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Executive Summary

The Digital Transformation In Elementary Education

The pandemic caused a massive transformation in K-12 education as schools closed to prevent the spread of the coronavirus and learning moved online. In the spring of 2021, Capstone, a children's educational publisher, commissioned the EdWeek Research Center to survey elementary school teachers and administrators to learn more about how the shift had impacted the instructional resources used to teach literacy, science, and social studies. Although elementary educators had previously embraced technology to a much lesser extent than their secondary school peers, survey results suggest that the pandemic closures led to a large increase in the use of digital resources to teach our nation's youngest learners. The tools that educators were most likely to try for the first time during the pandemic included the videoconferencing platform Zoom, Google Classroom's productivity suite, digital portfolio tool Seesaw, and Flipgrid, which enables video sharing and interaction. Survey respondents expressed high levels of satisfaction with their tools, with most saying that teachers and students alike had learned to more effectively use technology in academic settings as a result of the pandemic. However, sudden and large-scale transformations nearly always include challenges and this one was no exception. Educators will need guidance on the type of amount and screen time that is right for young students. And everyone will need to continue to learn to navigate the new and changing landscape of elementary school technology.

Introduction

In March of 2020, schools were shuttered en masse to slow the spread of the coronavirus. Some have not reopened since. The abrupt closures caused a sea change in K-12 education, as schools were suddenly forced to switch from in-person instruction, where teachers could readily print out worksheets and pass out textbooks, to online learning models that relied almost entirely on digital resources and devices.

In the spring of 2021, almost exactly one year after the pandemic first shut down schools, Capstone, a children's educational publisher, commissioned the EdWeek Research Center to conduct a survey to explore how the pandemic had impacted the instructional resources used to teach elementary English/language arts, social studies, and science. The survey respondents were 534 educators including 155 district leaders; 233 elementary-level school leaders; and 146 elementary teachers.

Elementary Education's Digital Evolution

The coronavirus pandemic hit elementary schools especially hard. That's because schools serving the youngest learners had fewer devices, largely due to instructional concerns such as limiting screen time. These concerns were especially pronounced when it came to teaching children to read and, in upper elementary grades, to use literacy skills to learn about subjects like social studies and science.

EdWeek Research Center Survey Methodology

Who: 534 educators (155 district leaders; 233 elementary-level school leaders; and 146 elementary teachers)
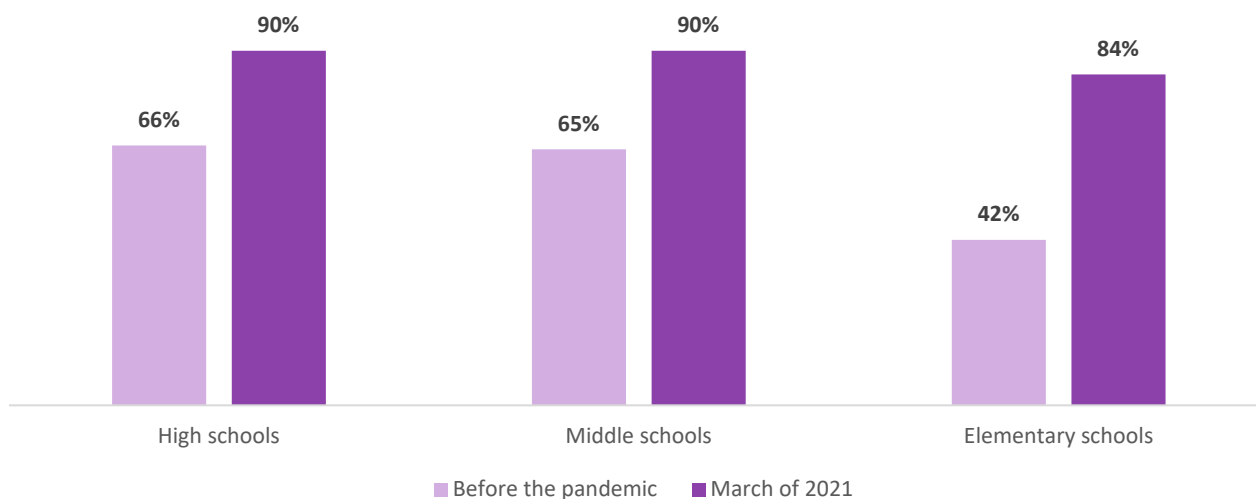
What: A nationally-representative survey

When: April 1st-15th 2021

Where: Respondents included educators working in the District of Columbia and every state in the mainland United States

Why: To explore the impact of the coronavirus pandemic school closures on resources used to teach elementary literacy, science, and social studies

How: The survey was administered online

Percent of District Leaders Reporting 1:1 Computing

High schools: Before the pandemic 66%, March of 2021 90%
Middle schools: Before the pandemic 65%, March of 2021 90%
Elementary schools: Before the pandemic 42%, March of 2021 84%

■ Before the pandemic   ■ March of 2021

Respondents are district leaders.

SOURCE: EdWeek Research Center March 2021 survey

EdWeek Research Center

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Largely as a result of such concerns, prior to the pandemic, just 42 percent of district leaders said their elementary schools offered 1:1 computing (one device for every student). By contrast, two out of three provided that level of computing to secondary students, an EdWeek Research Center survey found. By March of 2021, when that survey was conducted, the share of leaders reporting 1:1 computing at the elementary level had doubled. Elementary schools are now nearly as likely as secondary schools to provide a device to every student.

With more devices available and their students stuck at home, elementary educators increasingly turned to digital curricular resources, the April Capstone-EdWeek Research Center survey found. Ninety-two percent of administrators and elementary teachers said that, compared to prior to the pandemic, they had increased their use of digital resources for elementary literacy, science, and social studies instruction. Sixty-two percent reported decreasing their use of print resources.

How has your usage of digital and print resources for elementary literacy, science, and social studies instruction changed since 2019?
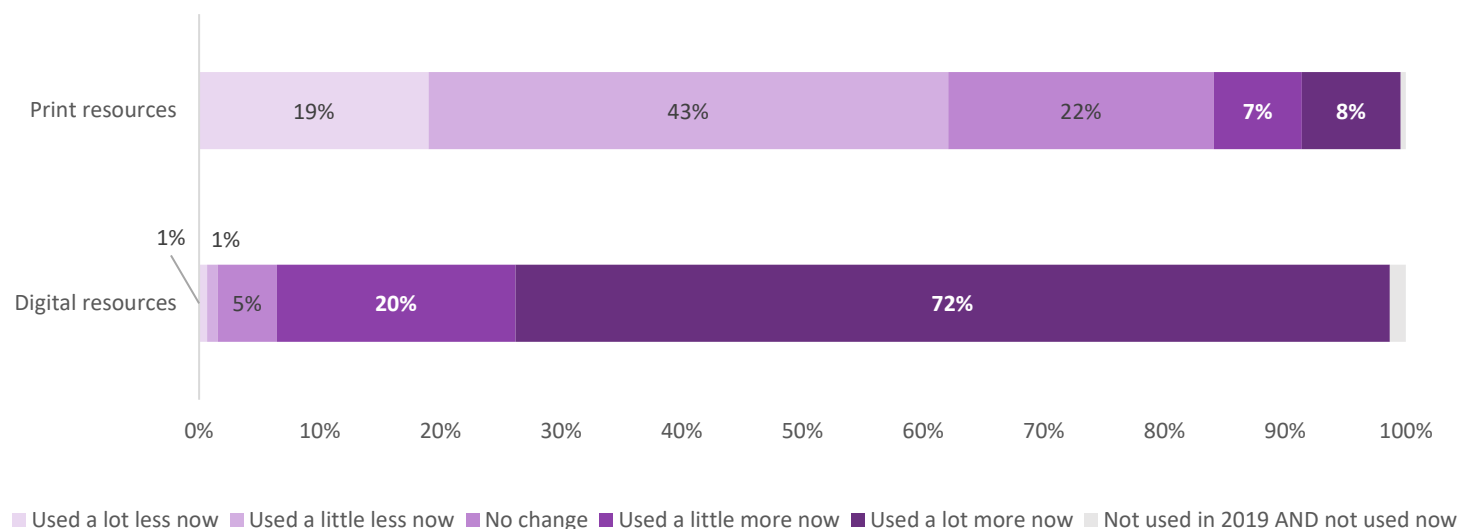
Print resources: 19% | 43% | 22% | 7% | 8%

Digital resources: 1% | 1% | 5% | 20% | 72%

Legend: ■ Used a lot less now ■ Used a little less now ■ No change ■ Used a little more now ■ Used a lot more now ■ Not used in 2019 AND not used now
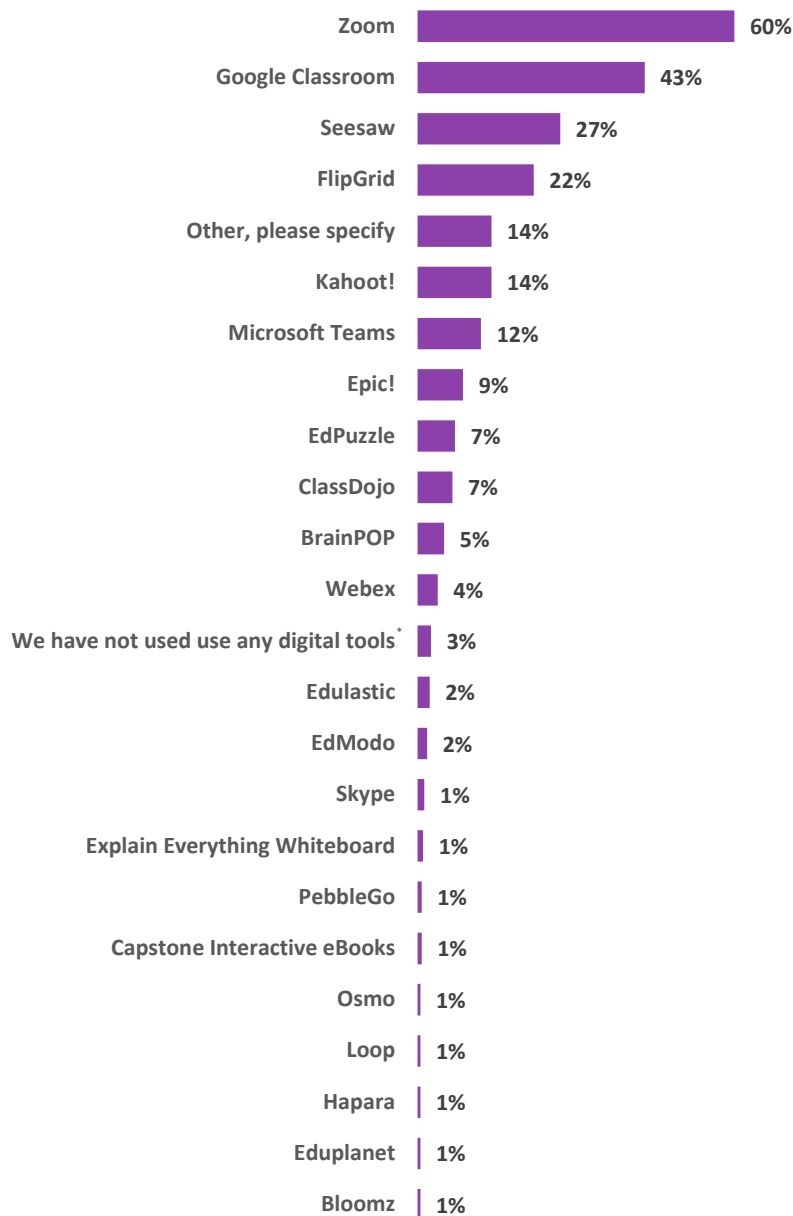
Respondents are elementary teachers, principals, and district leaders.
Totals may not add up to 100% due to rounding.

SOURCE: EdWeek Research Center April 2021 survey

The New Tools That Educators Tried

As elementary educators increased their use of digital resources during the pandemic, they tried out more than 20 products for the first time, the EdWeek Research Center survey found. Videoconferencing platform Zoom was the resource they were most likely to try during the pandemic, followed by Google Classroom's productivity suite, digital portfolio tool Seesaw, and Flipgrid, which enables video sharing and interaction.

Which digital tools, if any, did you or the elementary teachers in your district or school use for the FIRST TIME during the pandemic? Select all that apply.

Tool	Percentage
Zoom	60%
Google Classroom	43%
Seesaw	27%
FlipGrid	22%
Other, please specify	14%
Kahoot!	14%
Microsoft Teams	12%
Epic!	9%
EdPuzzle	7%
ClassDojo	7%
BrainPOP	5%
Webex	4%
We have not used use any digital tools[*]	3%
Edulastic	2%
EdModo	2%
Skype	1%
Explain Everything Whiteboard	1%
PebbleGo	1%
Capstone Interactive eBooks	1%
Osmo	1%
Loop	1%
Hapara	1%
Eduplanet	1%
Bloomz	1%

* We have not used use any digital tools for instructing students in grades K-5 for the first time during the pandemic
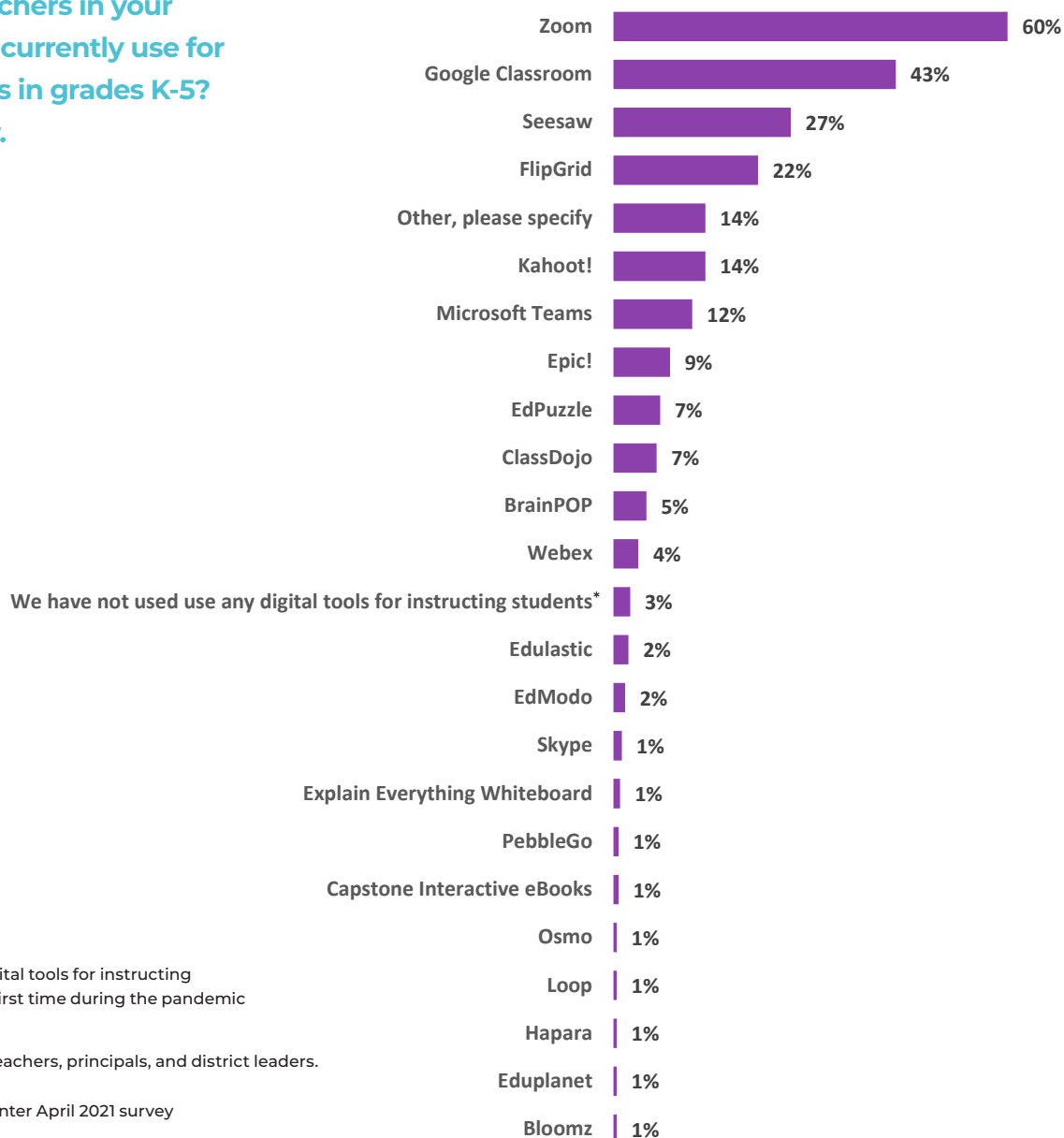
Respondents are elementary teachers, principals, and district leaders.

SOURCE: EdWeek Research Center April 2021 survey

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Overall, the majority of elementary teachers and administrators say they now use Google Classroom, Kahoot! (game-based learning), Zoom, ClassDojo (behavior management, learning, engagement, and parent communication), BrainPOP (gamified, animated learning), and Seesaw (digital portfolios available to parents, students, and teachers).

Which digital learning platforms do you — or the teachers in your district or school — currently use for instructing students in grades K-5? Select all that apply.

| Platform	Percentage
Zoom	60%
Google Classroom	43%
Seesaw	27%
FlipGrid	22%
Other, please specify	14%
Kahoot!	14%
Microsoft Teams	12%
Epic!	9%
EdPuzzle	7%
ClassDojo	7%
BrainPOP	5%
Webex	4%
We have not used use any digital tools for instructing students*	3%
Edulastic	2%
EdModo	2%
Skype	1%
Explain Everything Whiteboard	1%
PebbleGo	1%
Capstone Interactive eBooks	1%
Osmo	1%
Loop	1%
Hapara	1%
Eduplanet	1%
Bloomz	1%

* We have not used use any digital tools for instructing students in grades K-5 for the first time during the pandemic

Respondents are elementary teachers, principals, and district leaders.

SOURCE: EdWeek Research Center April 2021 survey

Satisfaction Rates

Elementary educators expressed high levels of satisfaction with their digital platforms. Two out of three said they had not been forced to stop using any of their digital tools during the pandemic because the products had failed to meet their instructional needs for literacy, science, or social studies. Educators were also asked about the likelihood that they would recommend the digital tool with which they were most familiar to a friend or colleague for teaching elementary literacy, science, or social studies. On a scale of 0 to 10, where zero was "not likely at all" and 10 was "extremely likely," the average score was 9.
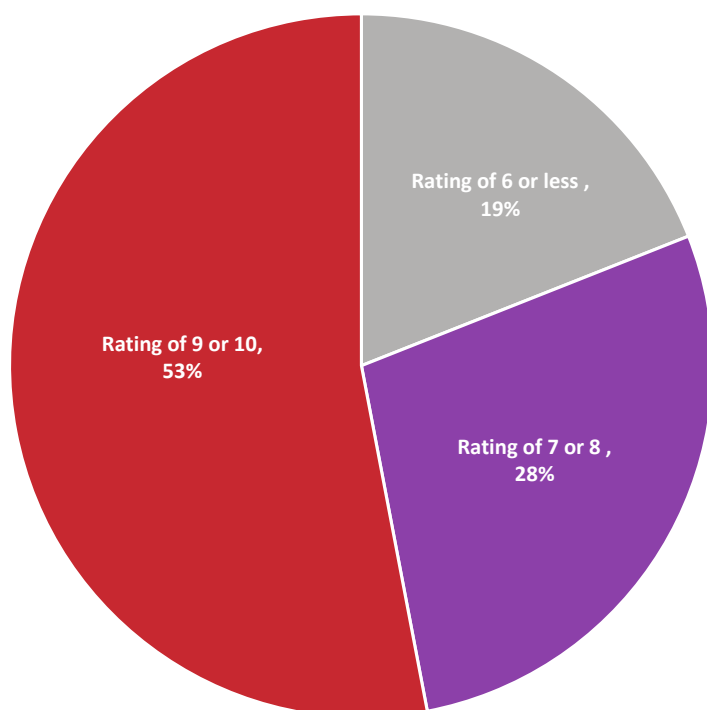
How likely is it that you would recommend the digital tool with which you are most familiar to a friend or colleague for teaching elementary literacy, science, or social studies?
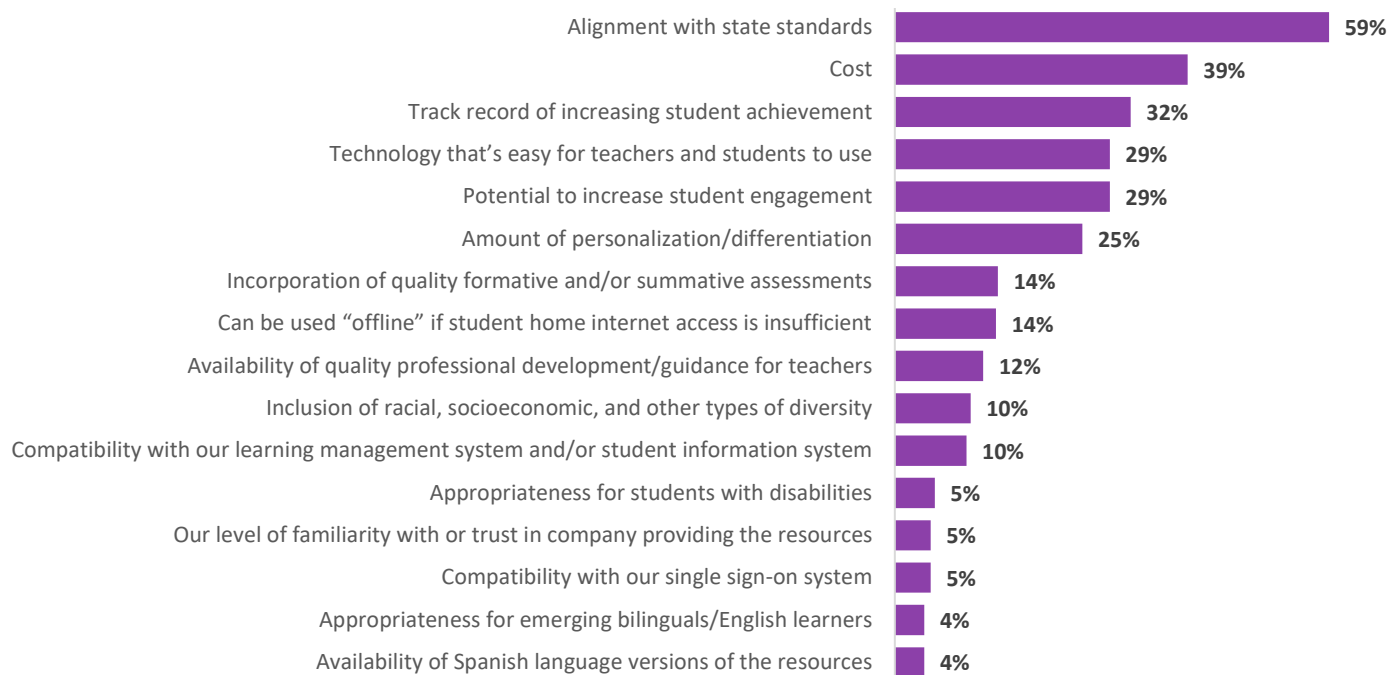
Rating of 6 or less , 19%

Rating of 9 or 10, 53%

Rating of 7 or 8 , 28%

Respondents are elementary teachers, principals, and district leaders.

SOURCE: EdWeek Research Center April 2021 survey

Educators' satisfaction levels hinge on several factors. Asked what they most value when considering a digital resource for elementary literacy, science, and social studies, school and district leaders were most likely to say alignment with state standards, followed by cost, a track record of increasing student achievement, the potential to increase student engagement, and ease of use.
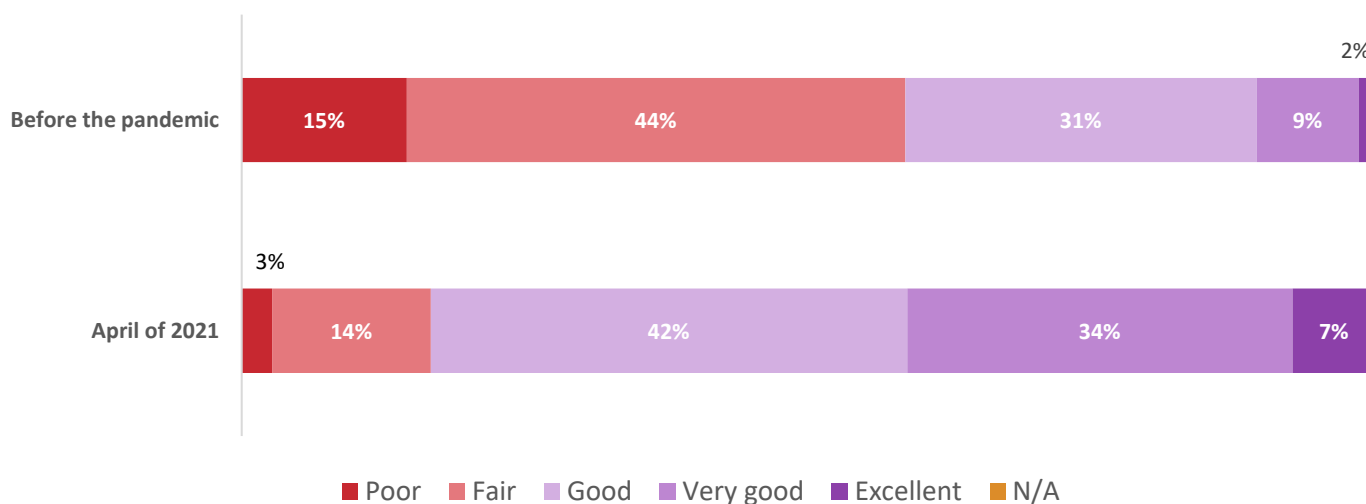
Traits that Principals and District Leaders Value in Digital Resources for Elementary Literacy, Science, and/or Social Studies

Trait	Percentage
Alignment with state standards	59%
Cost	39%
Track record of increasing student achievement	32%
Technology that's easy for teachers and students to use	29%
Potential to increase student engagement	29%
Amount of personalization/differentiation	25%
Incorporation of quality formative and/or summative assessments	14%
Can be used "offline" if student home internet access is insufficient	14%
Availability of quality professional development/guidance for teachers	12%
Inclusion of racial, socioeconomic, and other types of diversity	10%
Compatibility with our learning management system and/or student information system	10%
Appropriateness for students with disabilities	5%
Our level of familiarity with or trust in company providing the resources	5%
Compatibility with our single sign-on system	5%
Appropriateness for emerging bilinguals/English learners	4%
Availability of Spanish language versions of the resources	4%

Respondents are elementary principals and district leaders. Respondents were asked to select their top three traits.

SOURCE: EdWeek Research Center April 2021 survey

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How would you rate your ability — or the ability of the teachers in your district or school — to effectively use digital resources for elementary literacy, science, or social studies instruction?

	Poor	Fair	Good	Very good	Excellent	N/A
Before the pandemic	15%	44%	31%	9%		2%
April of 2021	3%	14%	42%	34%	7%	

■ Poor ■ Fair ■ Good ■ Very good ■ Excellent ■ N/A

Respondents are elementary teachers, principals, and district leaders.
Totals may not add up to 100% due to rounding.

SOURCE: EdWeek Research Center April 2021 survey

Digital Tools: The Benefits

Increasingly, students need to learn to use technology effectively in a variety of settings in order to succeed in our society. Sixty-one percent of elementary teachers, school leaders, and district leaders say their students improved their ability to use technology in an academic setting as a result of their use of digital tools for literacy, science, and social studies instruction during the pandemic.

The increased use of digital resources during the pandemic also helped elementary teachers improve this skill set. Prior to the pandemic, 42 percent of elementary teachers, school leaders, and district leaders rated teachers' ability to effectively use digital resources as good, very good, or excellent. That rate nearly doubled to 83 percent in April 2021.

Teachers also appreciated the efficiency of digital resources: 42 percent perceive that they saved money and time on printing.

Finally, in urban areas, nearly half of elementary educators (47 percent) said the digital resources they used for literacy, science, and social studies instruction were more up to date than their print resources. (Roughly 1 in 3 rural and suburban educators agreed).
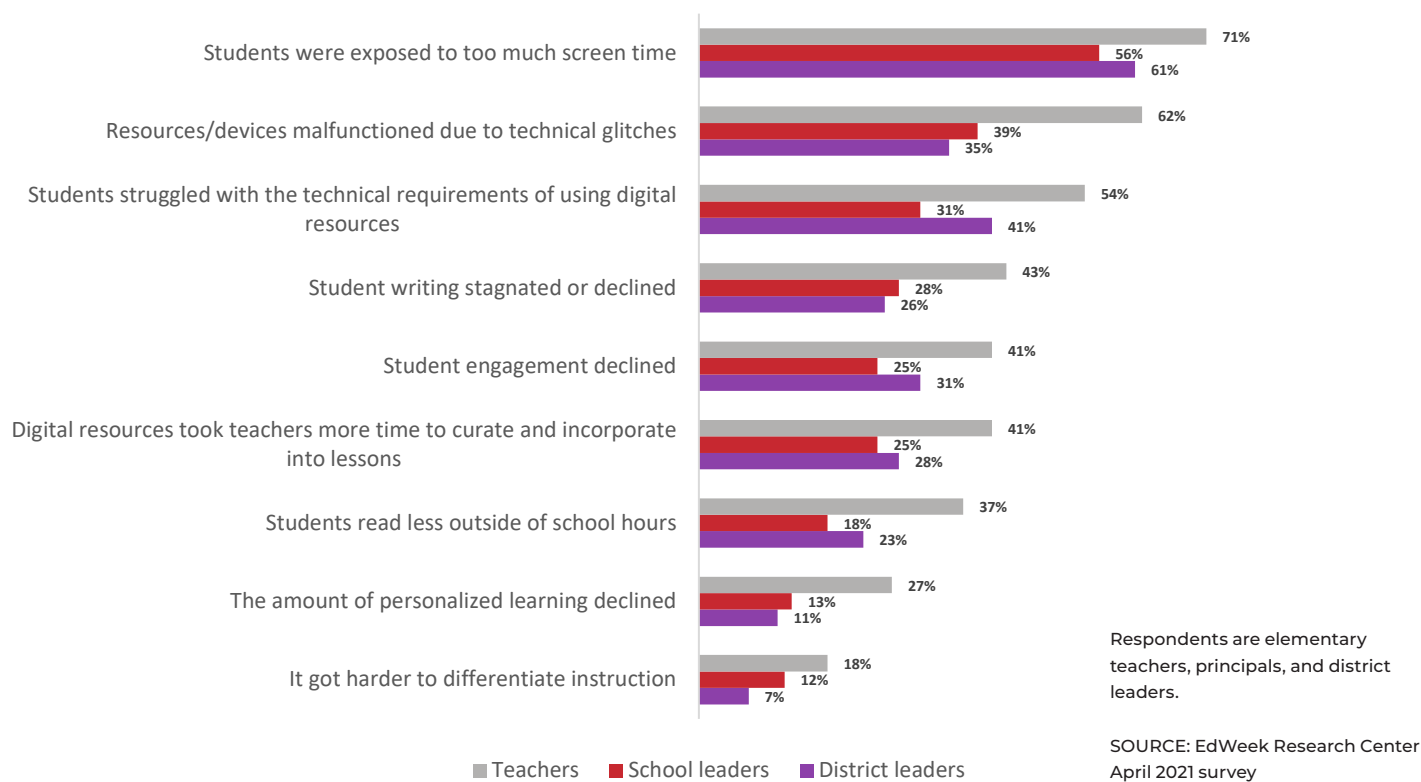
Digital Resources: The Challenges

Teachers, school leaders, and district leaders identified two main challenges with their pandemic-era use of digital resources for elementary literacy, science, and social studies instruction. First, 61 percent of educators expressed concerns that students are being exposed to too much screen time. Teachers were most likely to express this concern (71 percent) followed by district leaders (61 percent), and school leaders (56 percent).

"Is it appropriate to have students on technology as much as they are?" wrote a district-level curriculum and instruction director in Kansas in response to a survey question asking educators about their number 1 challenge related to the use of digital resources for elementary literacy, social studies, and science instruction. "What does this do to their learning and well-being? Does removing handwriting from the writing process impact our students' learning? All in all the #1 challenge has been following COVID protocols and not knowing how all of this might impact our students' learning (short-term and long-term)."

Families were the second biggest concern for teachers, school leaders, and district leaders. Fifty-three percent of educators said parents struggled to assist children with work involving digital resources.

Teachers are signifcantly more likely than administrators to report nine challenges resulting from using digital resources during the pandemic for K-5 literacy, science, and/or social studies
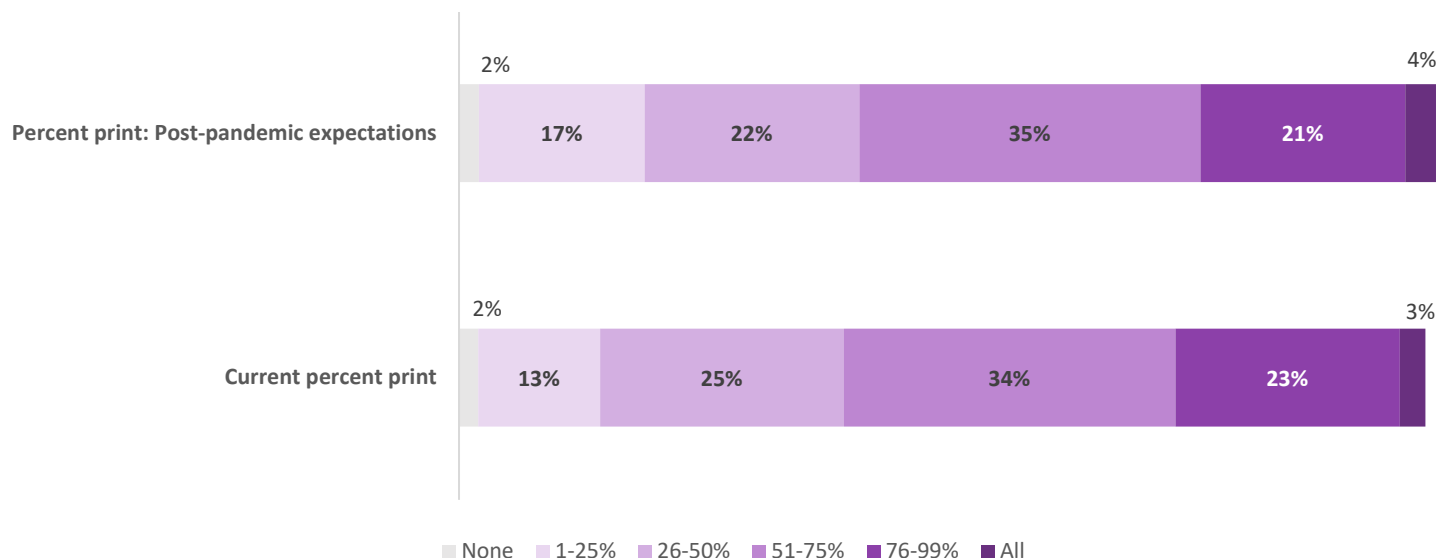
Challenge	Teachers	School leaders	District leaders
Students were exposed to too much screen time	71%	56%	61%
Resources/devices malfunctioned due to technical glitches	62%	39%	35%
Students struggled with the technical requirements of using digital resources	54%	31%	41%
Student writing stagnated or declined	43%	28%	26%
Student engagement declined	41%	25%	31%
Digital resources took teachers more time to curate and incorporate into lessons	41%	25%	28%
Students read less outside of school hours	37%	18%	23%
The amount of personalized learning declined	27%	13%	11%
It got harder to differentiate instruction	18%	12%	7%

■ Teachers ■ School leaders ■ District leaders

Respondents are elementary teachers, principals, and district leaders.

SOURCE: EdWeek Research Center April 2021 survey

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"My young learners can't use the technology and I can't help from a distance," said a Nebraska teacher.

Perhaps because they are trying to work with these young learners from a distance, technical issues are a bigger concern for teachers than for administrators. Sixty-two percent of teachers said malfunctioning devices were a major challenge, as compared to less than 40 percent of administrators. Teachers were also significantly more likely than administrators to face technical challenges related to student use of digital resources. More than half of teachers (54 percent) said students struggled with technical requirements as compared to 31 percent of school leaders and 41 percent of district administrators.

Print is Still in the Mix

Perhaps because of perceived challenges such as screen time and technical concerns, elementary schools plan on keeping print resources for grades K-5 literacy, social studies, and science even as they have come to rely more heavily on apps and devices. Sixty percent of district leaders say that the majority of their curricular materials are print-based in those grade levels and subjects. When the pandemic ends, 60 percent of those leaders say the majority of those materials will still be based in print. That said, just three percent of leaders say all of their resources are print-based. And only about a quarter say three-quarters or more of the resources are now print-based-or will be post-pandemic.

Percentage of district K-5 English/language arts, reading, social studies, and science curricular materials that are PRINT/PAPER rather than digital: Current vs. post-pandemic expectations

	None	1-25%	26-50%	51-75%	76-99%	All
Percent print: Post-pandemic expectations	2%	17%	22%	35%	21%	4%
Current percent print	2%	13%	25%	34%	23%	3%

Respondents are district leaders.

SOURCE: EdWeek Research Center April 2021 survey

Conclusion

Remote learning during the coronavirus pandemic has had a profound impact on the tools and materials used for elementary literacy, social studies, and science instruction. The use of devices and digital resources skyrocketed as educators turned increasingly to tools like Google Classroom and Zoom to teach children learning from home. Despite the abruptness of the transformation, educators experienced high rates of satisfaction with their digital tools. Most also said that their students had improved their ability to use technology in academic settings, a skill that will almost certainly come in use in the upper grades and in college, where digital resources are and have been much more ubiquitous.

Most rapid changes result not only in benefits but in opportunities for improvement. This one was no exception. Teachers and administrators almost certainly need more information on the amount and type of screen time that is beneficial to our youngest students. Parents need help navigating new technologies so they can assist their children with learning at home. Students need help too: even as they have grown more skilled at using technology for educational purposes, there is still room for improvement. And companies can always do more to assist educators with technical glitches that can interrupt education. When it comes to technology, elementary schools are a little bit like their students in that they are at the beginning of their educational journeys and not yet at the end. ■