MEASURING UP
WAKE COUNTY PUBLIC SCHOOL SYSTEM
EVALUATION AND RESEARCH DEPARTMENT

E&R Report No. 09.37 March 2010

Teacher Absences: Types, Frequency, and Impact on Student Achievement, Wake County Public School System, 2007-08

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ABSTRACT

In 2007-08, the WCPSS teacher absence rate was 10.3 days, slightly higher than a national rate of 9.5 days in 2004-05 but lower than the 11.3 to 14.6 days reported in large school districts more recently. In comparison with other studies, WCPSS teachers averaged smaller proportions of personal and sick leave days, slightly more annual leave days, and a higher proportion of administrative leave days. Teacher absences varied by years of experience and by schools' grade span and proportion of students receiving free or reduced-price lunch. Overall, there is some evidence, low but significant, of a negative relationship between teacher absences and mathematics achievement in two of six grades, but not in reading or six high school courses. These and other findings, including screening and costs of substitute teachers, are detailed in this report.

INTRODUCTION

This report provides an analysis of teacher absences for the 2007-08 school year in the Wake County Public School System (WCPSS) across 153 schools: 96 elementary, 30 middle, 23 high, and four alternative.

In December 2008, the WCPSS Board of Education adopted a two-part goal, with one part being "By 2014, all students will graduate on-time prepared to compete globally." In support of the goal, the district places emphasis on two vital behaviors: "teaching the North Carolina (NC) Standard Course of Study and ensuring that our students attend school" (http://www.wcpss.net/attachments/journal/2009_sept4.pdf), with the assumption that district teachers, all meeting the Highly Qualified standard of the No Child Left Behind (NCLB) Act of 2001, will be in the classroom as well. At the same time, there is recognition that some teacher absences cannot be avoided. According to data gathered by the National Center for Education Statistics, Schools and Staffing Survey (2003-04), US public school teachers average between nine and 10 days of absence per year. Slightly higher averages have been reported in individual school districts: 12.6 days in Los Angeles (Kirk, 1998); 11.3 days in New York City (Podgursky, 2003); 11 days for only sick and personal leave in Phoenix, Arizona

Key Topics

(Kossan, 2006); 14.6 days in Burlington, Vermont (Walsh, 2009); and an average of 10 to 14 days[1] across North Carolina districts (Clotfelter, Ladd, & Vigdor, 2007). As in any work environment, there are absences for medical appointments, family emergencies, and illness. Additionally, teaching has some occupational hazards, such as exposure to students with infectious illnesses and, increasingly, high-stress environments with budget constraints and uncertainties in staffing and resources, expanding class/school sizes and classroom diversity, and rapidly evolving accountability measures. Additionally, because teacher effectiveness is widely recognized as the most important factor in student academic growth (Darling-Hammond, Klein, & Wise, 1995; Teddlie and Reynolds, 2000; Stronge, 2002; McCaffrey, Lockwood, Koretz, & Hamilton, 2003), there is increasing concern within WCPSS about the amount of time during the instructional day that teachers (and principals) are pulled away from their classrooms and/or buildings, for required federal, state, and local program meetings and professional development activities. One purpose of this study is to gather baseline data on the amount of time spent by WCPSS teachers away from the classroom/building and the reasons for those absences. In addition to the overall absence rate, the study examines the relationship between teacher absence and school characteristics such as percentage of economically disadvantaged students and grade configuration (elementary, middle, and high schools), and the relationship between teacher absence and years of teaching experience.

A second purpose is to explore the relationship between teacher absences and student achievement in WCPSS. Recent studies, one using North Carolina 4th- and 5th-grade data (Clotfelter et al., 2007), and one using 4th-grade data from an unnamed northern urban district (Miller, Murnane, & Willett, 2008), indicate that teacher absences may negatively influence student achievement, while other studies have found little association or impact (Ehrenberg, Ehrenberg, Rees, & Ehrenberg, 1991; New York City Public Schools, 2000; Kirk, 1998; and Radcliffe, 2004).

Section I of the report provides background information for the study: overall teacher profile, types of leave available to teachers, and data sources. Next, Section II describes the types, frequency, and patterns of WCPSS teacher absences in 2007-08 and then examines teacher and school characteristics associated with teacher absence. Section III describes the credentials and screening of substitute teachers, frequency of their employment, and annual cost of the substitute teacher program. Finally, Section IV presents results of this report's examination of the association of teacher absences with student achievement, and Section V presents a discussion and recommendations.

[1] Extrapolated by subtracting the 10 mandatory annual/vacation leave days for winter and spring breaks.

SECTION I: BACKGROUND

In the 2007-08 school year, 98.5% of teachers in WCPSS met the federal NCLB Highly Qualified Teacher (HQT) standard.[2] The district's teacher profile for this time period was as follows: 78.6% held career status (tenure), 34.8 % had advanced degrees, 11% were National Board certified, 86% were White, 85% were female, and the average years of experience was 11.7. A recent (2008-09) district analysis of teacher equity across NCLB student subgroups in the district showed no inequities in distribution of teachers (based on "Highly Qualified" status, advanced degrees, and years of experience) among district schools for any of the NCLB student subgroups: economically disadvantaged students (those receiving free or reduced-price lunch), students with disabilities, and English language learners (Speas, 2009).

Of the 153 WCPSS schools in the 2007-08 school year, 103 were traditional-calendar schools, five schools had modified calendars differing somewhat from the traditional calendar, and 45 were year-round schools with four tracks (the first beginning in July), each with cycles composed of nine weeks of school followed by three weeks when students are "tracked out." As a consequence, teachers generally had common paid legal holidays, but the 10 annual vacation days designated by the local Board of Education policy varied among schools and tracks.

For WCPSS teachers, most of whom are 10-month employees, the school calendar consists of 215 days, with 180 instructional days, 10 paid legal holidays, and 10 annual vacation days (that must be used as scheduled by the local board, generally at winter and spring breaks). In addition, there are 15 non-instructional workdays used in the following manner: Five workdays for teachers to complete instructional and classroom administrative duties (beginning of the year and at the end of each quarter), and 10 workdays designated by the board and principals for teacher planning, program meetings, and professional development activities. On at least seven of the 10 days, with the approval of principals, teachers may use any accumulated annual/vacation leave. These workdays are, in fact, the only days in which annual/vacation leave can be used unless there are extenuating circumstances.

For this report, four types of teacher leave were studied:

1. Annual/Vacation Leave is earned at a rate of one day per month for novice teachers and up to 2.15 days for veteran teachers with 20 or more years of experience. At this rate, new teachers earn just enough leave for the 10 annual vacation leave days (spring and winter breaks) and must, therefore, be present for the 15 non-instructional workdays, while teachers with more years of experience and any accumulated leave may elect, with their principal approval, to use annual/vacation leave on some non-instructional days. (There is no deduction from teacher pay.) Bonus Vacation Leave, within this category, refers to the benefit - in lieu of a salary increase - to state employees in years 2002-03, 2003-04, and 2004-05. Because all teachers take the mandated 10 annual/vacation days (when students are not in school), those 10 leave days are not recorded as leave by the Payroll Department.

[2] The HQT percentage increased to 99.5% in 2008-09.

2. Personal Leave is earned at the rate of 0.2 days for each full month of employment, not to exceed two days per year, and is generally used for medical appointments and family needs. For each absence, $50 is deducted from teacher pay. For this study, Leave Without Pay, used at teacher discretion and principal approval (when other types of leave are exhausted), is also classified as personal leave.

3. Sick Leave is earned at a flat rate of one day per month. There are three types: sick leave; extended sick leave, available to all (up to 20 days, beginning when all accumulated sick leave has been used, $50 deductible per day); and donated leave (annual leave days donated by other employees for a specific teacher's use as sick leave).

4. Administrative/Mandated Leave (Absence with No Deduction) is used for professional development and federal, state, and local program meetings.

See Appendix A for more information about the types of leave for North Carolina teachers. Further details are in the *WCPSS Employee Handbook* available online at the district website.

DATA

For this exploratory/baseline study, several types of data were collected and analyzed for the 2007-08 school year:

- WCPSS Human Resources databases containing teacher demographic data, education level, licensure and tenure status, years of experience, plus school, grade and classroom/course assignments.
- A file linking students and their test scores with individual classroom teachers in each school, provided by the state testing program.
- WCPSS Student Locator Files containing student demographic data.
- WCPSS Payroll and Human Resources Departments data containing dates and reasons for teacher absences linked with substitute teacher types and pay information. For the 2007-08 school year, these data include dates and reason codes for 101,971.5 absences taken by 9,305 teachers over the 225-day period of employment.
- WCPSS Evaluation and Research Department databases containing student residuals based on scale score results from the North Carolina testing program, see Section IV. For this study, the units of measure are reading and mathematics scores in grades 3-8 and end-of-course scores for six courses at the high school level.

SECTION II: TYPES, FREQUENCY, AND PATTERNS OF ABSENTEEISM

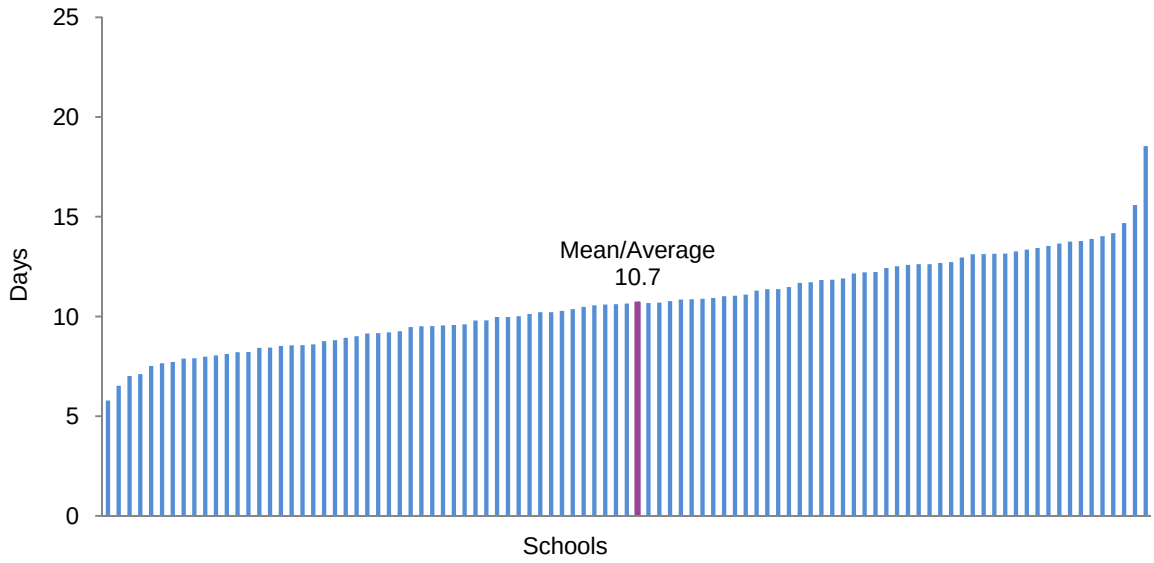
As noted earlier, US public school teachers were absent nine to 10 days per year on average (National Center for Educational Statistics survey, 2003-04) while, at the same time, the average absence rates for NC teachers from 1994-95 to 2003-04 ranged from 10.4 days to 14.0 days (Clotfelter et al., 2007). Compared to these and other published rates, the overall average teacher absence rate across the 180 instructional days for WCPSS teachers in 2007-08 was similar but slightly higher than the 2003-04 national survey average and lower than other published rates

since that time: 10.3 days across the 153 schools. On average, 5.7 % of WCPSS teachers were absent on a given instructional day, compared to the 5.3% of public school teachers in the United States reported in 2004.

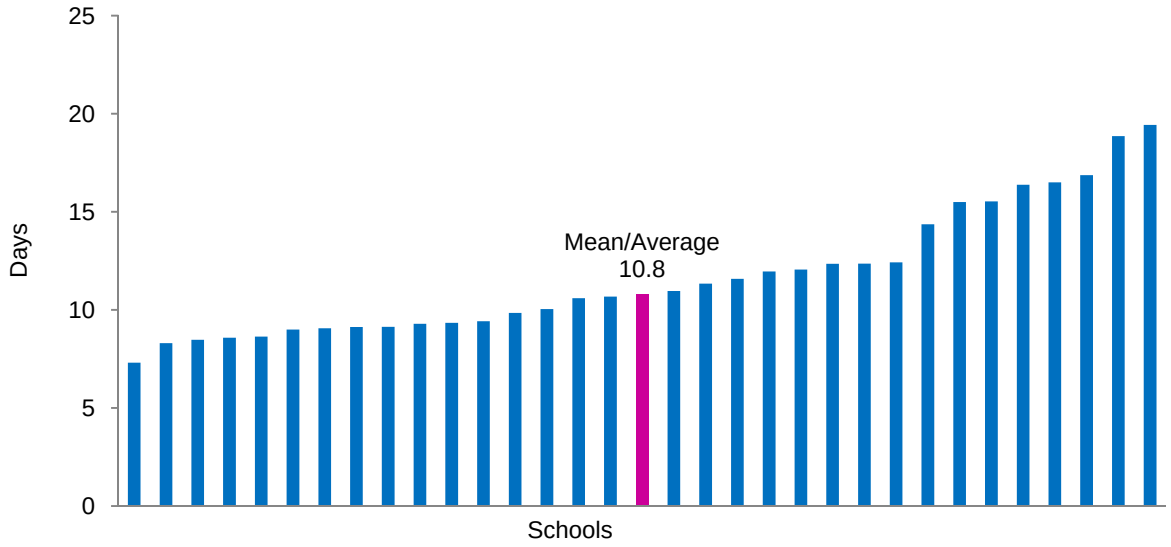
As shown in Figure 1, the range of total days absent among all WCPSS schools was from 5.8 to 18.5 days across the 153 schools, with the average number of absences varying by grade span: similar at the elementary and middle school levels (10.7 days and 10.8 days, respectively) but substantially lower at the high school level (8.8 days).

Figure 1
WCPSS Average Teacher Absence Rates for 180 Instructional Days by Grade Span: Elementary, Middle, and High Schools

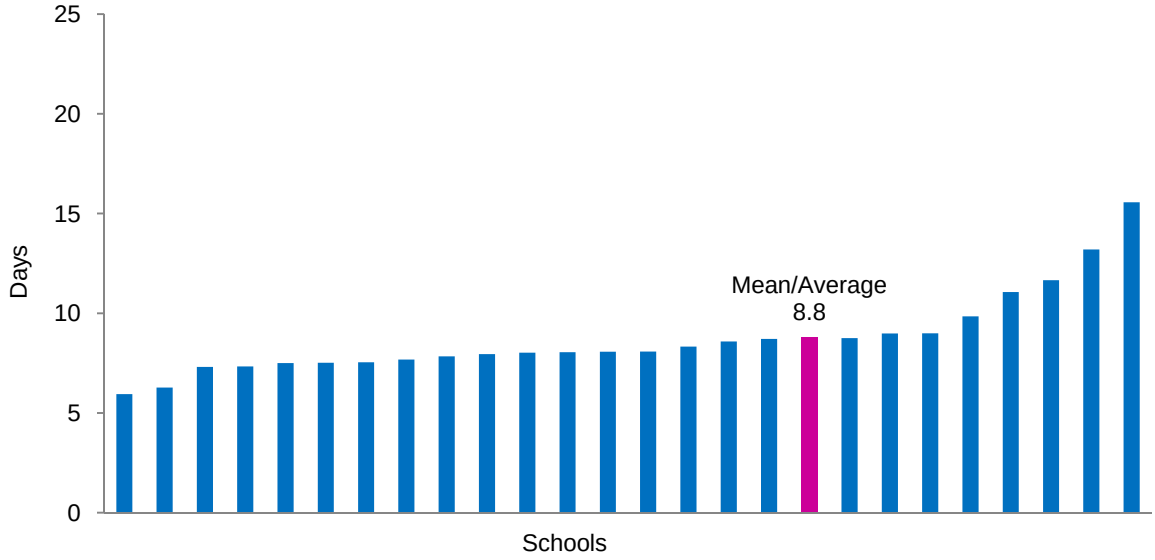
1a. Elementary Schools



1b. Middle Schools



1c. High Schools



Appendix B shows in tabular form the average days of teacher absences, by type of leave, for individual schools, and Appendix C charts the overall average of teacher absences (all types of leave combined) for individual schools within each grade span (elementary, middle, and high school).

Because all NC teachers use 10 days of annual vacation leave for winter and spring breaks, those 10 annual/vacation days are not recorded as absences in WCPSS and are not considered for this report. For the analyses here, teacher absences during the 180 instructional days when students were in school were examined first and then, separately, the 15 non-instructional teacher workdays devoted chiefly to report card preparation, parent conferences, professional development activities, and team and school-wide planning. Each teacher absence record in the dataset was coded as one of four types of absence: annual/vacation, personal, sick, and administrative/mandated. During the 180 instructional days, sick leave was the most common type of absence (62.5% of all absences), followed by administrative/mandated leave (24.8%), annual/vacation leave (7.1%), and personal leave (5.6%).

PATTERNS IN USE OF LEAVE

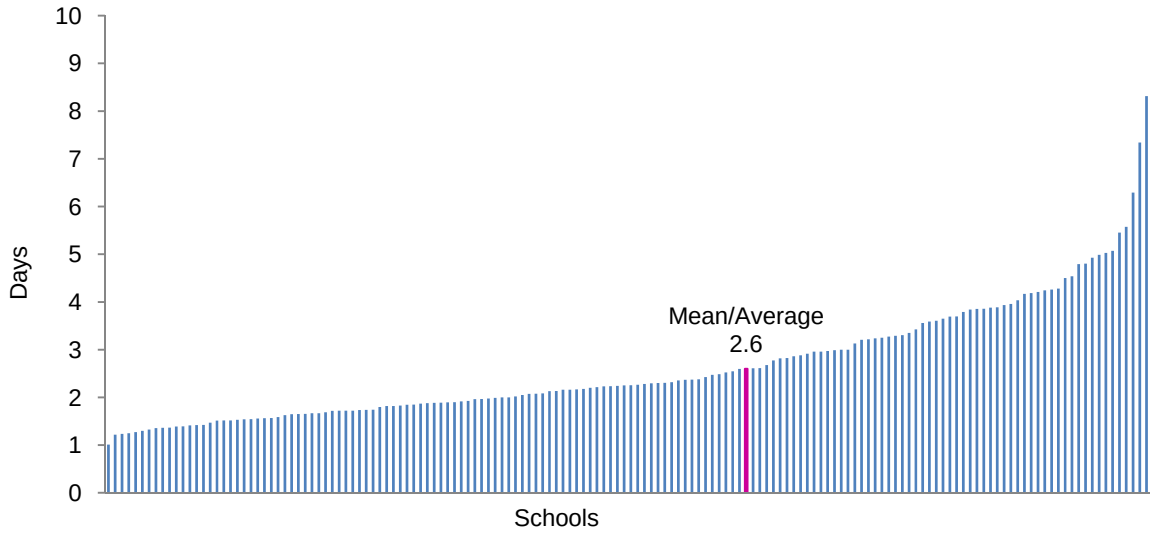
Personal leave, earned at the rate of two days per year in NC – a lower limit compared to many other states, was used sparingly (0.59 days on average) by teachers in the year under study. Across schools, average personal leave absences ranged from 0.1 to 1.9 days. Similarly, sick leave absences averaged 6.5 days, lower than the NC average district rate for all seven years of the Clotfelter et al. (2007) study. Individual school averages ranged from 1.9 days to 11.7 days.

Annual/vacation leave absences are designed to occur on teacher workdays when students are not in school and with the approval of the principal. In some instances, however, if considered reasonable, principal approval of a teacher's annual/vacation leave absence may occur during the 180 instructional days.[3] Across the district in 2007-08, teachers averaged 0.7 days of annual leave on instructional days, with school averages ranging from zero to 3.9 days of annual/vacation leave. Further inquiry may be needed in those schools with the highest averages to determine if there are patterns over time.

Administrative/mandated leave absences accounted for a large proportion of teacher absences in 2007-08, compared to the results of the earlier statewide study. Clotfelter et al.(2007) in their study of NC teacher absence rates over a seven-year period, observed that administrative/mandated leave, used chiefly for professional development activities, was "rarely held at a time that conflicts with classroom instruction" and varied little across schools. This was not the case in WCPSS in 2007-08, when a quarter (24.8%) of all teacher absences from the classroom was administrative/mandated leave. As shown in Figure 2, the range among all schools was from 1.1 to 8.3 days of administrative/mandated leave, with an average of 2.6 days. By school level, the average number of administrative leave absences was 2.8 days for elementary schools, 2.9 days for middle schools, and two days for high schools. In summary, the district average number of administrative leave days (2.6) was comparable to the findings of previous studies, but the large range of school averages (1.1 days up to 8.3 days) did not exist in the earlier study of NC schools, nor was there such a large proportion (25% of all leave days) found in other studies.

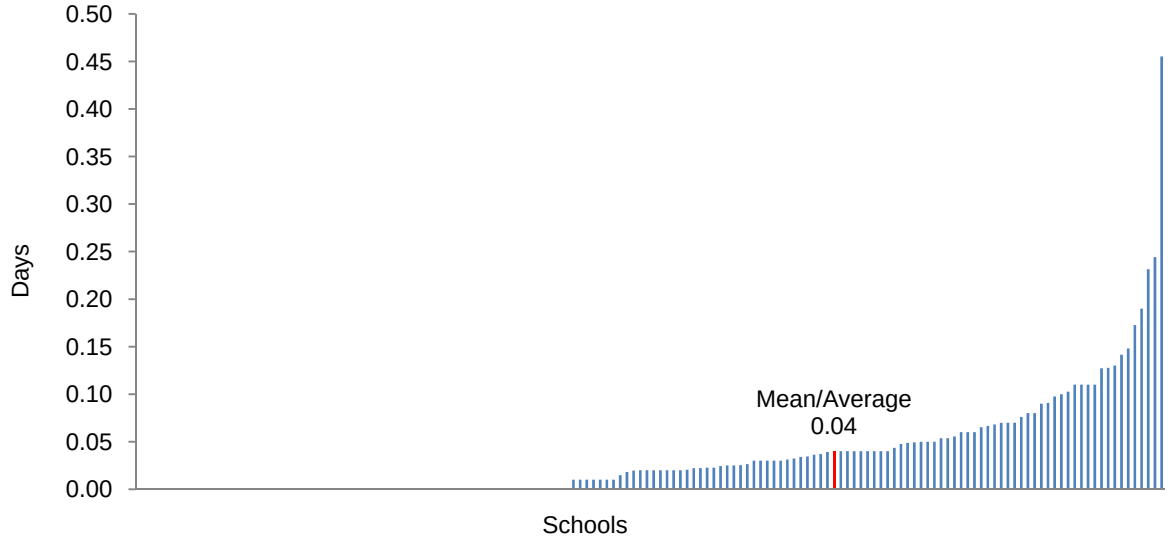
[3] Teachers with accumulated leave may elect, with principal approval, to use annual/vacation leave in lieu of some other form of leave for the following reasons: catastrophic illness, emergency, waiting period for disability benefits, new baby, or if qualified for Family and Medical Leave Act (FMLA). Also, with principal approval, 11-month teachers in specialized programs such as art, music, physical education, drama, dance, etc. may use annual leave on days when students are in class.

Figure 2
WCPSS Average Administrative/Mandated Leave Absences
by School for 180 Instructional Days, 2007-08



In comparison, see Figure 3 for the average number of administrative/mandated leave days during the 15 teacher workdays when students were not in school. Sixty-four schools averaged zero administrative leave days during this period, and the remaining schools averaged less than one-half day of teacher administrative leave. This suggests that most administrative/mandated meetings and professional development activities during the fifteen teacher workdays either: (a) occurred within the school and rarely at a location requiring leave time, or (b) did not occur during the 15 days. Closer examination of these 15 days is needed to assess optimal use of professional development and planning activities.

Figure 3
Average Administrative/Mandated Leave Absences by School
for the 15 Teacher Workdays, 2007-08



YEARS OF TEACHER EXPERIENCE ASSOCIATED WITH TEACHER ABSENCES

Since sick and annual/vacation leave are earned at higher rates as years of teacher experience increase, one might expect more absences by more experienced teachers. Consistent with results of previous studies, for WCPSS teachers in 2007-08, it was probationary teachers— those with three years or less of teaching experience[4] and earning less leave time than others—who averaged fewer absences than teachers with more years of experience. The average number of absences peaked at four-to-nine years of experience (10.7 average absences), followed by slight decreases in the 10-19 and 20-or-more years of experience. Figure 4 presents the number of teachers in the district by experience level, followed by Figure 5 showing the average number of teacher absences by experience level.

[4] A probationary teacher who has been employed by a NC public school system for four consecutive years is eligible for career status.

Figure 4
Number of WCPSS Teachers by Years of Experience, 2007-08

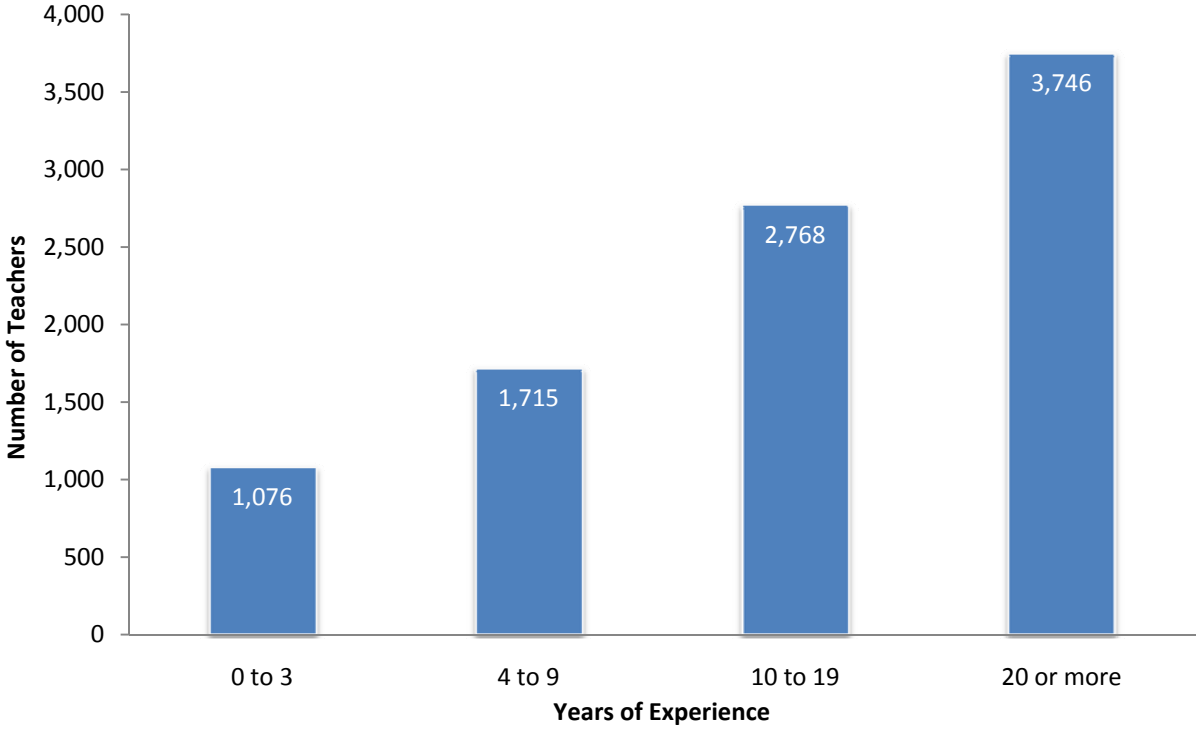
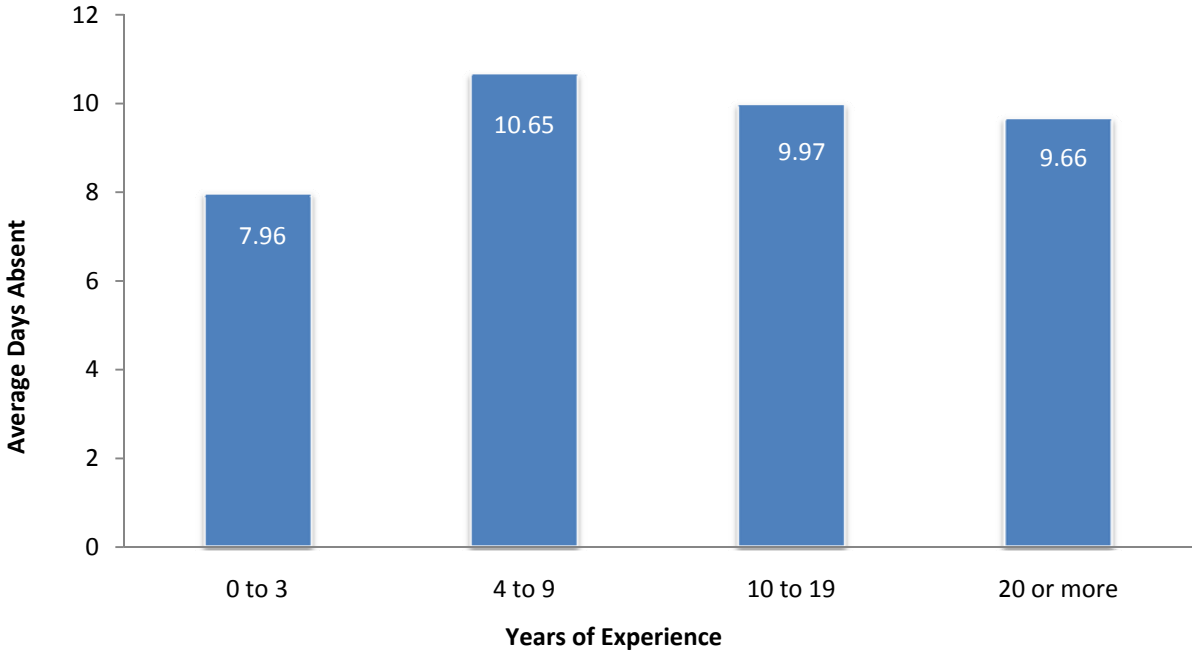


Figure 5
Average Number of Teacher Absences by Years of Experience



SCHOOL CHARACTERISTICS ASSOCIATED WITH TEACHER ABSENCE

School Grade Span

A school's grade span in WCPSS refers to three types of schools: elementary schools (grades K-5), middle schools (grades 6-8), and high schools (grades 9-12). As noted in the previous section, the average number of teacher absences in 2007-08 did vary among school grade spans: 10.7 days for elementary schools, 10.8 days for middle schools, and 8.8 days for high schools. The lower average number of days absent at the high school level is consistent with findings from the Clotfelter et al. (2007) study of NC teacher absence rates over a seven-year period.

School FRL Rates

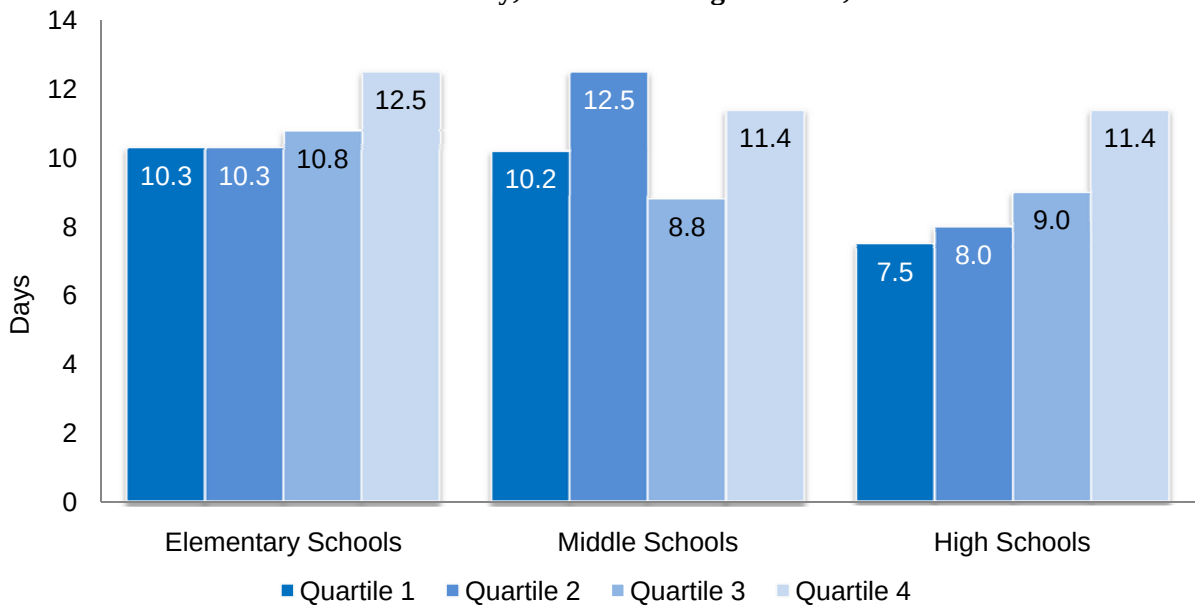
Nationally, teachers at schools with less than 24% of FRL students are absent at an average rate of 5% or less, while teachers at schools serving higher percentages of FRL students are absent 5.5% of the time (National Center for Education Statistics 2003-04 survey). Similarly, the statewide study of NC elementary schools found that each 10 percentage point increase in a school's FRL population was associated with an additional tenth of a day of absence by its teachers.

Overall, in WCPSS, when the 153 schools' FRL rates were classified/ranked into four sections (quartiles), teachers in schools with the highest FRL rates (quartile 4) were absent two days more per year than teachers in schools with the lowest FRL rates (quartile 1), twice the difference found in the statewide study using a similar methodology. In WCPSS, the average days of teacher absence were 9.8 in quartile 1 schools, 10.3 in quartile 2, a similar rate of 10.1 days in quartile 3, and 11.8 days in quartile 4 schools.

However, as shown in Figure 6, there were variations in average teacher absences among elementary, middle, and high schools. The anomaly was in middle schools where those schools with the next-to-lowest proportions of FRL students (quartile 2) averaged more teacher absences (12.5 days) compared to quartile 1, 3, and 4 schools with averages of 10.2, 8.8, and 11.4 days of teacher absences respectively. Investigation of individual school data within school-levels, especially with the addition of another one to two years of data, is needed.

Students in elementary schools and high schools with higher proportions of students receiving FRL did experience more teacher absences than their peers in schools with lower proportions of FRL students, a difference of up to 2.2 days at the elementary school level and up to 3.9 days at the high school level. These differences are even more striking when one considers that: (a) there were substantially fewer average teacher absences at the high school level, and (b) district analyses conducted for Title II-A reporting found no inequities in distribution of teachers among WCPSS schools in the areas of teacher qualifications (federal "Highly Qualified" status, advanced degrees, and years of teaching experience). This was true both for all students combined and for NCLB subgroups of economically disadvantaged students, English language learners, and students with disabilities (Speas, 2009).

Figure 6
Average Days of Teacher Absences by FRL Quartiles
in WCPSS Elementary, Middle and High Schools, 2007-08



Note 1: The 25th, 50th and 75th percentiles for proportion of students receiving free or reduced-price lunches were as follows: 20.9, 37.2, and 53.5 for elementary schools; 16.6, 27.8, and 39.0 for middle schools; and 15.3, 24.9, and 34.0 for high schools, excluding alternative schools with skewed FRL rates (100% FRL in one small alternative school).

Note 2: Middle and high school students are less likely than elementary students to apply for free or reduced-price lunches, resulting in undercounts of economically disadvantaged students.

SECTION III: SUBSTITUTE TEACHERS: CREDENTIALS, FREQUENCY OF USE, AND COSTS

No study of teacher absences would be complete without a discussion of substitute teachers. In most cases, substitute pay is provided for teachers who must be away from their classrooms/buildings. In WCPSS 4,165 substitute teachers were employed during the 2007-08 school year, each accepting a range of one to 175 requests/assignments (some for a half-day). The district uses an automated Substitute Employee Management System (SEMS), accessed by telephone, to fill teacher absences, but teachers must also contact their schools for each absence, ensuring personal communication (recognized as a best practice). SEMS provides school administrators daily with names of teachers who will be absent and of substitutes who will be filling the positions. To assist substitute teachers, at the beginning of each semester regular teachers prepare and submit to the principal's office a folder with schedules, rosters, daily procedures and duties, forms, and texts. These folders, as well as current lesson plans (unless there is an emergency), are provided to substitutes.

Nationally, standards for substitute teachers are typically below those of regular teachers, but this varies among states, with only one state requiring that substitutes be certified teachers. While

aimed at increasing accountability for schools, NCLB specifically exempts substitute teachers from any of the requirements for teacher quality. In WCPSS, the screening process for substitute teachers includes credential reviews and confirmation, criminal background checks, and letters of recommendation from current or former supervisors. After employment with the district, their work is evaluated by principals or their designees. WCPSS recognizes four levels of substitute teachers, based on education level and experience, with graduated stipends:

1. Non-Certified substitute (with 60 college credits OR a recommendation by the principal). Stipend of $68 per day in 2007-08.
2. Effective Teacher Training (ETT) substitute (has completed the state's community college ETT program). Stipend of $77 per day.
3. Certified substitute (a licensed teacher). Stipend of $88 per day.
4. Teacher Assistant as substitute (already employed at the school). Stipend of $136 per day includes extra funds in the benefit areas: social security, medical, and retirement.

Schools may match substitutes with subject areas (such as higher math) and grade level (kindergarten, for example) for lengthy teacher absences, but matching for brief absences is not generally undertaken. A length-of-service limitation under NCLB is that schools must send a letter to parents if a substitute is not a "Highly Qualified" teacher and serves four or more weeks in a single classroom/position.

Another category of employee, an Interim Employee (a certified teacher and contract employee with no benefits), may be employed for up to six months to replace a teacher on extended leave. However, only a handful of these are employed each year.

As listed above, teacher absences create costs for the district in the form of substitute teacher stipends. In 2007-08 there were 101,971.5 days of teacher absences in WCPSS, with substitutes employed for 69% of those absences (70,396.25 days, including 8,096 half-day absences). As shown in Table 1, stipends for substitute teachers totaled more than six million dollars ($6,594,975.98). At the same time, fifty dollars a day was deducted from teacher pay for personal leave days (5,440.55 days) and extended sick leave days (600), amounting to $302,027.50. When the teacher personal leave and extended sick leave deductions are subtracted from the subtotal stipend costs, total expenditures remain more than six million dollars ($6,292,948.48), not including administrative costs of the substitute teacher program.

Table 1
Total Expenditures for Substitute Teachers in WCPSS, 2007-08

Elements	Costs
Standard substitute teacher stipends	$6,039,401.35
Social Security contribution for teacher assistants (TAs) serving as substitutes	$374,499.09
Medical contribution for TAs	$87,738.40
Retirement contribution for TAs	$93,337.14
Subtotal: Stipend Costs	$6,594,975.98
Teacher deductions ($50 per day X 5,440.55 days) for personal leave	-$272,027.50
Estimated teacher deductions ($50 per day X 600 days) for extended sick leave* rarely used	-$30,000.00
Total Expenditures	$6,292,948.48

* Extended sick leave was not identified separately in the dataset. It is used only when a teacher has exhausted all other leave.

Additionally, it should be recognized that, in the year under study, 6.8% (6,879.25 days) of teacher absences occurred when students were not in school. Further, no substitutes were employed for another 24.2%[5] (24,696 days) of all teacher absences. This means that other school staff, at no additional expense to the district, briefly served as substitute teachers for almost a fourth of all teacher absences. For example, some staff members report foregoing planning or lunch time or adding students to their own classes, with members of a department or grade-level team banding together so that students will not fall behind. Others report that school administrators, non-core teachers, and office personnel may also rotate to serve as substitutes for short periods of time. The "filling in" function by other staff members in WCPSS is a finding not reported in previous studies of teacher absences and should be considered when district costs are summarized. At the same time, the extra burden placed on fellow staff members can be costly, too. Technically, this is referred to as "opportunity" cost.

SECTION IV: RELATIONSHIP OF TEACHER ABSENCES AND STUDENT ACHIEVEMENT

Common sense suggests that teacher absences impact student learning, even with substitute teachers in the classroom. Nevertheless, earlier research has yielded mixed results: while some studies have found little impact (Ehrenberg et al., 1991; New York City Public Schools, 2000; Kirk, 1998; and Radcliffe, 2004), two more recent studies cited previously (Clotfelter et al., 2007; Miller et al., 2008) indicate that teacher absenteeism can have an adverse effect on student learning.

[5] These are not the 24% of teacher administrative/mandated leave absences.

Clotfelter et al. (2007) examined seven years, 1994-95 to 2003-04, of North Carolina teacher absence and student achievement data. The first part of the study, using almost 500,000 observations, examined types and frequency of 4th- and 5th-grade teacher absences across time, while the second part of the study explored whether teacher absences—across all districts in the state—influenced student academic growth as measured by state end-of-grade tests in reading and mathematics at grades four and five. Their findings imply that having a teacher with 10 sick days in a year would be associated with a small but measurable impact: reduced test scores equivalent to 2.3% of a standard deviation in mathematics and 1.0% of a standard deviation in reading.

A similar but more recent study, by Miller et al. (2008), examined the impact of teacher absence on students' fourth-grade test scores in a large unidentified northern, urban school district over a three-year period beginning in 2002. Researchers focused on 285 fourth-grade teachers and their students. Those teachers averaged 10 days of absence per year. Study results were similar to those of Clotfelter et al., indicating that 10 teacher absences (two weeks) within a school year were associated with a significant loss in mathematics achievement (about 3.3 percent of a standard deviation) but no significant differences in reading on annual state tests taken in May. Although small, the mathematics effects were 50% greater than those found in the Clotfelter et al. study, with Miller et al. attributing the difference to the much higher proportion (80%) of FRL students in the unnamed urban district. Their reasoning was that, compared to parents of other students, parents of FRL students may be less likely to compensate for lapses in school instruction.

Therefore, the aim of this portion of the study is to examine whether, and to what degree, teacher absenteeism may influence student academic growth in grades 3-8 reading and mathematics and in six courses at the high school level. The number of participants by grade level and subject area are listed in Table 2.

Table 2
Number of Participants (Students and Teachers) by Grade Level and Subject Areas

Grade	Number Students (Mathematics)	Number Teachers (Mathematics)	Number Students (Reading)	Number Teachers (Reading)
3	7,722	314	N/A	
4	7,344	270	7,398	277
5	8,732	291	8,621	288
6	6,698	75	7,326	82
7	5,939	70	6,353	71
8	6,679	74	6,095	65
High School				
Algebra 1*	6,582	124		
English 1	8,855	99		
Algebra 2	5,112	107		
Chemistry	3,262	41		
Physics	676	17		
US History	5,465	94		

*Eighth-grade Algebra I scores were not included in the study. All 8th-grade students must take the EOG mathematics test, even if also taking the EOC Algebra I test.

Note 1: Because no 3rd-grade reading pre-test was administered in fall 2007, there were no 3rd-grade reading residuals at the end of the 2007-08 school year.

Note 2: Not included in the analyses are students with no pre-test scores from the previous year, teachers of classrooms with fewer than 15 students, and a small number of teachers for whom there was no match.

METHOD AND PROCEDURES

The NC Standard Course of Study, a common curriculum for each grade level and subject area, serves as the blueprint for construction of NC End-of-Grade and End-of-Course Tests. Based on student test results each year, WCPSS Evaluation and Research staff calculate student residual scores from which an Effectiveness Index is derived for each school (http://www2.wcpss.net/departments/e-and-r/reports/effec-residuals09.pdf).

A *student residual* is the difference in scale score points between a student's actual score and the score predicted for that student by the statistical method of multiple regression, taking into consideration the student's pretest score, academically gifted status, special education status and FRL status, as well as the school's FRL percentage. This procedure is used to calculate the score a student would be expected to achieve based upon the predictor variables. Thus, a residual score near zero means that the student scored close to the expected value for similar students across the district taking the same test. Individual residuals either one standard deviation above or one standard deviation below zero indicate a meaningful difference: either higher growth or lower growth than expected compared to that of similar students across the district.

For this study, *teacher residual averages*—derived from student residuals—and teacher absence rates were used as the units of measurement for determining whether, and to what extent, teacher

absences were influencing student achievement. A teacher residual average is the average of all his/her students' residuals for a particular test and class (analyzing only classes with 15 or more students).

The statistical analysis used was the Pearson product-moment correlation coefficient indicating the degree of linear relationship between two variables. This statistic predicts the tendency for one variable—in this case, student academic growth—to increase or decrease as the other variable—teacher absences—increases, with +1.00 as a perfect positive correlation and -1.00 as a perfect negative correlation.

OUTCOMES

Overall, results indicated an association between number of teacher absences and student achievement outcomes in only two of 17 grade/subject comparisons:

- A low negative correlation coefficient of -0.2 in 6th grade mathematics, not a strong linear relationship but a relationship.
- A larger trend (negative correlation coefficient of -0.3) in 7th grade mathematics, a more linear relationship than at grade 6 but still a low-moderate relationship.

As for the other analyses, no linear relationships were found between number of teacher absences and student residuals in the following grades-subjects: reading at grades 3-8, mathematics at grades 3-5 and 8, and the six courses at the high school level. It should be noted that, in the literature reviewed, only one study reviewed here has found an association (a very low one) between teacher absences and student growth in reading, and only WCPSS has explored any associations at the middle and high school levels.

Overall, in the WCPSS study, no associations were found between number of teacher absences and student academic growth in those grades and subject areas investigated by the most recent researchers Clotfelter et al. (grades 4 and 5 mathematics and reading) and Miller et al. (grade 4 mathematics and reading). However, as shown in Table 3, very low to low-moderate negative associations were found in grades 6 and 7 mathematics achievement.

Table 3
Correlation Coefficients between Teacher Absences and Teacher/Student Residuals by Grand-Subject Areas in 2007-08

	Reading	Mathematics
Grade 3		0.103
Grade 4	-0.027	-0.039
Grade 5	-0.092	-0.021
Grade 6	0.005	**-0.204***
Grade 7	-0.093	**-0.325****
Grade 8	0.049	0.041
High School		
Algebra I	-0.136	
Algebra II	-0.052	
English I	-0.155	
Chemistry	-0.152	
Physics	-0.189	
US History	-0.004	

Note: * Significant at <0.05 level
** Significant at <0.001 level
No other correlation coefficients were significant at these levels.

SECTION V: DISCUSSION AND RECOMMENDATIONS

One purpose of this study was to gather baseline data on the amount of time spent by district teachers on tasks away from the classroom/building—and the reasons for those absences—in order to maximize instructional time. The main categories of teacher leave under study were sick, personal, annual/vacation, and mandatory/administrative leave. In 2007-08, there were dates and reason codes for 101,971.5 absences (half days and more) taken by 9,305 WCPSS teachers. The district-wide absence rate was 10.3 days, slightly higher than the national survey rate of 9.5 in 2004-05, and less than rates reported more recently in large individual districts (11.3 to 14.6 days). On average, 5.7% of WCPSS teachers were absent on a given day. During the 180 instructional days, sick leave was the most common type of absence (62.5% of all absences), followed by administrative/mandated leave (24.8%), annual/vacation leave (7.1%), and personal leave (5.6%).

In comparison with previous studies cited in this report, within the 180 instructional days, WCPSS teachers used a relatively smaller proportion of personal and sick leave days, an elevated number of annual/vacation leave days in some schools, and a higher proportion of administrative/mandated leave days, used chiefly for professional development activities. Clearly, administrative/mandated leave is an issue warranting more attention and discussion. This type of leave has always presented a dilemma for educators. Just as in other professions, professional development is the means for upgrading knowledge/skills and meeting the

requirements for licensure/continued employment. At the same time, the competing—and crucial—aim of educators is increased instructional time with students, not pulling teachers away from the classroom for professional development. Adding to the dilemma is that teachers' use of accumulated annual/vacation leave days are limited to seven of ten[6] designated teacher workdays, inhibiting the scheduling of professional development on those days. However, within the district there are wide ranges of average days of administrative/mandated leave time among the schools, and these data can be used to initiate discussions about program and planning needs as well as administration and school culture expectations.

In addition to absence rates, this study examined the relationship between teacher absence and school characteristics such as grade span and percentage of economically disadvantaged students. Average days of teacher absence did vary by school grade span: 10.7 days for elementary schools, 10.8 days for middle schools, and 8.8 days for high schools, a difference of two additional days of absence in elementary and middle schools than in high schools.

Also of concern, the pattern of teacher absences across district schools in 2007-08 disproportionately affected schools with highest proportions of economically disadvantaged (FRL) students. When district schools were classified by their FRL rates into quartiles, it was found that teachers in schools with the highest FRL rates averaged two days more absences per year than teachers in schools with lowest FRL rates, twice the difference found in the state-wide study (Clotfelter et al., 2007). Further, average days absent varied by school grade span, with a substantial increase in days of teacher absence (up to 3.1 days) at high schools with the highest FRL rates. This is particularly notable since high school teachers, overall, averaged fewer absences than teachers at other school levels.

The finding of disproportionate impact in WCPSS corroborates the previous research of Clotfelter et al. (2007) and Miller et al. (2008). This was an unanticipated finding because WCPSS in 2007-08 had a lower proportion (33%) of economically disadvantaged elementary students than the state-wide elementary school average (48% FRL) in the Clotfelter et al. study and the unidentified urban district (80% FRL) studied by Miller et al. Further study is needed in this area, in part because WCPSS also had an equitable distribution of teachers (based on NCLB "Highly Qualified" standards, advanced degrees, and years of experience) among schools and subgroups of students in 2007-08, while the differences found in the Clotfelter et al. and Miller et al. studies between teacher-absence rates in lowest-FRL and highest-FRL schools were attributed to less qualified and less experienced teachers in the high-FRL schools under study.

Also found was a distinct pattern of teacher absences linked with years of teacher experience. Because sick and annual/vacation leave are earned at higher rates as years of teacher experience increase, the expectation is for more absences by more experienced teachers. Similar to patterns found in previous research, in 2007-08 it was probationary teachers, those with zero to three years of teaching experience and earning less leave time than others, who averaged fewest absences (approximately eight days). Teachers who successfully complete four years of teaching are eligible for career status, and teacher absences increased, peaking at four-to-nine years of

[6] An additional five teacher work days are used for one day of preparation at the beginning of school and four days set aside for quarterly reports and parent conferences.

experience (10.65 days absent), followed by stair-step decreases over time. Perhaps one cause of the lessening of leave days towards the latter stages of a career is the desire on the part of teachers not to use it. At retirement, accumulated sick leave is converted to additional service credit, adding to pension benefits, and any unused annual/vacation leave days are converted to a cash payment as per the state personnel system guidelines.

A surprising finding, not reported in previous research, was that no substitutes were employed for about one-fourth of all teacher absences. With costs of more than six million dollars in substitute pay in 2007-08, the "filling in" for absences by peers resulted in an estimated savings of around two million dollars[7]. At the same time, the toll on co-workers and/or opportunity costs should be considered.

The second purpose of the study was to explore whether, and to what degree, teacher absenteeism may influence student academic growth in grades 3-8 reading and mathematics and in six high school courses. In this study, student residuals derived from a multiple regression analysis based on students' scale score points on state end-of-grade and end-of-course tests, were used as the unit of measure for student achievement. Overall results: very low and low negative associations were found in grades 6 and 7 mathematics respectively, indicating that some level of increases in teacher absences are associated with decreases in student academic performance in mathematics for those grades, but no associations were found in the other grade/subject areas.

In summary, previous studies at different sites using various student populations and grade levels and differing measures of student outcomes for different periods of time, have resulted in conflicting evidence regarding the impact of teacher absence on student achievement. The results of this study mirror those conflicting outcomes. No association between teacher absences and student academic growth was found in 15 of 17 grade/subject areas. At the same time, the study does corroborate the work of Clotfelter et al. (2007) and Miller et al. (2008) in that, although at different grade levels, there is some evidence (small but significant) of an association between teacher absenteeism and mathematics achievement. Additionally, analyses of the WCPSS data corroborate previously documented relationships between absence and observed characteristics of teachers, such as years of teaching experience, as well as school characteristics such as grade span and percentage of FRL students (Betts et al., 2000; Dell'Angela & Little, 2006; Clotfelter et al., 2007; Miller et al., 2008).

RECOMMENDATIONS:

- Collect and analyze a minimum of three years of data. A serious limitation of the current study is the use of a single year of data, meaning the results may not be generalizable. Baseline data are now available for use of comparisons across years and exploration of trends. One question is whether there are schools with persistently high/low rates of teacher absence and, if so, on what other criteria do they differ?

[7] The total substitute teacher expenditures for 69% of all teacher leave days was more than six million dollars, at a cost of $91,202 for each one percent of teacher absences. Multiplying $91,202 by 24.2 (the percent of teacher instructional days absent with no substitute) equals $2,207,088.40.

- Address the issue of higher rates of teacher absences in schools with the highest FRL rates at the elementary and high school levels. It is important and necessary to track this across time until the issue is better understood.

- Monitor and attempt to resolve the dilemma of professional development requirements and planning issues versus pulling teachers from the classroom/building. Why is there a large range of administrative/mandated leave days among the schools? If a quarter of all teacher absences in 2007-08 were administrative/mandated leave, did the same occur in 2008-09? Perhaps what is needed most is a study of how professional development is scheduled and provided in general at the school level.[8]

- Monitor the substitute teacher program over time in order to track overall program costs and, if possible, study the effects of substitute teachers on student learning.

- Continue to investigate the relationship between the number of teacher absences and student achievement. The current study is a first step in what should be a continuing search.

[8] In 2009-10, steps were taken within the Instructional Services Division to restrict teacher absences for professional development when students are in class.

REFERENCES

Betts, J. R., Rueben, K. S., & Danenberg, A. (2000). *Equal resources, equal outcomes? The distribution of school resources and student achievement in California* (PPIC Report). San Francisco, Public Policy Institute of California. Retrieved October 20, 2009, from http://www.ppic.org/content/pubs/report/R_200JBR.pdf

Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2007). *Are teacher absences worth worrying about in the U.S.?* (NBER Working Paper No. 13648). Cambridge, MA, National Bureau of Economic Research.

Darling-Hammond, L., Klein, S. P., & Wise, A. E. (1995). *A license to teach: Building a profession for 21st century schools*. Boulder, CO: Westview Press.

Dell'Angela, T. & Little, D. (2006). Teachers miss days; poor kids miss out. *Chicago Tribune*, September 25, 2006.

Ehrenberg, R. G., Ehrenberg, R. A., Rees, D. I., & Ehrenberg, E. I. (1991). School district leave policies, teacher absenteeism, and student achievement. *Journal of Human Resources*, 26(1), 72-105.

Kirk, C. L. (1998). *Teacher absenteeism and student achievement.* Unpublished doctoral dissertation, Florida Atlantic University.

Kossan, P. (2006). School districts, students paying price for teacher absences. *The Arizona Republic*. Retrieved June 3, 2009, from http://www.azcentral.com/families/education/articles/0127absent27.html

McCaffrey, D., Lockwood, J. R., Koretz, D. M., & Hamilton, L. S. (2003). *Evaluating value-added models for teacher accountability*. RAND: Santa Monica, CA.

Miller, R. T., Murnane, R. J., & Willett, J. B. (2008). Do worker absences affect productivity? The case for teachers. *International Labour Review*, Vol. 147, No. 1, 71-89.

National Center for Education Statistics (n.d.). *Schools and staffing survey, 2003-04 (Public Schools)*. Retrieved October 20, 2009, from http://nces.ed.gov/surveys/sass/

New York City Public Schools. (2000). *Impact of student attendance, teacher certification and teacher absence on reading and mathematics performance in elementary and middle schools in New York City. Flash Research Report #3.* Brooklyn, NY: New York City Public Schools, Division of Assessment and Accountability. (ERIC Document Reproduction Service, No. ED 451316.)

Podgursky, M. (2003). Fringe benefits: There is more to compensation than a teacher's salary. *The Free Library.* (2003). Retrieved October 20, 2009, from http://www.thefreelibrary.com/Fringe benefits: there is more to compensation than a teacher's...-a0104835538.

Radcliffe, J. (2004). Teacher absences hurting kids growing problem costs LAUSD about $430 million a year. *The Free Library. (2004).* Retrieved October 20, 2009, from http://www.thefreelibrary.com/TEACHER ABSENCES HURTING KIDS GROWING PROBLEM COSTS LAUSD ABOUT $430...-a0116098401.

Speas, C. (2009). *Title II-A Report.* Unpublished report submitted to NC Department of Public Instruction in June 2009. Raleigh, NC: Wake County Public School System, Evaluation and Research Department.

Stronge, J. H. (2002). *Qualities of effective teachers.* Association for Supervision and Curriculum Development, 2002.

Teddlie, C., & Reynolds, D. (2000). *The international handbook of school effectiveness research*. Falmer Press.

Wake County Public School System (2008). *Employee handbook 2008-09*. Raleigh, NC, 41-43, 74-107.

Wake County Public School System (2009). *Superintendent's on-line journal, No. 13.* Raleigh, NC. Retrieved March 8, 2010, from http://www.wcpss.net/attachments/journal/2009_sept4.pdf.

Wake County Public School System (2009). *Understanding 2008-09 WCPSS effectiveness index information.* Raleigh, NC: Evaluation and Research Department. Retrieved March 8, 2010, from http://www2.wcpss.net/departments/e-and-r/reports/effec-residuals09.pdf.

Walsh, M. (2009). Absentee rates rise for teachers in Burlington. *The Burlington Free Press*. Retrieved October 20, 2009, from: http://www.allbusiness.com/education-training/teaching-teachers-primary/12566876-1.html

APPENDIX A
Types of Teacher Leave

The following information is derived from the *WCPSS Employee Handbook* by the Department of Human Resources, available online at the district website.

- **Paid Legal Holidays** (10 days):
  - New Year's Day
  - Martin Luther King, Jr.'s Birthday
  - Good Friday
  - Memorial Day (in 2007-08)
  - (Independence Day) for teachers in year-round schools not tracked out
  - Labor Day
  - Veteran's Day
  - Thanksgiving Day (two days)
  - Christmas (two days--- or three when Christmas falls on Tuesday, Wednesday, or Thursday.)

- **Annual Vacation Leave** (Earning is based on the length of total state service):

Years of State Service	***Days of Leave Earned Per Month of Employment***
Less than 2 years	1.0
2 but Less than 5 years	1.15
5 but Less than 10 years	1.4
10 but Less than 15 years	1.65
15 but Less than 20 years	1.9
20 or more years	2.15

  - The first 10 days of annual vacation leave must be scheduled in the school calendar and must be taken as scheduled, when schools are closed. (This is generally for winter and spring breaks, with some variation for tracks in year-round schools.) Beginning teachers in the first two years of experience earn only these 10 days of annual leave. *For this study, these 10 days—for all teachers—were removed <u>before</u> the data analyses.*
  - Classroom teachers who require a substitute teacher may not use annual vacation leave at any time that students are scheduled to be in attendance, unless for Board-approved activities… and approval by the principal.

- **Observance of Bona Fide Religious Holidays**
  Maximum of two days within a school year. Employee makes up the time.

- **Sick Leave** (includes military caregiver)
  Teachers earn one sick day per month. Thus, teachers can take up to 10 days of sick leave without penalty. Unused sick leave days are carried over into subsequent school years.

- **Extended Sick Leave (for lengthy illness, etc.)**
  This extends for up to 20 days (after teachers have exhausted all their earned sick leave). Teachers receives full salary less the required substitute deduction.

- **Personal Leave**: May be used only upon the authorization of the immediate supervisor.
  - It is earned at the rate of .20 days for each full month of employment, not to exceed two days per year.
  - Must be requested at least five days in advance, shall be automatically granted, the request subject to the availability of a substitute teacher, and the teacher cannot be required to provide a reason for the request.
  - If using up to one day, the teacher will receive full salary. Using more than one day per year, shall receive full salary less the required substitute deduction.

- **Educational Leave**
  - In-service school projects
  - State-sponsored staff development activities
  - NC Center for Advancement of Teaching (Center pays for the substitutes.)

- **Professional Leave**
  - Professional Leave with Deduction
    - Professional responsibilities/Attendance of professional organizations; no more than 3 days for state, 5 days for out-of-state.
  - Professional Leave without Deduction
  - Officers of Professional Organization (no deductions)
  - Community Responsibility (Local Funds) No deductions.

- **Jury Duty**

- **Court Attendance** related to official duty

- **Parental Leave without Pay** for up to one calendar year for birth or adoption to care for a child.

- **Parental Involvement in Schools Leave**

- **Workers' Compensation Leave**

- **Episode of Violence**

- **Contagious Disease**
- **Suspension with Pay**
- **Leave without Pay**
- **Family Medical Leave Act of 1993**
- **Workers' Compensation**
- **Short-Term Military Leave**
- **Military Leave for Extended Active Duty**
- **15 Non-Instructional Work Days**
  - Five days must be protected for teachers to complete instructional and classroom administrative duties: one workday at the start of the school year, and one at the end of each quarter (4). (With the principal's permission, teachers may take accumulated vacation leave on these days.)
  - Local boards of education may designate the 10 remaining workdays as required workdays for teachers.
  - Principals may designate remaining workdays (in consultation with the School Improvement Team)

APPENDIX B
Average Days of Absence Per School by Types of Leave
For 180 Instructional Days, 2007-08

School Name	Number of Teachers	Average Administrative Leave Absences	Average Sick Leave Absences	Average Personal Leave Absences	Average Annual Leave Absences	Average of All Absences
Elementary Schools						
Adams Elementary	56	2.24	8.55	0.87	1.88	13.5
Apex Elementary	43	2.26	7.13	0.36	0.73	10.5
Aversboro Elementary	43	2.30	7.72	0.65	0.70	11.4
Baileywick Road Elementary	40	1.74	7.79	0.55	0.29	10.4
Ballentine Elementary	57	1.89	7.04	0.64	1.08	10.6
Barwell Road Elementary	60	3.56	8.07	0.48	1.04	13.2
Baucom Elementary	53	2.08	6.48	0.61	0.43	9.6
Brassfield Elementary	50	1.85	6.03	0.65	0.73	9.3
Brentwood Elementary	38	3.88	8.61	0.51	0.26	13.3
Briarcliff Elementary	45	2.13	5.51	0.23	0.02	7.9
Brier Creek Elementary	41	3.70	6.66	0.54	1.62	12.5
Brooks Elementary	42	3.13	4.77	0.48	0.14	8.5
Bugg Elementary	40	3.43	6.96	0.39	0.26	11.0
Carpenter Elementary	39	2.23	8.74	0.21	0.97	12.2
Carver Elementary	47	3.35	8.11	0.80	1.40	13.7
Cary Elementary	50	2.61	5.98	0.49	0.49	9.6
Cedar Fork Elementary	47	4.17	4.78	1.18	0.09	10.2
Combs Elementary	59	1.36	5.60	0.58	0.10	7.7
Conn Elementary	51	1.24	5.90	0.48	0.50	8.1
Creech Road Elem.	58	2.86	8.64	0.78	0.34	12.6
Davis Drive Elementary	66	1.53	4.30	1.04	0.24	7.1
Dillard Drive Elem.	49	2.96	4.71	0.42	0.11	8.2
Douglas Elementary	47	1.63	5.97	0.32	0.51	8.4
Durant Road Elem.	79	3.70	6.75	0.46	1.82	12.7
East Garner Elementary	45	2.68	5.70	0.96	0.79	10.1
Farmington Woods Ele.	63	1.56	5.92	0.44	0.13	8.0
Forest Pines Elementary	53	2.92	6.34	0.53	0.02	9.8
Forestville Road Elem	55	3.24	6.24	1.85	0.05	11.4
Fox Road Elementary	60	3.28	7.45	1.05	0.45	12.2
Fuller Elementary	44	3.25	8.26	0.74	0.18	12.4
Fuquay-Varina Elem.	61	2.61	7.06	0.57	0.62	10.9
Green Elementary	47	1.99	8.28	0.40	1.91	12.6
Green Hope Elementary	60	1.92	6.42	0.59	0.23	9.2
Harris Creek Elementary	64	2.00	7.79	0.47	0.59	10.8
Heritage Elementary	54	4.93	6.69	0.87	1.41	13.9
Highcroft Elementary	65	1.42	6.03	0.45	1.10	9.0
Hilburn Drive Elem	57	1.41	6.14	0.29	0.14	8.0
Hodge Road Elementary	56	4.79	6.09	0.33	1.00	12.2
Holly Grove Elementary	59	3.86	5.53	0.56	0.75	10.7

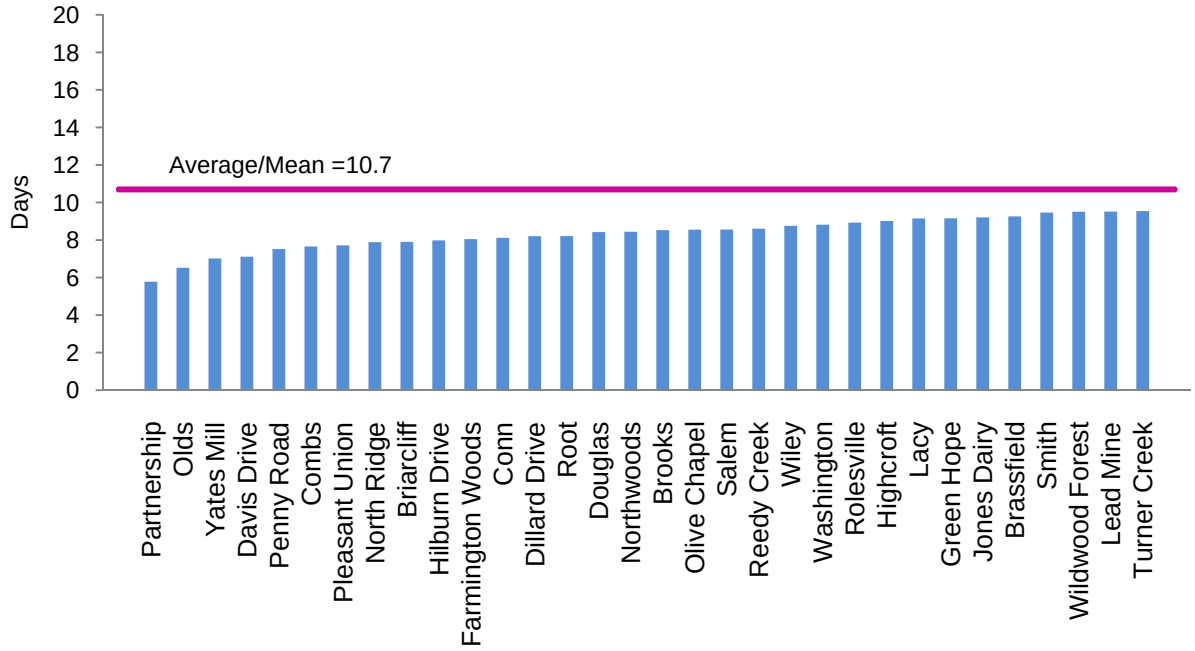
School Name	Number of Teachers	Average Administrative Leave Absences	Average Sick Leave Absences	Average Personal Leave Absences	Average Annual Leave Absences	Average of All Absences
Holly Ridge Elementary	55	2.55	7.30	0.67	0.08	10.6
Holly Springs Elem.	55	3.22	8.15	0.61	0.97	13.0
Hunter Elementary	57	1.52	7.78	0.93	0.66	10.9
Jeffreys Grove Elem.	40	2.20	7.10	0.72	0.91	10.9
Jones Dairy Elementary	49	1.01	7.20	0.46	0.53	9.2
Joyner Elementary	46	4.50	7.33	1.10	0.42	13.3
Kingswood Elementary	37	2.38	5.72	0.91	0.97	10.0
Knightdale Elementary	54	2.37	7.04	0.30	1.39	11.1
Lacy Elementary	51	2.96	5.18	0.45	0.56	9.1
Lead Mine Elementary	44	1.97	6.78	0.53	0.23	9.5
Leesville Road Elem.	62	2.17	5.30	1.14	1.41	10.0
Lincoln Heights Elem.	55	1.55	7.95	1.42	0.93	11.8
Lockhart Elementary	51	2.29	6.05	1.42	1.00	10.8
Lynn Road Elementary	38	3.61	6.55	0.05	0.00	10.2
Middle Creek Elem.	65	1.85	7.47	0.73	0.52	10.6
Millbrook Elementary	55	3.79	6.69	0.95	0.25	11.7
Morrisville Elementary	49	2.83	5.44	0.43	1.28	10.0
N. Forest Pines Dr.Elem.	43	4.99	7.38	0.60	1.71	14.7
North Ridge Elementary	59	1.54	5.89	0.14	0.31	7.9
Northwoods Elementary	40	2.43	5.60	0.29	0.13	8.4
Oak Grove Elementary	53	2.97	7.98	1.32	1.48	13.8
Olds Elementary	25	1.72	4.46	0.34	0.00	6.5
Olive Chapel Elementary	61	1.39	5.42	1.16	0.58	8.5
Partnership Elementary	25	1.22	3.96	0.58	0.02	5.8
Penny Road Elementary	56	1.59	5.38	0.50	0.04	7.5
Pleasant Union Elem.	42	1.25	6.08	0.20	0.18	7.7
Poe Elementary	33	2.82	9.24	0.48	0.58	13.1
Powell Elementary	45	3.59	6.43	0.46	0.13	10.6
Rand Road Elementary	55	4.28	5.87	0.45	0.42	11.0
Reedy Creek Elementary	53	1.65	5.79	0.99	0.17	8.6
River Bend Elementary	43	4.19	7.13	0.93	1.78	14.0
Rolesville Elementary	48	2.05	5.93	0.59	0.35	8.9
Root Elementary	33	2.00	5.58	0.36	0.27	8.2
Salem Elementary	61	2.13	5.14	0.89	0.40	8.6
Sanford Creek Elem.	39	3.86	4.22	0.97	0.74	9.8
Smith Elementary	41	1.93	6.95	0.52	0.06	9.5
Stough Elementary	44	3.00	7.74	0.28	0.27	11.3
Swift Creek Elementary	43	2.52	7.03	0.37	0.74	10.7
Timber Drive Elem.	61	3.93	6.75	0.21	1.01	11.9
Turner Creek Elementary	57	2.28	5.95	0.45	0.87	9.5
Underwood Elementary	41	1.98	6.94	1.72	0.84	11.5
Vance Elementary	35	3.96	10.00	0.50	1.13	15.6
Vandora Springs Elem.	42	2.36	9.61	0.81	1.40	14.2
Wake Forest Elementary	48	2.99	8.63	0.73	1.44	13.8
Wakefield Elementary	66	4.80	7.21	0.48	0.94	13.4

School Name	Number of Teachers	Average Administrative Leave Absences	Average Sick Leave Absences	Average Personal Leave Absences	Average Annual Leave Absences	Average of All Absences
Wakelon Elementary	46	3.21	8.98	0.35	0.15	12.7
Washington Elementary	48	1.47	6.92	0.18	0.25	8.8
Weatherstone Elem.	54	4.04	6.61	0.91	0.27	11.8
Wendell Elementary	43	6.29	5.83	0.79	0.22	13.1
West Lake Elementary	66	3.65	6.93	0.69	1.35	12.6
Wilburn Elementary	54	8.31	7.81	0.38	2.04	18.5
Wildwood Forest Elem.	68	1.74	6.35	1.28	0.15	9.5
Wiley Elementary	31	3.89	4.29	0.53	0.05	8.8
Willow Springs Elem.	66	1.52	7.48	0.25	1.04	10.3
Yates Mill Elementary	41	1.89	4.70	0.23	0.20	7.0
York Elementary	38	3.84	8.30	0.16	0.84	13.1
Zebulon Elementary	46	2.60	7.87	0.53	0.72	11.7
Middle Schools						
Apex Middle	70	2.24	4.96	0.71	0.28	8.2
Carnage Middle	80	1.90	8.19	0.73	0.64	11.5
Carroll Middle	53	1.69	6.47	0.61	0.42	9.2
Centennial Campus Mid .	47	2.37	7.23	0.41	0.45	10.5
Daniels Middle	83	1.89	5.96	0.30	0.39	8.5
Davis Drive Middle	74	1.65	5.12	0.20	0.06	7.0
Dillard Drive Middle	79	1.37	6.21	0.34	0.25	8.2
Durant Road Middle	81	5.57	6.86	0.45	3.00	15.9
East Cary Middle	19	7.34	6.13	0.82	2.47	16.8
East Garner Middle	80	4.54	6.01	0.38	0.41	11.3
East Millbrook Middle	79	3.29	6.31	0.41	0.42	10.4
East Wake Middle	76	2.78	7.93	0.46	3.31	14.5
Fuquay-Varina Middle	68	2.49	6.57	0.46	0.29	9.8
Heritage Middle	87	5.45	7.80	0.46	3.88	17.6
Holly Ridge Middle	79	1.96	5.08	0.42	1.00	8.5
Leesville Road Middle	81	1.52	5.64	0.80	0.19	8.1
Ligon Middle	78	2.47	6.71	0.49	0.04	9.7
Lufkin Road Middle	70	5.03	7.33	0.34	3.46	16.2
Martin Middle	75	2.02	5.25	0.69	0.21	8.2
Moore Sq. Museum Magnet Mid.	43	1.72	6.07	0.53	0.49	8.8
Mount Vernon	27	1.67	6.26	0.94	1.44	10.3
North Garner Middle	72	2.26	8.22	0.31	2.92	13.7
Reedy Creek Middle	52	2.08	4.21	0.75	0.10	7.1
River Oaks Middle	18	2.25	9.50	0.25	1.39	13.4
Salem Middle	74	4.24	4.79	0.43	1.86	11.3
Wake Forest-Rolesville	75	1.88	5.82	0.32	0.17	8.2
Wakefield Middle	84	1.72	5.51	0.52	0.32	8.1
Wendell Middle	24	4.21	3.29	0.10	0.06	7.7
West Cary Middle	74	1.74	6.52	0.34	0.23	8.8

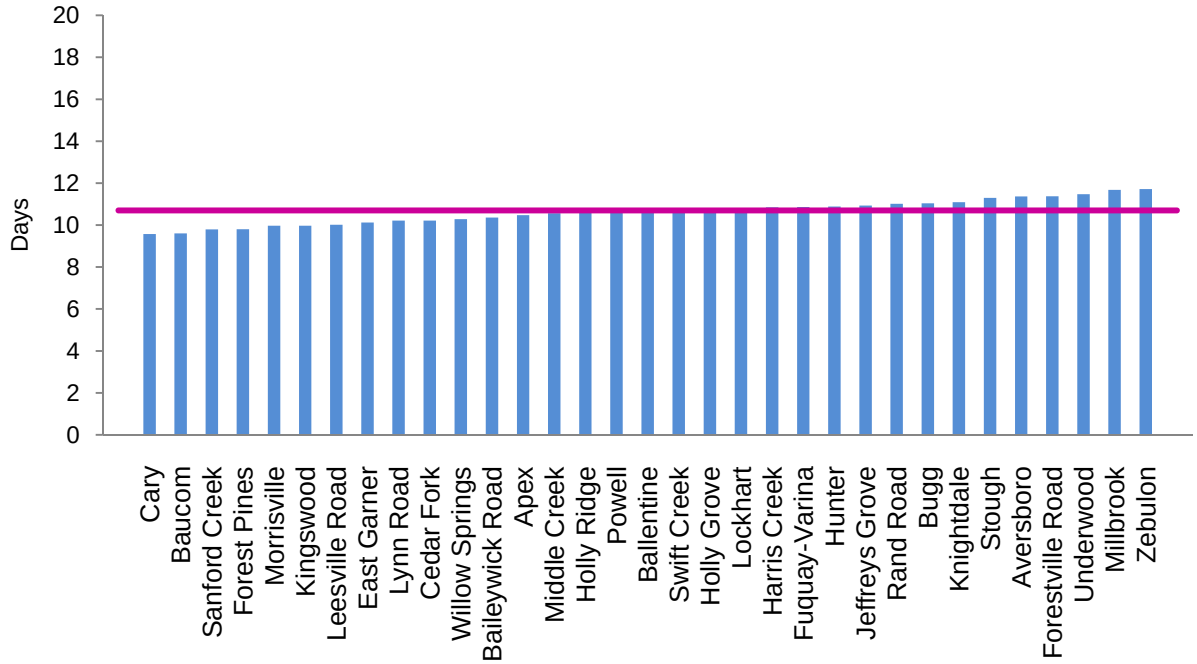
School Name	Number of Teachers	Average Administrative Leave Absences	Average Sick Leave Absences	Average Personal Leave Absences	Average Annual Leave Absences	Average of All Absences
West Lake Middle	82	5.07	9.40	0.62	3.72	18.8
West Millbrook Middle	71	1.65	6.23	0.74	0.66	9.3
Zebulon Middle	69	3.30	6.91	0.72	0.35	11.3
High Schools						
Apex High	136	1.72	4.68	0.60	0.34	7.3
Athens Drive High	140	1.80	4.95	0.64	0.15	7.5
Cary High	129	1.33	5.67	0.22	0.46	7.7
E. Wake Sch. of Arts, Ed., & GS	26	1.56	5.94	0.81	0.02	8.3
E. Wake School of Engineering	24	2.08	11.73	1.17	0.58	15.6
E. Wake Sch. of Health Sciences	36	1.39	6.04	0.58	0.06	8.1
East Wake School of IT	23	4.26	7.15	0.35	1.43	13.2
Enloe High	155	2.22	6.14	0.33	0.30	9.0
Fuquay-Varina High	115	1.67	5.58	0.21	0.37	7.8
Garner High	149	1.82	6.08	0.58	0.52	9.0
Green Hope High	119	1.36	4.07	0.65	0.20	6.3
Holly Springs High	83	2.16	4.96	0.64	0.28	8.0
Knightdale High	114	1.82	7.03	0.48	0.51	9.8
Leesville Road High	150	1.27	5.75	0.65	0.91	8.6
Longview	28	2.18	4.91	0.16	0.27	7.5
Middle Creek High	118	1.83	5.98	0.34	0.60	8.8
Millbrook High	150	1.30	5.46	0.43	0.32	7.5
Broughton High	146	1.42	5.63	0.58	0.39	8.0
Panther Creek High	94	2.88	3.60	0.64	0.19	7.3
Phillips High	28	2.16	8.55	0.43	0.52	11.7
Sanderson High	123	2.30	5.07	0.50	0.20	8.1
Southeast Raleigh High	130	2.32	7.00	0.48	1.26	11.1
Wake Early College	9	3.00	1.94	1.00	0.00	5.9
Wake Forest-Rolesville High	109	1.57	5.93	0.24	0.21	7.9
Wakefield High	153	1.87	5.42	0.85	0.57	8.7

APPENDIX C
Overall Mean Teacher Absence Rate per School for the 180 Instructional Days of 2007-08
(All Types of Leave Combined)

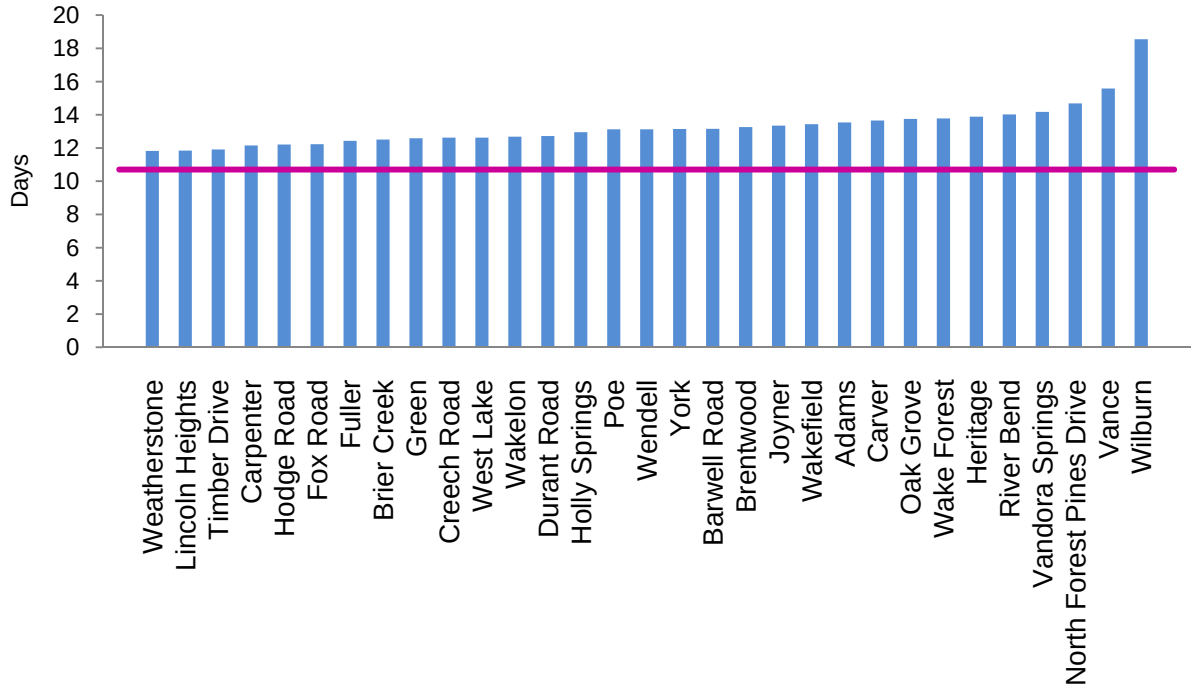
a. Elementary Schools
5.8 to 9.5 Absences



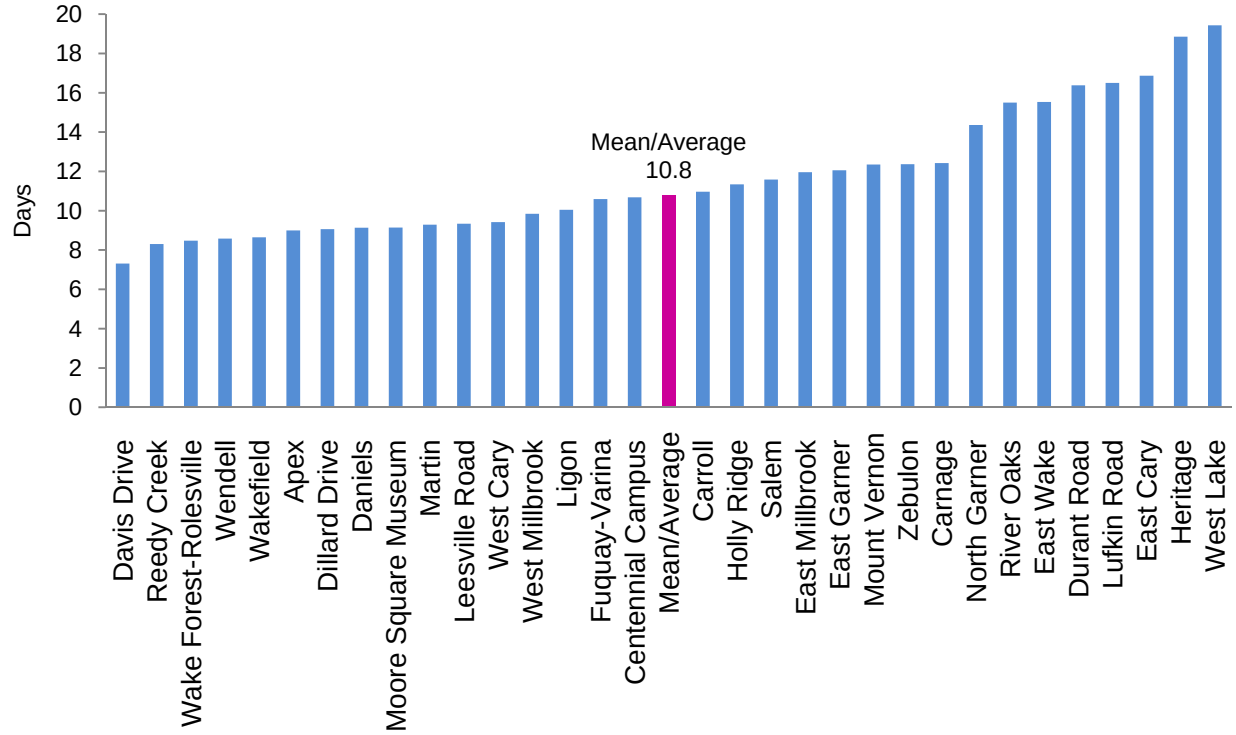
9.6 to 11.7 Absences (Elementary Schools)



11.8 to 18.5 Absences (Elementary Schools)



a. Middle Schools



b. High Schools