7 percent in 2011 (Aud et al., 2013), each year the amount of students who drop out is still huge. For instance, according to a National Education Association (NEA) report (Dianada, 2008), the total amount of dropouts of high school students in 2008 was about 600,000. Overall, the

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high dropout rate brought negative effects on the nation's economy (see Dianada, 2008), while lowering the high school dropout rate increased economic growth (Alliance for Excellent Education, 2010). As a result, dropout prevention has been in the spotlight in recent years, and school districts are trying various approaches—among which alternative schools is one of the most important—to bring kids back to schools and help them graduate (Balfanz, Bridgeland, Moore, & Fox, 2010; Barton, 2006; Khadaroo, 2013; Kleiner, Porch, & Farris, 2002; Lehr & Lange, 2003; Tyler & Lofstrom, 2009). Over the last decade, the alternative education possibilities for students at risk of dropping out have been expanded in over 31 states (Balfanz et al., 2010).

Alternative schools, as with all alternative education opportunities, were designed to meet the needs of at-risk students who are “over-age and under-credited or have dropped out of school” (New York City Department of Education, 2008). It is clear that alternative schools are an important pathway to help decrease the overall dropout rate through providing “different learning environments and structures for students who did not ‘fit in’ to the traditional programs” (Kellmayer, 1995, p. 4). To some extent, alternative schools are crucial places where such at-risk students can have a “second chance” (Lange & Lehr, 1999; Tyler & Lofstrom, 2009) or even a “last chance” (D. M. Kelly, 1993; Leone & Drakeford, 1999) to be educated. To keep students in schools and help them graduate, researchers have suggested many strategies, one of which is that a concerned teacher can make the difference between a student's staying in school and dropping out (see Furger, 2013). This was confirmed by a national empirical study (Izumi, Shen, & Xia, 2015), which showed that for alternative schools, the graduation rate was significantly associated, among others, with teacher characteristics and having the same teacher for two years or more. Another study (Lehr & Lange, 2003) also indicated that staffing was a major issue for alternative schools; since alternative schools tend to be small with relatively few teachers employed at the sites, there is a need for teachers to be licensed in several subject areas, and in both regular and special education as well. Further, alternative schools, as noticed by Frucher (2007), struggled to find and retain experienced and effective teachers. As a result, the teacher is one of the key elements deciding whether those students can really have the “second chance” or the “last chance.” The current study was initiated exactly under this context and it concerns one specific aspect of the teaching force at alternative schools—teachers' job satisfaction.

Behind the concern of alternative schools' teacher job satisfaction is a further and deeper concern—alternative schools' accountability. According to Lehr and Lange (2003), accountability is another major issue for alternative schools. They argued that just like traditional public schools, alternative schools also needed to be held accountable. Given the fact that the enrollment of alternative schools increased and that alternative schools expanded,

researchers worried that there was a need for increased accountability to ensure alternative schools “are not being used as a dumping ground for unwanted students” (Lehr, Tan, & Ysseldyke, 2009, p. 30). However, Lehr and Lange (2003) noted that there was a lack of “clearly documented measures of effectiveness and student success” (p. 6). Because alternative schools were often designed to meet students’ unique academic and social-emotional needs, it was noted by Pang and Foley (2006) that the supportive environments that strengthen relationships among peers and between teachers and students were often reported as an indicator of the quality of alternative schools (see Franklin, 1992; Lange & Sletten, 2002). Based on this rationale, the examination of alternative schools’ school processes and their associations with teacher job satisfaction could partly serve the purpose of evaluating alternative schools’ quality.

Before presenting the conceptual framework and research questions, a brief review of various approaches to understanding (teacher) job satisfaction is presented. The literature on teacher job satisfaction and influencing factors are reviewed as well, with the influencing factors categorized into teacher’s personal characteristics, principal’s background, school background, and school process.

## LITERATURE REVIEW

### Teacher Job Satisfaction

What is teacher job satisfaction? Before trying to understand “teacher job satisfaction,” it was necessary to understand “job satisfaction” in general. There was no general agreement regarding what job satisfaction is (Aziri, 2011). However, behind the job satisfaction concept there were two schools of motivation theories: the content theory (Alderfer, 1969, 1972; Herzberg, Mausner, & Snyderman, 1959; Maslow, 1943, 1954, 1970; McClelland, 1961) and the process theory (e.g., Locke, 1968; Vroom, 1964). There were also two approaches to measuring job satisfaction: the cognitive approach and affective approach (Brief & Roberson, 1987; Organ & Near, 1985; H. M. Weiss, 2002; H. M. Weiss & Cropanzano, 1996; Williams, 1988).

### MOTIVATION THEORIES: CONTENT VS. PROCESS

Motivation theories mainly have two groups: content theory and process theory. Content theories explain what factors lead to job satisfaction and what factors may cause job dissatisfaction. For instance, Maslow (1943, 1954, 1970) developed his motivation theory in terms of hierarchy of needs (physiological, safety, love/belonging, esteem, and self-actualization), arguing that peoples’ most basic level of needs must be met before they will desire higher level needs. Alderfer (1969, 1972) further developed Maslow’s theory

by categorizing the five hierarchies of needs into his three-dimension ERG theory of motivation (existence needs, relatedness needs, and growth needs). Also built on Maslow's work, McClelland (1961) developed his motivation theory by identifying three needs: achievement need, affiliation need, and power need. Herzberg et al. (1959) redefined needs into two categories: hygiene needs and motivator needs (see Salancik & Pfeffer, 1977). Herzberg et al. (1959) argued that hygiene factors were lower-level needs (e.g., working conditions, interpersonal relationships, salary, and supervision) that led to dissatisfaction when not met, while motivator needs were higher level psychological needs (e.g., recognition, achievements, advancement, growth, responsibility, and challenge) that led to increased job satisfaction.

Overall, content theories focused on identifying (intrinsic and extrinsic) needs/factors associated with motivation and job satisfaction "in a relatively static environment" (Steers, Mowday, & Shapiro, 2004, p. 381), while the process theories examine motivation "from a dynamic perspective and look for causal relationships across time and events" (Steers et al., 2004, p. 381). As a process theorist, Vroom (1964) proposed expectancy theory as an alternative to the content theory of motivation, and later it was also widely used in the study of job satisfaction. Expectancy theory proposes that the way people behave or act depends on what they expect from the act. Vroom's expectancy differs from the content theory in that expectancy theory does not suggest what motivates organization members. Instead, Vroom's theory proposes a process between cognitive antecedents and individuals' work motivation (Lunenburg, 2011). Locke (1968) proposed the goal-setting theory, concerning the processes of how goal setting can lead to higher motivation and better performance. Further, Locke predicted that participative goal setting was more likely associated with work performance than assigned goal setting. While some researchers found no significant association between goal setting and job satisfaction (J. C. Anderson & O'Reilly, 1981; Ivancevich, 1976; Latham & Yukl, 1976), others found that goal-setting better predicted satisfaction than achievement need (see Yukl & Latham, 1978, as cited in Locke & Latham, 2002).

By following content theories, the present study tried to understand from teachers' perspectives *what* school-process factors are associated with public alternative schools' teacher job satisfaction. In other words, this study didn't inquiry *how* school-process factors impacted on teacher job satisfaction, but it did not mean the inquiry was not important; rather, it was not the focus of this study. Specifically, this study aimed to examine public alternative school teachers' basic needs that were related to their job satisfaction. Instead of focusing on the growth needs, achievement needs, or higher-level psychological needs, these basic needs were more likely related to Maslow's (1943, 1954, 1970) deficiency needs, Alderfer's (1969, 1972) existence needs and relatedness needs, McClelland's (1961) affiliation needs and power needs, and Herzberg's (1959) lower level hygiene needs. The details

of these basic needs examined in this study were presented in the later sections.

#### MEASUREMENT APPROACH: AFFECTIVE VS. COGNITIVE

The content theory and process theory helped to explain what and how intrinsic and extrinsic factors exert impacts on job satisfaction, while some other studies examined job satisfaction through its measurement approaches. Brayfield and Crockett (1955) argued that any attempt to define job satisfaction should stick close to the measuring operations, since “we have found it necessary to assume that the measuring operations define the variables involved” (p. 397). Among the various measurement approaches, affective and cognitive were the two that were most often mentioned. Accordingly, researchers developed a job affect scale (Brief, Burke, George, Robinson, & Webster, 1988) and a job cognition scale (Brief & Roberson, 1987).

The affective approach of job satisfaction measures focuses on emotional appraisal of the job, while the cognitive approach of job satisfaction measures is based on more logical and rational evaluation of the job (Moorman, 1993). Organ and Near (1985) noted that most studies applied a cognitive approach to measuring job satisfaction rather than an affective approach. Thus, they suggested that measures of job satisfaction probably were based on an employee’s cognitions about his/her job rather than affective responses.

Brief and Roberson (1987) and Williams (1988) found that although most measures of job satisfaction were cognitively based, some measures were found to be based on an affective approach. For instance, through examining three satisfaction measures—the Job Descriptive Index (JDI; Smith, Kendall, & Hulin, 1969), the Minnesota Satisfaction Questionnaire (MSQ; D. J. Weiss, Dawis, England, & Lofquist, 1967), and the Faces scales (Dunham & Herman, 1975; Kunin, 1955)—Brief and Roberson (1987) found that the MSQ was the most cognitively oriented, the Faces scale was the most affectively oriented, and the JDI was predominantly cognitive with some affective measures as well.

H. M. Weiss (2002) argued that defining satisfaction as affective was not appropriate, and thus based on research and theory of attitude he differentiated three separate constructs of job satisfaction: affective experience at work, evaluative judgments about jobs, and beliefs about jobs. H. M. Weiss (2002) acknowledged that although affect and beliefs constitute different influences on job satisfaction, researchers’ major attention focused on cognitive judgment theories of job satisfaction. Since H. M. Weiss and Cropanzano (1996) also characterized the belief-based approach as cognitive judgment theories, H. M. Weiss’s (2002) three-dimensional approach seems close to the affective/cognitive approach.

There are some connections made between process theories and cognitive approach. For instance, according to H. M. Weiss (2002), several types of process theory of motivation and job satisfaction, including discrepancy theories, expectancy theory, and equity theory, were belief-based and their essential elements were cognitive judgment theories. H. M. Weiss believed that these theories “do not directly capture any real or experiential component of affective experiences” (p. 191). Steers et al. (2004) held the same perspective, explicitly pointing out that “central to the process theory genre is a series of cognitive theories of motivation that collectively attempt to understand the thought processes that people go through in determining how to behave in the workplace.” (p. 381) Steers et al. considered expectancy theory as the best known of the cognitive theories. Ololube (2006) reviewed all process theories and concluded that what they have in common is an emphasis on the cognitive processes in determining employee motivation and job satisfaction. Lunenburg (2011) also believed that Vroom’s theory proposed a process between cognitive antecedents and individuals’ work motivation.

In the literature, no explicit connection was made between content theories and affective or cognitive approaches. It is probably in part because need-based content theories lack support from empirical research and are difficult to be applied or tested (Jerome, 2013; Wahba & Bridwell, 1976). However, in some job satisfaction studies, the authors relied on content theory while applying affective measures of job satisfaction. For instance, to examine principals’ job satisfaction, Graham and Messner (1998) defined it as principals’ “affective” responses from an appraisal of their work roles. To measure principals’ job satisfaction, they applied the Principals Job Satisfaction Survey (PJSS), which they believed was based on Herzberg’s motivation-hygiene theory.

In the present study, the measures of teachers’ job satisfaction considered both affective aspects (e.g., “I am generally satisfied with being a teacher at this school”; “I think about staying home from school because I’m just too tired to go”; “I don’t seem to have as much enthusiasm now as I did when I began teaching”) and cognitive aspects (e.g., “I think about transferring to another school”; “I like the way things are run at this school”; “If I could get a higher paying job I’d leave teaching as soon as possible”). For the detailed information of the measurement items, please refer to the method section and the Appendix.

### Teacher Job Satisfaction and Influencing Factors

The associations between teacher job satisfaction and influencing factors have been widely explored. Some examined its association with principal leadership (e.g., Bogler, 2001; Davis & Wilson, 2000; Koh, Steers, & Terborg, 1995; Nguni, Slegers, & Denessen, 2006); some explored its association with teacher empowerment and decision participation (Bogler & Nir, 2012;



Davis & Wilson, 2000; Driscoll, 1978; Pearson & Moomaw, 2005; Taylor & Tashakkori, 1995); some examined its connection with teacher's personal characteristics (Klassen & Chiu, 2010; Koustelios, 2001); some studied its relationship with teacher self-efficacy and teacher job performance (e.g., Judge & Bono, 2001); while others tried linking it to student background and student performance (e.g., Michaelowa, 2002). However, few studies connected it with the school process and simultaneously considered all these factors; and few studies were based on evidence from large-scale national data.

Shen, Leslie, Spybrook, and Ma's (2012) study was among the first along this direction. Based on thorough review of theories, Shen et al. developed a comprehensive conceptual framework concerning teacher job satisfaction in which the influencing factors were grouped and hierarchically categorized into several teacher characteristics, principal backgrounds, and school processes. The study found that after controlling for some teacher variables, teacher job satisfaction was associated with some principal-background (experience), and several school-process variables (e.g., school culture).

Given the fact that few studies examined the associations for public alternative schools, on one hand, and the fact that most alternative schools have their own school processes and programs to meet students' needs, which could be important factors in the success of at-risk students (Beteman & Karr-Kidwell, 1995; Kellmayer, 1995; Ryan, 2009; U.S. Department of Justice, 1980) on the other hand, this study inquired into whether, and if so, how school processes of public alternative schools are related to teacher job satisfaction. A brief literature review of the associations between teacher job satisfaction and the influencing factors is presented in the next section.

#### TEACHER CHARACTERISTICS AND TEACHER JOB SATISFACTION

One of the factors that can affect teacher job satisfaction is the teacher's background. However, as to general public schools, the findings on the relationship between teacher background and teacher job satisfaction are inconsistent. For example, Shen et al. (2012) used nationally representative data from the Schools and Staffing Survey 2003-04 and found that both teaching experiences and teaching certification had statistically significant, positive relationships with the public school teachers' job satisfaction. These authors also concluded that secondary school teachers are less satisfied than elementary school teachers. This result supported the findings by Perie and Baker (1997) that elementary school teachers are more likely to have high levels of satisfaction than secondary school teachers. Thus, the findings by other researchers that few teacher characteristics stand out as being strongly associated with teacher job satisfaction (Harlow, 2008; Henke, Choy, Geis, & Broughman, 1996; MetLife, 2012; Perie & Baker, 1997) were refuted. Additionally, the findings of Shen et al.'s (2012) study neither supported



the findings by Harlow (2008) that “female teachers with less experience” appear to feel “more stress related to life and supervisory support from their administrators” (p. 45) nor the findings by Perie and Baker (1997) that younger teachers are more likely to have high levels of satisfaction than older teachers.

A few studies have explored relationships between teacher background and job satisfaction in public alternative schools. However, some results were inconsistent with those of general public schools. For example, Romano and Wahlstrom’s (2000) study used samples of 215 K–12 educators of alternative educational programs, and indicated that “elementary school educators experienced greater stress compared with those teaching older students” (p. 121). Additionally, the study indicated that female teachers experience more stress compared with male teachers, although no relationships between stress levels and years of teaching experience were found. These results presented a different insight from the ones by Shen et al. (2012) and Perie and Baker (1997) who studied the phenomenon of teacher job satisfaction in public schools in general.

#### SCHOOL CHARACTERISTICS AND TEACHER JOB SATISFACTION

Some studies indicated that school characteristics are associated with teacher job satisfaction. However, regarding the relationship between school size and job satisfaction of general public school teachers, the findings are inconsistent. For example, Shen et al. (2012) indicated that the number of enrolled students had a negative relationship with teacher job satisfaction. Perie and Baker (1997) and MetLife (2012) also indicated that school size has a negative impact on teacher job satisfaction. These findings differed from Henke et al.’s (1996) finding that the enrollment size of a school is not related to satisfaction. There appears to be no study on the relationship between school size and teacher job satisfaction in alternative schools. Lytle (1980) commented, in relation to alternative schools, that smaller school/class size, in which “staff and students know each other” (p. 700), could improve the job satisfactions of the teachers who participated in the Parkway Program in Philadelphia.

The social economic status of the student body can also be a factor in determining teacher job satisfaction. As to general public schools, some studies found that teacher job satisfaction decreases as the percentage of students who are from poor families increases (Perie & Baker, 1997; Shen et al., 2012). However, few studies explored the relationship, in public alternative schools, between the social economic status and teacher job satisfaction. Thus, this study explored whether the results of such relationships in general public schools are applicable to public alternative schools.

## PRINCIPAL CHARACTERISTICS AND TEACHER JOB SATISFACTION

Several studies have explored the role of principals' characteristics in determining teacher job satisfaction (Fullan, 2008; B. George, 2007; Miller, 2010). As to general public schools, Shen et al.'s (2012) study, one of the few studies focusing on this relationship, indicated that no variables for principal education and experience—total years as principal, years as principal in the current school, teaching experience, professional development that principals had before becoming principal, and highest earned degree—are related to teacher job satisfaction. We have not found any studies on the relationships between principal education, on the one hand, and experience and teacher job satisfaction, on the other, in public alternative schools. Our study was conducted to fill the void.

## SCHOOL PROCESSES AND TEACHER JOB SATISFACTION

Various aspects of the school processes are found to be associated with teacher job satisfaction. The following is a review of aspects of school processes associated with teacher job satisfaction in general public schools or public alternative schools. These school processes include: (a) classroom control, (b) collegiality, (c) working conditions, (d) administrative leadership, (e) parental support, and (f) student behavior.

Classroom control and teacher job satisfaction. There are several benefits to increasing teacher empowerment (Shen et al., 2012). As to general public schools, empowerment—professional growth, autonomy, self-efficacy, impact, professional respect, and involvement in decisions (Sheppard, 1996)—has been found to be associated with enhanced job performance, increased job satisfaction, greater work efficacy, and higher motivation and energy levels (Gonzales & Short, 1996; Henke et al., 1996; Perie & Baker, 1997). Moreover, Shen et al. (2012) indicated that classroom control has a positive relationship with teacher job satisfaction.

Regarding public alternative schools, some consistent findings emerged from previous studies. For example, Lytle (1980) emphasized that when exercising “more control over their time” (p. 702), teachers feel satisfied. Romano and Wahlstrom (2000) also indicated that “commitment to the programme” was identified as the most significant factor to reduce teachers' stress.

Collegiality and teacher job satisfaction. Collegiality and collaboration generally promote teachers' satisfaction and feelings of professional involvement (Leithwood, Leonard, & Sharratt, 1998; Woods & Weasmer, 2004). As to general public schools, Brunetti's (2001) study indicated that a number of teachers mentioned collegiality as a strong component of their overall satisfaction with teaching. Cox-McNeil (2003) also found that interrelations with co-workers produce job satisfaction. Moreover, Shen et al. (2012) indicated that collegiality among staff has a positive relationship with teacher job satisfaction. Regarding public alternative schools, Cancio (2008) commented

that collegiality among staff can be one of the factors in reducing teachers' frustrations.

Working conditions and teacher job satisfaction. Several studies have shown that working conditions have a strong impact on teacher job satisfaction (Dagenhart, O'Conner, Petty, & Day, 2005; Eberhard, Reinhardt-Mondragon, & Stottlemeyer, 2000; Herzberg et al., 1959; Leithwood & McAdie, 2007; S. Kelly, 2004; MetLife, 2012; Sultana, 2002). As to general public schools, most findings indicated that small class sizes with well-behaved students coupled with large yearly pay raises will increase teacher job satisfaction, while unsupportive parents, no copy paper, and unreasonable mandates will decrease teacher job satisfaction. Shen et al.'s (2012) study, one of the comprehensive studies on teacher job satisfaction, supported these findings by indicating a significant positive relationship between teacher job satisfaction and favorable working conditions, including salary, supplies, duties, paperwork, security, state or district content standards, and class size.

Likewise, regarding alternative schools, similar findings on relationships between working conditions and teacher job satisfaction were concluded by some studies. For example, Lytle (1980) emphasized that working conditions—"more control over their time, limits on unpaid effort, restraints on administrative authority, staff assignments, and improvement in working conditions" (p. 702)—can make teachers satisfied. As to alternative public schools, Romano and Wahlstrom (2000) also indicated that working conditions that facilitate teachers' commitment to the professional life can reduce teachers' stress, while "student demands, physical demands of teaching, and lack of funding" (p. 121) cause stress.

Administrative leadership and teacher job satisfaction. Principals create distinct working environments within schools and these different atmospheres are highly predictive of teacher job satisfaction and job commitment (E. M. Anderson, Belzer, & Smith, 1991). For example, as to general public schools, Blasé and Roberts (1994) indicated that principals who attempted to reduce frustrations, such as paperwork, increased feelings of teacher job satisfaction. Knauth and Kamin (1994) also suggested that when their principals were supportive, the novice teachers who participated in a program to develop teachers for urban schools in Chicago felt satisfied.

Researchers also found that transformational leadership has an impact on teacher job satisfaction, and the evidence was demonstrated in several studies based on data from various countries. For instance, Bogler's (2001) study was based on data from Israeli schools; Geijsel, Slegers, Stoel, and Krüger's (2009) study was based on data from Dutch schools; Koh et al.'s (1995) study was based on data from Singapore schools; and Nguni et al.'s (2006) study was based on data from Tanzanian schools.

Moreover, other researchers indicated a positive relationship between teacher job satisfaction and administrative support (Perie & Baker, 1997; Shen

et al., 2012). As to public alternative schools, similar findings can be seen. For example, Cancio (2008) suggested that administrative support and collegiality among staff can remove teachers' frustrations.

Parental support and teacher job satisfaction. Some studies have investigated the impact of parental support on job satisfaction among general public school teachers. For example, Tye and O'Brien (2002) indicated that poor relationships between teachers and parents can generate teacher stress. The study by MetLife (2012) also indicated that "teacher job satisfaction is associated with more parent engagement" (p. 52). However, some other studies yielded different findings. For example, Shen et al. (2012) concluded that there is no relationship between parental support and teacher job satisfaction. Based on these results, inconsistent findings can be seen about the relationship between parental support and teacher job satisfaction. As to alternative public schools, we did not find any studies examining the relationship between parental support and teacher job satisfaction.

Student behavior and teacher job satisfaction. Interactions with students can be the greatest source of frustration for teachers or the greatest source of satisfaction (Brunetti, 2001; Garrahy, Kulinna, & Cothran, 2005; Shann, 1998; Tye & O'Brien, 2002; Wright & Custer, 1998). As to general public schools, student misbehavior can lead to teacher stress, indifference toward students, and even leaving the profession (Certo & Fox, 2002; Garrahy et al., 2005; Wright & Custer, 1998). Knauth and Kamin (1994) also suggested that teachers feel stress when both students' motivation and academic preparation are at low levels. Moreover, Shen et al. (2012) indicated that student misbehavior—noise, horseplay, fighting, and tardiness—has a negative relationship with teacher job satisfaction. However, teacher satisfaction in working with students is a powerful motivator to remain in the classroom (Brunetti, 2001).

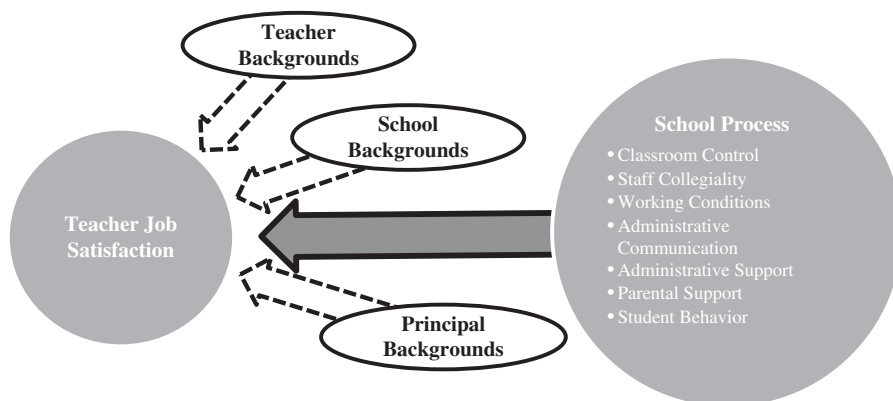
As to public alternative schools, some literature provided similar findings. Cancio (2008) suggested that teachers feel frustrations when they have a large number of students with significant behavior problems. Romano and Wahlstrom (2000) also indicated that stress stems from "student demands" and others. However, some studies suggested that even if students are delinquent, working with them can improve teacher satisfaction. For example, Lange (1998) suggested that educating and disciplining students at alternative schools satisfies teachers. In Gilson's (2006) study of alternative high schools in Iowa State, he reported that over 80 percent of alternative high school teachers "were very satisfied to teach in the alternative school setting they were in" (p. 12). The literature review indicated that the literature on teacher job satisfaction in alternative public schools is essentially nonexistent. Alternative schools are an important component of our educational system for those disadvantaged students. Our study was intended to fill the void in the literature.

## CONCEPTUAL FRAMEWORK AND RESEARCH QUESTIONS

The present study aims to examine the associations between school processes and public alternative schools' teacher job satisfaction. Based on the literature, we decided to design our study based on content theory due to several reasons. First, the purpose of this study is to find what instead of how school-process factors are associated with teacher job satisfaction. Second, this study would utilize an existing national data as research samples, which decides that our study is a correlational rather than an experimental study. Thus we think it is more appropriate to design our study based on content theory rather than on process theory. Based on the literature, we selected several school-process factors including Classroom Control, Staff Collegiality, Working Conditions, Administrative Communication, Administrative Support, Parental Support, and Student Behavior, and inquired to what extent these factors are associated with public alternative schools' teacher job satisfaction.

The literature also indicated that besides school-process factors, there were some other influencing factors including teacher backgrounds, school backgrounds, and principal backgrounds. In order to better identify school-process factors' effects on teacher job satisfaction, these background factors were also taken into account. As a result, teacher job satisfaction was a function of school background, teacher background, principal background, and multiple aspects of school process. A conceptual framework adapted from Shen et al. (2012) illustrates this function (see Figure 1).

In Figure 1, the dotted arrows in the conceptual framework indicate that these background factors have been taken into account, but were considered controlling variables. The solid arrow represents the focused interest of the present study. Based on the literature and the conceptual framework, in this study we asked two research questions:



**FIGURE 1** Conceptual framework. Adapted from Shen et al. (2012).

1. To what extent are teachers in public alternative schools satisfied with their job?
2. To what extent is public alternative schools' teacher job satisfaction associated with school-process factors, with control of teachers, principal, and school background factors?

## METHOD

### Data Source and Sample

The data for this study came from the nationally representative School and Staffing Survey (SASS) 2007–08, which was designed by National Center for Education Statistics of the U.S. Department of Education and implemented by the U.S. Census Bureau. SASS utilized a stratified sampling method, and each sampled teacher, principal, and school were given a certain weight with respect to their characteristics to make sure they were nationally representative. The SASS 2007–08 survey included District, School, Principal, and Teacher data, and the current study utilized Public Teacher and Principal Data. Both the public teacher data and principal data included teachers and principals from traditional public schools, public alternative schools, and public charter schools. All sampled teachers and principals from public alternative schools were used for the present study. As a result, 1,210 public alternative school teachers and 350 public alternative school principals/schools were included who represented 61,820 national public alternative school teachers and 5,590 nationwide public alternative school principals/schools.<sup>1</sup>

### Key Variables

#### TEACHER JOB SATISFACTION AS OUTCOME

Teacher Job Satisfaction is a composite variable that was constructed from seven variables extracted from the SASS 2007–08 Public Teacher Data. Based on teachers' perceptions, the variables measured teachers' job satisfaction from seven various aspects which include: (a) generally satisfied, (b) teaching not worth it, (c) school is well run, (d) leave for better pay, (e) transfer to other school, (f) less enthusiasm, and (g) too tired for school. The scale for these seven variables range from 1 = strongly agree, to 2 = somewhat agree, 3 = somewhat disagree, and 4 = strongly disagree. Items (a) and (c) were recoded reversely to ensure higher ratings corresponding higher satisfaction. After recoding, these seven variables presented a good reliability statistics (Cronbach's alpha = .802), and thus justified composing teacher's job satisfaction (TJS) as the mean of the seven variables.

## SCHOOL PROCESSES AS EXPLAINING VARIABLES

School-process variables include seven variables measuring teacher's perceptions of (a) Classroom Control, (b) Staff Collegiality, (c) Career and Working Condition, (d) Administrative Communication, (e) Administrative Support, (f) Parent Support, and (g) Positive Student Behavior. These seven variables were based on 23 teacher-level variables extracted from SASS 2007–08 Public Teacher Data but have been transformed into school-level variables by two steps: step one, the 23 teachers' variables were combined into seven teacher-level variables; step two, the seven teacher-level variables were aggregated to school level (average  $n = 3.5$  teachers per school). The rationale is based on two thoughts: (a) these variables were often considered a measure of school-level characteristics rather than a measure of teacher or student characteristics (Ma, 1999), and (b) as a leadership and policy-oriented study, we were often interested in how school leadership and policies could affect average school-level factors.

**Variables combination.** Among the seven school process variables, Classroom Control is based on combination of six teacher variables measuring teacher's perception of his/her actual control in the classroom on the 4-point Likert scale (1 = no control, 2 = minor control, 3 = moderate control, and 4 = a great deal of control). These six teacher variables yielded an acceptable reliability (Cronbach's alpha = .737).

Other six school-process variables are all based on a 4-point Likert scale (1 = strongly agree, 2 = somewhat agree, 3 = somewhat disagree, and 4 = strongly disagree) and four of them were based on variables combination with acceptable internal consistency coefficients: Staff Collegiality is based on combination of four teacher variables (Cronbach's alpha = .81); Working Conditions is based on combination of five teacher variables (Cronbach's alpha = .34); Administrative Support is based on combination of four teacher variables (Cronbach's alpha = .79); Student Behavior is based on aggregation of two teacher variables (Cronbach's alpha = .57); and Administrative Communication and Parent Support are both based on one single teacher variable, respectively.

**Justification of aggregation.** To justify data aggregation, researchers suggested evaluating both inter-rater agreement (IRA) and inter-rater reliability (IRR) indices (Biemann, Cole, & Voelpel, 2012). IRA refers to the extent to which raters or judges agree on a set of judgments (Shrout & Fleiss, 1979). In other words, it examines the degree to which raters' or judges' judgments are interchangeable (Bliese, 2000). IRR refers to the relative consistency of responses among raters (Bliese, 2000; Kozlowski & Hattrup, 1992). According to Bliese (2000), the most frequently used measure of within-group IRA is  $r_{WG}$  or  $r_{WG(I)}$  (James, Demaree, & Wolf, 1984, 1993); and IRR is commonly assessed by two intra-class correlation (ICC) coefficients: ICC(1) and ICC(2) (see Bliese, 2000; LeBreton, Burgess, Kaiser, Atchley, & James, 2003; Lebreton



& Senter, 2008). The present study assessed both IRA and IRR indices to justify data aggregation.

The  $r_{WG}$  calculation is based on James et al.'s (1984) method:

$$r_{WG} = 1 - \left( \frac{S_{jk}^2}{\sigma_{EU}^2} \right), \text{ and } r_{WG(J)} = \frac{J * \left( 1 - \left( \frac{S_k^2}{\sigma_{EU}^2} \right) \right)}{1 + (J - 1) * \left( 1 - \left( \frac{S_k^2}{\sigma_{EU}^2} \right) \right)}.$$

where  $r_{WG}$  is based on a single item and  $r_{WG(J)}$  is based on J items;  $S_{jk}^2$  is the observed within-group variance of item j and  $S_k^2$  is the average within-group variance of the J items both in a group with k raters;  $\sigma_{EU}^2$  is an expected error variance based on a uniform (rectangular) null distribution. According to Mood, Graybill, and Boes (1974), as cited by James et al. (1984),  $\sigma_{EU}^2 = (A^2 - 1) / 12$ . Here A is the number of alternative responses of a scale. For the present study, since all the teacher perceptions of school processes were measured on a 4-point Likert scale,  $\sigma_{EU}^2 = (4^2 - 1) / 12 = 1.25$ . Thus, for each sampled school, there will be an estimated  $r_{WG}$  or  $r_{WG(J)}$ , and over all there will be 350 estimates for each school-process variable. It is inconvenient to report so many indices and researchers recommended reporting a mean  $r_{WG}$  or  $r_{WG(J)}$  value and associated standard deviation as the final estimate of within-group inter-rater reliability (Biemann et al., 2012). As a result, a mean  $r_{WG}$  or  $r_{WG(J)}$  value was calculated for each pre-aggregated school-process variable.

For the question that how big an  $r_{WG}$  or  $r_{WG(J)}$  is good enough to justify aggregation, some researchers suggested or assumed .70 as a necessary cut-off (J. M. George, 1990; James, 1988), while others challenged it by arguing that it lacked support and justification (Castro, 2003) or it was somewhat arbitrary (Cohen, Doveh, & Eick, 2001). Lance, Butts, and Michels (2006) even argued that the .70 cutoff was used due to the fact that before James et al. (1993) renamed it as within-group inter-rater agreement, originally James et al. (1984) named  $r_{WG}$  as inter-rater reliability. LeBreton and Senter (2008) proposed a revised standard for interpreting the inter-rater agreement: .00 to .30 as lack of agreement, .31 to .50 as weak agreement, .51 to .70 as moderate agreement, .71 to .90 strong agreement, and .91 to 1.00 as very strong agreement. Due to the controversial situation and based on LeBreton and Senter's (2008) standards, this study takes .70 as good within-group agreement, while thinks .50 is still acceptable.

ICC has been proposed as both IRR (Bliese, 2000) and IRR+IRA (LeBreton, Burgess, Kaiser, Atchley, & James, 2003; LeBreton & Senter, 2008). According to Bliese (2000), IRR (or IRR+IRA) is commonly assessed using one or both of the two major forms of ICC: ICC(1) and ICC(2), both of which could be calculated from a one-way random-effects ANOVA model (Bartko, 1976, as cited by Bliese, 2000):

$$ICC(1) = \frac{MSB - MSW}{MSB + (K - 1) * MSW}, \text{ and } ICC(2) = \frac{MSB - MSW}{MSB}.$$

where *MSB* is the between-group mean square, *MSW* is the within-group mean square, and *k* is the group size. Here the group size *k* could use the average group size (Bliese, 2000). For the present study, *k* ≈ 3.5. Based on the formula, both *ICC*(1) and *ICC*(2) were calculated for the seven pre-aggregated school-process variables.

Like the standards for evaluating *r<sub>WG</sub>*, researchers also developed standards to evaluate *ICC*(1) and *ICC*(2). For *ICC*(1), usually a value of .01 was considered a “small” effect, .10 was a “medium” effect, and .25 was considered a “large” effect (see Murphy & Myers, 1998, p. 47). For *ICC*(2), since it was often interpreted as inter-rater reliability, researchers tempted to apply traditional reliability cutoff .70 (e.g., Nunnally & Bernstein, 1994). However, LeBreton et al. (2003) demonstrated how it is possible to have high *IRA* while having low *IRR*, and they argued that in such instances, researchers may not just rely on *ICCs* to justify aggregation.

To justify variable aggregation, researchers also recommended reporting *F* ratios (see Biemann et al., 2012). The *F* ratio is the result of an ANOVA-based significance test of between-group differences. A significant *F* ratio indicates significant group membership or group effect.

In this study, the *r<sub>WG</sub>* or *r<sub>WG(j)</sub>* values, *ICC*(1) and *ICC*(2), and *F* ratios are presented in Table 1. Based on these results, the aggregations of the seven teachers’ perceptions of school-process variables were deemed justifiable: the average *r<sub>WG</sub>* or *r<sub>WG(j)</sub>* values range from .63 to .95, indicating acceptable within-group agreements; all the *F* ratios are statistically significant, indicating significant group effects; and *ICC*(1) range from .12 to .36, indicating medium to large group effects. Although most *ICC*(2)s range from .50 to .63, indicating low inter-rater reliabilities, we made our decision, as LeBreton et al. (2003) warned, not solely relying on *ICC* (2), but mostly relying on *r<sub>WG</sub>* or *r<sub>WG(j)</sub>*, *F* ratios, and *ICC*(1) .

**TABLE 1** Inter-rater Agreement and Inter-rater Reliability.

	Within-Group IRA		F ratio	IRR (or IRR+IRA)	
	$r_{WG}$ or $r_{WG(j)}$			ICC(1)	ICC(2)
	$M$	$SD$			
Classroom Control	.84	.19	2.39***	.30	.56
Staff Collegiality	.79	.23	2.29***	.27	.54
Working Conditions	.74	.18	1.59***	.12	.31
Administrative Communication	.78	.23	2.10***	.26	.50
Administrative Support	.95	.11	2.38***	.24	.58
Parental Support	.63	.27	2.34***	.32	.53
Student Behavior	.65	.28	2.81***	.36	.63

Note. *SD* = standard deviation; \*\*\*: *p* < .001.

## Controlling Variables

### TEACHER BACKGROUND

From SASS 2007–08 Public Teacher Data, five teacher demographic variables were extracted, which include Gender, Highest Degree, Certificate, Teaching Level, and Total Years of Teaching Experience. The coding and descriptive statistics of these five variables are presented in the Appendix.

### SCHOOL AND PRINCIPAL BACKGROUND

Both school and principal background variables were extracted from SASS 2007–08 Public Principal Data. The school background includes student-teacher ratio (STR) and student's average social-economic status (SES). Principal background includes: (a) years as principal (YAP); (b) years as principal at this school (YAPTS); (c) years of teaching before being a principal (YAT); (d) participation in an aspiring principal program (Training); and (e) principal's highest degree (Degree). Both school and principal backgrounds are used as controlling variables. The coding and descriptive statistics of these seven variables are presented in the Appendix.

## Weighting and Linking Variables

Finally, we extracted weighting variables for both the teacher and the principal data sets and extracted the linking variable (school control number) that connects the teacher and principal data sets. **We applied relative weights at both the teacher level and the principal level to make the samples of both teachers and principals nationally representative, and still keep the original sample size.** The HLM software allows the application of weights at both levels simultaneously. Please see the Appendix for the name, measurement scale, and descriptive statistics for the variables used in the study.

## Statistical Procedures

Considering the hierarchical structure of educational data, and the inadequacy of traditional statistical techniques for modeling hierarchical data (Raudenbush & Bryk, 2002), the hierarchical linear modeling (HLM) method was applied in this study.

### NULL MODEL AND INTRA-CLASS CORRELATION

The first model, Model 1, is a null model without any predictor that functions to gauge to what extent that a second level model could contribute to explaining the variance of the outcome variable. Model 1 is:

**Level-1 model:**

$$(TJS)_{ij} = \beta_{0j} + r_{ij} \quad r_{ij} \sim N(0, \sigma^2)$$

**Level-2 model:**

$$\beta_{0j} = \gamma_{00} + \mu_{0j} \quad \mu_{0j} \sim N(0, \tau_{00})$$

where  $(TJS)_{ij}$  is teacher  $i$ 's job satisfaction in school  $j$ ,  $\beta_{0j}$  is the teachers' average job satisfaction in school  $j$ ,  $r_{ij}$  is the teacher level random effect, and  $\sigma^2$  is the variability within schools;  $\gamma_{00}$  is the grand mean of all teachers' job satisfaction across all national public alternative schools,  $\mu_{0j}$  is the principal/school level random effect, and  $\tau_{00}$  is the variance across all national public alternative schools. To gauge to what extent that a second-level model could contribute to explaining the variance of the outcome variable, we can calculate the intra-class correlation<sup>2</sup> (ICC, or ICC(1), see Bliese, 2000) .

**CONTROL MODEL—MODEL 2**

In order to answer research question two and to identify model improvement as well, before building the full model with the key predictors, one control model needs to be established in between. Based on Model 1, the control model, Model 2 added teacher background at level 1, and added both school and principal backgrounds at level 2:

**Level-1 model:**

$$(TJS)_{ij} = \beta_{0j} + \beta_{1j}(\text{Level}) + \beta_{2j}(\text{Experience}) + \beta_{3j}(\text{Gender}) + \beta_{4j}(\text{Degree}) \\ + \beta_{5j}(\text{Cert}) + r_{ij}$$

**Level-2 model:**

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{STR}) + \gamma_{02}(\text{SES}) + \gamma_{03}(\text{YAP}) + \gamma_{04}(\text{YAPTS}) + \gamma_{05}(\text{YAT}) \\ + \gamma_{06}(\text{Training}) + \gamma_{07}(\text{Degree}) + \mu_{0j}$$

Where  $\beta_{1j} - \beta_{6j}$  are the effects of the five teacher backgrounds on teacher job satisfaction; and  $\gamma_{01} - \gamma_{07}$  represent the effect of principal's background variables on teacher job satisfaction. Other parameters remain the same as in Model 1. The control model could help to identify the model improvement by calculating the proportion of variance explained.<sup>3</sup>

## SCHOOL-PROCESS MODEL—MODEL 3

To investigate the effects of school process on teacher job satisfaction, the school-process model, Model 3, was built based on Model 2 by including the seven school-process variables at the second level:

**Level-1 model:**

$$(TJS)_{ij} = \beta_{0j} + \beta_{1j} (\text{Level}) + \beta_{2j} (\text{Experience}) + \beta_{3j} (\text{Gender}) + \beta_{4j} (\text{Degree}) \\ + \beta_{5j} (\text{Cert}) + r_{ij}$$

**Level-2 model:**

$$b_{0j} = \gamma_{00} + \gamma_{01} (\text{STR}) + \gamma_{02} (\text{SES}) + \gamma_{03} (\text{YAP}) + \gamma_{04} (\text{YAPTS}) + \gamma_{05} (\text{YAT}) \\ + \gamma_{06} (\text{Training}) + \gamma_{07} (\text{Degree}) + \gamma_{08} (\text{Classroom Control}) \\ + \gamma_{09} (\text{Staff Collegiality}) + \gamma_{010} (\text{Working Conditions}) \\ + \gamma_{011} (\text{Administrative Communication}) + \gamma_{012} (\text{Administrative Support}) \\ + \gamma_{013} (\text{Parental Support}) + \gamma_{014} (\text{Student Behavior}) + \mu_{0j}$$

where  $\gamma_{08}$ - $\gamma_{014}$  represent the effect of the seven school-process variables on the teacher's job satisfaction, while other parameters remain the same as in Model 2. In order to know how much variance has been explained by adding school-process variables to Model 2, we need to calculate the proportion of variance explained<sup>4</sup> at the second level of Model 3 over Model 2.

## FINDINGS

## Level and Variation of Teacher Job Satisfaction

After conducting the analysis for the null model, the results were presented in the second and third columns of Table 2. The results showed that the average teacher job satisfaction was 3.162, a little bit lower when comparing with that for the all public schools (3.195, as found in Shen et al.'s 2012 study).

The results also showed that the variance in teacher job satisfaction was partitioned into two parts: the variance within schools, which is teacher level variance, is 0.36674, while the variance between schools, which is school level variance, is 0.06371. Thus, the ICC is  $0.06371/(0.036674+0.06371) = 0.148$ . This was also lower comparing with that for public schools (0.171, see Shen et al., p. 213).

**TABLE 2** Results of Model 1, 2, and 3.

Fixed Effect	Model 1		Model 2		Model 3	
	$\gamma$	SE	$\gamma$	SE	$\gamma$	SE
Intercept	3.162***	0.036	3.239***	0.182	0.591	0.351
Level-1: Teacher background						
Secondary (vs. elementary)			0.114	0.089	0.120	0.076
Teaching experience			0.004	0.003	0.003	0.002
Female (vs. male)			-0.017	0.066	-0.017	0.053
Master degree or higher (vs. below master)			0.018	0.058	0.006	0.054
Advanced/regular/probationary certification (vs. others)			-0.048	0.098	-0.021	0.087
Level-2						
School background						
Student-teacher ratio			0.006	0.004	0.008*	0.004
Percentage free/reduced lunch			-0.004**	0.001	-0.002**	0.001
Principal background						
Total years as principal			-0.014~	0.007	-0.003	0.006
Years as principal at this school			0.020*	0.009	0.006	0.007
Years of teaching before principal			-0.002	0.004	-0.002	0.003
Training			-0.069	0.063	-0.002	0.048
Degree			0.150*	0.060	0.155**	0.054
School process						
Classroom control					0.115	0.072
Staff collegiality					0.184**	0.068
Career and working conditions					0.209*	0.080

	Variance	p	Variance	p	Variance	p
Administrative communication					-0.077	0.063
Administrative support					0.304**	0.086
Parental support					-0.017	0.046
Positive student behavior					0.105*	0.040
<b>Random Effects</b>						
Level-2	0.06371	0.000	0.03570	0.000	0.00030	>.5
Level-1	0.36674		0.36977		0.34146	
Proportion of variance explained at level-2			Over Model 1 44.0%	Over Model 2 99.2%		

Note. \*\*\*; p < .001; \*\*, p < .01; \*, p < .05.

Note. \*\*\*:  $p < .001$ ; \*\*:  $p < .01$ ; \*:  $p < .05$ .



The lower level and lower variation of teacher job satisfaction indicated that comparing to teachers at all public schools, teachers at alternative schools were less satisfied with their jobs, and there was less difference between schools. However, according to Hox (2010), in an educational and organizational context, an ICC of .10 seems “reasonable,” and .15 could be considered “high.” As a result, he suggested using .05, .10, and .15 as small, medium, and large values of ICC in general cases. Based on this suggestion, the intra-class correlation (.148) of this study could still be considered as large, indicating 14.8% of the variance could be potentially explained at school level. This justified the necessity to analyze teacher job satisfaction using a multilevel analysis procedure.

### Teacher Job Satisfaction and the Controlling Variables

The results of the control model, Model 2, are included in the fourth and fifth columns of Table 2. As we can see, none of the five teacher characteristics is statistically significant; among the two school background variables, the percentage of students who enrolled in national free and reduced lunch program had a negative and statistically significant effect on teacher job satisfaction ( $\gamma = -0.004, p < 0.01$ ), while student-teacher ratio is not related to teacher job satisfaction; among the five principal background variables, years as principal at this school has positive and statistically significant effects on teacher job satisfaction ( $\gamma = 0.020, p < .05$ ), and principal's highest degree also has a positive and statistically significant effect on teacher job satisfaction ( $\gamma = 0.150, p < .05$ ), while principal's experience before this school, principal's teaching experience, and participating in training for aspiring program are not significant. The proportion of variance explained at level-2 is  $(0.06371 - 0.03570) / 0.06371 = 0.440$ . This indicated that the teacher, school, and principal background variables explained 44.0% of level-2 variance. The remaining level-2 variance is still significant ( $p < .001$ ), indicating the potential to include more significant predictors at level-2.

### Teacher Job Satisfaction and School Process

The results of the school-process model, Model 3, were presented in the sixth and seventh columns in Table 2. The results show that the student-teacher ratio started to show a positive and statistically significant effect on teacher job satisfaction ( $\gamma = 0.008, p < 0.029$ ), while the percent of students enrolled for the national lunch program still had a negative and statistically significant effect on teacher job satisfaction ( $\gamma = -0.002, p < 0.01$ ). Years as principal at this school was no longer significant ( $\gamma = 0.006, p > .05$ ), indicating that a principal's years being the principal at the current school was secondary to school process. Principal's degree became the only significant principal background variable that had a positive effect on teacher job satisfaction ( $\gamma = 0.155, p < 0.01$ ). Since this variable did not show its

significance for all public schools (see Shen et al., 2012), its stability of significance for alternative schools deserves further exploration. For instance, it might be interesting to know whether more alternative school principals had a special education background, since it was more related. Principal's other types of experiences and training were all insignificant.

Among the seven school processes, the significant predictors are Positive Student Behavior ( $\gamma = 0.105$ ,  $p < .05$ ), Staff Collegiality ( $\gamma = 0.184$ ,  $p < .01$ ), Career and Working Conditions ( $\gamma = 0.209$ ,  $p < .05$ ), and Administrative Support ( $\gamma = 0.304$ ,  $p < .01$ ), while Classroom Control, Administrative Communication, and Parental Support indicated no association with teacher job satisfaction. For Model 3, the proportion of variance explained at level-2 is  $(0.03570 - 0.00030) / 0.03570 = 0.992$ . This indicated that the seven school processes explained 99.2% of level-2 variance in teacher job satisfaction that remained from Model 2. This and the remaining insignificant level-2 variance ( $p > .5$ ) suggested that the seven school-process variables explained almost the entire school-level variance that was left from Model 2. This was a good indication that we successfully identified powerful school-level variables that are responsible for the variation in teacher job satisfaction between schools. These school-process variables were significant in predicting school-level teacher job satisfaction.

## CONCLUSIONS AND DISCUSSIONS

The aim of this study was to investigate whether and how school processes are associated with public alternative schools' teacher job satisfaction. To examine this postulation, a series of nested models were applied to nationally representative teacher and principal samples, which includes an unconditional model, a control model in between, and a school-process model. The two-level HLM model with teachers nested in principals/schools was used as the primary statistical method to handle the survey data. As a result, this study has its strengths in (a) investigating the traditionally overlooked public alternative schools' teacher job satisfaction and its association with school process, (b) using a nationally representative sample with a rich array of variables at the teacher and principal/school levels, and (c) an appropriate statistical method that capitalizes on the data structure and applies to the research questions. In this section, several conclusions are presented, and discussions are provided as well.

### How Much Difference Could School-Level Factors Make in Teacher Job Satisfaction?

This study revealed that there was significant and sufficient variation in public alternative schools' teacher job satisfaction between schools; the intra-class correlation was .148, indicating that about 14.8% of the variation lies

between schools. As suggested by Hox (2010), this value could be considered “large,” indicating the potentiality that schools could have a significant influence on teacher job satisfaction.

### Did Teacher Background Make a Difference in Teacher Job Satisfaction?

This study showed that public alternative schools’ teacher job satisfaction was neither associated with any of these three variables, nor with other teacher background variables. This is not consistent with Shen et al.’s study, in which they revealed that teacher job satisfaction was higher with elementary school teachers (as opposed to secondary school teachers); more experienced teachers (as opposed to less experienced teachers); and teachers with advanced, regular, or probationary certification (as opposed to teachers with provisional, temporary, emergency, or no certification). Although the smaller sample size for alternative public schools (vs. all public schools) might be a factor, the findings seemed to imply that compared with all public schools, public alternative schools’ teacher job satisfaction was less associated with teacher characteristics while more related to higher level factors. This has important implications for policymakers and educational researchers. For instance, to enhance teacher job satisfaction at alternative schools, policymakers could consider higher level policy intervention strategies.

### Did School Background Make a Difference in Teacher Job Satisfaction?

Although alternative schools’ background variables are also not the focus of this study, two significant variables deserve attention. The first one is the percentage of students enrolled in national free or reduced lunch program, which had a negatively significant, stable effect on teacher job satisfaction. Shen et al. (2012) found the same conclusion for public schools.

The second statistically significant school background variable is student-teacher ratio, which had a positively significant effect on teacher job satisfaction only when school-process variables were included. Shen et al. (2012) used school enrollment in their study, and it also had a positively significant effect on teacher job satisfaction for the school-process model. However, in both studies, this variable was either not significant or had a negative effect for previous models, telling us that for both public schools and public alternative schools, the effect of student-teacher ratios is conditional, i.e., contingent upon other school-process variables.

## Did Principal Background Make a Difference in Teacher Job Satisfaction?

Among the five principal-background variables, two significant variables indicated its association with teacher job satisfaction. First, a principal's experience at a current school was significant for the control model, but after including the school process, it became non-significant. This suggested that in terms of the association with teacher job satisfaction, a principal's experience at a current school was conditional on the school-process variables. In other words, its effect overlapped with that of the school-process variables.

Second, a principal's highest degree presented a quite stable association with teacher job satisfaction: it was positively significant for both the control model and the final school-process model. After including the school process, the positive effect of the principal's highest degree was not weakened by the presence of a far more important association between school process and teacher job satisfaction; instead, it was strengthened. This suggested that in terms of the association with teacher job satisfaction, the principal's highest degree has an unconditional effect. In other words, a principal's highest degree had a unique effect.

This unique effect was also justified by the fact that the principal's highest degree was not associated with public schools' teacher job satisfaction (see Shen et al., 2012), but associated with public alternative schools' teacher job satisfaction. This uniqueness and its stability of significance for alternative schools deserve further exploration. For instance, it might be interesting to know whether more alternative school principals had a special education background, since it was more related. If this was the case, then it might have implications for principal selection at public alternative schools, if we are concerned with its association with teacher job satisfaction.

## Did School Process Make a Difference in Teacher Job Satisfaction?

The answer seems straightforward—the seven school-process variables produced four significant predictors, and more importantly, the seven school-process variables explained 99.2% of the level-2 variance left from Model 2. This told us that school process did make a difference in teacher job satisfaction at public alternative schools. This finding was consistent with Shen et al.'s (2012) findings, based on all public schools. The consistent patterns demonstrated that educational policymakers, researchers, and practitioners must pay more attention to school process with respect to teacher job satisfaction for both public schools and public alternative schools.

## Which School Process Was More Important to Teacher Job Satisfaction?

First, the significance level of the regression coefficients indicated that overall the four significant variables (Administrative Support, Career and Working Conditions, Staff Collegiality, and Positive Student Behavior) were more important than the three non-significant variables (Classroom Control, Administrative Communication, and Parental Support) to alternative schools' teacher job satisfaction.

Second, to compare the relative importance of the four significant school-process variables, there were various approaches, such as using effect size. Since all the school-process variables utilized a 4-point Likert scale, it would be as effective as using effect size if directly comparing their variables' regression coefficients. Among the seven school-process variables, the ranking of the four significant variables according to the regression coefficients was: (1) Administrative Support ( $\gamma = 0.304$ ), (2) Career and Working Conditions ( $\gamma = 0.209$ ), (3) Staff Collegiality ( $\gamma = 0.184$ ), and (4) Positive Student Behavior ( $\gamma = 0.105$ ). Thus, Administrative Support and Career and Working Conditions turned out to be the two most important school-process variables, followed by Staff Collegiality and Student Behavior.

The findings indicated that in terms of teacher job satisfaction, what teachers were more likely concerned with was neither student/family-level factors from outside of the school, nor teachers control at the classroom level; what they were more concerned with were colleague-level relationship, and most importantly the substantial administrative or resource "support" from school-level or above (including school administrative support, school working condition, and school discipline). This implied that school leadership and policy did matter. To enhance teacher job satisfaction at alternative schools, school leaders and policymakers could take strategies such as enhancing administrative support and improving teachers' working conditions.

## Limitations and Directions for Future Effort

This study has its strengths in several aspects previously mentioned, but also has some limitations. The first limitation is that although the most recent national representative SASS 2007–08 data were utilized, it did not include some variables that were utilized by Shen et al. (2012) based on the SASS 2003–04 data. For instance, a teacher's influences on school-level decision making had a significant association with teacher job satisfaction in Shen et al.'s (2012) study based on SASS 2003–04 data, but these variables were not available in SASS 2007–08 data. Given the fact that teacher empowerment and teacher's participating in school-level decision making have been demonstrated as having a positive association with teacher job satisfaction (Bogler & Nir, 2012; Davis & Wilson, 2000; Driscoll, 1978; Pearson &

Moomaw, 2005), a future study may consider examining the association for alternative schools.

The second limitation is that although this study revealed some similar findings as Shen et al. (2012) achieved, the interpretation of the different findings should be made with the caution that this was not a comparison of teacher job satisfaction between traditional public schools (non-alternative public schools) and alternative schools. Rather, this is a more focused study by using much smaller but more homogeneous samples. As a result, the findings may have implications only for stakeholders who are concerned with public alternative education. Researchers who were interested in the comparison could utilize same-year SASS data by separating alternative schools from public schools. Since different types of schools had different school processes, it may also be necessary to separate charter schools from traditional public schools.

Third, although the present study found that principal's highest degree had a stable association with teacher job satisfaction, and administrative support and working conditions were the two most important school-process factors that had an association with teacher job satisfaction, the particular mechanisms were still not clear. One possible effort in the future could look into what type of principal's education area has the most important association with public alternative schools' teacher job satisfaction. Questions like "were principals' education background related to teacher job satisfaction, and if so, what kind of background matters the most?" could be considered. A possible connection could be that more alternative school principals had a special education background, which could more appropriately meet the field needs and requirement. The findings may help establish the criteria for selecting appropriate principals for alternative schools.

Another two directions for inquiry include what type of administrative support was most desired by alternative school teachers, and what concerned teachers the most in terms of their career and working conditions. Both quantitative (e.g., survey) and qualitative (e.g., interview) designs could be considered for these inquiries. The findings along these directions may help identify the specific leadership and policy strategies for the purpose of enhancing teacher job satisfaction in alternative public schools.

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## NOTES

1. The sample size and the population both were rounded up to the closet 10 per rules of using the restricted data from NCES.

2. Here the ICC equation is:  $= \frac{\hat{\tau}_{00}}{\hat{\sigma}^2 + \hat{\tau}_{00}}$ , where  $\hat{\sigma}^2$  and  $\hat{\tau}_{00}$  are the estimates of level-1 and level-2 variances.

3. The proportion of variance explained at the second level of Model 2 over Model 1 is  $\frac{\hat{\tau}_{00}(\text{Model 1}) - \hat{\tau}_{00}(\text{Model 2})}{\hat{\tau}_{00}(\text{Model 1})}$ , where  $\hat{\sigma}_{00}(\text{Model 1})$  and  $\hat{\sigma}_{00}(\text{Model 2})$  are the estimates of level-2 variances of Model 1 and Model 2.

4. The proportion of variance explained at the second level of Model 3 over Model 2 is:  $\frac{\hat{\tau}_{00}(\text{Model 2}) - \hat{\tau}_{00}(\text{Model 3})}{\hat{\sigma}_{00}(\text{Model 2})}$ , where  $\hat{\sigma}_{00}(\text{Model 2})$  and  $\hat{\sigma}_{00}(\text{Model 3})$  are the estimates of level-2 variances of Model 2 and Model 3.

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## APPENDIX

**TABLE A1** Descriptive Statistics.

Variable	Representation (Name in the SASS Data)	Coding	Statistics
Teacher-level outcome			
TJS	Teacher job satisfaction	Mean of T0302*, T0313, T0315*, T0316, T0317, T0318, T0319. Cronbach's alpha = .802	$M = 3.20$ , $SD = .628$
Teacher background (as teacher level variables)			
Level	Teaching level (by NCES)	Elementary = 0 Secondary = 1 Continuous	16.1% 83.9%
TE	Years of teaching (T0038)		$M = 11.49$ , $SD = 9.47$
Gender	Gender (T0352)	Male = 0 Female = 1	41.8% 58.2%
Degree	Degree (T0120)	Lower than master = 0 Master or higher = 1	52.5% 47.5%
Cert	Certification (T0160)	Provisional/temporary/emergency/ none = 0 Advanced/regular/probationary = 1	12.6% 87.4%
School background (as school level variables)			
STR	Student-teacher ratio (STU_TCH), created by NCES from school data	Continuous	$M = 12.88$ , $SD = 8.11$
SES	Percentage of students eligible for free and reduced-price lunch (NSLAPP_S), created by NCES from school data	Continuous	$M = 63.38$ , $SD = 29.78$

(Continued)

**TABLE A1** (Continued)

Variable	Representation (Name in the SASS Data)	Coding	Statistics
Principal background (as school level variables)			
YAP	Total years as principal (A0025)	Continuous	$M = 6.84$ , $SD = 6.19$
YAPTS	Years as principal in THIS school (A0026)	Continuous	$M = 4.11$ , $SD = 4.71$
YAT	Years as teacher (A0027)	Continuous	$M = 12.56$ , $SD = 8.28$
Training	Participate in training or program for aspiring principal (A0030)	no = 0 yes = 1	46.5% 53.5%
Degree	Principal's highest degree (A0032)	Master's or below = 0 Specialist or higher = 1	68.2% 31.8%
School process (as school level variables)			
Classroom Control	Teacher perception of classroom control	School aggregate of mean of T0280, T0281, T0282, T0283, T0284, and T0285.	$M = 3.33$ , $SD = .46$
Staff Collegiality	Teacher perception of staff collegiality	School aggregate if mean of T0293*, T0294*, T0296*, and T0314*.	$M = 3.21$ , $SD = .52$
Working Conditions	Teacher perception of career and working conditions	School aggregate of mean of T0287*, T0290*, T0291, T 0298, and T0299*.	$M = 2.67$ , $SD = .36$
Administrative Communication	Teacher perception of administrative communication	School aggregate of T0295*.	$M = 3.38$ , $SD = .65$
Administrative Support	Teacher perception of administrative support	School aggregate of mean of T0286*, T0292*, T0297*, and T0300*.	$M = 3.20$ , $SD = .50$
Parental Support	Teacher perception of parental support	School aggregate of mean of T0289*.	$M = 2.34$ , $SD = .77$
Student Behavior	Teacher perception of positive student behavior	School aggregate of mean of T0288 and T0301.	$M = 2.71$ , $SD = .74$

*Note.* \*indicates that an item was reversely recoded so that a higher value indicates a more positive response.