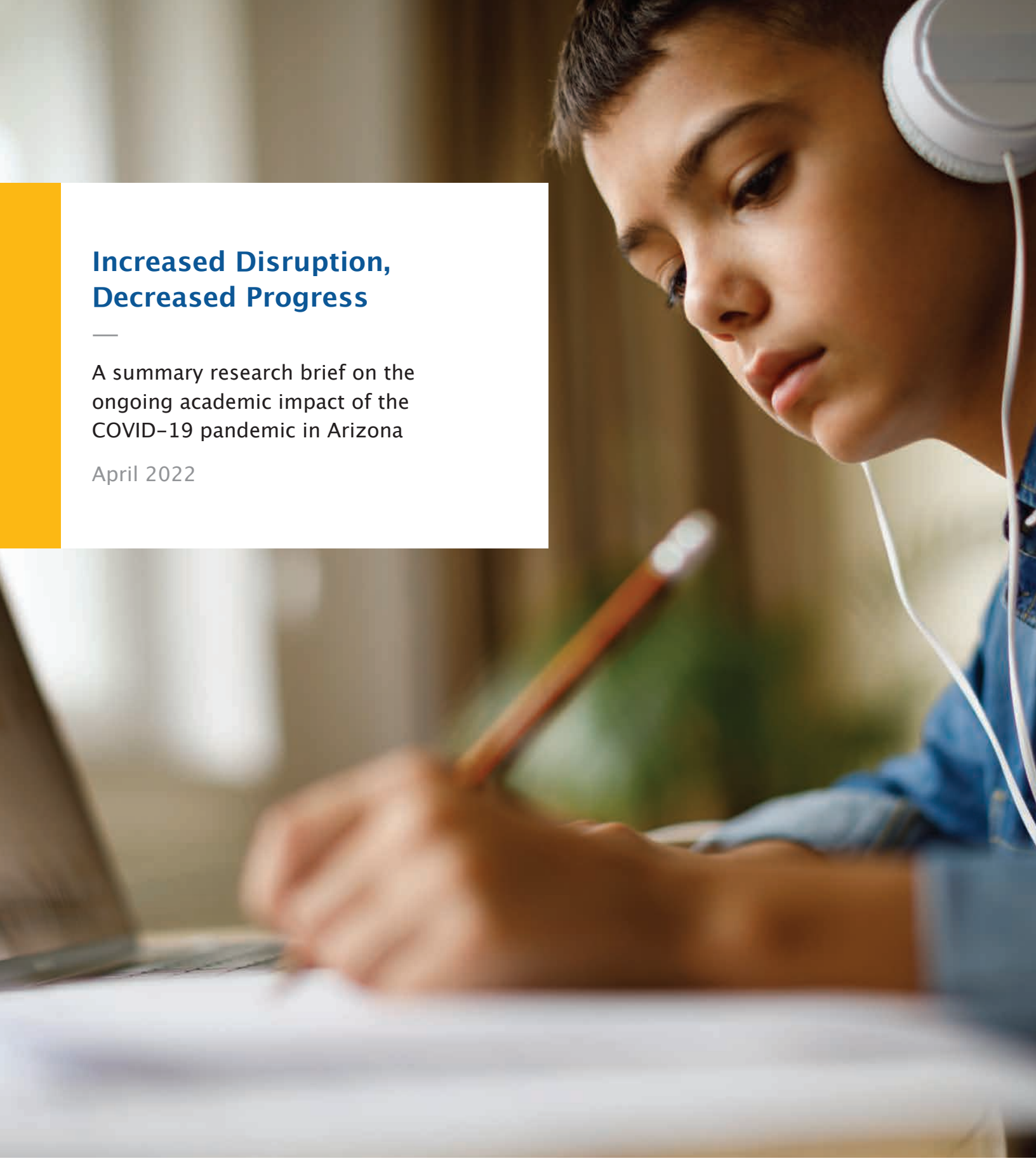

Increased Disruption, Decreased Progress

A summary research brief on the ongoing academic impact of the COVID-19 pandemic in Arizona

April 2022

Helios Education Foundation

ARIZONA DEPARTMENT OF EDUCATION

About This Brief

The Arizona State Board of Education (Board), the Arizona Department of Education (Department), The Center for Assessment, Helios Education Foundation, Abt Associates, and the ASU Helios Decision Center for Educational Excellence partnered to study the impacts that the pandemic has had—and continues to have—on the educational experiences and achievements of students in the state.

To date, the Board and Department have published extensive data and findings on the how the pandemic has impacted student growth, proficiency, and enrollment and mobility. These findings have been reviewed, discussed, and presented at the Board Fall/Winter 2021 meetings. The Board has also published preliminary findings on how the pandemic has impacted students who are English Learners.

This brief provides a condensed analytical look at key data points and indicators derived from the reports and data presentations publicly available on the Department's website (see COVID-19 Impact Data and Reporting). The insights it contains can inform policy and decision-making as the state works to facilitate a multi-year recovery from the large and widespread impacts of the pandemic.

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Introduction

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As the pandemic surges into its third academic year, students, families, and educators in Arizona continue to weather the disruption and uncertainty that characterize the educational experience in the COVID-19 era.

This effect of the pandemic on learning can be likened to a sustained academic headwind that is not only slowing the rate at which students progress, but also, because of that slower rate, is limiting the overall educational progress students can make. This results in lower rates of student growth and attainment throughout the state, with some demographic subgroups experiencing notably worse declines than others.

Educators, school staff, and school and district leaders have all endeavored to meet the educational and basic needs of their students and school communities. However, the illness, loss, and economic hardship that the pandemic is inflicting—in addition to the disruptions of school settings—continue to negatively affect students' educational opportunities and achievement, despite the return to in-person learning.

This brief highlights select state-level findings from in-depth and collaborative research undertaken to analyze the impacts of the pandemic on student growth, proficiency, and enrollment and mobility.

Summary of Main Research Findings

Students in the early grades experienced larger academic impacts than those in older grades. Compared to the older grades, proficiency and growth data for the K-5 grades show a greater impact. This is particularly true in English Language Arts (ELA), a finding that is especially significant given the importance of early literacy for a student's later success.

Although student achievement in both Mathematics and ELA has been impacted to a large degree, the impact on Mathematics has been greater. While both subject areas see large and broad impact across all demographic subgroups and achievement levels, overall impacts on students' Mathematics achievement were larger.

During the 2020-2021 school year, more students than ever before moved among Arizona schools. At the same time, fewer students enrolled. Student mobility during the school year represents a disruption in learning. As such, it contributes to a better understanding of student achievement gaps.

English Learners are struggling more than their English-language proficient peers, continuing a trend that predates the pandemic. The percentage of English Learners (EL) who achieved proficiency fell six points in ELA and seven points in Mathematics. The state saw declines in proficiency percentages across the board—38 percent in ELA and 31 percent in Mathematics in 2020-2021, compared to 42 percent in ELA and 42 percent in Mathematics in 2018-2019, when looking at the Longitudinal COVID Impact data.

About the Data

The COVID-19 impact study included proficiency and growth data from the 2020-2021 statewide assessment (AzM2), as well as statewide student enrollment, student mobility, and AZELLA (Arizona English Language Learner Assessment) assessment data.

Note that comparing student data gathered during the 2020-21 school year to data from pre-pandemic years is essential to any effort to analyze the impact of the pandemic on measures of student proficiency and growth. However, because of pandemic-related disruptions, student testing participation rates in Spring 2021 were lower than they are traditionally. This variation impacts comparative analyses, and any inferences drawn from such analyses must be made with caution.

To learn more about the data and methodologies used, please see the COVID-19 Impact Reporting resources available at: https://www.azed.gov/accountability-research/data

Pandemic Impacts on Student Learning Across Grade Levels

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The overall impact of the pandemic on education in Arizona is significant. Compared to pre-pandemic years, analyses of student growth and proficiency from the 2020-2021 school year reveal widespread decreases. Similarly, overall enrollment in Arizona schools has decreased, while student mobility during the school year—which can be understood as an academic disruption—increased meaningfully as more students withdrew from school or transferred.

Notably, statewide assessment participation rates in 2020-2021 were lower than historical averages. For ELA, 84 percent of Arizona students in Grades 5 through 10 were tested; for Mathematics, 86 percent of students were tested. A typical year would expect 95 percent of students tested on ELA and Mathematics.

Overview: Measures of Impact

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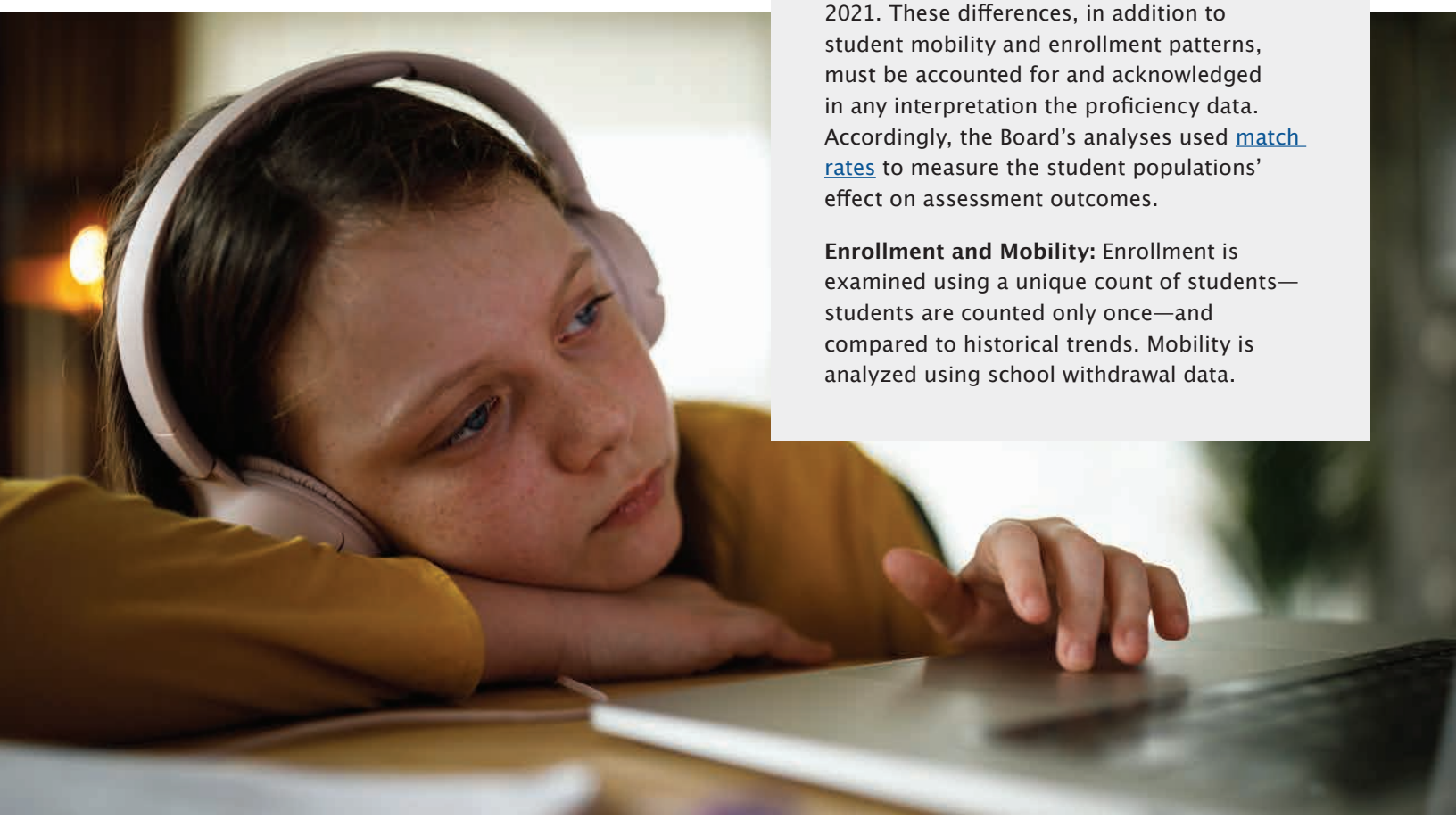
Growth: Arizona uses the Student Growth Percentile (SGP) model, in collaboration with Dr. Damian Betebenner (Center for Assessment), which assesses academic growth over one school year regression that links current year scores with the scores from the immediate prior year(s). Skip year regression was used in the 2020-2021 school year due to missing assessments in 2019-2020. Student growth was also compared to the 2018-2019 peer group who had not faced the pandemic to help measure the impact of COVID-19. More information on the methodology can be found in the growth resources on the Department's website.

Proficiency: Compared to historical testing rates, there are substantial differences in the student population tested in 2020-2021. These differences, in addition to student mobility and enrollment patterns, must be accounted for and acknowledged in any interpretation the proficiency data. Accordingly, the Board's analyses used match rates to measure the student populations' effect on assessment outcomes.

Enrollment and Mobility: Enrollment is examined using a unique count of students—students are counted only once—and compared to historical trends. Mobility is analyzed using school withdrawal data.



Statewide Decreases in Student Growth During the Pandemic Are Unprecedented

Student growth has been dramatically impacted by the pandemic. Across grade levels, significant decreases were observed in both ELA and Math growth, with the overall decreases in Math exceeding those in ELA.

Growth Impact Study Results, by Grade and Subject

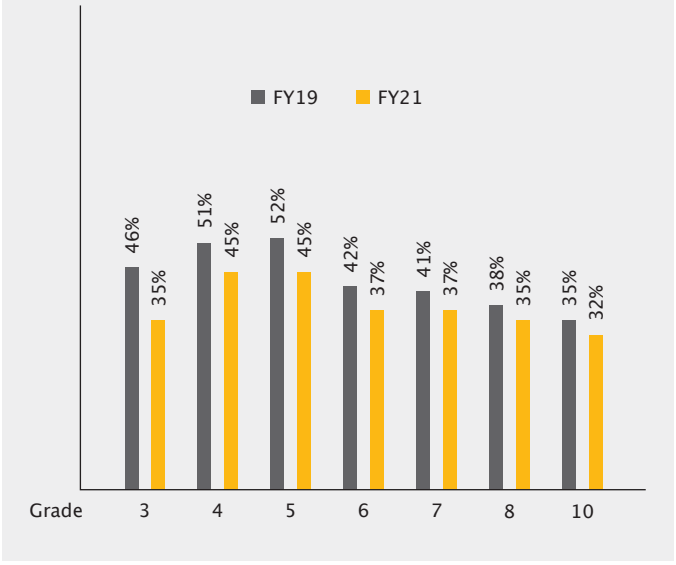
Grade	ELA				Mathematics			
	2019	2021	Loss	Impact	2019	2021	Loss	Impact
5	50.0 (74,441)	32.0 (58,823)	-18.0	Large	50.0 (74,508)	26.0 (59,817)	-24.0	Large
6	50.0 (74,522)	36.0 (60,667)	-14.0	Moderate	50.0 (74,700)	24.0 (61,592)	-26.0	Severe
7	50.0 (72,608)	33.0 (60,989)	-17.0	Large	50.0 (72,716)	30.0 (62,032)	-20.0	Large
8	50.0 (72,017)	37.0 (61,897)	-13.0	Moderate	50.0 (64,000)	31.0 (62,906)	-19.0	Large
10	50.0 (52,181)	36.0 (50,370)	-14.0	Moderate	NA	NA	NA	NA

Baseline growth in each grade and content area has a mean/median of 50 (number of students shown in parenthesis). The extent to which growth from 2019 to 2021 is below 50 indicates decreased student learning due to the pandemic. Impact strength is defined as: Improvement (>5), Moderate to None (-5 to 5), Moderate (-15 to -5), Large (-25 to -15), Severe (<25).

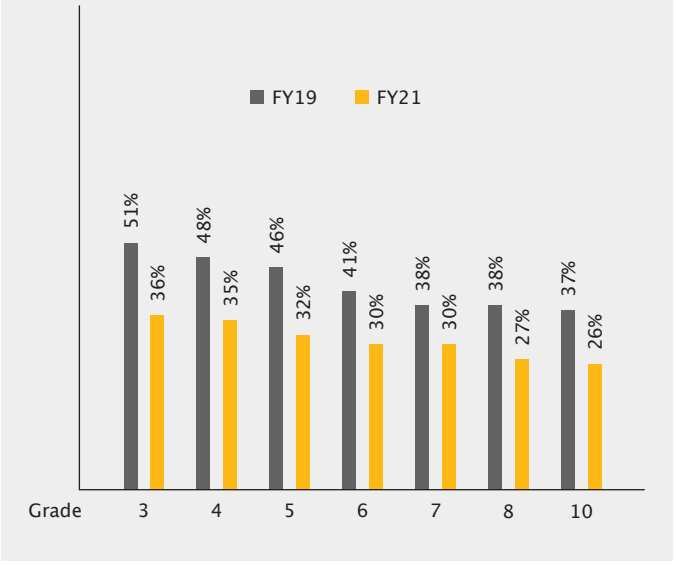
Student Proficiency Has Decreased Statewide Across Grade Levels

For all grade levels, ELA and Mathematics proficiency are down compared to pre-pandemic school years. Math proficiency is down 11 percent for all tested students, ELA is down four percent for all tested students. The largest, and perhaps most troubling, proficiency decrease was observed in ELA for grades 3 to 5. Given the importance of early literacy for student success, the impact on future outcomes for these students may be consequential.

ELA Proficiency, by Grade



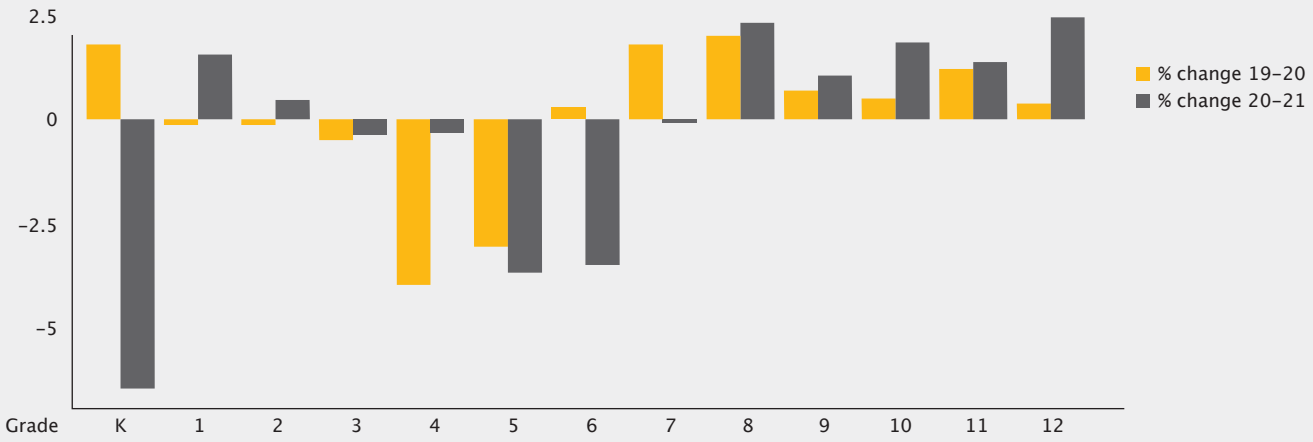
Mathematics Proficiency, by Grade



Student Enrollment Has Decreased Statewide While Student Mobility Has Increased

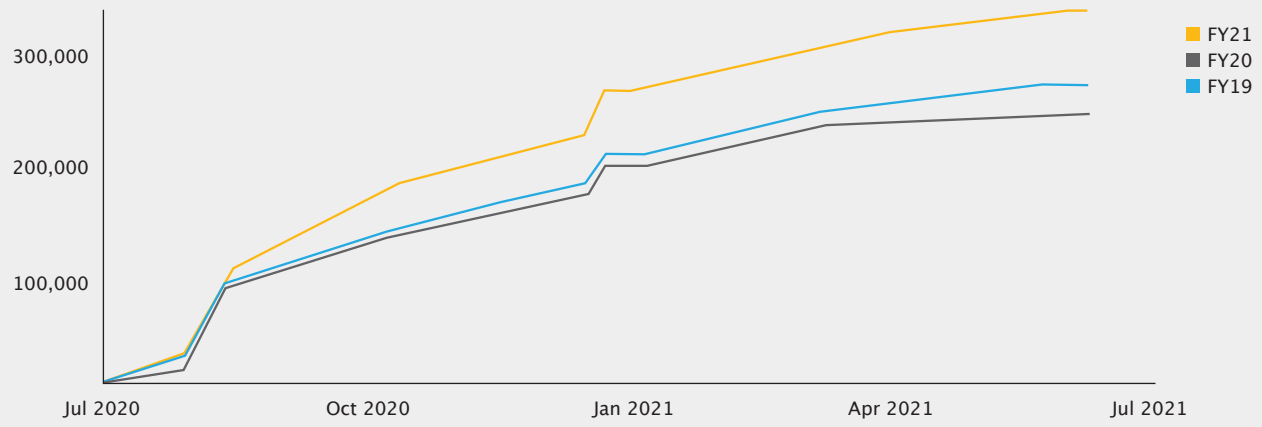
Overall, student enrollment declined across Arizona during the 2020–2021 school year. In particular, the data show greater pandemic-related decreases in enrollments in the elementary and middle school grade levels and especially in Kindergarten, Grade 5, and Grade 6.

Percent Change in Enrollments, by Grade



Similarly, students in the younger grades were more likely to withdraw or transfer to another school than students in the older grades, in keeping with an overall increase in student mobility during the pandemic.

Total Student Withdrawals, by Year



How the Pandemic Impact Varies for Different Student Groups

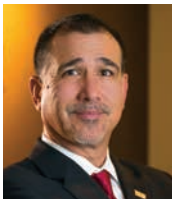
Before the pandemic disrupted learning for students in Arizona, there were prominent disparities and achievement gaps among students depending on their ethnicity, family income, disability status, and English Learner status. As might be expected, the severity of the pandemic impact on student growth varies; Hispanic and African American students, for example, are more impacted than their peers when it comes to growth in Mathematics. It is notable that, despite this variability, all groups were at least moderately impacted in ELA and all experienced large or severe impacts in Math.

Pandemic Impact on Student Growth, by Subject and Student Group

Student Population Group	ELA Impact	Math Impact
All Students	Moderate*	Large
English Learner Status		
English Learners	Large	Large
Non-English Learners	Large*	Large
Ethnicity		
American Indian or Alaska Native	Large	Severe
Asian	Moderate	Large
African American	Moderate	Severe
Hispanic or Latino	Large	Severe
Multiple Races	Moderate	Large
Native Hawaiian or Pacific Islander	Large	Severe
White	Moderate	Large
Family Income		
Income Eligibility 1 and 2	Large	Severe
Not Income Eligible	Moderate	Large
Disability Status		
Students without Disabilities	Large	Large
Students with Disabilities	Moderate	Large

Baseline growth in each grade and content area has a mean/median of 50. The extent to which growth from 2019 to 2021 is below 50 indicates decreased student learning due to the pandemic. Impact strength is defined as: Improvement (>5), Moderate to None (-5 to 5), Moderate (-15 to -5), Large (-25 to -15), Severe (<25).

*The unadjusted difference for All Students is -15; it is -15.4 for English Learners; and it is -15.1 for Non-English Learners. The cut score of -15 is between Moderate and Large. Any difference close to or around -15, could be considered either as "Moderate" or "Large."

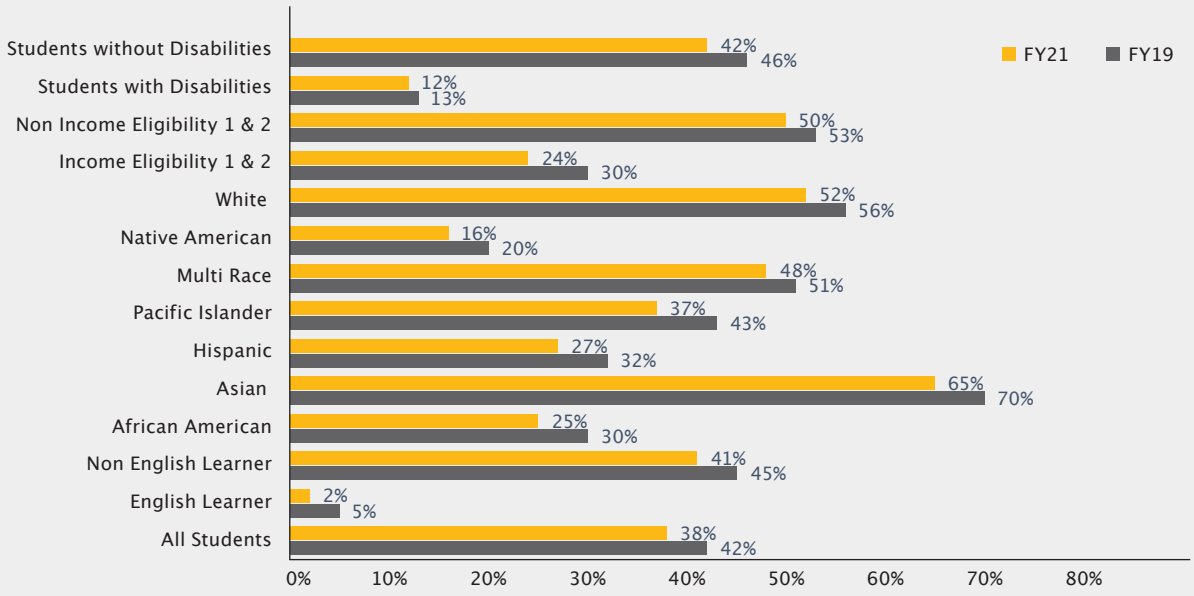


"COVID-19 continues to expose glaring inequities, and in turn, we need to elevate our response. The first course of action in shaping that response is to fully understand the impact of the pandemic on students, teachers, families, schools, and communities. The partnership represented in this research is an important one, as it brings together public and private sectors in ways that are important to meet the immediate needs of students and educators now, and to create sustained and systematic approaches to improving the conditions that improve student learning over time."

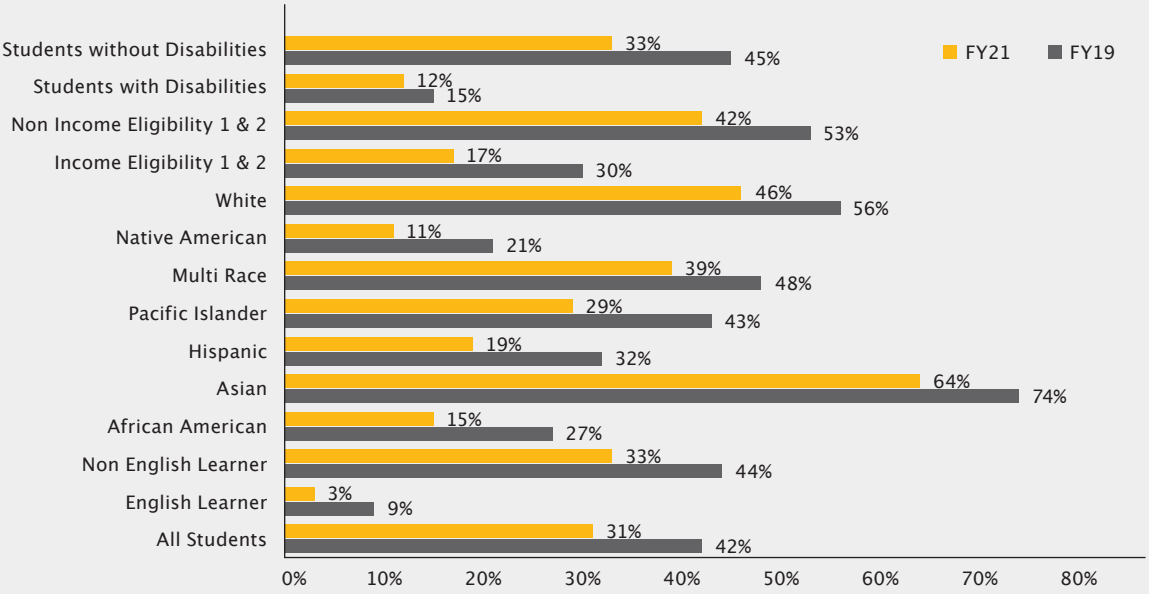
Paul J. Luna, President and CEO, Helios Education Foundation

Assessment data also indicate that all student population groups, without exception, have seen decreases in both ELA and Math proficiency. Some population groups, though, have seen greater decreases; Native American, African American, and Hispanic students registered notable proficiency decreases (from 2019 to 2021), the lowest proficiency rates among all ethnic groups, and proficiency rates well below the average for all students.

ELA Proficiency, by Subgroup



Mathematics Proficiency, by Subgroup



Despite the overall one percent decrease in enrollment in 2020–2021, most student population groups did not see substantial declines. The exception to this trend is students experiencing homelessness, who, as a group, saw a 20 percent decrease in enrollment. This decrease is likely attributable to their status. By contrast, enrollment for certain student populations—African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Pacific Islander subgroups increased in 2020–2021.

Enrollment 2019 to 2021, by Student Subgroup

Subgroup	FY19 Enrollment	FY20 Enrollment	FY21 Enrollment	Percent Change 2019 – 2020	Percent Change 2020 – 2021
All Students	1,238,727	1,239,759	1,225,694	0	-1
English Learners	90,254	80,081	80,980	-11	1
Ethnicity					
African American	64,098	65,166	72,107	2	11
American Indian or Alaska Native	52,277	51,700	55,394	-1	7
Asian	32,823	33,247	36,523	1	10
Hispanic or Latino	568,362	562,951	565,463	-1	0
Multiple Races	65,572	67,728	47,485	3	-30
Native Hawaiian or Pacific Islander	3,361	3,413	4,870	2	43
White	452,226	455,429	447,301	1	-2
Status					
Students with Disabilities	172,334	172,274	170,798	0	-1
Foster Care	6,464	7,480	7,830	16	5
Homeless	19,794	17,458	13,910	-12	-20
Military	9,348	10,852	11,323	16	4
Income Eligibility	582,544	600,265	551,907	3	-8

"This research is a critical tool in assessing the pandemic's impact on students and will help education professionals shape needed efforts to help kids catch up academically, socially, and emotionally. The data also highlights the critical need for ongoing and sustainable support for our public schools and the students they serve. Arizona students are ready to learn, and our teachers are ready to provide every student with the academic and mental health support they need. After two tumultuous school years, our school communities are working overtime to accelerate learning and help students succeed. It is the job of the state to support them in their work."

Kathy Hoffman, Superintendent, Arizona Department of Education

A Call to Action for Arizona

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The pandemic remains a prominent and influential factor in the educational experience for students in Arizona. As the recent resurgence of COVID-19 cases in the state and across the country has signaled—and as the disruptions to school, professional, social, and family life continue—the ability for schools to resume pre-pandemic "normal" operations remains elusive.

The return to in-person learning has been, for many, a positive step toward normality and a welcome opportunity for students to reengage with their schools, teachers, and peers. But the resumption of in-person learning in Arizona, while beneficial, is not sufficient to counteract the adverse effects of the pandemic on student achievement and growth, much less the social and emotional difficulties many students are experiencing.

Given the extent of the disruption and loss caused by the pandemic, Arizona will need to sustain a multi-year recovery effort structured around intentional strategies to address incomplete learning, accelerate student progress, and provide targeted supports to students and educators. Policies and programs that support the implementation and sustainability of such strategies are also vitally important.

To inform these efforts, it is essential that entities throughout the state continue to prioritize sustained, collaborative studies of the pandemic impact on student learning and outcomes. A deep and nuanced understand of the ways in which students have struggled against the academic headwind and lost ground in their learning will be necessary to inform the development of effective long-term strategies and interventions.

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