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North Carolina Teacher Working Conditions Survey

NEW TEACHER CENTER

2016 NORTH CAROLINA TEACHER WORKING CONDITIONS SURVEY

Student Achievement and Teacher Retention Analyses

INTRODUCTION

In spring 2016, the North Carolina Department of Public Instruction (NCDPI) collaborated with the North Carolina Association of Educators and the New Teacher Center (NTC) to administer the eighth biennial North Carolina Teacher Working Conditions (NC TWC) Survey. The survey assesses whether educators across North Carolina report having the resources and supports necessary to ensure effective teaching.

The NC TWC Survey is a full-population survey based on the NTC Teaching, Empowering, Leading and Learning (TELL) Survey first developed in the North Carolina Governor's Office in 2002. It has since been replicated in more than 12 states and 10 districts to collect critical data to support school improvement efforts. Specifically, the survey was designed to report educators' perceptions about the presence of teaching and learning conditions organized into the following eight constructs: Time, Facilities and Resources, Professional Development, School Leadership, Teacher Leadership, Instructional Practices and Support, Managing Student Conduct, and Community Support and Involvement.

The purpose of this report is to help stakeholders better understand the relationship between teaching conditions and outcomes of interest in North Carolina. The following analyses examine the association between 2016 survey data and student and teacher outcomes, with an emphasis on highlighting the aspect of teaching and learning conditions most related to student learning and teacher attrition.

ABOUT NC TWC

The North Carolina TWC Survey is a full-population survey first developed in the North Carolina Governor's Office in 2002. It has since been replicated in more than 20 states and captured the voices of more than 1.5 million educators, providing critical data to support school improvement efforts. Specifically, the survey is designed to report educators' perceptions of teaching and learning conditions organized into the following eight constructs:

- Time
- Facilities and Resources
- Professional Development
- School Leadership
- Teacher Leadership
- Instructional Practices and Support
- Managing Student Conduct
- Community Support and Involvement

See Appendix A for a list of survey items for each construct.

PROVIDING TEACHERS WITH THE BEST OPPORTUNITY TO BE EFFECTIVE

Connections Between Teaching Conditions and Student Learning

A positive school context, capable leadership, and a collaborative working environment facilitate teacher success. In particular, research shows that strong, trusting relationships—both internal and external—and supportive school leadership are linked to improved student achievement (Johnson, 2006; Bryk & Schneider, 2002). In addition, in schools where teachers talk to each other about their work and principals communicate with the community, students have higher reading and mathematics test scores than students in schools where these conditions are not as prevalent. Additionally, these conditions may have a greater impact on test scores than the experience or credentials of the staff (Leana & Pil, 2006).

NTC TELL Survey data have been used to establish a link between staff perceptions of teaching and learning conditions and student achievement (e.g., Ladd, 2009; Johnson, Kraft, and Papay, 2011; Ferguson & Hirsch, 2014). Recent work by Kraft and Papay (2014) found that teachers who work in more supportive environments became more effective at raising student achievement on standardized tests over time than did teachers who worked in less supportive environments, after controlling for student characteristics, prior test scores, and teacher and school characteristics. They found that *teachers in schools that had the most positive teaching conditions* (in the 75th percentile as measured by 24 questions in NTC's TELL Survey) *were 38 percent more effective after a decade than teachers in schools in the 25th percentile. Over two years, teachers were 11 percent more effective if they worked in schools with positive teaching conditions.*

TEACHING AND LEARNING CONDITIONS ASSESSED BY THE NC TWC SURVEY

Connections Between Teaching Conditions and Teacher Retention

A host of large-scale empirical studies provide evidence that contextual factors also matter in teachers' decisions about staying or leaving schools. Results of a meta-analysis of 34 studies by Borman and Dowling (2008) revealed that teaching and learning conditions influence teachers' career paths more than previously documented. Boyd et al. (2011) demonstrated that teachers' perceptions of the school administration have the greatest influence on teacher retention decisions. Other work finds similar effects (see, for example, Pogodzinski, Youngs, Frank, & Belman, 2012). Several studies also find strong relationships between teachers' perceptions of school facilities and their plans to stay or leave (Loeb, Darling-Hammond, & Luczak, 2005; Buckley, Schneider, & Shang, 2004).

Using NTC TELL survey data, Johnson, Kraft, and Papay (2011) found that teachers were more satisfied and planned to stay longer in schools with positive teaching conditions. Their work suggests that conditions such as a trusting atmosphere, principal leadership, and collaborative colleagues are as important, or more

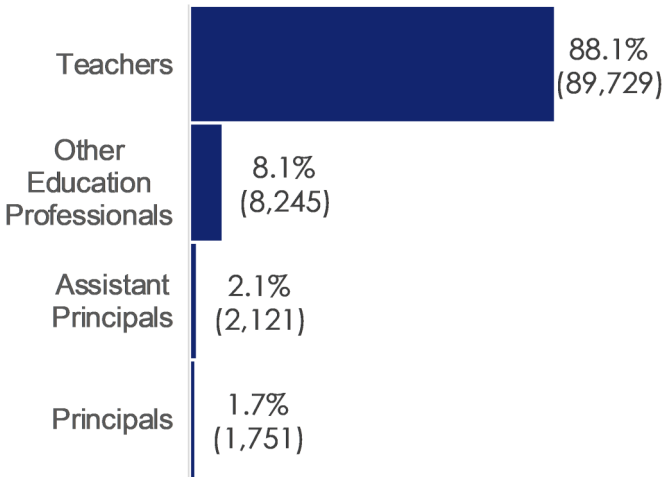
important, than conditions such as facilities and resources in influencing teachers' decisions to stay in schools. This finding holds true after controlling for student and school characteristics such as the percentage of students categorized as low income. Ladd (2009), also using TELL data, found that teaching and learning conditions predict teacher plans to leave a school, independent of school demographics.

This robust research foundation demonstrates a consistent link between teaching conditions and both student achievement and teacher retention outcomes. The following analyses add to this work by analyzing 2016 North Carolina TWC Survey data. This brief provides a summary of survey participants and analyses of state- and school-level data to help stakeholders understand which teaching conditions matter most in promoting teacher and student success.

2016 NORTH CAROLINA TWC RESULTS

NTC administered the 2016 North Carolina TWC Survey to all school-based licensed educators in March 2016. The data for these analyses include **responses from more than 100,000 educators in North Carolina**, yielding a response rate of 86%. This represents a three-percent decrease in response rate compared to the 2014 administration of the survey (89%). This distribution of responses by educator role presented in Figure 1 is similar to the data collected in 2014.

Figure 1.
Percent of Total Respondents by Participant Type, 2016



Note. The respondent category "Teachers" includes instructional coaches, department heads, literacy specialists, etc. The respondent category "Other Education Professionals" includes school counselors, school psychologists, social workers, etc.

Response rates varied by school type (Table 1). Of the 2,635 schools across the state of North Carolina, 97% met or exceeded the minimum response threshold to have access to individual school-level reports on their survey results.[1] School level results are available at http://ncteachingconditions.org/results.

The goal of these analyses is to understand how teaching conditions intersect with student performance and teacher retention in the context of North Carolina schools. When compared to schools with less favorable conditions, do schools with better teaching conditions have better student performance and/or higher teacher retention? A brief summary of outcomes and approaches follows, with a detailed discussion of methodology in Appendix B.

Table 1.
Survey Response Rates by School Type, 2014 and 2016

School Type	2014	2016
Elementary	92% (43,705)	89% (47,323)
Middle	88% (21,835)	84% (23,180)
High	85% (27,240)	82% (29,994)
Special	65% (300)	69% (1,349)
Total	**89%** (93,080)	**86%** (101,846)

Teaching conditions measures. The teaching conditions measures used in the analyses include the eight TELL constructs as well as an overall teaching conditions composite. The survey items that comprise each measure and construct can be found in Appendix A. All measures are analyzed and reported at the school level.

Student achievement outcome measures. For the 2016 NC TWC analysis, the Overall School Performance Grade (SPG) serves as the primary outcome variable for measuring the effects of teaching conditions on student achievement for elementary,

[1] Threshold for a school report is a minimum response rate of 40% and at least five respondents.

middle, and high schools. This measure is a combination of the School Achievement Score (based on student achievement on NC EOG and EOC exams) and the school-level Growth Score (based on the EVAAS value-added model). In addition, content-specific SPG scores are used to examine the effects of teaching conditions on K-8 student achievement in Math and Reading. As there is no content-specific SPG score for EOC exams, the EOC English 2 and Math 1 results for the 2015-16 school year are used in the content-specific analyses for High Schools.

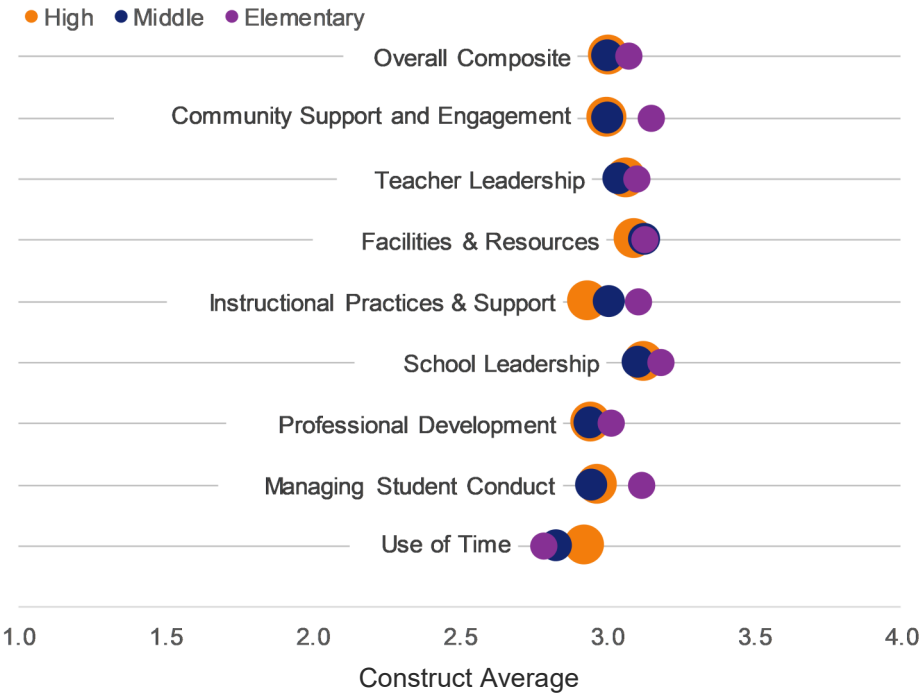
Teacher retention outcome measures. For the teacher retention analyses, school level attrition and mobility rates were calculated using data provided by NCDPI.

Additional model variables. Regression models included additional variables of interest in order to (a) provide a more complete picture of factors that influence both student achievement and teacher attrition, and (b) to account for the variance attributed above and beyond those factors.

Using statistical approaches appropriate for school-level data, these analyses isolate the effect of teaching conditions from other factors that research suggests are related to student academic performance, such as teacher and student background characteristics. The analyses combine school-level data across elementary, middle, and high schools for state-level findings. In addition to the state-level approach, because working conditions vary by grade level (See Figure 2), these analyses also examine the effects of teaching conditions on student achievement and teacher retention for each grade level—Elementary, Middle, and High. See Appendix B for a full discussion of statistical modeling and variables.

Figure 2.

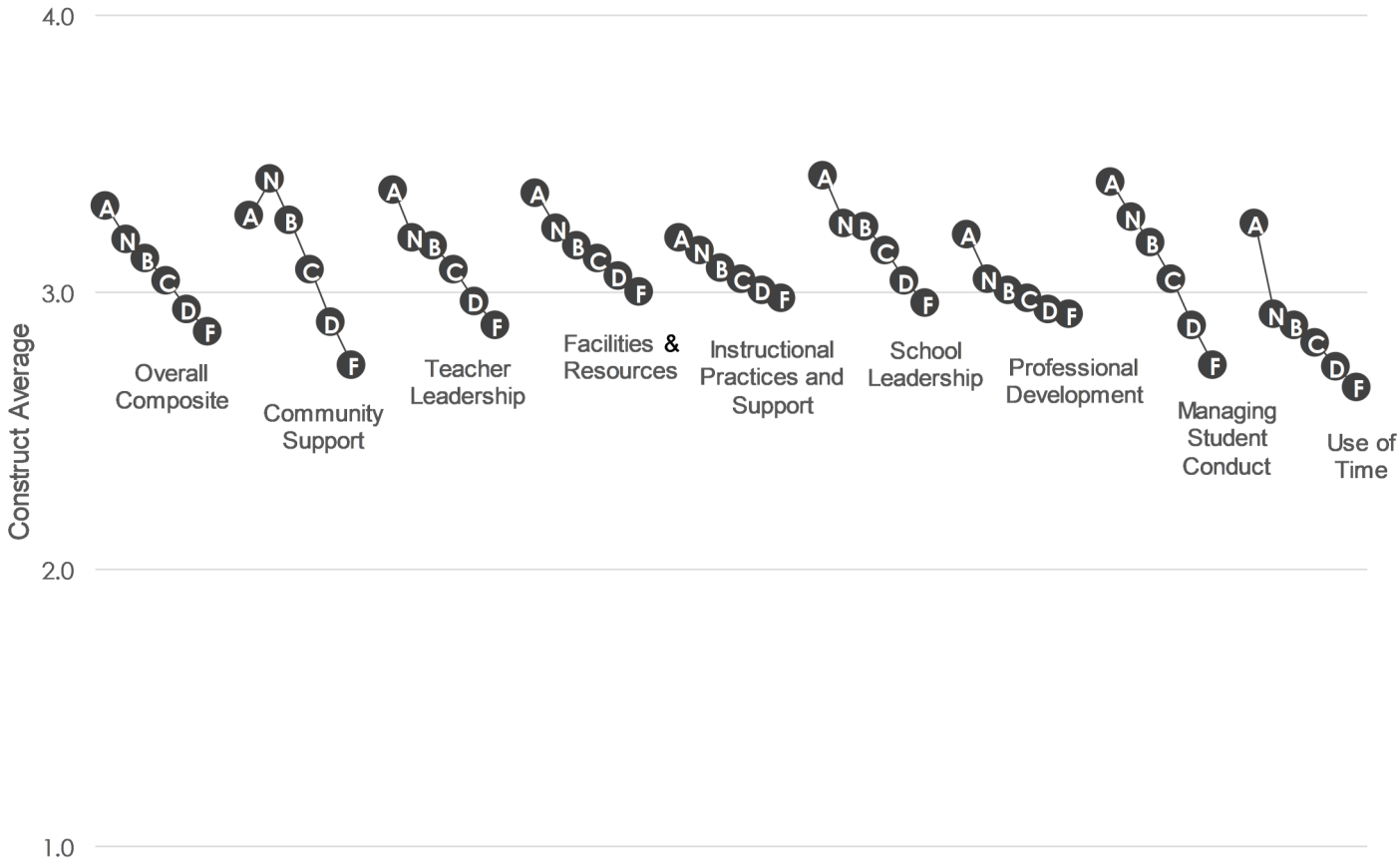
2016 Teaching Conditions Construct Averages by Grade Level



RESULTS OF THE TEACHING CONDITIONS AND STUDENT ACHIEVEMENT ANALYSES

More positive teaching conditions are related to higher student performance at all grade levels. As displayed in Figure 3, working conditions are strongly associated with overall SPG scores. The student achievement analyses revealed a statistically significant, positive relationship between the overall teaching conditions composite and SPG score even after controlling for student, teacher, and school-level variables (See Appendix C, Table 1.1C).

Figure 3.
2016 Teaching Conditions Construct Averages by School Performance Grade (SPG)



For elementary schools, this relationship is stronger for schools Community Eligibility Provision (CEP) schools (See Appendix C, Table 1.2C). For elementary CEP schools, one standard deviation increase in overall teaching conditions composite may translate to gains of 5 percentage points in Overall SPG. This finding suggests that improving teaching conditions may help to narrow the gap between CEP and Non-CEP schools (See Figure 4).

These relationships hold for both reading and math results. Findings from the content-specific analyses suggest that the Overall Teaching conditions composite is a statistically significant, positive predictor of both Reading and Math SPG for elementary, middle, and high schools (See Appendix C, Tables 3.1C—4.3C). The relationship is particularly strong for CEP elementary school performance in Reading.

Community Support & Involvement, Managing Student Conduct, and Instructional Practices & Support are the conditions most strongly related to higher achievement in Reading and Math. Analysis of the individual teaching condition constructs suggests that **Community Support & Involvement**,

Instructional Practices & Support, and **Managing Student Conduct** are positively associated with the Overall SPG score at all grade levels (See Appendix C, Tables 2.1—2.4C). In addition, positive conditions related to **Use of Time** are positively related with Overall SPG score in elementary and high schools. Conditions related to **Professional Development** were negatively related with Overall SPG score at all three levels. This finding is consistent with past findings in North Carolina and other states using the TELL Survey.

Community Support & Involvement and **Instructional Practices & Support** are significant predictors of SPG Reading and Math achievement when examined across elementary and middle schools (See Appendix C, Tables 5.1C—6.3C). **Managing Student Conduct** is also positively associated with elementary Reading SPG scores and elementary and middle school Math SPG scores. **Use of Time** is positively associated with elementary Reading and Math SPG scores.

Use of Time positively related to elementary and high school student achievement. On every student performance measure analyzed, **Use of Time** was consistently found to have a significant, positive relationship with elementary (Overall SPG, Reading SPG, Math SPG) and high school (Overall SPG, % GLP English 2, % GLP Math 1) student outcomes.

Figure 4.
Positive teaching conditions may help close the achievement gap between **Non-CEP** and **CEP** elementary schools.

Note: Score is Overall School Performance Grade; Overall Teaching Conditions SD = 0.22.

Different conditions may matter more for different student populations. Since the content-specific SPG measures are only calculated for elementary and middle schools, this report includes an additional analysis for high schools in order to measure the effects of teaching conditions on content-specific achievement at the high school level[2]. For the high school content-specific analyses, separate models were built for Economically Disadvantaged Students (EDS) and non-EDS student subgroups in order to look for differential effects of teaching conditions on student achievement between the groups (See Appendix C, Tables 7.1C—8.4C). The results of these analyses show that **Use of Time** is a statistically significant predictor of high school student achievement in ELA and math for both EDS and non-EDS students. **Community Support & Involvement** also is positively related to math performance for EDS and non-EDS students, and for non-EDS student performance in reading. Finally, **Instructional Practices & Support** and **Managing Student Conduct** are both positively related to ELA and math performance for EDS students.

[2] The percentage of students meeting or exceeding grade-level-proficiency (% GLP) for English 2 and Math 1 were used for the high school student achievement analysis.

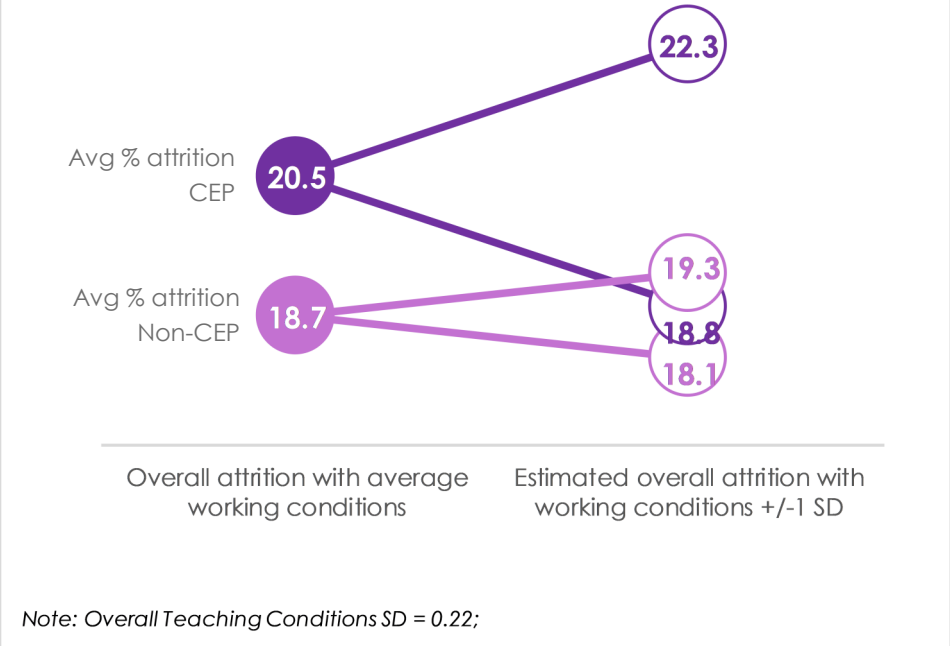
Teaching Conditions and Teacher Retention Analyses

The relationship between teaching conditions and teacher retention was examined for all school level attrition ("Overall Attrition") as well as for teachers who specifically moved on as a classroom teacher at another NC school ("Movers.") Overall Attrition includes all Movers as well as teachers who left for any other reason (e.g., moved into another role, retired from teaching, decided to work in another sector, etc.)

In general, teacher working conditions matter for teacher retention—and even more so for educators in Community Eligibility Provision (CEP) schools. Results suggest that schools with positive teaching conditions have lower rates of teacher attrition— both in terms of Overall Attrition as well as percentage of teachers leaving to teach at another school (Movers.) This relationship is more pronounced in CEP schools (See Appendix D, Tables 1.1D and 3.1D).

In addition, the relationship varies by school level. For elementary schools, the overall teaching conditions are related to teacher retention (for both Overall Attrition and Movers) in CEP schools (See Figure 5, Appendix D, Tables 1.2D and 3.2D). Overall teaching conditions are positively associated with Middle School teacher retention in terms of both Overall Attrition and Movers, regardless of the school's CEP status. Although overall teaching conditions is not a statistically significant predictor of High School teacher retention in terms of Movers, results suggest that, for CEP High Schools , an increase of one point in the Overall Teaching Conditions Composite would result in a 13.8% gain in teacher retention (See Figure 6, and Appendix D, Table 1.4D).

Figure 5.
Positive teaching conditions may reduce the overall teacher attrition gap between Non-CEP and CEP elementary schools.

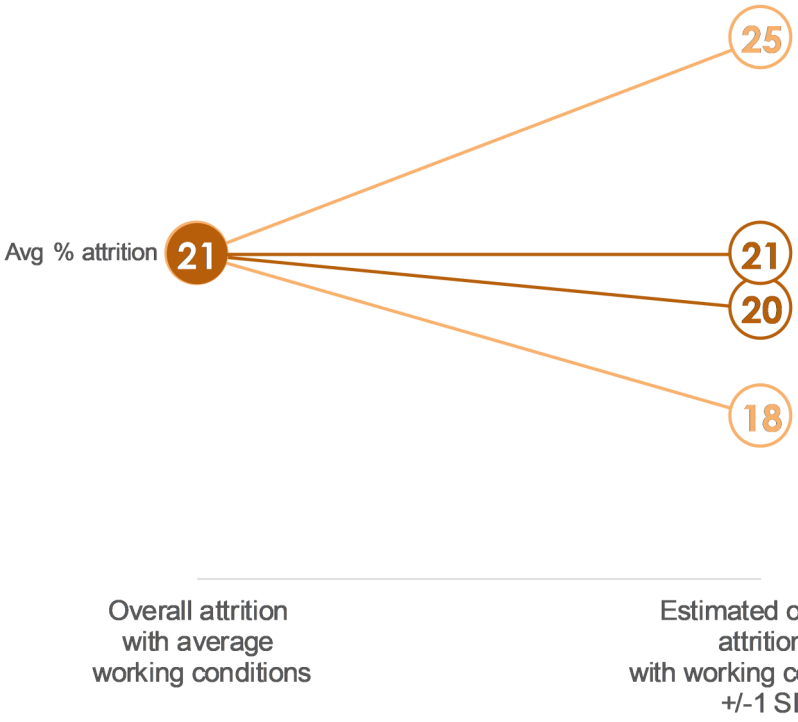


Note: Overall Teaching Conditions SD = 0.22;

Community Support & Involvement and Managing Student Conduct are teacher working conditions most commonly associated with lower attrition. An examination of the construct averages for each of the eight teacher working conditions constructs reveals that the effects of specific conditions on teacher attrition varies by grade level (See Appendix D, Tables 4.2D—4.4D). Overall, **Community Support & Involvement** and **Managing Student Conduct** are positively associated with lower attrition in terms of both Overall Attrition as well as percentage of Movers. More positive perceptions of **Teacher Leadership** are associated with lower Overall Attrition across grade levels.

When considering the effects of individual teaching conditions on Overall Attrition at each grade level (See Appendix D, Tables 2.2D—2.4D), **Community Support & Involvement** matters for Elementary and High Schools. **Managing Student Conduct** is a significant predictor of overall teacher attrition at the Elementary and Middle School levels. Additionally, Elementary Schools with positive conditions related to **Teacher Leadership** and Middle Schools with positive conditions related to **Use of Time** have lower Overall Attrition on average.

Figure 6.
Positive teaching conditions have a stronger relationship with teacher attrition at CEP high schools than at Non-CEP high schools.



Note: Overall Teaching Conditions SD = 0.22.

At each grade level, more positive perceptions of **Community Support & Involvement** at the school is associated with a lower percentage of Movers. Middle Schools with more positive conditions related to **Use of Time** have a lower percentage of Movers. At the High School level, **Managing Student Conduct** is also a statistically significant predictor of percentage of Movers (See Appendix D, Tables 4.2D—4.4D).

Summary

Overall, the analyses included in this report support the notion that teacher working conditions matter for student achievement and teacher retention in North Carolina public schools. In particular cases, teaching conditions appear to matter specifically for student performance and teacher retention in CEP schools.

Although results tend to vary across grade levels, there are few specific Teacher Working Conditions that consistently rise to the top. The results from this study suggest that **Community Support & Involvement** is a significant contributor to student achievement and teacher retention across grade levels. In addition, **Managing Student Conduct** and **Instructional Practices & Support** are consistently associated with student performance.

In addition to the importance of specific conditions varying by grade level, findings included in this report suggest that different teaching conditions may matter for different student subgroups. Results suggest that although **Use of Time** is a significant factor for both EDS and Non-EDS High School student achievement, **Community Support & Involvement** is only statistically significant for the Non-EDS group, whereas **Instructional Practices & Support** and **Managing Student Conduct** are significant predictors of EDS High School student achievement.

Implications and Limitations

The analyses described above suggest that educators' experience of their working conditions provide valuable insight into some of the factors that influence student and staff success. Given these results, it would be prudent for those in educational leadership positions to be mindful of the teacher working conditions in their school(s) and/or district. Furthermore, the findings from these analyses highlight the importance of understanding local context. The variation in the effects of teaching conditions across school levels and student subgroups evidenced in this study should also serve as a reminder that there is no one-size-fits all solution to improving teacher working conditions. There are many different aspects that make up the conditions for any given school, each of which can have their own unique implications for the teachers and students in the school.

The comparison of the EDS and Non-EDS High School student performance revealed differences between student subgroups in terms of which improvements in working conditions are more likely to impact student achievement. However, teaching conditions represent only a few of the factors that influence student success, and future work should continue to explore these relationships.

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APPENDIX D
TEACHER RETENTION

Overall Attrition by Overall Composite

Statewide Results. Tables 1.1D—1.4D present information from the OLS model (1) where the outcome variable is school attrition. The teaching conditions variable is the Overall Teaching Conditions Composite which averages across all eight teaching conditions constructs (see Appendix A for calculation).

Model 1.1D. Model Summary Explaining Teacher Attrition by Overall Teaching Conditions Composite (N=2,274)

	Model 1		Model 2		Model 3		Model 4		Model 5	
Variable	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Intercept	0.126**	.006	0.458**	.026	0.451**	.026	0.649**	.038	0.587**	.043
% Free Lunch Stu-	0.151**	.011	0.070**	.011	0.053**	.012	0.043**	.012	0.044**	.012
% Beginning Teachers			0.074**	.027	0.075**	.027	0.071**	.027	0.074**	.027
Teacher Experience			-0.007**	.001	-0.006**	.001	-0.006**	.001	-0.006**	.001
Average Teacher			-0.005**	.001	-0.005**	.001	-0.005**	.000	-0.005**	.000
Community Eligibility Provision (CEP)					0.020**	.005	0.019**	.005	0.182**	.056
Overall Teaching Conditions Compo-							-0.062**	.009	-0.043**	.011
Overall Composite*CEP Status									-0.054**	.018
R^2	0.087		0.154		0.16		0.171		0.173	
F for Change in R^2	216.499**		103.258**		16.2**		30.081**		5.48*	

*p <.05. **p< .01.

Overall Attrition by Overall Composite

Elementary Results.

Model 1.2D. Model Summary Explaining Elementary School Teacher Attrition by Overall Teaching Conditions Composite (N=1,280)

	Model 1		Model 2		Model 3		Model 4		Model 5	
Variable	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Intercept	0.131**	.008	0.390**	.034	0.394**	.036	0.553**	.054	0.477**	.064
% Free Lunch Students	0.126**	.014	0.040**	.014	0.02	.016	0.009	.016	0.011	.016
% Beginning Teachers			0.215**	.036	0.209**	.036	0.200**	.036	0.201**	.036
Teacher Experience			-0.005**	.001	-0.005**	.001	-0.005**	.001	-0.005**	.001
Average Teacher Pay			-0.005**	.001	-0.004**	.001	-0.004**	.001	-0.004**	.001
Student-Teacher Ratio					-0.001	.002	-0.002	.002	-0.002	.001
Community Eligibility Provision (CEP)					0.018**	.006	0.017**	.006	0.177*	.074
Overall Teaching Conditions Compo-							-0.049**	.012	-0.025	.017
Overall Composite*CEP Status									-0.052*	.024
R^2	0.062		0.212		0.218		0.227		0.23	
F for Change in R^2	84.473**		85.755**		4.884**		14.81**		4.952*	

*p <.05. **p< .01.

Overall Attrition by Overall Composite
Middle School Results.

Model 1.3D. Model Summary Explaining Middle School Teacher Attrition by Overall Teaching Conditions Composite (N=483)

	Model 1		Model 2		Model 3		Model 4	
Variable	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Intercept	0.100**	.013	0.515**	.055	0.506**	.055	0.705**	.079
% Free Lunch Students	0.240**	.025	0.140**	.027	0.116**	.028	0.107**	.028
Teacher Experience	.		-0.005**	.002	-0.004*	.002	-0.004*	.002
Average Teacher Pay	.		-0.007**	.001	-0.007**	.001	-0.007**	.001
Community Eligibility Provision (CEP)	.		.		0.029**	.010	0.029**	.010
Overall Teaching Conditions Composite	.		.		.		-0.068**	.019
R^2	0.162		0.256		0.267		0.286	
F for Change in R^2	92.986**		54.939**		7.173**		12.693**	

*p <.05. **p< .01.

Overall Attrition by Overall Composite
High School Results.

Model 1.4D. Model Summary Explaining High School Teacher Attrition by Overall Teaching Conditions Composite (N=457)

	Model 1		Model 2		Model 3		Model 4		Model 5	
Variable	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Intercept	0.113**	.013	0.398**	.051	0.388**	.051	0.510**	.077	0.424**	.082
% Free Lunch Stu-	0.185**	.029	0.130**	.029	0.121**	.030	0.107**	.030	0.108**	.030
Teacher Experience		.	-0.006**	.002	-0.006**	.002	-0.006**	.002	-0.006**	.002
Average Teacher		.	-0.004**	.001	-0.004**	.001	-0.004**	.001	-0.004**	.001
Community Eligibility		.		.	0.019	.011	0.017	.011	0.426**	.133
Overall Teaching Conditions Compo-		.		.		.	-0.036*	.017	-0.012	.019
Overall Composite*CEP Status		.		.		.		.	-0.138**	.045
R^2	0.085		0.163		0.168		0.176		0.193	
F for Change in R^2	42.268**		29.406**		2.716		4.379*		9.48**	

*p <.05. **p< .01.

Overall Attrition by Teaching Conditions Constructs

Statewide Results. Tables 2.1D—2.4D present information from the OLS model (1) where the outcome variable is school attrition. The teaching conditions variables are the construct averages for each of eight constructs (see Appendix A for calculations).

Model 2.1D. Model Summary Explaining Teacher Attrition by Teaching Conditions Constructs (N=2,274)

	Model 1		Model 2		Model 3		Model 4	
Variable	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Intercept	0.126**	.006	0.458**	.026	0.451**	.026	0.575**	.044
% Free Lunch Students	0.151**	.011	0.070**	.011	0.053**	.012	0	.013
% Beginning Teachers	.		0.074**	.027	0.075**	.027	0.070**	.027
Teacher Experience	.		-0.007**	.001	-0.006**	.001	-0.005**	.001
Average Teacher Pay	.		-0.005**	.001	-0.005**	.001	-0.005**	.000
Community Eligibility Provision (CEP)	.		.		0.020**	.005	0.011*	.005
Community Support & Involvement	.		.		.		-0.074**	.014
Teacher Leadership	.		.		.		-0.065**	.022
Facilities & Resources	.		.		.		0.017	.012
Instructional Practices & Support	.		.		.		0.066**	.021
School Leadership	.		.		.		0.050*	.021
Professional Development	.		.		.		0.013	.018
Managing Student Conduct	.		.		.		-0.052**	.012
Use of Time	.		.		.		0.013	.010
R^2	0.080		0.191		0.197		0.242	
F for Change in R^2	197.565**		103.774**		16.946**		16.771**	

*p <.05. **p< .01.

Overall Attrition by Teaching Conditions Constructs
Elementary School Results.

Model 2.2D. Model Summary Explaining Elementary School Teacher Attrition by Teaching Conditions Constructs (N=1,280)

	Model 1		Model 2		Model 3		Model 4	
Variable	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Intercept	0.131**	.008	0.390**	.034	0.386**	.034	0.551**	.066
% Free Lunch Students	0.126**	.014	0.040**	.014	0.024	.015	-0.032	.018
% Beginning Teachers		.	0.215**	.036	0.211**	.036	0.180**	.036
Teacher Experience		.	-0.005**	.001	-0.005**	.001	-0.003*	.001
Average Teacher Pay		.	-0.005**	.001	-0.005**	.001	-0.005**	.001
Community Eligibility Provision (CEP)		.		.	0.018**	.006	0.009	.006
Community Support & Involvement		.		.		.	-0.064**	.020
Teacher Leadership		.		.		.	-0.106**	.029
Facilities & Resources		.		.		.	-0.011	.017
Instructional Practices & Support		.		.		.	0.038	.032
School Leadership		.		.		.	0.055*	.027
Professional Development		.		.		.	0.035	.024
Managing Student Conduct		.		.		.	-0.035*	.016
Use of Time		.		.		.	0.051**	.015
R^2	0.062		0.212		0.218		0.255	
F for Change in R^2	84.473**		80.901**		9.775**		7.859**	

*p <.05. **p< .01.

Overall Attrition by Teaching Conditions Constructs

Middle School Results.

Model 2.3D. Model Summary Explaining Middle School Teacher Attrition by Teaching Conditions Constructs (N=483)

	Model 1		Model 2		Model 3		Model 4	
Variable	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Intercept	0.100**	.013	0.515**	.055	0.506**	.055	0.439**	.102
% Free Lunch Students	0.240**	.025	0.140**	.027	0.116**	.028	0.105**	.034
Teacher Experience	.		-0.005**	.002	-0.004*	.002	-0.003	.002
Average Teacher Pay	.		-0.007**	.001	-0.007**	.001	-0.008**	.001
Community Eligibility Provision (CEP)	.		.		0.029**	.010	0.023*	.010
Community Support & Involvement	.		.		.		-0.004	.032
Teacher Leadership	.		.		.		-0.09	.051
Facilities & Resources	.		.		.		0.037	.027
Instructional Practices & Support	.		.		.		0.135**	.046
School Leadership	.		.		.		0.108*	.049
Professional Development	.		.		.		-0.025	.038
Managing Student Conduct	.		.		.		-0.083**	.025
Use of Time	.		.		.		-0.065*	.025
R^2	0.162		0.256		0.267		0.327	
F for Change in R^2	92.986**		30.259**		7.173**		5.238**	

*p <.05. **p< .01.

Overall Attrition by Teaching Conditions Constructs
High School Results.

Model 2.4D. Model Summary Explaining High School Teacher Attrition by Teaching Conditions Constructs (N=457)

	Model 1		Model 2		Model 3	
Variable	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Intercept	0.113**	.013	0.398**	.051	0.491**	.096
% Free Lunch Students	0.185**	.029	0.130**	.029	0.066	.035
Teacher Experience		.	-0.006**	.002	-0.006**	.002
Average Teacher Pay		.	-0.004**	.001	-0.004**	.001
Community Support & Involvement		.		.	-0.071*	.029
Teacher Leadership		.		.	-0.02	.049
Facilities & Resources		.		.	0.034	.025
Instructional Practices & Support		.		.	0.051	.044
School Leadership		.		.	0.031	.050
Professional Development		.		.	0.005	.036
Managing Student Conduct		.		.	-0.041	.026
Use of Time		.		.	-0.016	.025
R^2	0.085		0.163		0.195	
F for Change in R^2	42.268**		21.108**		2.211*	

*p <.05. **p< .01.

School Attrition—% Movers by Overall Composite

Statewide Results. Tables 3.1D—3.4D present information from the OLS model (1) where the outcome variable is school attrition as measured by percentage of teachers who left to teach at another North Carolina school (% Movers). The teaching conditions variable is the Overall Teaching Conditions Composite which averages across all eight teaching conditions constructs (see Appendix A for calculation).

Model 3.1D. Model Summary Explaining School Attrition (% Movers) by Overall Teaching Conditions Composite (N=2,274)

	Model 1		Model 2		Model 3		Model 4		Model 5	
Variable	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Intercept	0.034**	.004	0.181**	.018	0.176**	.018	0.280**	.026	0.251**	.030
% Free Lunch Stu-	0.104**	.007	0.064**	.008	0.053**	.008	0.047**	.008	0.048**	.008
% Beginning Teachers			0.063**	.019	0.064**	.018	0.062**	.018	0.063**	.018
Teacher Experience			-0.003**	.001	-0.003**	.001	-0.003**	.001	-0.003**	.001
Average Teacher			-0.002**	.000	-0.002**	.000	-0.002**	.000	-0.002**	.000
Community Eligibility Provision (CEP)					0.014**	.003	0.013**	.003	0.089*	.038
Overall Teaching Conditions Compo-							-0.032**	.006	-0.024**	.007
Overall Composite*CEP Status									-0.025*	.012
R^2	0.087		0.154		0.16		0.171		0.173	
F for Change in R^2	216.499**		103.258**		16.2**		30.081**		5.48*	

*p <.05. **p< .01.

School Attrition—% Movers by Overall Composite
Elementary Results.

Model 3.2D. Model Summary Explaining Elementary School Teacher Attrition (% Movers) by Overall Teaching Conditions Composite (N=1,280)

	Model 1		Model 2		Model 3		Model 4		Model 5	
Variable	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Intercept	0.036**	.005	0.176**	.024	0.173**	.024	0.231**	.036	0.174**	.044
% Free Lunch Stu-	0.096**	.009	0.053**	.010	0.041**	.010	0.038**	.010	0.039**	.010
% Beginning Teachers			0.088**	.025	0.085**	.025	0.082**	.025	0.083**	.025
Teacher Experience			-0.004**	.001	-0.004**	.001	-0.004**	.001	-0.004**	.001
Average Teacher			-0.002**	.000	-0.002**	.000	-0.002**	.000	-0.002**	.000
Community Eligibility Provision (CEP)					0.014**	.004	0.013**	.004	0.134**	.052
Overall Teaching Conditions Compo-							-0.018*	.009	-0.001	.011
Overall Compo-									-0.039*	.017
R^2	0.078		0.176		0.183		0.186		0.19	
F for Change in R^2	108.117**		68.083**		10.916**		4.692*		6.281*	

*p <.05. **p< .01.

School Attrition—% Movers by Overall Composite
Middle School Results.

Model 3.3D. Model Summary Explaining Middle School Teacher Attrition (% Movers) by Overall Teaching Conditions Composite (N=483)

	Model 1		Model 2		Model 3	
Variable	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Intercept	0.031**	.009	0.217**	.036	0.353**	.053
% Free Lunch Students	0.131**	.016	0.085**	.018	0.079**	.018
Average Teacher Pay		.	-0.004**	.001	-0.004**	.001
Overall Teaching Conditions Composite		.		.	-0.046**	.013
R^2	0.118		0.167		0.187	
F for Change in R^2	64.351**		28.235**		11.784**	

*p <.05. **p< .01.

School Attrition—% Movers by Overall Composite
High School Results.

Model 3.4D. Model Summary Explaining High School Teacher Attrition (% Movers) by Overall Teaching Conditions Composite (N=457)

	Model 1		Model 2		Model 3		Model 4	
Variable	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Intercept	0.032**	.008	0.132**	.034	0.149**	.035	0.222**	.052
% Free Lunch Students	0.098**	.019	0.078**	.020	0.052*	.021	0.047*	.021
Average Teacher Pay		.	-0.002**	.001	-0.002*	.001	-0.002**	.001
Student-Teacher Ratio		.		.	-0.002**	.001	-0.002*	.001
Community Eligibility Provision (CEP)		.		.	0.017*	.008	0.016*	.008
Overall Teaching Conditions Composite		.		.		.	-0.023	.012
R^2	0.056		0.075		0.102		0.109	
F for Change in R^2	26.992**		9.325**		6.795**		3.543	

*p <.05. **p< .01.

School Attrition—% Movers by Teaching Conditions Constructs

Statewide Results. Tables 4.1D—4.4D present information from the OLS model (1) where the outcome variable is school attrition as measured by percentage of teachers who left to teach at another North Carolina school (% Movers). The teaching conditions variables are the construct averages for each of eight constructs (see Appendix A for calculations).

Model 4.1D. Model Summary Explaining Teacher Attrition (% Movers) by Teaching Conditions Constructs (N=2,274)

	Model 1		Model 2		Model 3		Model 4	
Variable	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Intercept	0.034**	.004	0.181**	.018	0.176**	.018	0.239**	.030
% Free Lunch Students	0.104**	.007	0.064**	.008	0.053**	.008	0.024**	.009
% Beginning Teachers	.		0.063**	.019	0.064**	.018	0.063**	.018
Teacher Experience	.		-0.003**	.001	-0.003**	.001	-0.002**	.001
Average Teacher Pay	.		-0.002**	.000	-0.002**	.000	-0.002**	.000
Community Eligibility Provision (CEP)	.		.		0.014**	.003	0.009**	.003
Community Support & Involvement	.		.		.		-0.041**	.010
Teacher Leadership	.		.		.		-0.011	.015
Facilities & Resources	.		.		.		0.017*	.008
Instructional Practices & Support	.		.		.		0.028*	.014
School Leadership	.		.		.		0.003	.014
Professional Development	.		.		.		0.013	.012
Managing Student Conduct	.		.		.		-0.024**	.008
Use of Time	.		.		.		-0.003	.007
R^2	0.087		0.154		0.16		0.187	
F for Change in R^2	216.499**		59.899**		16.2**		9.382**	

*p <.05. **p< .01.

School Attrition—% Movers by Teaching Conditions Constructs

Elementary School Results.

Model 4.2D. Model Summary Explaining Elementary School Teacher Attrition (% Movers) by Teaching Conditions Constructs (N=1,280)

	Model 1		Model 2		Model 3		Model 4	
Variable	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Intercept	0.036**	.005	0.176**	.024	0.173**	.024	0.269**	.047
% Free Lunch Students	0.096**	.009	0.053**	.010	0.041**	.010	0.006	.013
% Beginning Teachers		.	0.088**	.025	0.085**	.025	0.074**	.025
Teacher Experience		.	-0.004**	.001	-0.004**	.001	-0.004**	.001
Average Teacher Pay		.	-0.002**	.000	-0.002**	.000	-0.002**	.000
Community Eligibility Provision (CEP)		.		.	0.014**	.004	0.009*	.004
Community Support & Involvement		.		.		.	-0.048**	.014
Teacher Leadership		.		.		.	-0.005	.020
Facilities & Resources		.		.		.	0.002	.012
Instructional Practices & Support		.		.		.	-0.004	.022
School Leadership		.		.		.	-0.003	.019
Professional Development		.		.		.	0.031	.017
Managing Student Conduct		.		.		.	-0.014	.011
Use of Time		.		.		.	0.017	.011
R^2	0.078		0.176		0.183		0.201	
F for Change in R^2	108.117**		50.546**		10.916**		3.565**	

*p <.05. **p< .01.

School Attrition—% Movers by Teaching Conditions Constructs
Middle School Results.

Model 4.3D. Model Summary Explaining Middle School Teacher Attrition (% Movers) by Teaching Conditions Constructs (N=483)

	Model 1		Model 2		Model 3	
Variable	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Intercept	0.031**	.009	0.217**	.036	0.266**	.070
% Free Lunch Students	0.131**	.016	0.085**	.018	0.051*	.023
Average Teacher Pay		.	-0.004**	.001	-0.004**	.001
Community Support & Involvement		.		.	-0.048*	.021
Teacher Leadership		.		.	-0.012	.035
Facilities & Resources		.		.	0.018	.019
Instructional Practices & Support		.		.	0.066*	.031
School Leadership		.		.	0.026	.034
Professional Development		.		.	-0.009	.026
Managing Student Conduct		.		.	-0.023	.017
Use of Time		.		.	-0.037*	.017
R^2	0.118		0.167		0.21	
F for Change in R^2	64.351**		28.235**		3.211**	

*p <.05. **p< .01.

School Attrition—% Movers by Teaching Conditions Constructs

High School Results.

Model 4.4D. Model Summary Explaining High School Teacher Attrition (% Movers) by Teaching Conditions Constructs (N=457)

	Model 1		Model 2		Model 3		Model 4	
Variable	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Intercept	0.032**	.008	0.132**	.034	0.149**	.035	0.215**	.063
% Free Lunch Students	0.098**	.019	0.078**	.020	0.052*	.021	0.002	.025
Average Teacher Pay		.	-0.002**	.001	-0.002*	.001	-0.002*	.001
Student-Teacher Ratio		.		.	-0.002**	.001	-0.002**	.001
Community Eligibility Provision (CEP)		.		.	0.017*	.008	0.01	.008
Community Support & Involvement		.		.		.	-0.052*	.020
Teacher Leadership		.		.		.	-0.012	.032
Facilities & Resources		.		.		.	0.034*	.017
Instructional Practices & Support		.		.		.	0.017	.030
School Leadership		.		.		.	0.009	.033
Professional Development		.		.		.	0.032	.025
Managing Student Conduct		.		.		.	-0.042*	.017
Use of Time		.		.		.	0.001	.017
R^2	0.056		0.075		0.102		0.155	
F for Change in R^2	26.992**		9.325**		6.795**		3.481**	

*p <.05. **p< .01.