

## **Examining the Relationship between Grade Configuration and Teachers' Perceptions of Working Conditions in North Carolina Schools**

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### **Abstract**

*The purpose of our quantitative study was to determine if there were statistically significant differences in teachers' perceptions of working conditions between public K-8 and middle school teachers in North Carolina. Teacher working conditions subscale scores were calculated for the five teacher working conditions domains (time; facilities and resources; leadership; teacher empowerment; and professional development) within the North Carolina Teacher Working Conditions Survey (NCTWCS). Subscale scores were calculated for questions within each teacher working conditions domain with the same Likert scale responses. The sample included 13,433 public K-8 and middle school teachers who were selected from the NCTWCS data set. The results indicated significant differences in teachers' perceptions of most working conditions by school type. K-8 teachers reported more positive perceptions of all teacher working conditions domains except time and professional development when compared to some aspects of 6-8 middle school teachers and AMS teachers.*

The middle grades are a crucial time period for young adolescents if they are to be successful academically and professionally in the future. One of the reasons for the movement to organize adolescent students in schools with a separate grade configuration for middle grades students grades four through eight was to meet the needs of young adolescents in a setting entirely devoted to adolescent education (Herman, 2004; Mizell, 2005). Schools serving young adolescents of the middle grades are structured in various arrangements, such as fourth to eighth, fifth to eighth, and sixth to eighth. The majority of middle schools are organized in a sixth to eighth grade format.

Predominance of the sixth to eighth grade format evidences the allowance of adolescents to face numerous emotional and academic challenges in their developmental years in a safer environment with services suitable to their unique needs. Middle grades years are also important for adolescents beginning vocational and career exploration (Juvonen, Le, Kagonoff, Augustine, & Constant, 2004; Mizell, 2005). Comprehensive middle grades programs provide students with a wide variety of elective course offerings to choose from during their middle grades years.

Elective courses such as foreign languages, computer skills, dramatic arts, and vocational careers are incorporated within the context of an exploratory middle grades curriculum. Students may later explore topics in greater detail as they enter into high school. Providing middle grades students with an exploratory elective curriculum better prepares young adolescents to make academic choices in high school that will prepare them for post-secondary educational opportunities. During the young adolescent time, students are often first exposed to drugs, alcohol, and the opportunity to engage in sexual activities (Hough, 1995; George, 2005). A good middle grades program will integrate counseling and instruction during these years to encourage students to abstain from the use of drugs, alcohol, and sexual activities. Separate middle schools were introduced in part to counteract adolescents' early encounters with these social problems (Hough, 1995; Herman, 2004). Educators hoped separate middle schools would shield younger children in the primary grades from these negative aspects of adolescence.

Increased discipline issues including incidents of fighting, skipping school, drug and alcohol use, harassment, and profanity often increase at schools during the middle grades years (Franklin & Glascock, 1998) emphasize the importance of establishing the best grade configuration for middle grades students. Such changes might curtail discipline problems, which, in turn, could have a positive effect on middle grades students' academic performance (Patton, 2005). Fewer discipline problems involving middle grades students also might have the positive effect of decreasing teacher turnover through increased teacher retention.

### **Questioning the Middle School Model: Meeting Needs of Young Adolescents**

In recent years, educators have begun to question what the most appropriate grade configuration might be for schools to best meet the academic and socio-emotional needs of young adolescents. The debate concentrated on the analyses of the two most popular grade configurations for schools serving young adolescents ranging in age from 10 to 14: middle schools and K-8 schools. Researchers such as Anfara and Buehler (2005) suggested there is "evidence that academic achievement, social development, and dropout rates are all influenced by grade span configuration" (p. 56).

David L. Hough (1995) was one of the first educators to write extensively on the potential move away from the middle school grade configuration. Hough questioned the acceptance of the middle school model as the only option for organizing young adolescents within a school (p. 8). Hough elaborated on his indecisiveness in support of a specific middle school grade configuration when he suggested, "there is no national consensus on appropriate spans for the middle grades" (p. 8). Hough recognized the importance grade configuration could have on the quality of young adolescents' education and called for a shift to what he referred to as the "elemiddle school," which he defined as:

One that attends to the needs of young adolescents, aged 10 to 14, in any combination of grades 5 through 8, but is also part of an organizational structure that includes lower grades. (p. 7)

Hough's "elemiddle school" of the mid 1990s preceded by nearly a decade the revival of the K-8 grade configuration now seen in many urban areas throughout the nation.

Seller (2004, August) also explored the topic of grade configuration. However, Seller's research examined the best grade configurations for students in all grades kindergarten through twelfth. Seller noted two competing factors which school district administrators must consider when choosing grade configurations for the schools in their districts. Seller identified "many purposes" and explained "even though what is best for the student is central to the decision, administrative issues related to finances, transportation, space usage, and others can affect the final decision" (p. 2, 5). Administrative factors which influence administrators' selection of grade configuration for middle grades included "cost effectiveness, transportation efficiency, building usage, and personnel deployment" (p. 6). Following his research on the topic of grade configuration, Seller concluded that "there is not a single grade span configuration that will serve all purposes" (p. 2).

### **The Influence of Politics and Policy: Why Districts Never Left the K-8 Model**

Many rural school districts across the nation never swayed in their support and use of the K-8 grade configuration (DeYoung, Howley, and Theobald, 1994; Franklin & Glascock, 1998; Seller, 2004, August). Hough (1995) realized that districts that considered implementation of separate middle schools would have to be convinced of the value of grade configuration models for young adolescents designed as his "elemiddle school" model (p. 9).

Even though Hough expressed his opposition to separate middle school grade configurations, he acknowledged that ultimately, the grade configuration implemented within a particular school district “will probably remain a function of decision makers’ personal preferences, community needs, and economic necessity” (p. 9). Barry E. Herman (2004) recently concluded that “there is much interest around the country in the revival of K-8 schools” (p. 8). His observation of the rising popularity of the K-8 model, especially in large, urban areas, had also been noted by other scholars of middle grades education (Abella, 2005; George, 2005; Herman, 2004; Mizell, 2005; Seller, 2004, August). Many large cities across the country, such as Baltimore, Cincinnati, Cleveland, Denver, Miami, Milwaukee, Newark, New Orleans, Philadelphia, Phoenix, and New York City are either transforming their districts entirely to K-8 schools or are beginning a gradual changeover to schools with the K-8 grade configuration (Abella, 2005; Anfara & Buehler, 2005; George, 2005; Look, 2001; Mizell, 2005).

### **Statement of the Problem**

An often overlooked area in the grade configuration debate on the success of K-8 schools versus middle schools in educating middle grades students has been teachers’ perceptions of K-8 schools and middle schools. Could anyone have greater expertise, and a more up-close perspective on the advantages and disadvantages of K-8 and middle school grade configurations than those who work daily within these school structures? Additional research considering teachers’ perceptions of K-8 schools and middle schools needs to be conducted because of the absence of comprehensive literature on teachers’ perceptions of K-8 schools and middle schools and the vital information teachers within these grade configurations might provide. Hence, more research should be completed that concentrates on the inclusion of teachers and their perceptions of the advantages and disadvantages of K-8 schools versus 6-8 middle schools.

Teachers’ perceptions of working conditions have become an increasingly popular research topic over the past decade. The state of North Carolina has taken the lead in its development and biennial administration of the NCTWCS to assess teachers’ perceptions of working conditions in its public schools. The cost of administering the NCTWCS thus far has prevented the state of North Carolina from administering the NCTWCS on an annual basis. As of 2008, modified versions of the NCTWCS which include the basic design and conceptual framework of the NCTWCS have been administered other states as well (Sawchuck, 2010). The reason for the increased emphasis on teacher working conditions research is the “direct effect that working conditions have on both teacher attrition (and likewise teacher retention) and ultimately, student achievement” (Hirsch, 2005a; Hirsch, Emerick, with Church & Fuller, 2006a; Hirsch, Emerick, with Church & Fuller, 2006b; Hirsch, Emerick, with Church & Fuller, 2006c; Hirsch, Emerick, with Church & Fuller, 2007a; Hirsch, Emerick, with Church & Fuller, 2007b; Hirsch & Church, 2009a).

### **The Conceptual Framework of the Study**

Herzberg’s (1966) identification of working conditions as one of several factors potentially affecting worker dissatisfaction, along with the presence of the accessible, secondary data set from the NCTWCS, led us, researchers, to focus on the working conditions, as the dependent variable for more extensive research in the study. The researchers analyzed the working conditions, through the lens of Herzberg’s motivational-hygiene theory of worker satisfaction, specifically focusing on the worker dissatisfaction component, or hygiene lens, as well as through the conceptual framework of the NCTWCS, as described by the identification of the five domains or co-dependent variables of working conditions measured in the NCTWCS. Whereas Herzberg looked at both the motivational and hygiene factors affecting worker satisfaction and dissatisfaction, this study specifically focused on the hygiene factor, working conditions, which is measured by looking at public K-8 and middle school teachers’ perceptions of working conditions according to the NCTWCS.

### **Major Research Hypothesis and Sub-hypotheses**

The researchers hypothesized public K-8 school teachers would report more positive perceptions of teacher working conditions than public middle school teachers in the state of North Carolina as measured by the NCTWCS. We also hypothesized that teacher demographics (race, gender, education level, and years of experience) would not have an effect on teachers’ perceptions of working conditions. On the contrary, we hypothesized that school characteristics concerning the student body (race, socio-economic status as determined by free and reduced lunch, and academic achievement) would have an effect on teachers’ perceptions of those same working conditions.

## Methods and Techniques

The researcher used SPSS 15.0 for Windows to calculate subscale scores for each of the five teacher working conditions domains which represented the dependent variable for analysis in this study. Subscale scores were calculated to combine multiple survey questions in the same Likert-scale format for each teacher working conditions domain. Means and standard deviations for the subscale scores were calculated, analyzed, and compared by school type first for Group 1, which consisted of 6-8 middle and K-8 teachers, and then, for Group 2, which consisted of AMS and K-8 school teachers. Descriptive statistics from the subscale scores of Group 1 and Group 2 were then compared to determine if there were significant differences in subscale means and standard deviations between the two groups.

Next, the researchers analyzed independent sample t-tests to compare means for all teacher working conditions domain subscale scores by school type (K-8, 6-8 middle, and AMS). Correlations were then calculated to determine relationships: among teacher working conditions domain subscale means; between teacher working conditions domain subscale means and school type; between teacher working conditions domain subscale means and teacher demographic variables; and, between teacher working conditions domain subscale means and student/school characteristics. Teacher demographic and student/school characteristics variables that were significantly correlated to a teacher working conditions domain subscale means were run as co-variables via one-way ANCOVA tests. Grade configuration served as the independent variable, or fixed factor, for each ANCOVA. Teacher demographic and student/school characteristics variables were run as co-variables for each ANCOVA. ANCOVAs estimate the variance in teachers' perceptions of teacher working conditions domains caused by co-variables; otherwise, the variance in teachers' perceptions of teacher working conditions domains might be attributed to the primary independent variable examined in the study, grade configuration. ANCOVA results could yield potential rival alternative hypotheses if variance in the dependent variable, teachers' perceptions of teacher working conditions domains, was caused by co-variables.

Data analysis for this study began by sorting the NCTWCS data set into a file that contained only survey data for the K-8 and middle school teachers that completed the NCTWCS. Only K-8 and middle school teachers in which their schools met the 40% response rate guideline were included in the NCTWCS data set. This study's sample consisted of 13,433 teachers which included 10,520 6-8 middle school teachers, 1,813 K-8 teachers, and 1,100 AMS (6-8, 3-8, 4-8, 5-8) teachers. The study marked the first time data from any administration of the NCTWCS had been analyzed by school type comparing K-8 to 6-8 middle, and K-8 to AMS teachers' data. Data analyzed by school type from all prior administrations of the NCTWCS in 2002, 2004, and 2006 compared elementary (K-5), middle (6-8), and high school (9-12) teachers' perceptions of teacher working conditions domains. Even though the percentage of total teachers in the sample responding from K-8 (13.5%) and middle school configurations other than 6-8 (8.2%) was quite small when compared to the 6-8 middle school group (78.3%), it was still important to include and analyze the valuable data from these teachers on their perceptions of working conditions in their schools. Such an analysis could highlight any emerging trends or patterns as many large, urban districts around the country have either converted or have begun to consider the possibility of converting middle schools to K-8 schools (Abella, 2005; Anfara & Buehler, 2005; George, 2005; Look, 2001; Mizell, 2005).

## Establishing Reliability and Validity

The researchers analyzed pre-existing NCTWCS and its corresponding secondary data set, and they chose the secondary data set for several reasons. The fact that this survey had been administered and revised on three different occasions (2002, 2004, and 2006) by the Center for Teaching Quality (CTQ) for the Office of the Governor of the State of North Carolina was a deciding factor in selecting the NCTWCS and its secondary data set for inclusion in this research project. Another reason for the selection of the NCTWCS and its secondary data set for this research project was the sample for the NCTWCS survey from its prior administrations included all public school teachers in the state of North Carolina. The NCTWCS had expanded to include a total of 92 questions within the five teacher working conditions domains. Six additional questions labeled as Core questions asked comparison questions in which respondents choose one of the five teacher working conditions domains as their answer. There are nine additional demographics questions which gathered demographic information on survey respondents. Finally, there was a new segment within the NCTWCS that did not exist in the 2002 NCTWCS. This section, entitled Mentoring, contained 31 questions that measured mentor and mentee perceptions of the effectiveness of mentoring provided to beginning teachers in their first three years of teaching.

A series of questions were chosen from each teacher working conditions domain that were structured with the same Likert-scale responses as the questions to convert into teacher working condition subscale means for the purposes of data analysis for this research project. Questions selected included time, facilities and resources, teacher empowerment, and leadership. Responses for each of these questions included the Likert-scale responses: “strongly agree, disagree, neither disagree nor agree, agree, strongly agree” (NCTWCS). Reliability and validity were officially established for the NCTWCS for the first time following the 2008 iteration of the NCTWCS. Ellen Moir, Executive Director of the New Teacher Center at the University of California at Santa Cruz, produced a report titled, “Validity and Reliability of the North Carolina Teacher Working Conditions Survey,” which described the steps taken to establish the validity and reliability of the 2008 NCTWCS. Moir (2009) stated “the validity of the North Carolina TWC Survey addresses questions of whether the instrument is a true measure of what it is attempting to assess; in this case the presence of teacher working conditions” (p. 1). Content, construct, and predictive validity were established or re-established as a result of Moir’s study.

## **Results and Conclusions**

### **A Comparison of Means by School Type**

The data reported indicated that for the teacher working conditions domains of facilities and resources, teacher empowerment, leadership, and professional development, K-8 teachers’ perceptions of working conditions were more positive than 6-8 middle school teachers’ perceptions. Only for the time domain did 6-8 middle school teachers report greater satisfaction with working conditions than K-8 teachers. T-tests for independent samples indicated that the differences in means for teacher working conditions domain subscale means were statistically significant at  $p \leq .000$ , two-tailed, for all teacher working conditions domains except professional development. However, when teachers’ perceptions of working conditions were compared by school type (3-8, 4-8, and 5-8) teacher data with the 6-8 middle school teacher data in comparison to K-8 teachers, the number of teacher working conditions domains in which K-8 teachers’ perceptions of working conditions were more positive decreased to three (facilities and resources, teacher empowerment, and leadership). Once again, the only teacher working conditions domain subscale mean for which t-tests indicated differences in means were not statistically significant was the differences in means for the professional development domain.

Therefore, K-8 teachers’ perceptions of working conditions were more positive than 6-8 middle school teachers’ perceptions for each of the teacher working conditions domains except the time domain. Likewise, K-8 teachers’ perceptions of working conditions were more positive than AMS teachers’ perceptions for the facilities and resources, teacher empowerment, and leadership teacher working conditions domains. Therefore, differences in teachers’ perceptions of teacher working conditions domain subscale means could in part be attributed to school type for K-8 and middle school teachers, considering that K-8 includes 6-8 but not as a subset.

K-8 teachers, as indicated by teacher working conditions subscale means, reported the greatest satisfaction with leadership (3.92) of the five teacher working conditions domains (1=strongly disagree, 5=strongly agree). The leadership domain subscale mean was also the highest domain subscale mean of all teacher working conditions subscale means by school type. The K-8 leadership subscale mean for this study was higher than the elementary school leadership subscale mean (3.68) and middle school leadership subscale mean (3.47) found by Hirsch and Emerick with Church and Fuller (2007b) in their analysis of data from the NCTWCS by school type.

The next highest teacher working conditions domain subscale mean was also reported by K-8 teachers for the facilities and resources domain (3.76). The facilities and resources domain subscale mean for elementary schools was 3.71 and 3.64 for middle schools according to the findings of Hirsch and Emerick with Church and Fuller (2007b). The highest teacher working conditions domain subscale mean for 6-8 middle and AMS teachers was the mean for facilities and resources (3.68). The facilities and resources domain subscale mean was also the highest domain subscale mean for middle schools in the prior analysis of the NCTWCS by Hirsch et al. The difference between highest domain subscale means by school type for this study was .24 for scores ranging from one to five on a Likert scale, compared to a .07 difference in highest domain subscale means by school type for elementary and middle schools as found by Hirsch et al. in their prior analysis of the NCTWCS. Even though K-8 teachers’ perceptions of working conditions were higher for all teacher working conditions domains except for time, the differences in domain subscale means was small. Therefore, the variation in teachers’ perceptions of working conditions attributed to school type and whether or not teachers worked at K-8 or middle schools was similarly small.

The teacher working conditions domain that teachers reported the least satisfaction with for all school types was time. In fact, the time domain mean subscale score (3.03) for K-8 teachers was the lowest teacher working conditions subscale mean for all school types. The time domain subscale means for 6-8 middle (3.11) and AMS (3.12) were also the lowest subscale means for each of these school types. Hirsch and Emerick with Church and Fuller (2007b) also found that teachers' perceptions of time were the lowest for any teacher working conditions domain for middle school teachers (3.19). According to Hirsch et al., teachers' perceptions of time were also the least positive of all teacher working conditions domains for the 2002 and 2004 NCTWCS. However, the difference between time subscale means in this study were quite small by school type (.08 and .09 between K-8 and 6-8 middle school teachers, and between K-8 and AMS teachers).

The second lowest teacher working conditions domain subscale mean by school type for this study and the NCTWCS according to the findings of Hirsch and Emerick with Church and Fuller (2007b) was for teachers' perceptions of the time domain. In this study, the time domain subscale mean for 6-8 middle school teachers was (3.11) compared to the time domain subscale mean of (3.19) for middle school teachers from the NCTWCS. The second lowest teacher working conditions domain subscale mean for K-8 teachers in this study was in the professional development domain (3.37).

### **Correlations among Teacher Working Conditions Domains**

Correlations were calculated among teachers' perceptions of teacher working conditions domains, and between teachers' perceptions of teacher working conditions domains and school type, teacher demographics, and student/school characteristics. Significant correlations were found among all teacher working condition domains. Correlation results also indicated that there were significant relationships between school type for K-8 and AMS teachers and each of the teacher working conditions domain subscale means except professional development. Teacher ethnicity was the only teacher demographic characteristic that yielded significant correlations for all working condition domains. Significant correlations were also found between the 2005-06 ABC School Recognitions (as determined by North Carolina's ABC's of Public Education) and all teacher working conditions domains. Significant correlations were also found between the percentage of students' proficient on the 2005-06 Reading End-of-Grade test, a school characteristic, and all teacher working conditions domains.

Multicollinearity indicates there were multiple significant relationships among teacher working conditions domain subscale means. An examination of the significant relationships among teacher working conditions domain subscale means is important because the multicollinearity of teacher working conditions domain subscale means could represent an alternative rival hypothesis that influenced teachers' perceptions of working conditions that might otherwise be attributed to school type.

Hirsch (2005a; 2005b) also discovered the multicollinearity among teachers' perceptions of teacher working conditions domains in his analyses of the 2004 SCTWCS and the 2004 NCTWCS. Hirsch found significant correlations among all teacher working conditions domains at  $p < .01$ , two-tailed in his analyses of the 2004 SCTWCS and 2004 NCTWCS data for all survey respondents. Hirsch explained that the "interconnectedness" among teacher working conditions domains could lead to a "ripple effect" causing changes in teachers' perceptions of multiple teacher working conditions domains when efforts are made to improve teachers' perceptions of one working conditions domain (p. 14). Hence, efforts by school administrators to improve teachers' perceptions of one teacher working conditions domain could result in more positive teachers' perceptions of additional teacher working conditions domains as well due to the interconnectedness among teacher working conditions domains. Failure to estimate the variance caused by the interconnectedness of teacher working conditions domains could result in the variance of teachers' perceptions of working conditions being mistakenly attributed to independent variables such as school type in this study.

Results from this study indicated the strongest significant correlation (.780) among teacher working conditions domain subscale means was between leadership and teacher empowerment. Strong significant correlations between teacher working conditions domain subscale means implies that when teachers' perceptions of one teacher working conditions domain change, teachers' perceptions of the other domain with which it has a significant relationship will likely change in the same direction. Hirsch (2005a; 2005b) also found a strong, significant correlation between leadership and teacher empowerment in his analyses of the 2004 NCTWCS data (.803) and 2004 SCTWCS (.788) for all survey respondents.

Hirsch offered one explanation for the strong correlation and subsequent relationship between teachers' perceptions of the leadership and teacher empowerment domains by stating "teachers who felt empowered to make decisions about their classroom and school work have positive views of their school leader" (p.14). The weakest correlation (.497) among teacher working conditions domain subscale means for this study was between time and professional development. The fact that results indicated teachers were least positive with the use of time in their schools could have led to a stronger correlation between teachers' perceptions of the use of time and professional development since professional development activities often reduce available teacher planning time. However, this was not the case according to the results from this analysis. The weakest correlations found by Hirsch (2005a; 2005b) in his analyses of the 2004 SCTWCS and the 2004 NCTWCS were between the time and teacher empowerment domains (.360 and .458 respectively). Hence, the weakest correlation among teacher working conditions domains for K-8, 6-8 middle, and AMS teachers was stronger than the weakest correlations for the administrations of the 2004 SCTWCS and 2004 NCTWCS. Again, this difference could be attributed to school type since only K-8, 6-8 middle, and AMS teachers were included in the sample for this study.

In summary, all correlations among teacher working conditions domain subscale means were positive and ranged from .497 to .780. Strong significant correlations between teacher working conditions domain subscale means indicated that when teachers' perceptions of one teacher working conditions domain changed, teachers' perceptions for the other domain with which it had a significant relationship likely changed in the same direction.

### **The Relationship between Demographics and Perceptions**

Results indicated that teacher demographics did have an effect on teachers' perceptions of working conditions in many cases. This is contrary to the findings of Hirsch (2005a; 2005b) when he found that, "race, gender, highest degree earned, means of preparation (lateral entry versus traditionally preparation), and National Board Certification status do not appear to affect teachers' perceptions of any working conditions domain" (Hirsch, 2005b, p. 12-13). In this study, there were multiple, statistically significant relationships between teacher demographic variables and teachers' perceptions of teacher working conditions domains. Significant relationships between teachers' perceptions of teacher working conditions domains and teacher demographic variables likely influenced teachers' perceptions of these teacher working conditions domains. The direction in which teachers' perceptions of working conditions domains changed was determined by the negative or positive correlations found when correlations were calculated. Ethnicity was the only teacher demographic variable that indicated statistically significant relationships with all teacher working conditions domains at  $p \leq .000$ , two-tailed. All correlations between ethnicity and teacher working condition domains were negative, indicating that when one variable increased, the other decreased.

The strongest correlation (-.084) between all teacher demographic variables and teacher working conditions domains was between ethnicity and professional development. The correlation between ethnicity and professional development indicated that there was a strong relationship between teachers' ethnicity and teachers' perceptions of professional development offered at their school. The negative correlation indicated that as the percentage of teachers from an ethnic group increased or decreased for this study's sample, teachers' perceptions of professional development at their school changed in the opposite direction.

There were seven additional significant relationships between teacher demographic variables and teacher working conditions domains (gender and time; gender and facilities and resources; educational training prior to beginning teaching and time; highest degree earned and teacher empowerment; highest degree earned and professional development; years as an educator and leadership; years at a school and time). All significant correlations between teacher demographic variables and teacher working conditions domains ranged from -.084 (ethnicity and professional development) to .064 (gender and time). Results indicated the variable of time had the most statistically significant relationships (four) with teacher demographic variables. The leadership variable had the fewest number (one) of statistically significant relationships with teacher demographic variables. The only teacher demographic variable that did not have at least one statistically significant relationship with a teacher working condition domain was National Board Certification status of teachers. All teacher demographic variables which showed significant relationships with teacher working conditions domains were entered as co-variates via one-way ANCOVAs. Significant differences were still found in teacher working conditions domain subscale means by school type when controlling for teacher demographics as co-variates. However, the estimated variance in teacher working conditions subscale means explained by selected teacher demographic variables was quite small as indicated by  $\eta^2$  (.001 to .007).

The conclusion that the estimated variance in teacher working conditions subscale means explained by selected teacher demographic variables was quite small was based on the definition of  $\eta^2$  by Green and Salkind (2005). Green and Salkind define small, medium, and large effect sizes as .01, .06, and .14 respectively. Hence, very little variance in teachers' perceptions of working conditions by school type can be attributed to teacher demographic variables even though there were significant relationships between some teacher demographic variables and teacher working conditions domain subscale means.

Results from this study indicated positive, significant correlations between percentage of students' proficient on the 2005-06 Reading End-of-Grade test and the teacher working conditions domains. Again, correlations were weak ranging from .038 to .175. Since the correlation coefficients were so low between the percentage of students proficient on the Reading End-of-Grade test and the teacher working conditions domain subscale means, it is not likely large differences in teachers' perceptions of working conditions domains by school type can be attributed to the percentage of students proficient on the Reading End-of-Grade test.

### **Review of the Hypotheses**

Based on the literature review, it was hypothesized that K-8 teachers would report less satisfaction with the use of time, access to facilities, leadership, opportunities for teacher empowerment, and professional development at their schools than AMS teachers. The researchers proposed these hypotheses as prior analysis of the 2004 and 2006 NCTWCS data by Hirsch (2005b) and Hirsch and Emerick with Church and Fuller (2006a) by school type for elementary (K-5), middle (6-8), and high school (9-12) teachers indicated that elementary teachers reported more positive perceptions of all teacher working conditions domains except time. Since K-5 teachers are included within the sample for K-8 school teachers in this study and could not be identified by removing them from the sample due to safeguards in confidentiality, the researchers presumed that K-8 school teachers would report less satisfaction with the use of time at their schools than AMS teachers. The results, as indicated in Table 1, revealed that K-8 teachers did not report greater satisfaction than 6-8 middle school or AMS teachers with the use of time. T-tests for independent samples indicated the differences in means for teachers' perceptions of the use of time by school type between K-8 teachers and 6-8 middle school teachers, as well as between K-8 teachers and AMS teachers, were significant at  $p \leq .000$ , two-tailed. A correlation of  $-.036$  was found between school type and teachers' perceptions with the use of time at their school. Results, as indicated in Table 4, revealed a statistically significant relationship at  $p \leq .000$ , two-tailed.

Results, as indicated in Table 1, revealed that K-8 teachers did report greater satisfaction than 6-8 middle school and AMS teachers with access to facilities and resources at their schools. T-tests for independent samples indicated the differences in means for teachers' perceptions of access to facilities and resources by school type between K-8 teachers and 6-8 middle school teachers, as well as between K-8 teachers and AMS teachers, were significant at  $p \leq .000$ , two-tailed. A correlation of  $.036$  was found between school type and teachers' perceptions of access to facilities and resources at their school. Results, as indicated in Table 4, revealed a statistically significant relationship at  $p \leq .000$ , two-tailed.

Results, as indicated in Table 1, revealed that K-8 teachers did report greater satisfaction than 6-8 middle school and AMS teachers with leadership at their schools. T-tests for independent samples indicated the differences in means for teacher satisfaction with leadership by school type between K-8 teachers and 6-8 middle school teachers, as well as between K-8 teachers and AMS teachers, were significant at  $p \leq .000$ , two-tailed. A correlation of  $.155$  was found between school type and teachers' perceptions of school leadership. Results, as indicated in Table 4, revealed a statistically significant relationship at  $p \leq .000$ , two-tailed.

Results, as indicated in Table 1, revealed that K-8 teachers did report greater satisfaction than 6-8 middle school and AMS teachers with opportunities for teacher empowerment at their schools. T-tests for independent samples indicated the differences in means for teachers' perceptions of opportunities for teacher empowerment by school type between K-8 teachers and 6-8 middle school teachers, as well as between K-8 teachers and AMS teachers, were significant at  $p \leq .000$ , two-tailed. A correlation of  $.112$  was found between school type and teachers' perceptions of opportunities for teacher empowerment at their school. Results, as indicated in Table 4, revealed a statistically significant relationship at  $p \leq .000$ , two-tailed.

Results, as indicated in Table 1, revealed that K-8 teachers reported greater satisfaction than 6-8 middle school teachers with opportunities for professional development at their schools. However, AMS teachers reported greater satisfaction than K-8 teachers with opportunities for professional development at their schools.

T-tests for independent samples indicated the differences in means for teachers' perceptions of opportunities for professional development by school type between K-8 teachers and 6-8 middle school teachers, as well as between K-8 teachers and AMS teachers, were not significant at  $p \leq .000$ , two-tailed. A correlation of .005 was found between school type and teachers' perceptions of opportunities for professional development at their school. Results, as indicated in Table 4, revealed there was not a statistically significant relationship at  $p \leq .000$ , two-tailed. For three of the five teacher working conditions domains (facilities and resources, leadership, and teacher empowerment), K-8 teachers reported greater satisfaction with working conditions in their schools than 6-8 middle school and AMS teachers. For facilities and resources, leadership, and teacher empowerment, there were statistically significant relationships between each teacher working conditions domain and school type. Differences in means by school type for teachers' perceptions of facilities and resources, leadership, and teacher empowerment, as determined by t-tests for independent samples, were also significant.

K-8 teachers reported less satisfaction with one working conditions domain, the use of time, than 6-8 middle school and AMS teachers. There were statistically significant relationships between the use of time and school type when comparing K-8 teachers to 6-8 middle school teachers, and when comparing K-8 teachers to AMS teachers. Differences in means by school type for teachers' perceptions of the use of time, as determined by t-tests for independent samples, were also significant. K-8 teachers also reported less satisfaction with opportunities for professional development than AMS teachers, but were more satisfied with opportunities for professional development than 6-8 middle school teachers. There were no statistically significant relationships between teachers' perceptions of opportunities for professional development and school type when comparing K-8 teachers to 6-8 middle school teachers, or when comparing K-8 teachers to AMS teachers. Differences in means by school type for teachers' perceptions of opportunities for professional development, as determined by t-tests for independent samples, were also not significant.

### **Implications for Further Research**

Only a small portion of the variance in teachers' perceptions of working conditions domains could be attributed to student/school characteristics even when there were significant relationships according to the results from this study. However, significant correlations between teachers' perceptions of teacher working conditions domains and student/school characteristic variables such as 2005-06 ABC School Recognition should be closely examined as evidenced by the results of the 2004 NCTWCS revealed by Hirsch (2005a). Hirsch noted,

Teachers in poorer performing schools (as indicated by the three measures of achievement: AYP status, ABC status, and ABC growth) have more negative perceptions of their working conditions. More positive perceptions of working conditions in higher performing schools were found in all domains, except time. (p. 5)

Hirsch and Emerick with Church and Fuller (2007b) completed more extensive data analysis when examining the relationship between teachers' perceptions of teacher working conditions domains and student achievement for the NCTWCS data. Hirsch et al. calculated Ordinary Least Square regression models (OLS) to control for various factors "to better determine whether there is a direct relationship between working conditions and student achievement" (p. 10). Hirsch et al. found from their calculation of OLS regression models that working conditions explained up to 19% of the variance in elementary school student achievement. Hence, further analysis of data for this study could include running OLS regression models to determine an estimation of variance in K-8 and AMS student achievement caused by teachers' perceptions of teacher working conditions domains. For the purposes of this study, the findings by Hirsch et al. in their analysis of the NCTWCS revealed the importance of significant relationships between teachers' perceptions of teacher working conditions domains and various student/school variables measuring academic achievement.

Other factors that may have affected teachers' perceptions of teacher working conditions domains as suggested in past teacher working conditions studies (Hirsch & Emerick with Church & Fuller, 2006c; Berry & Fuller with Williams & Lobacz, 2007, Fall; Hirsch & Emerick with Church & Fuller, 2007b) include: grade level (referred to as school type in this study), school size, student ethnicity, and type of district (urban, suburban, rural). Analysis of teacher respondent data for future administrations of the NCTWCS should be taken a step further, beyond the analysis of teacher respondent data by grade configuration for K-8 and middle school teachers, and include an examination of the relationship between the grade taught by teachers and teachers' perceptions of working conditions.

It could be that teachers' perceptions of teacher working conditions domains vary by the specific grade level taught by teachers. The results from previous teacher working conditions studies (Hirsch, 2005a, 2005b) indicated that grade level (defined as elementary, middle, and high school; referred to as school type in this study) has influenced teachers' perceptions of working conditions. However, these studies have not looked at the potential relationships between the specific grade level taught by teachers and teachers' perceptions of teacher working conditions.

Further research regarding the relationship between teacher demographics and teachers' perceptions of working conditions should be conducted since there were multiple significant relationships found between teacher demographic variables and teachers' perceptions of working conditions domain subscale means in this study. The ever-changing demographics of the teacher workforce due to teacher attrition caused by "movers" and "leavers" as defined by Berry and Fuller with Williams and Lobacz (2007, Fall) provide additional support for continuing research on teacher demographics and teachers' perceptions of teacher working conditions domains.

More extensive research on the relationship between teacher demographics and teachers' perceptions of teacher working conditions domains might also examine the teacher demographics of all North Carolina K-8 schools. The findings could potentially be compared to urban school districts across the nation that are currently converting middle schools back to K-8 schools in hopes of improving the middle grade experience for students and teachers. Several student/school characteristics variables should be examined more closely to determine their effects on K-8 and middle school teachers' perceptions of working conditions in public K-8 and middle schools in North Carolina. Additional research could examine the relationship between district/school location and teachers' perceptions of working conditions. Further analysis of the relationships between the school characteristic variables, district/school location and the financial capacity of school districts, and teachers' perceptions of teacher working conditions could lead to a better understanding of what it might take to improve teachers' perceptions of working conditions in all district/school locations, despite the financial capacity of a school district.

Another factor whose relationship with teachers' perceptions of teacher working conditions that could be examined in future studies of student/school characteristics and their effects on teachers' perceptions of working conditions in public K-8 and middle schools in North Carolina is school size. Hirsch (2005b) analyzed the effects of school size on teachers' perceptions of all teacher working conditions domains in his analysis of the 2004 NCTWCS data. District/school location is often a predictor of school size for school districts across the state of North Carolina. For example, the K-8 schools of the rural eastern and western regions of North Carolina are often smaller schools, despite the fact they serve students in kindergarten through eighth grade. The benefits of looking at school size might include helping school administrators to better understand the relationship between school size and teachers' perceptions of teacher working conditions.

Most importantly, public school leaders that are considering restructuring grade configurations in schools that serve middle grades students should ensure that the characteristics of schools that successfully meet the needs of middle grades students as discussed by McEwin and Alexander (1990) are successfully implemented within all schools serving middle grades students. It appears from this argument by McEwin and Alexander that grade configuration is one of several issues that must be addressed when attempting to establish a school with the best grade configuration for young adolescents. McEwin and Alexander note that it is just as important to "focus on restructuring programs and practices" as it is to debate the particular grade configuration that best meets the needs of young adolescents (p. 10). McEwin often refers to the importance of the successful implementation of the middle school concept, not grade configuration, as the most important factor in meeting the needs of middle grades students. McEwin, et al. (2005) propose that poor implementation of the middle school concept in part explains why middle schools are often viewed as less successful at meeting the needs of middle grades students than K-8 schools. McEwin et al. argue that all middle schools have not passionately adopted and implemented the middle school concept in their schools. However, McEwin et al. feel middle schools, in the end, have greater potential at meeting the needs of young adolescents than K-8 schools. McEwin et al. explains,

Middle schools more frequently have programs and practices in place that are recognized as essential in middle level schools (e.g., interdisciplinary teaming, advisory programs, a wide variety of exploratory courses, common planning time for core teachers), and educators in middle schools are more likely to understand young adolescents to better focus their efforts on serving them. (p. 27)

Ultimately, the best grade configuration for middle grades students and teachers might not be the most important question for further debate and research. Instead, the most important topic for debate and further research could be the continuous search for the best instructional and organizational practices and policies that allow middle grades teachers to best meet the needs of middle grades students.

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**Table 1.: Descriptive Statistics: Means and Std. Deviations by School Type**

+Scale: 1=strongly disagree, 2= disagree, 3= neither disagree nor agree, 4= agree, 5= strongly agree

School Type	Working Conditions Domain	Teachers N	Mean	Std. Deviation
6-8 Middle Schools	School Type	10520		
	Time	10136	3.11	.88
	Facilities & Resources	9905	3.68	.75
	Teacher Empowerment	10194	3.33	.88
	Leadership	9930	3.55	.79
	Professional Development	10297	3.35	.81
K-8 Schools	School Type	1813		
	Time	1762	3.03	.87
	Facilities & Resources	1724	3.76	.66
	Teacher Empowerment	1772	3.62	.75
	Leadership	1738	3.92	.67
	Professional Development	1778	3.37	.77
All Middle Schools (6-8, 3-8, 4-8, 5-8)	School Type	1100		
	Time	1060	3.18	.85
	Facilities & Resources	1031	3.65	.74
	Teacher Empowerment	1066	3.41	.82
	Leadership	1029	3.69	.76
	Professional Development	1069	3.42	.81

**Table 2.: T-test for Independent Samples by School Type: 6-8 Middle Schools and K-8 Schools by Teacher Working Conditions Domain**

+Scale: Working Conditions Domain Subscale Score: 1= Strongly Disagree, 2= Disagree, 3= Neither Disagree Nor Agree, 4= Agree, and 5= Strongly Agree

Working Conditions Domain	School Type	N	Mean	Std. Deviation	T	df	Sig. (2-tailed)
Time	6-8	10136	3.11	.88	3.80	2434.18	.000*
	Middle K-8	1762	3.02	.87			
Facilities and Resources	6-8	9905	3.68	.75	-3.86	11627	.000*
	Middle K-8	1724	3.76	.66			
Teacher Empowerment	6-8	10194	3.33	.88	-13.06	11964	.000*
	Middle K-8	1772	3.62	.75			
Leadership	6-8	9930	3.55	.79	-18.17	11666	.000*
	Middle K-8	1738	3.92	.67			
Professional Development	6-8	10297	3.36	.80	-.899	2501.10	.369
	Middle K-8	1778	3.37	.77			

\*Significant on a two-tailed test of significance where  $\alpha \leq .000$

**Table 3.: Correlations Between Teachers’ Perceptions of Teacher Working Conditions Domains and Student/School Characteristics by School Type: All Middle Schools (6-8, 3-8, 4-8, and 5-8) and K-8 Schools**

Student School Characteristic Variable		Time	Facilities & Resources	Teacher Empowerment	Leadership	Professional Development
Percentage of Students Eligible for Free and Reduced Lunch	Pearson Correlation	.013	.126	.057	.069	.029
	Significance (2-tailed)	.147	.000*	.000*	.000*	.001
	n	12958	12660	13032	12697	13144
2005-06 ABC School Recognition	Pearson Correlation	-.059	-.174	-.097	-.135	-.045
	Significance (2-tailed)	.000*	.000*	.000*	.000*	.000*
	n	12909	12614	12982	12649	13095
Percentage of Students Proficient on 2005-06 Reading EOG Test	Pearson Correlation	.051	.175	.085	.120	.038
	Significance (2-tailed)	.000*	.000*	.000*	.000*	.000*
	n	12958	12660	13032	12697	13144

\*Significant at  $p \leq .000$  on a two-tailed test of significance

**Table 4. Correlations among Working Conditions Subscales and School Type: All Middle Schools (6-8, 3-8, 4-8, and 5-8) and K-8 Schools by Working Conditions Subscale**

Working Conditions Subscale	Pearson Correlation Significance (2-tailed)	Time	Facilities & Resources	Teacher Empowerment	Leadership	Profess. Develop.
Time	N Pearson Correlation Sig. (2-tailed) Teachers	1	.533 .000*	.539 .000*	.518 .000*	.497 .000*
Facilities and Resources	N Pearson Correlation Significance (2-tailed) Teachers	12958	12297	12618	12291	12705
Teacher Empowerment	N Pearson Correlation Significance (2-tailed) Teachers	.533 .000*	1	.546 .000*	.559 .000*	.557 .000*
Leadership	N Pearson Correlation Significance (2-tailed) Teachers	12297	12660	12376	12049	12441
Professional Development	N Pearson Correlation Significance (2-tailed) Teachers	.539 .000*	.546 .000*	1	.780 .000*	.566 .000*
School Type (All Middle School Configurations and K-8 Schools)	N Pearson Correlation Significance (2-tailed) Teachers	12618	12376	13032	12387	12798
	N Pearson Correlation Significance (2-tailed) Teachers	.518 .000*	.559 .000*	.780 .000*	1	.565 .000*
	N Pearson Correlation Significance (2-tailed) Teachers	12291	12049	12387	12697	12486
	N Pearson Correlation Significance (2-tailed) Teachers	.497 .000*	.557 .000*	.566 .000*	.565 .000*	1
	N Pearson Correlation Significance (2-tailed) Teachers	12705	12441	12798	12486*	13144
	N Pearson Correlation Significance (2-tailed) Teachers	-.036 .000*	.036 .000*	.112 .000*	.155 .000*	.005 .566
	N	12958	12660	13032	12697	13144

\*Significant at  $p \leq .000$  on a two-tailed test of significance