

# 2023 Working Conditions of New Teachers in South Carolina

DECEMBER 2023

## + TECHNICAL APPENDIX

This appendix details the relevant definitions, measures, statistical methods, and results referenced in the 2023 Working Conditions of New Teachers in South Carolina infographic, available at: [sc-teacher.org/2023-working-conditions-of-new-teachers-in-south-carolina](https://sc-teacher.org/2023-working-conditions-of-new-teachers-in-south-carolina).

### Data Sources

The South Carolina Teacher Working Conditions Survey (SCTWCS) administered in the spring of 2023 measured teachers' perceptions of demands and resources, working conditions, and job satisfaction for use in programmatic development (Starrett et al., 2023). This study used data collected from the spring 2023 administration of the SCTWCS to provide information about new teachers across South Carolina. The analyses included 14,408 teachers who provided their years as public school teachers in South Carolina. Years of teaching experience were used to examine three research questions. Two research questions compared new teachers with more experienced teachers: Key Question 1 (i.e., "How does the relationship between teachers' perceptions of the resources and demands and their overall job satisfaction differ by teacher experience level?") and Key Question 2 (i.e., "How do teachers' views of different dimensions of working conditions differ by teacher experience level?"). Key Question 3 focused on mentor experiences of new teachers (i.e., "How do new teachers' perceptions of mentor support differ by school organizational level and school poverty level?"). This question examined responses from 1,210 new elementary to high school teachers who received mentor support during the 2022–23 school year.

### Measures

#### WORKING CONDITIONS

The SCTWCS consists of 59 items measured on a 5-point agreement scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, 5 = Strongly Agree. Items measure teachers' perceptions of working conditions across two broad areas: resources (seven specific areas) and demands (four specific areas). The seven dimensions of resources include: (1) *administrative support* (e.g., "Administrators at your school recognize your accomplishments"), (2) *communication with principal* (e.g., "Your principal has positive interactions with you"), (3) *availability of resources* (e.g., "You have access to professional development that deepens your content knowledge"), (4) *parent support* (e.g., "Parents of your students recognize you as an educational expert"), (5) *cooperation and recognition among staff* (e.g., "You and your colleagues work together as a team"), (6) *influence over school policy and decision-making roles* (e.g., "Administrators at your school include your input in decision-making on school improvement planning"), and (7) *autonomy in the classroom that supports state and local standards* (e.g., "In your classroom, you are able to adapt the learning material in order for your students to master the content"). Four dimensions of demands were measured: (1) *amount of paperwork and routine duties* (e.g., "You have enough time to create lesson plans"), (2) *student engagement* (e.g., "In your classroom, your students put effort into doing their schoolwork"), (3) *student behavior* (e.g., "Student tardiness frequently interferes with your teaching"), and (4) *student safety and health* (e.g., "You feel prepared to recognize students exhibiting physical, social, and verbal bullying behavior").

For data analysis purposes, items from *student behavior* were reverse coded so that higher scores represent higher levels of agreement for all items and scales. Guided by factor analysis results, we also combined the factors of *administrative support* and *communication with principal* into one area. Therefore, the report details 10 areas: six resources and four demands. For the 10 dimensions, average scores were created, where a high average score indicates a more positive view of teachers' working conditions.

The reliability of the 10 areas of the SCTWCS ranged from 0.82 to 0.95, indicating that the items from each area consistently measured each dimension of teachers' working conditions.

## TEACHER JOB SATISFACTION

Teachers' *job satisfaction* was measured with four items (e.g., "If I could start over, I would choose teaching again as my career"). Respondents were given five rating options for each item: 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, and 5 = Strongly Agree. A higher average score indicates a higher level of job satisfaction. The reliability of the scale was 0.82, indicating an acceptable level of internal consistency among responses.

## MENTORING SUPPORT

We used a mentoring support scale to measure new teachers' perceptions of their mentor support in teaching and outside the classroom. The scale consisted of 20 items on a 5-point agreement scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, 5 = Strongly Agree. The 20 items measured two dimensions of mentor support: *mentor support for teaching* (e.g., "With regards to your classroom, your assigned mentor helps you develop your lesson plans") and *mentor support outside teaching* (e.g., "Outside of your classroom, your assigned mentor helps you get parents and caregivers involved"). A high average score indicated that new teachers had a more positive perception of mentor support. The reliability of these two areas was 0.98 and 0.94, indicating that the responses to items consistently measured these two areas.

## Demographic Information

School-level demographic factors (i.e., school organizational level, percentage of pupils-in-poverty) were included from the 2021–22 school report card data. Schools were categorized into four types: elementary, middle, high school, and other. Other schools included schools with combined organizational levels, such as K–8, 6–12, and K–12.

Concerning student poverty status, the South Carolina Department of Education (SCDE) classifies a child as living in poverty if the student is enrolled in Medicaid or Temporary Assistance for Needy Families (TANF), and/or enrolled in the Supplemental Nutrition Assistance Program (SNAP) or the foster system. Using these markers, the SCDE identified the percentage of pupils-in-poverty (PIP) at the school level. Using the SCDE PIP designation, all schools in South Carolina were then ranked, and quartiles were obtained to create a poverty designation. Teachers in the upper 25% of PIP levels in South Carolina schools were categorized as teaching in high-poverty schools, and teachers in the lowest quartile of PIP were categorized as teaching in low-poverty schools. Teachers at schools in the middle (25–75% of PIP rankings) were categorized as teaching at moderate-poverty schools.

For geographic location of the school, schools were categorized according to census-defined geographic designations (city, suburb, town, or rural) assigned by the National Center for Educational Statistics (NCES, 2006).

Table 1 shows the percentages of teachers by school organizational level, school poverty, and school location for all teachers participating in SCTWCS.

**Table 1. Teacher Characteristics Across School-Level Variables (N = 14,408)**

School-level variable	Levels	Number	Percentage
School organizational level	Elementary schools	5,996	43.7%
	Middle schools	2,921	21.3%
	High schools	3,619	26.4%
	Other	1,196	8.7%
School poverty	Low	4,626	33.9%
	Moderate	6,460	47.3%
	High	2,562	18.8%
School location	City	2,649	19.3%
	Suburbs	5,809	42.4%
	Town	933	6.8%
	Rural	4,324	31.5%

*Note.* This table details school type, poverty, and location for all teachers participating in SCTWCS.

Table 2 shows the percentages of teachers by school type, school poverty, and school location for all teachers participating in SCTWCS who answered “yes” to the item “Have you been teaching five years or fewer?” For the purpose of this analysis, these teachers were defined as new teachers. Experienced teachers were then defined as having taught for more than five years.

**Table 2. New Teacher Characteristics Across School-Level Variables (N = 3,718)**

School-level variable	Levels	Number	Percentage
School organizational level	Elementary schools	1,545	43.3
	Middle schools	819	22.9
	High schools	903	25.3
	Other	304	8.5
School poverty	Low	996	28.1
	Moderate	1,728	48.7
	High	824	23.2
School location	City	767	21.5
	Suburbs	1471	41.3
	Town	253	7.1
	Rural	1,074	30.1

*Note.* This table details school type, poverty, and location for all teachers participating in SCTWCS who stated they had taught for five or fewer years.

Table 3 shows the percentages of teachers by school type, school poverty, and school location for all teachers participating in SCTWCS who answered “yes” to the item “Have you been teaching five years or fewer?” and answered “yes” to the item “Do you currently have an assigned mentor?” For the purpose of this analysis, these teachers were defined as new teachers with an assigned mentor.

**Table 3.** Characteristics of New Teachers From Elementary to High Schools Receiving Mentor Support Across School-Level Variables (N = 1,210)

School-level variable	Levels	Number	Percentage
School organizational level	Elementary schools	535	46.1
	Middle schools	290	25.0
	High schools	336	28.9
School poverty	Low	289	25.0
	Moderate	596	51.6
	High	271	23.4
School location	City	251	20.7
	Suburbs	492	42.5
	Town	80	6.9
	Rural	334	28.9

Note. This table details the school type, poverty, and location for all teachers participating in SCTWCS who stated they had taught for five or fewer years and currently had an assigned mentor.

### Data Analysis

First, a multiple-group path analysis using structural equation modeling was utilized to examine whether the path between teachers' perceptions of workplace resources and demands and their job satisfaction differs by teacher experience level (new teachers with five or fewer years of teaching experience vs. experienced teachers with more than five years). The Wald test was used to assess whether the path coefficients significantly differed between the two groups. We also used pairwise parameter comparison to compare the magnitudes of the coefficients across new and experienced teacher groups. As the number of items from resources, demands, or job satisfaction differed, we used the average scores for the three constructs for the analysis.

Second, the Multiple Indicators Multiple Causes (MIMIC) model was constructed. The MIMIC model allows the examination of observed variables as predictors of latent variables (Kline, 2023). Model 1 examined the impact of teaching experience (new teachers vs. experienced teachers) on the 10 latent dimensions of teacher working conditions. Unstandardized path coefficient values were reported as they are preferred for reporting when covariates are categorical (Kline, 2023). New teachers were coded as 0 and experienced teachers as 1.

Third, Model 2 was conducted to examine the impact of school-level factors (i.e., school organizational level and poverty level) on new teachers' perceptions of the two latent dimensions of mentor support. For analysis purposes, we dummy-coded school organizational levels (i.e., middle school: 1 = yes, 0 = no; high school: 1 = yes, 0 = no, with elementary schools as the reference group) and school poverty levels (i.e., moderate poverty: 1 = yes, 0 = no; high poverty: 1 = yes, 0 = no, with low poverty level as the reference group). Unstandardized path coefficients were reported.

All analyses were conducted using Mplus 8.4 software (Muthen & Muthen, 2019). As all the scales are 5-point Likert scales, we used the weighted least square with mean and variance correction (WLSMV) estimator for analyses. The following fit indices were used to examine the model fit: chi-square ( $\chi^2$ ) fit statistic, comparative fit index (CFI), root mean squared error of approximation (RMSEA), and standardized root mean square residual (SRMR). CFI  $\geq$  .90, RMSEA  $\leq$  .08, and SRMR  $\leq$  .10 indicated an acceptable model fit. CFI  $\geq$  .95, RMSEA  $\leq$  .05, and SRMR  $\leq$  .08 suggested a good fit (Hu & Bentler, 1999). As teachers were nested within schools, we considered the clustering design effects for more accurate parameter estimates (Raykov & DiStefano, 2021).

## + RESULTS

### Key Question 1: How does the relationship between teachers' perceptions of the resources and demands and their overall job satisfaction differ by teacher experience level?

As shown in Table 4, the multiple-group path analysis model had perfect fit because the model was saturated. Figure 1 shows the structure of the model.

In the multiple-group path analysis, the omnibus Wald test showed that at least one of the path coefficients (perceived resources to job satisfaction, perceived demands to job satisfaction) significantly differed between new and experienced teacher groups ( $p = 0.029$ ). Table 5 details the pairwise comparison for these paths. While a significant, positive relationship between resources and job satisfaction was identified for both new teacher ( $b = 0.439$ ) and experienced teacher groups ( $b = 0.393$ ), pairwise comparisons revealed that the strength of this relationship differed between the two groups, with the new teacher group yielding a stronger relationship between resources and job satisfaction ( $p = 0.017$ ). A significant, positive relationship between demands and job satisfaction for both new teacher ( $b = 0.278$ ) and experienced teacher groups ( $b = 0.307$ ) indicated that fewer demands was associated with higher job satisfaction; however, the strength of this relationship did not differ between groups ( $p = 0.385$ ).

**Table 4.** Fit Statistics for MIMIC Models

Model	$\chi^2(df)$	CFI	RMSEA [90% CI]	SRMR
Multiple-group path analysis	0.000*(0)	1.00	0.000 [0.000 -0.000]	0.000
Model 1	42821.074*(1656)	0.970	0.042 [0.041 -0.042]	0.034
Model 2	2933.812*(241)	0.985	0.101 [0.098 -0.105]	0.023
Model 3	1900.462*(239)	0.991	0.080 [0.077 -0.083]	0.019

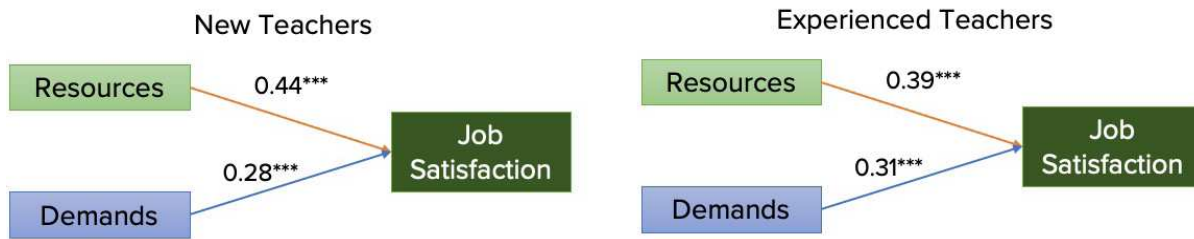
Note.  $\chi^2$  = Chi-square test of model fit; CFI = comparative fit index; RMSEA = root-mean-square error of approximation; CI = confidence interval; SRMR = standardized root mean square residual.

**Table 5.** Parameter Estimates for the Multiple-Group Path Analysis ( $N = 14,408$ )

Path	New teachers (n = 10,690)		Experienced teachers (n = 3,718)		Pairwise comparison $p$ -value
	Standard estimate ( $b$ )	SE	Standard estimate ( $b$ )	SE	
Perceived resources to job satisfaction	0.439***	0.020	0.393***	0.012	0.046*
Perceived demands to job satisfaction	0.278***	0.020	0.307***	0.012	-0.029

Note. \*\*\* $p < 0.001$ , \*\* $p < 0.01$ , and \* $p < .05$ .

**Figure 1. Multiple-Group Path Diagram**

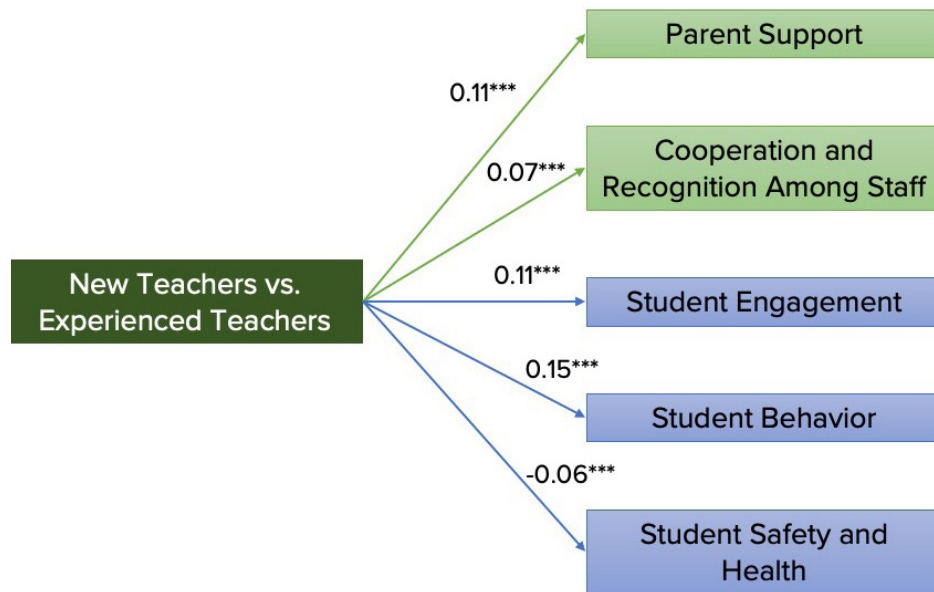


*Note.* The orange arrows indicate significant path coefficients and a difference between new and experienced teacher groups.

**Key Question 2: How do teachers’ views of different dimensions of working conditions differ by teacher experience level?**

As described in Table 4, Model 1 showed good model fit ( $\chi^2(1656) = 42821.074$ ; CFI = 0.970; RMSEA = 0.042; 90% CI [0.041–0.042]; SRMR = 0.034). Figure 2 shows the structure of the model with only significant paths included in the diagram.

**Figure 2. MIMIC Model 1 Diagram**



*Note.* Only significant paths were included in the diagram. The new teacher group was treated as the reference group. \*\*\* $p < 0.001$ .



As detailed in Table 6, teacher experience level (new vs. experienced teacher) illustrated a positive, statistically significant relationship with *parent support* ( $b = 0.106, p < 0.001$ ), *cooperation and recognition among staff* ( $b = 0.066, p = 0.000$ ), *student engagement* ( $b = 0.113, p = 0.001$ ), and *student behavior* ( $b = 0.149, p = 0.000$ ). This indicates that experienced teachers tended to have more positive perceptions of these four working conditions dimensions than new teachers. Teacher experience level was negatively related to *student safety and health* ( $b = -0.057, p = 0.003$ ), showing that new teachers perceived themselves as better prepared to address students' safety and health than more experienced teachers.

New and experienced teachers did not significantly differ in their perceptions of *administrative support and communication*, *availability of resources*, *influence over school policy and decision-making roles*, *autonomy in the classroom that supports state and local standards*, and *amount of paperwork and routine duties*.

**Table 6.** MIMIC Model 1 Results

Factors	Unstandardized coefficients ( <i>b</i> )	SE
Administrative support and communication	0.035	0.017
Availability of resources	0.002	0.017
Parent support	0.106***	0.020
Cooperation and recognition among staff	0.066**	0.020
Influence over school policy and decision-making roles	0.007	0.018
Autonomy in the classroom that supports state and local standards	0.025	0.020
Amount of paperwork and routine duties	-0.018	0.020
Student engagement	0.113***	0.020
Student behavior	0.149***	0.017
Student safety and health	-0.057**	0.019

Note. The new teacher group was treated as the reference group. \*\*\* $p < 0.0001$ , \*\* $p < 0.01$ , and \* $p < .005$ .

### Key Question 3: How do new teachers' perceptions of mentor support differ by school organizational level and school poverty level?

As noted in Table 4, Model 2 did not yield good model fit ( $\chi^2(241) = 2933.812$ ; CFI = 0.985; RMSEA = 0.101; 90% CI [0.098–0.105]; SRMR = 0.023). The model modification indices indicated that the model could be improved by allowing the correlation between the error terms of Item 12 (“With regards to your classroom, your assigned mentor provides clear, direct feedback from observations of your teaching”) and Item 13 (“With regards to your classroom, your assigned mentor observes your teaching”) and also freeing the correlation between Item 1 (“With regards to your classroom, your assigned mentor helps you develop your lesson plans”) and Item 11 (“With regards to your classroom, your assigned mentor helps you align your lesson planning with the state and local curriculum”). These changes were made due to the similarities in wording and concepts measured in the item pairs. Table 4 shows that the revised model (Model 3) had good fit ( $\chi^2(239) = 1900.462$ ; CFI = 0.991; RMSEA = 0.080; 90% CI [0.077–0.083]; SRMR = 0.019).

As presented in Table 7, while controlling for the impact of school poverty, school type (elementary vs. middle school) exhibited a negative, statistically significant relationship with *mentor support for teaching* ( $b = -0.144, p = 0.044$ ) and *mentor support outside of teaching* ( $b = -0.173, p = 0.012$ ), indicating that new teachers from elementary schools demonstrated more positive perceptions of *mentor support for teaching* and *mentor support outside of teaching* than new teachers from middle schools. New teachers from elementary and high schools did not significantly differ in their perceptions of mentor support. Figure 3 provides the structure of the model with only significant paths included in the diagram.

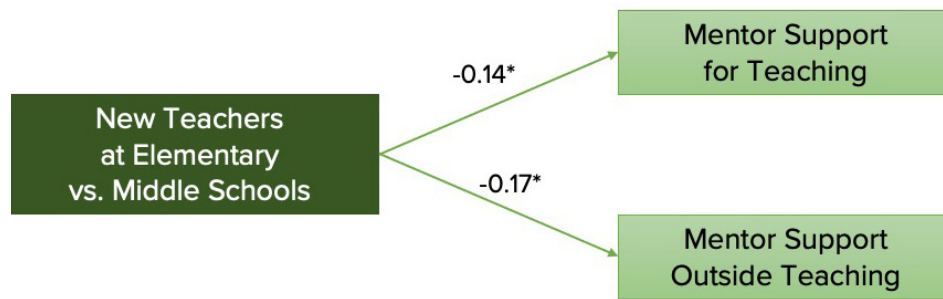
While controlling for the influence of school organizational level, new teachers did not differ in their perceptions of mentor support across school poverty levels.

**Table 7. MIMIC Model 3 Results**

Factors	Covariates	Unstandardized coefficients (b)	SE
Mentor support for teaching	Elementary vs. middle school	-0.144*	0.035
	Elementary vs. high school	0.066	0.037
	Low vs. moderate poverty	-0.058	0.039
	Low vs. high poverty	-0.014	0.042
Mentor support outside teaching	Elementary vs. middle school	-0.173*	0.034
	Elementary vs. high school	0.042	0.038
	Low vs. moderate poverty	-0.109	0.040
	Low vs. high poverty	-0.091	0.041

Note. Elementary or low-poverty school teachers were treated as the reference groups. \* $p < .05$

**Figure 3. MIMIC Model 3 Diagram**



Note. Only significant paths were included in the diagram. Elementary school teachers were treated as the reference group. \* $p < .05$ .



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