

Beyond the Homework Gap:

Leveraging Technology to Support Equity of Learning Experiences in School



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“ I wish our nation and communities collectively would have taken the opportunity afforded to us during the pandemic to really rethink our public education system using all that we know about how children learn, technology tools, 21st-century skills, inclusion and the need for greater equity in learning.”

Parent of an elementary school student in Florida

Introduction

Two years after the start of the pandemic, education leaders and policymakers continue to analyze the impact on students, teachers, and families of the sudden changes to traditional education environments and structures caused by the global health crisis. The quest to identify some silver linings from the experience, however, is coupled with a new heightened awareness about the lack of equitable learning in our nation's schools. While much of the early focus during the sudden shift to remote digital learning was ensuring that students had access to technology and the internet at home to support learning continuity, the pandemic also exposed some ugly truths about the inequity of access to high-quality learning experiences in the classroom as well. While the pandemic did not suddenly create inequities in teacher quality or the access that some students have to high-quality instructional materials, it did shine a spotlight on the need to ensure that all students, both at home and in school, have equitable learning experiences. Increasingly, those new conversations, especially about in-school equity, center on student and teacher use of technology in the classroom.

As a result of using technology as a platform for remote learning, both teachers and administrators now place a higher valuation on the role of technology to support students' future success. **Based upon new findings from the 2020-21 Speak Up™ Research Project facilitated annually by Project Tomorrow®, 85% of district administrators and 71% of school principals now say that effective technology use in school is an important component in the preparation of students for future success in college or the workplace.** Correspondingly, administrators have a fresh perspective on outcomes of student use of technology in the classroom. Increasingly, they ascribe the value of technology to helping students develop the future-ready skills they need for college and career environments including critical thinking,

problem-solving, creativity and teamwork. **Additionally, 60% of education leaders say that the effective use of digital tools in the classroom helps ensure equity in educational opportunities for all students.** This new focus on the connection of effective technology use to skill development and equity represents a significant change in the valuation of technology by educators. Just four years ago in the 2018-19 school year, school leaders were 60% more likely to say that the most important outcome of technology use in school was increased student engagement rather than addressing inequities in education. The pandemic opened many eyes to the need for a new focus on equity in the school day and also a new focus on the potential value of technology to help tackle the stubborn challenges of providing every student with a high-quality education no matter their home ZIP code or family background.

The role of technology as an agent for creating more leveled playing fields for student learning is not new – but it has not been fully articulated before now. The impetus for this new focus and articulation is the high concern that teachers, administrators and parents have for “learning



loss” or the need for learning recovery or acceleration due to the impact of the pandemic on students. Teachers are especially concerned about their special education students. Almost 1 in 2 teachers (49%) say that addressing their special education students’ learning loss or need for remediation is their biggest concern right now. Additionally, 63% of teachers say they are worried about how to support the remediation needs of all students. Consequently, educators are expanding the ways they are thinking about equity in education and investigating what is needed to support equitable learning in their classrooms.

Getting beyond simply thinking about equity as putting a Chromebook and hotspot in the hands of every student, Project Tomorrow now identifies four types of equity that school and district leaders should be addressing in their classrooms today. Those four types are as follows:

- **Equity of Access:** Students have access to digital tools and resources both in school and at home
- **Equity of Learning Experiences:** Students have consistency in learning experiences and teacher quality
- **Equity of Learning Opportunities for Success:** Students can learn in environments that are safe, trusting and supportive
- **Equity of Agency:** Students are explicitly empowered to take ownership of their own learning

To inform new discussions around the role technology plays in addressing all four types of equity in learning today, Project Tomorrow and Spectrum Enterprise have developed a series of focused reports for education leaders that leverage the most recent Speak Up Research findings. In this report, the first in the series, our focus is on the relationship between creating equity in school-based educational opportunities and leveraging technology effectively in the classroom. Core to that investigation is understanding the value that teachers place on equity within learning, how they are using technology in their classroom to support and personalize

learning for each student, and the obstacles or challenges they face in using technology effectively to support equitable learning experiences for all. The findings in this report include a first-ever comparative analysis examining the views of teachers working in schools where the majority of students are white versus teachers in schools where the majority are students of color. As will be illuminated in this report, those two sets of teachers and their students are having very different experiences in their schools and classrooms. The role of funding education and digital investments is obviously central to this conversation about equity in education as well.

Key Findings

- Teachers’ views on their concerns about equity and engagement vary by student demographics
- Students report inequitable access to and usage of digital tools for learning in the classroom
- Internet capacity in schools serving a majority of students of color is a significant challenge
- Pandemic funding has supported technology investments and equity in learning experiences

For the past 18 years, Project Tomorrow, a national education nonprofit organization, has been investigating the role of digital tools, content and resources within schools and classrooms through the Speak Up Research Project. Since 2003, over 6 million K-12 students, parents, teachers and administrators have shared their firsthand perspectives and ideas on the role of technology in education. Reflecting the priorities and concerns of school and district leaders, the research has also focused on the challenges associated with technology usage, including how to fund the necessary investments in infrastructure and tools.

Finding #1

Teachers' views on their concerns about equity and engagement vary by student demographics



It is not surprising after the past two years of the pandemic and disruptions to traditional school environments that teachers have a long list of concerns about their schools, their students and their teaching effectiveness. As noted earlier, 63% of classroom teachers across all grade levels with little differentiation by community type (urban, suburban or rural) are concerned about the impact of those disruptions on student learning and what that means for remediation, recovery or acceleration for certain students. However, while there is general unanimity on the learning loss concern, other teacher concerns or issues that can contribute to student

achievement and well-being appear to vary based upon the demographics of the student population.

As a result of the pandemic, educators are more focused this year than ever before on the health of their students, both in terms of their physical safety and their mental, social and emotional well-being. School principals nationwide identified supporting students' mental health and social-emotional well-being as the number one issue that is waking them up in the middle of the night, a statement of the high priority they are placing on this challenge. Parents also noted that this is a top concern

point for them as well. Yet, the difference in concern levels among teachers based on their school population demographics is stark. Teachers in schools where the majority of their students are students of color (66%) are significantly more likely to identify students' mental health and well-being as a primary concern than teachers in majority white schools (48%). Additionally, while national headlines speak to the overall criticality of addressing the lack of student engagement in learning in our schools, educators serving students of color are twice as likely as their colleagues serving white students to see this as a crisis-level concern. And as depicted in Table 1, **teachers in schools where the majority of students are students of color (54%) are more than twice as likely to identify equity as a top concern than teachers in schools where the majority of students are white (24%).**



Table 1: Teachers identify top concerns about their students

Concerns about students	% of teachers nationwide	
	Teachers in schools where the majority are students of color	Teachers in schools where the majority are white students
Lack of student engagement in learning	66%	33%
Students' mental, social and emotional well-being	66%	48%
Equity of learning experiences for all students	54%	24%
Health and safety of students and their families	52%	22%

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Understanding teachers' concerns and how those concerns differ by school demographics is important for appreciating what may be their motivation for using technology more effectively within learning. And that can help explain the differences in student use of digital tools and resources in the classroom as well.

Finding #2

Students report inequitable access to and usage of digital tools for learning in the classroom



Both students and teachers developed an increased dependence on certain technology tools and resources as a result of their remote learning experiences. In many ways these digital tools are living up to the new expectations that technology usage can help students develop key future-ready skills such as communications, collaboration and creativity. However, not all students are enjoying the same level of equitable access to technology that could enable these meaningful learning experiences.

Students in middle and high schools where the majority of students are students of color are less likely than

students in schools serving primarily white students to be using various technologies frequently within their learning environments (Table 2). Many schools, for example, have embraced online productivity tools to support student-to-student collaborations through document creating and sharing. These types of learning experiences help students understand the mechanics of using workplace tools effectively, and also enable them to have meaningful collaborative learning experiences while developing teamwork skills. However, while 55% of students in grades 9-12 in primarily white schools report creating documents on a highly frequent basis to share with their classmates and teachers in a collaborative learning environment, only

45% of high school students in schools where the majority of students are students of color are having the same level of access to and usage of those tools. Correspondingly, students in schools serving students of color are also less likely than their white counterparts to do internet research for assignments, take tests online or email their teachers with questions. This disconnect in access to and usage of technology is creating an inequity in learning experiences for students that has the potential to impact their achievement, academic outcomes and future success in college or career environments.

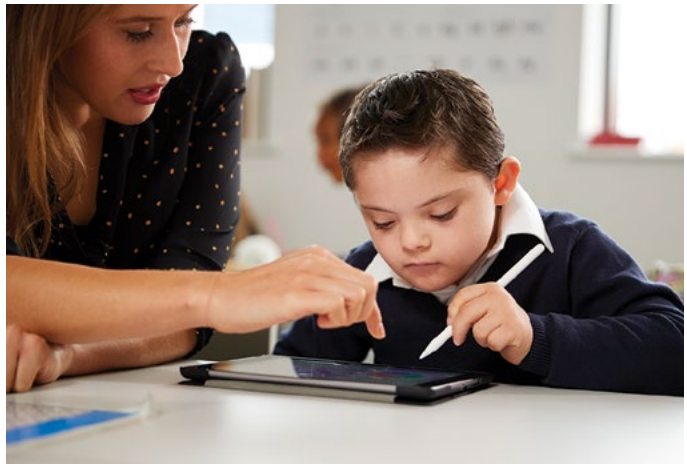


Table 2: Student usage of technology to support learning in school

Technologies used for learning	% of students who report frequent usage of these technologies in their classroom learning			
	Grade 6-8 students		Grade 9-12 students	
	Schools with majority students of color	Schools with majority of white students	Schools with majority students of color	Schools with majority of white students
Taking tests online	54%	68%	69%	75%
Doing internet research in class to support assignments or lessons	44%	51%	56%	62%
Creating documents to share with classmates and teachers	26%	30%	45%	55%
Emailing teachers with questions	19%	27%	28%	35%

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While there may be many reasons why some students are having less access to online collaboration and research tools to support learning than others, or not being provided with opportunities to develop fluency with online testing, the common denominator in these results may be the lack of equitable access to high-speed, high-bandwidth internet connectivity in our nation’s classrooms.

Finding #3

Internet capacity in schools serving a majority of students of color is a significant challenge

As a result of remote learning during the pandemic, teachers developed a stronger sense of the potential value of technology to support student learning. Though not all implementations of remote learning represented effective digital learning, the experience provided teachers with new insights into how technology could be better used to support both student outcomes and their own increased effectiveness as teachers. When asked to identify why the effective use of technology within learning is essential today, teachers identified these five reasons as the most important:

1. Technology creates learning experiences for students that are interactive and participatory (65% of teachers)
2. Technology helps students develop skills to support lifelong, self-directed learning (63%)
3. Technology enables students to develop college and workplace skills (60%)
4. Technology provides students with increased access to online content that is more current and relevant (53%)
5. Technology can help address the inequities in education (44%)

Each of these reasons points to the long-held promise of digital tools and resources to support an overdue transformation of the educational process. However, the key to moving from promise to reality is the efficacy of the technology usage and how it supports student learning and teacher effectiveness in the classroom. To that end, teachers clearly articulate what they need to be able to use technology more effectively. Across different types of schools and communities, teachers agree on these four key needs to support their effective use of technology in their classroom: a) planning time with colleagues – 64%, b) confidence that their students have out-of-school access to digital tools and the internet – 64%, c) technology support when they need it – 50%, and d) professional learning on new strategies and tools – 42%.

Upon closer examination, however, we see teachers in schools serving students of color have an expanded list of needs compared to their colleagues in schools serving white students. The list from these teachers indicates the lack of equity in the types of tools and resources available in their schools for students and teachers to

use technology effectively. Most notable in this list is the call from teachers for classroom internet access that is consistent and reliable, and can support high-bandwidth digital resources. Nearly three-quarters of teachers (72%) in schools with a majority of students of color say that their number one need is to be able to use technology effectively within learning. And though the percentage of teachers in schools serving white students having that same need is significantly less (59%), it is also still too high to ensure that all students across all schools have a high-quality learning experience. Additionally, as noted in Table 3, classrooms in schools serving students of color have a higher need for classroom sets of devices than classrooms in predominantly white schools. And these teachers are expressly looking for additional support from their school and district leadership to help them with the effective usage of technology within learning.



Table 3: Teachers identify top concerns about their students

Technology wish list	% of teachers nationwide	
	Teachers in schools where the majority are students of color	Teachers in schools where the majority are white students
Consistent, reliable, high-bandwidth internet access in my classroom	72%	59%
Classroom set of devices for student usage	59%	38%
Recommendations from my school district on best digital and online tools and resources to use	42%	37%
Online tools to help me organize my digital content and resources	37%	30%

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The teachers’ perceptions regarding the ineffectiveness of their current internet connectivity in school is echoed by the students as well. When asked to identify the obstacles that prevent them from effectively using technology to support learning in school, 56% of high school students identified the lack of consistent, high-bandwidth internet connectivity as the primary barrier. However, this is not a new finding precipitated by the pandemic. Approximately 55% of students have voiced the same complaint each year since 2014 about the quality of their school’s Internet connectivity. The difference today is that teachers themselves are now demanding a higher level of connectivity to support their new digital learning practices, and new funding sources are enabling schools to improve their bandwidth to classrooms.



Finding #4

Pandemic funding has supported technology investments and equity in learning experiences

School and district administrators (60%) agree that technology used effectively within learning can help address some of the inherent and stubborn inequities in education today. But that effectiveness requires a careful curated mix of resources and experiences in order to become a reality for all students. As evidenced by the Speak Up Research findings shared in this executive report, equitable access to digital and online tools and resources is a critical component for ensuring effective technology usage for all students, and for ensuring all students have the opportunity to develop the skills they need for future success. **But this twin focus on ensuring that every student has access to high-quality learning experiences and environments, and a commitment to leveraging digital tools and resources effectively to support all students' needs requires astute leadership and the willingness to make strategic investments in the future of learning.**

As many education thought leaders have pointed out, a significant silver lining of the pandemic and resultant sudden shift to remote virtual learning is the increased availability of funding to support innovation and equity in our schools. Driven by a need to address inequities in

home access to technology and then subsequently to support schools' focus on addressing learning loss and recovery, federal and state policymakers have created new sources of investment income for K-12 school districts. Based on feedback provided by district technology leaders and district administrators, it appears that the CARES/ESSER funds from the federal government and many state school investment programs have not replaced the traditional sources of school funding for technology as much as they have augmented those funds. This is noteworthy as it supports the original intent of the legislation: to provide supplemental funding to address needs emerging from the pandemic. As noted in Table 4, education leaders note that they are continuing to tap into their traditional technology funding sources such as e-Rate funding, Title 1 funding and budget allocations to support new investments just as they did in the 2019-20 school year prior to the pandemic. The difference is truly the availability of the federal and state pandemic funds, some of which may be offsetting the need for budget allocations from the district general fund.

But the question remains as to how school districts are specifically using these supplemental funds to

Table 4: How districts are funding technology investments – a comparative view from 2019-20 and 2020-21

Sources of funding for technology investments	% of district administrators and technology leaders	
	2019/20 school year	2020/21 school year
Federal pandemic funds (CARES/ESSER)	NA	64%
State-initiated pandemic funds	NA	48%
Budget allocations from the district general fund	60%	45%
e-rate funds	42%	43%
Title 1 funds	41%	36%

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address pandemic-induced needs especially as they relate to key equity issues raised in this report. Given the unprecedented amount of funding available today to K-12 school districts, the expectation is that education leaders would leverage these funds not only to address the key issues of learning loss and recovery but also to implement sustainable changes in their education systems to address the vexing challenge of equity attainment. By leveraging the current diversified collection of funding available to support new technology investments, schools could address many of the equity issues discussed, including:

- **Ensuring that all students have access to high-quality instructional materials including digital and online resources**
- **Enhancing the internet connectivity across all schools so that both students and teachers can seamlessly interact with digital resources effectively**
- **Providing classroom sets of digital learning devices so every student has the opportunity to use technology in school and to continue learning at home with the same tools**
- **Supporting teachers with online tools, resources and training that will enable them to create more equitable learning experiences for all students**

With an eye both on addressing the current needs of our students and developing a new vision for the effective use of technology, our education leaders must not lose sight of the enduring equity challenges in our schools. The outlook is already very promising that they will be successful with these goals. According to district technology leaders, the investments they have made in technology during the 2020-21 school year have already resulted in significant benefits, including improving school-to-home communications (74%), improving the relevancy and quality of instructional materials (61%), enhancing teachers’ skills with technology use within learning (61%), increasing student engagement in learning (52%) and providing new and more equitable educational opportunities for all students (52%).



Ending thoughts and questions for further discussion

It is becoming increasingly clear that the pandemic and the resulting school disruptions have forever changed K-12 education. A key lesson learned from the experience is that equity is about more than providing a student with a Chromebook and a hotspot. The learning experience matters. This is especially true for students who attend schools where the majority of students are of color. In this first report in the new Project Tomorrow – Spectrum Enterprise series for 2022, we identified four aspects of a new equity conversation that should be happening in every school and district right now. The following questions can help jump-start those important local discussions with teachers, administrators, school board members and community partners.



1. How are we leveraging students' expanded access to digital tools and resources both in school and at home to improve educational outcomes? How can we help our teachers more effectively model the effective use of technology for their students?
2. What is needed to ensure that all students across all schools have learning experiences that represent high-quality instruction? What types of professional learning or support are necessary to help our teachers design and deliver consistent learning experiences that address individual student needs?
3. What are we doing to create learning environments for students that are safe, trusting and supportive? Relative to our school culture and policies, are we sufficiently addressing the needs of students of color, students living in poverty or students with special learning challenges?
4. How can we help our students develop a greater sense of agency, self-efficacy and ownership of their learning so they are well prepared with the requisite future-ready skills to be lifelong learners?



About Project Tomorrow

Project Tomorrow's nonprofit mission is to support the effective implementation of research-based learning experiences for students in K-12 schools. Project Tomorrow is particularly interested in the role of digital tools, content and resources in supporting students' development of college and career-ready skills. For the past 18 years, the organization has focused efforts on national research projects and the design and implementation of evaluation, efficacy and feedback studies examining the impact of digital tools or technology-enabled learning models in the classroom. Learn more about our research activities including our globally recognized Speak Up Research Project at www.tomorrow.org.



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