



DIGITAL LEARNING DURING THE PANDEMIC: Emerging Evidence of an Education Transformation

Digital Learning during the Pandemic: Emerging Evidence of an Education Transformation

by
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Introduction

In spring 2020, the landscape of K-12 education was forever shifted by a seismic event that no one could have predicted; a global pandemic that resulted in the closure of school buildings and widespread implementation of remote, at-home learning for over 55 million students in the United States. For most of those students, school learning took place through a tablet, laptop or Chromebook screen and a virtual connection to classmates and teachers. Like an earthquake, this unforeseen jolt to the education enterprise resulted in a dramatic and immediate change to the everyday teaching and learning process for students and teachers, for families and schools.

This sudden shift to digital learning created a series of challenges for all stakeholders that continue today. But many have asked, given the proliferation of education technology in the classroom over the past 20 years, why was this such a seismic event within K-12 education? Weren't most teachers and students already using technology every day in their physical classrooms? The answer to those questions requires us to understand the role of technology within K-12 education prior to school closures. The increased usage of digital devices and online content within K-12 classrooms has been well-documented over the last few years including in Project Tomorrow's annual Speak Up reports. In our report from the 2018-19 school year, *Digital Learning: Peril or Promise for Our K-12 Students*, we noted that 72% of school districts said they were using cloud based collaboration tools such as Google classroom to support student learning and 57% were assigning mobile devices for students to use in school¹. However, in that same report we also document that 90% of teachers and administrators identified increased student engagement as the overriding value of using these devices and tools within instruction. Only one-third of school administrators recognized enhanced quality of student work, depth of student collaborations or students' skill development as meaningful outcomes from the use of technology within learning, even though these types of outcomes would be expected for most other educational interventions. Despite significant investments in professional development, only one-quarter of classroom teachers said they were very comfortable integrating mobile devices like laptops, tablets, and Chromebooks into everyday instruction. While digital tools have become more commonplace in our schools, the vast majority of educators prior to the spring 2020 school closures were not visualizing technology as an effective delivery mechanism for instruction. Their vision was clouded by their valuation of technology as chiefly a supplemental extrinsic motivation tool to help engage students in learning, not as an enabler of the learning process. The most important change therefore that happened in spring 2020 was first a mindset shift. Forced by a need to provide continuity of learning during the pandemic, schools had to suddenly shift from thinking about the use of digital tools and online resources as engagement tools within the context of traditional learning paradigms, to being the structural pillars in a new and re-imagined environment of remote e-learning with technology as the primary instructional platform.

Like most seismic changes, the process of shifting from the traditional learning paradigms to a new online environment created a series of aftershocks. In the immediacy of the collective national experience, evidence is emerging that supports positive, sustainable changes in K-12 education. Examples of lessons learned have already taken seed in new practices and plans. Though not initially prepared to facilitate remote e-learning for all students, many schools rallied to provide some level of learning continuity in their communities. Those efforts by teachers and administrators as well as parents and students were no less than heroic and

¹ <https://tomorrow.org/Speakup/speakup2018-19-Digital-Learning-Peril-or-Promise-october2019.html>

certainly worthy of continued recognition. Reflecting on what worked and what did not work in the spring, many school districts are now better prepared to address unforeseen emergencies that result in the disruption of learning in physical classrooms. New plans are in place for learning continuity to address potential new health outbreaks in the fall or emergency weather conditions in the winter. The spring 2020 remote learning experience also exposed inequities in education that should have been brought to light years ago, but are now being openly discussed with new solutions including how to address the persistent digital divide in too many communities of color. While schools have always valued parent engagement, the remote learning experience heightened the importance of effective communications not only between schools and families, but also the criticality of effective communications between students and teachers. Emerging from that new awareness is the acceptance of new online tools that facilitate effective two-way communications and increased transparency. And an increased realization of the essential value of social-emotional learning for all students from kindergarten through high school reflects the increasingly important connection between mental and emotional well-being and learning outcomes.

These new practices and plans that have emerged from the lessons learned are important, but there is much more that we can mine from this seismic shift to digital learning in spring 2020. This collective national experience which touched every K-12 stakeholder provides a perfect opportunity for us to examine with a new lens what is needed to truly transform American education so that all students, regardless of home zip code, community profile or family environment has the opportunity to develop the skills needed to become tomorrow's leaders, innovators and engaged citizens of the world. The task is rightfully tall. Given that, it is instructive to understand how technologists who have been leading a future focused approach in their work differentiate between change and transformation. According to CIO Insights, "*Change uses external influences to modify actions, but transformation modifies beliefs, so actions become natural and thereby achieve the desired result.*"²

The pandemic was an external force that resulted in schools changing from a face-to-face instructional model to an online learning model literally overnight. However, beyond the structural changes to school format, the shift to remote e-learning has also changed beliefs and attitudes about educational efficacy and the value of technology within instruction. These changed beliefs and attitudes provide an optimum climate for education leaders to advance long stymied ideas about transformation in education and to think constructively about how to effectively leverage digital tools and resources to build new and sustainable learning environments. This is a crisis that we do not want to waste, and the Speak Up Research findings provide a foundation for examining key evidence that can be the launching point for new discussions and insights. From September 2019 through June 2020, over 136,000 K-12 students, parents, and educators from across the country shared their views on learning experiences and environments using digital tools and resources through the Speak Up Research Project. By disaggregating the data into two sets of results, data from September 2019 – March 16, 2020 as the first set, and data from March 16, 2020 through June 2020 as the second set, we are able to see in almost real time how the digital learning shift altered not only teachers' expectations for using technology within learning, but also parents' perceptions on the value of digital learning and the impact of this digital lab experience on students' aspirations for enhanced learning environments. With the focus on evolving beliefs and values, each section of this year's Speak Up national report, *Digital Learning during the Pandemic: Emerging Evidence of an Education Transformation*, provides key research findings to support how students, teachers and parents are thinking differently about teaching and learning as a result of distance learning in spring 2020. Key findings from the report include:

- *Evidence of transformation potential #1:* Increased use of digital tools by teachers and students during spring 2020 propelled new thinking about what constitutes quality in digital resources for classroom use, and for teachers, a new set of value propositions around digital learning. (Findings begin on page 3)
- *Evidence of transformation potential #2:* As a result of the sudden shift to digital learning, parents developed a stronger appreciation for the value of technology as a learning vehicle and their role in supporting their child's education from home. (Findings begin on page 7)

² <https://www.cioinsight.com/it-management/expert-voices/the-difference-between-change-and-transformation>

- *Evidence of transformation potential #3:* Students have long valued the role of technology in helping to support learning. The realization of the value of digital learning by the adults in their lives resulted in an improved learning environment for many students. New findings around the use of digital, online and videos games provide an excellent exemplar of this new impact. (Findings begin on page 9)

For the past seventeen years, Project Tomorrow's annual Speak Up Research Project has provided education leaders nationwide and around the globe with illuminating insights into the expectations of students for new learning environments by reporting on the authentic, unfiltered ideas of students themselves. Additional perspectives from teachers, librarians, administrators, community members and parents have illustrated the challenges as well as benefits of education technology usage. It is our hope in this unusual year that the findings and insights provided in this national report, as well as through our other reports and infographics, can stimulate new discussions about how to harness the best lessons learned from this seismic shift in education, and that those discussions can advance new solutions, ideas and approaches for a sustainable new transformation of the learning process in our K-12 schools. To help with that effort, our ending thoughts to this year's report include a short list of questions for education leaders to consider and to potentially use to engage with stakeholders around how to create a more future ready education enterprise.

Evidence of transformation potential #1: Teachers' new sophistication with evaluating outcomes from digital content usage

Our first set of evidence of an emerging transformation in K-12 education involves the analysis of how teachers' increased usage of digital content and resources in spring 2020 shifted their perspective on the value of technology as a learning tool and what characteristics of digital resources are important for effective classroom usage. As a result of the adoption of distance learning, teachers reported more frequent usage of a wide range of online resources to support student learning. For example, weekly usage of online animated movies or simulations to illustrate difficult concepts such as in science or math increased by 41% during school closures. The use of online curriculum with students on a weekly basis rose 23% and the use of mobile apps for learning increased 19%. Two-thirds of teachers prior to school closures (64%) had already reported weekly usage of online educational videos such as from YouTube, National Geographic, or NASA in their classroom. However, as result of distance learning, 72% of teachers said they were tapping into online videos on a weekly basis with students during April, May and June 2020. As noted earlier, these digital tools took on a new purpose during the school closures. Beyond student engagement, technology now served in a new capacity as the essential foundation for the online learning process. This increase in both the access to the tools and a more purposeful approach to that usage resulted in changes in teachers' comfort level with technology and a new appreciation for the benefits of appropriate technology usage on student outcomes and their own effectiveness.

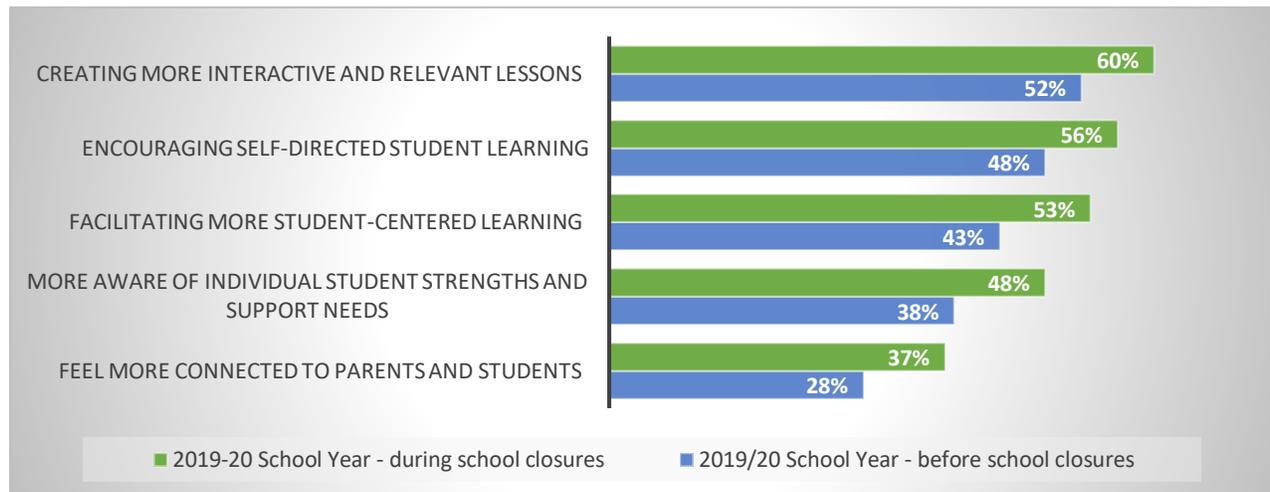
- As a result of the spring lab experience, 71% of teachers said the effective use of technology within learning was very important to ensure that their students were well-prepared for future success. This was a 10-percentage point increase from before schools was closed.
- The increased familiarity with using digital tools to support learning outcomes, not just student engagement goals, resulted in teachers' reporting higher levels of comfort with technology use for learning. For example, 66% of teachers said they were comfortable using technology to support student collaborations and personalizing instruction for each student during spring 2020. Prior to the school closures, only 58% of teachers reported that same level of comfort.

Research has long documented the positive correlation between teacher efficacy and student achievement outcomes. It is therefore valuable to examine how teachers think about their own instructional efficacy especially as it pertains to the use of technology in the classroom. The experience of digital learning during school closures provides a unique laboratory type view to explore how technology can support higher levels of teacher efficacy.

The annual Speak Up surveys ask teachers to reflect on how their use of technology in their classroom has impacted their effectiveness. As depicted in Chart A, 60% of teachers during school closures said they were creating more interactive and relevant lessons as a result of their increased access to online and digital resources. Prior to school closures, 52% of teachers held

that same view. Similarly, 48% of teachers reported greater awareness of individual student academic strengths as a byproduct of their technology use during remote learning, an increase of 10 percentage points compared to the pre-school closure results. This increased awareness level provides an opportunity for teachers to pinpoint more clearly where their students need additional support, a different intervention or some remediation, all of which are key hallmarks of a learning process that is personalized and focused on individual student success.

Chart A: Teachers' evaluation of the impact of technology on their own teaching effectiveness



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The increased usage of digital resources by teachers and students in spring 2020 had another interesting impact. The sudden shift to digital learning forced many teachers to re-engineer their tried and true instructional practices that had worked in a physical classroom but were now no longer appropriate for online learning. It also created new opportunities for teachers to experiment and test new technologies that they had never used before. Many education vendors supported this effort with free access to products and solutions. The school closures in spring 2020 therefore created a “digital learning lab” environment in many classrooms for teacher experimentation and exploration. The increased access to a wide variety of digital learning tools opened teachers’ eyes to new ways to leverage digital tools to support student learning, and also it helped them identify what features and characteristics they really wanted and needed in digital resources for effective classroom usage. This set of desired features and characteristics are the result of teachers’ real-world experiences using technology during remote learning, and they represent a new rubric for evaluating quality within digital content specifically.

Teachers have a keen understanding of the type of instructional materials that will work in their classroom, and what will not work. This understanding comes from deep content knowledge as well as an appreciation of the needs of their students. The spring 2020 “digital learning lab” experiences provides us now with a unique perspective on the relative importance of different features and characteristics with market available digital content. By comparing the views of teachers before school closures with the views of teachers after they have been using digital resources as their primary instructional platform we gain a new understanding of changes in valuations, and what really matters now to teachers in terms of features and characteristics. Table 1 depicts the percentage of teachers who identified specific digital content features as *very important*, comparing before school closure views with during school closure views. Features are categorized by supporting the personalization of the learning process or supporting teachers’ effective usage in the classroom.

Table 1: Teachers identify features that define quality in digital content for classroom usage – before and during school closures

Features that define quality in digital content for classroom usage	Percentage of teachers who chose this feature as a <u>very important</u>	
	K-12 Teachers - before school closures	K-12 Teachers – during school closures
Features that support the personalization of student learning		
Available in multiple reading levels	73%	81%
Available on multiple technology platforms	53%	73%
Includes high quality video and media	60%	73%
Provides rich data about student progress	56%	70%
Provides built in assessments for teachers to use	44%	61%
Includes individual student accounts	44%	61%
Available in multiple languages	36%	59%
Features that support teachers' effective usage of the digital content		
Created and evaluated with input from in-classroom teachers	53%	64%
Recommended or approved by an organization that I trust	53%	63%
Efficacy studied by independent researchers	49%	58%
Includes professional development for teachers	37%	55%
Includes data integration with other systems or tools	36%	51%
Organized in a curated collection of resources	31%	41%

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While in some communities, school districts were able to provision a uniform set of laptops, tablets and Chromebooks to their students for online learning, in other districts the students used devices they already had at home, what parents purchased for them, or potentially a school owned device. In any given class, the students may be using an older version of a tablet, a brand-new laptop or a 2-year-old school Chromebook. This mix of platforms meant that the digital content being used in Ms. Jones' online 9th grade English class may have looked and performed differently on each students' personal device at home, including potentially not being functional at all. Teachers experienced this reality firsthand and thus, their heightened interest (a 20-percentage point increase) in ensuring that the digital content selected for classroom use functions as advertised across different device platforms. The spring 2020 experiences also taught teachers about the value of individual student accounts and a rich stream of data about student competencies that can be used to adjust or redirect instructional practices. And while teachers have long valued the insights of peers in evaluating instructional materials, teachers also learned through this experience the value of digital content products that are research-based, created by real teachers and recommended by a trusting organization.

What is the takeaway of these findings for education leaders? As a result of this sudden shift to digital learning experience, teachers now have a heightened sophistication now about what constitutes quality in digital content, and this should result in better decisions around digital content usage in the classroom. Administrators share similar views with their teachers about the potential of digital tools and resources to support more personalized learning and enhanced teacher effectiveness within instruction. But the digital learning lab concept where teachers can experiment with different digital tools and provide feedback on key features they feel are most important for effective classroom usage is one that should be commonplace in our schools, and not only happen during a pandemic.

Evidence of transformation potential #2: the increasingly positive views of parents on the value of technology within education

Our second proof case of an emerging transformation in K-12 education focuses on parents' increasingly positive views on the value of digital tools, content, and resources within their child's learning life. Even prior to the shift to home-based learning, district administrators have long aspired to find ways to increase parental engagement in their child's education. Research has documented for many years the connection between parental engagement and student achievement. But current administrators now seek to expand this connection. Nearly a majority of district administrators (48%) representing a diverse set of communities say that engaging parents in supporting student learning at home is an important tool in their arsenal for both closing the student achievement gap and ensuring that all students are well-prepared for college or career success, whether school buildings are open for face-to-face instruction or learning is happening online. Administrators see parental engagement and active involvement in their child's education as second only to enhancing teacher effectiveness in the classroom as a key factor in driving student success.

Most parents would probably agree that their involvement in their child's education since last spring has been at an all-time high because of remote learning. Certainly, this "front row" seat from the kitchen table may have provided many parents with a refresher on how to add compound fractions, but it also offered for potentially the first time a more comprehensive view on how technology could be effectively used to support learning. For many parents, their only real experience school technology prior to school closures was through the school portal to check on their child's grades in English or the due date of the extinct animal project. As a result of the spring 2020 remote learning experience, parents witnessed firsthand their children engaging in purposeful learning activities enabled by technology such as through a collaborative writing assignment with peers using Google docs or a virtual field trip of African biospheres in real time. These eye-opening experiences resulted in parents' new valuations on the role of technology within learning, and a humbleness about their own abilities to support their child's increasingly sophisticated digital learning experiences.

- As a result of the spring 2020 shift to remote learning, an increased number of parents (75%) now say that the effective use of technology within school is very important for their child's future success compared to the percentage of parents who held that view prior to school closures (55%).
- Parents (51%) were also more likely during school closures to say that technology was being used effectively by their child's teacher to support learning than prior to the sudden shift to digital learning. Only one-third of parents (32%) felt technology was used effectively for learning prior to school closures.
- The percentage of parents who feel comfortable helping their child with digital homework however fell because of the at-home virtual learning experience. Prior to school closures, over two-thirds of parents (68%) said they were very comfortable helping with digital homework. As a result of having that seat at the kitchen table with their child, only 59% were as confident in their abilities.
- Similarly, the number of parents who said they were very comfortable helping their child learn good digital citizenship skills also declined by 14% in spring 2020. Similarly, while 86% of parents say that they are the best person to teach their children digital citizenship, parents' confidence in their ability to model good digital citizenship skills also declined by 21% in spring 2020 with no differentiation based upon age or generation of parents. Millennial parents were just as likely as Baby Boomer parents to have this crisis in confidence in how to effectively model good digital citizenship for their children.

Parents have always held high aspirations for the potential of technology to create more personalized learning experiences for their children, helping teachers recognize each child's individual academic strengths and identifying areas for learning improvements. Their experiences in this new role of a co-teaching parent supporting remote learning appear to have strengthened those perspectives. As illustrated in Table 2, parents' perspectives on the benefits of technology use in their child's learning life increased during the spring 2020 school closures. The attitudes of parents prior to school closures are significantly like the views of parents

collected during the 2018/19 school year, lending greater evidence to the impact of the parents' spring 2020 experience on these higher valuations.

Table 2: Parents' perspectives on how technology use within learning benefits their child's learning

Benefits of technology use for learning	Percentage of parents who agreed		
	2018/19 School Year	2019/20 School Year – before school closures	2019/20 School Year – during school closures
My child communicates with their teacher(s) more	35%	33%	53%
My child has ability to learn at their own pace	33%	33%	49%
My child is developing enhanced creativity skills	35%	32%	44%
My child is learning in a way that best fits their own needs	32%	30%	41%

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As evidenced by the parents, their child's one-on-one communications with their teacher(s) increased significantly when comparing pre and post school closures. This same view is echoed by the teachers with 52% of K-12 teachers saying that digital tools enabled them to have more communications with individual students on a more regular basis. As we would expect, email and text messages were used more often to facilitate these student-teacher communications during remote learning. Parents also benefited from increased communications with their child's teacher(s). Two-thirds of parents (65%) said that they had a better understanding of their child's academic progress and performance in class during school closures. Parent satisfaction with the level of communications with teachers correspondingly increased by 35% during this time frame as well.

What is the takeaway of these findings for education leaders? Parents gained a new appreciation for teachers and effective teaching and learning practices because of their new role within their child's education during remote learning. They also acquired a new understanding of the potential of technology to support personalized learning and effective communications. This genie cannot go back into the bottle. It is imperative that school and district leaders continue to expand upon the engagement of parents in their child's learning life and use that as a springboard to not only rethinking how to communicate with parents more effectively but also how to recruit them on an ongoing basis into the work of re-imagining the education enterprise for the future.

Evidence of transformation potential #3: What can we learn from students about purposeful digital learning environments

With our third set of evidence supporting a new era for transformation in K-12 education, we examine students' views on the types of learning experiences and environments that best support their needs. As documented in many previous Speak Up reports, K-12 students have long valued the potential role of technology within learning and have expressed dissatisfaction and disappointment with traditional learning environments that do not take advantage of the potential of various digital resources to provide more personalized education experiences. Students' perceptions of the value of digital learning originate with their out-of-school experiences using technology to support not only social and entertainment pursuits, but also self-directed, independent learning. This makes logical sense given that 55% of middle school students and 50% of high school students said that they use technology more often for learning outside of school than inside of their physical classroom. Increasingly, these purposeful and satisfying learning experiences that students are having outside of school are influencing their expectations for learning in the classroom.

To first understand the environment for these new expectations, the Speak Up findings examine student access to school technology, both before and during school closures. As we would expect, overall technology access was greatly accelerated by the sudden shift to distance learning in spring 2020 in two significant ways: students had increased access to a school-provided mobile device to use for learning, and online and digital tools were used more frequently within instruction. During school closures, many school districts put a high priority on providing students with tablets, laptops or Chromebooks to support continuity of learning, some based upon student need, others making that provisioning universal for all students. In particular, students reported significant increases in having access to a Chromebook to use for learning during the school closure period in spring 2020 (Table 3). For example, high school students' access to a Chromebook for learning activities increased by 86% because of the shift to distance learning.

Table 3: Student access to a school-provided Chromebook – before and during school closures

Students by grade level	Percentage of students reporting use of a school-provided Chromebook	
	Before school closures	During school closures
Students in grades 3-5	50%	82%
Students in grades 6-8	56%	80%
Students in grades 9-12	35%	65%

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Correspondingly, cloud-based applications and resources were used more frequently by students in spring 2020. For example, middle school students in grades 6-8 were more likely to say that they were using online textbooks, creating collaborative documents to share with peers, watching videos and reading online articles that prior to the school closures. Notably, 85% of these students also said that they were regularly watching videos created by their teachers as part of their remote learning classroom. Only 55% of middle school students had that same experience prior to school closures.

While the full impact of school closures and the sudden shift to remote e-learning in spring 2020 is still to be evaluated, Speak Up findings relative to students' perceptions about their learning experiences, both before and during school closures, are interesting to review. The changes in perceptions as well as the non-changes in those perceptions provide us with new insights into the learning lives of today's students and what is most important to them.

- 81% of students in grades 6-12 say that doing well in school is personally important to them. The percentage of students reporting this perception was the same before and after school closures. Student personal aspirations for school success do not appear to have been impacted by the school closures or new learning formats.
- Students' self-reported level of engagement in what they are learning at school also did not fluctuate based upon the shift in learning format. However, it is important to note that only 55% of students in grades 6-8 and 49% of students in grades 9-12 say that they are engaged most of the time when they are in class, with no difference during school closures from before school closures.
- The percentage of high school students however who wished for more interesting classes declined during spring 2020. Prior to school closures, 61% of students in grades 9-12 said that they wish their classes at school were more interesting. This percentage is similar to what was reported by students in the 2018/19 school year (59%). During distance learning however only 49% of students shared that same view.

- The digital learning experience in spring 2020 did not alter or change students' opinions of their preferred learning modalities. For example, 46% of students in grades 6-8, both before and during school closures, prefer to do schoolwork reading from a printed book or article; 42% say they prefer to do schoolwork readings online using a device. 55% of students continue to say they learn more from watching a video than reading a book. 50% say their best learning experience is when they get to use what they have learned to solve a real-world problem. And 60% of middle school students say they would like to see more online, digital, and video games as part of their learning experiences.

As noted earlier, students' out-of-school experiences with digital tools and resources provides a foundation for understanding learning preferences and their expectations for new learning experiences in school. This is certainly the case in terms of the value that students see in online, digital and video game play within learning. Overall, 51% of students in grades 6-8 and 47% of students in grades 9-12 say they play games on their own, beyond teacher sponsorship or facilitation, to support self-directed learning. Students say that these learning experiences help them develop essential college and career ready skills as well as personal self-efficacy. Whereas students have been leading the charge for more game-based learning in school, the shift to digital learning in spring 2020 seems to be accelerating the acceptance of games as viable learning tools. As potential evidence of changing perceptions around games within education, 50% of teachers reported using games within remote learning instruction on a weekly basis during school closures, an increase of 7 percentage points compared to before school closures and compared to usage during the 2018/19 school year.

Students' engagement with online, digital, and video game play outside of school includes two different modalities – personal participation and observation of others playing games. According to students, they see both modalities as supporting self-directed learning. Students play games as often as they observe others playing games and switch back and forth between both modalities seamlessly. As identified in Table 4, middle school boys continue to be more frequent game players and game observers than middle school girls. However, students who attend majority minority schools and students who attend majority white schools are engaged with game play at similar levels. This is also true for students who are part of a school-based e-sports clubs where they compete with other students in team-based game play.

Table 4: Students' participation in online, digital, and video game play outside of school for learning purposes

Students by gender, school type or in an e-sports club		Percentage who report this activity as a regular occurrence	
		Participate in game play	Observe others playing games
Grades 6-8	Boys	61%	67%
	Girls	42%	37%
Grades 6-8	Students in majority minority schools	55%	55%
Grades 6-8	Students in majority white schools	49%	51%
Grades 6-8	Students in school-based e-sports clubs	58%	51%

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The inclusion of e-sports teams, clubs and leagues within schools is an example of how out-of-school digital learning experiences by students can impact and influence in-school learning opportunities. This emerging field of school-based e-sports activities is still nascent with only 15% of students in grades 6-12 saying they are in an e-sports club or team at their school. However, in recognition of the value of these types of learning experiences for many students, principals are warming to the idea of including these types of activities within their school programming. This may also be the result of the cancellation or deferment of school athletic competitions in spring 2020 that depend upon students being in close physical proximity to one another. E-sports

competitive events can happen online anytime. While only 10% of school principals said they were considering adding an e-sports team to their school prior to school closures, 29% noted that they were now considering this during spring 2020.

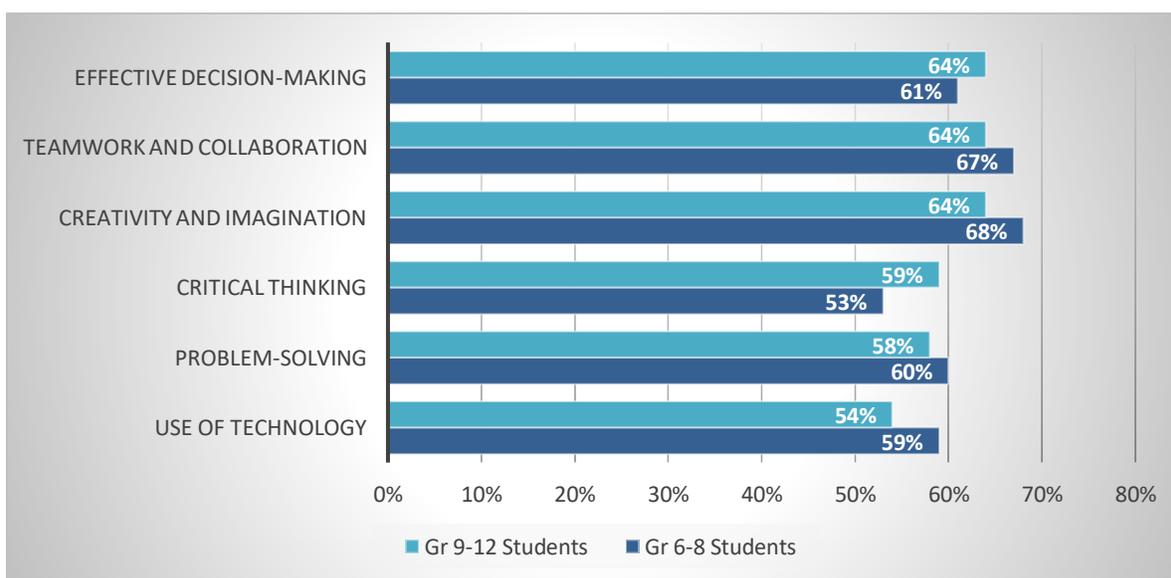
As further evidence of a changing set of perceptions, educators are increasingly interested in how to effectively integrate games within classroom learning. Inspired by their game usage during distance learning, 48% of teachers now say they want their school district to provide them with professional learning on how to successfully utilize online, digital and video games as learning tools, up from 35% of teachers prior to school closures. The types of online games that teachers are interested include quiz type games that test students' content knowledge, building games where students develop digital skills while using their imagination to create new environments, simulation games that allow students to take on contextually relevant roles within game play, strategy games that depend upon critical thinking and decision-making, and team-based games where students work together to solve problems. Principals are also realizing the potential of games as an effective instructional tool with 43% now saying that they want new teachers to learn how to effectively integrate games within learning as part of their teacher preparation coursework.

Based upon their experiences in the spring, classroom teachers cite the following key benefits of including game-based learning within instruction:

- Games can increase student engagement in learning – 85% of teachers agree
- Games can be used to activate students' prior knowledge – 82% agree
- Games provide a way to differentiate learning for students – 73% agree
- Games help students visualize difficult concepts – 60% agree
- Games help students develop critical thinking and problem-solving skills – 54% agree

Teachers' realization that game play can support students' development of key workplace skills such as critical thinking and problem-solving is a telling observation. Though a new positioning for teachers, students have long articulated that the most important benefit of playing online, digital and video games within school or on their own outside of school is to help them develop college and career readiness. What many adults see as simply engagement or entertainment with games, students see as a highly effective and purposeful learning process. Today's students are cognizant of the critical workplace skills needed for their future success in a global marketplace and society. As noted in Chart B, students see a direct connection between game play and those critical skills.

Chart B: Skills students say they develop by using games as a learning tool



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Approximately two-thirds of students in grades 6-12 say that playing online, digital and video games helps them develop more effective decision-making skills, teamwork and collaboration skills and stimulates creativity and imagination. Students also report (49%) that game play helps them become more aware of their current competencies and where they need to develop stronger skills, thus developing an ethos for self-directed learning and personal responsibility for learning outcomes. These are powerful outcomes for any type of learning intervention.

What is the takeaway of these findings for education leaders? As educators reflect on the learning experiences during spring 2020 and begin to incorporate lessons learned into their plans for this school year and beyond, understanding the experiential insights of our students can be an important input. As documented in this discussion around the changing views of educators regarding the use of games within instruction, the sudden shift to digital learning in spring 2020 may have been the catalyst for many educators to think differently about new learning modalities such as game play, but it is also important to note that our students have actually been waiting a long time for us to catch up. Let's resolve to listen more to the digital learning expertise of our students as we take the next steps to translate the lessons learned from this spring experiment into sustainable plans for transforming education.

Ending Thoughts

The pandemic and resulting closures of physical school buildings in spring 2020 caused a series of seismic aftershocks that significantly impacted the lives of K-12 students and their families, teachers and administrators, schools and communities in most parts of our country. We are still reeling from many of those aftershocks. However, as noted in this year's Speak Up report, *Digital Learning during the Pandemic: Emerging Evidence of an Education Transformation*, our research findings indicate that beyond the structural changes implemented to accommodate the sudden shift to digital learning, there are other interesting lessons learned from this national collective experience that have the potential to positively impact the future of education. Being able to see and act upon these lessons learned requires us, however, to see opportunity where others may only see problems. As the popular phrase says, "Nothing is as expensive as a lost opportunity." School and district leaders have the unprecedented opportunity (if they choose) to use this pandemic crisis as a starting point for brand new conversations around equity, innovation and learning efficacy. The Speak Up findings provide evidence that the virtual learning experiment during spring 2020 changed many of the enduring beliefs and attitudes of teachers and parents around digital learning. Combined with students' longstanding aspirations for more effective learning experiences, these changed perspectives create a fresh environment and an energized climate for future-facing discussions around how to re-imagine and re-invent the K-12 education enterprise.

We are here to help with that process. We encourage schools, districts and communities to use this year's findings as a jumpstart to new local discussions around the future of education. Project Tomorrow has long advocated for the inclusion of a diverse set of views and voices in local decision-making. The Speak Up Research Project provides an efficient and effective way for you to learn about the perspectives of your key stakeholders, notably students, parents and staff. But beyond reviewing the data collected via the Speak Up surveys, we also highly value the power of active listening to constituents, clients and stakeholders. The views and voices of your community are a valuable asset that can be effectively leveraged to inform your plans, your messages and your policies. To support your efforts, we have identified for you some thought-provoking questions to include in your critical conversations with your stakeholders. Good luck and keep us informed of your progress!

- What is the one big thing that you learned from your school or district's remote e-learning experience in that you think can be a catalyst for new internal discussions about the future of education? What do you need to do to move that idea from being a catalyst into an agent of transformation within your school or district? How will that transformation impact your students?
- Given the realities of the spring experiences, what are your priorities for this school year? Are those goals the right goals to have now or do they need to be revisited considering what we have learned about digital learning and equity in particular? What is the best way to re-evaluate those goals now?

- When you think about the ultimate school for today's learners, what learning models or resources do you think are most important to include in that vision today? How has that vision changed from a year ago? What do you need to actualize that vision?
- How are you bringing your stakeholders into these discussions? Whose voice is even more critical now to have at that planning table today? How are you creating a culture of innovation that values and acts upon the perspectives and ideas of your students, parents, teachers, and leaders on a regular basis?

Project Tomorrow and the Speak Up 2019-20 Research Project

The Speak Up Research Project is a national initiative of Project Tomorrow, an internationally recognized education nonprofit organization dedicated to ensuring that all students are prepared to become tomorrow's leaders, innovators and engaged citizens of the world. Each year, the Speak Up Project polls K-12 students, parents, and educators about the role of technology for learning in and out of school, and the impact of new learning models on student outcomes and teacher effectiveness. The Speak Up dataset represents the largest collection of authentic, unfiltered stakeholder voices on digital learning. Since fall 2003, almost 6 million K-12 students, parents, teachers, librarians, principals, technology leaders, district administrators, communications officers, and members of the community have shared their views and ideas through Speak Up. Education, business, and policy leaders report that they regularly use the Speak Up data to inform federal, state, and local education programs, policies, and initiatives.

Other Speak Up reports and infographics from this school year include:

[90 Days That Changed K-12 Teaching & Learning](#) (series of 4 executive briefs)

- *The Shift to Digital Learning*
- *Spotlight on Equity in Learning*
- *Strengthening the Bonds of Communications*
- *Sponsoring Student Ownership of Learning*

[Equity in Educational Opportunities](#) – two infographics about the differences in students' digital access and social-emotional well-being, comparing students in majority minority schools with students in majority white schools

[The Impact of Remote E-Learning on K-12 Teachers' Professional Learning Needs](#) – infographic

During the 2019-20 school year, 110,467 K-12 students, 11,731 teachers and librarians, 1,128 school and district level administrators, 11,749 parents and 1,532 community members submitted a Speak Up online survey. Surveys for parents and students were available this year in both English and Spanish. The Speak Up Project is facilitated 100% through K-12 schools and districts that register to participate. Registration for this past year included 8,933 public, private and charter schools and 268 school districts. Of those participating schools, 37% were in rural communities, 34% were in urban communities and 29% were in suburban communities. Data analysis was done to evaluate differences in responses from students and teachers in schools with a majority minority student population compared to schools where the student population is majority white. Data from 444 majority minority schools was evaluated as was data from 154 majority white schools. The Speak Up 2019-20 Research Project was open for input from September 2019 through June 2020. Learn more about Project Tomorrow and the Speak Up Research Project at <https://tomorrow.org/speakup>



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Project Tomorrow® is the leading global education nonprofit organization dedicated to the empowerment of student voices in education. With 24 years of experience in the K-12 education sector, Project Tomorrow regularly provides consulting and research support about key trends in K-12 science, math and technology education to school districts, government agencies, business and higher education.

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