

Summer 2021 Summer Extension Programs

Research Report

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Introduction

On April 29, 2021, the North Carolina General Assembly passed Session Law 2021-7. This law required primary school units (PSUs) to implement in-person academic programming in summer 2021.¹ The enabling legislation prioritized the attendance of “at risk” students in summer 2021 programs, while allowing non-at-risk students to participate as space and funding allowed. Student participation in summer 2021 programming was voluntary. A newly formed unit within the North Carolina Department of Public Instruction (NCDPI) called the Office of Learning Recovery and Acceleration (OLR) provided program guidance and oversight. PSUs were required to submit their summer 2021 program plans to this office.

Summer programs were required to meet specific academic and non-academic programming requirements. Table 1 shows these requirements by grade level.

Table 1: Requirements for Summer 2021 Programming (Overall and by Grade Level)

All Grade Levels		
<ul style="list-style-type: none"> – At least 150 hours or 30 days of programming – Individual or small group academic instruction – Social-emotional learning supports – Enrichment activities – Meals and transportation 		
K-3	4-8	9-12
<ul style="list-style-type: none"> – ELA and math instruction – At least one enrichment opportunity – Science instruction (3rd grade only) – State-mandated reading camp 	<ul style="list-style-type: none"> – ELA, math and science instruction – At least one enrichment opportunity 	<ul style="list-style-type: none"> – Instruction in “end-of-course” subjects (Math 1, Math 3, English II, and Biology) – Credit recovery opportunities

PSUs were required to report data from summer 2021 programs to NCDPI. These data included student participation and attendance in summer 2021 programs, assessment scores, grade promotion and retention, and credit recovery. Teachers and other school personnel staffing summer 2021 programs were employed by PSUs as temporary employees. PSUs were required to offer a signing bonus of \$1,200 to teachers with previous performance bonuses in ELA and/or Math, as well as those with National Board Certification, and were encouraged to incentivize participation from other teachers with prior evidence of effectiveness. Summer 2021 teachers were given a bonus of \$150 for each student who gained reading proficiency during the program.

¹ Charter schools were permitted but not required to offer summer programming.

As part of a research project funded by the Institute of Education Sciences (IES) within the U.S. Department of Education, the Education Policy Initiative at Carolina (EPIC) at the University of North Carolina at Chapel Hill is partnering with the OLR to examine the impacts of school extension programs in the summer or during the school year on student re-engagement and academic performance following COVID-19. The overall research project will span multiple years of school extension programming, measuring implementation and impact. This report represents an initial examination of the summer 2021 programs. Future reports will continue to follow the outcomes of students who participated in summer 2021 programs and will examine summer 2022 programs and other programs sponsored by the OLR.

The purpose of this report is to provide descriptive evidence on:

- The characteristics of students who participated in summer 2021 programs,
- Attendance rates among participants,
- Approaches to program staffing,
- The types of enrichment activities that PSUs offered to students, and
- Academic gains by program participants.²

This report makes use of data from multiple sources including:

- Administrative data on student demographics, PSU characteristics, test scores, and course passing from the 2020-21 school year,
- PSU summer 2021 program plans submitted to the OLR,
- Post-program surveys completed by PSUs,
- Summer 2021 program enrollment, attendance, and assessment results reported by PSUs, and
- Grade and course enrollments for the 2021-22 school year.³

The following sections of the report display descriptive findings on the summer 2021 programs by topic area, explain the analysis, and discuss the findings.

² Due to limited data on charter school participation in summer 2021 programming, we focus on traditional school districts in this report.

³ Due to data limitations, some PSUs are omitted from particular analyses. For a full description of PSUs included in each analysis, see the appendix.

Who Enrolled in Summer Extension Programs?

In this section we present data on the students that enrolled in Summer 2021 learning recovery and acceleration programs. Specifically, we examine the demographics of enrollees, enrollment percentages by district characteristics, and data on student achievement and engagement with school from the 2020-21 year—i.e. directly before the start of Summer 2021 programming. Together, these data help identify the scale of Summer 2021 programming and the types of students who were more and less likely to enroll in these programs.

Figure 1 displays the percentage of North Carolina public school (NCPS) students enrolled in Summer 2021 programs by grade band—K-5, 6-8, 9-12—and student characteristics. Overall, 20 percent of elementary grades students (K-5), 14 percent of middle grades students (6-8), and 9 percent of high school students (9-12) enrolled in Summer 2021 programs. This difference in enrollment by school level suggests that K-12 districts and schools targeted younger students and/or take up rates declined with age. When examining these data by race/ethnicity, we find that students of color, particularly American Indian, Black, and Hispanic students, were more likely to be enrolled in Summer 2021 programs than their White peers. For example, relative to 13 percent of White elementary grades students, 29 percent of Black elementary grades students and 27 percent of Hispanic elementary grades students enrolled in Summer 2021 programs. When considering program participation measures, we find that economically disadvantaged students, students with disabilities, and English learner students all had higher enrollment rates—higher than the state average and students not in the identified category—in Summer 2021 programs. The overrepresentation of these historically marginalized student subgroups may reflect that these programs were targeted primarily to at-risk students.

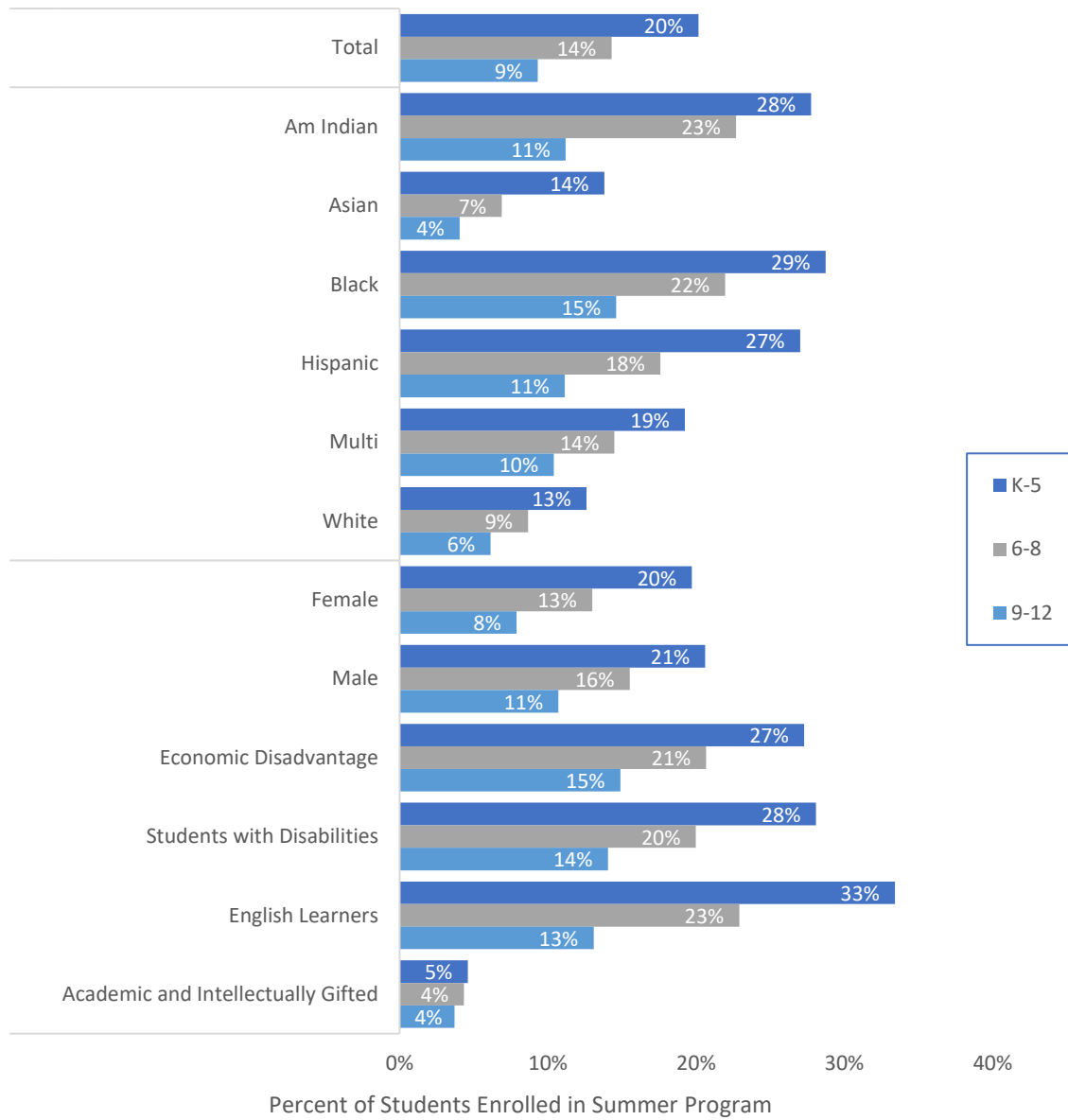
As an extension of these data, Figure 2 presents the percentage of students enrolled in Summer 2021 programming by K-12 district characteristics.⁴ Here, we find meaningful differences in Summer 2021 enrollment by district type. Specifically, the data highlight ways in which enrollment may have varied by district need, district capacity for communication and relationships with students/families, and/or the presence of alternative summer options for students. For example, regarding district need, we find that enrollment percentages in Summer 2021 programs were higher in Tier 1 versus Tier 3 counties and in districts educating more versus fewer students of color.⁵ Regarding district capacity and/or the presence of other summer options for students, we find that enrollment in Summer 2021 programs was higher in rural versus urban areas and in districts with fewer versus more students.⁶

⁴ Enrollment data for Figure 2 come from district-level reporting on Summer 2021 program surveys. This differs from the enrollment data in Figure 1 and Figures 3-5 which is at the individual student level.

⁵ The North Carolina Department of Commerce rates counties based on economic well-being, with the 40 most distressed counties designated as Tier 1, the next 40 as Tier 2, and the last 20 as Tier 3 (see <https://www.commerce.nc.gov/grants-incentives/county-distress-rankings-tiers/county-tier-designation-archives>)

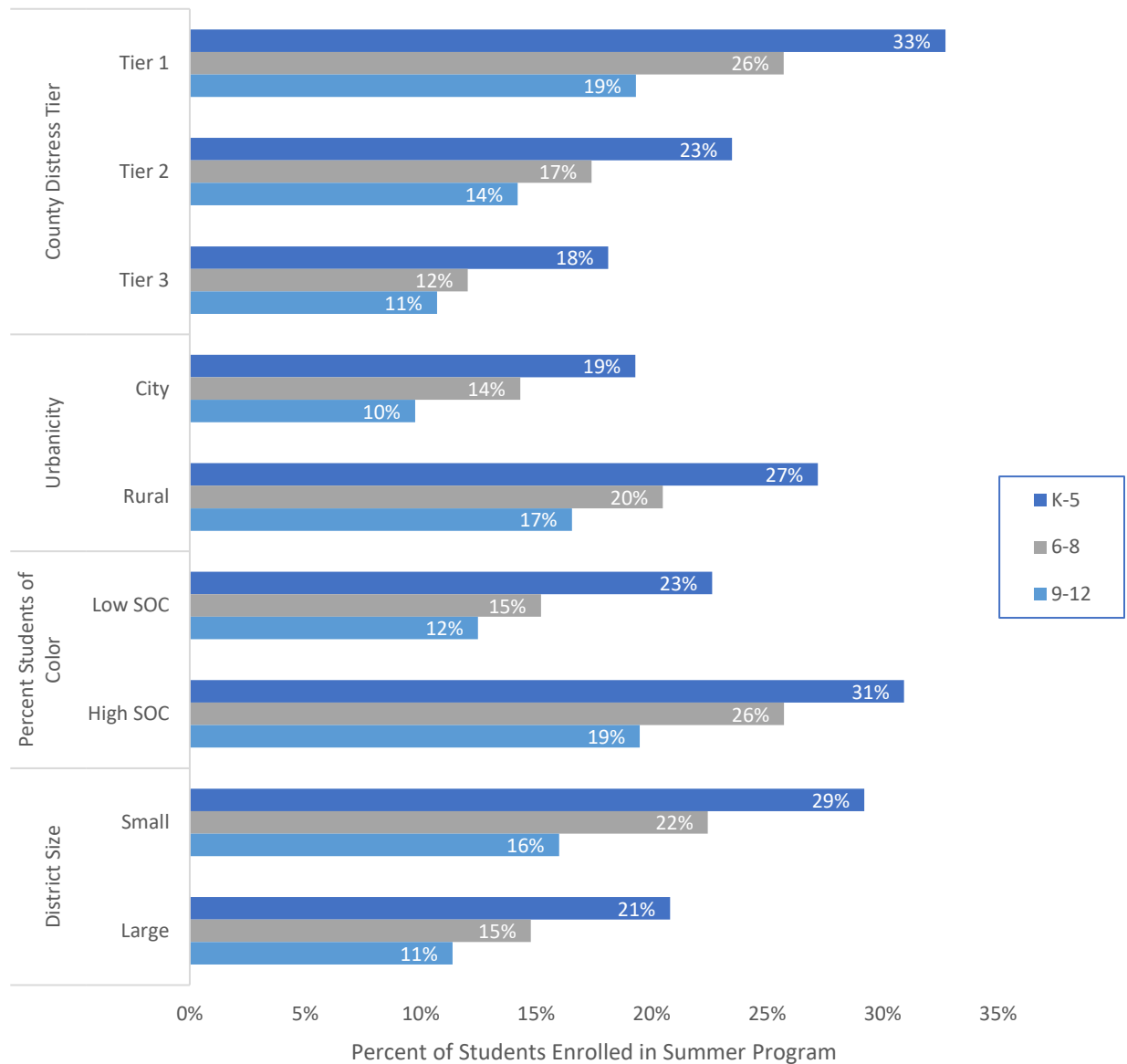
⁶ Districts in more economically distressed counties, districts with a higher percentage of students of color, and districts with fewer numbers of students invited a higher percentage of their students to Summer 2021 programs.

Figure 1: Demographics of Enrollees in Summer 2021 Programs



Note: This figure displays the percentage of NC public school students enrolled in Summer 2021 programming by grade band (K-5, 6-8, and 9-12) and by student characteristics. Student enrollment data is available for 111 districts for grades K-5, 108 districts for grades 6-8, and 80 districts for grades 9-10.

Figure 2: Summer 2021 Enrollment by District Characteristics



Note: This figure displays the percentage of students enrolled in Summer 2021 programming by K-12 district characteristics and grade band (K-5, 6-8, and 9-12). Enrollment numbers for this figure come from district-level reporting on Summer 2021 program surveys. Student enrollment data is available for 111 districts for grades K-5, 108 districts for grades 6-8, and 80 districts for grades 9-10.

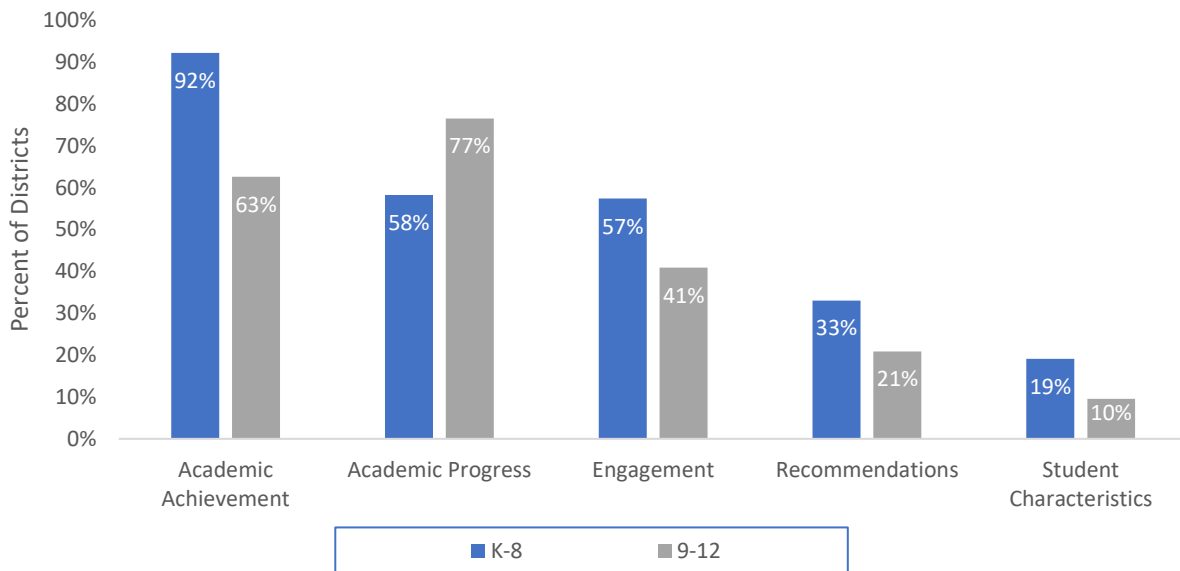
Defining At-Risk

Summer 2021 Programs were targeted primarily to at-risk students, although districts could enroll other students as space allowed. About half of districts reported that they invited both at-risk and non-at-risk students to attend summer extension programs, but district reports show that over 90 percent of students who enrolled in the programs were defined as at-risk. State legislation gives districts a great deal of latitude in the factors they use in identifying students as at-risk. In our analysis, we examine the different criteria districts listed for identifying students as at-risk and, thus, prioritized for attendance at summer programs. We divided these factors into

five categories: academic achievement, academic progress, engagement, recommendations, and student characteristics.

Figure 3 shows the percentage of districts that included each criterion in their plans for identifying at-risk students at the K-8 and 9-12 grade levels.⁷ Statewide, the most common criterion included in definitions of at-risk for elementary and middle school students was academic achievement (typically in the form of test scores). Academic progress and engagement were also commonly considered, while recommendations and student characteristics were included by a much smaller number of districts. For high school students, academic progress (e.g. grade retention, course failing, risk for dropping out) was the most common factor included in at-risk definitions, followed by academic achievement and engagement. Fewer districts considered recommendations or student characteristics in identifying high school students as at-risk.

Figure 3: Components Used to Define At-Risk by Grade Level



Note: This figure displays the percentage of districts that included measures falling into the five identified categories of criteria – academic achievement, academic progress, engagement, recommendations, and student characteristics – used to define students as “at-risk”. The rates for each criterion are reported for grades K-8 and grades 9-12.

Figures 4 and 5 show how definitions of at-risk varied across the state by district characteristics. Figure 4 shows the definitions for grades K to 8. In general, nearly all district types relied heavily on academic achievement in identifying students as at-risk. Districts in Tier 3 counties were more likely than other districts to also consider academic progress, while small districts were less likely to consider academic progress. Small districts were also less likely to consider engagement or student characteristics but much more likely than large districts to rely on recommendations. Using recommendations to identify students as at-risk was also more common in rural districts and in districts with low percentages of students of color. Including student

⁷ Districts were asked to describe their definitions of at-risk separately for students in grades K-8 and students in grades 9-12 separately.

characteristics (e.g. being identified as an English Learner) in at-risk criteria was more common in Tier 3 districts, urban districts, and large districts. These differences may reflect greater individualization in who was identified for invitation to the summer extension programs in smaller districts.

Figure 4: Components Used to Define At-Risk by District Characteristics, Grades K-8

	Academic Achievement	Academic Progress	Engagement	Recommendations	Student Characteristics
All Districts	92%	58%	57%	33%	19%
County Distress Tier	Tier 1	89%	55%	25%	7%
	Tier 2	96%	57%	40%	23%
	Tier 3	92%	67%	33%	33%
Urbanicity	City	100%	53%	21%	32%
	Rural	91%	59%	35%	17%
Percent Students of Color	Low SOC	100%	58%	45%	16%
	High SOC	86%	59%	24%	14%
LEA Size	Small	94%	44%	42%	6%
	Large	89%	66%	26%	29%

Note: By district characteristics, this figure shows the percentage of districts using each category of criteria to identify grade K-8 students as at-risk.

Figure 5 shows the variation by district characteristics in definitions of at-risk for high school grades. Rural districts, Tier 1 districts, districts with high percentages of students of color, and small districts were less likely to use measures of academic progress to identify students as at-risk. However, rural districts were more likely to include academic achievement in definitions, while districts with high percentages of students of color were less likely to use this metric. Urban districts and large districts were less likely to use measures of student engagement than their counterparts. Overall, few districts used student characteristics to identify high schoolers as at-risk, but districts with few students of color and rural districts used recommendations more frequently than other districts.

Figure 5: Components Used to Define At-Risk by District Characteristics, Grades 9-12

	Academic Achievement	Academic Progress	Engagement	Recommendations	Student Characteristics
All Districts	63%	77%	41%	21%	10%
County Distress Tier	Tier 1	64%	45%	18%	7%
	Tier 2	64%	38%	23%	11%
	Tier 3	58%	88%	38%	21%
Urbanicity	City	53%	11%	16%	11%
	Rural	65%	47%	22%	9%
Percent Students of Color	Low SOC	74%	53%	29%	11%
	High SOC	57%	41%	19%	8%
LEA Size	Small	64%	44%	25%	0%
	Large	61%	79%	29%	24%

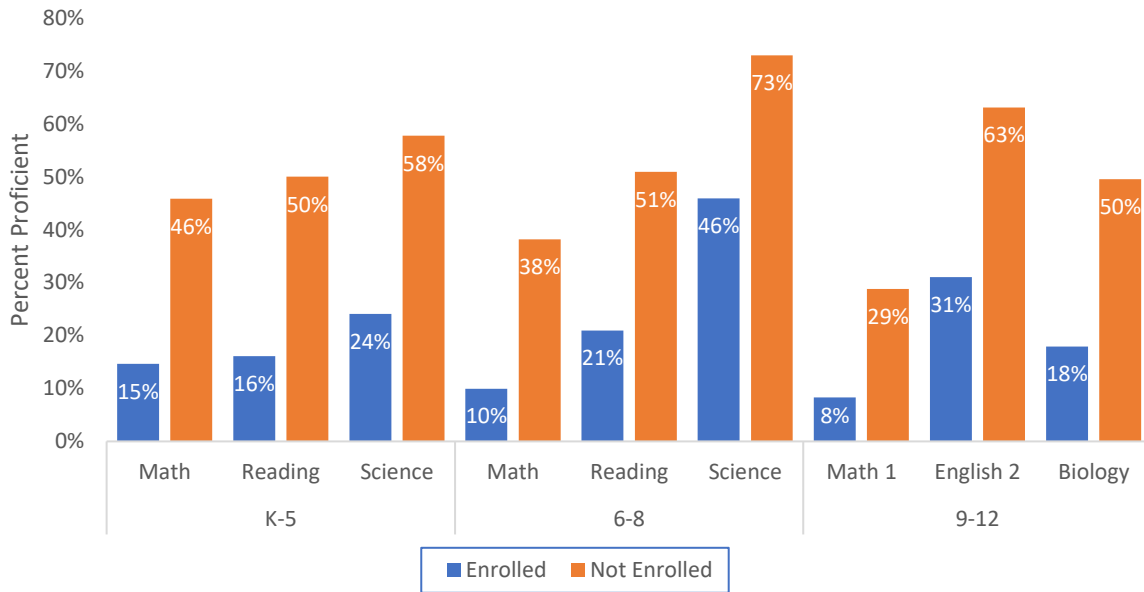
Note: By district characteristics, this figure shows the percentage of districts using each category of criteria to identify grade 9-12 students as at-risk.

Prior Performance of Participants

Figure 6 presents EOG and EOC test proficiency rates, from the 2020-21 school year, for students who enrolled in Summer 2021 programs and students who did not enroll. Across all grade levels and subject areas, we find that those enrolled in Summer 2021 programs were far less likely to be proficient on their EOG and EOC exams than peers that did not enroll in such programs. For example, middle grades students enrolled in Summer 2021 programs had proficiency rates of 10, 21, and 46 percent in math, reading, and science, respectively. By comparison, middle grades students not enrolled in Summer 2021 programs had proficiency rates of 38, 51, and 73 percent. Differences in proficiency rates were generally comparable in elementary and high school grades and highlight that Summer 2021 programs largely served students with lower prior test scores. This matches districts’ report that they took prior test scores into account in identifying at-risk students to recruit into the programs.

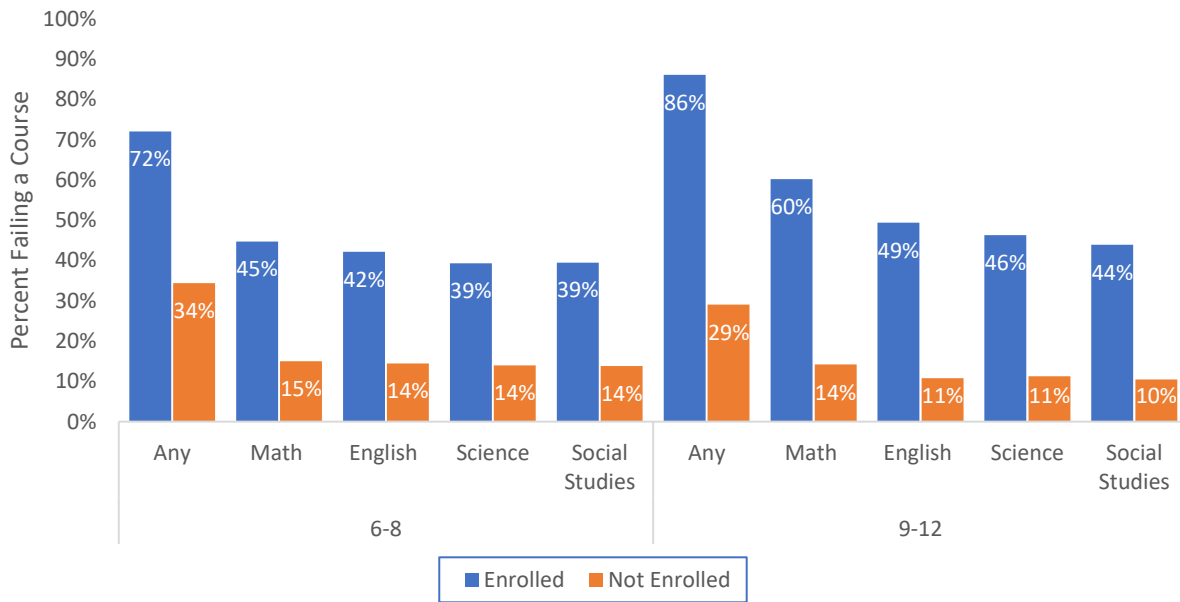
As an additional way of considering student academic performance, Figure 7 displays data on course failures in the 2020-21 school year for middle and high school students. These data show that students enrolled in Summer 2021 programming were much more likely to have failed at least one core course in the 2020-21 academic year. For example, in high school grade levels, students enrolled in Summer 2021 programs were approximately three times more likely than those not enrolled—86 versus 29 percent—to have failed at least one core course prior to program attendance. In high school grade levels, course failures among Summer 2021 enrollees were particularly high in math; in middle grade levels, course failures were distributed more evenly across subjects. Once again, these data highlight that, as intended, Summer 2021 programs largely served students who were struggling with academic content.

Figure 6: EOG and EOC Proficiency Rates by Summer 2021 Enrollee Status (2020-21 Tests)



Note: By enrolled status—i.e. enrolled or not enrolled in Summer 2021 programs—this figure displays EOG and EOC test proficiency rates from the 2020-21 school year. Student enrollment data is available for 111 districts for grades K-5, 108 districts for grades 6-8, and 80 districts for grades 9-10.

Figure 7: Course Failures by Summer 2021 Enrollee Status (2020-21 Course Grades Data)

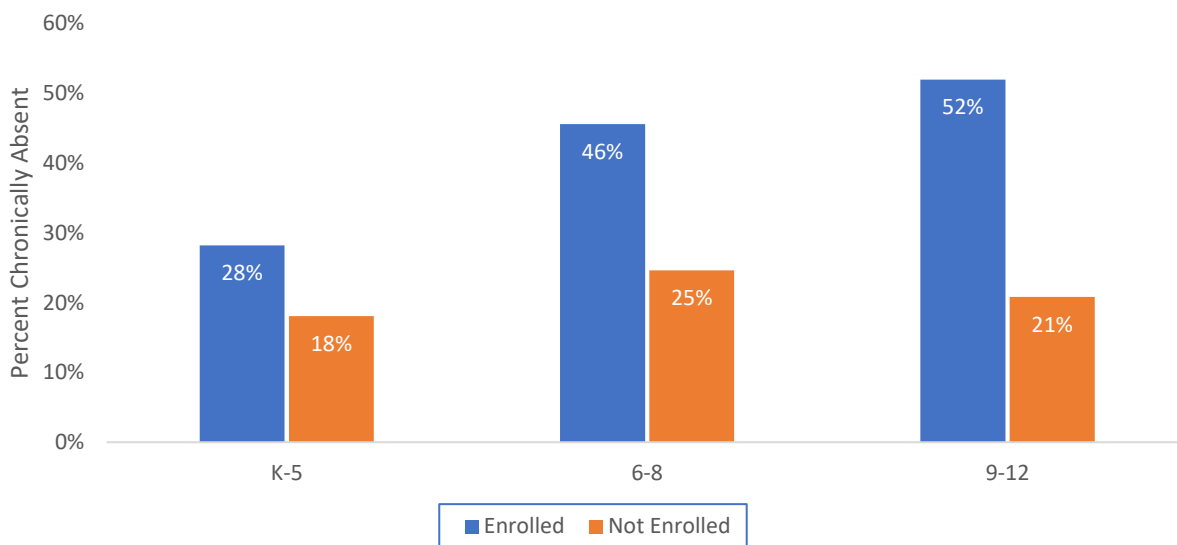


Note: By enrolled status—i.e. enrolled or not enrolled in Summer 2021 programs—this figure displays the percentage of students who failed any course and courses in each academic subject area, respectively, in the 2020-21 school year. Data are for students in middle (6-8) and high school (9-12) grades. Student enrollment data is available for 111 districts for grades K-5, 108 districts for grades 6-8, and 80 districts for grades 9-10.

Finally, Figure 8 presents data on the percentage of students who were chronically absent—i.e. missing 10 percent or more school days—in the 2020-21 year. As with the test proficiency and course failure rates, these data indicate that students enrolled in Summer 2021 programs differ

from their peers who were not enrolled. Summer 2021 enrollees were far more likely to be chronically absent in 2020-21—across elementary, middle, and high school grades.

Figure 8: Chronic Absence Rates by Summer 2021 Enrollee Status (2020-21 Attendance Data)



Note: By enrolled status—i.e. enrolled or not enrolled in Summer 2021 programs—this figure displays the percentage of chronically absent students in the 2020-21 school year. We define chronically absent as missing 10 percent or more school days. Student enrollment data is available for 111 districts for grades K-5, 108 districts for grades 6-8, and 80 districts for grades 9-10.

Taken together, these data show that a significant percentage (approximately 10 to 20 percent by school level) of North Carolina students enrolled in Summer 2021 programs and enrollment was strongly related to students' prior academic performance and engagement with school.

Attendance

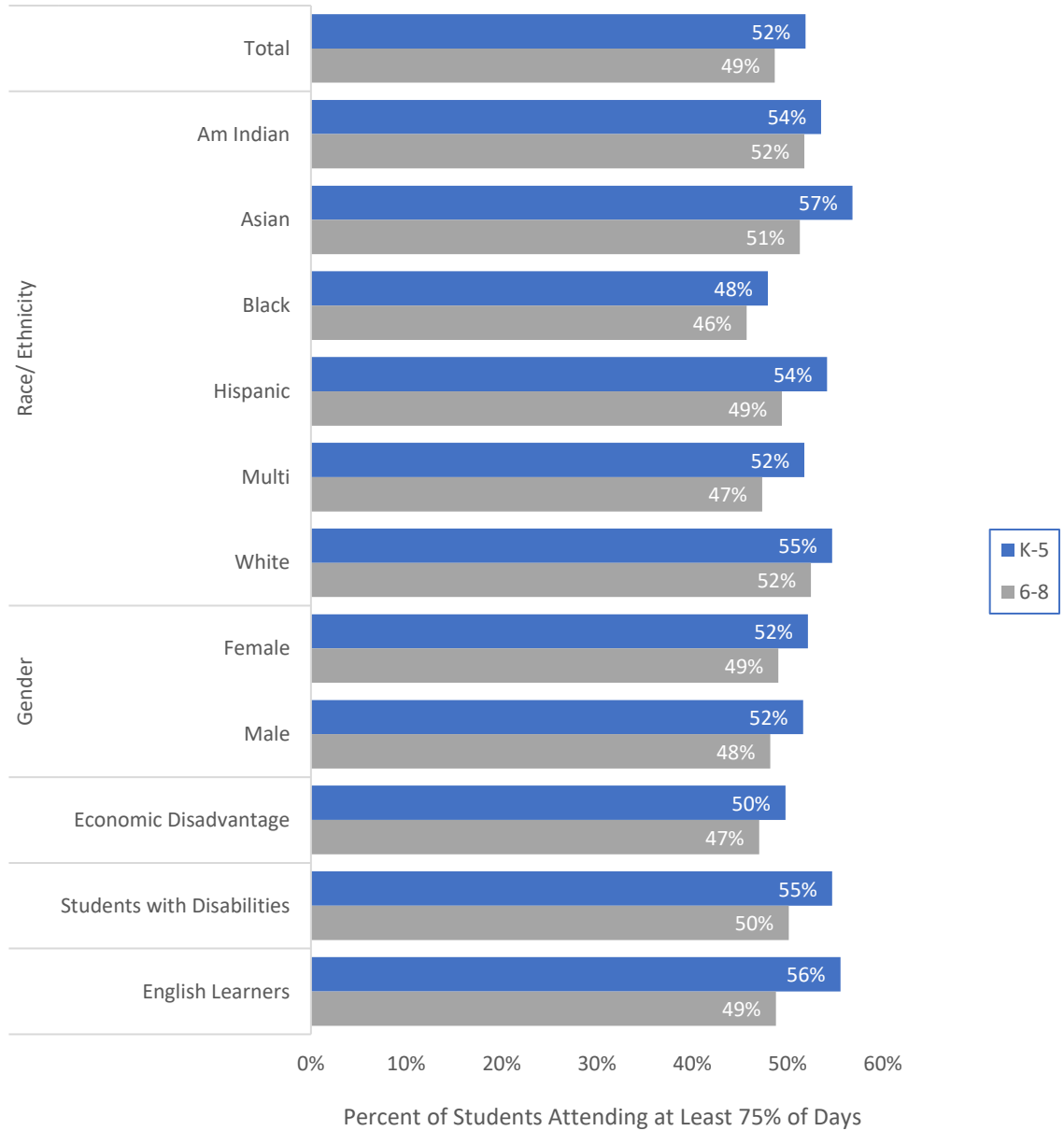
In this section we present data on student attendance at Summer 2021 learning recovery and acceleration programs. These attendance data were collected by each site/district and shared with the OLR at NCDPI. Attendance data are available for a large majority, but not all, of Summer 2021 sites/districts.⁸ Here, we report attendance data for K-5 and 6-8 students from all districts reporting such data.

For Summer 2021 enrollees, Figure 9 displays data, by grade band and student characteristics, on the percentage of students attending at least 75 percent of the Summer 2021 programming days. Overall, Figure 9 shows that 52 percent of elementary grades students and 49 percent of middle grades students attended at least three quarters of Summer 2021 programming days. These percentages indicate that full attendance was relatively low and highlight potential challenges in encouraging attendance at voluntary summer programming. When examining the data by student characteristics, we find that across most student groups attendance was highest in elementary grades and lowest in middle school grades. By race/ethnicity, Black students had lower attendance

⁸ Specifically, we received K-5 attendance from 81 districts and 6-8 attendance data from 80 districts. These districts represent three-quarters of the student population of the state. We only received 9-12 data from 13 districts. We do not report those results here.

rates, while attendance rates for American Indian students—a small group—were high across both levels. Attendance was similar by gender and relatively high among students with disabilities and English learners.

Figure 9: Percentage of Students Attending at Least 75% of Summer 2021 Days

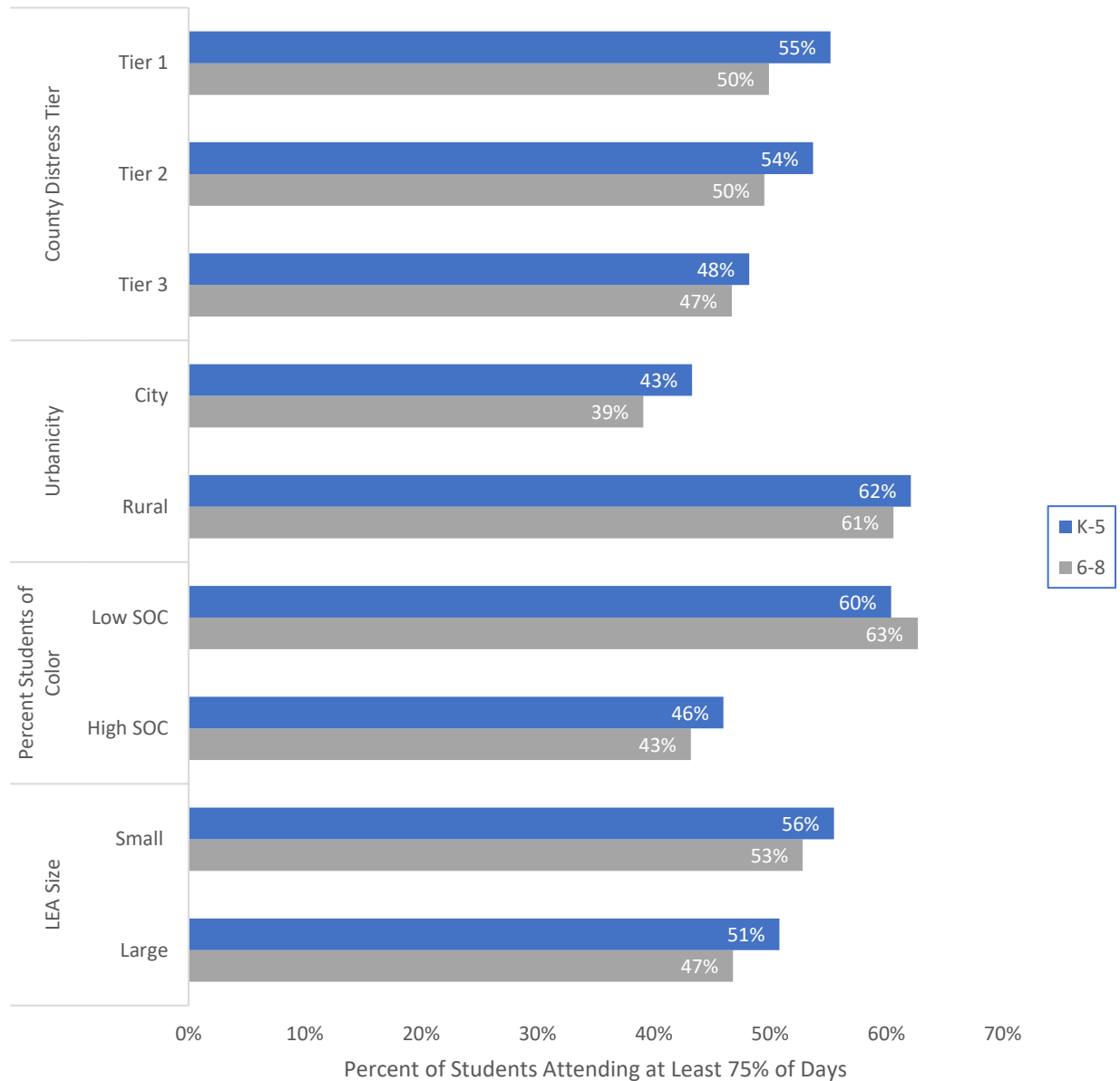


Note: This figure displays the percentage of students enrolled in Summer 2021 programming who attended at least 75 percent of the summer days. Data are presented by grade band (K-5, 6-8) and by student characteristics. Student attendance data is available for 81 districts for grades K-5 and 80 districts for grades 6-8.

To further assess variation in student attendance, Figure 10 presents data on the percentage of students attending at least 75 percent of the Summer 2021 days by district characteristics. These data show particularly stark differences in attendance between urban and rural districts and

between districts educating many versus few students of color. For example, approximately 60 percent of elementary and middle grades students in rural districts attended at least three quarters of Summer 2021 programming days. By comparison, the values are around 40 percent in urban school districts. Likewise, in districts educating fewer students of color, the percentage of students attending at least three quarters of Summer 2021 days is much higher. Differences by district enrollment and the economic distress of the county are generally smaller in magnitude.

Figure 10: Percentage of Students Attending at Least 75% of Summer 2021 Days, By District Characteristics



Note: This figure displays the percentage of students enrolled in Summer 2021 programming who attended at least 75 percent of the summer days. Data are presented by grade band (K-5, 6-8) and by district characteristics. Student attendance data is available for 81 districts for grades K-5 and 80 districts for grades 6-8.

This data does not identify specific reasons for low attendance at summer 2021 programming but may indicate that urban districts and districts serving populations of students of color face unique challenges in facilitating attendance at voluntary summer programs. Low attendance rates at summer programs may limit the ability of the programs to meaningfully impact students' learning and other outcomes.

Staffing

This section of the report discusses staffing challenges identified by LEAs in response to an end-of-program survey completed by district administrators during the summer of 2021. According to survey responses, the top four implementation challenges identified by districts were lack of preparation time, burnout, student recruitment, and teacher recruitment (see Figure 11). Districts also identified a mix of other issues (e.g. behavior needs, scheduling challenges, class sizes, and lack of transportation), and these other issues, though varied, represented anywhere from one-third to one-half of the challenges identified.

Across all districts, lack of preparation time and burnout were the most commonly identified issues, with 31 and 26 percent of districts, respectively, reporting these as implementation challenges. Teacher and student recruitment were selected frequently as well, with 21 and 17 percent of districts, respectively, highlighting these as challenges. Tier 3 counties (least disadvantaged), urban districts, and districts serving higher percentages of student of color were more likely to identify lack of preparation time as a challenge compared to Tier 1, rural, and low student of color districts. Urban, low student of color, and small districts were more likely to report burnout as a challenge compared to their counterpart districts. Urban and large districts had more challenges with teacher recruitment than rural and small districts. These differences by district characteristics as well as the high number of districts identifying relatively unique challenges suggest that there may not be a common solution that improves implementation of summer programming across all districts.

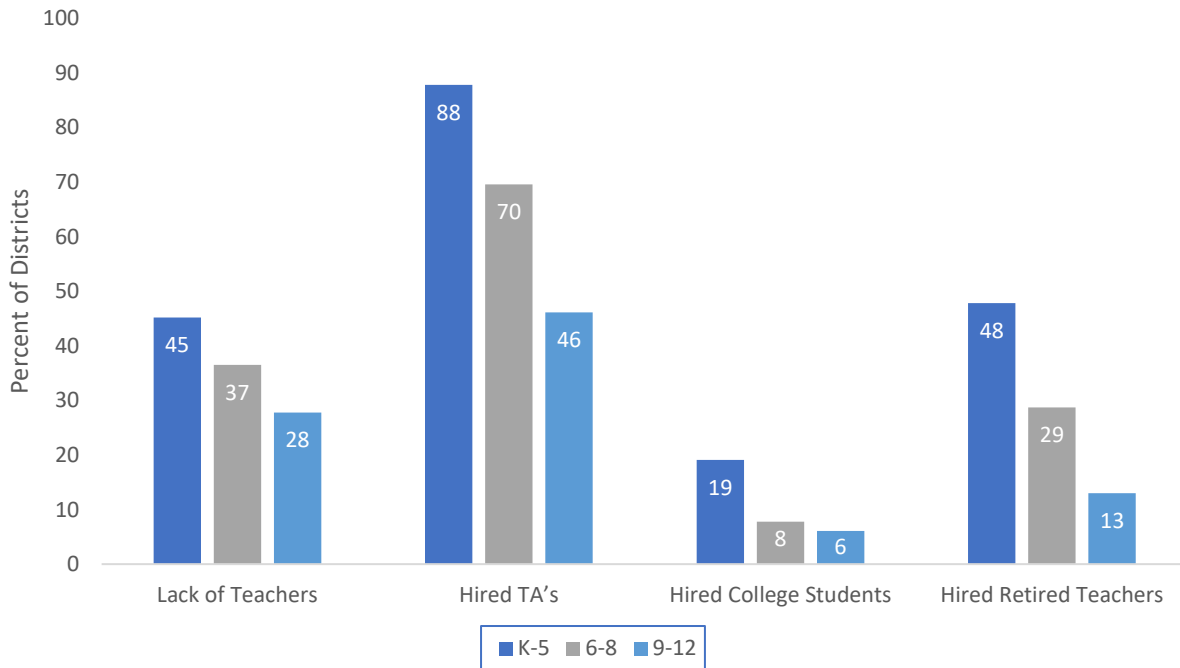
Figure 11: Challenges in Implementation of Summer 2021 Programs, by District Characteristics

		Lack of Prep Time	Burnout	Student Recruitment	Teacher Recruitment	Other
Average		31%	26%	17%	21%	42%
Distress Tier	1	25%	25%	18%	21%	36%
	2	32%	30%	19%	26%	38%
	3	42%	21%	8%	13%	54%
Urbanicity	City-Suburb	37%	37%	16%	32%	47%
	Town-Rural	30%	24%	17%	19%	40%
SOC Group	Lowest	26%	37%	11%	18%	53%
	Highest	41%	19%	16%	16%	42%
LEA Size	Smallest	28%	31%	22%	19%	37%
	Largest	26%	24%	18%	29%	50%

Note: By district characteristics, this figure displays the percentage of LEAs identifying specific challenges to Summer 2021 program implementation.

Staffing challenges varied a great deal across grade levels, with districts reporting more challenges staffing programs for younger students than for older students (see Figure 12). For example, 45% of districts reported lack of teachers as a challenge in K-5 programs compared to only 28% for high school programs. Nearly 9 in 10 districts hired teaching assistants for K-5 programs. The corresponding percentage for high school programs was 46%. In addition, hiring college students or retired teachers was about three times more common in K-5 programs compared to high school programs.

Figure 12: Staffing Challenges in Summer 2021 Programs, by Grade Level



Note: This figure displays the percentage of LEAs identifying lack of teachers as a challenge and reporting the hiring of TAs, college students and teachers by grade level.

Lack of teachers was identified as a challenge by 37% of districts. Tier 3 and large districts reported this as a challenge more frequently, with more than half of these districts reporting a lack of teachers. Hiring TAs was quite common (68% across all districts), followed by hiring retired teachers (30%); hiring college students was rarer (11%). Hiring TAs was more common in urban districts, large districts, and districts serving more students of color compared to their counterparts. Hiring retired teachers was more common in Tier 1 counties, districts serving high percentages of students of color, and large districts compared to their counterparts.

Figure 13: Staffing Challenges in Summer 2021 Programs, by District Type

		Lack of Teachers	Hired TA's	Hired College Students	Hired Retired Teachers
All Districts		37%	68%	11%	30%
Distress Tier	Tier 1	37%	70%	11%	34%
	Tier 3	51%	69%	8%	31%
Urbanicity	City-Suburb	37%	75%	5%	28%
	Town-Rural	36%	66%	12%	30%
SOC Group	Lowest	33%	54%	15%	19%
	Highest	34%	75%	9%	32%
LEA Size	Smallest	25%	53%	7%	20%
	Largest	55%	82%	11%	43%

Note: This figure shows the percentage of districts reporting lack of teachers as a challenge and reporting hiring TAs, college students, and retired teachers.

These results suggest that hiring teachers for summer programs is more challenging in lower grades, which had higher enrollments in the summer programs, and in more populous districts, which may have more positions to staff. However, many districts were able to hire TAs and retired teachers to fill gaps in teaching positions.

What Did Students Do?

This section focuses on the activities, academic and non-academic, that students participated in as part of the summer 2021 programs that varied by district. One intended focus of the summer 2021 programs as specified by state policymakers was the promote learning acceleration. Overall, about half (47%) of districts reported offering learning acceleration as part of their academic programming,⁹ although this varied across district type (see Figure 14). Learning acceleration can be distinguished from remediation by practices that preview content from the next grade level rather than addressing weaknesses in understanding from past grade levels. This is important because research shows that students who experience only remediation can remain behind grade level despite extensive academic intervention. Tier 3, urban, large, and high student of color districts were more likely to report learning acceleration than Tier 1, rural, small, and low student of color districts.

⁹ Districts were not asked to distinguish whether learning acceleration was available at all grade levels.

Figure 14: Does District Offer Learning Acceleration, by District Type



Note: This figure shows the percentage of districts by district characteristics reporting providing learning acceleration as part of their academic programming.

In addition to academic instruction, programs were required to offer enrichment activities to students. This is an area of programming where districts had more discretion in the types of activities provided. This section summarizes some of the data from the end-of-program survey on this topic. Certain types of enrichment activities were commonly offered to K-5 students (see Figure 15). In descending order, the five most common enrichment activities for K-5 students were arts, STEM, physical wellness and sports, CTE and career, and environment and nature. In addition, 59% of districts offered at least one enrichment activity outside of these five main categories (e.g. foreign language and media). Districts of all characteristics offered STEM enrichment at about the same rates, although small districts were about 10 percentage points less likely to do so compared to the largest districts. Large majorities of all districts reported arts enrichment, with urban and high student of color districts more likely to do so. Urban and large districts were also more likely to offer physical wellness and sports compared to their counterparts.

Figure 15: Enrichment Offered in Grade K-5 Summer 2021 Programs, by District Type

		STEM	Arts	Physical Wellness & Sports	CTE & Career	Environment & Nature	Other
All Districts		70%	84%	30%	26%	13%	59%
Distress Tier	Tier 1	71%	82%	23%	32%	14%	61%
	Tier 3	67%	83%	33%	17%	21%	54%
Urbanicity	City-Suburb	68%	100%	58%	26%	11%	68%
	Town-Rural	70%	80%	24%	26%	14%	56%
SOC Group	Lowest	68%	76%	26%	26%	16%	55%
	Highest	73%	89%	27%	35%	11%	61%
LEA Size	Smallest	61%	81%	36%	28%	17%	74%
	Largest	71%	84%	40%	29%	11%	47%

Note: By district characteristics, this figure shows the percentage of districts reporting providing particular types of enrichment activities for students in grades K-5.

Relative to K-5 programs, particular enrichment activities less were commonly offered to 6-8 students (Figure 16). In descending order, the five most common enrichment activities in middle grades were arts, STEM, CTE and career, physical wellness and sports, and environment and nature. Other enrichment activities outside of these common categories made up 44% of all enrichment activities. A majority of districts, regardless of characteristics, offered STEM enrichment, but Tier 1, urban, low student of color, and small districts were more likely to offer STEM enrichment compared to their counterparts. Urban, high student of color, and large districts were more likely to offer arts enrichment than other districts.

Figure 16: Enrichment Offered in Grade 6-8 Summer 2021 Programs, by District Type

		STEM	Arts	Physical Wellness & Sports	CTE & Career	Environment & Nature	Other
All Districts		58%	65%	24%	44%	15%	44%
Distress Tier	Tier 1	66%	68%	25%	39%	11%	43%
	Tier 3	58%	71%	29%	29%	13%	33%
Urbanicity	City-Suburb	63%	79%	32%	63%	21%	53%
	Town-Rural	57%	63%	22%	41%	14%	41%
SOC Group	Lowest	63%	53%	18%	42%	18%	37%
	Highest	54%	73%	27%	51%	5%	37%
LEA Size	Smallest	64%	58%	28%	50%	19%	61%
	Largest	53%	76%	24%	42%	16%	37%

Note: By district characteristics, this figure shows the percentage of districts reporting providing particular types of enrichment activities for students in grades 6-8.

Summer programs for high school students were relatively distinct from those for younger students. Districts were required to provide instruction in the four EOC courses – Math 1, Math 3, English 2, and Biology. Districts also offered credit recovery for students who failed courses

during the prior school year. Many districts also offered some form of enrichment opportunities to students in grades 9-12, although enrichment activities were less common than in younger grades (see Figure 17). Overall, the most common types of enrichment offered were CTE and Career and Environment and Nature, which were both offered by more than a quarter of districts. STEM, Arts, and Outdoor Recreation enrichment were the other types of enrichment that were relatively common in high school grades. Only 12 percent of districts offered any enrichment outside of these five most common categories. Across districts, the types of enrichment were relatively similar with one of the biggest distinctions being that Tier 1 and small districts were least likely to offer STEM enrichment.

Figure 17: Enrichment Offered in Grade 9-12 Summer 2021 Programs, by District Type

		STEM	Arts	Outdoor Rec	CTE & Career	Environment & Nature	Other
All Districts		15%	13%	16%	35%	25%	12%
Distress Tier	Tier 1	7%	14%	14%	39%	23%	11%
	Tier 3	25%	8%	13%	38%	21%	4%
Urbanicity	City-Suburb	21%	16%	16%	32%	26%	5%
	Town-Rural	14%	13%	16%	35%	25%	12%
SOC Group	Lowest	8%	11%	24%	34%	29%	13%
	Highest	16%	16%	16%	41%	24%	8%
LEA Size	Smallest	3%	11%	22%	33%	28%	18%
	Largest	21%	11%	8%	32%	26%	5%

Note: By district characteristics, this figure shows the percentage of districts reporting providing particular types of enrichment activities for students in grades 9-12.

This section shows that although summer 2021 programs all followed a set of basic programming requirements laid out by legislation, there was significant variation across districts in the range of programming. These differences may reflect different needs, interests, and resources across the state.

What were the Short-Term Impacts of Summer Program Participation?

In this section, we explore the potential benefits of participating in the summer program on students. The goals of the summer 2021 program were to address learning losses and negative impacts students experienced due to COVID-19. The full effect of attending the summer program will be measured over time as we track re-engagement with school and learning recovery.

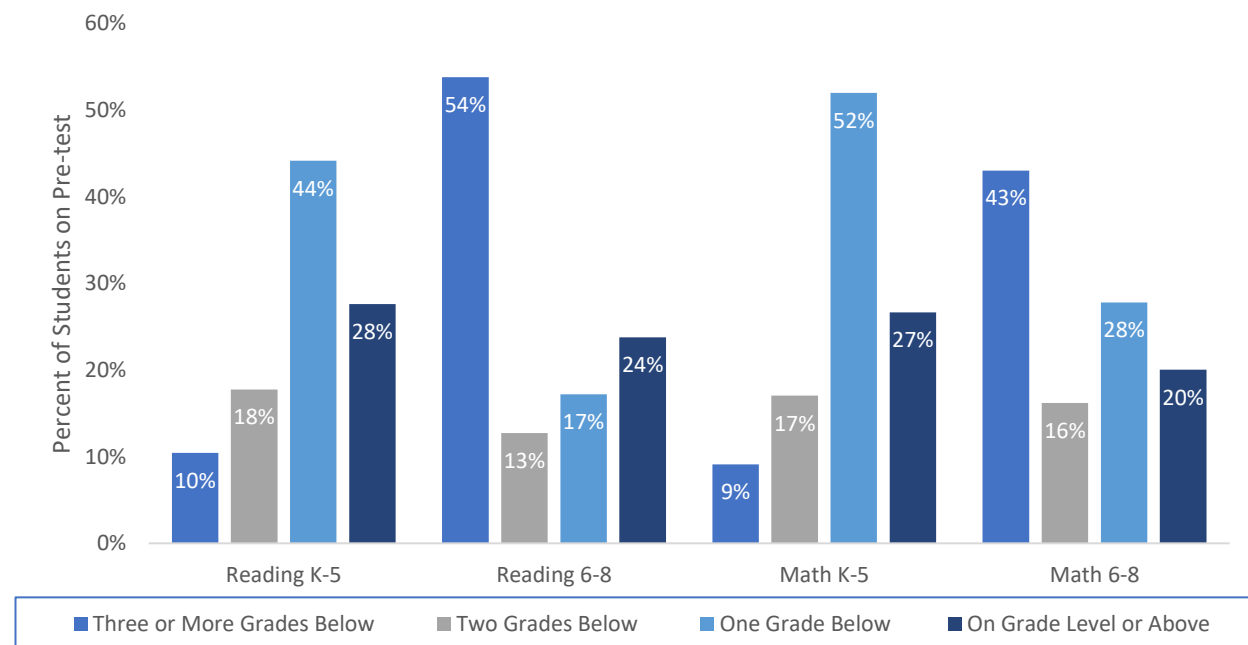
In the short-term, we can measure a more limited set of outcomes. Specifically, we examine gains on competency-based assessments taken at the beginning and end of the summer program and rates of repeating failed courses in 2021-22 among students who enrolled in the summer program.

Competency Based Assessment Gains

As part of the summer extension programs, districts were required to report competency-based assessment scores in reading and math for students in grades K-8 at the beginning and end of the summer program. The primary test used by districts was the i-Ready test, which was given to 38% of K-5 and 43% of 6-8 students participating in the summer program. Students took this assessment either at the end of the 2020-21 school year or at the beginning of the summer program and again either at the end of the summer program or at the beginning of the 2021-22 school year. Other districts used other testing platforms that are not comparable to i-Ready scores and not included in this analysis (see appendix for list of districts included).

Figure 18 shows the distribution of i-Ready scores for summer extension program participants prior to the start of the program. Among elementary school students, only about a quarter of students were at or above grade level in math and reading. The most common level of performance was one grade level below their current grade level. For middle school students, the most common level of performance was *three or more* grade levels below their current grade level, with only 24 and 20 percent of students scoring on or above grade level in reading and math, respectively. Like the 2020-21 end-of-grade test score measures shown in Figure 3, the i-Ready scores indicate that students enrolling in the program had a strong need for academic support.

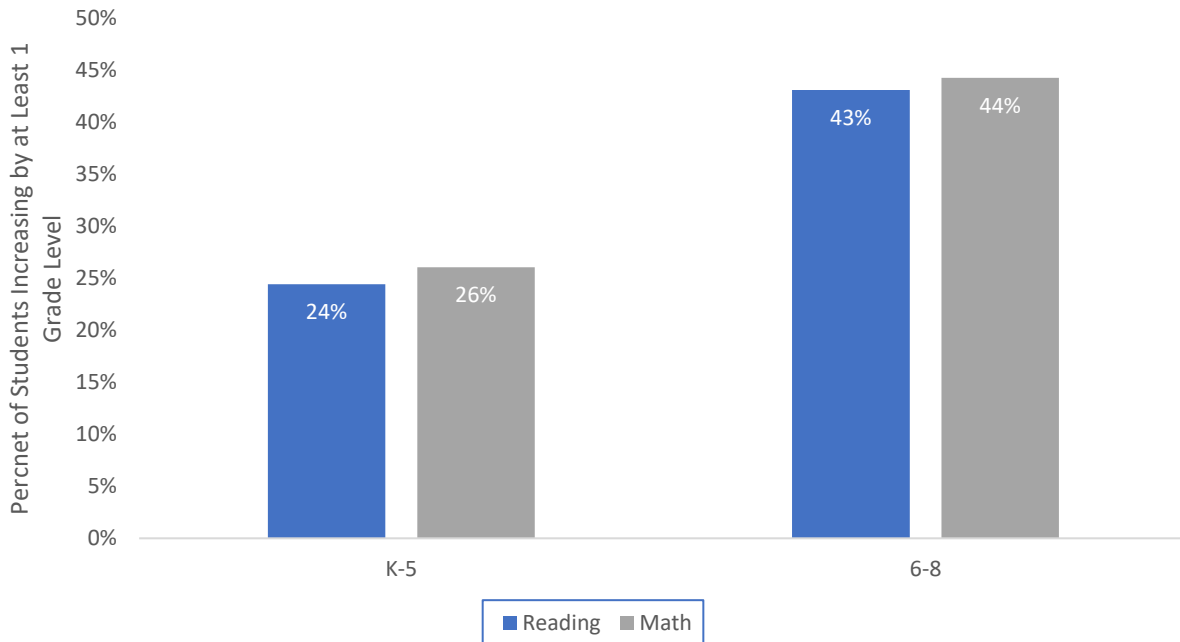
Figure 18: Beginning of Summer Placement based on i-Ready Scores



Note: This figure shows the distribution of starting i-Ready scores in reading and math for students in grades K-5 and grades 6-8 who attended summer 2021 programs. Data from i-Ready assessments is available for 54 districts for grade K-5 and 63 districts for grades 6-8.

Figure 19 shows the percent of students enrolling in the summer program who increased their i-Ready scores in reading and math by at least one grade level by the end of or after the summer 2021 program. Among elementary schoolers who enrolled in the program, about a quarter increased their scores by at least one grade level in math and reading. However, among middle schoolers, who were further behind (as measured by i-Ready), nearly half (43 and 44 percent in reading and math, respectively) increased by at least one grade level during the summer.

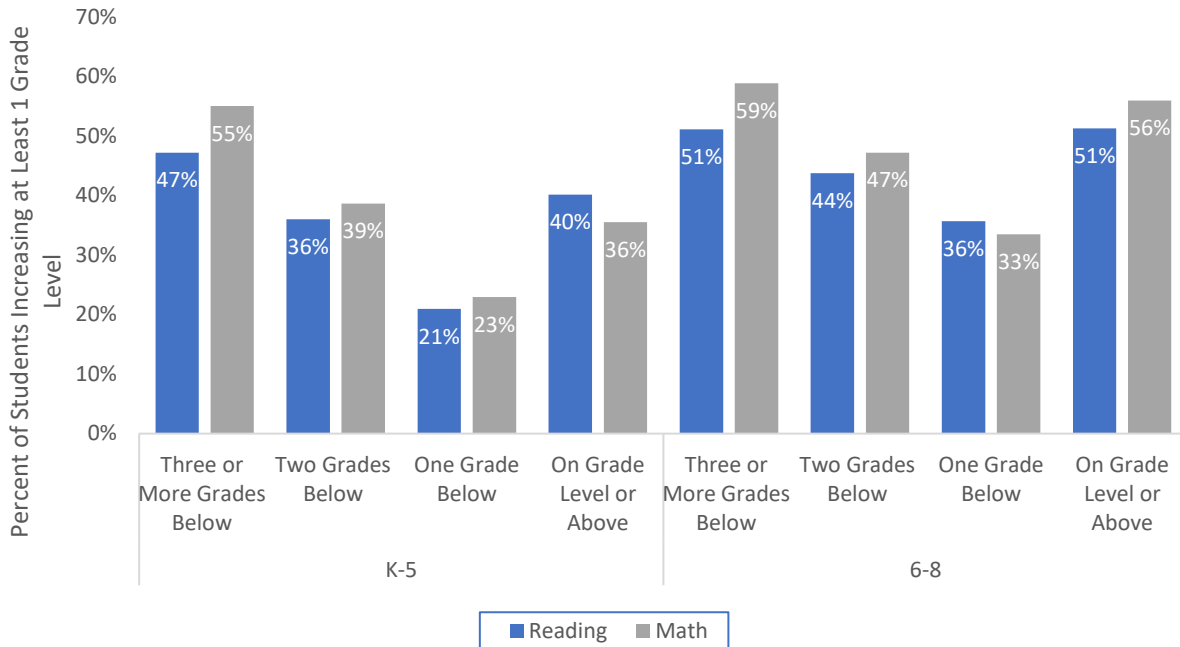
Figure 19: Percentage of Students Increasing by at Least One Grade Level on i-Ready During the Summer



Note: This figure shows the percentage of summer 2021 program attendees in grades K-5 and grades 6-8 who gained at least one grade level on their i-Ready scores between the beginning and end of the summer. Data from i-Ready assessments is available for 54 districts for grade K-5 and 63 districts for grades 6-8.

Figure 20 shows how gains in i-Ready scores were distributed by starting performance level. Among both elementary and middle school students participating in summer programs, about half (or slightly more in math) of students who were three or more grade levels behind increased their scores by at least one grade level. Students who were behind by two or more grade levels also saw large percentages improve by at least one grade level. The percentages of students making this level of improvement who were just one grade level behind was lower than other groups of students. Generally, students who were on grade level at the beginning of the program had larger increases than students who were two grades or one grade below grade level. This may reflect that students who were on grade level were more likely to be prepared to be on-track at the beginning of the following school year.

Figure 20: Percentage of Students Increasing by at Least One Grade Level on i-Ready During the Summer, by Starting Level



Note: This figure shows the percentage of summer program participants in grades K-5 and grades 6-8 who gained at least one grade level on their i-Ready scores between the beginning and end of the summer. Students are divided into groups by their starting i-Ready level compared to their current grade level and percentages increasing at least one grade level are reported for each group. Data from i-Ready assessments is available for 54 districts for grade K-5 and 63 districts for grades 6-8.

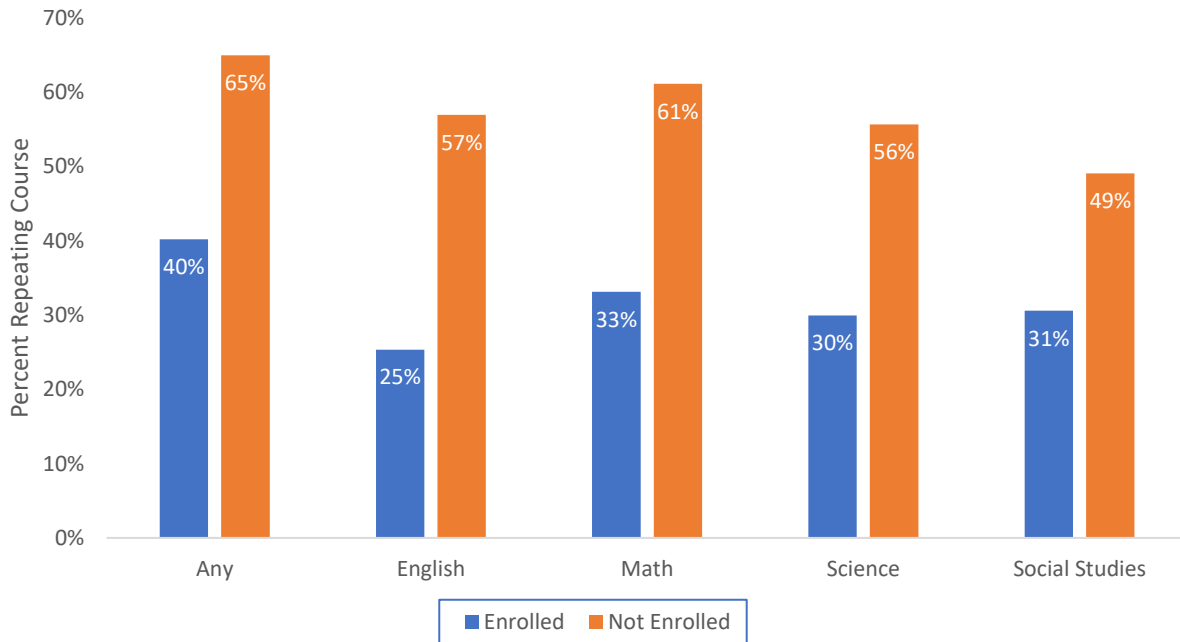
Reductions in Repeating Classes

High school students enrolled in summer 2021 programs did not take competency-based assessments. Instead, many high school students participated in credit recovery. This section looks at the impact of participation in the summer program on the likelihood that high school students had to repeat a core course required for graduation, conditional on having failed that course during the previous school year.

As shown earlier in this report (see Figure 7), students enrolling in the summer program were more likely than their peers to have failed at least one course during the previous school year. Figure 21 shows the percentage of students who failed a course, overall and by subject area, who repeated the same course in the 2021-22 school year. Students in Figure 21 are categorized into groups based on whether they enrolled in the summer program. Among those who failed at least one course in any subject area in 2020-21, 40 percent of students enrolled in a summer 2021 program repeated at least one course in 2021-22. By comparison, 65 percent of students who failed any course in 2020-21 and did not enroll in a summer program repeated a course in 2021-22. This is a notable reduction in course repetition, though it is smaller than the reduction in repeating courses within each subject area. This is likely because students may have failed courses in multiple subject areas and recovered some but not all of those credits.

By individual subject area, students who enrolled in the summer program were between 18 and 32 percentage points less likely than peers who also had failed to repeat that class in the following school year. Reductions in course repeating were largest in English (32 percentage points), math (28 percentage points), and science (26 percentage points).

Figure 21: Percentage of Students Repeating Courses by Summer Program Enrollment and Subject Area

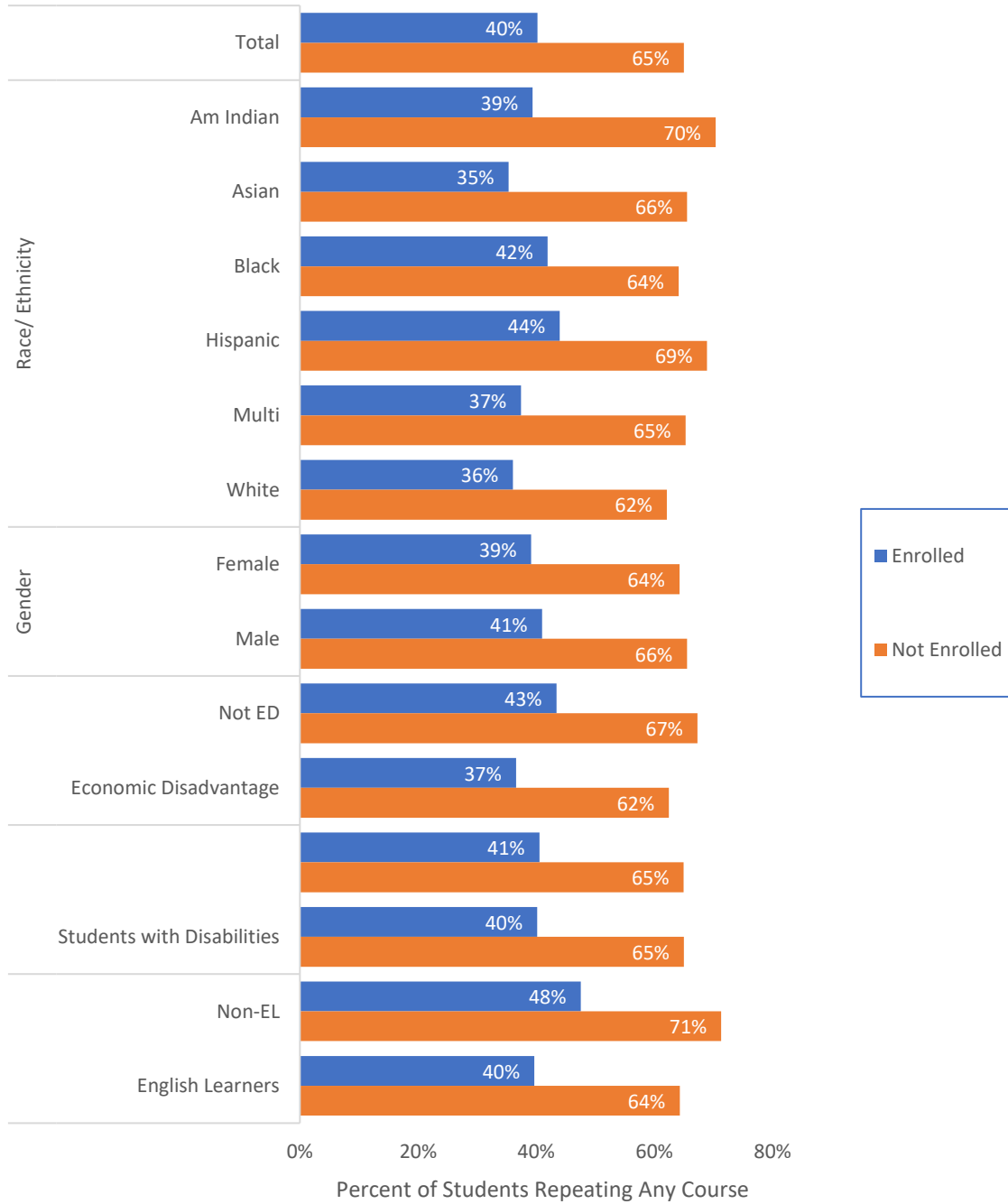


Note: This figure displays the percentage of students who repeated a particular course in the 2021-22 school year (contingent on having failed that course in the 2020-21 school year) by summer program enrollment status. Course failure and repeating data is available for 80 districts for students in grades 9-12.

Figure 22 shows the probability that a student who failed at least one core course repeats any failed course by student characteristics and summer program enrollment status. Most student subgroups saw similar benefits (decreases of approximately 25 percentage points in the likelihood of repeating any class), but Black students decreased less in their likelihood of repeating courses (a 22-percentage point decrease).

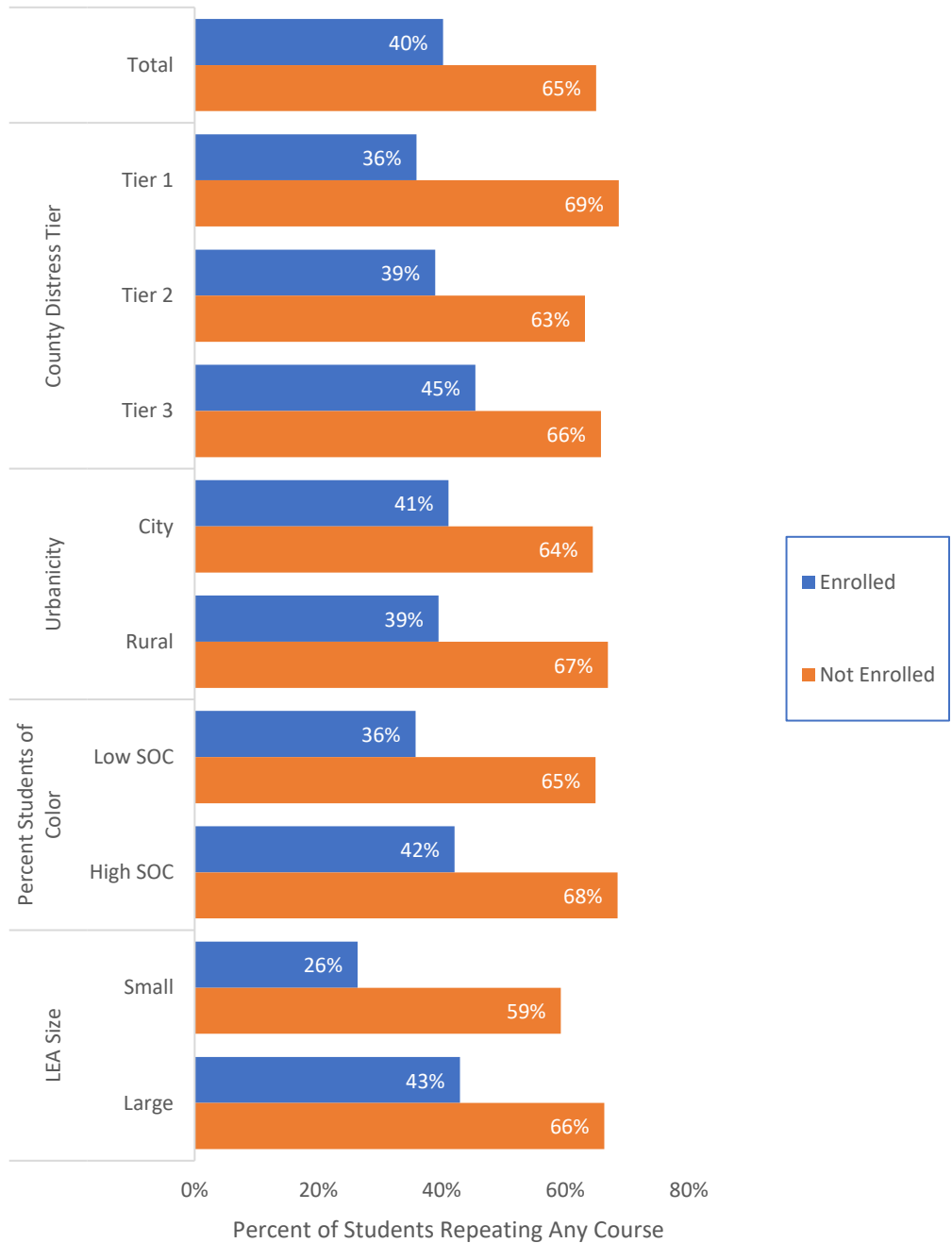
Figure 23 shows similar data on repeating courses by district characteristics for program enrollees and non-enrollees. Tier 1 districts, rural districts, small districts, and districts serving few students of color saw larger decreases in the likelihood of repeating a course for summer program enrollees compared to non-enrollees. The decreases in these districts ranged between 28 and 33 percentage points compared to decreases between 21 and 26 percentage points for Tier 3, urban, and small districts.

Figure 22: Percentage of Students Repeating Courses by Summer Program Enrollment and Student Characteristics



Note: This figure shows the percentage of students within each subgroup who repeated any core course failed in the previous school year by summer enrollment status. Course failure and repeating data is available for 80 districts for students in grades 9-12.

Figure 23: Percentage of Students Repeating Courses by Summer Program Enrollment and District Characteristics



Note: This figure shows the percentage of students within each district subgroup who repeated any core course failed in the previous school year by summer enrollment status. Course failure and repeating data is available for 80 districts for students in grades 9-12.

Overall, data in this section of the report shows signs of learning progress among students who attended summer 2021 programs. The extent of this progress and how it compares to the progress of students who did not attend these programs will be a topic for further exploration with longer term data on outcomes for summer 2021 program participants.

Conclusions

This report suggests that the summer 2021 learning recovery and acceleration programs succeeded in targeting at-risk students. Students with low prior test scores, more course failures, and higher numbers of absences were more likely to enroll in these summer programs. The programs served a student population that was disproportionately low-income, students of color, English Language Learners, and students with disabilities. Although many more were invited to participate, only 20 percent of K-5, 14 percent of 6-8, and 9 percent of 9-12 students enrolled in the program. In addition, only about one-half of students who enrolled attended at least 75% of summer school days.

Districts varied in the types of challenges they experienced in implementing and staffing the summer programs. The most common challenges districts reported included lack of prep time, burn out, and difficulty recruiting staff. Staffing shortages were most common in large and urban districts and in grades K-5. Many districts utilized teaching assistants or retired teachers to fill staffing needs in their summer programs.

Districts also pursued different approaches to their programming. About half of districts offered learning acceleration, which research shows is more effective than remediation for spurring learning growth. Enrichment opportunities varied across districts and across grade levels. For K-5 students, the most common enrichment opportunities were Arts and STEM enrichment. Arts and STEM enrichment opportunities were also common for students in grades 6-8, with CTE and Career enrichment also prominent among this age group. Fewer districts offered enrichment for high school students but among those that did, CTE and Career as well as Environment and Nature were common enrichment foci.

The full impacts of the summer programming will be measured by student engagement and academic performance in the subsequent school year (2021-22), but in this report, we were able to report associations with a more limited set of short-term outcomes. These short-term outcomes show promising gains for summer program participants. One-quarter of K-5 students increased their test scores by at least one grade level, and among middle school students, 45 percent increased scores by at least one grade level. Students that were the furthest behind on their pre-program scores were the most likely to gain at least a grade level by the end of the summer, but students at grade level also showed academic growth. Among high school students who had failed a core course in the 2020-21 academic year, summer school programs appeared to reduce the chances of repeating the same course in the 2021-22 academic year. These reductions were substantial—between 18 and 32 percentage points less likely to repeat by subject area.

This descriptive report has some important limitations to consider in drawing conclusions. Underreporting of some data elements by districts, particularly program attendance, limit the number of districts that can be included in key analyses (see the appendix for details of districts included). In addition, there are no data available for a comparison group in the i-Ready analyses, which limits the ability to draw conclusions about how gains for summer program enrollees compare to non-enrollees. In future work, we will look at a range of outcomes available for all students statewide and compare summer program enrollees to similar students who did not attend summer programming.

Appendix

Appendix Table A1 shows the number of districts and the particular districts included in the data set for program enrollment, attendance, and i-Ready scores by grade level. Districts were excluded if they were missing data for greater than 20 percent of reported enrollment.

	Program Characteristics			Student Characteristics			Attendance		i-Ready	
	K-5	6-8	9-12	K-5	6-8	9-12	K-5	6-8	K-5	6-8
Total Number of Districts	115	115	115	111	108	80	81	80	54	63
Alamance-Burlington Schools	X	X	X	X	X		X			
Alexander County Schools	X	X	X	X	X	X	X	X	X	X
Alleghany County Schools	X	X	X	X	X	X			X	X
Anson County Schools	X	X	X	X	X	X	X	X	X	X
Ashe County Schools	X	X	X	X	X	X			X	X
Avery County Schools	X	X	X	X	X	X	X	X	X	X
Beaufort County Schools	X	X	X	X	X	X	X	X	X	X
Bertie County Schools	X	X	X	X	X	X	X	X	X	
Bladen County Schools	X	X	X	X	X	X	X	X	X	X
Brunswick County Schools	X	X	X	X	X	X	X	X	X	X
Buncombe County Schools	X	X	X	X	X				X	X
Asheville City Schools	X	X	X	X	X	X	X	X		
Burke County Schools	X	X	X	X						
Cabarrus County Schools	X	X	X	X	X	X	X	X		
Kannapolis City Schools	X	X	X	X	X		X	X		X
Caldwell County Schools	X	X	X	X	X	X	X	X		
Camden County Schools	X	X	X	X	X	X	X	X		X
Carteret County Public Schools	X	X	X	X	X	X				
Caswell County Schools	X	X	X	X	X	X	X	X		
Catawba County Schools	X	X	X	X	X	X	X	X	X	X
Hickory City Schools	X	X	X	X	X	X	X	X		
Newton Conover City Schools	X	X	X	X	X		X	X	X	X
Chatham County Schools	X	X	X	X	X					
Cherokee County Schools	X	X	X	X	X	X	X	X	X	X
Edenton-Chowan Schools	X	X	X	X	X		X	X	X	X
Clay County Schools	X	X	X	X	X	X	X	X	X	X
Cleveland County Schools	X	X	X	X	X	X	X	X		X
Columbus County Schools	X	X	X	X	X				X	X
Whiteville City Schools	X	X	X	X	X	X	X	X	X	X
Craven County Schools	X	X	X	X	X		X	X		
Cumberland County Schools	X	X	X	X	X	X	X	X		
Currituck County Schools	X	X	X	X	X	X			X	X
Dare County Schools	X	X	X							
Davidson County Schools	X	X	X	X	X	X	X	X	X	X
Lexington City Schools	X	X	X	X			X		X	
Thomasville City Schools	X	X	X	X	X		X	X		X
Davie County Schools	X	X	X	X	X	X	X	X	X	X

	Program Characteristics			Student Characteristics			Attendance		i-Ready	
	K-5	6-8	9-12	K-5	6-8	9-12	K-5	6-8	K-5	6-8
Duplin County Schools	X	X	X	X	X	X	X	X		
Durham Public Schools	X	X	X	X	X	X	X	X	X	X
Edgecombe County Public Schools	X	X	X	X	X		X	X	X	X
Winston Salem / Forsyth County Schools	X	X	X	X	X		X	X	X	
Franklin County Schools	X	X	X	X	X	X	X	X	X	X
Gaston County Schools	X	X	X	X	X	X	X	X	X	X
Gates County Schools	X	X	X	X	X	X			X	X
Graham County Schools	X	X	X	X	X	X	X	X		
Granville County Schools	X	X	X	X	X	X	X	X	X	X
Greene County Schools	X	X	X	X	X		X			
Guilford County Schools	X	X	X	X	X	X	X	X		
Halifax County Schools	X	X	X		X					
Roanoke Rapids City Schools	X	X	X	X	X				X	X
Weldon City Schools	X	X	X	X	X	X	X	X		
Harnett County Schools	X	X	X	X	X	X				X
Haywood County Schools	X	X	X	X	X	X	X	X		X
Henderson County Schools	X	X	X	X	X	X	X	X		
Hertford County Schools	X	X	X	X	X	X	X	X		
Hoke County Schools	X	X	X	X	X	X	X	X	X	X
Hyde County Schools	X	X	X	X	X	X	X	X		X
Iredell-Statesville Schools	X	X	X	X	X	X	X	X	X	
Mooresville Graded School District	X	X	X	X	X	X	X	X		X
Jackson County Public Schools	X	X	X	X	X	X			X	X
Johnston County Public Schools	X	X	X	X	X					
Jones County Schools	X	X	X	X	X	X	X	X	X	X
Lee County Schools	X	X	X	X	X	X	X	X	X	X
Lenoir County Public Schools	X	X	X	X	X	X	X	X		
Lincoln County Schools	X	X	X	X	X		X	X		X
Macon County Schools	X	X	X	X			X			
Madison County Schools	X	X	X	X	X	X	X	X		
Martin County Schools	X	X	X							
McDowell County Schools	X	X	X	X	X	X	X	X		
Charlotte-Mecklenburg Schools	X	X	X	X	X	X	X	X		
Mitchell County Schools	X	X	X	X	X				X	X
Montgomery County Schools	X	X	X	X	X	X			X	X
Moore County Schools	X	X	X	X	X	X	X	X	X	X
Nash County Public Schools	X	X	X	X	X		X	X		
New Hanover County Schools	X	X	X	X	X					
Northampton County Schools	X	X	X	X	X	X	X	X		
Onslow County Schools	X	X	X	X	X	X			X	X
Orange County Schools	X	X	X	X	X					
Chapel Hill-Carrboro City Schools	X	X	X	X	X	X	X		X	
Pamlico County Schools	X	X	X	X	X	X	X	X		
Elizabeth City-Pasquotank Public Schools	X	X	X	X					X	
Pender County Schools	X	X	X	X	X		X	X		X
Perquimans County Schools	X	X	X	X	X	X		X	X	X

	Program Characteristics			Student Characteristics			Attendance		i-Ready	
	K-5	6-8	9-12	K-5	6-8	9-12	K-5	6-8	K-5	6-8
Person County Schools	X	X	X	X	X	X			X	X
Pitt County Schools	X	X	X	X	X	X			X	X
Polk County Schools	X	X	X	X	X	X	X	X	X	X
Randolph County School System	X	X	X	X	X	X	X	X	X	X
Asheboro City Schools	X	X	X	X	X	X	X	X		
Richmond County Schools	X	X	X							
Public Schools of Robeson County	X	X	X	X	X				X	X
Rockingham County Schools	X	X	X	X	X	X	X	X		X
Rowan-Salisbury Schools	X	X	X	X	X				X	X
Rutherford County Schools	X	X	X	X	X	X	X	X		
Sampson County Schools	X	X	X	X	X	X	X	X		X
Clinton City Schools	X	X	X	X	X				X	X
Scotland County Schools	X	X	X	X	X	X				X
Stanly County Schools	X	X	X	X	X	X		X	X	X
Stokes County Schools	X	X	X	X	X		X	X		
Surry County Schools	X	X	X	X	X	X		X	X	X
Elkin City Schools	X	X	X	X	X	X		X		
Mount Airy City Schools	X	X	X	X	X	X	X	X		X
Swain County Schools	X	X	X	X	X	X	X	X		
Transylvania County Schools	X	X	X	X	X			X		
Tyrrell County Schools	X	X	X	X	X	X	X	X	X	X
Union County Public Schools	X	X	X	X	X	X	X		X	
Vance County Schools	X	X	X	X	X		X	X		X
Wake County Schools	X	X	X	X	X	X	X	X		
Warren County Schools	X	X	X	X	X	X	X	X	X	X
Washington County Schools	X	X	X	X	X	X	X	X		
Watauga County Schools	X	X	X	X	X	X	X	X	X	X
Wayne County Public Schools	X	X	X	X	X	X	X	X		
Wilkes County Schools	X	X	X	X	X	X	X	X		
Wilson County Schools	X	X	X	X	X	X	X	X		
Yadkin County Schools	X	X	X	X	X		X	X		
Yancey County Schools	X	X	X	X	X	X	X	X		X



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