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Attracting and retaining teachers in a changing educational system

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ATTRACTING AND RETAINING QUALITY TEACHERS IN A CHANGING
EDUCATIONAL SYSTEM

A Thesis

Presented in

Partial Fulfillment of the
Requirements for the Degree of
Master of Arts

BY

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June, 2010

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VITA

The author was born in Milwaukee, Wisconsin, on August 7, 1984. He obtained his Bachelor of Science degree in Psychology from the University of Wisconsin-LaCrosse with Highest Honors in 2003 and his Master of Arts degree in Industrial and Organizational Psychology from DePaul University in 2010.

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CHAPTER I

INTRODUCTION

Over the past three decades in education research, one message has been clear: there is a problem. The United States has continued its decline as a leader in education, now ranked by the United Nations Children's Fund (UNICEF) as number 18 out of 24 industrialized nations that were sampled in terms of the relative effectiveness of its educational system (UNICEF, 2002). The study estimates that 16.2% of 15-year-olds in America fall below international benchmarks, well behind the 1.4% in South Korea and 2.2% in Japan (see Appendix A for a full list). What is worse, the Trends in International Mathematics and Science Study (TIMSS) gives cause for further concern with the finding that American students in fourth grade exceed the international mean for math and science performance, decline a bit in comparison to other countries by eighth grade, and perform worse than the international average by 12th grade. The United States stands alone as the only country whose students' performance levels actually deteriorate over time (Gonzales et al., 2004).

Alongside this evidence that our nation's students are struggling to keep up in an increasingly globalized world, we also have a teacher turnover crisis on our hands. While the turnover rate averaged across all types of employment in the United States has kept steady at approximately 11% per year over the last decade (Bureau of National Affairs, 1998; Ingersoll, 2001; Liu, 2007), the rate of turnover in teaching has been climbing higher and higher each year, from an already high 13.2% from 1991 to 1992 to a staggering 16.8% from 2004 to 2005

(Marvel, Lyter, Peltola, Strizek, & Morton, 2006). Turnover rates for teachers even exceed those found in other professions associated with staffing problems, such as nursing (Ingersoll, 2001). In fact, a study looking at the turnover rates of registered hospital nurses conducted in the mid-1990s was found to be only 12%, slightly above the national average and well below that found in educational settings (William M. Mercer, 1999).

To address the problem of teacher turnover and to make teaching a more attractive profession, policymakers need to consider the systemic problems underlying teacher attrition. Although it is commonly recognized that teachers are underpaid, those who leave the profession or transfer to teach at a different school rarely cite money as the reason for their departure (e.g., Kohn, 2003). In contrast, teachers report that their greatest satisfactions are derived from helping students achieve and advancing their personal teaching skills, and their defection arises from school-level factors that block these efforts and deny them the respect they feel should be associated with a profession that contributes so much to society (Dinham & Scott, 2000).

Rather than attack each of the many problems associated with teaching separately (e.g., declining student achievement, increasing teacher turnover, greater teacher scrutiny, increasing parental demands, limited tax bases for funding), research has suggested the importance of holistic approaches that look for underlying variables that may be common to all of these problems (Ingersoll, 2001). One variable that has been identified as critical to teacher turnover, teacher performance, and student achievement has been organizational

commitment. Therefore, it is essential to identify and implement effective mechanisms for increasing teacher commitment to the schools in which they work.

Firestone and Pennell (1993) adapted Hackman and Oldham's (1980) Job Characteristics Model to fit educational settings and identified nine antecedents to teacher commitment: skill variety, task identity, task significance, autonomy, participation in decision-making, feedback, collaboration, learning opportunities, and resources. This study's purpose is to support the link between each of these organizational variables and teacher commitment and to demonstrate the direct and indirect pathways between these variables and teacher turnover. The implications of finding strong antecedents of organizational commitment in school settings are significant for reshaping the educational system in the United States. In addition to gaining a better understanding of the theoretical makeup of commitment, this research will contribute to policy suggestions that could significantly impact teacher retention and student performance.

The Problem of Teacher Turnover

Concern over teacher shortages dates back to the early 1980s when the National Commission on Excellence in Education published a report entitled *A Nation at Risk* predicting that increasing student enrollments and the vast number of retiring baby-boomers would combine to devastate the number of remaining teachers (National Commission on Excellence in Education, 1983). While this warning has become a reality, it is not solely the result of the two reasons cited back in the 1980s. Ingersoll (2001) took an organizational perspective to show

that retirements have accounted for only a small portion of teachers leaving the profession and that there are other factors at work—related to organizational characteristics and working conditions in schools—that have caused turnover to escalate dramatically and create the school staffing problems we see today.

To get a sense of the magnitude of this problem, a 2007 policy brief put out by a Washington, D.C. nonprofit advocacy group whose purpose is to increase teacher retention shows that teacher attrition has grown by 50% over the past 15 years (National Commission on Teaching and America's Future [NCTAF], 2007a). As previously stated, the national teacher turnover rate is currently peaking at 16.8%, but it is important to note this number reaches over 20% for troubled urban schools where the teacher turnover rate actually exceeds the student dropout rate. The Schools and Staffing Surveys (SASS) and its supplement, the Teacher Follow-up Survey (TFS), that were conducted by the National Center for Education Statistics (NCES) during the 2003-2004 school year show that a record-breaking 332,700 teachers left their jobs that year (i.e., nearly 1,000 per day); of these, 245,429 left to pursue other interests while only 88,271 retired (Marvel et al., 2006). That means that the lion's share of the teaching shortage (73%) is caused by pre-retirement turnover, a figure that has remained steady with time (Ingersoll, 2001; Shakrani, 2008).

While schools go ahead losing approximately one seventh of their teaching workforce every year (Ingersoll, 2001), it is the 73% of those pre-retirement defectors that should be the focus of any reform package. Looking to further describe this target group, Ingersoll (2001) notes that half of all teacher

turnover consists of “movers” and half consists of “leavers,” a finding replicated by other studies (e.g., Liu, 2007). Teacher migration is the term used to describe movers, defined as those teachers who leave one school or district in order to work for another one. Leavers, on the other hand, fall into the category of teacher attrition, a term denoting the permanent exit of teachers from the teaching profession as a whole (Liu, 2007; Loeb, Darling-Hammond, & Luczak, 2005). These types of turnover are up to 50% more common in high-poverty than low-poverty schools (Ingersoll, 2001) and among new teachers (Hanushek, Kain, & Rivkin, 1999).

Many researchers agree that beginning teachers are the hardest hit (Liu, 2007; NCTAF, 2003; Rosenholtz, 1986; Shakrani, 2008). A U-shaped curve best describes the relationship between age and turnover, with beginning teachers quitting from shell shock and dissatisfaction, old teachers retiring, and middle-aged teachers being the most stable (Guarino, Santibañez, & Daley, 2006; Ingersoll, 2001). Whereas the retirement of older teachers can be expected and planned for, the departure of new teachers can and must be lessened, since this is a principal source of the teacher supply problem, particularly in urban school districts (Shakrani, 2008). In June of 2007, NCTAF reported that nearly one third of new teachers exit the classroom within their first three years of teaching; by the end of fifth year, only half remain (NCTAF, 2007a). This deluge of turnover among teachers is worsened only by the fact that the first to leave have historically been the most qualified teachers in the most high-demand fields, such as mathematics and science (Rosenholtz, 1989b; Shakrani, 2008).

Ingersoll (2001) was among the first to research teacher turnover from an organizational perspective. Previous research had viewed turnover as a function of individual characteristics and teacher demographics (e.g., Boe, Bobbitt, Cook, & Whitener, 1997; Grissmer & Kirby, 1997; Miech & Elder, 1996; Murnane, 1981). Since Ingersoll's (2001) paradigm-shifting study, other researchers have expanded the investigation of the relationship between turnover and school characteristics, governance, and working conditions (Liu, 2007).

With regards to the former line of research, it is important to first note that the overall demographics of teachers have not changed dramatically over the past few decades; that is, the profession is mostly comprised of women, whites, and altruistically-oriented people, although the proportion of whites to minorities has been shrinking since the early 1990s (Guarino et al., 2006). Of these professionals in the teaching pool, the characteristics most associated with turnover have been shown to be age (the U-shaped curve), specialty field expertise (math and science), gender (women have higher turnover than men), and ethnicity (whites have higher turnover than minorities), and those with high ability (Guarino et al., 2006; Ingersoll, 2001).

The above findings regarding teacher characteristics associated with turnover have been found consistently by researchers, but the effects that school characteristics and working conditions in schools have on turnover have been systematically overlooked, especially with regards to large-scale or representative data (Ingersoll, 2001). The information that is out there suggests that a school's size, location, wealth, student composition, school type, and school working

conditions play a large role in teacher defection. Large schools and public schools in large school districts are plagued with teacher turnover (Ingersoll, 2001); urban schools have higher attrition rates than do rural or suburban schools (Guarino et al., 2006; Ingersoll, 2001; Liu, 2007); high-poverty schools and schools with a high proportion of low-income students have trouble retaining teachers (Guarino et al., 2006; Ingersoll, 2001); schools with low-performing students and schools with large numbers of minorities tend to be at-risk for exceedingly high rates of teacher turnover (Guarino et al., 2006; Ingersoll, 2001); and private schools face higher turnover rates than public schools (Guarino et al., 2006; Ingersoll, 2001). All of the above findings are in line with the hypothesis that schools with poor working conditions more readily lose their staff except for the last finding; however, the reason that private schools face greater turnover in spite of offering, on average, better working conditions, is that the reasons cited for leaving private schools are usually that teaching was not seen as a full-time profession and not because of the reasons related to dissatisfaction that are so common in public schools (Ingersoll, 2001). Because of this stark contrast, the remainder of this paper will address only turnover problems in public schools, unless otherwise stated.

Looking at reasons commonly cited for public school teachers' departure, Ingersoll (2001) found major complaints in the departments of student discipline problems, limited faculty input into school decision-making, and inadequate support from school administrators, after controlling for characteristics of the teachers and schools. It is important to note that low salaries ranked much lower

on the list, consistent with other studies showing that money is not typically the primary reason given for quitting a job as a teacher (Kohn, 2003). Along similar lines, Shakrani (2008) cited that 65% of teachers who voluntarily left their jobs complained about a lack of planning time, 60% thought their workload was too heavy, 53% were dissatisfied with the student body's behavior, and 52% thought they had too little influence over school policy. Problems were especially troublesome among new teachers, who the study showed to be more likely to be assigned problematic students, while being unlikely to receive professional support, feedback, or mentoring for success.

Although these factors pave the way for the attrition of hundreds of thousands of teachers every year, the upside is that they are not intractable and may even be reversible through wise policy planning (Rosenholtz, 1989a). Before policies can be planned and enacted, however, it is important to understand the reason for their necessity. Supportive working conditions can be likened to a form of compensation for teachers (Guarino et al., 2006). For prospective teachers to enter into and maintain a career in teaching, they must view the overall compensation package (salary, benefits, working conditions, satisfaction of working with kids) with the compensation offered in other professions available to them (Guarino et al., 2006). Since the salary portion of the equation is on the low end, teachers rely on positive workplace conditions and work experiences to keep teaching attractive. When these resources dwindle, they take an extraordinary toll on the willingness of new and experienced teachers to remain in teaching (Liu, 2007).

Schools that have addressed some of these concerns and implemented appropriate solutions have seen some success. Implementing mentoring and induction programs have raised retention rates for new teachers (Guarino et al., 2006) and similar effects have been found by decreasing class sizes and thereby reducing disciplinary problems, and by increasing the amount of administrative support provided and the level of decision-making authority given to teachers both in their classrooms and in the school at large (Ingeroll, 2001). Other useful strategies have been to provide teachers with common planning time with other teachers who share their subject and opportunities to collaborate (Guarino et al., 2006). Liu (2007) notes that the sense of collegiality provided by feeling a sense of belonging with a network of teachers contributes to professional morale and commitment.

Because workplace conditions are specific to each school, they are important in explaining teacher attrition and teacher migration (i.e., leavers and movers). Prior to Ingersoll (2001), empirical research focused only on teacher attrition, those who left the occupation altogether. It was assumed that this was more drastic and more devastating to the teacher staffing dilemma than was teacher migration, those teachers who transfer from one school or district to another. Ingersoll (2001) pointed out that each component of turnover should be analyzed because they are both indicative of and add to organization-level problems. Moreover, the same types of organizational conditions are associated with both attrition and migration. It is the working conditions within each individual school that determine its fate; whether the teachers who turn over are

leaving the profession permanently or transferring to a different location, the end result is the same: the school suffers.

Financial Costs

For most schools, money is desperately needed to make needed improvements. It is off-putting, then, when NCTAF reports that an estimated \$7 billion is spent annually recruiting, hiring, and training new teachers to replace those who have quit (NCTAF, 2007b). Federal data show that this amounts to an average of about \$100 million for each state, although it varies considerably, hitting \$505 million in Texas, the state with the worst teacher turnover, and a considerable \$224 million here in Illinois (Shakrani, 2008). This amounts to a national average of over \$8,000 for each new recruit who quits in the first three years (Texas Center for Educational Research, 2000) and almost \$18,000 in large cities like Chicago (NCTAF, 2007b) (see Appendix B for estimated costs of turnover figures in various school districts). As the teacher shortage worsens, as has been the trend, recruitment strategies will only increase in cost, as they tend to offer higher salaries, bigger signing bonuses, and subject matter stipends in math and science, especially for school districts with extreme turnover issues.

Currently, there is no system in place for schools to track and calculate their turnover costs. To address this deficiency, NCTAF completed an 18-month study of five diverse school districts (Chicago; Milwaukee; Granville County, NC; Jemez Valley, NM; and Santa Rosa, NM) to develop an online calculator administrators can use to estimate the cost of turnover to their school district (NCTAF, 2007b). The calculator factors in eight typical costs associated with

turnover: recruitment and advertising costs (e.g., job fairs, interview sites); special incentives/hiring costs (e.g., signing bonuses, relocation bonuses); administrative processing costs (e.g., checking criminal backgrounds, health records, and references, drafting acceptance and rejection letters); training costs for new hires (e.g., conducting tours, explaining benefits); training costs for first-time teachers (e.g., mentoring programs, structured induction programs); training costs for all teachers (e.g., workshops, professional development activities); costs associated with the learning curve (e.g., deficits in student learning due to inexperienced teachers); and transfer costs (e.g., hiring substitutes to cover the classes of teachers who transfer or quit during the school year). These eight expenses place an extraordinary burden on both the human and financial capital of schools whose teaching staffs are in a constant flux (Loeb et al., 2005; Shakrani, 2008).

As mentioned previously, young teachers are among the most likely to leave teaching, and do so in large numbers within their first three years (Ingersoll, 2001; Loeb et al., 2005; NCTAF, 2003, 2007a). This draws criticism to the act of replacing teachers who have turned over with more teachers who are likely to turn over, drawing them in with increased perks but not addressing the underlying issues. This cycle that is being enacted is accomplishing only one thing, and that is the staffing of high turnover schools with hordes of inexperienced teachers, which causes schools to continually drain their scarce resources on recruitment efforts and staff development for new teachers without ever reaping the rewards of their investments (Loeb et al., 2005; Maddox, 1997). Moreover, this creates a crisis of national concern in that schools that need change most desperately are

disproportionately staffed with the inexperienced teachers least likely to bring it (NCTAF, 2007b).

It is painful to see funds that are desperately needed to transform struggling, high-poverty schools being soaked up by a turnover problem “spiraling out of control” when they could just as easily be allocated toward improving teaching effectiveness, student growth, and working conditions in schools (NCTAF, 2007b). The focus should be on a long-term payoff that improves working conditions and retains quality teachers rather than on the short-term payoffs that come with heavy recruitment. Yet, the NCTAF commission president, Tom Carroll, is confident that turnover costs can be dramatically reduced through careful organizational planning. Financial costs aside, however, this analysis would be incomplete if it did not mention the non-financial “costs” that accrue from the constant rebuilding of a school’s teaching staff.

Impact on Student Achievement

Although \$7 billion is a lot to spend each year replacing teachers who have turned over, the largest cost in the equation is actually the lost teacher productivity and the lost student achievement that accompanies it. There is no limit to the number of studies showing that teacher effectiveness improves with time (e.g., Rivkin, Hanushek, & Kain, 2005). Furthermore, there is evidence that many of the teachers who leave the profession are quality teachers. Davis (1988) found that more than two-thirds of the teachers in his sample had been rated by their school principals as having average to superior levels of performance prior to their voluntary departure from the school. It has also been found that early

defectors from teaching tend to be the most academically talented individuals, and, by some estimates, the most likely to help students learn and succeed (Rosenholtz, 1987, 1989a).

When teachers leave a school, they take with them their subject matter and pedagogical expertise, and the “collective knowledge” of the school weakens (Loeb et al., 2005). Effective schools require a certain degree of coherence and continuity of operations, but high turnover levels preclude the successful efforts of a school’s teaching staff to develop teamwork and design curricula and programs that are consistent from one year to the next. There are myriad other problems associated with teacher attrition and migration, including the staffing of schools with teachers who are unaware of best practices, and lost time and resources filling positions that would not have been empty in the first place had the issues underlying turnover been properly addressed (Loeb et al., 2005).

In addition to being disruptive, however, the real question is whether these organizational problems transfer into problems for student learning; research suggests they do (Guarino et al., 2006; Ingersoll, 2001; Shakrani, 2008). Dolton and Newson (2003) analyzed a database of 316 primary schools and found that teacher turnover indeed has detrimental effects on student progress and achievement, and is also associated with increased behavioral issues among students. Schools that inadequately staff their classrooms place their students under the guidance of inexperienced teachers and disrupt the consistency that is essential for fluent learning (Loeb et al., 2005). Low student performance inevitably results, which then creates a vicious cycle wherein underachieving

schools have trouble retaining teachers, and the resulting turnover rates keep the school ineffective (Dolton & Newson, 2003).

Recruitment Strategies and the Hole in the Bucket

Supply and demand theory tells us that there are two principal solutions for dealing with a teacher shortage: either increase the quantity supplied or decrease the quantity demanded. The former approach, addressed through mass recruitment initiatives, has so far been the strategy favored by policy-makers at the state and federal level who seem to view the problem as one of increasing an insufficient supply (Ingersoll, 2001; Liu, 2007). Recruitment efforts have consisted of a variety of programs, including “troops-to-teachers” (designed to persuade outside professionals to swap their careers for a job in teaching) and “Teach for America” (designed to recruit the “best and the brightest” into a teaching career), as well as offering alternative routes to licensing that lessen the burden of entering teaching. Additional incentives for new teachers have ranged the gamut from signing bonuses, to student loan forgiveness, to housing assistance and reimbursement for relocation fees (Ingersoll, 2001).

In spite of all these recruitment strategies, the teacher shortage remains as severe as ever. Explaining why, Ingersoll (2001) notes that qualified teaching candidates are abundant and most schools are uniformly able to recruit their desired number of qualified teachers; the schools that do experience difficulty filling their positions, however, are far more likely to also have above-average rates of teacher attrition than are the schools with no staffing problems. In other words, there is a strong correlation between staffing problems and teacher

turnover. Therefore, recruitment programs alone are not a suitable remedy unless they are accompanied by efforts to reduce turnover. Relating back to supply and demand theory, the data from this study make it clear that the most appropriate solution is to decrease excess demand (through teacher retention) rather than increase supply (through teacher recruitment), since the supply does not appear to be insufficient after all.

Shakrani (2008) shares the same view as Ingersoll, stating that, despite the mainstream belief that there is a constant need to recruit more and more new teachers, universities are turning out more than enough teachers to fill classrooms across America. For example, in 1994, then U.S. Secretary of Education, Richard W. Riley stressed that two million new teachers would need to be hired over the following ten years to replace retiring baby boomers; in turn, 2.25 million teachers ended up being hired only to see 2.70 million teachers leave, 2.10 million of them pre-retirement (NCTAF, 2007b). It is clear this problem extends from recruitment to retention, and the bulk of the problem has to do with dissatisfied teachers leaving to pursue other types of work (Ingersoll, 2001; Shakrani, 2008). The situation has been equated to the children's song "There's a hole in the bucket, Dear Liza, Dear Liza," meaning that the problem is not filling the bucket with water (or filling a school with teachers), it is with keeping it filled (NCTAF, 2007b). Recruiting teachers will do nothing to solve staffing shortages if the teachers who are recruited subsequently leave. Efforts aimed at teacher retention, therefore, seem to be at the forefront of any adequate plan for re-shaping the present education system.

Teacher Commitment

The above research makes it evident that our nation's teacher turnover crisis is not a surface-level problem that can be dealt with through superficial means such as throwing money at it (e.g., recruitment packages, performance-based pay). Rather, it is the sign of a deeper, more insidious problem, that can be explained in large part by the lack of commitment teachers feel toward the schools in which they work (Allen & Meyer, 1990; Dee, Henkin, & Singleton, 2006; Firestone & Rosenblum, 1988). A committed workforce is a key ingredient for fueling long-term teacher-school relations (Dee et al., 2006) and research strongly supports the notion that efforts aimed at increasing organizational commitment pay off big in terms of job performance, organizational effectiveness, and employee retention (Mowday, Porter, & Steers, 1982; Park, Henkin, & Egley, 2005).

The majority of research pertaining to commitment has taken place outside of educational settings, but it is important to understand the origins of this research before applying it to the current situation (Allen & Meyer, 1990; Buchanan, 1974; Mathieu & Zajac, 1990; Mowday et al., 1982; Park et al., 2005). Buchanan (1974) was among one of the first researchers to explore the concept of commitment, labeling it as "a partisan, affective attachment to the goals and values of an organization, to one's role in relation to goals and values, and to the organization for its own sake, apart from its instrumental worth." Similarly, Porter, Steers, Mowday, and Boulian (1974) concluded that organizational commitment could be defined in terms of "the relative strength of an individual's

identification with and involvement in a particular organization,” characterized by at least three factors: (1) a strong belief in and acceptance of the organization’s goals and values; (2) a willingness to exert considerable effort on behalf of the organization; and (3) a strong desire to maintain membership in the organization.

Mowday et al. (1982) viewed commitment as important in that it is indicative of an employee’s willingness to go above and beyond expected organizational norms in order to further the organization’s goals. Mowday and colleagues framed commitment as an attitude and claimed that high levels of organizational commitment had implications at three levels. At the level of individual employees, strong attitudes of commitment could be associated with better performance and associated extrinsic rewards (e.g., wages and benefits) and intrinsic rewards (e.g., job satisfaction and positive peer relations) that accompany high performance. At the next highest level, the organization benefits by having more productive employees that show lower levels of tardiness, absenteeism, and turnover; furthermore, commitment is thought to accompany innovative and creative “extra-role” behaviors that so often keep an organization competitive. Finally, at the highest level, society as a whole benefits in realizing lower job movement and higher national job productivity, both a boon to a strong American economy (Mowday et al., 1982).

Reyes (1989) noted that the above definitions focus heavily on attitudes (i.e., attitudinal commitment) and only assume that loyal behaviors will follow loyal attitudes. Subsequently, he noted the need to add some indication of behavioral commitment, to get a sense for employees’ intended actions. He

discovered that the two forms of commitment were indeed linked, with signs of behavioral commitment, such as remaining a part of the organization, being more common among those showing high levels of attitudinal commitment. In further support of this connection, Mottaz (1989) found that attitudinal and behavioral commitment have strong reciprocal effects, with each being the strongest predictor of the other, supporting Mowday et al.'s (1982) belief that commitment behaviors and attitudes reinforce one another.

A final major development in the non-educational organizational literature on the conceptualization of commitment is the work by Meyer and Allen (1991). Meyer and Allen broke organizational commitment into three distinguishable components: affective, continuance, and normative commitment. Affective commitment, akin to the way commitment had been heretofore described by Porter et al. (1974), refers to “the employee’s emotional attachment to, identification with, and involvement in the organization.” An employee with high levels of affective commitment remains with their organization out of a genuine desire to do so. Continuance commitment, on the other hand, refers to “commitment based on the costs that employees associate with leaving the organization.” For example, an employee may choose to stay with their organization because they lack legitimate alternative career options or because they have put a certain amount of money into their pension that they do not want to lose. Meyer and Allen (1991) point out that continuance commitment is negatively related to affective commitment. Finally, normative commitment refers to “a feeling of obligation to continue employment.” A prototypical

example of an employee that would remain with an organization out of normative commitment is one who has a Protestant work ethic and values loyalty to the point where he or she would not leave the organization even if better personal options presented themselves elsewhere.

Each of the three commitment domains share the common outcome of enhanced employee retention, however, the reason an employee cites for staying with the organization differs depending on the primary type of commitment experienced (Allen & Meyer, 1990). Knowing which type of commitment motivates an employee's behaviors is important in further increasing that employee's level of commitment (Allen & Meyer, 1990; Scott-Ladd, Travaglione, & Marshall, 2006). Although a single individual is capable of experiencing some extent of all three commitments simultaneously, one usually dominates. Furthermore, there are known relationships between the three components, with affective and normative showing moderate positive relations with each, in turn, being unrelated to continuance commitment (Allen & Meyer, 1990).

Meyer, Paunonen, Gellatly, Goffin, and Jackson (1989) recommend to organizations that affective commitment is the most desirable of the three types of commitment, stressing its relation to various performance measures. The researchers found a positive relationship between each of three measures of supervisor ratings of their subordinates' job performance and affective commitment, in contrast to a negative relationship between the three measures and continuance commitment. Allen and Smith (1987) also found support for the superiority of affective commitment. In their study, it was found that employee

innovativeness, employee consideration for co-workers, and employee use of time were each positively related to affective commitment, with the latter two also being positively related to normative commitment, and none having a relationship with continuance commitment. For this reason, the present study is only concerned with affective organizational commitment, as defined by Meyer and Allen (1991).

All of this organizational research has set the foundation for educational researchers to look at commitment in school settings. Firestone and Rosenblum (1988) suggested that a broader definition of commitment is required in education, because teachers can be committed to the teaching profession, to their individual school, or to their students, and that the target of their commitment determines where and how they will exert most of their effort (Park, 2005). For example, a commitment to students may enhance teacher-pupil relations while doing little to improve measures of academic performance; in contrast, a commitment to teaching may produce the reverse finding (improved academic performance to the detriment of teacher-pupil relations). These three facets of teacher commitment can be so entangled with one another that they are often difficult to measure separately and teachers need to experience at least some extent of each dimension in order to further their own personal goals as well as the goals of the schools in which they work (Firestone & Pennell, 1993).

Park (2005) acknowledges the multidimensional nature of teacher commitment, adding to the previous list that teachers can be committed to their colleagues and professional associations. To emphasize the most fundamental

sources of commitment, though, Park focuses on the three types of commitment alluded to earlier: commitment to the school, to teaching, and to the students.

Park equates commitment to the school to the concept of organizational commitment that was described by Porter et al. (1974). Teachers with this type of commitment are loyal to the school and see eye to eye with the school in terms of important goals, values, social relationships, and working conditions.

Additionally, these teachers are the least likely to turn over and the most likely to go above and beyond for the school (Park, 2005).

Like commitment to the school, commitment to the teaching profession also consists of a positive affective attachment; this time, however, the focus of the attachment is the occupation of teaching rather than the school (Somech & Bogler, 2002). The central theme behind this aspect of commitment is the enjoyment of teaching activities and identification with the teacher role (Park, 2005). Teachers committed to their profession pursue more opportunities to develop their craft and are less likely candidates for attrition, although commitment to the profession without commitment to the school does not prevent teacher migration (Firestone & Rosenblum, 1988). Lastly, a commitment to students is associated with a desire to see students behave, learn, and achieve, and the extra hours being put in to fulfill those needs (Park, 2005). Some research points to a positive relationship between this type of commitment and students' academic achievement and engagement in learning activities, particularly among underachieving students (Kushman, 1992). As mentioned previously, teacher-pupil relationships benefit most from this type of commitment, since it enables

more personal relationships and produces teachers who are devoted to seeing their students benefit both academically and socially (Park, 2005).

Each type of commitment has its unique functions, and all three are needed to some extent, although they can be in conflict from time to time. Research shows that today's teachers demonstrate the most commitment to students, followed by commitment to the profession, with commitment to the organization trailing behind (Park, 2005). Across schools, it seems like teachers are, by default, likely to be committed to their students first and foremost, regardless of individual school settings. In fact, only 1% of the variance in teacher commitment to students is explained by school differences, compared to 22% of the variance in teacher commitment to the organization being explained by school differences (Park, 2005). A reasonable conclusion from this is that schools have the greatest need for reforms aimed at increasing organizational commitment among teachers. Since so much variance in organizational commitment depends on the school, it is also reasonable to infer that the respective working conditions of schools are to blame/credit for organizational commitment levels. Improving working conditions could therefore increase organizational commitment, a feat that is necessary, and Park (2005) specifically mentions that increasing the levels of organizational commitment can be accomplished without necessarily lowering either of the other types of commitment.

It is clear that a primary direction for reform efforts to curb turnover lies in strengthening affective organizational commitment to the school. Although this

principal concept has been defined in numerous ways, each of the above definitions shares the common theme of creating a psychological bond or identification between the employee (i.e., teacher) and the organization (i.e., school), and each notes that teachers with stronger commitment are less likely to leave the organization. This paper therefore focuses only on organizational commitment from this point forward, unless otherwise stated.

The Importance of Organizational Commitment

One of the best attributes of organizational commitment (OC) is its voluntary nature (Firestone & Pennell, 1993). This characteristic likens OC to other desirable employee qualities such as intrinsic motivation, in which the source of inspiration comes simply by means of performing a job's duties and belonging to the organization (Deci & Ryan, 1985). Teachers who identify with their school and value their membership also tend to be top performers, continually striving for quality results and seeking out new challenges while accepting responsibility for their conduct (Park, 2005). As could be expected, linkages have been confirmed between OC and desired organizational citizenship behaviors, which are defined as "those discretionary behaviors that go beyond existing role expectations and are directed toward the individual, the group, or the organization as a unit to promote organizational goals" (Park et al., 2005; Somech & Bogler, 2002). Somech and Bogler (2002) report that these extra-role behaviors can be aimed at students (e.g., spending extra time adapting lesson plans to individual student needs), at colleagues (e.g., mentoring new faculty), and at the school as a whole (e.g., volunteering for unpaid tasks). In turn, Rosenholtz

(1989a) reports that these extra forms of effort, commitment, and involvement in the school translate into increased student learning and performance, and are associated with parents getting involved in their children's schooling.

Firestone and Rosenblum (1988) see holistic school reforms concentrated on increasing teacher commitment as the solution to the majority of school problems. In the past, policies have tended to address each school-place problem (e.g., turnover, student misbehavior, poor academic performance) in a piecemeal fashion without considering this underlying concern. In one of the most thorough analyses of the antecedents and consequences of OC to date, Mathieu and Zajac (1990) found OC to be a reasonable predictor of absenteeism, performance, turnover, and myriad other important behaviors that are linked to organizational effectiveness. It has also correlated well with other constructs of interest, such as job satisfaction (see Appendix C for a full list of antecedents, correlates, and consequences of OC).

Since there is some overlap between the constructs of OC and job satisfaction, it is beneficial to briefly differentiate the two. Mowday, Steers, and Porter (1979) identify that the key difference is that job satisfaction is an affective response to one's job, whereas OC is a broader affective response that includes loyalty and identification with the entire organization. Furthermore, OC can be thought of as a more stable attitude, while job satisfaction is more prone to fluctuation depending upon daily features of the job (Park et al., 2005). Finally, the two constructs demonstrate different relationships with turnover. Job satisfaction is more strongly correlated with turnover intention, but OC is more

strongly correlated with actual turnover (Mowday et al., 1979). In fact, numerous studies support the notion that OC is a better predictor than job satisfaction of actual turnover (e.g., Porter et al., 1974; Price & Mueller, 1981; Tett & Meyer, 1993).

As the concept of OC continues to grow and develop, it “is becoming understood as a hallmark of organizational success” (Rosenholtz & Simpson, 1990). The leadership literature has actually named teacher commitment as the most effective route to school success (Fink, 1992), a confirmation of Steers’ 1977 premonition that commitment is a strong indicator of organizational health, especially in schools. Steers (1977) noted both that highly committed individuals performed better and were less likely to turn over than individuals with low levels of commitment. Given the present staffing crisis in teaching, the relationship commitment has with turnover is especially relevant.

Organizational commitment plays a large part in a teacher’s decision to remain with the school where he or she teaches (Mowday et al., 1982). Lam, Foong, and Moo (1995) found that new teacher interns’ experiences of commitment and job satisfaction were negatively related to their feelings of early career withdrawal (or turnover intentions). Another study examining the relationship between OC and turnover compared four school districts with historically high rates of turnover and four school districts with historically low rates of turnover and revealed that teachers from the low turnover districts reported more satisfaction and commitment (as well as perceived administrative support) than did teachers from the high turnover districts (Meador, 2002). The

author specifically commented on the signature role of OC in a teacher's decision to relocate, mentioning that, regardless of how satisfied a teacher is with his or her job and the support provided, he or she will be more inclined to transfer locations if there is no felt commitment toward the school or district.

Low levels of OC that do not lead to turnover can still be destructive to a school's mission. When commitment is low and turnover is not an option (e.g., there is a lack of alternate opportunities for employment), teachers may remain in their positions but put forward a minimum amount of effort and display patterns of chronic absenteeism (Rosenholtz & Simpson, 1990). This characterization is somewhat similar to the concept of continuance commitment and paints a picture for why negative relationships were found between this type of commitment and indicators of performance (Allen & Meyer, 1990). The converse of this situation is also true; that is, while low OC can hurt an organization in more ways than teacher turnover, high OC can help the school in more ways than simply boosting teacher retention.

Teacher OC is thought to be of major importance in efforts aimed at improving student academic achievement (Riehl & Sipple, 1996). Rosenholtz (1989b) found that teacher commitment positively influenced how thoroughly teachers lesson plans were, which positively influenced students' math and reading scores. Kushman (1992) also found teacher OC to be related to student performance in reading, as well as in language arts. Park (2005) notes the significance of being able to use well designed-interventions to manipulate a variable like OC that exerts so much influence over student achievement, which is

otherwise controlled primarily by a series of variables that are hardly amenable to change, such as a student's innate ability, home environment, and socioeconomic status (SES).

A final argument for the criticality of teacher OC is the finding by Firestone and Rosenblum (1988) that teacher commitment and student commitment are mutually reinforcing constructs. Again, the authors mention the poorly thought out programs schools currently use to address teacher problems separately from student problems (i.e., reforms to professionalize teaching for teachers and dropout programs for students), when really the problem is one in the same. Low teacher commitment drags down student commitment, and vice versa. Burned out teachers with low levels of commitment treat their students with less sympathy and experience more stress and irritation from minor classroom disruptions (Firestone & Pennell, 1993). Further, these teachers spend less time preparing lesson plans that make learning fun (Farber, 1984). It is no wonder that students of these teachers have trouble maintaining their commitment.

In sum, teacher OC is a cornerstone for any reform effort poised to make a dent in the systemic challenges faced by American primary and secondary institutions. Not only does OC have positive associations with teacher performance, school performance, and teacher retention, but commitment is also fundamental to the willingness of teachers to take part in labor-intensive reform strategies that will consume their precious time and resources. It is precisely this set of committed teachers who tend to be more likely to participate and succeed in activities geared toward professional development (Noe & Schmitt, 1986; Smith

& Rowley, 2005). In the end, it is the schools that stand to benefit most by having an increasingly capable and stable teaching staff.

Antecedents of Organizational Commitment

Having established that teacher OC is an essential, if not the essential, piece behind legitimate school reform efforts, it is next necessary to identify ways to increase the OC of teachers. Dee et al. (2006) suggest that a wide variety of both individual and organizational characteristics factor into a given teacher's commitment level and many research efforts have been aimed at identifying these antecedents of OC (e.g., Allen & Meyer, 1990; DeCotiis & Summers, 1987; Mathieu & Zajac, 1990; Somech & Bogler, 2002; Steers, 1977).

Steers (1977) had initially theorized that personal characteristics (e.g., age, amount of education, need for achievement), job characteristics (e.g., task identity, opportunity to interact, feedback), and work experiences (e.g., group attitudes, organizational dependability) were the principal antecedents of OC. Together, these three categories of antecedents explained an average of about 57% of the variance in OC between the two samples in his study. Of the three, the strongest support was found for work experiences, a finding consistent with the work of Buchanan (1974) and Meyer and Allen (1991). Specifically, work experiences had the strongest influence on OC when they enhanced an employee's perceived comfort and feelings of competence within the organization. Adding to this model, Mowday et al. (1982) indicated the need for a fourth category, which considers the structural characteristics of the organization (e.g., decentralization).

The idea behind the above research is that properties of individuals and, more importantly, properties of the organization contribute to commitment. One of the premier studies demonstrating this phenomenon, albeit at a more general level, was Hackman and Oldham's (1980) job characteristics model (JCM). These authors investigated the effects of organizational characteristics on intrinsic motivation, work satisfaction, job performance, absenteeism, and turnover (and the JCM was later applied to OC, as well). The central premise of the JCM is that employees will attain desired levels of the above variables (e.g., work satisfaction) if they experience each of three psychological states deemed critical by the authors. The critical psychological states include experienced meaningfulness of the work, experienced responsibility for the outcomes of the work, and knowledge of the results of the work activities. These psychological states, in turn, were claimed to be produced by the presence of five "core" job dimensions: skill variety, task identity, task significance, autonomy, and feedback, with each having specific roles in positively shaping their respective psychological states (see Appendix D for a model of the theorized relationships).

Skill variety (the degree to which a job involves carrying out multiple activities that require the use of multiple skills and talents), task identity (the degree to which a job requires the completion of whole tasks that have visible outcomes), and task significance (the degree to which one identifies with his or her job and views it as important to society) combine multiplicatively to influence how meaningful an employee finds his/her job (i.e., sees it as worthwhile and valuable). Autonomy (the degree to which one is allowed freedom to operate and

use personal discretion in carrying out duties) contributes to experienced responsibility for outcomes of the work, or a sense of accountability. Lastly, feedback can come in two forms: from the job itself (wherein one's performance of the job in itself indicates the quality of his or her work) and from others (e.g., supervisors, coworkers, customers) who alert the employee to the level of his/her performance. In both cases, feedback contributes to knowledge of the actual results of the work activities (including how well one is performing).

Finally, the three psychological states (experienced meaningfulness of work, experienced responsibility for outcomes, and knowledge of the actual results) contribute to high quality work performance, high intrinsic motivation, high job satisfaction, and low absenteeism and turnover. Since its inception, the JCM has become a guide for redesigning work settings and time has also shown enriched jobs (those possessing each of the core job dimensions) to be useful in producing higher OC (Mathieu & Zajac, 1990; Steers, 1977). One last thing to note is that the model presupposes that the relationship between the core job dimensions and the critical psychological states, as well as the relationship between the critical psychological states and the personal and work outcomes, are moderated by employee growth need strength, or the desire of the employee to develop in his/her abilities and career. That is, the relationships between the job characteristics and the psychological states and the relationships between the psychological states and the desired work outcomes are stronger for employees who have high growth need strength and weaker for those with low growth need strength.

While an excellent starting place for research on the antecedents of OC for employees in general, Charters, Bogen, Dunlap, Harris, and Landry (1984) note that the above list of core job dimensions may not be sufficient for capturing the relationship between teaching work and OC. Teachers are unlike employees from other occupations in that they work in a flat organizational structure (i.e., not much room for promotion to other positions), their work is primarily with children and adolescents, they are physically isolated from working with other adults for the better part of the day, and they do not produce any routine output that allows their performance to be objectively evaluated. Furthermore, teachers may view their positions through different lenses at different points in their career, in which case the relationship between specific job components and OC may vary depending on a the number of years of experience a teacher has (Rosenholtz & Simpson, 1990). Rosenholtz and Simpson presuppose that novice teachers may be affected more by the school-level management of student behavior, whereas veteran teachers may be more affected by organizational conditions pertaining to the core tasks of instruction.

For these reasons, a number of researchers used Hackman and Oldham's (1980) model as a springboard to identify additional organizational factors believed to affect the OC of teachers. In addition to the job characteristics cited in the JCM, further workplace conditions identified as antecedents to commitment have been: participation in decision-making (Ingersoll, 2001; Riehl & Sipple, 1996; Weiss, 1999), opportunities to collaborate with colleagues (Klusman, Kunter, Trautwein, Lüdtke, & Baumert, 2008; Riehl & Sipple, 1996; Weiss,

1999), opportunities to learn and develop new skills (Rosenholtz, 1986; Rosenholtz & Simpson, 1990), administrative support (Ingersoll, 2001; Klusman et al., 2008; Riehl & Sipple, 1996; Rosenholtz & Simpson, 1990; Weiss, 1999), availability of resources (Weiss, 1999), effective student behavior management (Ingersoll, 2001; Klusman et al., 2008; Rosenholtz, 1986; Rosenholtz & Simpson, 1990), and having reasonable levels of managerial duties that do not interfere with the act of teaching (Rosenholtz, 1986).

When Ingersoll (2001) analyzed data from teachers' self-reports of satisfaction with several organizational variables, he found that each one-unit difference on the four-unit scale of satisfaction with administrative support was associated with a 23% difference in the odds of a teacher leaving the school; each one-unit difference on the four-unit scale of conflict and strife within the organization was associated with a 47% difference in the odds; and each one-unit difference on the six-unit participation in decision-making scale was associated with a 26% difference in the odds. Each of these associations strengthened substantially when looking at voluntary turnover rather than all types of turnover; for example, a one-unit difference in the scale regarding school conflict became associated with a dramatic 88% difference in the odds of voluntary departure from the school.

Firestone and Pennell (1993) incorporated much of the above research into a comprehensive teacher-oriented job characteristics model, focusing on the organizational characteristics most pertinent to the profession of teaching. The final list of job characteristics included skill variety, task identity, task

significance, autonomy, and feedback (per Hackman & Oldham, 1980), as well as participation in decision-making, opportunities for collaboration, learning opportunities, and institutional resources. Notably, the article omitted growth need strength as a moderator, mentioning that the variable has demonstrated poor utility moderating the relationship between work characteristics and various dependent variables in educational contexts.

The decision of Firestone and Pennell (1993) to consider only the organizational variables rather than the personality variables that contribute to OC fits well with the purpose of the present research project. While both personality and organizational variables play important roles in the development of OC, Rosenholtz (1989a) found that the design and management of work settings far exceeds the role of personal characteristics in terms of shaping the construct. In a later study by Rosenholtz and Simpson (1990), it was determined that organizational conditions account for 58% of the variance in commitment levels. In any case, outside of selection practices, schools have limited or no control over the psychological predispositions of its teachers and so measuring these types of personality variables does little good from an administrative or policy intervention standpoint (Louis, 1998). Conversely, workplace conditions can be effectively altered and research to date shows efforts to do so pay off in terms of increased commitment and reduced turnover (Loeb et al., 2005; Louis, 1998).

The ultimate purpose of this thesis is to examine the major workplace conditions that influence teacher OC and turnover that are also susceptible to alteration through school, district, or state policies. Cooley and Yovanoff (1996)

specify that teachers are faced with both “givens” and “alterables” in their careers. Teacher job demands, such as disciplining misbehaving pupils, are examples of givens, whereas alterables include (to an extent) things like job resources, how much administrative support is given, and the way the school is structured. Although the categorization of certain working conditions as givens or alterables will indeed vary from school to school, this thesis, following the outline presented by Firestone and Pennell (1993) covers those topics that are likely to be alterables in most schools. School structures, programs, and activities can be aimed at improving each of the following working conditions, which in turn, are theorized to be associated with increased OC and decreased teacher turnover.

Skill Variety

Although Firestone and Pennell (1993) mentioned the importance of skill variety, task identity, and job significance, the latter two variables are not quite as susceptible to manipulation as the former variable. That is, the nature of the tasks performed by a teacher are not wholly adaptable and the extent to which teachers carry them out from start to finish (task identity) and view the tasks as significantly impacting the lives of others is more or less a fixed part of the job, similar for all teaching professionals across different schools (Charters et al., 1984; Firestone & Pennell, 1993). Skill variety, on the other hand, can be manipulated with ease at the organizational level and has demonstrated a stronger link with OC than have task identity and job significance (Charters et al., 1984); skill variety is therefore the focus of this first section.

While skill variety is indeed important in the development of OC, it is essential to find the right balance. Too little skill variety tends to make work exceedingly routine and unfulfilling, leading to employees' perceptions that their work is oversimplified. Inevitably, employees who feel they are not given the opportunities to utilize their full set of "tools" in their job end up feeling less committed (Deci & Ryan, 1985); however, this is not to say that skill variety has no boundaries. A study by Scott-Ladd et al. (2006) showed that a requisite amount of skill variety was needed to motivate employees, but that too much skill variety can result in work overload and actually undermine performance, job satisfaction, and commitment. Extending this research to educational settings, Flores (2006) declared the importance of not overloading novice teachers with unnecessary tasks, because new teachers tend to be especially prone to feeling overwhelmed. Firestone and Pennell (1993) clarify that performing too many varied tasks and having to accomplish an unrealistic set of objectives leads to role strain and job overload, the feeling that one's job requires the performance of too many disparate, and even conflicting, acts. This role strain, in turn, is as detrimental to OC as is having too little skill variety in one's job (Dworkin, 1987).

Individual difference variables come into play with this antecedent more than any other, because teachers differ in the number of roles they would like to enact in their jobs (Firestone & Pennell, 1993). Most teachers can agree that more varied tasks are desired as long as they support rather than conflict with principal instructional activities (e.g., planning lessons, tailoring instructional approaches to students with different levels of understanding). Additionally, most teachers

welcome tasks related to enhancing the teaching profession in general, such as mentoring new teachers and revising curricula (Malen & Hart, 1987; Rosenholtz, 1987). Where the line needs to be drawn, then, is with additional tasks that take teachers out of the classroom (Rosenholtz & Smylie, 1984). An example of an activity that ignores desired skill variety and introduces job overload is requiring teachers to make portfolios of their work, a task teachers view as time-consuming and unnecessary, and a prime example of a task that detracts from time that could be better spent planning lessons or contributing in other ways to student learning. In sum, maximizing teacher OC requires meaningful teacher tasks or assignments that are related to helping advance student learning and are “neither too varied and complex nor too simplistic” (Firestone & Pennell, 1993).

Classroom Autonomy

A second antecedent to teacher OC is granting teachers autonomy over their classrooms (e.g., DeCottiis & Summers, 1987; Dee et al., 2006; Pearson & Moomaw, 2006; Rosenholtz, 1989a; Rosenholtz & Simpson, 1990; Steers, 1977). Hackman and Oldham (1980) defined autonomy as “the extent to which work provides substantial freedom, independence, and discretion to carry out tasks.” Pearson and Moomaw (2006) divided teacher autonomy into two factors: (a) general teaching autonomy, which consists of a teacher’s personal on-the-job decision making and freedom to declare classroom standards of conduct, and (b) curriculum autonomy, which consists of a teacher’s freedom to choose activities and materials for class, as well as how to sequence them.

Teachers desire to obtain the level of autonomy that is given to other professionals, such as doctors and lawyers (Rosenholtz & Simpson, 1990). Just as doctors and lawyers are able to use their judgment in addressing patients and clients, respectively, teachers should be allowed leeway in their decisions regarding their students. For instance, administrators must allow teachers the freedom to adapt teaching strategies to the various learning needs of their students (Rosenholtz, 1989b). Doing so is thought to lead to better curricular and pedagogical decisions and also to improved learning among students (Dee et al., 2006). In addition, allowing teachers to run their classrooms as they see fit makes them feel as though their administrators trust, respect, and value them, and have confidence in their abilities (Littrell, Billingsley, & Cross, 1994; Rosenholtz & Simpson, 1990).

Studies have shown that teacher autonomy results in teachers who report higher levels of job satisfaction and internal motivation to perform their teaching duties and in higher-achieving students (Dee et al., 2006; Rosenholtz, 1989b). Furthermore, teachers who are not restrained from performing their job as they see fit have greater reverence toward their schools and, therefore, develop more OC (Dee et al., 2006). In contrast, OC is lower among teachers who feel suffocated by rules and regulations that restrict their behaviors and provide burdensome amounts of teacher supervision (DeCotiis & Summers, 1987). Academically talented teachers tend to be the most affected by this lack of self-determination, and will often flee to jobs that treat them with a more professional demeanor (Rosenholtz, 1989a).

Along the lines of the JCM, autonomy in the job contributes to commitment through experienced responsibility for the outcomes of work, or the sense that one is the causal agent of his or her personal performance (Rosenholtz & Simpson, 1990). This allows teachers to take ownership of their work and to derive intrinsic rewards that drive them to continue successful practices and alter or discontinue unsuccessful ones (Deci & Ryan, 1985). It also leads to performance efficacy, the belief that one can control his/her performance level by exercising proper judgment and choice. By taking responsibility for their performance, teachers can see how their personal successes are of value to the school and aid in carrying out its goals, feelings that are fertile ground for OC (Firestone & Pennell, 1993).

Conversely, teachers whose actions are controlled by their administrators' orders feel less invested in their work, less accountable for the results of their behaviors, and, subsequently, less committed to the organization (Firestone & Pennell, 1993). Reduced autonomy also contributes to teacher burnout, which is defined as a syndrome of exhaustion and cynicism toward teaching, and is a major factor driving turnover (Hakanen, Bakker, & Schaufeli, 2006; LeCompte & Dworkin, 1991). It is not surprising then, that teachers in highly regulated schools often cite their lack of autonomy as a reason for their dissatisfaction, absenteeism, and turnover (Dee et al., 2006; Rosenholtz, 1989) and that reform efforts centered around administrative control have historically been short-lived and ineffective (Firestone & Bader, 1992).

Finally, a caveat to note is that Firestone and Pennell (1993) reported that not all studies have found a positive association between autonomy and OC in educational settings; however, this is likely due to the way teacher autonomy has evolved. Two conceptualizations of autonomy have emerged: autonomy can occur through isolation and extreme independence (i.e., individualistic autonomy), or it can occur through collaborative decision-making and the latitude to use professional judgment in day-to-day activities (i.e., collectivistic autonomy) (Dee et al., 2006; Firestone & Pennell, 1993; Pearson & Moomaw, 2006). Only the latter form has been found to strengthen bonds with the organization that breed OC (Firestone & Pennell, 1993). Teachers comprising the former group, on the other hand, typically make conscious efforts to alienate themselves as a last-ditch effort to keep their autonomy sacred from policies aimed at stripping it away. While they may still be committed to the profession and to their students, they no longer possess commitment to the organization (Firestone & Pennell, 1993). The key distinction is that individuals fueled by collectivistic autonomy are still connected to the administration and their peers and are concerned with the advancement of the school's mission.

Participation in Decision-Making

The third antecedent necessary for garnering teacher OC is to give teachers a hand in shaping decisions that affect their schools and districts. Organizational decision-making is often considered by researchers to be a good gauge for understanding the behavior and performance of organizational members (Richardson, 2001). It has even been described as “the life process of an

organization, just as respiration is a physical life process. If the process fails, the very survival of the organization is threatened” (Szilagyι & Wallace, 1987).

Knoop (1995) defines participation in decision-making (PDM) as “sharing decision-making with others to achieve organizational objectives.” This construct is quite similar in nature to autonomy, as both describe the level of influence teachers have over decisions, but the two terms differ with regard to the context of the decisions (Firestone & Pennell, 1993). Autonomy involves operational influence, or input into decisions affecting one’s own classroom (e.g., how to teach and manage the students in one’s classroom). PDM, on the other hand, involves strategic influence, or input surrounding decisions that impinge upon multiple classrooms, the entire school, or even the school district, which have traditionally been addressed by administrators, school boards, and state policy (Bacharach & Conley, 1989; Firestone & Pennell, 1993).

Liu (2007) identified seven areas in which teachers can exert their PDM: (1) setting performance standards; (2) establishing curriculum; (3) determining professional development programs; (4) evaluating teachers; (5) hiring decisions regarding new full-time teachers; (6) setting discipline policy; and (7) deciding on school budget. Using rigorous statistical analyses (hierarchical linear modeling) on a nationally representative sample, Liu found support for his theory that an increase in PDM would result in a decrease in first-year teacher turnover rates. In the study, teachers who perceived they had low influence over school policy had a first-year attrition rate of 0.19, compared to an attrition rate of a mere 0.04 among teachers who perceived high levels of PDM. On average, teachers felt their level

of PDM was slightly below the middle point of the scale (i.e., 2.58 versus 3). Furthermore, across each of the 7 PDM domains, teachers staying in their jobs reported the highest levels, with teacher movers reporting the second-highest levels, and teacher leavers reporting the lowest levels of influence. The article's conclusion is that providing first-year teachers with more PDM will keep retention rates higher.

Proponents of teacher PDM oppose the centralized structure of schools, in which decisions are left to the aforementioned administrators, school boards, and state policy, and teachers are denied any voice in the governance of their schools. Instead, these proponents support forms of school- or site-based management (SBM) that flatten the administrative structure found in most public schools and put the impetus on both teachers and administrators to collaborate and reach a consensus on decisions related to the school's budget, personnel, and curriculum (e.g., Reyes, 1989; Richardson, 2001). David (1988) cites seven advantages of SBM: (1) it allows competent individuals in the schools to make decisions that will improve learning; (2) it gives the entire school community a voice in key decisions; (3) it focuses on accountability for decisions; (4) it leads to greater creativity in the design of programs; (5) it redirects resources to support the goal developed in the school; (6) it leads to realistic budgeting as more stakeholders become aware of the school's financial status, spending limitations, and the cost of its programs; and (7) it improves the morale of teachers and nurtures new leadership at all levels.

Because there are so many benefits of PDM for schools and teachers alike, Dee et al. (2006) put forth two types of strategies for increasing teacher PDM. Related to SBM, schools could develop governance teams that congregate to develop and enforce budgets, set student achievement goals, and design long-term plans for the overall school mission. By giving teachers a voice in shaping the policies and procedures with which they are forced to work, administrators find that their school's teachers identify more strongly with school goals and become more committed to their realization (Mowday et al., 1982). In addition to school governance teams, Dee et al. (2006) mentioned the need for curriculum development teams, whose purpose would be to examine and revise current teaching methods and content, choosing which textbooks should be used and ensuring that teaching strategies fit into the school's mission. Although both sets of teams would be important, it seems that teachers care more about contributing to decisions that affect issues related to instruction and learning rather than managerial aspects of the school (Dee et al., 2006; McGrevin, 1984; Smylie, 1992).

While teachers are more supportive of decisions that are reached collaboratively, not all teachers want to take time out of their day to contribute to these efforts (Richardson, 2001). Particularly in instances where teachers are experiencing work overload from too much skill variety, they may not show interest in taking on new responsibilities and attending additional meetings (Firestone & Pennell, 1993). Furthermore, there appears to be an interaction between career orientation and the OC derived from PDM, such that workers who

want to make a career out of their current job seem to benefit from additional PDM, but those who view their job as a temporary position do not (Wright, 1990). Therefore, across the board increases in PDM are not recommended; rather, PDM should be offered according to teacher preferences (Park, 2005). Alutto and Belasco (1973) suggested assessing whether teachers feel their school is decision saturated (i.e., it involves teachers in too many decisions), decision equilibrated (i.e., it involves teachers in a suitable number of decisions), or decision deprived (i.e., it involves teachers in too few decisions). At the minimum, teachers should have the impression that, if an issue arose in which they wanted to have their voices heard concerning a specific policy, that a mechanism is in place for doing so (Allen, Shore, & Griffeth, 2003).

Be that as it may, most teachers do desire more influence in decision-making, and research has generally supported a link between PDM and OC (Firestone & Pennell, 1993; Hackman & Oldham, 1980; Mathieu & Zajac, 1990; Meyer & Allen, 1997; Park, 2005; Scott-Ladd et al., 2006), especially after controlling for student variables (Kushman, 1992), and this relationship is not moderated by teacher characteristics (i.e., age, sex, teaching experience) (McGrevin, 1984). Theoretically, increases in PDM are associated with increases in OC because teachers develop a shared vision of school goals and values by contributing to them along with others in the organization. This personal sense of ownership, similar to that observed from autonomy, enhances felt identity with the job and commitment to the organization (Scott-Ladd et al., 2006). Ability to have one's voice heard also results in perceived organizational support, which

contributes not only positively to OC and positively to job satisfaction, but also negatively to turnover (Allen et al., 2003). Finally, PDM has shown relationships with teacher empowerment (Dee et al., 2006; Richardson, 2001), teacher self-efficacy (Firestone & Pennell, 1993), and concomitant student achievement (Park, 2005).

Again, it is in order to list some caveats when attempting to increase teacher PDM. First, teachers end up becoming discouraged rather than committed if their suggestions are not acted upon or taken seriously (Firestone & Pennell, 1993). Second, even when proposals put forward by teachers are taken into account, commitment may not follow if the results of the proposals are negative; instead, teachers and administrators may try to pin the blame on one another, although this can be avoided through strong leadership. Third, and also related to leadership, some administrators may find it difficult to share their leadership roles with teachers (Kushman, 1992; Richardson, 2001). A fourth and final caveat is that, once teachers are involved, they must be given clear instructions on what is expected of them; otherwise, they will become frustrated by the additional, vague responsibilities of PDM. Nonetheless, PDM appears to be an ideal candidate for increasing teacher OC.

Feedback

Returning to one of the original job characteristics from Hackman and Oldham's (1980) JCM, feedback has profound implications for the OC of teachers. The purpose of feedback is to give teachers knowledge of their performance (i.e., competence cues), without which they would not be able to

improve (Hackman & Oldham, 1980). In addition, feedback can serve as a type of psychic reward when it indicates positive performance, providing teachers with a sense of the value they contribute to the school (Rosenholtz, 1989b).

Withholding feedback (particularly positive feedback), on the other hand, prevents teachers from feeling valued and, thus, valuable, and denies teachers access to explicit standards of acceptable performance (Littrell et al., 1994; Rosenholtz & Simpson, 1990).

Feedback in educational settings can take many forms, some which are clearly more effective than others. The most basic and the most well-received source of feedback is that which comes from personal observations of one's students' behavior and performance, and the teacher-pupil exchanges that accompany these observations (Rosenholtz, 1989b; Rosenholtz & Simpson, 1990). Self-administered feedback of this type exhibits the strongest association with OC (Firestone & Pennell, 1993; Ivancevich & McMahon, 1982) and is typically preferred over other types of feedback more external in nature (e.g., evaluation by a supervisor). Not all direct feedback from student performance builds teacher commitment, however; for example, student standardized test scores actually do more to alienate teachers than to motivate them, due to the external standards that accompany them (Rosenholtz, 1987). Teachers therefore report seeing these scores as a form of public control that limits their instructional autonomy (Johnson, 1990).

Although self-administered feedback is generally preferred, teachers must have other sources of feedback to alert them of their strengths and weaknesses,

and to give them helpful suggestions for improvement (Rosenholtz, 1986). An overlooked type of feedback which is strongly related to commitment is that which comes from a teacher's colleagues (Louis, 1998). Teachers desire meaningful, non-evaluative feedback from others who identify with and understand their role in the school and the contributions that they make to the organization (Rosenholtz & Simpson, 1990). In fact, teachers often seek out this type of external recognition and many report they would like to have more feedback from peers than they are currently receiving (Firestone & Pennell, 1993). Instances include visiting one another's classrooms and providing encouragement as well as occasional suggestions for improvement (Louis, 1998). Many teachers often complain that the only peer feedback they get involves information about troubled students; obviously, they would welcome more substantive feedback pertaining to their own instruction (Firestone & Pennell, 1993). Rosenholtz (1989b) notes that more frequent sharing of ideas and practices can result in improved teacher performance.

Finally, feedback that comes from supervisors, if administered meaningfully, can be useful to boost teachers' OC (Louis, 1998). Like feedback from colleagues, teachers report that they would like to receive more feedback from principals and others in administrative positions (Firestone & Pennell, 1993). Meanwhile, they consider the feedback they do report receiving to be useless. Common explanations for the inadequacy of administrative feedback are that it occurs too infrequently to affect teacher practices, it is given by sources who do not fully understand a teacher's job, it focuses around unimportant or

nitpicky details, and it is derived from infrequent and/or superficial observations (Johnson, 1990). What is worse, it tends to carry an evaluative and controlling tone that makes teachers feel they are being judged rather than given information they can use to improve (Kohn, 2003). Even positive feedback, when administered in a controlling manner, undermines a teacher's intrinsic motivation to perform his or her job (Deci, Koestner, & Ryan, 1999). This is explained by Cognitive Evaluation Theory, which states that intrinsic motivation is driven by feelings of autonomy and competence. Informative feedback increases these feelings (as well as intrinsic motivation), while feedback that is perceived as controlling actually diminishes felt autonomy and competence, lowering intrinsic motivation (Deci et al., 1999).

Similar to informal feedback that is evaluative, formal performance appraisals, when they occur, tend to be unrelated or negatively related to OC, because they often classify teachers who expect to be rated as outstanding as satisfactory, typically without giving a rationale for the lower-than-expected rating (Pearce & Porter, 1986). This is not to say that feedback must always be positive, but it does imply that negative feedback should always be accompanied by reassurance that flawed behaviors can be corrected and by identifying several suggestions to improve performance (Baron, 1988). Too often criticism is administered when a supervisor is fed up and, therefore, unable to hold his or her temper in check. Employees are left with harsh feelings toward the supervisor and the organization, lower motivation to perform the job, and lowered OC (Baron, 1988). Therefore, Baron recommends criticism should always be

delivered promptly after poor performance occurs and it should be specific, considerate, and should not attribute the poor performance to internal causes (i.e., employees can improve by incorporating helpful suggestions into their routines).

Despite there being numerous pitfalls for a principal delivering feedback, principals remain instrumental sources of encouragement to teachers when they acknowledge their efforts (Rosenholtz, 1989b). Additionally, principals are relied upon to clearly delineate school values and goals that teachers can strive to meet, as well as improvement goals for when performance comes up short (Rosenholtz, 1986, 1989b). In fact, goal-setting has been shown to add to the OC and satisfaction that are derived from quality feedback (Tziner & Latham, 1989). In setting goals for their teaching staff, principals identify ideal behaviors and standards of performance that teachers should try to achieve. Once goals are set, teachers are aware of the established standards of performance and can evaluate their own performance accordingly, using the aforementioned self-administered feedback that is so desirable (Littrell et al., 1994). Meanwhile, however, principals should also monitor how teachers are coming along in their goals and be available and poised to offer assistance when needed (Rosenholtz, 1986).

In summary, feedback is necessary in educational settings, and certain types of feedback display strong positive relationships with teacher OC (Ivancevich & McMahon, 1982; Louis, 1998; Rosenholtz, 1989b). Feedback is also necessary for keeping teachers intrinsically motivated in their jobs (Hackman & Oldham, 1980) and external recognition from principals, colleagues, and parents serves as a type of psychic reward for teachers (Deci et al., 1999;

Rosenholtz, 1989b). Firestone and Pennell (1993) comment that, while the effects of feedback are positive, they become more and more unpredictable the further away the feedback is from being self-administered (i.e., derived from personal experiences with students). Peer and principal feedback can be hit or miss, depending on its extent of information versus evaluation; as it becomes more evaluative, it loses its value to teachers and they, in return, lose value in their commitment to the school. On the other hand, feedback that is clear, frequent, and objective tends to be a hallmark of academically successful schools that are renowned for their teaching strategies and student learning (Rosenholtz, 1986, 1989b).

Collaboration

Collaboration in school settings is defined as two or more teachers working together on a task (Firestone & Pennell, 1993). Tasks that are ripe for collaboration include the development of curricula, the planning and implementation of school programs, the mentoring or coaching of new teachers, and the teaching of classes in teams of two or more. Schools fare better when teaching is viewed as a collective rather than an individual enterprise (Campo, 1993; Rosenholtz, 1986). Collaboration is partially effective because it incorporates elements of feedback, but also because it keeps teachers engaged in professional dialogue with one another and connected to school goals (Firestone & Pennell, 1993; Rosenholtz, 1986). Isolated teachers are left to succeed and fail within the confines of their individual classrooms, believing that their struggles are unique and unsolvable (Campo, 1993; Rosenholtz, 1989b; Shakrani, 2008).

Teachers who work collaboratively learn new techniques from one another and contribute to a collegial atmosphere within the school, where teachers are not afraid to ask for help or assistance (Firestone & Pennell, 1993; Flores, 2006; Rosenholtz, 1986). This type of atmosphere can be especially important for teachers who are new to the profession, and who stand to gain from the experience of others (Johnson, 1990; Shakrani, 2008). Rather than being forced to learn by trial-and-error, collaboration with experienced teachers allows novices to bypass failed strategies and sink their teeth into good ones, which results in higher morale, stronger OC, and lower turnover intentions among first-year teachers (Rosenholtz, 1989b; Shakrani, 2008; Weiss, 1999). Without being briefed on specific aspects of instruction, discipline, and other school-specific items, first-year teachers tend to experience “reality shock,” as idealistic views of teaching give way to the reality of potentially unruly students whose behavior must be dealt with prior to being able to present material effectively. If teachers are forced to go it alone, they tend to become frustrated, mistrust their students, and engage in punitive actions, such as excessive discipline; each of these tendencies are negatively correlated with effective instruction and positively correlated with turnover (Firestone & Pennell, 1993; Rosenholtz, 1986).

Importantly, research has shown the criticality of providing first-year teachers with an induction program orienting them to the school, followed by mentoring from like-minded veterans in the same teaching discipline (Dodds, 2005; Shakrani, 2008; Smith & Ingersoll, 2004). Not only does this aid in teachers’ socialization processes, but the support they receive also enhances their

self-efficacy and reduces job-related confusion and uncertainty through powerful learning opportunities (Dodds, 2005; Johnson, 1990). Dodds (2005) also shows that mentoring increases job satisfaction and OC and is associated with numerous indicators of success, including higher salaries and better performance ratings. Unfortunately, schools in the U.S. have much lower rates of induction and mentoring programs than many higher performing school systems in Europe and Asia (Shakrani, 2008).

Although collaboration is most essential to the development of new teachers, it appears to have strong effects for teachers at all stages of their careers. Collaborative cultures are important to a school's performance, and should be a part of any reform movement seeking to improve school effectiveness and sustain positive changes (Campo, 1993; Kugelmass, 2001; Shakrani, 2008). Campo (1993) found that successful schools outperform unsuccessful schools in terms of teacher talk ("frequent, continuous and increasingly concrete talk about teaching practice"), joint planning, teacher observation and teacher teaching.

One popular strategy for maximizing collaboration (and OC) is to use team teaching, which involves small groups (including dyads) of teachers teaching a single classroom as a unit (Dee et al., 2006). Teams often outperform individuals in instructionally related skills and activities, as they are able to collectively interpret situations and share ideas (Dee et al., 2006; Rosenholtz, 1986). Using teams in classrooms has also been shown to reinvigorate schools by injecting new ideas and practices into an overly routine and conventional system (Park et al., 2005). Rather than force collaboration on teachers, though,

Dee et al. (2006) found it is best when teams emerge spontaneously through teachers' unique efforts and interests. Resulting teams are characterized by high levels of trust, commitment, and interconnectedness that contribute to creative new forms of instruction related to improved teacher and student outcomes (Dee et al., 2006; Park et al., 2005). Finally, findings by Somech (2005) provide support for the notion of team teaching by showing that teachers' performance benefits from the joint effects of personal empowerment and team empowerment, and, that even when personal empowerment is low, having high team empowerment is enough to result in teacher OC.

In conclusion, collaboration among teachers has been shown numerous times to be an antecedent of teacher OC (Dee et al., 2006; Heffner & Rentsch, 2001). Reasons for this relationship are that it enhances affiliation with organizational members, makes work more meaningful, and increases felt responsibility for and ownership of actions that were collaboratively decided (Dee et al., 2006; Firestone & Pennell, 1993; Louis, 1998). Similar to other positive working conditions, collaborative settings are perceived as a type of psychic reward by teachers, and are thus a strong source of motivation to perform (Firestone & Pennell, 1993; Rosenholtz, 1989a). In a study of 19 New Jersey public schools, Hansen and Corcoran (1989) found that high collaboration was an element that characterized the schools that had the most positive teacher attitudes and behaviors. Aside from the important benefits to OC, then, teachers who work collaboratively perform their jobs better, enjoy them more, and develop

appreciation and respect for their colleagues and schools (Kugelmass, 2001; Rosenholtz, 1989b).

Learning Opportunities

Another working condition not originally a part of the JCM but vital to teacher OC is the opportunity to engage in continuous learning (Hakanen et al., 2006; Louis, 1998; Rosenholtz, 1989b). Firestone and Pennell (1993) define learning opportunities as those formal learning-oriented experiences aimed toward professional development, including workshops, college courses, and networking events with teachers from various school districts. Rosenholtz (1989a) found learning opportunities to be among the few variables directly related to commitment. Similarly, the ability to “develop and use skills” topped Louis’ (1998) list of variables most strongly related to teacher commitment and Rosenholtz (1989b) found that school districts with more committed teachers provided them with a greater number of learning opportunities.

Opportunities to develop one’s professional skills have been known to be important prerequisites to OC in service-oriented vocations, such as nursing (Bartlett, 2001; Gould & Fontenla, 2006; Kirsch, 1990; Kontoghiorghes & Bryant, 2004). While there are only a scarce number of studies relating learning opportunities to teacher OC, teachers often report a desire to learn new teaching methods and to enhance their skills in order to be more effective in the classroom (Rosenholtz, 1986). Despite this, many teachers feel caught in a trap of monotony, since there is no room for promotion and their day-to-day routines can become tedious, resulting in professional stagnation (Louis, 1998; Rosenholtz,

1986, 1989b). Professional development opportunities offer new challenges that can help increase skill variety so that teachers can break through the monotony and gain a newfound sense of accomplishment (Hackman & Oldham, 1980; Rosenholtz, 1987).

Meanwhile, it is clear that a lack of learning opportunities can be devastating to a school. Teachers who are obligated to use the same instructional practices year after year lose their motivation for teaching and fail to engage their students in learning (Rosenholtz, 1987, 1989b). Additionally, teachers often cite their lack of opportunities for professional growth as a reason for chronic absenteeism and eventual turnover (Rosenholtz, 1987, 1989b). If unsatisfied teachers do not have any means for gaining new skills, they lose hope that improvements to their career are possible (Loeb et al., 2005). Professional development opportunities send the message that the struggles teachers encounter are normal and can be mended, and that teachers can acquire the requisite skills needed for improving their classroom effectiveness (Rosenholtz & Simpson, 1990).

In terms of theory, learning opportunities appear to be related to commitment through their impact on expanding the meaningfulness and professional stature of work, as well as through teachers' improved knowledge and subsequent self-efficacy and confidence (Firestone & Pennell, 1993; Rosenholtz & Simpson, 1990). Like team teaching, learning opportunities also tend to break the monotonous routine of conventional teaching, adding an element of enthusiasm that can serve as a psychic reward and add significance to one's

work through enhanced skill variety (Firestone & Pennell, 1993; Rosenholtz, 1986, 1987; Rosenholtz & Simpson, 1990). In the end, teachers are not the sole beneficiaries of policies that encourage continuous learning; organizations gain a well-trained, highly competent teaching staff that is committed to the organization, performs exceptionally, and is unlikely to leave.

Resources

The seventh and final antecedent of teacher OC to be examined in this thesis relates to the resources that teachers have available to them within their schools. Firestone and Pennell (1993) define work resources as “the material and institutional means through which teachers are able to accomplish their tasks and experience intrinsic rewards.” These types of resources are directly tied to a teacher’s ability to perform his or her job and include an orderly environment, administrative support, adequate physical conditions, instructional resources, and reasonable workloads. Having inadequate levels of these resources creates a constant drain on a teacher’s experience of his/her job, and contribute to withdrawal behaviors, turnover, reduced motivation, and reduced OC (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007). Conversely, Maddox (1997) found that schools are better able to retain their teaching staff when they do a good job enforcing discipline policies, provide a supportive administrative staff and well-maintained facilities, and make teachers feel empowered, valued, and safe.

Hakanen et al. (2006) developed the Job Demands-Resources Model to demonstrate that two parallel processes influence teacher well-being. There is an

energetical process, in which job demands lead to burnout, which leads to health issues. There is also a motivational process, in which job resources lead to work engagement, which leads to OC. The authors used structural equation modeling to demonstrate that these two processes indeed exist, and also confirmed that having inadequate resources leads to low work engagement and OC through burnout.

Although the list of job demands and job resources used by Hakanen et al. (2006) differed slightly from the five resources that are listed in this study, the general concepts can be grouped under the same basic set of definitions used in that study. Job demands “refer to those physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (i.e., cognitive or emotional) effort and are therefore associated with certain physiological and/or psychological costs.” Workload and pupil misconduct (which is one part of an orderly environment) fall into this category.

Job resources, on the other hand, “refer to those physical, psychological, social, or organizational aspects of the job that may (1) reduce job demands and the associated physiological and psychological costs, (2) are functional in achieving work goals, and (3) stimulate personal growth, learning, and development (Hakanen et al., 2006).” Administrative support, adequate physical conditions of schools, and adequate instructional resources can be lumped into this category. Job resources are needed as buffers to prevent teacher demands from taking their negative toll and they are especially needed in schools that are

struggling with extreme student behavior and teacher turnover problems (Bakker et al., 2007).

Orderly environments. For teachers to engage effectively in the core tasks of instruction, they must first be surrounded by environments conducive to teaching (Rosenholtz & Simpson, 1990). Shaw and Reyes (1992) comment that schools have different “feels” to them, and they provide examples of schools that are run like a tight ship, an assembly line, or a prison. Orderly school climates have been associated with increased teacher commitment (Kushman, 1992; Riehl & Sipple, 1996; Rosenholtz & Simpson, 1990). Conversely, teachers in high-turnover districts have frequently complained of a lack of student motivation and discipline (Loeb et al., 2005). Students who repeatedly misbehave contribute to teacher stress at least as much as does a teacher’s workload (Hakanen et al., 2006). Teachers in these types of settings report more emotional exhaustion and burnout symptoms at the end of the school-year than do teachers whose students are well-behaved (Burke, Greenglass, & Schwarzer, 1996; Klusman et al., 2008).

That is, teachers and schools fare better when excessive time does not have to be spent controlling student behavior (Firestone & Pennell, 1993). In schools where student misbehavior is a problem, the time spent mediating disputes cuts into time spent teaching, and classroom goals become oriented around keeping the classroom civil rather than on advancing student knowledge (Rosenholtz, 1989a; Rosenholtz & Simpson, 1990). In addition to teachers finding it frustrating to spend much of their time and effort settling disputes, breaking up fights, and keeping students on-task, it is also detrimental to their

ability to engage students in learning (Firestone & Rosenblum, 1988). It is this demoralization that detracts from commitment and contributes to burnout and turnover.

Reasonable workloads. A teacher's total workload is determined by the summation of teaching-related and non-teaching-related work requirements. Teaching workload is based on the number of courses taught, how many sections of each course are offered, the proportion of those courses that fall under the umbrella of the teacher's subject area of expertise, the size of each class, and the average achievement level of the students in those classes (Firestone & Pennell, 1993; Riehl & Sipple, 1996). Non-teaching workload consists of extraneous duties, such as hall monitoring, patrolling during lunch periods, supervising bus loading, and related activities (Johnson, 1990). If the total workload is too high, teachers are unable to spend as much time as they would like on the intrinsically rewarding acts relating to instruction that help students learn and achieve (Firestone & Pennell, 1993; Rosenholtz & Simpson, 1990). This detracts from the perceived meaningfulness of tasks and damages teacher OC (Riehl & Sipple, 1996).

Extreme cognitive and emotional workloads can also be detrimental to health (through stress and anxiety), work engagement (through burnout), and performance (Hakanen et al., 2006). The performance and commitment of young teachers is most likely to be jeopardized by this variable, as schools tend to lump problem students together and assign them to new teachers, who already run a greater risk of defection (Rosenholtz & Simpson, 1990). Low-turnover schools

may do a better job distributing students among teachers and keeping class sizes reasonable (Loeb et al., 2005).

Administrative support. Administrative support is an important component in maintaining an orderly school environment, and Firestone and Pennell (1993) define it in terms of principals clearly outlining roles and expectations of organizational members, consistently enforcing rules, and assuring fairness across all aspects of work. Teachers expect principals to treat them with respect and provide them with the resources needed to perform their jobs effectively and to protect them against unnecessary burdens and extraneous duties (Firestone & Pennell, 1993; Louis, 1998; Riehl & Sipple, 1996). Teachers who perceive support from higher ups become more dedicated and engaged in their work (Hakanen et al., 2006; Klusman et al., 2008), believe in their performance and perform at higher levels (Epps, 2006; Hogenson, 2002; Mowday et al., 1982; Rosenholtz & Simpson, 1990), and develop stronger commitment to the goals of the organization (Hakanen et al., 2006; Meador, 2002; Riehl & Sipple, 1996). The connection to OC appears to be through enhanced meaningfulness of work that contributes to effort and commitment (Littrell et al., 1994).

Littrell et al. (1994) broke administrative support down into four dimensions. Although each type of support is related in the desired direction to job satisfaction, OC, and stress/health problems, teachers rank their importance in the following order: emotional support, appraisal support, instrumental support, and informational support. Emotional support consists of administrators showing

their appreciation of and respect for teachers, and is demonstrated by communicating frequently and openly with them, encouraging their efforts, and listening to their suggestions. Appraisal support involves providing useful feedback according to the best practices identified earlier, which include outlining guidelines and expectations of performance. The third type, instrumental support, is provided by assisting teachers in their roles by giving them required materials, space, time, and other resources for accomplishing their work. Finally, informational support occurs when principals give helpful suggestions for improving instruction and classroom control. While informational support holds the lowest relative importance, Littrell et al. (1994) found that this was the type of support most commonly received. Regardless, some support is better than no support, as no support results in teachers who feel frustrated, unimportant, and poorly understood (Littrell et al., 1994; Loeb et al., 2005).

Adequate physical conditions. Arguably the principal resource that is directly tied to money, adequate physical conditions are necessary for garnering OC from teachers. Firestone and Pennell (1993) defined this resource as providing teachers with well-maintained facilities that have adequate space for teaching. It is distracting for teachers and students to work in settings that are poorly maintained (e.g., leaks in the ceiling, faulty locks, poor heating/air circulation, desks with extreme wear and tear). Not only do these annoyances take the focus away from learning, but they make those who attend the school feel unimportant (Firestone & Pennell, 1993). Although there is a paucity of studies looking directly at this variable, it is common knowledge that the quality of

physical conditions varies drastically from school to school. Moreover, it is clear that the schools that fare better in these regards house teachers and students who are more satisfied with their roles in the school (Firestone & Rosenblum, 1988).

Adequate instructional resources. Similar to adequate physical conditions of school buildings, providing classrooms with adequate instructional resources also comes down to funding and varies from district to district (Loeb et al., 2005). Instructional resources include things like textbooks, dictionaries, science materials, blackboards, computers, and writing utensils, and many teachers (particularly those in urban settings) report inadequate supplies of these resources (Corcoran, Walker, & White, 1988; Firestone & Rosenblum, 1988). In fact, Johnson (1990) states that “part of learning to teach is learning to do without.” Sentiments along these lines are felt by teachers across the country, many of who face burnout from constantly having to figure out ways to work around the system to get the teaching supplies they need (Hakanen et al., 2006; Hansen & Corcoran, 1989).

Burned out teachers are less engaged in teaching, less committed to the organization, and more likely to quit their jobs (Hakanen et al., 2006). In fact, Loeb et al. (2005) found a lack of instructional resources can predict turnover, while Theobald and Gritz (1996) found that male teachers are less likely to move to a different school if their district provides them with all the necessary materials for teaching. Therefore, schools with better resources available are more able to retain their teaching staff, which, in turn, responds positively to acquiring the supplies they need to perform without major hassles that take time away from

instruction. The bottom line is that teachers are increasingly expected to do more with less, in spite of greater criticism and less support and respect (Epps, 2006). This is far from a promising trend and bodes poorly for teacher commitment and the plight of teacher turnover.

Positive teacher-pupil interactions. A final point to mention frames the teaching dilemma in a more optimistic light. An e-mail exchange with Jari Hakanen, who interviewed hundreds of teachers in Finland, revealed that positive teacher-pupil interactions are the ultimate resource to keep teachers motivated and committed (Bakker et al., 2007; Hakanen et al., 2006; Rosenholtz, 1989b). Experiences in which teachers get to witness their students succeeding, exerting effort, and turning their behavior around are the greatest sources of inspiration for teachers, since, after all, these are typically the reasons why teachers enter the profession in the first place (Rosenholtz, 1989b; Rosenholtz & Simpson, 1990).

Bakker et al. (2007) stress the importance of reciprocity in the teacher-pupil relationship. When teachers put in considerably more than they get out (from inattentive, disrespectful, and lackadaisical students), they become prone to burnout and defection. On the other hand, when students return a teacher's investment of enthusiasm and effort and become engaged in learning, the teacher becomes invigorated by the circumstances and finds the work extremely meaningful. As discussed previously, viewing one's work as meaningful is a strong antecedent of OC (Hackman & Oldham, 1980; Rosenholtz, 1989b).

Overlap Among Variables

A note of clarification with regard to the present investigation is that the relationships between skill variety, autonomy, PDM, feedback, collaboration, learning opportunities, and resources with teacher OC are not proposed to be completely independent of one another. In contrast, there is expected to be considerable overlap and shared variance between certain variables. Empirical support for job characteristics that may be interrelated will be discussed briefly before expressing the hypotheses of this study.

Autonomy is an important antecedent for OC, but Firestone and Pennell (1993) clarify that this relationship only exists if teachers maintain some form of collaboration with their colleagues; isolated autonomy does little to contribute to OC. In addition, Charters et al. (1984) point out that autonomy may be less critical if other antecedents, such as PDM, are satisfactory. Likewise, it has been argued that PDM may be conducive to OC because of its natural effect of increasing collaboration and collegiality among teachers (Campo, 1993; Wallace, 1995). Also related to PDM, Smylie (1992) found that teachers are most willing to participate in decisions affecting the school when they feel the presence of administrative support, however, teachers may be reluctant to participate if their workloads are too burdensome and they have little energy or time available to take part in additional meetings (Firestone & Pennell, 1993).

Feedback shares its relationship to OC with other variables as well. Deci and Ryan (1985) found that feedback only carries weight in fostering OC if workers also have the necessary amount of autonomy in their jobs. If teachers'

actions are determined by school stakeholders other than themselves, then feedback is not perceived as meaningful and will not motivate teachers' efforts (Firestone & Pennell, 1993). There is also some evidence for other job characteristics mediating the relationship between feedback and OC because receiving quality feedback enhances feelings of collegiality among staff as well as opportunities to learn new teaching methods and material (Firestone & Pennell, 1993).

It is not clear which of the above three variables (feedback, collaboration, or learning opportunities) has the most proximal relationship to OC. Firestone and Pennell (1993) comment that collaboration's ability to promote teacher OC could be the result of teachers providing one another with useful feedback or new tips on teaching. Rosenholtz and Simpson (1990), meanwhile, hint that all three may be mutually supportive of one another. Other (partially) mediated relationships may be found between collaboration and skill variety, because acts of collaboration (e.g., mentoring) may provide ways to increase skill variety, which then aids in cultivating OC (Dodds, 2005). Finally, research by Liu (2007) suggests that orderly environments are only attainable when teachers are given adequate amounts of PDM regarding discipline policies and research by Meador (2002) suggests that administrative support will only be perceived if administrators also grant teachers reasonable amounts of autonomy and PDM.

Rationale

American educational institutions are facing a grave danger with respect to keeping classrooms staffed with competent teachers. At the root of this issue is

the pre-retirement turnover of hundreds of thousands of teachers every year, which costs schools dearly in terms of finances needed to replace teacher movers and leavers, not to mention the negative effects turnover has on student achievement (Ingersoll, 2001). Because the turnover problem tends to be more severe for certain schools and districts than others, research must focus on the organizational variables that differentiate a school's ability to retain its workforce. One variable that has shown strong ties to teacher turnover is OC, which aligns teacher goals with the goals of the school in which they work (e.g., Firestone & Pennell, 1993; Ingersoll, 2001; Louis, 1998; Rosenholtz, 1989a). The purpose of the present study, then, is to identify the working conditions of schools that facilitate the development and maintenance of teacher OC. Preliminary work by Firestone and Pennell (1993) has adapted the JCM to educational settings and identified seven variables that have potentially strong associations with OC, including skill variety, autonomy, PDM, feedback, collaboration, learning opportunities, and resources.

These job characteristics were chosen because of their supposed relations with OC as well as their amenability to being altered through administrative policies at a minimum of cost. It was not assumed that these variables would comprise a comprehensive list of all organizational variables that may affect teacher OC, nor was it assumed that each variable would have equal potential for impacting OC. It was expected, however, that there would be systematic differences in the expression of these characteristics between schools (Klusman et al., 2008). Specifically, this study proposed that teachers who perceive high

levels of these working conditions in their schools would report higher OC, lower turnover intentions, and fewer turnover problems in their school compared with teachers who work in schools where these working conditions are found to a lesser degree. Moreover, the relationship between each working condition variable and school turnover was expected to be fully or partially mediated by OC and turnover intentions (see Figure 1 for a model of what full mediation of the hypothesized relationships would look like).

Statement of Hypotheses

Hypothesis I: Skill variety will be negatively related to school turnover problems through the mediating role of organizational commitment and teacher turnover intentions.

Hypothesis II: Autonomy will be negatively related to school turnover problems through the mediating role of organizational commitment and teacher turnover intentions.

Hypothesis III: Participation in decision-making will be negatively related to school turnover problems through the mediating role of organizational commitment and teacher turnover intentions.

Hypothesis IV: Feedback will be negatively related to school turnover problems through the mediating role of organizational commitment and teacher turnover intentions.

Hypothesis V: Collaboration will be negatively related to school turnover problems through the mediating role of organizational commitment and teacher turnover intentions.

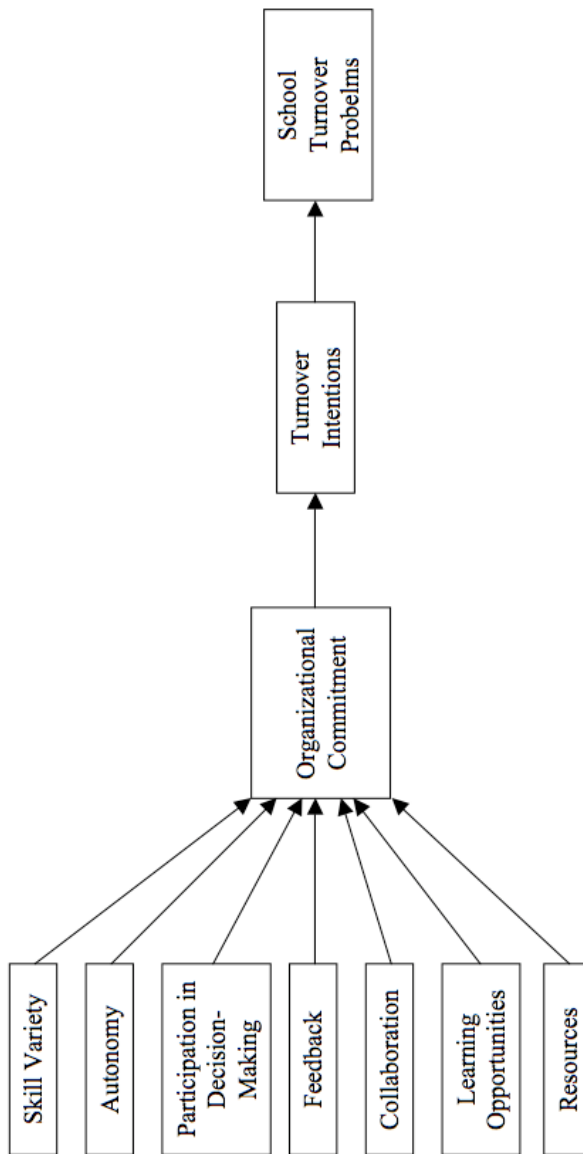


Figure 1. Model of hypothesized relationships.

Hypothesis VI: Learning opportunities will be negatively related to school turnover problems through the mediating role of organizational commitment and teacher turnover intentions.

Hypothesis VII: Resources will be negatively related to school turnover problems through the mediating role of organizational commitment and teacher turnover intentions.

Hypothesis VIIa: A high workload will be positively related to school turnover problems through the mediating role of organizational commitment and teacher turnover intentions.

Hypothesis VIIb: Pupil misconduct will be positively related to school turnover problems through the mediating role of organizational commitment and teacher turnover intentions.

Hypothesis VIIc: Administrative support will be negatively related to school turnover problems through the mediating role of organizational commitment and teacher turnover intentions.

Hypothesis VIId: Adequate physical conditions of schools will be negatively related to school turnover problems through the mediating role of organizational commitment and teacher turnover intentions.

Hypothesis VIIe: Adequate instructional resources will be negatively related to school turnover problems through the mediating role of organizational commitment and teacher turnover intentions.

Hypothesis VIIf: Positive teacher-pupil interactions will be negatively related to school turnover problems through the mediating role of organizational commitment and teacher turnover intentions.

CHAPTER II

METHOD

To explore the above hypotheses, this study required input from current full-time teachers about the quality of skill variety, autonomy, participation in decision-making (PDM), feedback, collaboration, learning opportunities, and resources they perceive to be present in their schools. In addition, data were collected from these teachers concerning the amount of organizational commitment (OC) they feel toward their school, their intentions to continue teaching with the same school in the immediate future, and their reports of how serious a problem turnover is for their school in general. In other words, this study used a non-experimental survey research design to collect data on seven working conditions (the independent variables, or IVs), OC (the distal mediator, or M1), turnover intentions (the proximal mediator, or M2), and school turnover problems (the dependent variable, or DV). Using these data, the relationships between teacher-reported school turnover problems and teacher-reported scores on the seven working condition variables listed above were tested, with organizational commitment and turnover intentions mediating the relationship between each working condition and turnover.

Research Participants

Prior to recruiting teachers to participate in the study, an a priori power analysis was conducted to determine how large of a sample would be needed to achieve a statistical power of .80 with an α error probability = .05. Given the number of predictor variables listed above and the type of multiple regression

analyses that would need to be conducted, it was determined that 80 participants would be required with a medium effect size ($f^2 = .20$; Faul, Erdfelder, Buchner, & Lang, 2009). Originally, it was planned that these participants would all be drawn from the same handpicked schools from a single school district, however, access to these schools was denied and time constraints prevented the researcher from starting the process all over with a new school district. Therefore, due to the difficulty of getting permission to systematically recruit teachers where they work, a different approach known as snowball sampling was undertaken.

Snowball sampling is a method of recruiting participants through a process of chain referral, or word of mouth. Simply put, members of the target population, in this case current full-time teachers, are identified, surveyed, and asked to provide names and contact information of other members of the target population, who can also be surveyed; this cycle then repeats for as long as possible or until a suitable sample of participants has been surveyed (Singleton & Straits, 2005). Notably, this type of sampling is often used with “invisible” groups of people, such as the homeless, and is a useful way for collecting data on an otherwise unreachable population. Due to administrative restrictions on who is allowed to collect what kind of data in schools, teachers became “invisible” for the purposes of this study. As such, snowball sampling provided an optimal way of reaching out and obtaining a large enough sample size for this study to ensue.

Using snowball sampling, 120 teachers were recruited via e-mail to take part in the on-line study. Participants were informed that completing the on-line survey was entirely voluntary, although an incentive was provided in the form of

a drawing at the conclusion of the survey in which three participants would be randomly selected to each win a \$50 gift card to Target. In order to keep teacher responses to the research measures anonymous, the personally identifiable information needed to enter the drawing was obtained by linking to a separate online survey at the conclusion of the study.

Teacher demographics were collected at the end of the primary survey, and 94 (78.3%) of the original 120 teachers made it to this point in the survey, evidencing some problems with fatigue. Because items from the demographics page were analyzed as control variables in the study's hypothesis tests and because listwise deletion of cases was used, the remainder of this paper will focus on these 94 participants who had usable data. Descriptively, 32 (34.0%) taught in an elementary school, 13 (13.8%) taught in a middle school, and 48 (51.1%) taught in a high school, with one teacher not reporting where she taught. No restrictions were placed on the geographic location of participants and, although nine participants did not report their location, the vast majority (87.1%, $n = 75$) of those who did taught at schools in the Midwest, with the largest numbers of participants coming from regions surrounding Milwaukee, Wisconsin (47.1%, $n = 40$), Red Wing, Minnesota (22.4%, $n = 19$), and Chicago, Illinois (16.5%, $n = 14$). City information was used to classify schools as rural (30.2%, $n = 26$), urban (14.0%, $n = 12$), or suburban (55.8%, $n = 48$). Lastly, it is important to note that most of these teachers came from public schools (90.6%, $n = 77$), although seven (8.2%) taught in private schools and one (1.2%) taught in a charter school.

Of the 94 participants who completed the demographics page of the survey, there were no missing data regarding personal information about race, age, gender, education level, socioeconomic status, or number of years teaching. Respondents ranged in age from 24 to 65, with an average age of 40.6 years ($SD = 11.8$), and nearly all participants reported their race as White (88.3%, $n = 83$), followed by Multiracial (5.3%, $n = 5$), Asian/Pacific Islander (2.1%, $n = 2$), Hispanic (2.1%, $n = 2$), American Indian/Alaskan Native (1.1%, $n = 1$), and Black (1.1%, $n = 1$). As is true of the profession in general, most respondents were female (83.0%, $n = 78$). For other information detailing the breakdown of teachers in the survey, see Table 1.

Procedure

This study used a snowball sampling technique to recruit teachers to take an on-line survey which asked about the quality of the working conditions in their school, their levels of organizational commitment, their turnover intentions, and their perceptions of their school's problems with teacher turnover. The researcher began by making a list of personal acquaintances who are teachers. It was decided to survey only current full-time teachers because responses from teachers who have already quit would be subject to bias in the form of retrospective attributions. In addition, the researcher made a conscious effort to identify teachers from a variety of different settings, to ensure variability among the measured variables in the study (Mathieu & Zajac, 1990). Once a list of suitable candidates was created, the researcher sent a standardized e-mail (see Appendix E), indicating the nature of the study, the time commitment required, the potential

Table 1

Breakdown of Teacher Demographic Characteristics

	Frequency	Percent
Level of Education		
Associate's Degree	2	2.10%
Bachelor's Degree	26	27.70%
Master's Degree	65	69.10%
Other Certification	1	1.10%
<i>Total</i>	94	100%
Self-Perceived Social Class		
Lower Class/Working Class	4	4.30%
Middle Class	68	72.30%
Upper Middle Class	22	23.40%
<i>Total</i>	94	100%
Years Teaching at Current School		
1-2 Years	27	28.70%
3-5 Years	22	23.40%
6-9 Years	10	10.60%
10 Years or More	35	37.20%
<i>Total</i>	94	100%
Total Teaching Experience		
1-2 Years	13	13.80%
3-5 Years	11	11.70%
6-9 Years	16	17.00%
10-19 Years	26	27.70%
20 Years or More	28	29.80%
<i>Total</i>	94	100%

for incentive, the link to the on-line survey, and instructions for forwarding the e-mail on to other teachers.

The survey itself was hosted online by SurveyMonkey, a large survey design and data collection company. Because this was an on-line study which preempted the possibility of collecting signed informed consent documents, the first page of the survey acted as the official informed consent page, and participants expressed their consent by clicking to continue to subsequent pages in the survey. Each page contained measures of one of the variables of interest in this study, which will be described in detail in the next section. After completing these measures, the second-to-last page of the survey asked for demographic information, which participants were assured would not be used to identify them in any way, although it is apparent that some still felt wary about giving their information, as evidenced by one participant who responded “I feel uncomfortable saying” to the question asking where she taught.

Finally, the last page of the survey was used to debrief participants on the purpose of the research, thank them for their participation, provide contact information for the researcher, and present a hyperlink to guide them to the separate survey where they could enter their names and e-mail addresses for a chance to win a \$50 gift card to Target, which 49 participants chose to do (see Appendix F). From conversations with several participants, it was judged that completing the entire survey took between 20 and 30 minutes. Lastly, the link to the survey was deactivated and all available data were downloaded for analysis

after approximately two months of snowball sampling. Also at this time, the three winners for the prize were chosen and issued their gift cards through the mail.

Measures

Self-report measures that have either been adapted to teaching settings or shown by research to be valid in educational settings were used to represent each organizational variable in the study: OC, skill variety, autonomy, PDM, feedback, collaboration, learning opportunities, resources, turnover intentions, and school turnover problems.

Organizational Commitment

The Organizational Commitment Questionnaire (OCQ), developed by Porter et al. (1974), is the most widely used measure of commitment (Price, 1997). As initially developed, this instrument taps into attitudinal and behavioral dimensions of organizational commitment. That is, individuals rate their agreement (from 1=Strongly Disagree to 7=Strongly Agree) with 15 items measuring their acceptance of organizational goals and values (e.g., “I find that my values and the school’s values are very similar”), their willingness to exert effort on behalf of the organization (e.g., “I am willing to put in a great deal of effort beyond that normally expected in order to help this school be successful”), and their desire to remain a part of the organization (e.g., “I would accept almost any type of job assignment in order to keep working for this school”). Mowday et al. (1979) found the OCQ to have adequate levels of reliability, with Cronbach’s alpha coefficients ranging from .82 to .93. In addition, the OCQ was positively correlated with measures of organizational attachment and motivation, providing

evidence of convergent validity. Since then, the measure has demonstrated further convergent validity by correlating .83 with Allen and Meyer's (1990) Affective Commitment Scale. Finally, as would be expected, the OCQ has shown a negative correlation with both turnover and absenteeism, indicating strong construct validity (Mowday et al., 1979).

In addition to the original version of the OCQ, a shorter form has been created that removes six items thought to tap into withdrawal intentions, leaving only nine of the original positively worded items. Many researchers choose to use the short form of the OCQ (e.g., Park et al., 2005; Price, 1997), however, Mowday et al. (1979) cautioned against blind use of the short form because removing the negatively keyed items leaves the possibility of acquiescent responding. In addition, those researchers advise that some of the negatively keyed items actually show stronger correlations with the overall scale score than do some of the positively worded items, something that was also found to be true in this study. Mathieu and Zajac (1990) performed a meta-analysis comparing the two forms and found that the average internal consistency reliability coefficient from 80 samples ($N = 24,258$) using the original OCQ was .88 while the average reliability found across 9 samples ($N = 1,831$) using the short form was .86. In this study, Cronbach's $\alpha = .92$ and .87, respectively; therefore, because the 15-item OCQ does seem to have slightly better psychometric properties, this form was chosen for use in this study's analyses. Specifically, a version of the OCQ adapted by Soler (1999) to an educational context (by substituting the word

‘organization’ with ‘school’) was used (see Appendix G; bolded items are the ones removed in the 9-item version, however all items were used in this study).

Skill Variety

There are not many measures that focus specifically on skill variety, however, this variable has often been measured as one dimension of Hackman and Oldham’s (1975) Job Diagnostic Survey (JDS). Although the JDS was designed to measure characteristics of jobs in business settings, Barnabé and Burns (1994) found that the instrument is also valid for educational settings. The three items of this survey that tap into skill variety (e.g., “The job requires me to use a number of complex or high-level skills”) can be found in Appendix H. Each item is rated on a 7-point Likert scale where 1 indicates low skill variety and 7 indicates high skill variety (with the third item needing to be reverse-scored). Hackman and Oldham (1975) developed the JDS using two different rating formats to decrease the influence of measurement bias, and so the anchoring of the Likert scale differs between item one and the second two items.

Each dimension in the JDS (including skill variety) has shown discriminant validity from other dimensions, and each dimension is based on a thorough understanding of each construct. The three items making up the skill variety scale had an internal consistency reliability of .71 on the 658 employees in 62 different jobs from 7 different organizations in Hackman and Oldham’s (1975) original validation study. Furthermore, the skill variety scale showed the most objectivity of all scales in that study, as determined by the correlations between

job holders' ratings and the ratings of supervisors and observers. In the current study, Cronbach's $\alpha = .84$.

Autonomy

While the above scale from the JDS captures the domain of skill variety for teachers with reasonable validity, Charters et al. (1984) have suggested that the JDS' treatment of autonomy is incapable of capturing the multifaceted nature of autonomy in teaching. In attempting to identify the underlying theoretical makeup of teacher autonomy, Pearson and Moomaw (2006) developed the two-dimensional Teaching Autonomy Scale (TAS), with six items tapping into what they label curriculum autonomy (i.e., the extent to which teachers feel they are able to select and sequence instructional activities and materials), and 12 items tapping into what they label general teaching autonomy (i.e., the teacher's perception that he/she has the ability to set classroom standards of conduct and make classroom-related decisions).

All items are rated on a 4-point Likert scale from 1 (definitely false) to 4 (definitely true) to prevent neutral responding; in addition, to prevent acquiescent responding, 11 items reflect high autonomy (e.g., "The materials I use in my class are chosen for the most part by me") while 7 items reflect low autonomy and need to be reverse scored (e.g., "The evaluation and assessment activities used in my class are selected by others"). See Appendix I for the full measure.

As was the case in Pearson and Moomaw's (2006) study, this study found adequate levels of reliability for both subscales, with Cronbach's $\alpha = .84$ and $.85$, respectively, although item 6 from the general autonomy scale was deleted for

having an item-total correlation below .10 (Nunnally, 1978; this item is italicized in Appendix I). Unlike Pearson and Moomaw's study, however, a principal axis factor analysis with promax rotation did not show the items from each subscale to load cleanly onto the two distinct factors in either the structure or pattern matrix. In contrast, extracting a single underlying factor was able to explain roughly 40% of the common variance in the items, with all items loading greater than .30 on the single factor. Because the two subscales were modestly correlated ($r = .62$, $p = .00$) and had a Cronbach's $\alpha = .90$ when combined into one scale (excluding item six, which was deleted), this study operationalized autonomy as the overall score on the combined subscales.

Participation in Decision-Making

In keeping with Liu's (2007) conceptualization of teacher PDM, seven items were used to measure the seven areas in which teachers can influence school decisions. Specifically, teachers rated their perceived influence to affect policy with regard to setting standards for students, curriculum, professional development, teacher evaluation, new hires, discipline policy, and the school's budget from 1=No Influence to 5=A Great Deal of Influence (see Appendix J). These items come from the "decision-making" measure (items 57 a-g) in the National Center for Education Statistics' (NCES) 1999-2000 Schools and Staffing Survey (SASS), which is administered to a nationally representative sample of teachers every few years. Liu's (2007) analysis of 12,268 cases found this measure to have an acceptable Cronbach's alpha coefficient of .81. Similarly, the scale was used by the Center for the Study of Teaching and Policy (CTP) in their

2001-2002 Teacher Survey, in which they found an alpha coefficient of .87 for the scale (Center for the Study of Teaching and Policy [CTP], 2001). In this study, Cronbach's $\alpha = .79$.

In addition to demonstrating adequate levels of reliability, the brevity of the SASS scale was a major advantage over other measures of teacher PDM (e.g., Alutto & Belasco, 1972). Still, because not all teachers may want the burden of providing their input into school policies (Alutto & Belasco, 1973), an element of Alutto and Belasco's (1972) Shared Decision-Making Survey was incorporated into the SASS measure by having teachers rate their desired level of participation for each of the seven items (in addition to their perceived level of participation). Although, to this author's knowledge, no previous studies have measured desired participation for this particular measure, it has indeed been a facet of other PDM scales, which have shown the reliability of desired participation items to be as strong or stronger than those for perceived participation (e.g., Heil, 1997). In this study, what is truly desired is a difference score between real and desired PDM. Therefore, a new scale was created that subtracted the level of PDM experienced from the sought after level of PDM, and this scale had a Cronbach's $\alpha = .80$. This scale was then used to make inferences about the importance of PDM.

Feedback

A primary goal in measuring the quality of feedback that teachers receive in their jobs was to find a scale that considered each of the three elements of feedback elaborated on in the Feedback section of the introduction; namely, feedback from the job itself, feedback from supervisors, and feedback from co-

workers. Although not targeted at teaching jobs, Steelman, Levy, and Snell (2004) recently developed a thorough feedback measure assessing the quality of feedback coming from two of the three sources, supervisors and co-workers. Their Feedback Evaluation Scale (FES) consists of 31 parallel items where the referent is either the supervisor or the co-worker (e.g., “I value the feedback I receive from my supervisor” and “I value the feedback I receive from my co-workers”), with each item being rated on a 7-point Likert scale (where 1=Strongly Disagree and 7=Strongly Agree). In addition, there is one standalone item designated only for the supervisor as referent, bringing the total number of items assessing supervisor feedback up to 32.

The 31 parallel items of the FES are split up into seven theoretically-derived dimensions of feedback: Source Credibility (e.g., “My supervisor (co-worker) is generally familiar with my performance on the job”), Feedback Quality (e.g., “My supervisor (co-worker) gives me useful feedback about my job performance”), Feedback Delivery (e.g., “My supervisor (co-worker) is supportive when giving me feedback about my job performance”), Favorable Feedback (e.g., “When I do a good job at work my supervisor (co-worker) praises my performance”), Unfavorable Feedback (e.g., “My supervisor (co-worker) tells me when my work performance does not meet organizational standards”), Feedback Availability (e.g., “My supervisor (co-worker) is usually available when I want performance information”), and Promotes Feedback Seeking (e.g., “My supervisor (co-worker) is often annoyed when I directly ask for performance feedback”).

Steelman et al. (2004) examined the psychometric properties of their scale on a sample of 405 employees and found an internal consistency reliability of .96 for the scores aimed at supervisor feedback (with supervisor subscale internal consistency reliabilities ranging from .82 to .92) and .95 for the scores aimed at co-worker feedback (with co-worker subscale internal consistency reliabilities ranging from .74 to .92). Furthermore, correlations between ratings of supervisor and co-worker feedback provide support for the assertion that these sources should be measured separately (i.e., the ratings were not highly correlated) and a confirmatory factor analysis revealed that Steelman et al.'s (2004) a priori model using the seven facets of feedback fit the data better than a model that combined the different dimensions, suggesting that the multiple dimensions are warranted. Finally, Steelman et al. (2004) examined the construct validity of the scale by examining the relationship between the FES and four measures predicted to be related to employee feedback perceptions: satisfaction with feedback, motivation to use feedback, feedback seeking, and leader-member exchange. Of 98 validity coefficients, only 17 were not statistically significant and in the expected direction.

Having determined the merits of the FES for measuring supervisor and co-worker feedback, items of the FES were examined and determined by the author to be appropriate for measuring these variables in an educational setting. That is, the wording of each item was judged to be non-problematic for administering the measure to teachers without alteration. Because of the length of the scale, however, it was deemed impractical to use all seven facets, so only the feedback

quality subscale was chosen, since Steelman et al. (2004) reported this subscale as having the highest internal consistency for both supervisor and coworker referents (2004). The items from this subscale can be found in Appendix K. In this study, Cronbach's $\alpha = .92$ when items were answered about supervisor feedback quality and Cronbach's $\alpha = .88$ when items were answered about coworker feedback quality. Notably, the supervisor and coworker responses were only weakly correlated ($r = .24, p = .02$), suggesting they indeed represent different constructs and should not be combined.

The only element not included by this otherwise comprehensive feedback scale, then, is a measure of the quality of feedback teachers report receiving from the job itself. Therefore, Hackman and Oldham's (1975) JDS was once again used to select the three items from that survey that assess this operationalization of feedback (see Appendix L). Similar to the description given for the skill variety measure, these three items were also rated along two different formats, although both formats involve a 7-point Likert scale where 1 indicates low feedback and 7 indicates high feedback (with the third item needing to be reverse scored). Also like the three items representing skill variety, the three feedback items were found to have an internal consistency reliability of .71 in Hackman and Oldham's (1975) initial validation study. In this study, reliability was somewhat higher, with Cronbach's $\alpha = .76$ for the three items. Although this may be considered a low alpha coefficient, it is still in the acceptable range suggested by Nunnally (1978).

Evidence that the JDS scale measures a different aspect of feedback is found in its lack of correlation with either of the other feedback scales ($r = .18, p = .04$ and $r = .04, ns$, respectively). In addition, a principal axis factor analysis with direct quartimin rotation was conducted on all feedback items, and three clear factors emerged, with items mapping perfectly onto their respective factors in both the structure and pattern matrices (see Table 2). Together, the three factors explained 63.21% of the common variance in the items, with each factor uniquely accounting for more than 10%. Therefore, each element of feedback was analyzed separately.

Collaboration

The CTP (2001) constructed an 8-item scale of teacher collaboration to measure the extent to which teachers collaborate with one another on instruction (see Appendix M). Teachers use a 5-point Likert scale to assess the frequency with which they engage in the acts described in each item (e.g., “Discuss beliefs about teaching and learning”), where 1=Never and 5 =Very Often. This measure has been widely administered, and has shown high levels of reliability, including an alpha coefficient of .90 (CTP, 2001). In this study, Cronbach’s $\alpha = .89$. In addition to this measure, another element of collaboration, peer observation, was assessed with a 3-item measure rated along the same 1 to 5 scale, with an alpha coefficient of .80 in the CTP study (see Appendix N). Cronbach’s $\alpha = .64$ in this study, although one item in particular (which is italicized in Appendix N) had an extremely low item-total correlation of .19, below Nunnally’s (1978) recommended cut-off. After eliminating this item, the now two-item scale had a

Table 2

Rotated Factor Matrices for Principal Axis Factor Analysis (with Direct Quartimin Rotation) of Feedback Scales

Items	Structure Matrix			Items	Pattern Matrix		
	Factor				Factor		
	1	2	3		1	2	3
SupFB4	.921			SupFB2	.930		
SupFB2	.918			SupFB4	.926		
SupFB1	.808			SupFB1	.808		
SupFB3	.802			SupFB3	.785		
SupFB5	.724			SupFB5	.715		
CoFB2		.918		CoFB2		.917	
CoFB4		.859		CoFB4		.838	
CoFB3		.782		CoFB3		.781	
CoFB1		.750		CoFB1		.727	
CoFB5		.614		CoFB5		.642	
GenFB2			.784	GenFB2			.798
GenFB1			.675	GenFB3			.664
GenFB3			.670	GenFB1			.664

Note: Factor loadings < |.40| were suppressed to clearly reveal the dominant loadings.
 SupFB = Supervisor Feedback items CoFB = Coworker Feedback items GenFB = JDS Job Feedback items

Cronbach's $\alpha = .90$. Because these two scales had a moderate correlation ($r = .50, p = .00$), the items were all pooled together and a principal axis factor analysis was conducted to see if they should be combined as one factor. A single factor was able to explain 47.31% of the common variance in the items and all items loaded higher than .50 on the factor. Therefore, these subscales representing cooperative climate and engaged observation, respectively, were analyzed as a single measure of teacher collaboration. The final scale had a Cronbach's $\alpha = .89$.

Learning Opportunities

A paucity of measures exist to look at teacher learning and/or professional development, but one seemingly appropriate instrument identified through a search of the literature was the four-item Opportunity to Develop and Use Skills Scale, developed by Louis (1998). This measure uses a six-point Likert scale to judge the extent to which teachers perceive they are encouraged and able to engage in several different developmental activities (e.g., "Staff development programs in this school permit me to acquire important new knowledge and skills"), with 1 signaling no extent of availability and 7 signaling a great extent (see Appendix O). Louis (1998) administered this scale to 528 teachers and found it to have an internal reliability coefficient of .79; it was also the most strongly correlated of their nine measures with teacher organizational commitment and the second best predictor of teacher efficacy. In this study, Cronbach's $\alpha = .77$, which is once again lower than desired, but still in an acceptable range for research.

The author's primary concern with using the above scale is that it does not explicitly ask about different types of learning opportunities available to teachers. The Center for Strengthening the Teaching Profession (CSTP) identified seven sources of professional development: attending workshops or conferences, regularly-scheduled collaboration with other teachers, college or university courses, mentoring and/or peer observation and coaching, participating in a network of teachers (including online networks), observational visits to other schools, and presenting at workshops or conferences (Center for Strengthening the Teaching Profession [CSTP], 2004). Because no measure has been validated to assess teacher perceptions of the availability of these specific opportunities, the author has simply included them as examples of professional development within the instructions for the Opportunity to Develop and use Skills Scale, with the intention of getting teachers to think about the availability of these specific opportunities when answering the items making up this scale.

Resources

Finally, to measure resources, it was desired to find a measure that examined each class of resources discussed in the introduction: orderly environment (i.e., student misbehavior and discipline), administrative support, adequate physical conditions, instructional resources, and reasonable workloads. Conceptually, these facets can be differentiated into categories of job demands and job resources. A high workload and pupil misconduct can be grouped together as job demands (Hakanen et al., 2006), coded so that higher numbers for each dimension represent greater job demands. Meanwhile, administrative

support, adequate physical conditions of schools, and adequate instructional resources represent buffers or resources for teachers that help them to deal with their job demands. Taking advice from Jari Hakanen, positive teacher-pupil exchanges will also be measured as a job resource for teachers.

Workload. To begin, teacher workload was measured using a single item taken from the SASS (NCES, 2000), which asks participants to rate from 1=Strongly Disagree to 4=Strongly Agree with the statement “Routine duties and paperwork interfere with my job of teaching.” Beyond this, three items were developed by the author, consistent with the education literature, to measure additional facets of teacher workload and to be measured along the same scale (e.g., “Many students in my classroom have low levels of ability”) (see Appendix P). Internal consistency reliability for the four-item scale was very low, with Cronbach’s $\alpha = .66$, even after deleting the item with the lowest item-total correlation (italicized in Appendix P). Interpretations using this scale will be made with extreme caution, as this scale likely measures something besides, or in addition to, teacher workload.

Pupil misconduct. Next, to measure the other job demand, pupil misconduct, a six-item instrument developed by Kyriacou and Sutcliffe (1978) and adapted by Hakanen et al. (2006), was used. This scale assesses the level of stress experienced by teachers because of pupil misconduct (e.g., “How often do you experience stress related to maintaining class discipline,” from 1=Hardly Ever to 5=Very Often) (see Appendix Q). Alpha coefficients for the scale have

ranged from .86 (Bakker et al., 2007) to .90 (Hakanen et al., 2006) and Cronbach's $\alpha = .92$ on the sample in this study.

Administrative support. Moving on to job resources, two facets of administrative support were taken from the 1984 High School and Beyond Teacher Questionnaire, as analyzed by Rutter and Jacobson (1986) (see Appendix R). Five items represent principal leadership (e.g., "The principal sets priorities, makes plans, and sees that they are carried out"), with a coefficient alpha of .85, and four items represent administrator responsiveness (e.g., "This school's administration knows the problems faced by the staff"), with a coefficient alpha of .79 (Rutter & Jacobson, 1986). Teachers rate their agreement with each of these statements from 1=Strongly Disagree to 5=Strongly Agree. Although these two constructs may be unique, there is considerable overlap among them, as evidenced by a strong correlation ($r = .69, p = .00$). Furthermore, beyond the conceptual relatedness of the measures, a principal axis factor analysis found that a single factor could explain 51.34% of the common variance in the nine total items, with all items loading greater than .50 on the underlying factor. Therefore, for the purposes of this study, these subscales were combined into one overall measure of administrative support, and Cronbach's α for that scale was .90.

Physical conditions of school grounds. Physical conditions of school buildings were measured using a five-item scale asking teachers to rate how much they are bothered by several potentially problematic school conditions (e.g., noise), from 1=Not At All to 5=Very Much (see Appendix S). This scale was taken from Hakanen et al. (2006), who found it to have an alpha coefficient of .72

in their original study. In this study, Cronbach's $\alpha = .83$. Because higher scale scores indicate worse physical conditions, however, this measure was reverse-scored so that higher ratings indicated better conditions.

Instructional resources. Next, the presence (or absence) of adequate instructional resources was assessed with two items from the 2007-08 SASS (see Appendix T). These items ask teachers to rate their agreement (from 1=Strongly Agree to 4=Strongly Disagree) with statements about the availability of school resources needed to teach (e.g., "For the most part, textbooks are current rather than outdated"). Because higher scale scores indicate less adequate instructional resources, this measure was also reverse-scored so that higher ratings would indicate better resources. Cronbach's $\alpha = .70$ for the teachers in this study.

Due to the low level of internal consistency and because instructional resources were moderately correlated with school resources ($r = .56, p = .00$), a principal axis factor analysis was conducted to see whether an underlying factor would explain substantial variance in these two conceptually related constructs. After standardizing the items from each measure (because they were measured along different scales), the factor analysis showed that a single factor explained 45.66% of the common variance in the items, with all items loading more than .50 on the underlying factor. This was taken as a sign that these measures could be combined into a single, more expansive construct, representing school resources in general. Therefore, Hypotheses VIIId and VIIe were combined to look at the importance of school resources in general. This new scale had $\alpha = .85$.

Positive teacher-pupil interactions. As a final measure of job resources, Jari Hakanen suggested taking into consideration the extent to which teachers experience positive interactions with their students. Because of the intrinsic nature of teaching, teachers are likely to feel most rewarded when witnessing positive strides from their students, and so this can be considered a principal resource that helps them deal with job demands (Firestone & Pennell, 1993). The relatively esoteric nature of this variable makes it unsurprising that there is no established instrument for measuring it. As such, eight items were developed by the author that were thought to tap into this element (see Appendix U for a full list of these items). In this study, Cronbach's $\alpha = .85$ for this newly constructed scale. Cortina (1993) advises, however, that Cronbach's alpha does not ensure a single unique factor; therefore, factor analysis was run to see whether this novel scale was truly unidimensional. The factor matrix revealed that items 1, 2, 4, and 8 loaded on one factor while items 3, 5, 6, and 7 loaded on another. Upon further consideration, it would appear that the first subset of items represents a student motivation factor (e.g., "I often see my students trying their best to learn what I have to teach them"), whereas the second subset of items demonstrates the positive relationship construct that was intended (e.g., "I feel like I am making a difference in the lives of my students"). Therefore, only the four items from this latter factor were retained to represent positive teacher relations (and these items can be found in bold in Appendix U). Cronbach's alpha for the four retained items was .82 on the sample in this study.

Turnover Intentions

In addition to the measures of OC and the seven organizational variables that are a part of this study, indicators of turnover were also required. Since turnover was expected to be a bigger problem in schools with poor working conditions and low OC, turnover intentions (as a proxy of actual teacher turnover) should be related to these variables. Therefore, a two-item measure developed by Irving and Meyer (1994) was used to measure teacher turnover intentions, asking teachers to rate the likelihood that they will leave their job within the next year from 1=Extremely Unlikely to 7=Extremely Likely (see Appendix V). In their validation study, Irving and Meyer reported Cronbach alphas ranging from .95 to .97, and Cronbach's $\alpha = .93$ in this study.

Severity of School Turnover Problems

It is possible that teachers may experience both poor working conditions and low organizational commitment yet still have low turnover intentions, due to personal circumstances that prevent them from the possibility of quitting. Therefore, it was also desired to get data regarding perceptions of turnover problems in schools. Teachers were thus asked to respond to the following items: "This school has a serious problem with teacher turnover" and "School vacancies are hard to fill" on a 7-point Likert scale from 1=Strongly Disagree to 7 = Strongly Agree. This scale had a Cronbach's $\alpha = .81$ in this study.

Demographic Questions

Because turnover has been linked to individual variables (e.g., age, gender, ethnicity, socioeconomic status) as well as the organizational variables of

interest in this study, it was imperative to collect and control for demographic information of the teachers participating in this study (Ingersoll, 2001). In addition, information about teachers' personal and educational backgrounds was collected, as Weiss (1999) found these variables to affect the relationships between working conditions and teacher commitment. See Appendix W for a full list of demographic questions, which include items about gender, ethnicity, age, highest degree earned, perceived socioeconomic status, teaching experience, class subject, current class size, and school information (e.g., elementary, middle, or high school).

CHAPTER III

RESULTS

This chapter presents this study's findings with regard to the relationships between turnover (operationalized as turnover intentions and perceptions of school turnover problems), organizational commitment (OC), and the following organizational variables: skill variety, autonomy, participation in decision-making (PDM), feedback, collaboration, learning opportunities, and resources. All hypothesis tests were conducted using one-tailed significance levels of $p < .05$ in the predicted direction.

Statistical Assumptions, Missing Data, and Descriptive Statistics

All hypotheses in this study make use of hierarchical regression analyses, which means that several assumptions of regression needed to be checked for violations before interpreting the findings. Rather than look at all variables separately, Tabachnick and Fidell (2007) suggest that violations related to normality, heteroscedasticity, and multicollinearity can be detected from the output generated from the final multivariate analyses. In no instances was there any evidence of multicollinearity, and all residual analyses indicated normality, equal error variance, and a lack of influential outliers unless otherwise indicated.

Missing data points were handled differently depending on how many items were missing and from which measure. If a participant had a single item response missing from a multiple item scale, that item was replaced with the individual's mean response to the other items from that scale; if multiple items were missing, the same approach was only taken if there were at least twice as

many items answered than not answered in the scale. This approach is valid when fewer than 25% of the data are missing at random (Schafer & Graham, 2002). Overall, this strategy resulted in replacing 18 items from 14 different participants, so that their scale scores could still be included in the analyses. Finally, preliminary analyses were used to provide descriptive statistics for all variables to ensure that the score ranges and means were appropriate for each given scale, and also to make sure that no obvious data entry errors were present. Corresponding means and standard deviations for the 94 participants who completed the survey through the demographics page can be found in Table 3, while a correlation matrix of the variables can be found in Table 4. Finally, to ensure these 94 participants did not meaningfully differ from the participants who did not finish the survey, Table 3 also presents independent samples t-tests showing that scale scores are not significantly different for those who provided answers to demographic items and those who did not. It can therefore be concluded that the primary analyses in this study, which control for demographics, were not conducted on a biased subsection of participants. Lastly, it is important to note that, because of differences in the point ranges of the various rating scales, all scales were standardized; therefore, only standardized coefficients are reported throughout this section.

Demographics and Control Variables

Prior to conducting the main analyses, it was of interest to look at the relationship between certain demographic variables (e.g., gender, race, age) and turnover intentions to determine if these relationships were consistent with the

Table 3
Means, Standard Deviations, and Comparisons for Individual Measures by Full and Partial Respondents

Variable	Scale	Participants Providing Demographic Information			Participants Not Providing Demographic Information			<i>t</i>
		<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	
Skill Variety	7	94	5.39	1.06	15	5.24	1.25	0.47
Autonomy	4	94	2.86	0.52	10	2.86	0.46	0.02
PDM-Have	7	94	2.10	0.76	6	2.19	0.71	-0.27
PDM-Want	7	94	3.58	0.70	6	3.54	0.50	0.15
Supervisor Feedback	7	94	4.44	1.66	4	4.45	1.33	-0.01
CoWorker Feedback	7	94	5.22	1.24	4	4.75	1.27	0.76
Job-Based Feedback	7	94	4.59	1.13	4	4.58	1.26	0.00
Collaboration	5	94	3.26	0.73	3	3.60	0.52	-0.79
Learning Opportunities	6	94	3.87	0.88	3	4.25	1.39	-0.72
Workload	4	94	3.08	0.76	2	3.00	0.47	0.14
Pupil Misconduct	5	94	2.87	0.93	2	3.08	0.18	-0.32
Administrative Support	5	94	3.31	0.87	2	4.11	1.10	-1.28
Building Conditions	5	94	2.37	0.92	2	2.00	0.28	0.57
Instructional Resources	4	94	2.32	0.84	2	2.75	0.35	-0.71
Positive Relations	5	94	4.22	0.48	2	4.13	1.24	0.28
Organizational Commitment	7	94	4.61	1.21	19	4.58	0.99	0.12
Turnover Intentions	7	94	3.30	2.34	16	3.88	2.53	-0.90
School Turnover	7	94	3.47	1.96	17	3.76	1.86	-0.57

Table 4

Summary of Pearson-Product Moment Correlations Among Measures

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Skill Variety	(.84)															
2. Autonomy	.45**	(.90)														
3. PDM (Observed-Desired)	-.07	-.32**	(.80)													
4. Supervisor FB	.09	.05	-.37**	(.92)												
5. Coworker FB	.13	.09	-.25**	.23*	(.88)											
6. Job-Based FB	.13	.27**	.04	.18*	.04	(.76)										
7. Collaboration	.12	.12	-.37**	.40**	.42**	.10	(.89)									
8. Learning Opportunity	.22*	.29**	-.63**	.52**	.29**	.19*	.52**	(.77)								
9. Workload	-.03	-.27**	.33**	-.30**	.12	-.03	-.04	-.31**	(.66)							
10. Pupil Misconduct	-.27*	-.45**	.31**	-.28**	-.21*	-.26**	-.15	-.36**	.41**	(.92)						
11. Administrative Support	.10	.22*	-.56**	.73**	.11	.10	.41**	.61**	-.45**	-.28**	(.90)					
12. School Resources	.02	.18*	-.40**	.25**	.13	.20*	.12	.42**	-.30**	-.37**	.27**	(.85)				
13. Positive Student Relations	.39**	.29**	-.14	.28**	.20*	.16	.21*	.31**	-.21*	-.41**	.24**	.16	(.82)			
14. Organizational Commitment	.29**	.46**	-.52**	.52**	.19*	.14	.37**	.58**	-.53**	-.57**	.63**	.48**	.30**	(.92)		
15. Turnover Intentions	-.21*	-.24*	.35**	-.17	-.17*	.00	-.15	-.33**	.33**	.49**	-.26**	-.43**	-.18*	-.58**	(.93)	
16. School Turnover	-.11	-.28**	.42**	-.43**	-.23*	-.10	-.26**	-.47**	.49**	.49**	-.42**	-.56**	-.28**	-.72**	.62**	(.81)

Note. Diagonals represent internal consistency reliabilities (Cronbach's α).

**Significant at the .01 level (1-tailed)

*Significant at the .05 level (1-tailed)

existing literature. Past research has shown turnover to be higher for women and for whites, and that there is a curvilinear relationship between age and turnover (Guarino et al., 2006). Therefore, the relationship of each of these demographic variables and turnover intentions (as a proxy of actual turnover) was investigated. An independent-samples t-test was used to detect gender and race differences, while simple ordinary least squares (OLS) regression was used to look at the age-turnover relationship.

For gender, there was a tendency for women to report lower turnover intentions than men ($M = 3.47$, $SD = 2.40$ and $M = 3.26$, $SD = 2.33$, respectively), although this difference was not significant ($t = .32$, $p = .75$). For race, because there were not many non-white participants, a t-test was used to compare white and non-white teachers, rather than splitting race into multiple categories. In this sample, white teachers actually had significantly lower turnover intentions than non-white teachers ($M = 3.47$, $SD = 2.40$ and $M = 3.26$, $SD = 2.33$, respectively; $t = 2.28$, $p = .03$). Finally, as expected, after centering age and creating an interaction variable of age with itself (to test its curvilinear relationship with turnover), a significantly negative U-shaped curve appeared, with turnover intentions being the highest for very young and very old teachers, while lowest for middle aged teachers ($\beta = .19$, $t = 1.83$, $p = .036$), as expected.

While the above relationships are interesting in and of themselves, they are not included as control variables in any of the analyses, because it makes no sense that individual demographics should be related to the study's dependent variable of school turnover (unless enough information could be collected to

describe each school's overall demographic makeup of teachers). Rather, teacher-reported characteristics of schools were used as control variables for the primary analyses. The school characteristics that were significantly related to school turnover problems included whether the school was an elementary, middle, or high school, whether it was a public or private school, whether it was located in an urban, suburban, or rural setting, and average class size (see Table 5).

Specifically, turnover was the worst in high schools, public schools, suburban schools, and schools with large class sizes, although most of these findings were not very strong. Furthermore, to keep the model trimmed, a requirement for school characteristics to be included as a control variable in the first step of the primary analyses was that they explain significant variance in the dependent variable after all of the other variables were included in the model. Only the variable denoting elementary, middle, or high school status met this requirement, and so this variable was entered as the sole control variable in the first block of each hypothesis test. Taking this step ensures that our variables of interest are explaining additional variance in school turnover above that already explained by school status. It should be noted, however, that because only 93 of the 94 participants provided information about their school status, and because listwise deletion of cases was used for all hypothesis tests, the resulting sample size for each of the following analyses is 93 instead of 94.

Hypothesis Testing

Each of this study's hypotheses follows the same basic guideline that an organizational working condition (the IV) is related to school turnover problems

Table 5

Regression Analyses of the Relationship Between School Characteristics and School Turnover

Construct	Variable Entered	Regression Coefficients		
		(Unstandardized)	R^2_{adj}	Model F
School Status ^a	Constant (High Schools)	4.26**	.18	10.89**
	Dummy Elementary	-1.84**		
	Dummy Middle	-1.29*		
School Sector ^b	Constant (Public Schools)	3.50**	.04	4.40*
	Dummy Private School	-1.25*		
City Size ^c	Constant (Urban)	2.71**	.07	4.29*
	Dummy Rural	-0.06		
	Dummy Suburban	1.22*		
Class Size	Average Number of Students Assigned to a Class	0.06*	.05	5.46*

^aHigh schools are the reference group^bPublic Schools are the reference group^cUrban cities are the reference group

**Significant at the .01 level (2-tailed)

*Significant at the .05 level (2-tailed)

(the DV) through the mediating role of OC (a distal mediator) and turnover intentions (a proximal mediator), after controlling for school level (elementary, middle, or high school). Essentially, a test of mediation is required to test each of these hypotheses. Baron and Kenny (1986) outlined three criteria for testing a mediational hypothesis. Specifically, their requirements posit that (1) the dependent variable must be significantly related to the independent variable; (2) the mediator(s) must be significantly related to the independent variable; and, (3) after regressing the dependent variable on both the mediator(s) and the independent variable, the mediator-DV relationship(s) are significant whereas the previously significant relationship between the independent variable and dependent variable reduces in magnitude (for partial mediation) or drops to null (for full mediation).

Preacher and Hayes (2004) have attempted to discredit the notion that all three steps proposed by Baron and Kenny (1986) must be met in order to conclude that an indirect effect exists. They argue that running all three of Baron and Kenny's regressions requires too many parameter estimates, which reduces the power to detect effects, and subsequently leads to possible Type II errors. Instead, they propose a more powerful method for testing mediation, which simply tests whether an indirect effect exists, or whether the indirect path between the IV and DV (through M1 and M2) is significant, and whether this indirect path explains the direct path (in which the mediators are absent). Specifically, a point estimate is given for how much the direct path reduces due to the indirect path, as well as a bootstrapped confidence interval around that point estimate to determine

whether this amount is significantly different from zero or not. Confidence intervals that do not contain zero represent significant mediators. Finally, in addition to maximizing power by estimating fewer parameters, Preacher and Hayes (2008) argue that their method also yields more accurate parameter estimates (and reduces Type I error) because they use bootstrapping techniques to resample the data and ensure multivariate normality, which is often a problem when the sample size is not large.

Hayes, Preacher, and Myers (in press) made their syntax for testing multiple mediator models publicly available and it is the primary indication of whether mediators were significant in each of this study's hypotheses. The sole limitation of this approach is that the multiple mediator syntax provided by Hayes et al. (in press) does not allow for the inclusion of covariates. Therefore, while still relying on the test to indicate significant mediation or not, a hierarchical regression analysis incorporating the basic elements of Baron and Kenny's (1986) criteria was also run to supplement this information by including school status (elementary, middle, or high school) as a control variable. This hierarchical regression took the form of a three-step model, and had several purposes. The control variable was entered in the first step, followed by the IV in the second step (to look at its relationship to the DV after controlling for school status), and the mediators in the third step (to determine if the mediator-DV relationships were significant after controlling for the IV and the control variable and whether the IV-DV relationship declined in magnitude fully or partially after controlling for the mediators and the control variable). In addition to demonstrating that the

mediation effects found using the Hayes et al. (in press) method still exist after controlling for school status, running this separate regression also allowed for a more accurate estimation of the variance explained by the full model as well as an analysis of outliers, multicollinearity, and heteroscedasticity.

Hypothesis 1

The first hypothesis proposed that skill variety would be negatively related to school turnover problems through the mediating role of teacher OC and turnover intentions. As seen in Table 4, skill variety was significantly related to both OC and turnover intentions ($r = .29, p < .01$ and $r = -.21, p = .02$, respectively), although there was not a significant zero-order correlation between skill variety and school turnover ($r = -.11, ns$). That is, those who reported high levels of skill variety in their schools also tended to report both high OC and low turnover intentions, as would be expected. Although they also reported lower school turnover, this latter relationship was of a non-significant magnitude. Regardless, Preacher and Hayes (2004) suggest that a mediated effect can be present even in the absence of a direct IV-DV relationship.

To test for the presence of the proposed effect, a hierarchical regression was used in which step one controlled for the effects of school level (elementary, middle, or high school), step two entered skill variety, and step three entered both mediators. As seen in Table 6, this model accounted for a significant 61.80% of the variance in school turnover ($R^2_{adj} = .62, F[5, 87] = 30.77, p < .001$). All three steps of the model were significant, indicating that, after accounting for school level, skill variety was significantly negatively related to school turnover ($\beta =$

Table 6

Hierarchical Regression Analysis of the Mediated Skill Variety-School Turnover Relationship

Step	Variable Entered	Regression Coefficients ^a			R^2_{adj}	Model F	ΔR^2_{adj}	ΔF
		1	2	3				
1	Dummy Elementary		-0.45**	-0.46**	.18	10.89**	.18	10.89**
	Dummy Middle			-0.23*				
2	Skill Variety			-0.16*	.20	8.41**	.02	2.97*
3	Organizational Commitment							
	Turnover Intentions				.62	30.77**	.42	50.32**
					.29**			

^aRegression coefficients are standardized

^bSkill variety dropped from significant to non-significant after mediators were entered into the model

**Significant at the .01 level (1-tailed)

*Significant at the .05 level (1-tailed)

-.16, $p = .04$). After entering the mediators in step three, however, the association between skill variety and school turnover dropped to non-significance ($\beta = .07$, ns), while both mediators remained significant predictors of school turnover ($\beta = -.51$, $p < .01$ and $\beta = .29$, $p < .01$, respectively).

Finally, the significance test for a multiple mediator model provided by Hayes et al. (in press) was run to determine whether each mediator, and their combination, was responsible for the diminished skill variety-school turnover relationship. At root, the significance test provides a 95% confidence interval showing the estimated size of the drop in the β -coefficient for skill variety, once the mediators are entered into the model. It was deemed that OC and turnover intentions together fully mediated the relationship and that their total effect on β was 95% likely to be between .10 and .38, with a point estimate of .25. Of this .25, OC alone accounted for .18 (95% CI: .07, .29), whereas the confidence interval for turnover intentions contained zero, meaning it was not a full mediator of the relationship like OC was. To determine whether turnover intentions was a partial mediator, the indirect effect of both mediators was shown to reduce the β -coefficient by a significant 0.05 (95% CI: .02 to .11), meaning that adding turnover intentions to OC helped account for the mediated effect. Thus, Hypothesis 1 was supported. A visual depiction of this relationship can be found in Figure 2, where OC is a full mediator and turnover intentions is a partial mediator of the relationship between skill variety and school turnover.

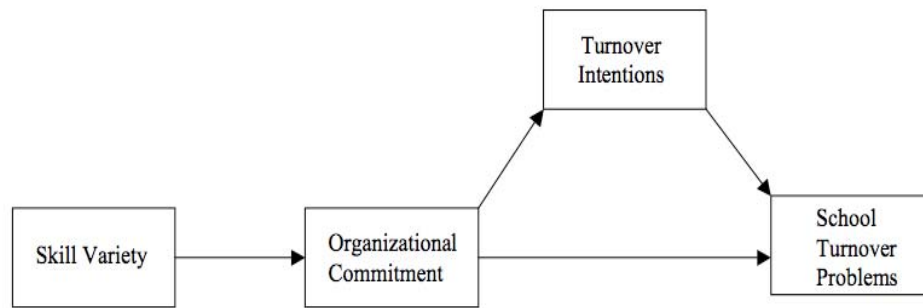


Figure 2. The fully mediated path between skill variety and school turnover.

To ensure that the discovered model was appropriately specified, all assumptions of regression were checked on the hierarchical regression analysis. Although the residuals were normally distributed with a mean of zero and constant variance, several outliers were discovered. Specifically, there was a single outlier in the criterion-space, as indicated by a studentized residual larger than 3.00, as well as five influential data points, as indicated by Cook's distance values outside of the critical range specified by the sample size and number of predictor variables. The regression was re-run without these outliers, and the reported relationships increased in magnitude, as did the overall variance explained by the model. Despite this, because the data points represented real information (i.e., they were not data entry errors), it was determined that they should be left in the analysis and that their deletion would over-inflate the model's explanatory power.

Hypothesis 2

The second hypothesis proposed that autonomy would be negatively related to school turnover problems through the mediating role of teacher OC and

turnover intentions. As seen in Table 4, autonomy was significantly related to both OC and turnover intentions ($r = .46, p < .001$ and $r = -.24, p = .01$, respectively), as well as to school turnover ($r = -.28, p < .01$). That is, those who reported high levels of teacher autonomy in their schools also tended to report high OC, low turnover intentions, and low school turnover problems, as expected.

To test for the presence of the proposed mediated effect, a hierarchical regression was used in which step one controlled for the effects of school level (elementary, middle, or high school), step two entered autonomy, and step three entered both mediators. As seen in Table 7, this model accounted for a significant 61.40% of the variance in school turnover ($R^2_{adj} = .61, F[5, 87] = 30.21, p < .001$). All three steps of the model were significant, indicating that, after accounting for school level, autonomy was still significantly negatively related to school turnover ($\beta = -.34, p < .001$). After entering the mediators in step three, however, the association between autonomy and school turnover dropped to non-significance ($\beta = -.02, ns$), while both mediators remained significant predictors of school turnover ($\beta = -.48, p < .01$ and $\beta = .28, p < .01$, respectively).

Finally, the significance test for a multiple mediator model provided by Hayes et al. (in press) was run to determine whether each mediator, and their combination, was responsible for the diminished autonomy-school turnover relationship. It was deemed that OC and turnover intentions together fully mediated the relationship and that their total effect on the β -coefficient for autonomy was 95% likely to be between .19 and .51, with a point estimate of .35. Of this .35, OC alone accounted for .27 (95% CI: .16, .43), whereas the

Table 7

Hierarchical Regression Analysis of the Mediated Autonomy-School Turnover Relationship

Step	Variable Entered	Regression Coefficients ^a			Model F	ΔR^2_{adj}	ΔF
		1	2	3			
1	Dummy Elementary	-.45**	-0.49**	-.26**	.18	10.89**	.18
	Dummy Middle	-.23*	-0.24**	-.18**			
2	Autonomy		-0.34**	-.02 ^b	.29	13.40**	.11
3	Organizational Commitment			-.48**	.61	30.21**	.32
	Turnover Intentions			.28**			

^aRegression coefficients are standardized

^bAutonomy dropped from significant to non-significant after mediators were entered into the model

**Significant at the .01 level (1-tailed)

*Significant at the .05 level (1-tailed)

confidence interval for turnover intentions contained zero, meaning it was not a full mediator of the relationship like OC was. To determine whether turnover intentions was a partial mediator, the indirect effect of both mediators was shown to reduce the β -coefficient by a significant 0.08 (95% CI: .03 to .16), meaning that adding turnover intentions to OC helped account for the mediated effect. Thus, Hypothesis 2 was supported. A visual depiction of this relationship can be found in Figure 3, where OC is a full mediator and turnover intentions is a partial mediator of the relationship between autonomy and school turnover.

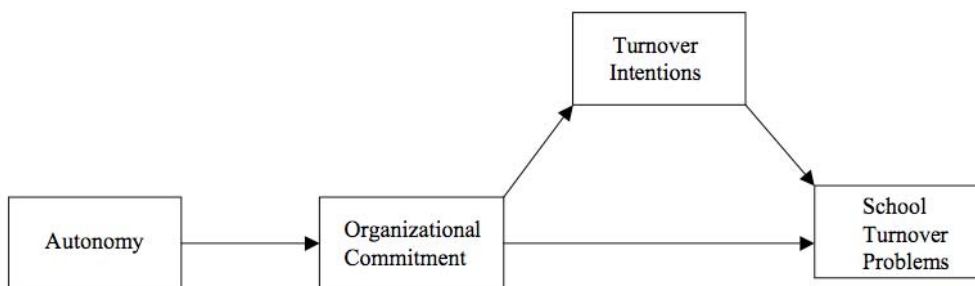


Figure 3. The fully mediated path between autonomy and school turnover.

To ensure that the discovered model was appropriately specified, all assumptions of regression were checked on the hierarchical regression analysis. Although the residuals were normally distributed with a mean of zero and constant variance, several outliers were discovered. Specifically, there were six influential data points, as indicated by Cook's distance values outside of the critical range specified by the sample size and number of predictor variables. The regression was re-run without these outliers, and the reported relationships increased in magnitude, as did the overall variance explained by the model. Despite this, because the data points represented real information (i.e., they were

not data entry errors), it was determined that they should be left in the analysis and that their deletion would over-inflate the model's explanatory power.

Hypothesis 3

The third hypothesis proposed that participation in decision-making (PDM) would be negatively related to school turnover problems through the mediating role of teacher OC and turnover intentions. As discussed earlier, because not all teachers desire the same amount of involvement in making school decisions, a difference score between actual PDM and desired PDM was used to operationalize this variable. Therefore, the hypothesis can actually be read as predicting that larger differences between actual and desired PDM would be associated with lower OC, higher turnover intentions, and higher school turnover. As seen in Table 4, each of these relationships was supported ($r = -.52, p < .001$; $r = .35, p < .001$; and $r = .42, p < .001$, respectively).

To test for the presence of the proposed mediated effect, a hierarchical regression was used in which step one controlled for the effects of school level (elementary, middle, or high school), step two entered PDM (as a difference score), and step three entered both mediators. As seen in Table 8, this model accounted for a significant 61.80% of the variance in school turnover ($R^2_{adj} = .62, F[5, 87] = 30.81, p < .001$). All three steps of the model were significant, indicating that, after accounting for school level, the difference between actual and desired levels of PDM was still significantly positively related to school turnover ($\beta = .38, p < .001$). After entering the mediators in step three, however, the association between PDM and school turnover dropped to non-significance (β

Table 8

Hierarchical Regression Analysis of the Mediated PDM-School Turnover Relationship

Step	Variable Entered	Regression Coefficients ^a			R^2_{adj}	Model F	ΔR^2_{adj}	ΔF
		1	2	3				
1	Dummy Elementary	-.45**	-0.42**	-.27**	.18	10.89**	.18	10.89**
	Dummy Middle	-.23*	-0.21**	-.18**				
2	(Actual-Desired) PDM		0.38**	.08 ^b	.31	15.06**	.13	19.03**
3	Organizational Commitment			-.45**	.62	30.81**	.31	36.44**
	Turnover Intentions			.28**				

^aRegression coefficients are standardized

^bPDM dropped from significant to non-significant after mediators were entered into the model

**Significant at the .01 level (1-tailed)

*Significant at the .05 level (1-tailed)

= .08, *ns*), while both mediators remained significant predictors of school turnover ($\beta = -.45, p < .01$ and $\beta = .28, p < .01$, respectively).

Finally, the significance test for a multiple mediator model provided by Hayes et al. (in press) was run to determine whether each mediator, and their combination, was responsible for the diminished PDM-school turnover relationship. It was deemed that OC and turnover intentions together fully mediated the relationship and that their total effect on the β -coefficient for PDM was 95% likely to be between .21 and .51, with a point estimate of .34. Of this .34, OC alone accounted for .25 (95% CI: .13, .41), whereas the confidence interval for turnover intentions contained zero, meaning it was not a full mediator of the relationship like OC was. To determine whether turnover intentions was a partial mediator, the indirect effect of both mediators was shown to reduce the β -coefficient by a significant 0.08 (95% CI: .03 to .15), meaning that adding turnover intentions to OC helped account for the mediated effect. Thus, Hypothesis 3 was supported. A visual depiction of this relationship can be found in Figure 4, where OC is a full mediator and turnover intentions is a partial mediator of the relationship between PDM and school turnover.

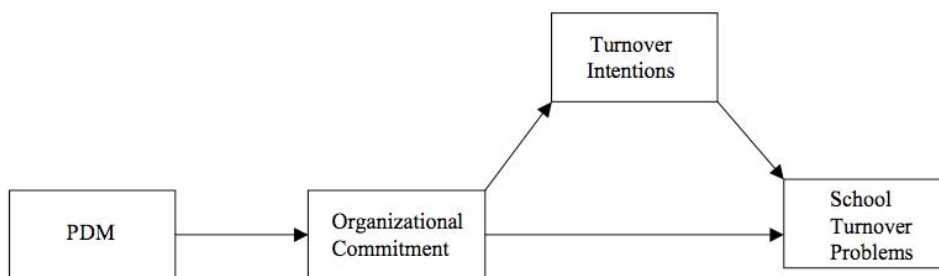


Figure 4. The fully mediated path between PDM and school turnover.

To ensure that the discovered model was appropriately specified, all assumptions of regression were checked on the hierarchical regression analysis. Although the residuals were normally distributed with a mean of zero and constant variance, several outliers were discovered. Specifically, there were two outliers in the criterion-space, as indicated by a studentized residual larger than 3.00, as well as six influential data points, as indicated by Cook's distance values outside of the critical range specified by the sample size and number of predictor variables. The regression was re-run without these outliers, and the reported relationships increased in magnitude, as did the overall variance explained by the model. Despite this, because the data points represented real information (i.e., they were not data entry errors), it was determined that they should be left in the analysis and that their deletion would over-inflate the model's explanatory power.

Hypothesis 4

The fourth hypothesis proposed that feedback would be negatively related to school turnover problems through the mediating role of teacher OC and turnover intentions. As discussed above, feedback was operationalized in three different ways, depending on the source of feedback. Specifically, this study looked at feedback coming from the supervisor, feedback coming from coworkers, and self-derived feedback gained simply by performing the job. Factor analysis revealed that these were three distinct sub facets of feedback, and so each source was analyzed separately (see Table 2).

Supervisor Feedback. Beginning with supervisor feedback, Table 4 shows that this type of feedback was significantly positively related to OC ($r = .52, p <$

.01), marginally negatively related to turnover intentions ($r = -.17, p = .06$), and significantly negatively related to school turnover ($r = -.43, p < .01$). That is, those who reported a high quality of supervisor feedback in their schools also tended to report high OC, low turnover intentions, and low school turnover problems, as expected.

To test for the presence of the proposed mediated effect, a hierarchical regression was used in which step one controlled for the effects of school level (elementary, middle, or high school), step two entered supervisor feedback, and step three entered both mediators. As seen in Table 9, this model accounted for a significant 62.90% of the variance in school turnover ($R^2_{adj} = .63, F[5, 87] = 32.15, p < .001$). All three steps of the model were significant, indicating that, after accounting for school level, supervisor feedback was still significantly negatively related to school turnover ($\beta = -.39, p < .001$). After entering the mediators in step three, the association between PDM and school turnover lessened in magnitude, but still remained significant ($\beta = -.15, p = .03$). Despite both mediators also displaying significant relationships with school turnover in the final model ($\beta = -.40, p < .01$ and $\beta = .31, p < .01$, respectively), it is clear that they do not fully mediate the relationship between school turnover and supervisor feedback.

To test whether the mediators partially mediated the relationship (i.e., whether there was a significant drop in the significance of the β -coefficient for supervisor feedback from step two to step three), the author conducted the Hayes et al. (in press) multiple mediation significance test. It was deemed that OC and

Table 9
Hierarchical Regression Analysis of the Mediated Supervisor Feedback-School Turnover Relationship

Step	Variable Entered	Regression Coefficients ^a			Model F	ΔR^2_{adj}	ΔF
		1	2	3			
1	Dummy Elementary		-0.45**		10.89**	.18	10.89**
	Dummy Middle		-0.23*				
2	Supervisor Feedback			-0.39**	14.32**	.12	17.25**
3	Organizational Commitment				32.15**	.33	40.04**
	Turnover Intentions						

^aRegression coefficients are standardized

^bSupervisor Feedback became a less significant predictor after mediators were entered into the model

**Significant at the .01 level (1-tailed)

*Significant at the .05 level (1-tailed)

turnover intentions together did indeed partially mediate the relationship and that their total effect on the β -coefficient for supervisor feedback was 95% likely to be between .13 and .45, with a point estimate of .27. Of this .27, OC alone accounted for .22 (95% CI: .11, .38), whereas the confidence interval for turnover intentions contained zero, meaning it was not an independent mediator of the relationship like OC was. To determine whether turnover intentions was still a useful part of the path, the indirect effect of both mediators was shown to reduce the β -coefficient by a significant 0.11 (95% CI: .05 to .21), meaning that adding turnover intentions to OC helped account for the partially mediated effect. Thus, the first part of Hypothesis 4 was supported. A visual depiction of this relationship can be found in Figure 5, where supervisor feedback exerts a direct effect on school turnover problems, in addition to an indirect effect through OC and turnover intentions.

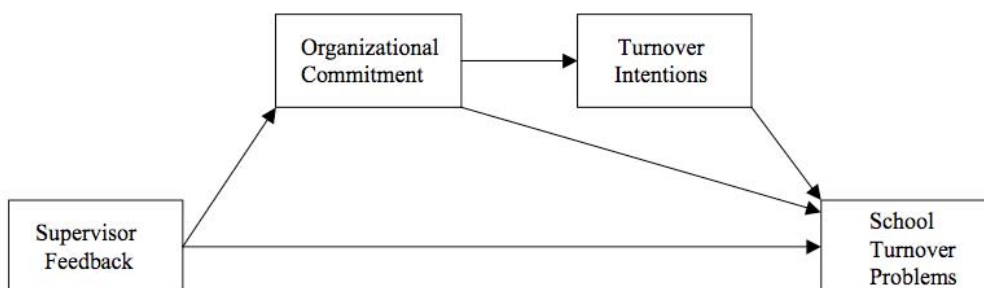


Figure 5. The partially mediated path between supervisor feedback and school turnover.

To ensure that the discovered model was appropriately specified, all assumptions of regression were checked on the hierarchical regression analysis. Although the residuals were normally distributed with a mean of zero and constant variance, several outliers were discovered. Specifically, there were nine

influential data points, as indicated by Cook's distance values outside of the critical range specified by the sample size and number of predictor variables. The regression was re-run without these outliers, and the resulting model not only explained a large amount of additional total variance in school turnover problems, but the direct effect of supervisor feedback dropped to non-significance after the mediators were entered into the model, meaning the relationship was fully mediated when the outliers were deleted. Despite this, because the data points represented real information (i.e., they were not data entry errors), it was determined that they should be left in the analysis and that their deletion would over-inflate the model's explanatory power.

Coworker Feedback. Shifting the source of feedback from a supervisor to coworker referent, Table 4 shows that this type of feedback was significantly related to both OC and turnover intentions ($r = .19, p = .03$ and $r = -.17, p = .04$, respectively), as well as to school turnover ($r = -.23, p = .01$). That is, those who reported a high quality of coworker feedback in their schools also tended to report high OC, low turnover intentions, and low school turnover problems, as expected.

To test for the presence of the proposed effect, a hierarchical regression was used in which step one controlled for the effects of school level (elementary, middle, or high school), step two entered coworker feedback, and step three entered both mediators. As seen in Table 10, this model accounted for a significant 61.70% of the variance in school turnover ($R^2_{adj} = .62, F[5, 87] = 30.68, p < .001$). All three steps of the model were significant, indicating that, after accounting for school level, coworker feedback was still significantly

Table 10

Hierarchical Regression Analysis of the Mediated CoWorker Feedback-School Turnover Relationship

Step	Variable Entered	Regression Coefficients ^a			R^2_{adj}	Model F	ΔR^2_{adj}	ΔF
		1	2	3				
1	Dummy Elementary		-0.43**		.18	10.89**	.18	10.89**
	Dummy Middle		-0.21*					
2	CoWorker Feedback			.06 ^b	.20	8.41**	.02	2.97*
3	Organizational Commitment							
	Turnover Intentions							

^aRegression coefficients are standardized

^bCoWorker Feedback dropped from significant to non-significant after mediators were entered into the model

**Significant at the .01 level (1-tailed)

*Significant at the .05 level (1-tailed)

negatively related to school turnover ($\beta = -.16, p < .05$). After entering the mediators in step three, however, the association between coworker feedback and school turnover dropped to non-significance ($\beta = .06, ns$), while both mediators remained significant predictors of school turnover ($\beta = -.48, p < .01$ and $\beta = .28, p < .01$, respectively).

Finally, the significance test for a multiple mediator model provided by Hayes et al. (in press) was run to determine whether each mediator, and their combination, was responsible for the diminished coworker feedback-school turnover relationship. Surprisingly, although the inclusion of OC and turnover intentions in the model reduced the relationship between coworker feedback and school turnover to non-significance, it was not a large enough drop to constitute a mediated effect. That is, all of the 95% confidence intervals, including the total indirect effect included zero (95% CI: $-.02, .29$), providing no support for full or even partial mediation, likely because the original relationship was not very large.

To verify whether the above model was appropriately specified, all assumptions of regression were checked on the hierarchical regression analysis. Although the residuals were normally distributed with a mean of zero and constant variance, several outliers were discovered. Specifically, there were eight influential data points, as indicated by Cook's distance values outside of the critical range specified by the sample size and number of predictor variables. The regression was re-run without these outliers and, interestingly, the relationship between coworker feedback and school turnover disappeared, even prior to entering the mediators into the model. Because Hayes et al. (in press) argue that

the IV-DV relationship is not a precondition for tests of mediation, their test was once again run on the reduced sample, but still showed no mediated effect. Thus, the second part of Hypothesis 4 was not supported.

Job-Based Feedback. Finally, the last component of feedback (i.e., job feedback) was examined. Table 4 shows that feedback from the job itself was not significantly related to OC ($r = .14, ns$), turnover intentions ($r = .00, ns$), or school turnover ($r = -.10, ns$). Not surprisingly, the relationship between job feedback and school turnover was still not significant after controlling for school level (see Table 11) and the test of mediation showed that the 95% confidence interval of the total indirect effect contained zero ($-.06, .25$). Therefore, there was no evidence of either full or partial mediation, nor did there appear to be any direct effect to mediate. An examination of the assumptions of regression showed that the above model was correctly specified, with normally distributed residuals having a mean of zero and constant variance. Again, however, there were six influential data points, as indicated by Cook's distance values outside of the critical range, but deletion of these observations did not alter any of the above relationships. Therefore, the third part of Hypothesis 4 was not supported.

Overall, then, there was only partial support for Hypothesis 4. Specifically, the relationship between feedback and school turnover appears to be partially mediated by OC and turnover intentions, but only when referring to supervisor feedback.

Table 11

Hierarchical Regression Analysis of the Mediated Job Feedback-School Turnover Relationship

Step	Variable Entered	Regression Coefficients ^a			R^2_{adj}	Model F	ΔR^2_{adj}	ΔF
		1	2	3				
1	Dummy Elementary	-.45**	-0.44**	-.26**	.18	10.89**	.18	10.89**
	Dummy Middle	-.23*	-0.23*	-.18**				
2	Job Feedback		-0.07	.00	.17	7.38**	-.01	.48
3	Organizational Commitment			-.49**	.61	30.19**	.44	51.77**
	Turnover Intentions			.28**				

^aRegression coefficients are standardized

**Significant at the .01 level (1-tailed)

*Significant at the .05 level (1-tailed)

Hypothesis 5

The fifth hypothesis proposed that teacher collaboration would be negatively related to school turnover problems through the mediating role of teacher OC and turnover intentions. As seen in Table 4, collaboration was significantly positively related to OC ($r = .21, p < .05$), marginally negatively related to turnover intentions ($r = -.15, p = .08$), and significantly negatively related to school turnover ($r = -.26, p < .01$). That is, those who reported high levels of teacher collaboration in their schools also tended to report high OC, low turnover intentions, and low school turnover problems, as expected.

To test for the presence of the proposed mediated effect, a hierarchical regression was used in which step one controlled for the effects of school level (elementary, middle, or high school), step two entered collaboration, and step three entered both mediators. As seen in Table 12, this model accounted for a significant 61.40% of the variance in school turnover ($R^2_{adj} = .61, F[5, 87] = 30.31, p < .001$). All three steps of the model were significant, indicating that, after accounting for school level, collaboration was still significantly negatively related to school turnover ($\beta = -.24, p < .001$). After entering the mediators in step three, however, the association between collaboration and school turnover dropped to non-significance ($\beta = -.03, ns$), while both mediators remained significant predictors of school turnover ($\beta = -.47, p < .01$ and $\beta = .28, p < .01$, respectively).

Finally, the significance test for a multiple mediator model provided by Hayes et al. (in press) was run to determine whether each mediator, and their

Table 12

Hierarchical Regression Analysis of the Mediated Collaboration-School Turnover Relationship

Step	Variable Entered	Regression Coefficients ^a			R^2_{adj}	Model F	ΔR^2_{adj}	ΔF
		1	2	3				
1	Dummy Elementary	-.45**	-0.41**	-.26**	.18	10.89**	.18	10.89**
	Dummy Middle	-.23*	-0.28**	-.19**				
2	Collaboration		-0.24**	-.03 ^b	.22	9.72**	.04	6.12**
3	Organizational Commitment			-.47**	.61	30.31**	.39	46.34**
	Turnover Intentions			.28**				

^aRegression coefficients are standardized

^bCollaboration dropped from significant to non-significant after mediators were entered into the model

**Significant at the .01 level (1-tailed)

*Significant at the .05 level (1-tailed)

combination, was responsible for the diminished collaboration-school turnover relationship. It was deemed that OC and turnover intentions together fully mediated the relationship and that their total effect on the β -coefficient for collaboration was 95% likely to be between .10 and .39, with a point estimate of .24. Of this .24, OC alone accounted for .19 (95% CI: .08, .33), whereas the confidence interval for turnover intentions contained zero, meaning it was not a full mediator of the relationship like OC was. To determine whether turnover intentions was a partial mediator, the indirect effect of both mediators was shown to reduce the β -coefficient by a significant 0.07 (95% CI: .02 to .12), meaning that adding turnover intentions to OC helped account for the mediated effect. Thus, Hypothesis 5 was supported. A visual depiction of this relationship can be found in Figure 6, where OC is a full mediator and turnover intentions is a partial mediator of the relationship between collaboration and school turnover.

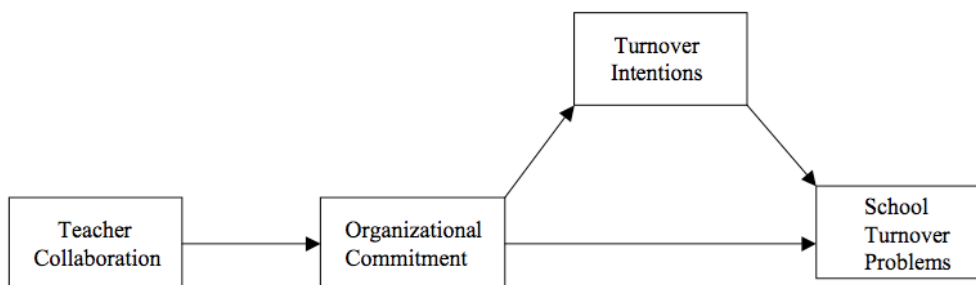


Figure 6. The fully mediated path between teacher collaboration and school turnover.

To ensure that the discovered model was appropriately specified, all assumptions of regression were checked on the hierarchical regression analysis. Although the residuals were normally distributed with a mean of zero and constant variance, several outliers were discovered. Specifically, there were

seven influential data points, as indicated by Cook's distance values outside of the critical range specified by the sample size and number of predictor variables. The regression was re-run without these outliers, and the reported relationships increased in magnitude, as did the overall variance explained by the model. Despite this, because the data points represented real information (i.e., they were not data entry errors), it was determined that they should be left in the analysis and that their deletion would over-inflate the model's explanatory power.

Hypothesis 6

The sixth hypothesis proposed that teacher access to learning opportunities would be negatively related to school turnover problems through the mediating role of teacher OC and turnover intentions. As seen in Table 4, learning opportunities were significantly related to both OC and turnover intentions ($r = .58, p < .001$ and $r = -.33, p = .001$, respectively), as well as to school turnover ($r = -.47, p < .001$). That is, those who reported high levels of learning opportunities in their schools also tended to report high OC, low turnover intentions, and low school turnover problems, as expected.

To test for the presence of the proposed mediated effect, a hierarchical regression was used in which step one controlled for the effects of school level (elementary, middle, or high school), step two entered learning opportunities, and step three entered both mediators. As seen in Table 13, this model accounted for a significant 61.40% of the variance in school turnover ($R^2_{adj} = .61, F[5, 87] = 30.23, p < .001$). All three steps of the model were significant, indicating that, after accounting for school level, learning opportunities were still significantly

Table 13

Hierarchical Regression Analysis of the Mediated Learning Opportunity-School Turnover Relationship

Step	Variable Entered	Regression Coefficients ^a			R^2_{adj}	Model F	ΔR^2_{adj}	ΔF
		1	2	3				
1	Dummy Elementary	-.45**	-0.33**	-.26**	.18	10.89**	.18	10.89**
	Dummy Middle	-.23*	-0.20*	-.18**				
2	Learning Opportunity		-0.36**	-.02 ^b	.29	13.39**	.11	14.99*
3	Organizational Commitment			-.47**	.61	30.23**	.32	38.55**
	Turnover Intentions			.28**				

^aRegression coefficients are standardized

^bLearning Opportunity dropped from significant to non-significant after mediators were entered into the model

**Significant at the .01 level (1-tailed)

*Significant at the .05 level (1-tailed)

negatively related to school turnover ($\beta = -.36, p < .001$). After entering the mediators in step three, however, the association between learning opportunities and school turnover dropped to non-significance ($\beta = -.02, ns$), while both mediators remained significant predictors of school turnover ($\beta = -.47, p < .01$ and $\beta = .28, p < .01$, respectively).

Finally, the significance test for a multiple mediator model provided by Hayes et al. (in press) was run to determine whether each mediator, and their combination, was responsible for the diminished learning opportunity-school turnover relationship. It was deemed that OC and turnover intentions together fully mediated the relationship and that their total effect on the β -coefficient for learning opportunities was 95% likely to be between .25 and .52, with a point estimate of .38. Of this .38, OC alone accounted for .28 (95% CI: .15, .43), whereas the confidence interval for turnover intentions contained zero, meaning it was not a full mediator of the relationship like OC was. To determine whether turnover intentions was a partial mediator, the indirect effect of both mediators was shown to reduce the β -coefficient by a significant 0.10 (95% CI: .04 to .18), meaning that adding turnover intentions to OC helped account for the mediated effect. Thus, Hypothesis 6 was supported. A visual depiction of this relationship can be found in Figure 7, where OC is a full mediator and turnover intentions is a partial mediator of the relationship between learning opportunities and school turnover.

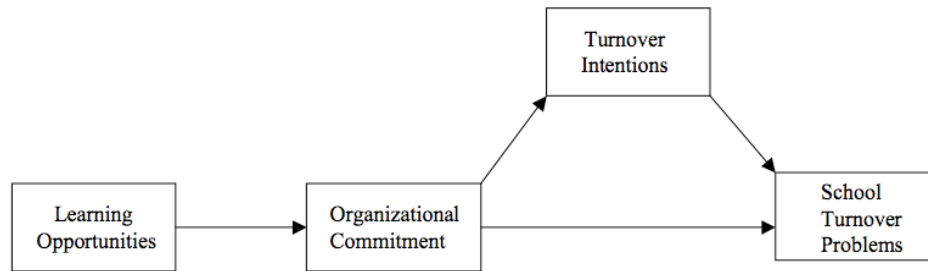


Figure 7. The fully mediated path between teacher learning opportunities and school turnover.

To ensure that the discovered model was appropriately specified, all assumptions of regression were checked on the hierarchical regression analysis. Although the residuals were normally distributed with a mean of zero and constant variance, several outliers were discovered. Specifically, there were seven influential data points, as indicated by Cook's distance values outside of the critical range specified by the sample size and number of predictor variables. The regression was re-run without these outliers, and the reported relationships increased in magnitude, as did the overall variance explained by the model. Despite this, because the data points represented real information (i.e., they were not data entry errors), it was determined that they should be left in the analysis and that their deletion would over-inflate the model's explanatory power.

Hypothesis 7 (a-f)

The seventh hypothesis proposed that the resources available to teachers would be negatively related to school turnover problems through the mediating role of teacher OC and turnover intentions. Six specific types of resources were specified and analyzed separately, including having a reasonable teacher workload, an orderly school environment, a supportive administrative support, reasonable school building conditions, availability and adequacy of instructional

resources, and positive teacher-pupil interactions. Of these constructs, the two job demands (workload and pupil misconduct) were expected to be positively related to school turnover, whereas the four job resources (administrative support, building conditions, instructional resources, and positive teacher-pupil interactions) were expected to be negatively related to school turnover. Finally, OC and turnover intentions were hypothesized to mediate the positive relationship between the job demands and school turnover and the negative relationship between the job resources and school turnover.

7a) Teacher workload. Hypothesis 7a proposed that teacher workload would be positively related to school turnover problems through the mediating role of teacher OC and turnover intentions. As seen in Table 4, workload was significantly related to both OC and turnover intentions ($r = -.53, p < .001$ and $r = .33, p = .001$, respectively), as well as to school turnover ($r = .49, p < .001$). That is, those who reported high levels of teacher workload also tended to report low OC, high turnover intentions, and high school turnover problems, as expected.

To test for the presence of the proposed mediated effect, a hierarchical regression was used in which step one controlled for the effects of school level (elementary, middle, or high school), step two entered teacher workload, and step three entered both mediators. As seen in Table 14, this model accounted for a significant 62.10% of the variance in school turnover ($R^2_{adj} = .62, F[5, 87] = 31.17, p < .001$). All three steps of the model were significant, indicating that, after accounting for school level, workload was still significantly positively related to school turnover ($\beta = .41, p < .001$). After entering the mediators in step

Table 14

Hierarchical Regression Analysis of the Mediated Workload-School Turnover Relationship

Step	Variable Entered	Regression Coefficients ^a			R^2_{adj}	Model F	ΔR^2_{adj}	ΔF	
		1	2	3					
1	Dummy Elementary		-.45**	-0.38**	-.26**	.18	10.89**	.18	10.89**
	Dummy Middle		-.23*	-0.16*	-.16*				
2	Workload			0.41**	.10 ^b	.33	16.22**	.15	21.83**
3	Organizational Commitment				-.43**	.62	31.17**	.29	50.16**
	Turnover Intentions				.28**				

^aRegression coefficients are standardized

^bWorkload dropped from significant to non-significant after mediators were entered into the model

**Significant at the .01 level (1-tailed)

*Significant at the .05 level (1-tailed)

three, however, the association between workload and school turnover dropped to non-significance ($\beta = .10$, *ns*), while both mediators remained significant predictors of school turnover ($\beta = -.43$, $p < .01$ and $\beta = .28$, $p < .01$, respectively).

Finally, the significance test for a multiple mediator model provided by Hayes et al. (in press) was run to determine whether each mediator, and their combination, was responsible for the diminished workload-school turnover relationship. It was deemed that OC and turnover intentions together fully mediated the relationship and that their total effect on the β -coefficient for workload was 95% likely to be between .21 and .51, with a point estimate of .34. Of this .34, OC alone accounted for .25 (95% CI: .14, .39), whereas the confidence interval for turnover intentions contained zero, meaning it was not a full mediator of the relationship like OC was. To determine whether turnover intentions was a partial mediator, the indirect effect of both mediators was shown to reduce the β -coefficient by a significant 0.09 (95% CI: .03 to .16), meaning that adding turnover intentions to OC helped account for the mediated effect. Thus, Hypothesis 7a was supported. A visual depiction of this relationship can be found in Figure 8, where OC is a full mediator and turnover intentions is a partial mediator of the relationship between workload and school turnover.

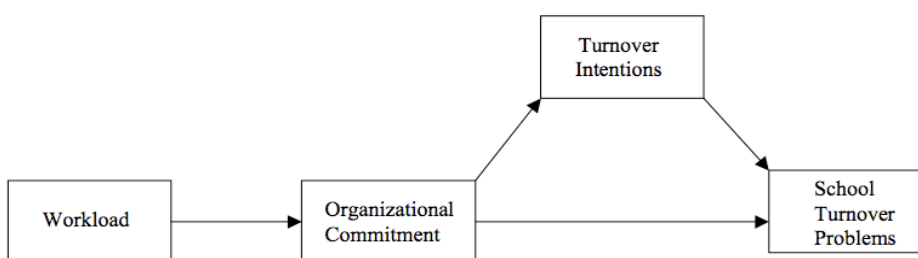


Figure 8. The fully mediated path between teacher workload and school turnover.

To ensure that the discovered model was appropriately specified, all assumptions of regression were checked on the hierarchical regression analysis. Although the residuals were normally distributed with a mean of zero and constant variance, several outliers were discovered. Specifically, there were six influential data points, as indicated by Cook's distance values outside of the critical range specified by the sample size and number of predictor variables. The regression was re-run without these outliers, and the reported relationships increased in magnitude, as did the overall variance explained by the model. Despite this, because the data points represented real information (i.e., they were not data entry errors), it was determined that they should be left in the analysis and that their deletion would over-inflate the model's explanatory power.

7b) Pupil misconduct. Hypothesis 7b proposed that pupil misconduct would be positively related to school turnover problems through the mediating role of teacher OC and turnover intentions. As seen in Table 4, pupil misconduct was significantly related to both OC and turnover intentions ($r = -.57, p < .001$ and $r = .49, p < .001$, respectively), as well as to school turnover ($r = .49, p < .001$). That is, those who reported high levels of pupil misconduct also tended to report low OC, high turnover intentions, and high school turnover problems, as expected.

To test for the presence of the proposed mediated effect, a hierarchical regression was used in which step one controlled for the effects of school level (elementary, middle, or high school), step two entered pupil misconduct, and step three entered both mediators. As seen in Table 15, this model accounted for a

Table 15
Hierarchical Regression Analysis of the Mediated Pupil Misconduct-School Turnover Relationship

Step	Variable Entered	Regression Coefficients ^a			Model <i>F</i>	ΔR^2_{adj}	ΔF	
		1	2	3				
1	Dummy Elementary	-.45**	-0.36**	-.26**	.18	10.89**	.18	10.89**
	Dummy Middle	-.23*	-0.17*	-.18**				
2	Pupil Misconduct		0.44**	.04 ^b	.36	17.90**	.18	25.90**
3	Organizational Commitment			-.47**	.62	30.34**	.26	30.93**
	Turnover Intentions			.27**				

^aRegression coefficients are standardized

^bPupil Misconduct dropped from significant to non-significant after mediators were entered into the model

**Significant at the .01 level (1-tailed)

*Significant at the .05 level (1-tailed)

significant 61.50% of the variance in school turnover ($R^2_{adj} = .62$, $F[5, 87] = 30.34$, $p < .001$). All three steps of the model were significant, indicating that, after accounting for school level, pupil misconduct was still significantly positively related to school turnover ($\beta = .44$, $p < .001$). After entering the mediators in step three, however, the association between pupil misconduct and school turnover dropped to non-significance ($\beta = .04$, *ns*), while both mediators remained significant predictors of school turnover ($\beta = -.47$, $p < .01$ and $\beta = .27$, $p < .01$, respectively).

Finally, the significance test for a multiple mediator model provided by Hayes et al. (in press) was run to determine whether each mediator, and their combination, was responsible for the diminished pupil misconduct-school turnover relationship. It was deemed that OC and turnover intentions together fully mediated the relationship and that their total effect on the β -coefficient for pupil misconduct was 95% likely to be between .32 and .56, with a point estimate of .44. Of this .35, OC alone accounted for .29 (95% CI: .16, .43), while turnover intentions alone accounted for .07 (95% CI: .01, .16), and the dual path accounted for an additional .07 (95% CI: .02, .13). Thus, Hypothesis 7b was supported. A visual depiction of this relationship can be found in Figure 9, where OC and turnover intentions are both full mediators of the relationship between pupil misconduct and school turnover.

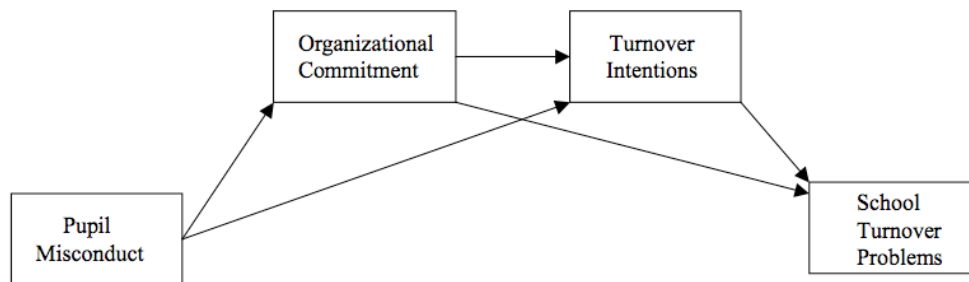


Figure 9. The fully mediated path between pupil misconduct and school turnover.

To ensure that the discovered model was appropriately specified, all assumptions of regression were checked on the hierarchical regression analysis. Although the residuals were normally distributed with a mean of zero and constant variance, several outliers were discovered. Specifically, there were six influential data points, as indicated by Cook's distance values outside of the critical range specified by the sample size and number of predictor variables. The regression was re-run without these outliers, and the reported relationships increased in magnitude, as did the overall variance explained by the model. Despite this, because the data points represented real information (i.e., they were not data entry errors), it was determined that they should be left in the analysis and that their deletion would over-inflate the model's explanatory power.

7c) Administrative support. Hypothesis 7c proposed that administrative support would be negatively related to school turnover problems through the mediating role of teacher OC and turnover intentions. As seen in Table 4, administrative support was significantly related to both OC and turnover intentions ($r = .63, p < .001$ and $r = -.26, p = .005$, respectively), as well as to school turnover ($r = -.42, p < .001$). That is, those who reported high levels of

administrative support in their schools also tended to report high OC, low turnover intentions, and low school turnover problems, as expected.

To test for the presence of the proposed mediated effect, a hierarchical regression was used in which step one controlled for the effects of school level (elementary, middle, or high school), step two entered administrative support, and step three entered both mediators. As seen in Table 16, this model accounted for a significant 61.70% of the variance in school turnover ($R^2_{adj} = .61$, $F[5, 87] = 30.60$, $p < .001$). All three steps of the model were significant, indicating that, after accounting for school level, administrative support was still significantly negatively related to school turnover ($\beta = -.41$, $p < .001$). After entering the mediators in step three, however, the association between administrative support and school turnover dropped to non-significance ($\beta = -.07$, *ns*), while both mediators remained significant predictors of school turnover ($\beta = -.43$, $p < .01$ and $\beta = .29$, $p < .01$, respectively).

Finally, the significance test for a multiple mediator model provided by Hayes et al. (in press) was run to determine whether each mediator, and their combination, was responsible for the diminished administrative support-school turnover relationship. It was deemed that OC and turnover intentions together fully mediated the relationship and that their total effect on the β -coefficient for administrative support was 95% likely to be between .25 and .56, with a point estimate of .40. Of this .40, OC alone accounted for .32 (95% CI: .19, .48), whereas the confidence interval for turnover intentions contained zero, meaning it was not a full mediator of the relationship like OC was. To determine whether

Table 16

Hierarchical Regression Analysis of the Mediated Administrative Support-School Turnover Relationship

Step	Variable Entered	Regression Coefficients ^a			R^2_{adj}	Model F	ΔR^2_{adj}	ΔF
		1	2	3				
1	Dummy Elementary		-0.45**	-0.40**	.18	10.89**	.18	10.89**
	Dummy Middle		-.23*	-0.31**	-.20**			
2	Administrative Support			-0.41**	.33	16.17**	.15	21.71**
3	Organizational Commitment			-.43**	.62	30.60**	.29	34.17**
	Turnover Intentions			.29**				

^aRegression coefficients are standardized

^bAdministrative Support dropped from significant to non-significant after mediators were entered into the model

**Significant at the .01 level (1-tailed)

*Significant at the .05 level (1-tailed)

turnover intentions was a partial mediator, the indirect effect of both mediators was shown to reduce the β -coefficient by a significant 0.13 (95% CI: .04 to .22), meaning that adding turnover intentions to OC helped account for the mediated effect. Thus, Hypothesis 7c was supported. A visual depiction of this relationship can be found in Figure 10, where OC is a full mediator and turnover intentions is a partial mediator of the relationship between administrative support and school turnover.

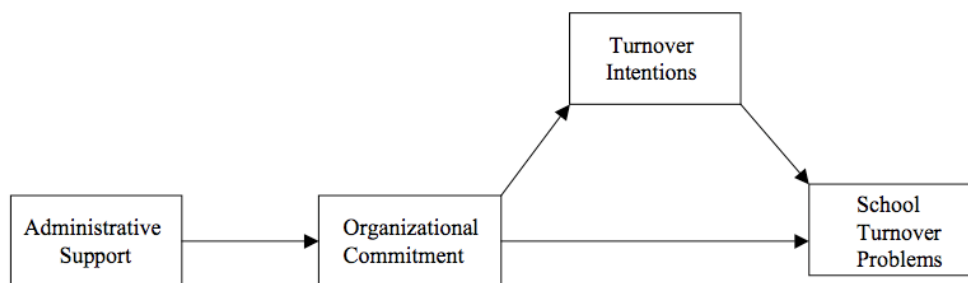


Figure 10. The fully mediated path between administrative support and school turnover.

To ensure that the discovered model was appropriately specified, all assumptions of regression were checked on the hierarchical regression analysis. Although the residuals were normally distributed with a mean of zero and constant variance, several outliers were discovered. Specifically, there were seven influential data points, as indicated by Cook's distance values outside of the critical range specified by the sample size and number of predictor variables. The regression was re-run without these outliers, and the reported relationships increased in magnitude, as did the overall variance explained by the model. Despite this, because the data points represented real information (i.e., they were

not data entry errors), it was determined that they should be left in the analysis and that their deletion would over-inflate the model's explanatory power.

7d-e) Building conditions and instructional resources. Recall that hypotheses 7d and 7e were combined due to the fact that single school resource factor was found to encompass both constructs. Therefore, the revised hypothesis was that general school resources would be negatively related to school turnover problems through the mediating role of teacher OC and turnover intentions. As seen in Table 4, school resources were significantly related to both OC and turnover intentions ($r = .48, p < .001$ and $r = -.43, p < .001$, respectively), as well as to school turnover ($r = -.56, p < .001$). That is, those who reported high levels of general resources in their schools also tended to report high OC, low turnover intentions, and low school turnover problems, as expected.

To test for the presence of the proposed mediated effect, a hierarchical regression was used in which step one controlled for the effects of school level (elementary, middle, or high school), step two entered school resources, and step three entered both mediators. As seen in Table 17, this model accounted for a significant 62.50% of the variance in school turnover ($R^2_{adj} = .63, F[5, 87] = 31.64, p < .001$). All three steps of the model were significant, indicating that, after accounting for school level, school resources were still significantly negatively related to school turnover ($\beta = -.45, p < .001$). After entering the mediators in step three, the association between school resources and school turnover lessened in magnitude, but still remained significant ($\beta = -.13, p = .05$). Despite both mediators also displaying significant relationships with school

Table 17
Hierarchical Regression Analysis of the Mediated School Resource-School Turnover Relationship

Step	Variable Entered	Regression Coefficients ^a			R^2_{adj}	Model F	ΔR^2_{adj}	ΔF
		1	2	3				
1	Dummy Elementary	-.45**	-0.26**	-.22**	.18	10.89**	.18	10.89**
	Dummy Middle	-.23*	-0.07	-.14*				
2	School Resources		-0.45**	-.13* ^b	.33	16.16**	.15	21.68**
3	Organizational Commitment			-.45**	.63	31.64**	.30	35.88**
	Turnover Intentions			.26**				

^aRegression coefficients are standardized

^bSchool Resources became a less significant predictor after mediators were entered into the model

**Significant at the .01 level (1-tailed)

*Significant at the .05 level (1-tailed)

turnover in the final model ($\beta = -.45, p < .01$ and $\beta = .26, p < .01$, respectively), it is clear that they do not fully mediate the relationship between school resources and school turnover.

To test whether the mediators partially mediated the relationship (i.e., whether there was a significant drop in the significance of the β -coefficient for school resources from step two to step three), the author conducted the Hayes et al. (in press) multiple mediation significance test. It was deemed that OC and turnover intentions together did indeed partially mediate the relationship and that their total effect on the β -coefficient for supervisor feedback was 95% likely to be between .19 and .47, with a point estimate of .32. Of this .32, OC alone accounted for .21 (95% CI: .11, .33), while turnover intentions alone accounted for .05 (95% CI: .01, .14), and the dual path accounted for an additional .06 (95% CI: .02, .12). Thus, this hypothesis was supported. A visual depiction of this relationship can be found in Figure 11, where OC and turnover intentions are both partial mediators of the relationship between school resources and school turnover (i.e., there remains a direct effect of school resources on school turnover, in addition to the indirect effects through OC and turnover intentions).

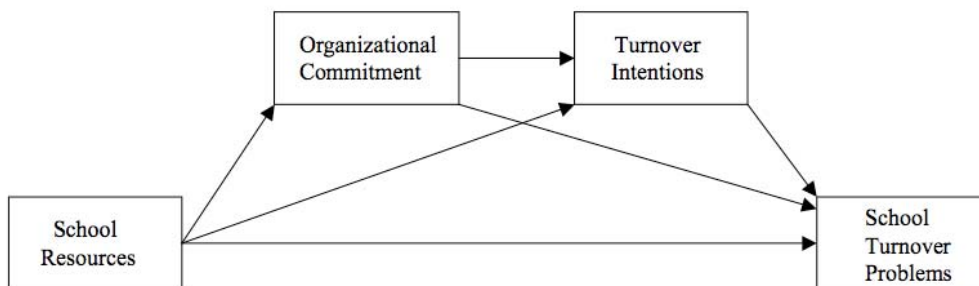


Figure 11. The partially mediated path between school resources and school turnover.

To ensure that the discovered model was appropriately specified, all assumptions of regression were checked on the hierarchical regression analysis. Although the residuals were normally distributed with a mean of zero and constant variance, several outliers were discovered. Specifically, there was a single outlier in the predictor-space and eight influential data points, as indicated respectively by leverage values and Cook's distance values outside of the critical range specified by the sample size and number of predictor variables. The regression was re-run without these outliers, and the reported relationships increased in magnitude, as did the overall variance explained by the model. Despite this, because the data points represented real information (i.e., they were not data entry errors), it was determined that they should be left in the analysis and that their deletion would over-inflate the model's explanatory power.

7f) Positive teacher-pupil interactions. Finally, hypothesis 7f proposed that positive teacher-pupil interactions would be negatively related to school turnover problems through the mediating role of teacher OC and turnover intentions. As seen in Table 4, positive teacher-pupil interactions were significantly related to both OC and turnover intentions ($r = .30, p = .001$ and $r = -.18, p = .04$, respectively), as well as to school turnover ($r = -.28, p = .003$). That is, those who reported high levels of positive teacher-pupil interactions in their schools also tended to report high OC, low turnover intentions, and low school turnover problems, as expected.

To test for the presence of the proposed mediated effect, a hierarchical regression was used in which step one controlled for the effects of school level

(elementary, middle, or high school), step two entered positive teacher-pupil interactions, and step three entered both mediators. As seen in Table 18, this model accounted for a significant 61.70% of the variance in school turnover ($R^2_{adj} = .62$, $F[5, 87] = 30.66$, $p < .001$). All three steps of the model were significant, indicating that, after accounting for school level, positive teacher-pupil interactions were still significantly negatively related to school turnover ($\beta = -.24$, $p < .001$). After entering the mediators in step three, however, the association between positive interactions and school turnover dropped to non-significance ($\beta = -.06$, ns), while both mediators remained significant predictors of school turnover ($\beta = -.47$, $p < .01$ and $\beta = .28$, $p < .01$, respectively).

Finally, the significance test for a multiple mediator model provided by Hayes et al. (in press) was run to determine whether each mediator, and their combination, was responsible for the diminished positive teacher-pupil interactions-school turnover relationship. It was deemed that OC and turnover intentions together fully mediated the relationship and that their total effect on the β -coefficient for positive interactions was 95% likely to be between .05 and .35, with a point estimate of .21. Of this .21, OC alone accounted for .16 (95% CI: .04, .27), whereas the confidence interval for turnover intentions contained zero, meaning it was not a full mediator of the relationship like OC was. To determine whether turnover intentions was a partial mediator, the indirect effect of both mediators was shown to reduce the β -coefficient by a significant 0.05 (95% CI: .01 to .10), meaning that adding turnover intentions to OC helped account for the mediated effect. Thus, Hypothesis 7f was supported. A visual depiction of this

Table 18

Hierarchical Regression Analysis of the Mediated Positive Relations-School Turnover Relationship

Step	Variable Entered	Regression Coefficients ^a			R^2_{adj}	Model F	ΔR^2_{adj}	ΔF
		1	2	3				
1	Dummy Elementary		-0.43**	-0.26**	.18	10.89**	.18	10.89**
	Dummy Middle		-0.23*	-0.18**				
2	Positive Relations		-0.24**	-0.06 ^b	.23	10.03**	.05	6.88**
3	Organizational Commitment			-0.47**	.62	30.66**	.39	46.30**
	Turnover Intentions			.28**				

^aRegression coefficients are standardized

^bPositive Relations dropped from significant to non-significant after mediators were entered into the model

**Significant at the .01 level (1-tailed)

*Significant at the .05 level (1-tailed)

relationship can be found in Figure 12, where OC is a full mediator and turnover intentions is a partial mediator of the relationship between positive teacher-pupil relations and school turnover.

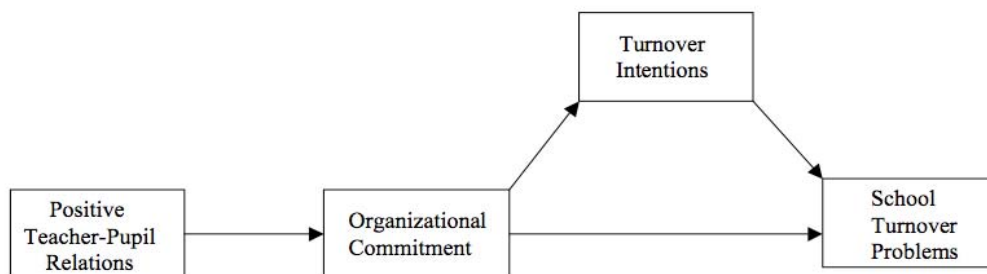


Figure 12. The fully mediated path between positive teacher-pupil relations and school turnover.

To ensure that the discovered model was appropriately specified, all assumptions of regression were checked on the hierarchical regression analysis. Although the residuals were normally distributed with a mean of zero and constant variance, several outliers were discovered. Specifically, there was a single outlier in the predictor-space and six influential data points, as indicated respectively by leverage values and Cook's distance values outside of the critical range specified by the sample size and number of predictor variables. The regression was re-run without these outliers, and the reported relationships increased in magnitude, as did the overall variance explained by the model. Despite this, because the data points represented real information (i.e., they were not data entry errors), it was determined that they should be left in the analysis and that their deletion would over-inflate the model's explanatory power.

CHAPTER IV

DISCUSSION

The present study attempted to further extend knowledge about organizational variables that may be causally responsible for the skyrocketing teacher turnover rates in the United States. Based on previous research, this study centered around organizational commitment (OC), which has repeatedly been shown to be a particularly potent precursor to teacher turnover decisions (Firestone & Rosenblum, 1988; Mowday et al., 1982; Park, 2005; Rosenholtz, 1989b). Realizing the importance of this construct, a model of antecedents to teacher OC (and, consequently, teacher turnover) that was initially proposed by Firestone and Pennell (1993) was modified and tested. Specifically, seven broad categories of organizational working conditions (some with subcategories) were tested for having indirect associations with teacher turnover, with each of the working condition-turnover associations being mediated by OC. A summary of the study's major findings, theoretical and practical implications, limitations, and suggestions for future research follow.

Major Findings and Implications

In general, each of the hypotheses presented in this paper received some extent of empirical support. That is, at least one variable from each category of working conditions was found to display a relationship with school turnover problems that was either fully or partially mediated by teacher OC and teacher turnover intentions, as predicted. Furthermore, the mediated relationships took the same form in most cases. Specifically, the study showed OC to be a full

mediator and turnover intentions to be a partial mediator of the relationships between school turnover problems and skill variety, autonomy, participation in decision-making (PDM), collaboration, learning opportunities, workload, administrative support, and positive teacher-pupil relations. In turn, the relationship between pupil misconduct and school turnover was fully mediated by both teacher OC and teacher turnover intentions, whereas the relationships between supervisor feedback and school resources with school turnover were only partially mediated by the intervening variables. Lastly, it is important to note that there was no support for the mediated relationships hypothesized to exist between coworker feedback and job feedback with school turnover.

First, to address the non-significant relationships, it is important to note that the findings for coworker feedback were consistent with the other findings, but simply failed to reach significance, possibly indicating that there is a smaller effect size for this variable that was unable to be detected with a sample size of only 93 participants (Hollenbeck, DeRue, & Mannor, 2006). That is, although coworker feedback displayed the expected associations with OC ($r = .19, p = .03$), turnover intentions ($r = -.17, p = .04$), and school turnover ($r = -.23, p = .01$), and although the partial regression coefficient for coworker feedback predicting school turnover dropped from significant ($\beta = -.16, p < .05$) to non-significant ($\beta = .06, ns$) when the mediator variables were entered into the model, meeting Baron and Kenny's (1986) requirements for mediation, the indirect path was not large enough to reach significance. Because the test of mediation used in this study used bootstrapping and therefore provided confidence intervals of

parameter estimates rather than p -values, the finding that the 95% confidence interval of the indirect effect just barely contained zero (-.02, .29) can be likened to a situation where there is marginal significance (i.e., $p < .10$). Again, then, despite not finding support for this hypothesis in the present study, the researcher interprets the lack of a finding to a lack of power rather than the non-existence of the (small) effect.

The same interpretation cannot be used for the findings related to job feedback, however, as the study failed to find any associations between this variable and the other variables of interest (see Table 4). This may simply indicate that job feedback is not in fact related to OC, turnover intentions, or actual turnover. Although literature does suggest the instrumental role of receiving feedback from the job itself in the workplace (e.g., Hackman & Oldham, 1980), most of this research has centered around the importance of this type of feedback for goal-setting and performance. And while it makes intuitive sense for performance and turnover to be linked, research also suggests that intrinsic motivation moderates this relationship, such that negative feedback from the job (indicating poor performance) is more likely to result in higher defection rates only for those with low levels of internal motivation. In contrast, those who are highly intrinsically motivated are more likely to use their negative job feedback to search for ways to improve their performance, rather than giving up (Rosenholtz, 1989b). Therefore, it seems plausible that this mediated relationship should have been specified as a moderated mediated relationship, with a measure of intrinsic motivation serving as the moderator.

Finally, the remaining hypotheses that received empirical support in this study can be interpreted as providing preliminary support to the proposed mediated model wherein these seven categories of working conditions are related to school turnover problems through OC and turnover intentions. Most of these relationships between working condition variables and teacher turnover were completely explained by OC and turnover intentions, meaning that, after accounting for these two intervening variables, there was no longer any direct link between the working conditions (e.g., skill variety) and turnover problems. It is important to note, however, that the relationships between supervisor feedback and school resources with turnover were not fully explained by OC and turnover intentions, and direct effects of the respective working conditions on school turnover problems remained even after controlling for the intervening variables. This may signify that there are other mediating variables that explain why supervisor feedback and school resources affect teacher turnover, or there may really be a direct association between the variables that is not explained by anything else. For instance, a teacher who is continually given inadequate feedback or supervisor evaluations (see Baron, 1988), or who is denied access to necessary instructional materials, may become frustrated and quit, regardless of satisfaction with the job overall or commitment to the school itself.

In any case, this study's findings add to a growing literature on the importance of teacher OC in retaining a strong teacher workforce, and the study also puts forth an initial list of working conditions that seem capable of affecting levels of OC. Furthermore, the list of proposed working conditions is thought to

be mostly or entirely made up of organizational variables that most school districts are capable of altering at their own discretion. Therefore, schools struggling with high levels of teacher turnover should probably do their best to take these seven categories of variables (skill variety, autonomy, PDM, feedback, collaboration, learning opportunities, and resources) into consideration and see whether there is any way they can improve upon them.

As an example, given the recent attention that has been paid to the idea of merit pay for teachers, it may be worthwhile to consider these non-monetary changes to working conditions instead. In particular, the findings of this study regarding teacher collaboration seem to forebode some possibly negative effects of merit pay, which has been shown to increase competition and decrease collaboration amongst teachers (Chandler, 1989). What merit pay advocates do not seem to realize, then, is that work attributes, when properly configured, are viewed by most teachers as being more rewarding than salary (Johnson, 1990). In other words, unless schools can do a better job fostering teacher commitment, then any reform efforts they attempt (e.g., merit pay, recruitment packages), while potentially successful in the short-term, will ultimately fail as a long-term strategy.

Along parallel lines of reasoning, it is important to note that Hackman and Oldham (1980) have acknowledged that work redesign is not a panacea for all organizational ills; they did note, however, that competently executed work redesign efforts have resulted in significant gains for a variety of organizations. Therefore, while attempting to redesign the working conditions discussed in this

paper should improve organizational commitment and reduce turnover, it is important to realize that these variables did not explain 100% of the variance in either of these outcomes. In other words, factors outside those discussed in this paper, such as characteristics of the student body (e.g., poverty, violence) will continue playing a role in teachers' decisions to change schools or quit teaching.

In addition, the situation is further complicated by the fact that local, state, and federal policies can be restrictive of what interventions a given school can even try to implement. It is this author's opinion, however, that simple organizational planning is all that is needed to implement the majority of the job characteristics discussed in this paper. That is, these variables have been shown to differ widely between schools that serve similar student bodies, and this variance is typically due to differences in school leadership rather than any formal policies that dictate the level of skill variety, autonomy, participation in decision-making, feedback, collaboration, learning opportunities, or resources allowed in a school (e.g., Charters et al., 1984; David, 1988; Dee et al., 2006; Ingersoll, 2001). Of course, certain resources mentioned in this paper (e.g., condition of buildings and instructional materials) are contingent on a school's budget, and are therefore exceptions to this general statement, however, that still leaves a handful of other working conditions that can be targeted with relative freedom. This is especially so among charter schools, and so it would be interesting to see these types of schools, which run independently, implement these job redesign practices to demonstrate their effectiveness to policy makers who can help lobby for similar interventions in state-run schools.

Overall, then, if the findings in this study can be replicated, it will be clear that schools should place a higher priority on enhancing teachers' levels of OC if they want to retain a more stable workforce. Further empirical support will also provide administrators insight into the antecedent working conditions from which OC is derived, allowing them to target these organizational variables for redesign, with the long-term impact of these organizational changes capable of reversing teacher turnover trends and saving upwards of \$10 million for some of the nation's larger school districts in costs associated with turnover (see Appendix B).

Clearly, the implications of finding strong antecedents of organizational commitment in school settings are significant for impacting practical change, but it is also important to realize their importance in gaining a better understanding of the theoretical makeup of teacher commitment. Hoyle and Kenny (1999) understate the importance of testing and finding mediated relationships to a developing field of study. Specifically, they state that these tests advance our understanding beyond simply identifying which variables are associated (e.g., organizational working conditions and teacher turnover), and turn to the challenging endeavor of developing theories about *how* they are related (e.g., through OC). Theoretically, then, the findings from this study extend the research literature on teacher turnover by specifying a model of mediated relationships shown to contribute to teacher turnover.

Limitations and Suggestions for Future Research

Despite finding strong support for many of the hypotheses contained herein, caution is encouraged in interpreting the results. The single most

important limitation of the present study stems from the chosen method of sampling participants. In particular, the use of a snowball sampling design was used for convenience and to collect data in a timely manner, but snowball sampling is certainly not the most desirable way to collect data when hoping to generalize findings beyond the sample on which the study was conducted. Ideally, a list of teachers representative of the population of interest could be identified and teachers from that list could be randomly sampled for inclusion in the study. This approach would allow each member of the population to have an equal probability of being in the research sample and would, most likely, control for biases in the sample, such as sampling from only upper class teachers or teachers of a specific age range, for example.

In this study, the researcher was not working with a list of representative candidates but, rather, with a list of acquaintances, which precluded the use of conventional probability sampling techniques and admittedly led to a sample that was mostly white and middle class. As a result, the sample in this study was largely unrepresentative of the population of teachers in general. Perhaps this is best demonstrated by the finding that most of the demographic variables that were collected were not associated with turnover in the way that has been shown time and again in other research studies. For example, whereas women and whites typically have higher turnover rates (Guarino et al., 2006), neither of these trends was found in the present sample and, in contrast, minorities reported significantly higher turnover intentions than whites in this study ($t = 2.28, p = .03$). An

obvious caveat is that very few of the study's participants were non-white, which brings this finding into question.

Not all aspects of the sample were inconsistent with historical findings, however. For instance, one of the stronger findings in the teaching literature, that the relationship between age and turnover is curvilinear, was likewise found in this study ($\beta = .19, t = 1.83, p = .036$), suggesting that perhaps some of the more notable relationships should emerge in any collection of teachers, as long as there is variance along the variables of interest. Therefore, it could be that the hypotheses supported in this study have much larger effect sizes than the demographic (e.g., gender, race) relationships and are therefore easier to find in small subsections of the population. Either way, the hypotheses presented in this paper should be replicated on more representative samples of teachers before assuming that these findings will generalize beyond the present sample.

Aside from issues with the design of the study, it is also pertinent to note several anomalies in the data that were collected. The three principal causes for concern include the low internal consistency reliabilities of several instruments used in the study, a curious side note about the multivariate outliers in the multiple regression analyses, and the violation of the independence of observations assumption. First, regarding reliability, three measures had Cronbach alpha coefficients below .80, including the coworker feedback scale ($\alpha = .76$), the learning opportunity scale ($\alpha = .77$), and the workload scale ($\alpha = .66$). Of these, the workload scale is by far the most problematic, but all of the findings concerning these three variables should be interpreted with caution. Future

studies attempting to replicate this study should revise the coworker feedback and learning opportunity scales (possibly by adding more items), while searching for or creating a new measure of teacher workload.

Secondly, regarding the multivariate outliers, although these outliers were kept in and reported in all the above analyses due to the fact that they represented accurate data, it is unclear what exactly caused them. Specifically, of the six to nine influential data points that were found across the different analyses, five of them were consistently labeled as outliers throughout each and every analysis. While this may be indicative that a subset of this sample was not described well by the proposed mediated model, an examination of the five outlying data points did not reveal anything unusual; that is, descriptive statistics for the five corresponding participants on the mediators and dependent variable were not markedly different from the rest of the sample. This abnormality is likely just due to the small sample size and, because the Cook's distance values of the outliers were not problematically large (i.e., greater than one), no further attention was paid to these data points.

Finally, it is important to note that studies collecting data from multiple members of multiple organizations (e.g., teachers from different schools) should really use hierarchical linear modeling (HLM) rather than ordinary least squares (OLS) regression (Raudenbush & Bryk, 2002). This is because teachers from the same school who are responding about working conditions in that school are not really providing independent data; rather, their responses are expected to be associated with one another. Again, this was a necessary limitation of this study

because not all respondents felt comfortable giving their school name, and the sample size would have been very small if only those who gave their school name were included.

Overall, then, this study did an adequate job of testing the mediated model of teacher turnover antecedents that was proposed. Despite problems with the sampling methodology, Singleton and Straits (2005) note that random sampling techniques are not critical during early phases of research. Because this was the first attempt to test the revised job characteristics model, the goal was not to generalize the findings to teachers everywhere or to make important decisions; therefore, convenience sampling was deemed to be appropriate at this stage. Having said that, future research will need to improve upon the methodology and use probability sampling if the data are to accurately represent a specified population of teachers.

Ideally, future researchers will be able to further test the mediated model of teacher turnover in this paper by collecting data in multiple schools (and possibly even multiple school districts), using HLM to model the related observations within each school. These models should also attempt to control for a greater number of variables that may influence the proposed relationships, at the school level (e.g., mean SES of students, budget), at the teacher level (e.g., age, gender, race, satisfaction with pay), and at the student level (e.g., racial makeup of the student body, the number of limited English and low-income students, standardized test scores, truancy, mobility, and attendance rates).

Additionally, researchers could explore the one completely non-significant finding from the present study concerning feedback from the job itself. Taking the advice of the researcher, it could be explored whether there truly is a mediated relationship between job feedback and school turnover after accounting for the moderating effect of intrinsic motivation. It would also be interesting to see if the other atypical relationships hold in future studies, such as the finding of partial rather than full mediation for supervisor feedback and school resources.

Finally, while many readers may interpret the discovered mediational models as instances of cause and effect, it must be clarified that a true cause-effect conclusion is unwarranted based on non-experimental studies. While there are theoretical reasons for specifying the order of the relationships expressed herein, confirmation can only be discovered through careful experimental design (Hayes et al., in press). Therefore, studies could use an experimental approach to redesign the working conditions from this study in an experimental group of schools and compare teacher turnover outcomes with control groups, although it would be difficult to control for all the possible confounds in an educational environment.

CHAPTER V

SUMMARY

This study explored a growing organizational literature which has suggested that the record levels of teacher defection that are currently costing American schools dearly in terms of dollars and talent can be explained by working conditions and teacher organizational commitment. By incorporating educational research into Hackman and Oldham's (1980) job characteristics model, which was created to explain organizational phenomena in non-educational settings, a new model was proposed wherein organizational commitment mediated the relationship between turnover and seven categories of school working conditions: skill variety, autonomy, participation in decision-making, feedback, collaboration, learning opportunities, and resources.

One hundred and twenty one teachers were recruited through e-mail to take an online survey measuring the perceived quality of these seven working conditions in their respective schools, along with measures assessing their level of organizational commitment, turnover intentions, and the extent of turnover problems in their schools. As hypothesized, it was found that each of the seven organizational variables was negatively related to teacher turnover and, further, that these relationships were all either fully or partially mediated by organizational commitment. A full discussion of the study's results is provided, alongside suggestions for next steps in this research area.

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Appendix A

United Nations Children's Fund's Country Rankings

Country	Percent of 15-year-olds falling below international benchmarks
1.) South Korea	1.4
2.) Japan	2.2
3.) Finland	4.4
4.) Canada	5.0
5.) Australia	6.2
6.) Austria	8.2
7.) Britain	9.4
8.) Ireland	10.2
9.) Sweden	10.8
10.) Czech Republic	12.2
11.) New Zealand	12.2
12.) France	12.6
13.) Switzerland	13.0
14.) Belgium	14.0
15.) Iceland	14.0
16.) Hungary	14.2
17.) Norway	14.2
18.) United States	16.2
19.) Germany	17.0
20.) Denmark	17.0
21.) Spain	18.6
22.) Italy	20.2
23.) Greece	23.2
24.) Portugal	23.6

Source: UNICEF, 2002

Appendix B
Projected Costs of Teacher Turnover

The Annual Cost of Teacher Turnover: A Five District Study		
School District	Number of Teachers	Cost Per Teacher Leaver
Chicago, Illinois	25,300	\$17,872
Granville County, North Carolina	532	\$9,875
Jemez Valley, New Mexico	41	\$4,366
Milwaukee, Wisconsin	6,139	\$15,325
Santa Rosa, New Mexico	58	Unavailable

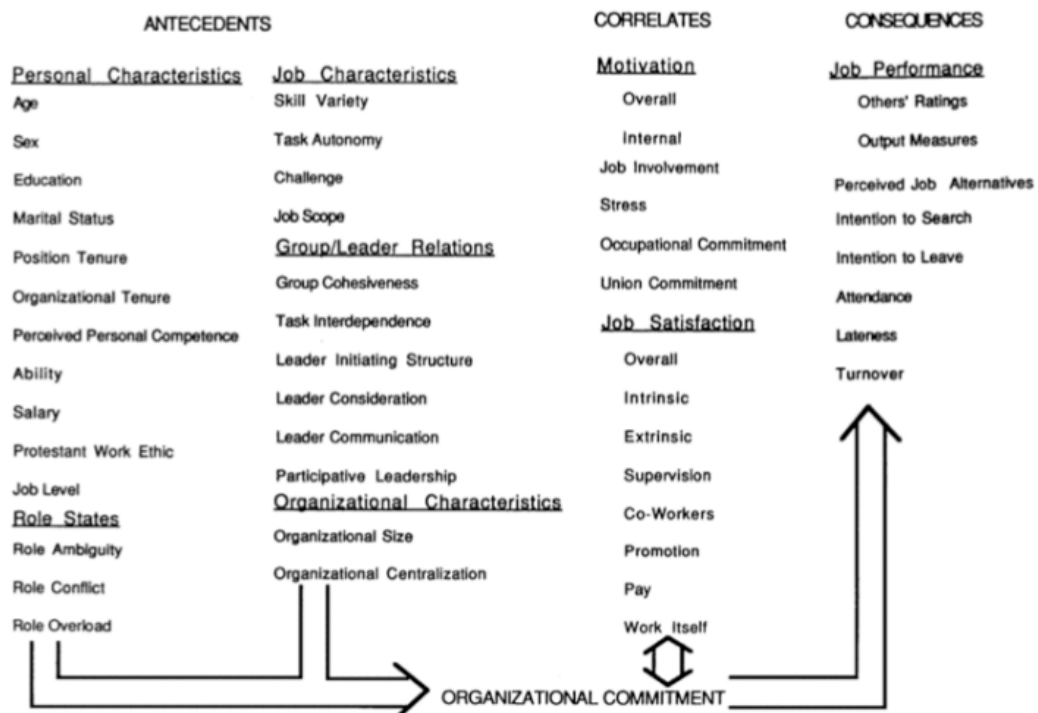
Source: NCTAF, 2007b

Cost of Teacher Turnover in Selected School Districts	
School District	Annual Cost of Teacher Turnover
Atlanta, Georgia	\$10,920,000
Baltimore, Maryland	\$19,013,750
Boston, Massachusetts	\$13,020,000
Chicago, Illinois	\$86,000,000
Cleveland, Ohio	\$12,538,750
Dallas, Texas	\$28,892,500
Detroit, Michigan	\$26,565,000
Denver, Colorado	\$14,988,750
Fairfax, Virginia	\$28,350,000
Hartford, Connecticut	\$4,462,500
Houston, Texas	\$35,043,750
Los Angeles, California	\$94,211,250
Louisville, Kentucky	\$18,208,750
Memphis, Tennessee	\$21,866,250
Miami, Florida	\$47,775,000
Nashville, Tennessee	\$14,393,750
New York City, New York	\$115,221,250
Oakland, California	\$12,005,000
Philadelphia, Pennsylvania	\$29,662,500
Pittsburgh, Pennsylvania	\$8,890,000
Prince Georges County, Maryland	\$23,292,500
Richmond, Virginia	\$6,072,500
San Francisco, California	\$11,865,000
Seattle, Washington	\$10,596,250
Washington, D.C.	\$16,598,750

Source: NCTAF, 2007b

Appendix C

Antecedents, Correlates, and Consequences of Organizational Commitment



Source: Mathieu & Zajac, 1990

Appendix D
The Job Characteristics Model

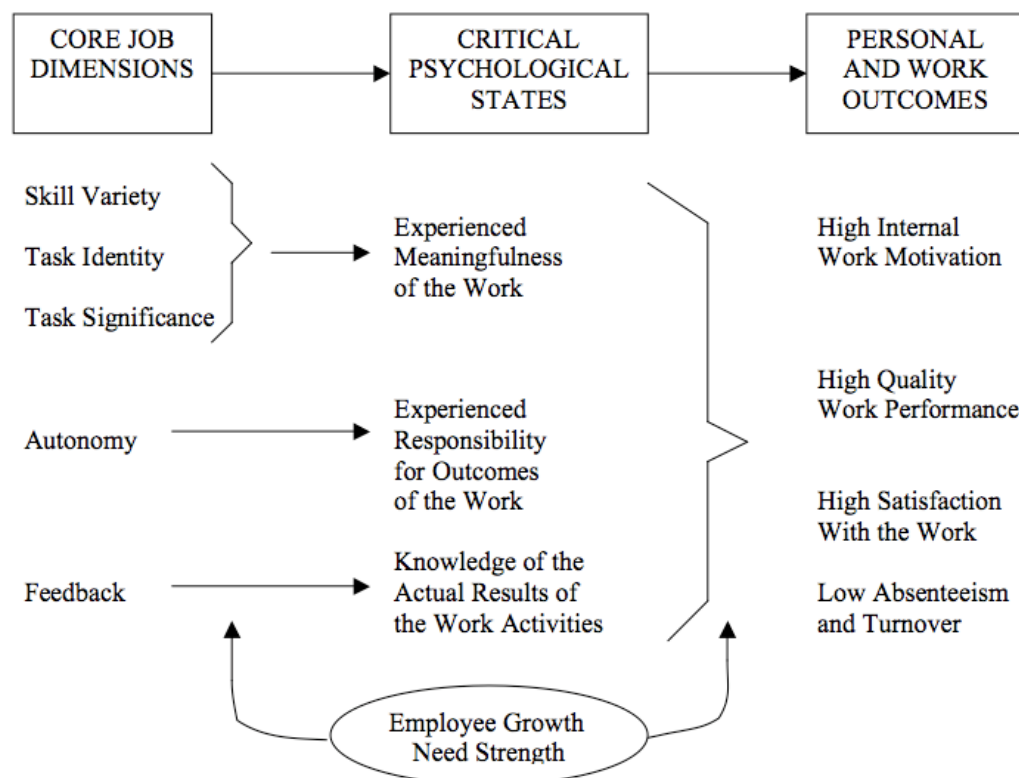


FIGURE 1. A theoretical model relating the core job dimensions, the critical psychological states, and on-the-job outcomes (as moderated by employee growth need strength).

Source: Hackman & Oldham, 1975

Appendix E
Teacher Recruitment E-Mail

Dear Faculty,

Below is a link to an on-line survey, the purpose of which is to assess your satisfaction with a variety of work experiences in your school. The survey is part of a research project which seeks to pinpoint school conditions that lead to teacher turnover. The results will be used to provide schools with information on how to improve the working lives of their teachers in order to retain quality educators. More information about the study, including contact information for the researcher, can be found on the first page of the survey.

I would also like to inform you that in exchange for your time to complete this 15-30 minute survey, you will be entered in a drawing where three teachers will be selected and each awarded a \$50 gift card to Target.

Those of you who are interested can take the survey at:

https://www.surveymonkey.com/s.aspx?sm=A66c6WKK_2ba3K7Oe4_2bQhqfQ_3d_3d

Thank you very much for your time and consideration!

Sincerely,

Micah D. Lueck
DePaul University
Industrial/Organizational Psychology
mlueck1@depaul.edu

P.S. This research is being collected by word of mouth, so I would encourage you to please consider passing this survey along to as many other current full-time teachers as you feel comfortable.

Appendix F
Debriefing Form

Debriefing--Thank you for your help!

Thank you for taking the time to complete this survey. Your responses are valuable in determining what organizational variables contribute to the massive amount of teacher turnover we have witnessed over the past decade and figuring out how to reverse this trend. This study seeks to uncover whether turnover is meaningfully linked to teachers' experiences of variety in their work, autonomy, participation in school decisions, feedback, opportunities for professional development, collaboration, and school resources. Results of the study will be made available to all school principals once the data from these surveys have been analyzed.

If you have questions about this study or would like additional information, please contact Micah D. Lueck, 262-271-5561, mlueck1@depaul.edu or Dr. Jane Halpert, 773-325-4265, jhalpert@depaul.edu.

To enter the drawing for your chance to win one of three \$50 Target gift cards, please copy and paste the URL below into your internet browser's address bar. This will re-direct you to a page where you can enter your name and e-mail address, neither of which can be linked to your responses from this survey. Thanks again!

https://www.surveymonkey.com/s.aspx?sm=sVYEs4VzHwDk5eabNDcCYQ_3d_3d

Appendix G
Organizational Commitment Questionnaire

Instructions: Listed below is a series of statements that represent possible feelings that individuals might have about the organization for which they work. With respect to your own feelings about the particular school for which you are now working, please indicate the degree of your agreement or disagreement with each statement by choosing one of the seven alternatives for each statement.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

1. I am willing to put in a great deal of effort beyond that normally expected in order to help this school be successful.
2. I talk up this school to my friends as a great school to work for.
3. I feel very little loyalty to this school. (RS)
4. **I would accept almost any type of job assignment in order to keep working for this school.**
5. I find that my values and the school's values are very similar.
6. I am proud to tell others that I am part of this school.
7. **I could just as well be working for a different school as long as the type of work was similar. (RS)**
8. This school really inspires the very best in me in the way of job performance.
9. **It would take very little change in my present circumstances to cause me to leave this school. (RS)**
10. I am extremely glad that I chose this school to work for over others I was considering at the time I joined.
11. **There's not too much to be gained by sticking with this school indefinitely. (RS)**
12. Often, I find it difficult to agree with this school's policies on important matters relating to its employees. (RS)
13. I really care about the fate of this school.
14. **For me this is the best of all possible schools for which to work.**
15. **Deciding to work for this school was a definite mistake on my part. (RS)**

Appendix H

Skill Variety Scale from the Job Diagnostic Survey

Instructions: Please describe your job as objectively as you can. These questions are designed to obtain your perceptions of your job and your reactions to it. Please, do not use this part of the questionnaire to show how much you like or dislike your job. Circle the number which is the most accurate description of your job.

1.) How much variety is there in your job? That is, to what extent does the job require you to do many different things at work, using a variety of your skills and talents?

1-----2-----3-----4-----5-----6-----7
 Very little; Moderate variety. Very much; the job
 the job requires me requires me to do
 to do the same routine many different things,
 things over and over using a number of
 again. different skills
 and talents.

Instructions: Listed below are a number of statements which could be used to describe a job. You are to indicate whether each statement is an accurate or an inaccurate description of your job. Once again, please try to be as objective as you can in deciding how accurately each statement describes your job regardless of whether you like or dislike your job.

Write a number in the appropriate space based on the following scale:

How accurate is the statement describing your job?

1	2	3	4	5	6	7
Very	Mostly	Slightly	Uncertain	Slightly	Mostly	Very
Inaccurate	Inaccurate	Inaccurate		Accurate	Accurate	Accurate

_____ 2.) The job requires me to use a number of complex or high-level skills.

_____ 3.) The job is quite simple and repetitive. (RS)

Appendix I
Teaching Autonomy Scale

Instructions: For each statement below, select the response that best describes your current teaching situation in this school.

1	2	3	4
Definitely False	Mostly False	Mostly True	Definitely True

Curriculum autonomy

- 1.) In my teaching, I use my own guidelines and procedures.
- 2.) In my situation, I have little say over the content and skills that are selected for teaching. (RS)
- 3.) My teaching focuses on those goals and objectives I select myself.
- 4.) What I teach in my class is determined for the most part by myself.
- 5.) The materials I use in my class are chosen for the most part by me.
- 6.) The content and skills taught in my class are those I select.

General teaching autonomy

- 1.) I am free to be creative in my teaching approach.
- 2.) The selection of student-learning activities in my class is under my control.
- 3.) Standards of behavior in my classroom are set primarily by me.
- 4.) My job does not allow for much discretion on my part. (RS)
- 5.) The scheduling of use of time in my classroom is under my control.
- 6.) *I seldom use alternative procedures in my teaching.* (RS)
- 7.) I follow my own guidelines on instruction.
- 8.) In my situation, I have only limited latitude in how major problems are solved. (RS)
- 9.) In my class, I have little control over how classroom space is used. (RS)
- 10.) The evaluation and assessment activities used in my class are selected by others. (RS)
- 11.) I select the teaching methods and strategies I use with my students.
- 12.) I have little say over the scheduling of use of time in my classroom. (RS)

Appendix J

Teacher Participation in Decision-Making Scale

Instructions: This section asks about your influence on staffing, budgeting and instructional policies, and your perception of various issues about teaching. Using the scale 1-5, where 1 means “No Influence” and 5 means “A Great Deal of Influence”, how much **actual influence** do you think you, as a teacher, have over school policy AT THIS SCHOOL in each of the following areas?

In addition, please rate how much influence over policy **you would like to have** over each of these areas, along the same scale (1=No Influence to 5=A Great Deal of Influence”).

1	2	3	4	5
No Influence	Little Influence	Neutral	Moderate Influence	A Great Deal of Influence

	I have:	I would like to have:
1.) Setting performance standards for students of this school	<input type="text"/>	<input type="text"/>
2.) Establishing curriculum	<input type="text"/>	<input type="text"/>
3.) Determining the content of in-service professional development programs	<input type="text"/>	<input type="text"/>
4.) Evaluating teachers	<input type="text"/>	<input type="text"/>
5.) Hiring new full-time teachers	<input type="text"/>	<input type="text"/>
6.) Setting discipline policy	<input type="text"/>	<input type="text"/>
7.) Deciding how the school budget will be spent	<input type="text"/>	<input type="text"/>

Appendix K

Feedback Quality Subscale from the Feedback Evaluation Scale

Instructions: This section contains parallel items about the quality of feedback you receive from your direct supervisor (i.e., your school's principal) and from your co-workers (i.e., other teachers in your school). Please indicate your agreement with the following statements.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

	Supervisor Source:	Co-worker Source:
1.) My supervisor/co-workers give me useful feedback about my job performance	<input type="text"/>	<input type="text"/>
2.) The performance feedback I receive from my supervisor/co-workers is helpful	<input type="text"/>	<input type="text"/>
3.) I value the feedback I receive from my supervisor/co-workers	<input type="text"/>	<input type="text"/>
4.) The feedback I receive from my supervisor/co-workers helps me do my job	<input type="text"/>	<input type="text"/>
5.) The performance information I receive from my supervisor/co-workers is generally not very meaningful (RS)	<input type="text"/>	<input type="text"/>

Appendix L

Feedback Scale from the Job Diagnostic Survey

Instructions: Please describe your job as objectively as you can. These questions are designed to obtain your perceptions of your job and your reactions to it. Please, do not use this part of the questionnaire to show how much you like or dislike your job. Circle the number which is the most accurate description of your job.

1.) To what extent does doing the job itself provide you with information about your work performance? That is, does the actual work itself provide clues about how well you are doing aside from any “feedback” co-workers or supervisors may provide?

1-----	2-----	3-----	4-----	5-----	6-----	7-----
Very little; the job itself is set up so I could work forever without finding out how well I am doing.			Moderately; sometimes doing the job provides “feedback” to me; sometimes it does not.			Very much; the job is set up so that I get almost constant “feedback” as I work about how well I am doing.

Instructions: Listed below are a number of statements which could be used to describe a job. You are to indicate whether each statement is an accurate or an inaccurate description of your job. Once again, please try to be as objective as you can in deciding how accurately each statement describes your job regardless of whether you like or dislike your job.

Write a number in the appropriate space based on the following scale:

How accurate is the statement describing your job?

1	2	3	4	5	6	7
Very Inaccurate	Mostly Inaccurate	Slightly Inaccurate	Uncertain	Slightly Accurate	Mostly Accurate	Very Accurate

- _____ 2.) Just doing the work required by the job provides many chances for me to figure out how well I am doing.
- _____ 3.) The job itself provides very few clues about whether or not I am performing well.
(RS)

Appendix M
Teacher Collaboration on Instruction Scale

Instructions: This survey concerns how teachers interact with each other in your school. Please indicate the frequency with which you do each of the following:

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very Often

- 1.) Share ideas on teaching with other teachers
- 2.) Discuss with other teachers what you/they learned at a workshop or conference
- 3.) Analyze student work with other teachers
- 4.) Discuss particular lessons that were not very successful
- 5.) Discuss beliefs about teaching and learning
- 6.) Discuss how to help students having problems
- 7.) Discuss common challenges in the classroom
- 8.) Work together to develop teaching materials or activities for particular classes

Appendix N
Peer Observation Scale

Instructions: This survey concerns how teachers interact with each other in your school. Please indicate the frequency with which you do each of the following:

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very Often

- 1.) Observe another teacher teaching
- 2.) Get observed by another teacher
- 3.) *Teach with a colleague*

Appendix O

Opportunity to Develop and Use Skills Scale

Instructions: When answering the following items, think about “professional development” and activities intended to increase your knowledge of the academic subject(s) you teach, the students you teach, and/or to advance your understanding of effective instructional strategies. Keep in mind developmental opportunities related to: *attending or presenting at workshops or conferences, taking college or university courses, participating in a network of teachers (including online networks), making observational visits to other schools or classrooms, engaging in regularly-scheduled collaboration with other teachers, and/or mentoring and coaching experiences.*

1	2	3	4	5	6
No Extent	Hardly Any Extent	Little Extent	Some Extent	A Good Extent	A Great Extent

On a scale from 1 to 6, please rate the extent to which...

- 1.) Teachers in this school are continually learning and seeking new ideas.
- 2.) I have an opportunity to develop my special abilities.
- 3.) Staff development programs in this school permit me to acquire important new knowledge and skills.
- 4.) Most of the in-service programs I attended in the past school year dealt with issues specific to the needs and concerns of this school’s students and staff.

Appendix P
Workload Scale

Instructions: Rate to what extent you agree or disagree with each of the following statements:

1	2	3	4
Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree

- 1.) Routine duties and paperwork interfere with my job of teaching
- 2.) Classes are too large
- 3.) *I am required to teach in areas outside of my expertise*
- 4.) Many students in my classroom have low levels of ability

Appendix Q
Pupil Misconduct Scale

Instructions: Please rate the following statements from 1=Hardly Ever to 5=Very Often.

1	2	3	4	5
Hardly Ever	Infrequently	Sometimes	Quite Often	Very Often

As a teacher, how often do you experience stress related to the following factors?

- 1.) Noisy pupils
- 2.) Difficult classes
- 3.) Maintaining class discipline
- 4.) Pupils' lack of respect for the teacher
- 5.) Pupils who show a lack of interest
- 6.) Poorly motivated pupils

Appendix R
Principal Support Scale

Instructions: Please rate your agreement with the following statements, using the scale below:

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

Principal Leadership

- 1.) The principal does a poor job of getting resources for this school (RS)
- 2.) The principal deals effectively with pressures from outside the school that might interfere with my teaching
- 3.) The principal sets priorities, makes plans, and sees that they are carried out
- 4.) The principal knows what kind of school he/she wants and has communicated it to the staff.
- 5.) The principal lets staff members know what is expected of them

Administrator Responsiveness

- 1.) To what extent has each of the following helped you improve your teaching or solve instructional or class management problems?
 - a. Principal or school head
 - b. Other school level administrators
- 2.) This school's administration knows the problems faced by the staff
- 3.) The school administration's behavior toward the staff is supportive and encouraging

Appendix S

Adequate Physical Conditions Scale

Instructions: Please rate the extent to which the following issues in YOUR school bother you:

1	2	3	4	5
Not At All	Only A Little	To Some Extent	A Fair Amount	Very Much

- 1.) Noise
- 2.) Quality of indoor air (e.g., temperature, moisture, draft)
- 3.) Unsafe work environment
- 4.) Flaws in work instruments and materials
- 5.) Uncomfortable working area and work surroundings

Appendix T
Instructional Resources Scale

Instructions: Please rate your agreement with the following items, using the scale below:

1	2	3	4
Strongly Agree	Agree	Disagree	Strongly Disagree

- 1.) Necessary materials such as textbooks, supplies, and copy machines are available as needed by the staff.
- 2.) For the most part, textbooks are current rather than outdated.

Appendix U

Positive Teacher-Pupil Exchanges Scale

Instructions: Please rate the extent to which the following statements are accurate of your experiences in teaching.

1	2	3	4	5
Very Inaccurate	Inaccurate	Neither Accurate Nor Inaccurate	Accurate	Very Accurate

- 1.) I often see my students trying their best to learn what I have to teach them
- 2.) Students meet and exceed my expectations on a regular basis
- 3.) Students leave my classroom better off than when they entered it**
- 4.) I often get to see my students reach their goals
- 5.) The students and I get along very well on a personal level**
- 6.) I feel like I am making a difference in the lives of my students**
- 7.) Occasionally, I am able to turn around a student's poor performance and get him/her back on track**
- 8.) I feel like I get as much in return from the students as I give to them

Appendix V
Turnover Intentions Scale

Instructions: Please rate the following:

1	2	3	4	5	6	7
Extremely Unlikely			Neither Likely Nor Unlikely			Extremely Likely

1.) How likely is it that you will look for work outside your school in the next year?

2.) How likely is it that you will leave your school within the next year?

Appendix W
Demographic and Personal Questions

1.) Gender:

- Male
 Female

2.) Ethnicity

- Asian/Pacific Islander
 American Indian/Alaska Native
 Hispanic
 Non-Hispanic Black
 Non-Hispanic White
 Biracial/Multiracial/Other

3.) Please indicate your age: _____

4.) What is the highest level of education you have achieved?

- Associate's Degree
 Bachelor's Degree
 Master's Degree
 Doctoral Degree
 Other Certification

5.) What social class do you feel best describes you?

- Lower Class/Working Class
 Middle Class
 Upper Middle Class
 Upper Class

6.) Teaching Experience—Current School

How many years have you been working at the school where you now work?

- 1-2 Years
 3-5 Years
 6-9 Years
 10 Years or More

7.) Teaching Experience—Overall

How many years have you been working as a teacher (including years taught at other schools)?

- 1-2 Years
- 3-5 Years
- 6-9 Years
- 10-19 Years
- 20 Years or More

8.) Is teaching the first career you have had?

- Yes
- No

9.) Please indicate which class subject you teach? If you teach more than one subject, choose the one that you consider the *main* subject you teach, such as the subject that occupies most of your time:

- Elementary School (All Subjects)
- Math
- Science
- Reading
- Social Studies
- English
- Fine Arts/Music
- Foreign Language
- Health/Physical Education
- Special Education/ELL
- Other: _____

10.) Regarding your answer to #9 above, is that the subject you feel you are most qualified to teach?

- Yes
- No

11.) Do you teach in an elementary school, middle school, or high school?

- Elementary School
- Middle School
- High School

12.) With which school are you currently employed? _____