

WAKE COUNTY PUBLIC SCHOOL SYSTEM STUDENT SURVEY RESULTS, 2021-22 June 2023



ABSTRACT

The Wake County Public School System's Student Engagement Survey is administered annually to measure students' perceptions of their learning experiences. This report is the first publication on student engagement results in the school system since 2018-19. Approximately 34,692 students from grades 5 through 12 responded in the spring of 2022 for a 34% response rate. The response rate decreased in the higher grades, dropping from 68.1% for grade 5 to 14.8% for grade 12. Due to low response rates for high school students, only grades 5 through 8 were included in this report.

The general trend across survey domains is for percent agreement to remain stable or decrease with student grade level. Generally, percent agreement decreased slightly from pre-pandemic levels with a few exceptions. Details of the survey results are summarized in the report below.

TABLE OF CONTENTS

INTRODUCTION	4
RESPONSE RATES	5
RESULTS	6
CONCLUSIONS	17
REFERENCES	18
APPENDICES	20



INTRODUCTION

The Wake County Public School System (WCPSS) conducts a student survey each spring to gain insights into students' perceptions of various aspects of their learning. The survey contained items from the Student Engagement Instrument (Appleton et al., 2006), which measures students' level of engagement in school on five domains: Teacher-Student Relationships, Control and Relevance of School Work, Peer Support for Learning, Future Aspirations and Goals, and Family Support and Learning. Additional items to measure three other domains were added to include Rigor, Civic Engagement, and Creativity.

The survey results from 2021-22 provide information stakeholders can use in planning and evaluation. School administrators and program evaluation staff can use the survey results as a benchmark while tracking changes over time and comparing a particular school to the district average. The differences between one school's results and the district average might lead to insights about school practices relevant to the survey items.

Throughout the report, results from 2021–22 were compared to 2018–19 to measure students' perceptions before and after the COVID-19 pandemic. The report only contains responses from students in elementary and middle schools because of the low response rate from high school students in 2021-22. A test of statistical significance between the results from the two years was conducted for each item and student group to indicate any significant changes.

Shaded values are used to compare the responses in 2021-22 versus 2018-19. Blue indicates that the level of agreement for 2021-22 was significantly higher than that for 2018-19, while orange indicates that the levels were significantly lower. Unshaded cells indicate no significant change between years.

A total of 34,692 eligible students in grades 5-12 (34%) from 188 schools completed the survey during the 2021-22 administration period. The level of participation was down considerably from 69,237 eligible students (69%) in 2018-19.

RESPONSE RATES

The WCPSS Student Engagement Survey is designed to elicit responses from all students enrolled in grades 5 through 12. As seen in Table 1, the response rate for students decreased in the higher grades. More information about nonresponse rates and response rates for student groups can be found in Appendix A. High school response rates are low enough that they were not considered for this analysis.

Table 1

2021-22 response rates by grade level

Enrolled Grade	Enrollment Numbers	Number Participating	Response Rate
Grade 5	12,107	8,248	68.1%
Grade 6	12,178	5,406	44.4%
Grade 7	12,626	5,416	42.9%
Grade 8	12,853	5,507	42.8%
Grade 9	14,900	3,220	21.6%
Grade 10	13,173	2,987	22.7%
Grade 11	12,428	2,332	18.8%
Grade 12	10,825	1,576	14.6%

As seen in Appendix A, there were differences in demographic characteristics among respondents and nonrespondents in 2021-22 in terms of ethnicity and gender. Additionally, there is evidence that higherachieving students were more likely to participate in the survey in 2021-22. Given this, as well as the lower response rate in 2021-22, comparisons between 2018-19 and 2021-22 should be made cautiously.

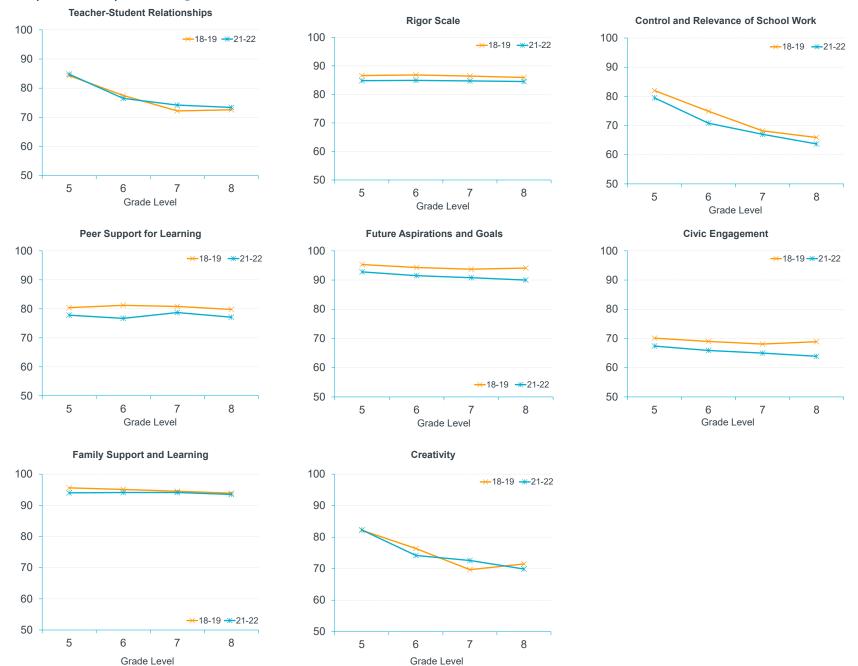
RESULTS

Throughout this report, the primary reporting metric is the percent agreement for items answered. The percent agreement was calculated as the total number of items in the domain receiving a rating of "strongly agree" or "agree" divided by the total number of items with a response in the domain. Figure 1 shows the percent agreement across each of the grade levels and domains to include a comparison from 2018-19 to 2021-22. Student group results can be found in Appendix B.

Consistent with results from previous years (https:// www.wcpss.net/Page/3814), percent agreement in 2021-22 remained stable or decreased as grade level increased. When comparing across years, the percent agreement in 2021-22 was comparable to or slightly lower than the 2018-19 pre-pandemic results. Those domains with the most noticeable decrease over these years were Rigor, Peer Support for Learning, Future Aspirations and Goals, and Civic Engagement. Other research on student engagement has noted declines during that period as well. For example, teachers in K-12 reported that the pandemic period saw a significant disruption in student engagement and curriculum adjustment, as many students transitioned to a completely online learning environment (Leech et al., 2022).

Figure 1

Comparison of percent agreement between 2018-19 and 2021-22



TEACHER-STUDENT RELATIONSHIPS

Positive teacher-student relationships are necessary for building trust, promoting conducive learning environments, and increasing student achievement (Demerath et al., 2022). Table 2 presents the 2021-22 results from the nine items measuring Teacher-Student Relationships and compares them with the pre-pandemic 2018-19 results. Items 5 ("The school rules are fair") and 9 ("Most teachers at my school are interested in me as a person, not just as a student") show a slight decline, with other items increasing between 2018-19 and 2021-22.

Table 2

Teacher-Student Relationships

		2021	-2022		Pattern	Dif	ference 2	1-22 vs 1	8-19
Teacher Student Relationships Scale Items	Grade 5	Grade 6	Grade 7	Grade 8	Grades 5-8	Grade 5	Grade 6	Grade 7	Grade 8
Percentage of students who responded 'Strongly Agree' or 'Agree'									
1. Overall, adults at my school treat students fairly	88.2%	82.3%	78.7%	77.8%	•	1.6%	1.1%	2.0%	1.6%
2. Adults at my school listen to the students	84.4%	77.1%	72.6%	71.6%	•	0.7%	0.5%	3.2%	1.9%
3. At my school, teachers care about students	94.6%	88.6%	87.0%	86.0%	•	0.4%	-0.5%	1.8%	1.7%
4. My teachers are there for me when I need them	88.3%	80.3%	79.9%	80.2%	~	1.1%	0.1%	3.7%	2.5%
5. The school rules are fair	78.6%	63.7%	57.4%	54.6%	~ ~ ~ ~	-1.4%	-7.6%	-4.1%	-4.1%
6. Overall, my teachers are honest and open with me	86.8%	80.3%	79.2%	80.1%	••	0.2%	0.8%	3.5%	1.9%
7. I enjoy talking to the teachers here	84.8%	75.3%	75.1%	73.8%	~	1.7%	-0.2%	4.7%	1.8%
8. I feel safe at school	84.5%	76.6%	77.6%	77.3%	• • • • • • • • • • • • • • • • • • • •	0.4%	-3.3%	-0.3%	-1.5%
9. Most teachers at my school are interested in me as a person, not just as a student	74.3%	63.2%	60.5%	59.5%	∼	0.5%	-0.8%	3.9%	1.5%

RIGOR

Rigor involves engaging students in complex learning that requires them to apply higher-order thinking skills to demonstrate mastery (Culver et al., 2021). The Rigor domain consisted of two items. The first examined whether students felt their teachers gave them challenging work and the second focused on students' perception of their effort in meeting their teachers' expectations (see Table 3). The data showed that as grade levels increased, students felt that their schoolwork was more challenging while their efforts to meet teachers' expectations decreased. The percent agreement for the 2021-22 Rigor questions decreased slightly compared to the 2018-19 results.

Table 3

Rigor

		2021	-2022		Pattern	Dif	ference 2 [°]	1-22 vs 18	3-19
Rigor Scale Items	Grade 5	Grade 6	Grade 7	Grade 8	Grades 5-8	Grade 5	Grade 6	Grade 7	Grade 8
Percentage of students who responded 'Strongly Agree' or 'Agree'									
10. My teachers give me challenging work.	77.1%	80.2%	82.5%	83.9%	+	-1.7%	-1.9%	-1.3%	-0.5%
11. I work hard to meet my teachers' expectations	92.8%	89.6%	87.2%	85.1%		-1.6%	-1.8%	-1.9%	-2.3%



CONTROL AND RELEVANCE OF SCHOOL WORK

Students are more likely to be interested in learning when they feel schoolwork is relevant to themselves and their future (Assor et al., 2002). The Control and Relevance of School Work domain, shown in Table 4, consists of nine items measuring students' perceptions of how well their classes captured their ability and how useful what they learn in school will be in the future. Similar to results from 2018-19, students' percent agreement indicates an overall decline from grade 5 through grade 8.

When compared to the 2018-19, it appears that agreement on all items has generally decreased between 2-9 percent, except for items 12 ("The tests in my classes do a good job of measuring what I am able to do") and 14 ("The grades in my classes do a good job of measuring what I am able to do").

Table 4

Control and Relevance of Schoolwork

		2021	-2022		Pattern	Dif	ference 2	21-22 vs 18-19	
Control and Relevance for School Work Scale Items	Grade 5	Grade 6	Grade 7	Grade 8	Grades 5-8	Grade 5	Grade 6	Grade 7	Grade 8
Percentage of students who responded 'Strongly Agree' or 'Agree'									
12. The tests in my classes do a good job of measuring what I am able to do	84.6%	79.7%	74.5%	69.7%		-1.2%	0.3%	3.3%	0.2%
13. Most of what is important to know you can learn in school	79.7%	65.5%	57.2%	48.8%		-2.8%	-6.7%	-3.6%	-7.4%
14. The grades in my classes do a good job of measuring what I am able to do	85.5%	73.8%	69.0%	64.2%		-0.4%	-1.1%	2.3%	2.3%
15. What I am learning in my classes will be important in my future	80.5%	66.3%	60.8%	55.3%	~~~~~	-5.1%	-9.3%	-5.1%	-5.2%
16. After finishing my schoolwork, I check it over to see if it is correct	75.1%	70.6%	68.2%	65.4%	•++	-2.7%	-1.9%	0.2%	0.4%
17. When I do schoolwork, I check to see whether I understand what I am doing	87.0%	84.1%	82.9%	82.4%	•	-2.1%	-2.9%	-1.6%	-2.9%
18. Learning is fun because I get better at something	67.5%	53.3%	51.5%	52.0%	~	-4.5%	-7.0%	-2.9%	-3.1%
19. When I do well in school, it is because I work hard	91.0%	86.3%	85.4%	83.1%	*	-1.7%	-4.6%	-2.5%	-3.6%
20. I feel like I have a say about what happens to me at school	64.7%	56.7%	53.4%	51.7%	• • • • • • •	-2.9%	-4.9%	-2.6%	-0.9%

Indicates 21-22 % agree was significantly higher than 18-19 % agree for the same item.

Indicates 21-22 % agree was significantly lower than 18-19 % agree for the same item.



PEER SUPPORT FOR LEARNING

Peer support, like teacher support, is essential for student engagement. Students are more likely to excel in school when they have mutual friendships and perceive peers value and respect them (Moreira et al., 2018). Table 5 shows the results of the six items included in the Peer Support for Learning domain about students' relationships with peers. In 2021-22, more than 90% of students in every grade level agreed with item 26, ("I have some friends at school"). However, 65 to 67 percent of students in each grade level agreed with item 25 ("Students here respect what I have to say"). Similar to 2018-19, the percent agreement for Peer Support for Learning was consistent across grade levels. Percent agreement decreased for most items in 2021-22 compared to 2018-19, however.

Table 5

Peer Support for Learning

Peer Support for Learning Scale Items	Grade 5		-2022 Grade 7	Grade 8	Pattern Grades 5-8			1-22 vs 18 Grade 7	8-19 Grade 8
Percentage of students who responded 'Strongly Agree' or 'Agree'									
21. Other students at school care about me	72.1%	71.9%	74.9%	73.6%	• • • • • • • • • • • • • • • • • • • •	-2.2%	-4.3%	-2.4%	-2.6%
22. Students at my school are there for me when I need them	71.1%	68.7%	72.4%	69.9%	•	-4.3%	-7.2%	-3.7%	-5.1%
23. Other students here like me the way I am	75.5%	75.3%	77.6%	76.0%	• • • • •	-3.7%	-5.4%	-2.7%	-2.9%
24. I enjoy talking to the students here	87.2%	84.2%	85.0%	81.0%	•	-2.6%	-4.4%	-1.5%	-3.1%
25. Students here respect what I have to say	65.9%	65.0%	66.7%	67.3%		-2.8%	-5.6%	-2.7%	-2.1%
26. I have some friends at school	95.2%	95.6%	96.3%	95.3%	· · · · · · · · · · · · · · · · · · ·	-0.3%	-0.1%	0.4%	0.0%

Indicates 21-22 % agree was significantly higher than 18-19 % agree for the same item.

Indicates 21-22 % agree was significantly lower than 18-19 % agree for the same item.



FUTURE ASPIRATIONS AND GOALS

Based on their aspirations, students recognize the importance of education in helping them achieve their goals and are more motivated to learn (Bessadok, 2022). Table 6 presents the results of the five items in the Future Aspirations and Goals domain. The items focused on students' plans and beliefs about the importance of education for their future. In 2021-22, percent agreement for all items across all grades was above 85 percent. However, this was a slight decrease from 2018-19, when percent agreement exceeded 91 percent.

Table 6

Future Aspiration and Goals

		2021	-2022		Pattern	Dif	ference 2 [°]	1-22 vs 18	3-19
Future Aspirations and Goals Scale Items	Grade 5	Grade 6	Grade 7	Grade 8	Grades 5-8	Grade 5	Grade 6	Grade 7	Grade 8
Percentage of students who responded 'Strongly Agree' or 'Agree'									
27. I plan to continue my education following high school	95.8%	96.2%	96.2%	96.1%	•	-1.2%	-0.7%	-0.9%	-0.9%
28. Going to school after high school is important	91.5%	89.9%	87.6%	85.0%		-3.4%	-4.1%	-5.2%	-7.5%
29. School is important for achieving my future goals	91.5%	89.3%	88.1%	87.1%	←	-2.9%	-3.1%	-3.6%	-5.8%
30. My education will create many future opportunities for me	93.0%	92.6%	92.2%	92.7%	••	-2.7%	-2.2%	-2.2%	-2.2%
31. I am hopeful about my future	92.9%	90.9%	90.0%	90.1%	• • • • • • • • • • • • • • • • • • • •	-2.5%	-3.1%	-3.1%	-3.0%



CIVIC ENGAGEMENT

The goal of civic education in schools is to provide students with the knowledge, democratic principles, and mindsets they need to participate successfully in political and civic life (Alscher et al., 2022). Table 7 presents the seven items in the Civic Engagement domain that measured students' interest in civic issues. Item 34 ("When I'm old enough, I plan to vote in most elections") had the highest agreement across grade levels. Additionally, more than 70% of students across all grade levels responded favorably to item 33 ("I can make a difference in my community"). Most items saw a decline in percent agreement in 2021-22 as compared to 2018-19, with item 35 ("I care a great deal about who is elected to be our next president") having the largest decline.

Table 7

Civic Engagement

Civic Engagement Scale Items	Grade 5		-2022 Grade 7	Grade 8	Pattern Grades 5-8			1-22 vs 18 Grade 7	8-19 Grade 8
	01000		Crudo r	Ciudo o				Crudo r	
Percentage of students who responded 'Strongly Agree' or 'Agree' 33. I believe I can make a difference in my community	75.9%	72.6%	73.0%	71.9%	•	-7.3%	-8.5%	-7.2%	-9.7%
34. When I'm old enough, I plan to vote in most elections	78.4%	80.8%	81.3%	81.6%	••	0.7%	2.8%	-0.4%	-2.1%
35. I care a great deal about who is elected to be our next president	73.6%	70.5%	67.8%	68.6%	• • • • • • • • • • • • • • • • • • • •	-6.3%	-8.6%	-11.4%	-11.0%
36. I pay attention to what's going on in the news	51.9%	53.0%	54.7%	56.9%	••	-6.2%	-4.4%	-4.4%	-5.8%
37. I think politics and government are boring	50.9%	56.7%	57.3%	59.3%	+	4.1%	1.8%	2.9%	4.3%
38. I participate in projects in my community	65.5%	57.2%	53.5%	46.7%		-3.4%	-3.8%	-2.6%	-7.2%
39. I often volunteer my time to help others	75.9%	69.7%	66.6%	60.7%		-0.4%	-1.5%	0.9%	-4.2%



FAMILY SUPPORT AND LEARNING

Students are likely to be more committed to their academics based on the support they receive from their families (Heldemerina et al., 2017). Table 8 presents the four items included in the Family Support and Learning domain measuring students' perceptions of their family support. Similar to 2018-19 results, in 2021-22, over 90% of respondents in all grade levels agreed that their family/guardian(s) are supportive regarding school. The percentage of agreement remained consistent from grade 5 to grade 8 across the two survey years.

Table 8

Family Support and Learning

		2021	-2022		Pattern	Dif	ference 2	1-22 vs 18	-19
Family Support and Learning Scale Items	Grade 5	Grade 6	Grade 7	Grade 8	Grades 5-8	Grade 5	Grade 6	Grade 7	Grade 8
Percentage of students who responded 'Strongly Agree' or 'Agree'									
40. My family/guardian(s) are there for me when I need them	94.0%	93.4%	93.8%	92.4%		-1.9%	-1.6%	-0.8%	-1.5%
41. When I have problems at school, my family/guardian(s) are willing to help me	93.0%	93.5%	93.6%	92.8%		-2.0%	-1.4%	-0.2%	-0.6%
42. When something good happens at school, my family/guardian(s) want to know about it	93.0%	93.2%	92.2%	91.8%		-1.4%	-0.2%	-0.3%	0.0%
43. My family/guardian(s) want me to keep trying when things are tough at school	96.6%	97.1%	97.4%	97.3%		-0.8%	-0.4%	0.2%	0.4%



CREATIVITY

Educators foster students' creativity by supporting their creative ideas, letting them take intellectual risks, encouraging open communication, and allowing flexibility in completing assignments (Fan & Cai, 2020). Results from 2018-19 revealed a marked decline in the percentage of students who reported having the opportunity to be creative at school after grade 5. Approximately 70% or more of all students agreed their teacher encourages creativity regardless of survey administration year.

Table 9

Creativity

	2021-2022				Pattern	Difference 21-22 vs 18-19				
Creativity Scale Items	Grade 5	Grade 6	Grade 7	Grade 8	Grades 5-8	Grade 5	Grade 6	Grade 7	Grade 8	
Percentage of students who responded 'Strongly Agree' or 'Agree'										
44. My teachers give me the opportunity to be creative at school	82.3%	74.1%	72.6%	69.9%		0.1%	-2.3%	2.9%	-1.6%	



DIFFERENCES ACROSS STUDENT GROUPS

This section explores the student survey results of various student groups of all combined students in grade 5 through grade 8 by gender, ethnicity, students with disabilities (SWD), English learners (EL), and students considered academically or intellectually gifted (AIG). As previously mentioned, a test of statistical significance between the results of administration years was conducted for each item and student group to indicate significant changes. Shaded values within the tables in the appendices continue to follow the same rules as the previous tables and should be interpreted as follows: blue indicates that the level of agreement for the 2021-22 respondents was significantly higher than that for 2018-19, while orange indicates that the level of agreement was significantly lower. Unshaded cells indicate there was no significant change between years. More detailed information for each student group, including 2021-22 itemlevel analyses and changes, are available in Appendix B.

In 2021-22, Asian students generally reported the highest levels of agreement in all domains compared to other students. All student groups saw high percent agreement in the Future Aspirations and Goals as well as the Family Support and Learning domains with agreement above 90%. The exception to this was the Students with Disabilities (SWD) category, which saw an 88.0% positive overall agreement in Future Aspirations and Goals.

African American and Hispanic/Latino students showed slightly lower levels of agreement in some domains when compared to White and Asian student groups, specifically for the domain Teacher-Student Relationships which is consistent with prior years. For instance, when asked if school rules were fair, African American students had the lowest percent agreement when compared to the other ethnic groups. Female students consistently reported slightly higher rates of agreement across some domains than male students, specifically for the domains Control and Relevance of School Work, Future Aspirations and Goals, and Civic Engagement.

As noted earlier, a decrease in percent agreement among student groups was generally evident when comparing the 2021-22 to 2018-19 results. Teacher-Student Relationships was the one domain that had a slight improvement in percent agreement. The only student groups that did not follow this trend were White students, SWD, and EL where agreements remained the same. Unlike other student groups, the percent agreement did not change over time in the Control and Relevance for School Work and Family Support and Learning domains for the SWD group. Percent agreement comparisons between the various student groups showed similar patterns in both 2018-19 and 2021-22.



CONCLUSIONS

Educators, peers, parents, and other community stakeholders all play a crucial role in how students perceive school and ultimately shape their success. Findings from the current survey provide important insights into students' perceptions of engagement in school Similar to pre-pandemic results, students' perception of school engagement varies at different grade levels. Main findings in this report include the following:

- Nonresponse bias is a threat to the validity of any survey estimates. The responses returned represent a particular subset of the WCPSS student population. For a more confident analysis across all grade levels, there would need to be an overall increase in student response rates to assure representation in the data in future years.
- Similar to pre-pandemic results, students in grade 5 report higher levels of agreement across many of the items when compared to middle school students, especially in the domains of Teacher-Student Relationships and Control and Relevance of School Work.
- The only domain that showed slight improvement post-pandemic was the Teacher-Student Relationships. The percent agreement within in many of the other domains showed a slight decline.
- Positive response rate patterns on items and domains at the student group level in 2021-22 are similar to patterns observed in 2018-19.

REFERENCES

- Alscher, P., Ludewig, U., & McElvany, N. (2022). Civic education, teaching quality and students' willingness to participate in political and civic life: Political interest and knowledge as mediators. *Journal of Youth and Adolescence*, *51*(10), 1886-1900. https://doi.org/10.1007/ s10964-022-01639-9
- Appleton, J. J., Christenson, S. L., Kim, D, & Reschly, A. L. (2006). Measuring cognitive and psychological engagement: Validation of the student engagement instrument. *Journal of School Psychology*, 44, 427–445.
- Bessadok, A. (2022). Analyzing student aspirations factors affecting e-learning system success using a structural equation model. *Education and Information Technologies*, 27(7), 9205-9230. https://doi.org/10.1007/s10639-022-11015-6
- Carini, R., Kuh, G., & Klein, S. (2006). Student engagement and student learning: Testing the linkages. *Research in Higher Education*, 47(1), 1-32.
- Culver, K. C., Braxton, J. M., & Pascarella, E. T. (2021). What we talk about when we talk about rigor: Examining conceptions of academic rigor. *The Journal of Higher Education*, 92(7), 1140-1163. https://doi.org/10.1080/00221546.2021.1920825
- Demerath, P., Kemper, S., Yousuf, E., & Banwo, B. (2022). A grounded model of how educators earn students' trust in a high performing U.S. urban high school. *The Urban Review*, 54(5), 703-732. https://doi.org/10.1007/s11256-022-00635-4
- Dillman, D. A. (1999). Mail and Internet Surveys: The Tailored Design Method (2nd ed.). John Wiley & Sons.
- Fan, M., & Cai, W. (2020). How does a creative learning environment foster student creativity? An examination on multiple explanatory mechanisms. *Current Psychology* 41, 4667–4676. https://doi.org/10.1007/s12144-020-00974-z



- Fredericks, J.A., Blumenfeld, P.C., & Paris, A.H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59-109.
- Heldemerina S. Pires, Adelinda A. Candeias, Luísa Grácio, Edgar Galindo, & Madalena Melo. (2017). The Influence of Family Support According to Gender in the Portuguese Language Course Achievement. *Frontiers in Psychology, 8.* https://doi.org/10.3389/fpsyg.2017.01610
- Hendra, R., & Hill, A. (2019). Rethinking response rates: new evidence of little relationship between survey response rates and nonresponse bias. *Evaluation Review*, *43*(5), 307-330.
- Kish, L. (1965). Survey sampling. John Wiley and Sons.
- Leech, N. L., Gullett, S., Cummings, M. H., & Haug, C. A. (2022). The challenges of remote K-12 education during the COVID-19 pandemic: Differences by grade level. *Online Learning*, 26(1), 245-267.
- Moreira, P. A. S., Dias, A., Matias, C., Castro, J., Gaspar, T., & Oliveira, J. (2018). School effects on students' engagement with school: Academic performance moderates the effect of school support for learning on students' engagement. *Learning and Individual Differences*, 67, 67–77. https://doi.org/10.1016/j.lindif.2018.07.007
- Nayak, M. S. D. P., & Narayan, K. A. (2019). Strengths and weaknesses of online surveys. *Technology*, 6(7), 0837-2405053138.
- Wu, M. J., Zhao, K., & Fils-Aime, F. (2022). Response rates of online surveys in published research: A meta-analysis. *Computers in Human Behavior Reports, p.7*, 100206.



APPENDICES

APPENDIX A

Nonresponse Rates

The survey is technically a census with no sample design features. Despite being a census, survey estimates are still examined for data quality and sources of error. Sources of error in this data collection context can fall into four categories: coverage error, measurement error, sampling error, and nonresponse error (Dillman, 1999). Of these, bias due to nonresponse is arguably the biggest threat to making inferences about student engagement at the district, school, and student group levels. Kish (1965) showed that the effect of nonresponse bias for a particular item was the product of two components: the nonresponse rate and the mean difference between the response rate of those responding and those

who fail to respond. While the first component is easily calculated, the second component is almost impossible to determine.

The Office of Management and Budget (OMB) has set a recommended response rate of 80% to handle nonresponse bias in funded survey projects (Wu et al., 2022). However, several research articles note that this recommendation is not feasible (Wu et al., 2022) or even a guarantee to reduce nonresponse bias (Hendra & Hill, 2019). As such, there is no agreed-upon level of nonresponse that can be definitively considered acceptable. The following tables provide a further examination of response rates across student categories to examine representation in the data.



Table A-1

Response Rates

-	Enrollment Numbers	Grades 5-8 Number Participating	Response Rate
- Gender	Humbere	i anticipating	
Female	24,110	12,173	50.5%
Male	25,654	12,404	48.4%
		Grades 5-8	
	Enrollment	Number	Response
	Numbers	Participating	Rate
Ethnicity	110		
American Indian	112	44	39.3%
Asian	5,639	2,689	47.7%
Hispanic	9,781	4,523	46.2%
Black	11,378	4,946	43.5%
White	20,942	11,421	54.5%
Multi-Racial	1,856	927	49.9%
Native Hawaiian/Pacific Islander	56	27	48.2%
	Enrollment	Number	Beenenee
	Numbers	Participating	Response Rate
- Gifted Status			
No	38,889	18,502	47.6%
Yes	10,875	6,075	55.9%
	,	0,010	
	Enrollment	Number	Response
	Numbers	Participating	Rate
_			
English Learner Status			
English Learner Status No	44,666	22,323	50.0%
-	44,666 5,098	22,323 2,254	50.0% 44.2%
No	5,098	2,254	44.2%
No	5,098 Enrollment	2,254 Number	44.2% Response
No Yes	5,098	2,254	
No Yes Special Education Status	5,098 Enrollment Numbers	2,254 Number Participating	44.2% Response Rate
No Yes Special Education Status No	5,098 Enrollment Numbers 43,862	2,254 Number Participating 22,312	44.2% Response Rate 50.9%
No Yes Special Education Status	5,098 Enrollment Numbers	2,254 Number Participating	44.2% Response Rate
No Yes Special Education Status No	5,098 Enrollment Numbers 43,862 5,902	2,254 Number Participating 22,312 2,265	44.2% Response Rate 50.9% 38.4%
No Yes Special Education Status No	5,098 Enrollment Numbers 43,862	2,254 Number Participating 22,312	44.2% Response Rate 50.9%
No Yes Special Education Status No Yes	5,098 Enrollment Numbers 43,862 5,902 Enrollment	2,254 Number Participating 22,312 2,265 Number	44.2% Response Rate 50.9% 38.4% Response
No Yes Special Education Status No Yes Student Ability	5,098 Enrollment Numbers 43,862 5,902 Enrollment Numbers	2,254 Number Participating 22,312 2,265 Number	44.2% Response Rate 50.9% 38.4% Response
No Yes Special Education Status No Yes Student Ability	5,098 Enrollment Numbers 43,862 5,902 Enrollment Numbers	2,254 Number Participating 22,312 2,265 Number	44.2% Response Rate 50.9% 38.4% Response
No Yes Special Education Status No Yes Student Ability Number of EOGs Passed (Readin Proficient on Both	5,098 Enrollment Numbers 43,862 5,902 Enrollment Numbers g and Math) 22,107	2,254 Number Participating 22,312 2,265 Number Participating	44.2% Response Rate 50.9% 38.4% Response Rate
Yes Special Education Status No Yes Student Ability Number of EOGs Passed (Readin	5,098 Enrollment Numbers 43,862 5,902 Enrollment Numbers	2,254 Number Participating 22,312 2,265 Number Participating	44.2% Response Rate 50.9% 38.4% Response Rate 55.5%



APPENDIX B

Percent Agreement by Item, Domain, and Student Ethnicity/Category

Table B-1

Percent Agreement by Student Ethnicity

contragreement by Stud			2	021-22		Diffe	rence betwee	n 2021-22 and 20	018-19
Domain	Item	Asian	Hispanic	Black/African American	White	Asian	Hispanic	Black/African American	White
	1. Overall, adults at my school treat students fairly	89.9%	82.1%	73.4%	84.9%	2.1%	0.9%	4.2%	0.4%
	2. Adults at my school listen to the students	86.4%	77.6%	68.2%	79.2%	3.0%	0.3%	4.6%	0.9%
	3. At my school, teachers care about students	93.2%	89.6%	85.0%	91.1%	1.0%	0.9%	2.0%	0.7%
	4. My teachers are there for me when I need them	88.3%	83.1%	78.9%	83.6%	3.3%	1.2%	4.5%	1.4%
	5. The school rules are fair	79.5%	65.3%	54.9%	66.9%	-1.4%	-4.4%	-2.2%	-3.4%
Teacher Student Relationship	6. Overall, my teachers are honest and open with me	88.1%	81.6%	77.7%	83.2%	3.4%	1.2%	3.5%	0.5%
	7. I enjoy talking to the teachers here	84.4%	77.7%	72.1%	79.6%	3.4%	2.2%	3.3%	0.7%
	8. I feel safe at school	87.3%	78.7%	73.1%	81.5%	3.7%	-1.5%	-0.4%	-1.9%
	9. Most teachers at my school are interested in me as a person, not just	71.8%	64.6%	62.4%	66.2%	4.6%	1.8%	1.5%	1.2%
	as a student	-		-				-	
	Overall	85.4%	77.8%	71.6%	79.5%				
	10. My teachers give me challenging work	72.3%	81.7%	82.7%	80.8%	-4.3%	-1.6%	-0.6%	-1.7%
Rigor Scale	11. I work hard to meet my teachers' expectations	92.9%	86.4%	85.3%	91.1%	-1.2%	-1.6%	-2.3%	-1.9%
	Overall	82.4%	83.9%	84.0%	85.9%	1.270	1.070	2.070	1.070
	12. The tests in my classes do a good job of measuring what I am able to	83.2%	80.4%	77.6%	76.5%	4.8%	0.1%	2.3%	0.6%
	do	03.270	00.470	11.070	70.5%	4.0 %	0.170	2.370	0.0%
	13. Most of what is important to know you can learn in school	72.9%	70.5%	67.5%	60.5%	0.6%	-3.9%	-3.5%	-4.3%
	14. The grades in my classes do a good job of measuring what I am able	80.8%	70.5%	72.9%	60.5% 74.1%	2.7%	- <u>3.9%</u> 1.3%	-3.5%	2.1%
	to do	00.0%	76.0%	12.9%	74.1%	2.1%	1.3%	2.2%	2.1%
		70.00/	70.00/	67.6%	04 70/	-1.6%	-4.4%	-6.2%	-6.5%
and the local Delever and a forth and Weath	15. What I am learning in my classes will be important in my future	78.0%	70.3%		64.7%				
control and Relevance of School Work	16. After finishing my schoolwork, I check it over to see if it is correct	80.0%	69.7%	70.0%	69.3%	0.9%	-1.7%	0.2%	-0.2%
	17. When I do schoolwork, I check to see whether I understand what I am	89.3%	84.2%	82.7%	84.3%	-1.7%	-3.2%	-1.2%	-1.1%
	doing			== ===	=0.10/		a 494		
	18. Learning is fun because I get better at something	70.6%	63.9%	58.2%	52.4%	-1.6%	-3.4%	-3.7%	-3.5%
	19. When I do well in school, it is because I work hard	88.2%	87.6%	87.2%	86.7%	-1.9%	-2.6%	-2.4%	-3.0%
	20. I feel like I have a say about what happens to me at school	64.3%	60.8%	59.8%	54.5%	-0.7%	-2.4%	-0.7%	-3.1%
	Overall	78.4%	73.8%	71.5%	69.1%				
	21. Other students at school care about me	78.9%	69.6%	66.0%	75.8%	-1.9%	-3.0%	-2.8%	-5.5%
	22. Students at my school are there for me when I need them	78.1%	69.0%	64.8%	71.9%	-1.1%	-5.5%	-5.0%	-7.2%
	23. Other students here like me the way I am	81.5%	75.7%	73.0%	76.1%	-1.7%	-4.1%	-3.8%	-4.7%
Peer Support for Learning	24. I enjoy talking to the students here	88.9%	84.3%	79.7%	86.2%	-1.7%	-2.6%	-2.9%	-4.2%
	25. Students here respect what I have to say	76.8%	65.9%	60.0%	66.2%	-0.7%	-4.9%	-1.4%	-5.6%
	26. I have some friends at school	95.6%	94.9%	93.9%	96.5%	-1.0%	0.1%	-0.2%	-0.3%
	Overall	83.1%	76.5%	72.9%	78.7%				
	27. I plan to continue my education following high school	98.2%	94.0%	95.1%	96.7%	-0.1%	-1.1%	-0.9%	-1.7%
	28. Going to school after high school is important	95.0%	86.4%	84.5%	90.4%	-1.8%	-4.4%	-7.0%	-5.3%
Euture Appirations and Coals	29. School is important for achieving my future goals	93.6%	88.7%	88.8%	89.0%	-1.9%	-3.8%	-3.3%	-4.2%
Future Aspirations and Goals	30. My education will create many future opportunities for me	96.0%	91.8%	92.1%	92.4%	-1.0%	-2.6%	-2.3%	-3.1%
	31. I am hopeful about my future	92.3%	90.5%	92.6%	90.9%	-2.3%	-3.2%	-1.7%	-2.9%
	Overall	94.9%	90.2%	90.4%	91.7%				
	33. I believe I can make a difference in my community	77.4%	66.8%	74.1%	75.4%	-7.0%	-7.3%	-6.9%	-11.8%
	34. When I'm old enough, I plan to vote in most elections	82.2%	69.9%	73.7%	86.5%	1.1%	1.8%	-3.3%	-2.8%
	35. I care a great deal about who is elected to be our next president	74.6%	67.0%	69.6%	71.7%	-7.2%	-5.6%	-12.7%	-13.2%
	36. I pay attention to what's going on in the news	58.7%	52.6%	50.6%	54.3%	-5.6%	-3.7%	-8.0%	-8.2%
Civic Engagement	37. I think politics and government are boring	49.6%	55.6%	58.3%	54.9%	4.7%	1.8%	3.5%	3.6%
	38. I participate in projects in my community	63.4%	50.6%	52.5%	60.5%	-2.2%	-4.1%	-3.1%	-3.3%
	39. I often volunteer my time to help others	73.7%	68.3%	68.6%	69.4%	-1.2%	-0.8%	0.3%	-0.9%
	Overall	68.4%	61.7%	64.1%	67.6%	-1.2.70	-0.070	0.570	-0.370
	40. My family/guardian(s) are there for me when I need them	93.4%	91.7%	92.0%	94.9%	2 70/	1.00/	1 4 0/	0.5%
						-2.7%	-1.0%	-1.1%	-2.5%
	41. When I have problems at school, my family/guardian(s) are willing to	93.6%	90.9%	91.0%	94.8%	-1.1%	-0.9%	-1.3%	-2.0%
	help me	00.00/	00.40/	00.00/	04.49/	0.70/	0.00/	4.00/	1.001
Family Support and Learning	42. When something good happens at school, my family/guardian(s) want	93.9%	89.4%	90.6%	94.4%	0.7%	-0.3%	-1.0%	-1.6%
,	to know about it								
	43. My family/guardian(s) want me to keep trying when things are tough at	97.2%	95.4%	96.4%	97.8%	-0.4%	-0.2%	0.3%	-1.2%
	school								
	Overall	94.5%	91.6%	92.4%	95.4%				
Creativity	44. My teachers give me the opportunity to be creative at school	84.9%	77.0%	76.3%	73.5%	5.0%	0.3%	1.1%	-2.1%



Table B-1

Percent Agreement by Student Category

				Difference between 2021-22 and 2018-19				8-19			
Domain	Item	Female	Male	AIG	SWD	EL	Female	Male	AIG	SWD	EL
Teacher Student Relationship	1. Overall, adults at my school treat students fairly	82.9%	82.1%	86.4%	81.2%	85.1%	1.9%	2.2%	1.5%	2.6%	-0.8%
	2. Adults at my school listen to the students	76.5%	78.2%	80.6%	76.7%	80.4%	1.8%	2.5%	0.8%	2.6%	-1.3%
	3. At my school, teachers care about students	90.1%	89.3%	92.1%	88.6%	91.3%	0.9%	1.6%	1.5%	1.7%	0.4%
	4. My teachers are there for me when I need them	83.3%	82.6%	84.6%	83.4%	85.2%	1.9%	2.8%	1.5%	2.5%	-1.9%
	5. The school rules are fair	65.2%	65.7%	70.0%	64.5%	69.4%	-3.0%	-2.9%	-4.4%	-0.7%	-8.3%
	6. Overall, my teachers are honest and open with me	81.9%	82.7%	84.2%	80.5%	84.5%	1.6%	2.4%	1.7%	1.7%	0.2%
	7. I enjoy talking to the teachers here	80.2%	76.2%	80.1%	76.9%	79.6%	2.4%	2.8%	3.1%	0.5%	-2.2%
	8. I feel safe at school	79.5%	80.0%	84.1%	76.8%	81.2%	-1.0%	-0.2%	-0.3%	0.0%	-1.6%
	9. Most teachers at my school are interested in me as a person, not just as a student	67.7%	63.6%	68.7%	66.5%	69.4%	2.5%	1.7%	3.0%	0.2%	-1.4%
	Overall	78.5%	77.7%	81.2%	77.1%	80.6%					
	10. My teachers give me challenging work	81.1%	79.7%	73.4%	83.3%	79.4%	-2.5%	-1.0%	-2.8%	0.3%	-1.5%
	11. I work hard to meet my teachers' expectations	91.3%	87.1%	91.0%	84.0%	87.0%	-1.9%	-1.3%	-2.0%	-1.1%	-1.7%
	Overall	86.1%	83.4%	82.2%	83.5%	82.9%					
Control and Relevance of School Work	12. The tests in my classes do a good job of measuring what I am able to do	78.7%	77.5%	75.1%	78.0%	81.3%	1.8%	0.7%	1.2%	1.4%	-1.4%
	13. Most of what is important to know you can learn in school	66.1%	64.2%	55.8%	76.3%	81.8%	-2.2%	-4.8%	-3.1%	-2.0%	-4.7%
	14. The grades in my classes do a good job of measuring what I am able to do	76.5%	73.2%	73.9%	75.7%	79.7%	2.0%	1.8%	1.1%	3.9%	1.4%
	15. What I am learning in my classes will be important in my future	69.6%	66.1%	64.9%	75.6%	81.3%	-3.7%	-5.8%	-3.8%	-2.3%	-6.7%
	16 After finishing my schoolwork. I shock it over to see if it is correct	74.3%	66.9%	69.8%	69.2%	75.6%	-0.7%	-0.6%	-2.0%	0.2%	-2.5%
	17. When I do schoolwork, I check to see whether I understand what I am doing	85.5%	83.5%	85.0%	80.3%	86.3%	-2.3%	-1.9%	-3.9%	-2.2%	-1.0%
	18. Learning is fun because I get better at something	59.8%	55.7%	56.7%	62.8%	73.7%	-3.0%	-3.6%	-2.9%	-3.3%	-4.7%
	19. When I do well in school, it is because I work hard	89.8%	84.4%	84.4%	86.2%	88.1%	-2.5%	-2.7%	-2.7%	-1.4%	-3.0%
	20. I feel like I have a say about what happens to me at school	58.9%	56.7%	53.0%	62.9%	65.6%	-2.9%	-1.2%	-1.8%	-1.6%	-4.5%
	Overall	73.1%	69.8%	68.5%	74.2%	79.3%					
Peer Support for Learning	21. Other students at school care about me	73.3%	72.6%	79.5%	65.1%	70.7%	-4.9%	-1.0%	-2.3%	-4.0%	-0.1%
	22. Students at my school are there for me when I need them	71.7%	69.5%	75.8%	64.5%	71.7%	-6.6%	-3.4%	-4.0%	-6.1%	-2.3%
	23. Other students here like me the way I am	74.6%	77.4%	79.9%	70.1%	76.2%	-5.6%	-1.9%	-3.6%	-3.4%	-1.5%
	24. I enjoy talking to the students here	83.1%	86.5%	87.7%	80.8%	86.3%	-3.0%	-2.2%	-2.2%	-2.9%	-0.9%
	25. Students here respect what I have to say	65.0%	67.4%	72.0%	60.8%	69.1%	-4.3%	-2.4%	-2.7%	-4.0%	-2.4%
	26. I have some friends at school	95.9%	95.1%	96.9%	91.7%	93.3%	-0.5%	0.3%	-0.3%	-0.9%	-0.2%
	Overall	77.2%	78.0%	81.8%	72.2%	77.7%					
Future Aspirations and Goals	27. I plan to continue my education following high school	97.4%	94.7%	98.1%	91.6%	92.8%	-0.8%	-1.2%	-0.7%	-1.5%	-1.1%
	28. Going to school after high school is important	90.1%	87.9%	92.2%	84.6%	88.6%	-4.4%	-4.9%	-4.0%	-5.2%	-3.0%
	29. School is important for achieving my future goals	91.7%	87.0%	91.2%	88.5%	90.9%	-2.7%	-4.4%	-3.1%	-2.4%	-2.9%
	30. My education will create many future opportunities for me	94.3%	91.0%	94.7%	88.6%	92.0%	-1.7%	-2.9%	-1.9%	-2.9%	-2.0%
	31. I am hopeful about my future	90.9%	91.7%	91.6%	88.4%	92.1%	-3.2%	-2.2%	-3.0%	-3.1%	-1.1%
	Overall	92.7%	90.3%	93.5%	88.0%	91.1%					
Civic Engagement	33. I believe I can make a difference in my community	75.2%	72.2%	77.0%	72.0%	70.7%	-8.5%	-7.3%	-7.6%	-7.7%	-10.8%
	34. When I'm old enough, I plan to vote in most elections	81.7%	78.7%	89.8%	71.1%	67.9%	-1.3%	1.4%	0.7%	-1.8%	-3.1%
	35. I care a great deal about who is elected to be our next president	72.0%	69.4%	74.9%	69.7%	68.9%	-10.5%	-7.1%	-7.0%	-5.4%	-10.0%
	36. I pay attention to what's going on in the news	54.1%	53.4%	58.1%	53.7%	55.3%	-6.8%	-4.2%	-4.0%	-5.4%	-7.6%
	37. I think politics and government are boring	54.7%	55.8%	50.0%	56.2%	51.1%	3.4%	2.1%	3.9%	0.6%	3.6%
	38. I participate in projects in my community	59.8%	54.8%	59.0%	62.2%	57.0%	-4.2%	-2.2%	-4.6%	-2.1%	-8.6%
	39. I often volunteer my time to help others	71.5%	67.4%	66.5%	72.6%	75.8%	-2.4%	1.4%	-2.5%	1.3%	-2.3%
	Overall	67.0%	64.6%	68.0%	65.5%	63.9%					
Family Support and Learning	40. My family/guardian(s) are there for me when I need them	91.7%	95.4%	94.7%	90.9%	91.8%	-2.3%	-0.5%	-1.3%	-1.8%	-2.2%
	41. When I have problems at school, my family/guardian(s) are willing to help me	92.4%	94.0%	95.3%	89.5%	90.1%	-1.6%	-0.6%	-0.5%	-1.2%	-2.1%
	42. When something good happens at school, my family/guardian(s) are wining to help me 42. When something good happens at school, my family/guardian(s) want to know about it	92.9%	92.3%	94.8%	89.1%	89.1%	-0.6%	-0.4%	0.0%	-0.7%	-1.7%
	43. My family/guardian(s) want me to keep trying when things are tough at school	97.2%	96.8%	98.4%	93.8%	93.9%	-0.4%	-0.1%	0.0%	-0.7%	-1.1%
	Overall	93.4%	94.4%	95.7%	90.6%	91.0%	-0.470	-0.170	0.070	-0.770	-1.170



Serena Halstead, EdD and Kevin Shropshire, PhD

Data, Research, and Accountability Department Wake County Public School System Cary, North Carolina