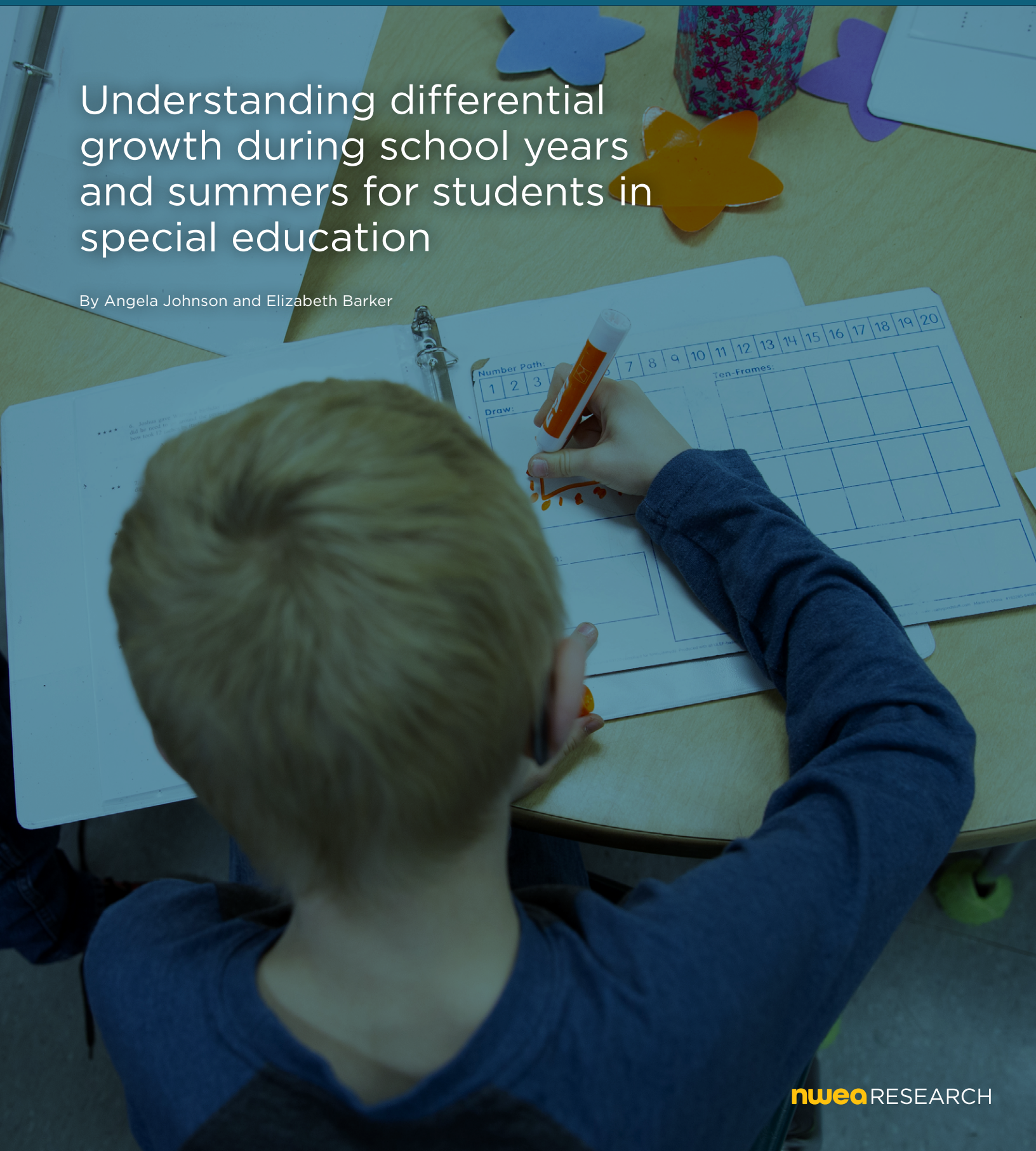


Understanding differential growth during school years and summers for students in special education

By Angela Johnson and Elizabeth Barker



KEY FINDINGS

- **Students ever enrolled in special education (ever-SPED) began kindergarten with lower test scores than their peers who were never enrolled in special education (never-SPED).**
- **During the school years, in about half of the early grade years (grades K–4), students with disabilities grew at *higher* rates in reading and math than never-SPED students.** However, during kindergarten, students with disabilities grew less than students without disabilities in both reading and mathematics.
- **Summer learning loss was greater for ever-SPED than never-SPED students.** This contributed to widening achievement gaps between these two groups.

For about seven million children and young adults who have disabilities (approximately 14 percent of all students in US public schoolsⁱ), the Individuals with Disabilities Education Act (IDEA) provides a critical foundation to ensure that their unique educational needs are recognized and supported in schools. IDEA mandates the provision of a free and appropriate public education (FAPE) for eligible students with a disability in one or more of 13 categories¹, and to the greatest extent possible, for inclusion, so that students with disabilities are educated alongside their peers.

Under IDEA, schools are required, at no cost to families, to identify and evaluate students who have disabilities who may need special education (SPED) and related services to support their learning. Recognizing that learners and their needs are diverse, an Individualized Education Program (IEP) is then developed collaboratively that defines the specific, customized instruction, services, supports to be provided, and goals for each student who receives SPED, and how the student's progress toward those goals will be measured. Schools are required to provide instruction that is 'appropriately ambitious' and show the student is making progress.ⁱⁱ To demonstrate this, schools typically assess and report students' progress towards their annual goals.ⁱⁱⁱ Measuring within-year academic growth is critically important in determining whether students are receiving FAPE. For example, flat within-year achievement trajectories would suggest that students are not receiving FAPE.

Learning during summers and out-of-school time is especially important to students with disabilities. Students who qualify under IDEA are sometimes also eligible for extended school year (ESY) programming,

which goes beyond the typical school year and may include academic content and additional services like speech language or behavioral therapy. A school must provide ESY programming to a student who qualifies for SPED when this service is deemed necessary. While there is some variation in how this is defined, ESY typically is considered necessary when an interruption in a student's education during the summer months hinders the gains that student made during the school year.^{iv} Nearly every state uses *regression-recoupment*, often described as the amount of time it takes a student to regain in the fall what they have lost over the summer months, as a factor for determining eligibility for ESY services. Given that, measuring summer learning (or summer loss) for students with disabilities is important for determining if ESY is offered to them.

With the goal that all children in the United States should receive an equal education, and of ensuring shared high expectations, measurement of learning and progress is an important component of IDEA. However, while schools are under both legal and social imperatives to educate students with disabilities, data showing equitable outcomes for these students are scant.

Research shows troubling discrepancies between the academic outcomes for students with and without disabilities. A recent analysis synthesizing results from 23 studies on reading achievement found that students with disabilities scored 1.17 standard deviations below their peers without disabilities.^v Additionally, 2019 National Assessment of Educational Progress data for fourth and eighth grade math and reading showed that students with disabilities were well behind the proficiency rates of students without disabilities, with average score gaps of 30 to 40 points, or about one

¹ Categories under IDEA include: autism, deaf-blindness, deafness, emotional disturbance, hearing impairments, intellectual disability, multiple disabilities, orthopedic, other health impairments, specific learning disability, speech or language impairment, traumatic brain injury, and visual impairment including blindness.

standard deviation, between the two groups. While these focused on achievement at a single point in time, other research has explored academic growth for students with disabilities. Although student growth estimates varied depending on the specific data examined, generally these studies showed lower rates of growth for students with disabilities than for students without disabilities.^{vi, vii, viii} However, these studies share an important limitation: since assessment data were collected at most once a year, growth could only be estimated across but not within school years.

No study yet has examined within-year academic growth, summer learning for students with disabilities, and how differences in learning during the school year versus summers may shape disparities for students with and without disabilities. By examining seasonal patterns of learning for students by SPED participation, this study addresses a critical gap in understanding growth and achievement for students with disabilities.

Using data from NWEA's MAP® Growth™ assessment² and student-level SPED program information from a cohort of 4,228 students in 109 US public schools across five years (2014-15 to 2018-19)—from kindergarten through fourth grade—this study addressed two questions:

1. How does **academic achievement** compare between students who were *ever* in special education services and those *never* in special education services in each grade between kindergarten and fourth grade?

2. How does **growth in achievement** compare between students who were *ever* in special education services and those *never* in special education services in each grade and summer between kindergarten and fourth grade?

Of this cohort, 786 students, about 19% of students in the sample, were in special education in at least one academic year (referred to in this brief as “*ever-SPED*” students; their peers who were never identified for special education services are referred to as “*never-SPED*”).

Ever-SPED students entered kindergarten with lower test scores than never-SPED students in both reading and math.

In both reading and math, ever-SPED students entered kindergarten with considerably lower test scores than never-SPED students (in math, a mean RIT of 139.7 [50th percentile] for ever-SPED students versus 144.5 [64th percentile] for never-SPED students, and in reading, a RIT of 136.9 [50th percentile] versus 140.9 [63rd percentile] for never-SPED students). (See figure 1.) Never-SPED students in this study's sample consistently scored above the national mean during each term from kindergarten to fourth grade. In comparison, ever-SPED students scored similar to the national mean in the fall of kindergarten, but fell behind during kindergarten. Consistent with other research,^{vi, ix} this study showed that the disparities between ever-SPED and the national mean, as well as with never-SPED students, widened between kindergarten (under 0.4 standard deviations) and fourth grade (about 0.9 standard deviations).

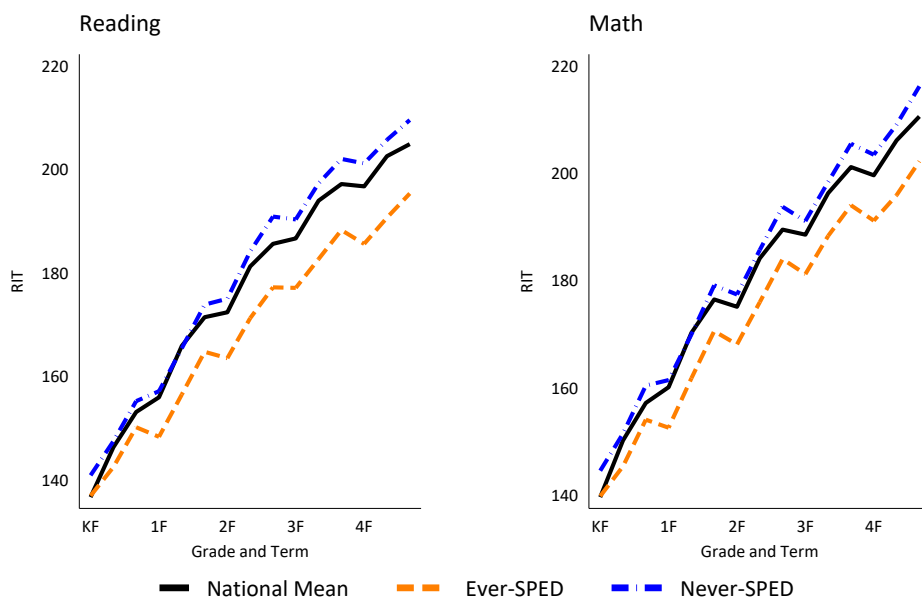


Figure 1. Average K-4 achievement scores in reading and math on MAP Growth assessments for students ever in special education services and students never in special education services. The national mean from NWEA achievement norms* is included for comparison. KF= kindergarten fall. 1F = 1st grade fall. The sawtooth pattern reflects achievement gains during school years and decreases over summers.

² This study uses RIT scores from MAP Growth assessments to measure academic achievement and growth. MAP Growth assessments are vertically scaled across grades K-12 and measure student achievement on the RIT scales. Because the RIT scales are equal-interval across grades and the assessments adapt above and below grade level, educators can compare academic growth across students and time—within an academic year and over multiple years.

During some school years, ever-SPED students grew at higher rates in reading and math compared to never-SPED students.

In reading, ever-SPED students grew more than never-SPED students during first, third, and fourth grades (see figure 2). In math, ever-SPED students grew more than never-SPED students during first and second grade and slightly less during third and fourth grades. However, during kindergarten, ever-SPED students tended to grow less than never-SPED students in reading and math.

Our results showed that students with disabilities can grow in reading and math during the school year as much or more than never-SPED students: their academic growth was higher than that of never-SPED students in two grades in math and three grades in reading.

This novel result challenges deficit narratives and low expectations about the academic potential of students with disabilities, and also shows the importance of seasonal learning studies that examine academic growth separately for each grade and summer.

Other research using annual assessment data to investigate growth rates for students with various disabilities has typically found slower growth rates compared to students without disabilities.^{vi, vii} In our study, too, estimating a single growth trajectory across grades K–4 would have led to the oversimplified conclusion that ever-SPED students grew less than their never-SPED peers. But by examining growth within each grade and summer, our analysis revealed more nuance: with appropriate support, students with disabilities can grow as much or more than students without disabilities. The key is identifying features of programs and services that work well for specific groups of students and suitable points of intervention.

Larger summer losses for ever-SPED students than for their never-SPED peers contributed to widening disparities.

Despite comparable or even higher academic growth rates during the school year, much larger summer losses in reading and math for students with disabilities (-1.2 to -2.1 RITs per month, compared to -0.4 to -0.8 RITs for never-SPED

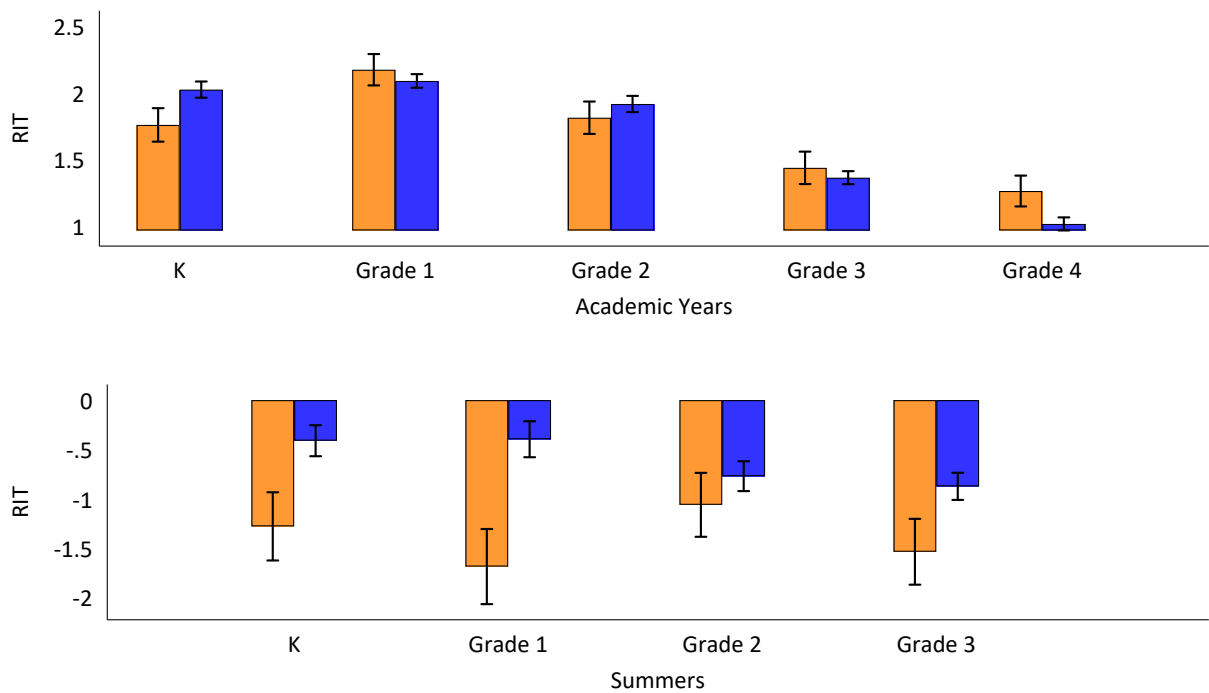
students) accumulated to shape the expanding disparities between the two student groups between kindergarten and fourth grade (see figure 2).

Previous research on students with disabilities has not addressed these seasonal patterns. Our findings draw attention to summer learning and carry important implications for ESY policies. Although we could not examine ESY participation in relation to summer learning rates, prior studies suggest that ESY programs may be beneficial to students with disabilities. For instance, one study found that approximately 8% of students with disabilities received ESY services, and that these services appear to be a proactive way for schools to minimize the loss of achievement and a possible effective way to use public funds.^{xi} However, determining eligibility for ESY can be a barrier.^{xii} Our study points to the potential of using disaggregated data, like spring-to-fall changes in achievement level, to investigate the needs of vulnerable student populations, including students with disabilities.

Concluding notes

It is important to note that the sample in this study is not nationally representative, but rather includes schools that voluntarily provided student-level SPED program information, and that the number of students in the study did not support analyses to explore potential differences by gender, race/ethnicity, specific type of disability, or service. Given the diversity of abilities and needs for students with disabilities, it will be important for additional research to disaggregate data for groups with distinct needs, such as students of color, English learners with disabilities, and students with multiple disabilities. Doing so will help pinpoint the areas of need, so schools and districts can make targeted changes to best support learning for all students with disabilities.

Reading Monthly Growth Rates



Math Monthly Growth Rates

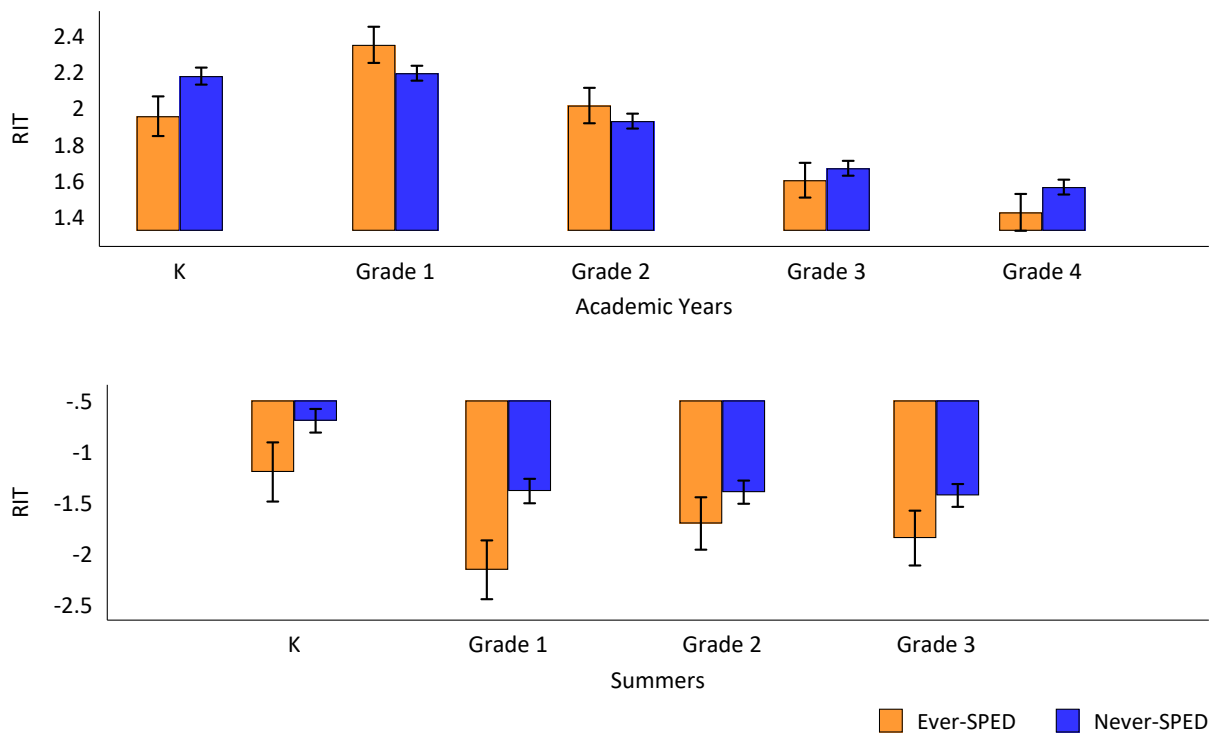


Figure 2. Estimated monthly growth rates (in RIT points) in reading and math during each grade and summer for students ever in special education services and students never in these services. Black bars represent 95% confidence intervals for growth rate estimates. The longer negative bars in the bottom panel for each subject show steeper summer losses for students ever in special education.

RECOMMENDATIONS

Educators and researchers should work to identify and provide effective support for struggling students earlier to foster their academic growth in kindergarten.

Our findings suggest that the education system currently falls short for students in special education in the transition to kindergarten. Students with disabilities began kindergarten with lower achievement, grew less during kindergarten than students without disabilities in both reading and mathematics, and grew less academically in kindergarten than they did in first grade.

Kindergarten is a pivotal year for students' learning. Though opportunities to learn before kindergarten vary by family income, race/ethnicity, and other factors, research shows that, on average, students grow most academically during kindergarten, and growth slows down during subsequent grades.^{xiii, xiv} The lower growth seen in our study for students with disabilities in kindergarten points to potential missed learning opportunities during this critical kindergarten year, and may suggest a need for better identification of students who are struggling and better support as students transition into school.

When considering classroom frameworks for instruction, kindergarten is not too early for implementing structures such as universal design for learning, response to intervention, or multi-tiered system of supports. In fact, holistic approaches including specialists like speech language pathologists, learning specialists, or behavioral specialists may be the support students need. Additionally, research has shown that providing access to materials with explicit, direct instruction in reading and mathematics improves academic success for students who are struggling.^{xv, xiv} More attention needs to be given to early learning and services that support it. Future research should investigate the effects of early identification and special education services for students with disabilities aged 0 to 5, including access to and early intervention in preschools.

Educators, policymakers, and researchers should explore how extended school year services may support learning for students with disabilities.

While our results showed that students with disabilities grew at the same or greater rates than students without disabilities during about half of the school years between first and fourth grades, the gains seem to be lost during the summer months when most schools are on break. Summer learning loss rates were substantially higher for students ever in SPED than for their never-SPED peers. This calls for more research to address extended school year services and the potential impact of increasing access to learning activities over the summer.

Our results also beg the question of how students with disabilities fared through the unprecedented event of the COVID-19 pandemic. We anticipate uneven impacts and differential unfinished learning, especially for students with disabilities. During the pandemic, some students received instruction online, some in hybrid models, and others received no instruction for months.^{xvi} Students with disabilities often require small-group or one-on-one support from the teaching staff, which can be difficult to deliver or less effective when provided remotely. If loss of opportunities to learn during the pandemic is similar to loss of learning opportunities during summer break, then the findings of this study provide further reason to believe that students with disabilities may be more severely impacted than their peers as a result of the COVID-19 pandemic. As schools return to in-person instruction, there is an urgent need to gauge and respond to the impact COVID-19 has had on student learning, especially for students with disabilities, who might be more affected by loss of learning opportunities during the out-of-school time.

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For more than 40 years, NWEA® has been a pioneer in educational research and assessment methodology with a focus on improving learning outcomes for every student. NWEA continues this discovery through dedicated research that explores foundational issues in education, practical challenges in today's schools, and the evolving role of technology in the lives of students. As a mission-based, not-for-profit educational research organization, NWEA's research agenda reflects our commitment to attacking big challenges in education and measurement and empowering education stakeholders with actionable insights.

ABOUT THE CENTER FOR SCHOOL AND STUDENT PROGRESS

The Center for School and Student Progress (CSSP) engages directly with NWEA partner schools to influence education practices and policies that promote student success. The CSSP focuses on issues that impact the daily work of educators and the students they serve, such as achievement and growth patterns for traditionally underserved students, the integrity of testing systems, supporting college and career readiness, and school accountability. CSSP researchers also serve as consultative partners, offering advanced technical support, custom research projects, and analysis to school leadership, educators, and policymakers.

ABOUT THE COLLABORATIVE FOR STUDENT GROWTH

The Collaborative for Student Growth at NWEA is devoted to transforming education research through advancements in assessment, growth measurement, and the availability of longitudinal data. The work of our researchers spans a range of educational measurement and policy issues including achievement gaps, assessment engagement, social-emotional learning, and innovations in how we measure student learning. Core to our mission is partnering with researchers from universities, think tanks, grant-funding agencies, and other stakeholders to expand the insights drawn from our student growth database—one of the most extensive in the world.

