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RESEARCH CENTER

Teachers and Ed-Tech Innovation

Results of a National Survey

About Editorial Projects In Education

Editorial Projects in Education (EPE) is a nonprofit, tax-exempt organization based in Bethesda, Md. Its primary mission is to help raise the level of awareness and understanding among professionals and the public of important issues in American education. EPE covers local, state, national, and international news and issues from preschool through the 12th grade. Editorial Projects in Education publishes *Education Week*, America's newspaper of record for precollegiate education, the online *Teacher*, *EdWeek Market Brief*, and the TopSchoolJobs employment resource. It also produces periodic special reports on issues ranging from technology to textbooks, as well as books of special interest to educators.

The Education Week Research Center conducts surveys, collects data, and performs analyses that appear in *Education Week* and special reports such as *Quality Counts*, and *Technology Counts*. The center also conducts independent research studies and maintains the Education Counts online data resource.

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RC | EDUCATION WEEK RESEARCH CENTER

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Inside:

Executive Summary

In March 2019, the Education Week Research Center conducted an online survey of 700 Pre-K-12 teachers to learn more about how they experience and perceive ed-tech innovation. The survey was designed to provide content for the 2019 edition of *Education Week's* longstanding *Tech Counts* report. Although some of the survey findings are summarized in that report, this publication contains the full survey results, including previously unreleased data.

Major findings from the survey include:

- **Basics available at school, not necessarily home**: Without fundamentals like WiFi and devices, ed-tech innovation is all but impossible. Most teachers say they have these basics at school but can't safely presume their students can access them at home.

- **WiFi drives improvement**: High-speed WiFi is the ed-tech innovation that teachers perceive has most significantly improved teaching and learning.

- **The device dilemma**: Survey results suggest devices are the technology that is most likely to be replaced or refreshed and most teachers say they have enough for every student. However, even 1:1 initiatives may not be sufficient: A shortage of devices is the top perceived barrier to ed-tech innovation in schools. This may impede progress: Devices are the tool that teachers are most likely to have used innovatively in recent years.

- **Ed-tech is not necessarily synonymous with innovation**: Fewer than 1 in 3 teachers say ed-tech provides a lot of support for innovation in their classrooms. Just 27 percent say ed-tech innovations have created a lot of change in their work.

- **Districts or schools provide limited support for ed-tech innovation**: For instance, fewer than half of teachers say they have received training to help them use ed-tech innovatively. And just 1 in 5 say they have adequate time to experiment with classroom technology. Support is weaker in high-poverty schools.

- **Frequent areas of innovation**: Teachers are most likely to use ed-tech innovatively to differentiate instruction, assess student learning, and communicate with parents.

- **Hearts and Minds**: The vast majority of teachers indicate that ed-tech innovations have changed their beliefs about some aspect of education.

Introduction

Technological change is a constant of contemporary life. Smart phones, self-driving cars, and other innovations create an ever-evolving set of options and obstacles. And K-12 education is certainly not immune. Although the sector does change more slowly than other areas of society (witness the continued reliance on paper-and-pencil work sheets and printed text books), there is plenty of evidence that elementary and secondary schools have embraced innovations such as high-speed WiFi, cloud-based services, and low-cost devices. What is less clear is the degree to which teachers have used these new tools in innovative manners, rather than merely continuing their former practices on new and different platforms.

The objective of this survey was to examine this question by gauging teachers' experiences and perceptions vis a vis ed-tech innovation. To this end, we asked teachers how much technology was actually supporting innovation. We delved into the areas they focused on when they did use ed-tech to innovate. We queried them about the degree to which ed-tech innovations had actually impacted core beliefs about teaching and learning. And we collected baseline information on the technologies that are actually available to teachers in their classrooms.

Combined, these results suggest that K-12 schools, while not innovation deserts, have plenty of room to grow when it comes to meaningful and positive changes to the ways in which they use technology.

SURVEY DETAILS

Survey Administered: March 2019

Sample: Nationally-representative

Respondents: Preschool, elementary, middle school, and high school teachers

Total Respondents: 700

Tech Basics

Prescursors to Innovation: Most Teachers Have Basic Tech Tools in School

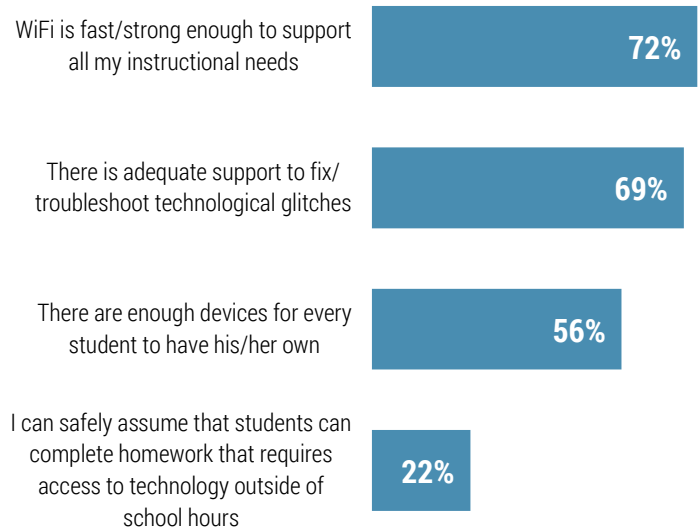
It's a simple idea: Ed-tech innovation requires access to technology.

It is difficult for teachers to even consider ed-tech innovation if they lack such basics as reliable WiFi, adequate tech support, and sufficient numbers of devices.

A majority of teachers say they have access to all three at school.

Although in-school access to technology is typically adequate, home access is less robust. Fewer than a quarter of teachers say they can safely assume that students can complete homework that requires access to technology outside of school hours.

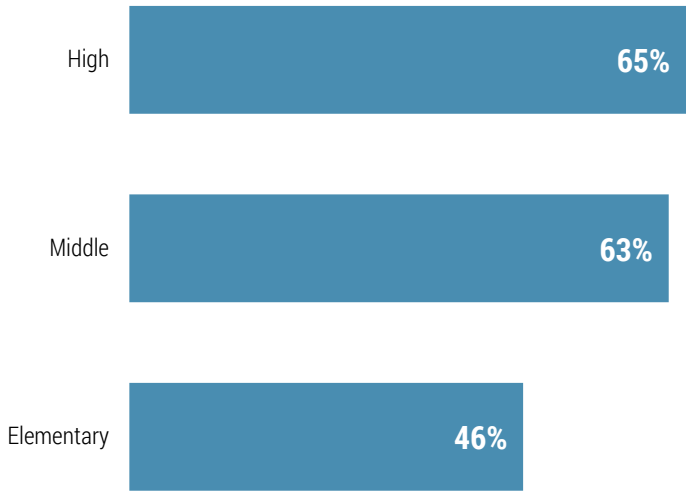
At my school:



Access to Devices Lags in Elementary Schools

More than 6 in 10 teachers in high schools and middle schools say that all their students have access to devices. Elementary teachers are an exception, with less than half (46 percent) reporting that there are enough devices for each student to have his or her own.

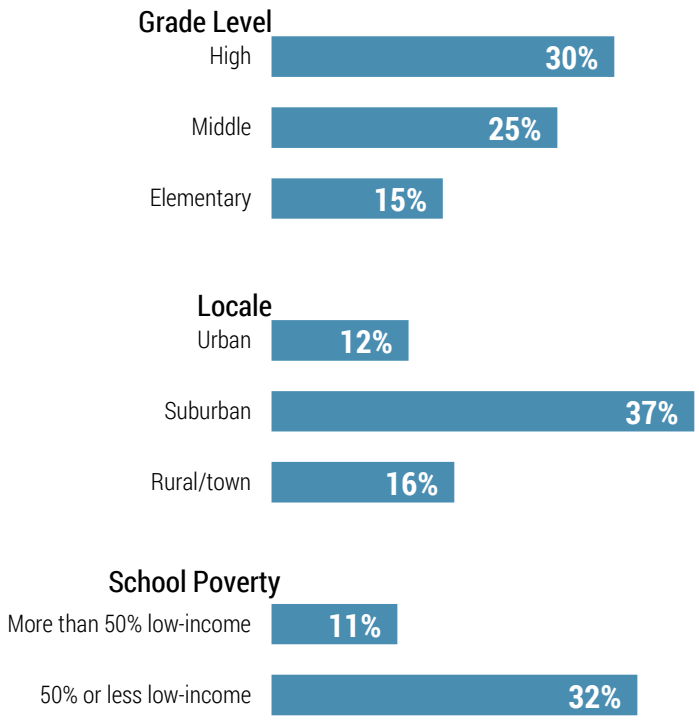
At my school: There are enough devices for every student to have his/her own.



Home Access Varies by Student Age, Locale, Demographics

Out-of-school access to technology is particularly challenging in high-poverty schools, and also in rural, and urban environments, where parents may be unable to access or afford basics like home WiFi or laptops. In addition, out-of-school access is a greater challenge at the elementary than at the secondary level, perhaps because younger children are less likely to have their own smart phones.

At my school: I can safely assume that students can complete homework that requires access to technology outside of school hours.



Exclusive Service Programs For K–12 Schools

Help Extend Life of Education Devices, Improving Total Cost Of Ownership

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Early in the shift toward digital learning in K–12 schools, Acer recognized that education customers had different needs than their corporate customers. While chronically understaffed, school and district IT teams are knowledgeable and generally have a good idea of what their issues are. Their end users are students as opposed to employees, so schools have different types and frequency of damages. They also require streamlined customer service procedures that utilize others in their supply chain, including authorized local resellers.

To meet those needs, Acer established a premier support program called Educare that provides schools with a unique set of service offerings that extends the life of technology in the classroom and maximizes schools' return on their IT investments. For education customers, Acer delivers value-added services like battery replacements for heavily used notebooks and tablets, extended warranty and accidental damage coverage, and two-way freight for depot repairs. An example of damage that is unique to schools is students picking off keys on the keyboard. Acer covers this repair under its accidental damage coverage. As this was a common occurrence for schools, Acer also responded by developing better keyboard design on their newer machines.

One of the resources the Acer team developed was an online community that is organized by product type and model. English speakers have the largest, most vibrant products community. Acer provides many self-service tools that allow users to find answers for themselves, but community members also ensure that everyone gets their questions answered. These are super fans who volunteer to handle community questions—some for years at a time. This responsive, online community is available to Acer users 24/7.

A Unique Commitment to K–12 Schools

Acer is unique in its level of commitment to schools. They wanted to give schools and districts lots of options to support their fleets of education devices, and most importantly, they wanted to provide superior customer service through responsiveness and flexibility. With the Educare program, Acer developed a unique-to-the-industry, comprehensive "can do" service model that puts the needs of schools and districts first to provide various levels of support.

One of the important ways Acer responded to unique school challenges was to move the warranty start date to the device deployment date, often the start of the school year, from the purchase and delivery date, which is frequently during June and July. This allowed Acer to give schools and districts back months of warranty coverage more in line with when the device usage began.

Districts often want their mobile devices and projectors to last through a three- to four-year cycle. If the machines' batteries lose the ability to keep a machine charged through a school day, Acer will replace the batteries at no charge to the school.

Educare is a comprehensive portfolio of services for schools

- Dedicated toll free number with PIN access and dedicated email address.
- US based level 2 technical and administrative support.
- 15 second response time and no "scripts" means quicker resolution.
- Real time repair case status check available on the Premier Support website.
- Live Chat is available on the Premier Support Website. Monday– Friday from 9:00 am to 4:30 pm Central.
- Warranty registration assistance.
- Adjustment of the warranty start date to reflect when the units are deployed versus purchased.
- Inbound shipping to the depot for device repairs.
- Out of warranty spare parts purchasing assistance.

Exclusive Service Programs for K–12 Schools

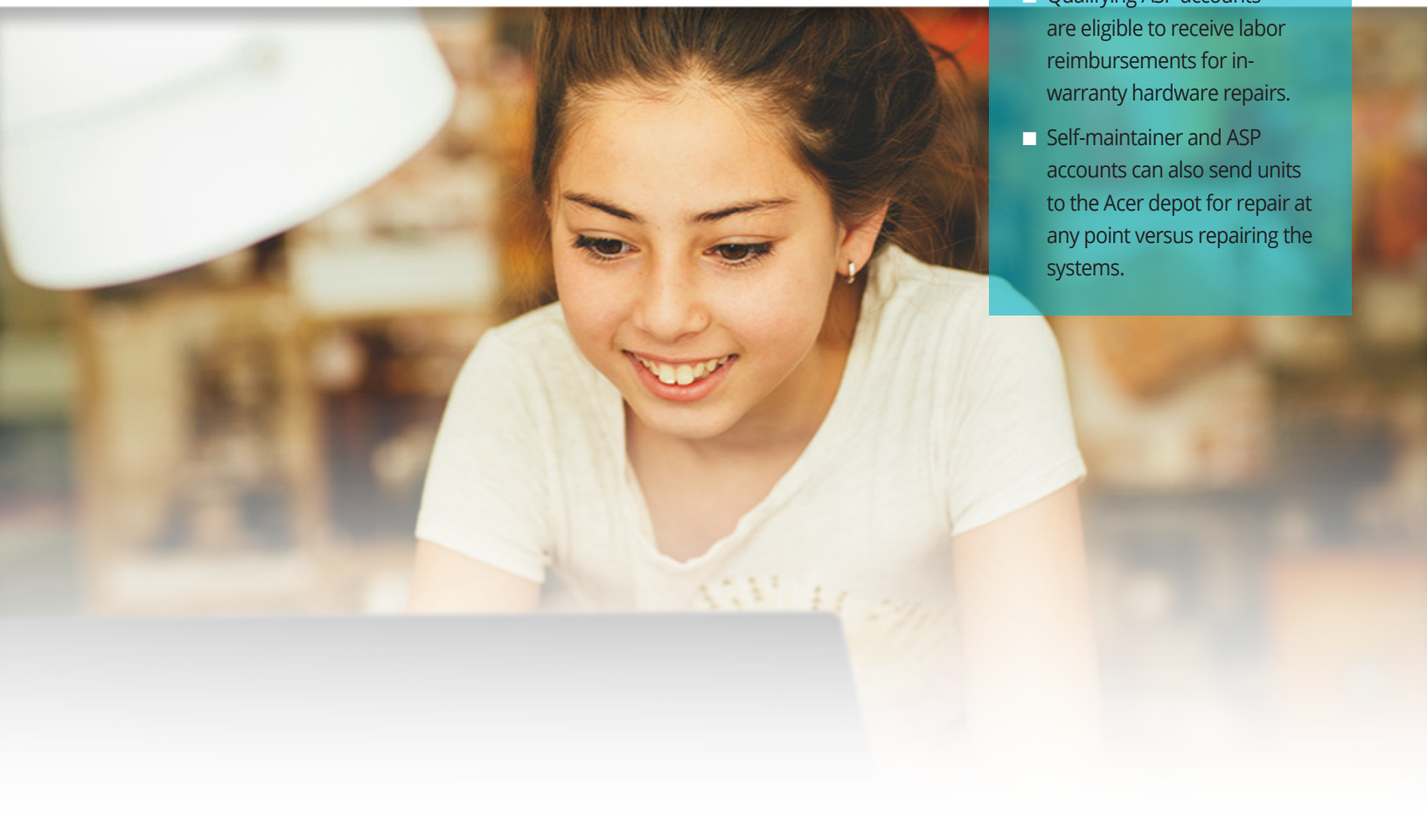
With tens of thousands of schools implementing 1:1 programs, it became clear that schools and districts had additional needs that Acer could help support. The first was to help schools minimize the down time for student devices by creating a program that allows them to perform in-warranty repairs for Acer products instead of sending them out to the Acer depot or a certified reseller. Acer offers training for schools to perform these repairs themselves. Schools are then able to minimize the downtime for instruction and extend the life of their Acer devices which helps districts manage the total cost of technology ownership.

Educare includes Acer mobile devices as well as desktop computers and projectors. There are options for one or two-year extensions of limited warranties, three-year-total protection upgrades, (including accidental damage protection), premium battery support and two way prepaid freight for depot repairs. These services are currently available across various Acer Education device offerings including the following: Windows Based TravelMate Notebooks including the TravelMate Spin B1, Chromebooks, Aspire One Netbooks, ICONIA and Chrome Tablets, and Acer projectors that have a three-year base warranty.

Schools can choose from a menu of support options that include turnkey service from Acer, a self-maintainer program, certifying their own staff and students to be authorized repair technicians, or schools can choose to work with their local reseller on service and repairs.

Self-Maintainer and Authorized Service Provider Program

- Authorizes accounts to perform in-warranty repairs for products they purchased from Acer.
- Requires signing self-maintainer or ASP contracts.
- Both in-warranty and out of warranty parts can be ordered directly from the Acer ASP website or via Premier Support.
- Qualified accounts may receive advance spare parts to enable same day repairs.
- Product specific online or in person repair training available for qualified accounts.
- Qualifying ASP accounts are eligible to receive labor reimbursements for in-warranty hardware repairs.
- Self-maintainer and ASP accounts can also send units to the Acer depot for repair at any point versus repairing the systems.



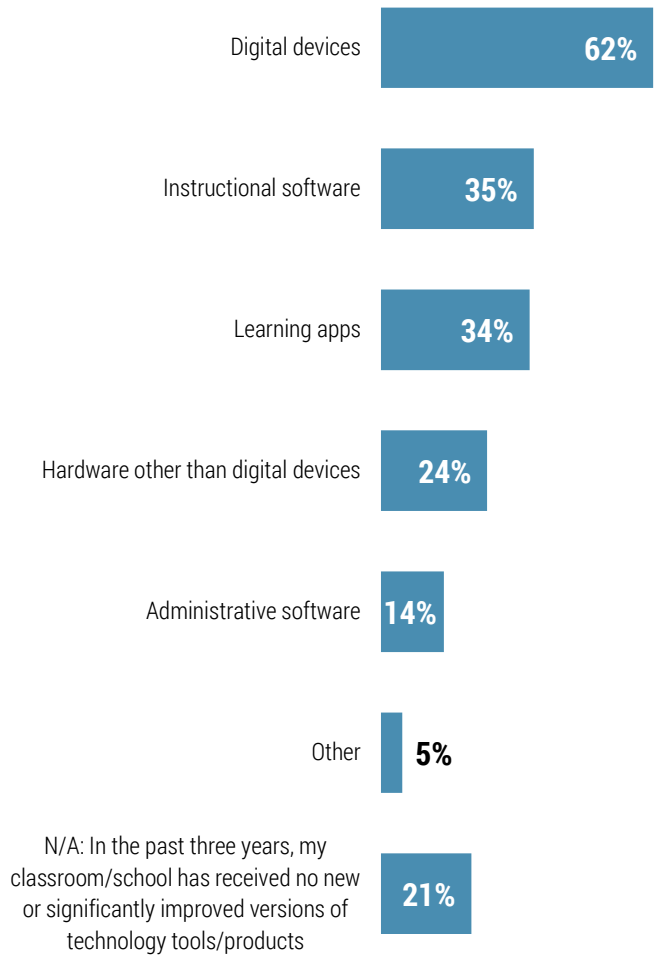
Ed-Tech and Innovation

Teachers Say Devices are More Likely to be Replaced than Software

Digital devices are the technology most likely to have been replaced or significantly improved in the past three years.

More than half of teachers (62 percent) say their digital devices have been replaced or significantly improved in the past three years. By contrast, just over one-third say instructional software or learning apps have been replaced or improved during that time.

In the past three years, my school has received new or significantly improved versions of the following tools/products:

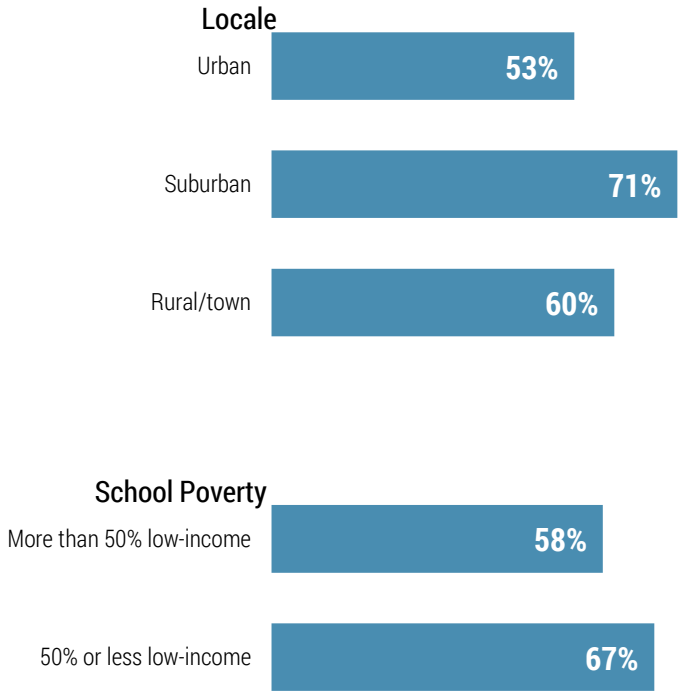


Teachers in Urban and High-Poverty Schools are Less Likely to Receive Upgraded Devices

Suburban teachers are most likely to report that digital devices have been upgraded or replaced. Urban teachers are least likely.

Compared to their peers in higher-poverty schools, teachers in lower-poverty schools are somewhat more likely to have received upgraded/improved devices.

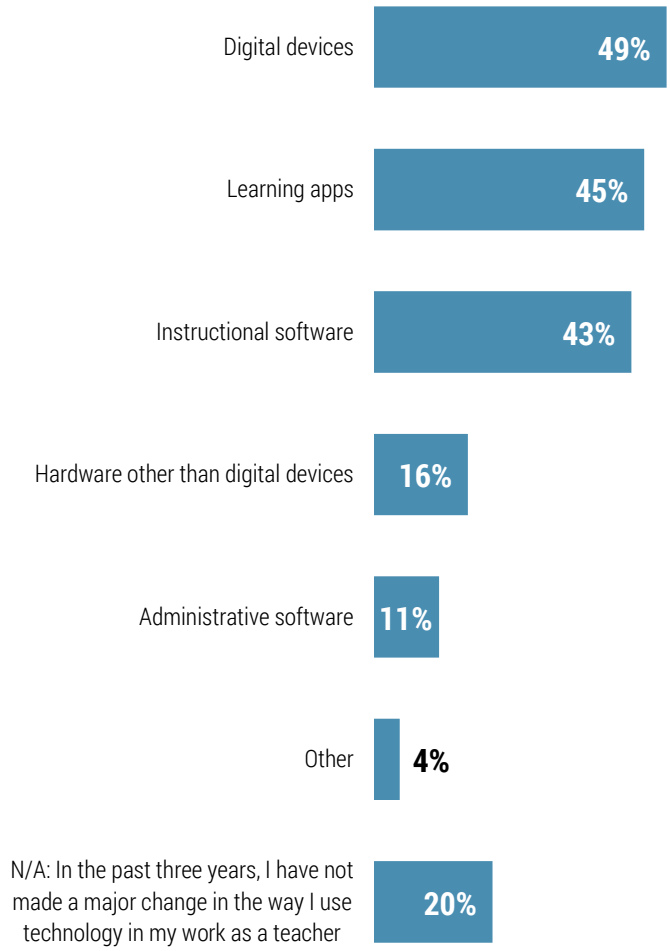
In the past three years, my school has received new or significantly improved versions of the following tools/products: Digital devices



Do Devices Drive Innovation?

Digital devices are the technology that teachers are most likely to have used differently in recent years. Nearly half of teachers say they have meaningfully changed the way in which they use devices in their classroom in the past three years. Nearly as many (45 percent) have changed the way they use learning apps.

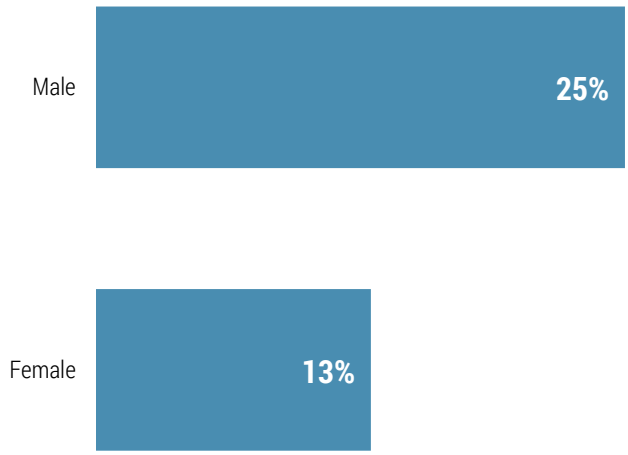
In the past three years, I have meaningfully changed the way I use the following technology in my classroom:



Gender Gap

Males are significantly more likely than females to say that, in the past three years, they have meaningfully changed the way they use hardware other than digital devices in the classroom.

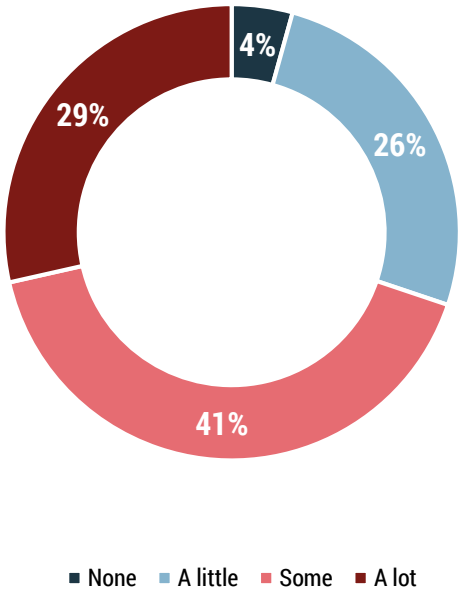
In the past three years, I have meaningfully changed the way I use the following technology in my classroom: Hardware other than digital devices



Ed-Tech is Not Necessarily Driving Classroom Innovation

Fewer than 1 in 3 teachers say ed-tech provides a lot of support for innovation in their classrooms. However, more than 40 percent say it does provide some support. And only 4 percent say it provides none.

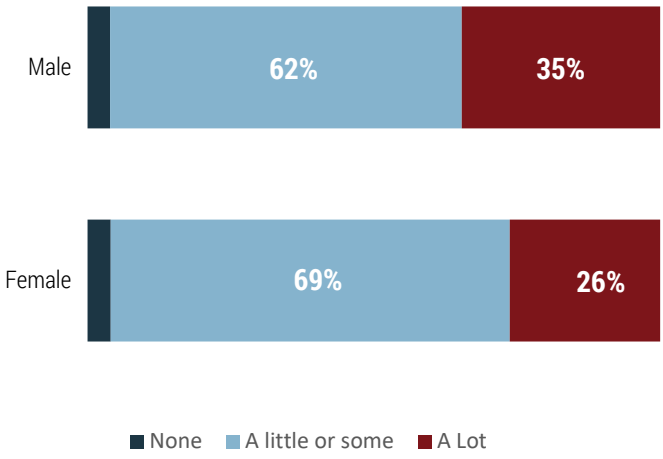
To what extent does technology support innovation in your classroom?



Differing Views of Innovation Support Provided by Technology

Males are more likely than females to indicate that ed-tech provides a lot of innovation support.

To what extent does technology support innovation in your classroom?



Pre-Packaged Software Plays a Key Role in Innovation

An open-ended question asked teachers to describe the most innovative thing they have done with technology in their classrooms. More than 1 in 3 highlighted innovation involving apps, digital curriculum, games, and programs.

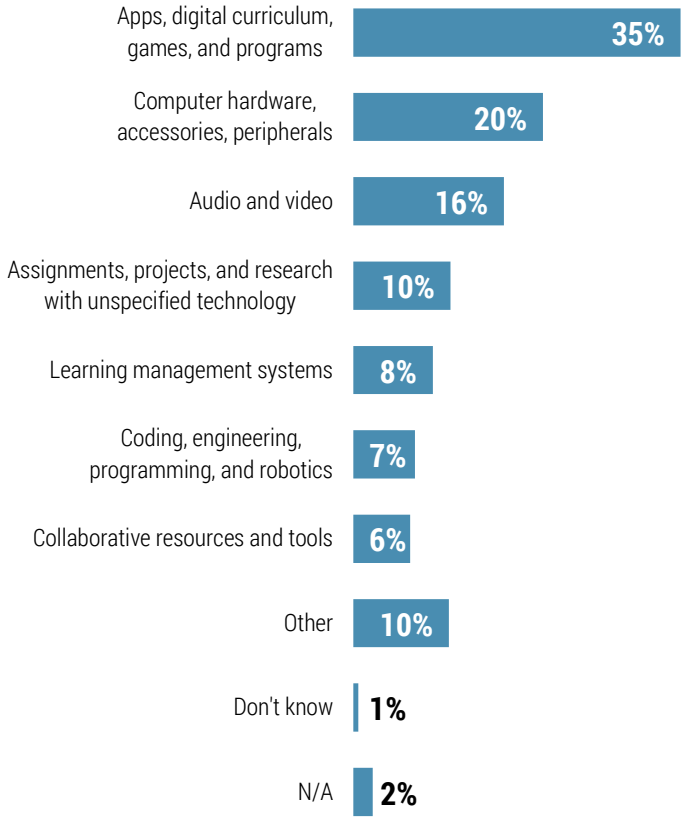
For example, a kindergarten teacher in Massachusetts used the My Story app to help students publish their own narrative texts. "Students were able to share their stories with extended families around the world," she wrote.

A middle school science teacher in Kentucky had students program Spheros to create geometric figures.

And a high school English teacher in New Jersey described how Google Classroom has "changed the 'writing' classroom" by allowing her to "assist students with their writing on a daily and individual basis."

Other frequently-mentioned means of ed-tech innovation included hardware and accessories such as Promethean boards as well as approaches using audio and video.

What is the most innovative thing you've done with technology in your classroom?



Impact on Teaching and Learning

Teachers Wowed by WiFi

In 2013, 30 percent of U.S. schools were on track to reach the Federal Communications Commission's objectives for providing classroom WiFi that is sufficient to support digital learning, according to a 2018 report by EducationSuperHighway, a nonprofit that focuses on upgrading internet capability in schools.

By 2018, that share had risen to 98 percent.

During that same period, the number of students with access to high speed school internet increased elevenfold, from 4 million to 44 million, EducationSuperHighway found.

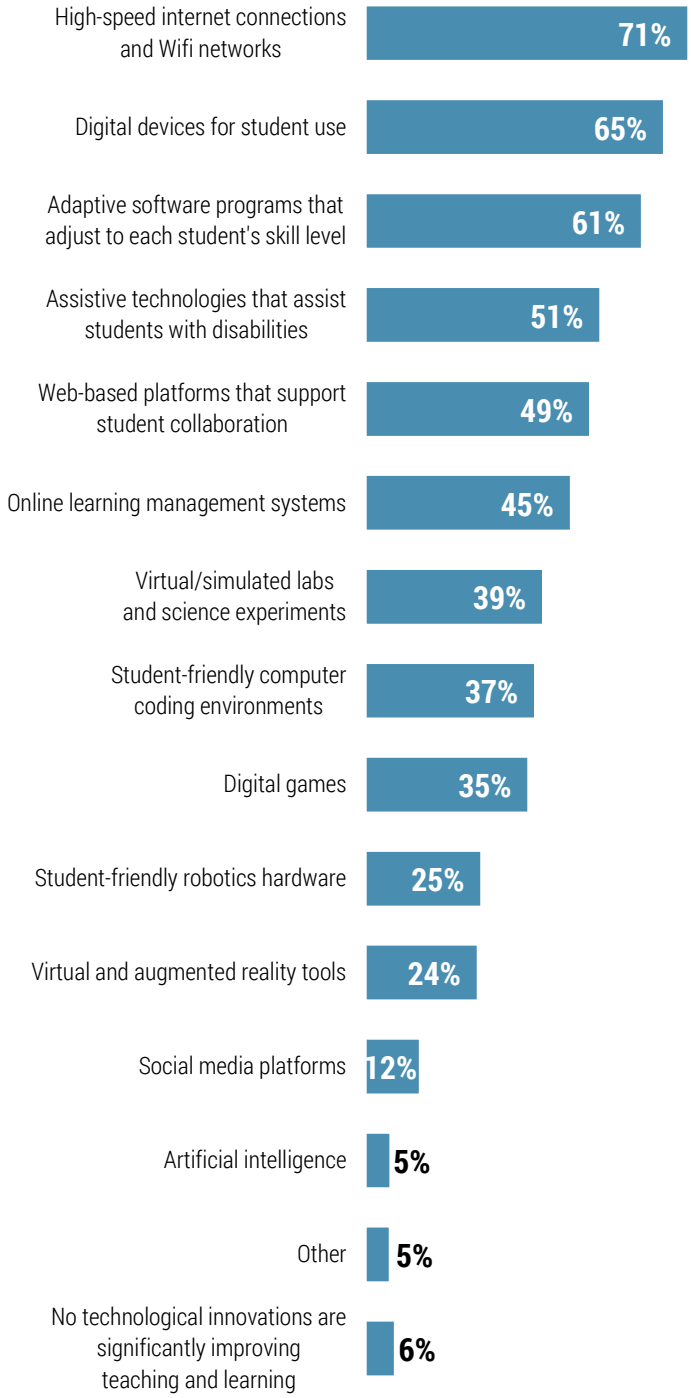
This increase in WiFi access, fueled by federal E-rate funds, represents one of the biggest sea changes in K-12 ed-tech in recent years.

So perhaps it is unsurprising that teachers perceive that high-speed connections and WiFi networks are the ed-tech innovations most likely to significantly improve teaching and learning.

Another basic technology tool — digital devices for student use — is the innovation that teachers are second most likely to perceive as driving ed-tech innovation.

Workplaces have taken WiFi and devices for granted for decades. Yet teachers view these two basic tools as more crticial to ed-tech innovation than a slew of more cutting-edge developments such as digital games, robotics hardware, and artificial intelligence.

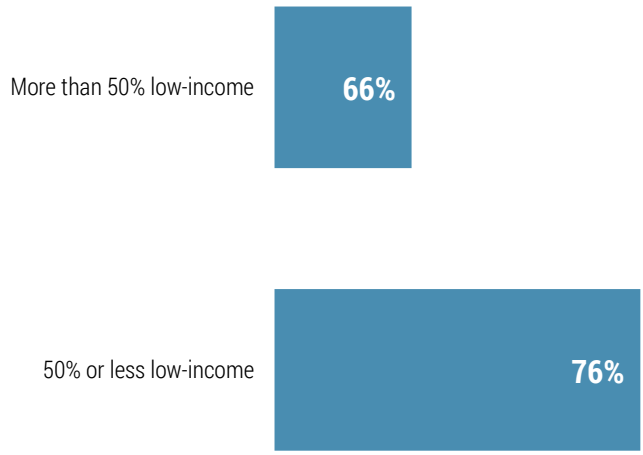
In your opinion, which of the following technological innovations are significantly improving teaching and learning?



Greater Skepticism in High-Poverty Schools

Teachers at high-poverty schools are more skeptical that high-speed connections are improving teaching and learning.

In your opinion, which of the following technological innovations are significantly improving teaching and learning? High-speed internet connections and Wifi



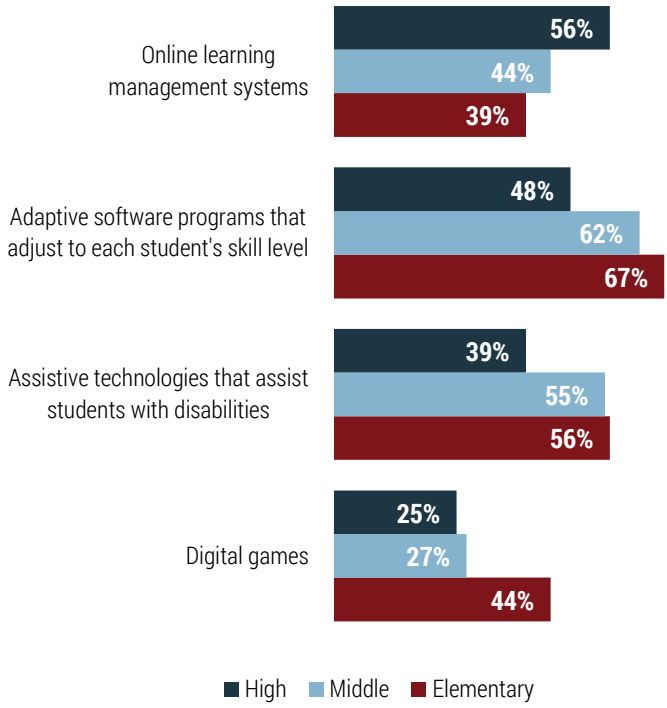
Widespread Disagreement on the Types of Technology that Improve Education

Different groups of teachers have different opinions about the types of technologies that are improving teaching and learning.

For example, high school teachers are bigger fans than their middle and elementary peers of online learning management systems.

And elementary teachers are significantly more likely to perceive that teaching and learning are improving as a result of adaptive software programs that adjust to each student's skill level, assistive technologies for students with disabilities, and digital games.

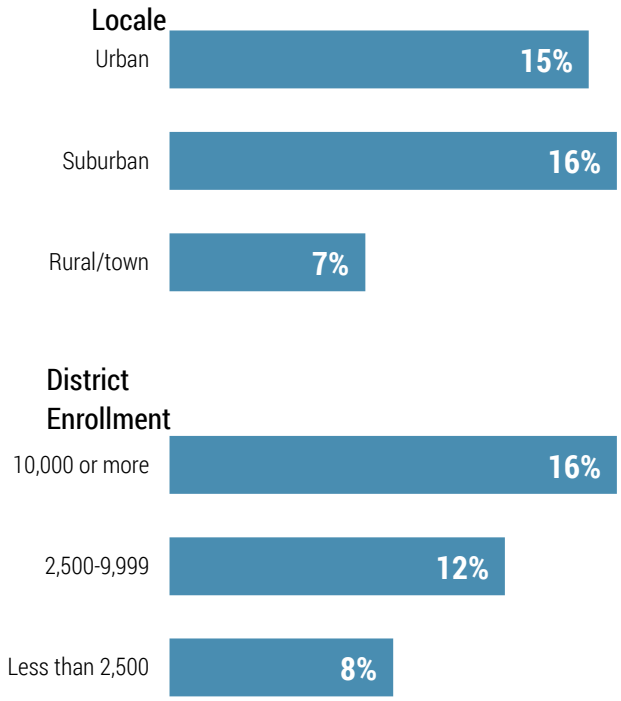
In your opinion, which of the following technological innovations are significantly improving teaching and learning?



Impact of Social Media

Teachers from large districts and suburban schools are more likely to say that social media platforms are improving teaching and learning.

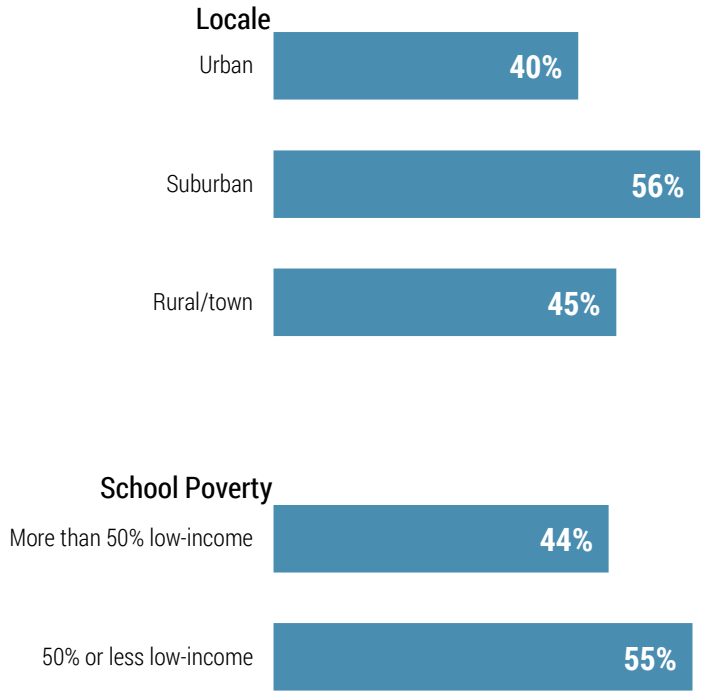
In your opinion, which of the following technological innovations are significantly improving teaching and learning? Social media platforms



Impact of Collaboration Platforms

Educators from suburban and low-poverty schools have more faith in web-based platforms that support student collaboration.

In your opinion, which of the following technological innovations are significantly improving teaching and learning? Web-based platforms that support student collaboration



Developing and Launching an eLearning Repair Certification Program for Schools

The idea for developing an eLearning repair certification program for schools came from Acer's education advisory council. This group meets annually to talk about tech issues particular to schools, districts, and educators. As they talked about the idea, the council saw multiple reasons to design and implement this course of study for students as it:

- Trains students to help support school/district IT staff with help desk and repairs
- Provides students with supervised, hands-on practical experience paired with an online, self-paced course of study
- Is project-based learning that prepares students for work place collaboration
- Reinforces development of 4 Cs: creativity, critical thinking, communication, and collaboration.

Acer created an online eLearning course targeted to grades 9–12. Depending on the device model, the course consists of 30–32 self-paced lessons that teach the basics of device repair.

For example, the eLearning course can be customized for the new TravelMate B114 with instructional videos that shows students step-by-step how to replace individual components. Throughout the eLearning program, there are built-in quizzes that students must pass to progress to the next lesson. Students can watch and repeat as often as they need to; then the program culminates with a hands-on assessment by school IT staff.

For the final course assessment, a district IT staffer makes the determination whether a student is competent enough to be certified through observation of the student's handling of tools and components and executing steps in the correct order. If the student is successful, he or she is designated a Repair Techspert, certified in their particular device model, and receives an Acer certificate.

As Acer developed the program, they tested the content at a local Texas high school. They wanted students to assess their interest, gamification elements, and observations of the program. The testing confirmed what Acer was doing right and what they needed to change. They then introduced the program to a larger audience inviting comments before launching the program at the beginning of the 2018–2019 school year.

Temple (TX) Independent School District, the district that helped Acer beta test the eLearning program had this to say:

"The Acer Repair Certification eLearning Program is a great solution for Temple ISD," said Luann Hughes, director of technology. "Both our school's IT team and the Student Technology and Repair team are benefitting from this training. It is a great resource—not just for troubleshooting, but also for providing real-life experience in getting our students ready for the work force."

Case Study: Burnsville-Eagan-Savage (MN) School District 191

Burnsville-Eagan-Savage School District 191 in Minnesota partnered with Acer to pilot the eLearning program. Prior to this, Acer conducted a training webinar for staff and students to learn about their education devices and how to repair them. After the second semester, the district considered developing an online, self-paced program where students could learn hardware repair at school and earn certification.

Cindy Drahos, computer programming teacher, and Rachel Gorton, instructional tech coordinator, are part of the district's team to create a college and career pathways program. They decided to include the Acer eLearning Repair Program as part of their IT Explorations Class—the first class in the IT career pathway.

The educators designed the curriculum to align with ISTE and Precision Exam learning standards. They wanted to launch a program to give students real experience in technology.

The heart of the eLearning training program is seven instructional videos. Students can access notes on the slides as the Acer technician demonstrates a process on video. The video is then followed by a brief review and quiz. Students must pass the quiz for each lesson to move forward. The course has active engagement and different question types complement different learning styles. There are also some open-ended feedback questions that allow Acer to continually assess and improve the program.

The course assumes that students have no prior knowledge in mobile device repair. Students have 30 days to complete the course, although Acer will work with schools if they need more time. Students can choose the sequence of lessons, but skill development requires hands-on experience, followed by a final assessment.

In addition, students learn customer service skills as they help their IT department staff the help desk. They learn about trouble ticketing—reporting, tracking, analysis—and how to diagnose, report, and repair a device. "This is an opportunity for students to learn something they're interested in and to demonstrate leadership while they do it," said Rachel Gordon, instructional tech coordinator. "This program has been so successful that we now want to extend our IT Explorations Class into the middle school so that our college and career pathways program is available to all students in grades 6-12."

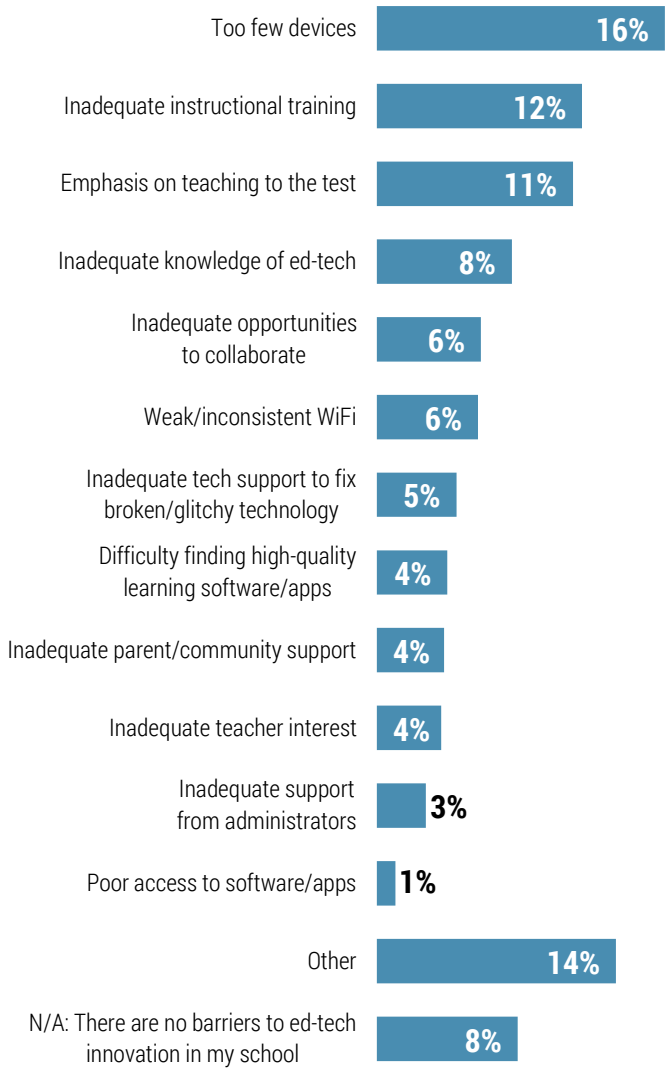
Challenges

Top Barriers

Teachers say that a shortage of devices is the top barrier to ed-tech innovation in their schools.

Other top barriers include inadequate instructional training and an emphasis on teaching to the test.

What is the top barrier to ed-tech innovation in your school?

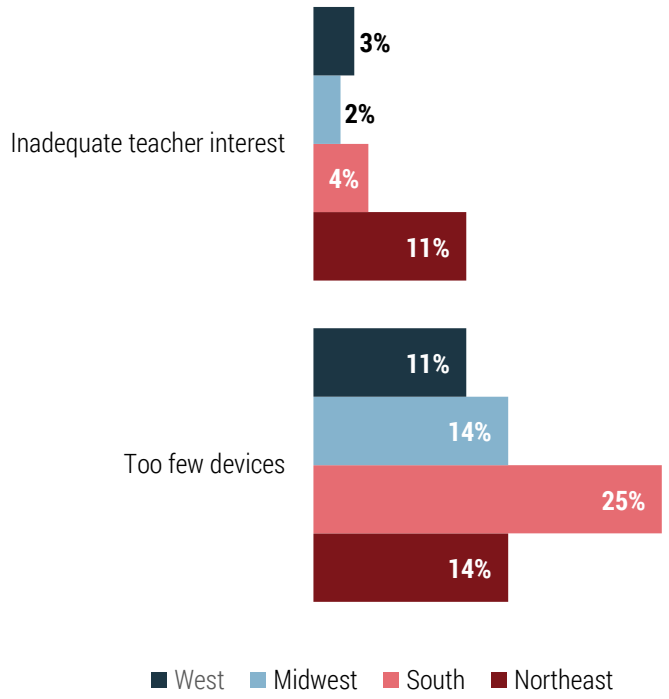


Top Barriers by Region

Southern teachers are significantly more likely to report that a shortage of devices is their top ed-tech innovation challenge.

Inadequate teacher interest is a bigger problem among Northeastern teachers than in other areas of the country.

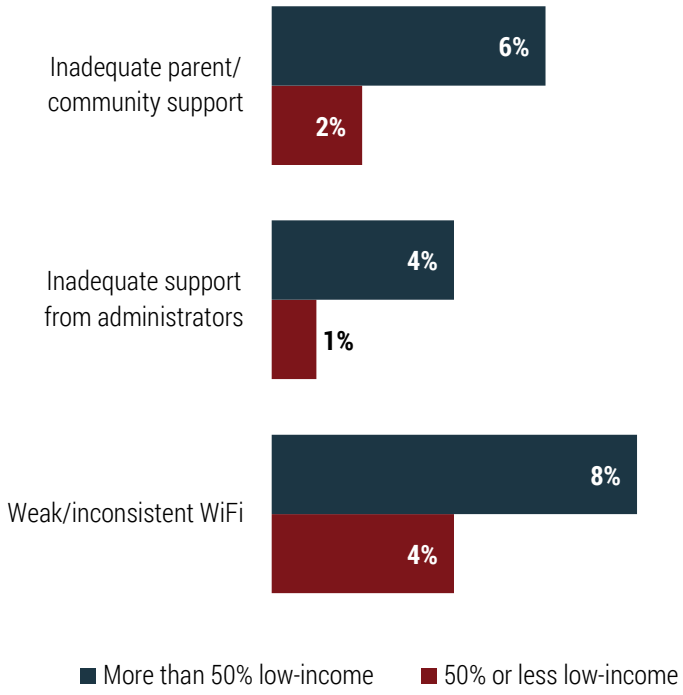
What is the top barrier to ed-tech innovation in your school?



Barriers by Poverty

Weak/inconsistent WiFi, inadequate administrative support, and insufficient parent/community support are bigger barriers to teachers at higher-poverty schools.

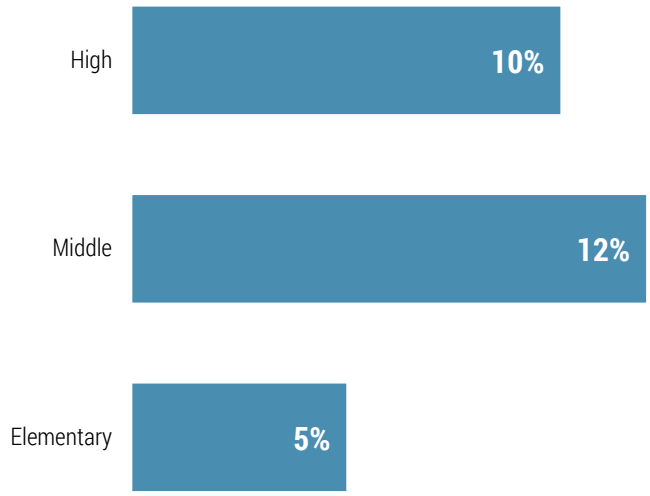
What is the top barrier to ed-tech innovation in your school?



Barriers by Grade Level

Elementary teachers are significantly less likely to say that there are no barriers to ed-tech innovation in their schools.

There are no barriers to ed-tech innovation in my school.



Limited Support for Ed-Tech Innovation

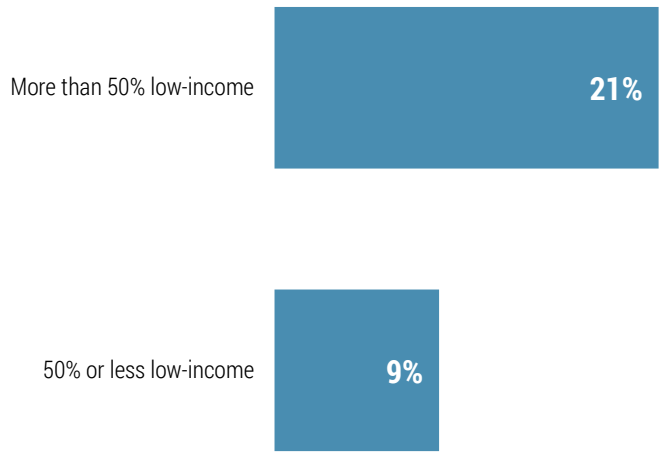
Most teachers (85 percent) say their districts or schools offer some sort of support for ed-tech innovation. But ask them about specific types of basic support (such as training and time) and fewer than half say they are supported in these ways. For example, 49 percent say they have received training that helps them use ed-tech in innovative ways. And just 1 in 5 say they have adequate time to experiment.

My school/district supports classroom innovation with educational technology by:

Support for Ed-Tech Innovation Lags in High-Poverty Schools

Teachers at high-poverty schools where more than half the students are from low-income families are more than twice as likely as their peers from lower-poverty schools to report that their districts and schools do not support classroom innovation with educational technology.

My school/district does not support classroom innovation with educational technology.



Hardware Dominates the Ed-Tech Innovation Graveyards

Asked about their most innovative uses of ed-tech, teachers are most likely to mention software.

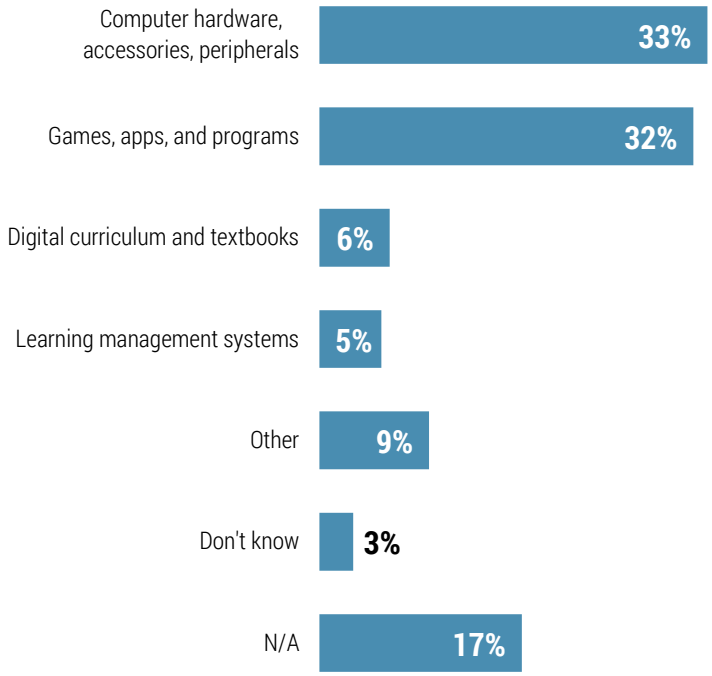
However, when questioned about classroom technology they once found valuable but have since abandoned, these same educators are almost equally likely to mention hardware and software.

It's important to note here that many teachers' responses specified that they had not opted to abandon a particular technology: Their district or school had simply gone in a different direction.

Here are some examples of the tools that have ended up on the ash heap of ed-tech innovation:

· Smart boards: Mentioned by more than 40 different teachers, this was one of the most common abandoned technologies.
· Virtual reality: "I still use it some, but it makes a lot of the kids feel sick," wrote a Utah middle school teacher.
· Clickers: More than 10 teachers mentioned these remote-control-like devices that share students responses with the teachers in real time.
· Projectors: "Everyone seeing and doing the same thing is generally a waste of instructional class time anymore," wrote a high school science teacher in South Carolina.
· iPads: "Students were just going on YouTube and after it was blocked, so were all the other valuable apps," said a high school English teacher in Arizona. "And many of the platforms such as Gradpoint and Odysseyware were not supported by the iOS updates."

Describe an innovative use of classroom technology you once found valuable, but have since abandoned.



The Role of the Reseller

Even though Acer supports schools and devices directly with their Educare program, resellers still have an important role in servicing their districts' fleets of student devices. The reseller is usually the authorized service center that performs warranty work on the district's devices. They can provide service onsite at the district or in their service center as opposed to sending the device to the Acer depot for repair. The ability to provide onsite service and pickup and delivery makes it easy for the districts and allows resellers to provide white glove services that include post-warranty service.

"Of the hardware manufacturers I deal with, Acer is the most reliable," says Jack Mele of DI Technology Group, Inc. "They're easier to work with and the most likely to bend if a district is on the cusp of warranty expiration. They put high priority on customer satisfaction, and it allows us to be flexible with our district customers."

Indy Batra of MJP Technologies, Inc. agrees, "Acer is a big company that acts like a small company with their good service. Acer treats us the same way we treat our customers. They absolutely partner with us."

According to these resellers, Acer has set the customer service bar high by how they treat their resellers. For example, if a reseller wants to bring in a new district customer, Acer will work with them to establish pricing that allows the reseller to be competitive with larger device distributors, so that the district has a real choice of vendor partner. As the eLearning program becomes established in more schools, it is likely that Acer will help their resellers support the program in their customer districts.

Acer's commitment to providing students with superior learning tools while enhancing teaching and learning activities offers schools a partnership in learning and in device management. Since districts are chronically underfunded, a relationship with Acer helps them leverage their investment in technology while providing students with the best education devices on offer through full service or self-service programs as well as good customer relationships.

Also, Acer has pushed their commitment to students and schools to the next level through the creation of Educare and the recently released eLearning Repair Certification program. The curriculum for this training program has been carefully constructed to provide students with the knowledge and application opportunities they need to be certified as repair technicians for their specific education devices. Students work through the self-paced video course and apply their knowledge under supervision from the school or district IT team. There is a final assessment that determines whether students are ready to be certified.

For schools and districts, Acer offers unparalleled support of classroom technology that makes a difference for 21st century learners. Their unique commitment to K–12 education makes them an able partner to schools that want to optimize mobile device management, leverage their investment in classroom technology, while preparing their students for college and future tech jobs that are still being created from emerging technologies.

Featured Product

Deploy and manage TravelMate Spin B1 with supporting Autopilot and Microsoft Intune for Education. These devices are easily configured for a great classroom experience. Optimize PCs for classroom use as Windows 10 in S mode provides Microsoft-verified security for apps, while educational resources load faster and more safely with Microsoft Edge.

Learn how your school can benefit from Acer's Self-Maintainer and ASP program, the online Acer Educator communities, Educare, and the Acer Premiere Support programs at https://www.acer.com/ac/en/US/content/professional-education-home and the eLearning Repair Certification program at https://community.acer.com/en/discussion/552784/acer-repair-certification-elearning-program-builds-students-steam-skills-engagement

About Acer

At Acer we believe that the most valuable part of computing lies in its power to spread knowledge. We see it as our responsibility to provide today's generation with the instruments they need to develop 21st century skills and succeed in the information age. Acer for Education offers an end-to-end adaptive learning experience comprising easy, reliable and affordable products, education-oriented software solutions and award-winning after-sales service. Acer's extensive line of products supports the learning process at every step, enabling the exploration of all subjects, in all situations and even beyond classroom walls. Our hardware solutions feature tablets, 2-in-1 devices, notebooks, Chromebooks, desktops, monitors and projectors, all designed to support dynamic and interactive learning environments.

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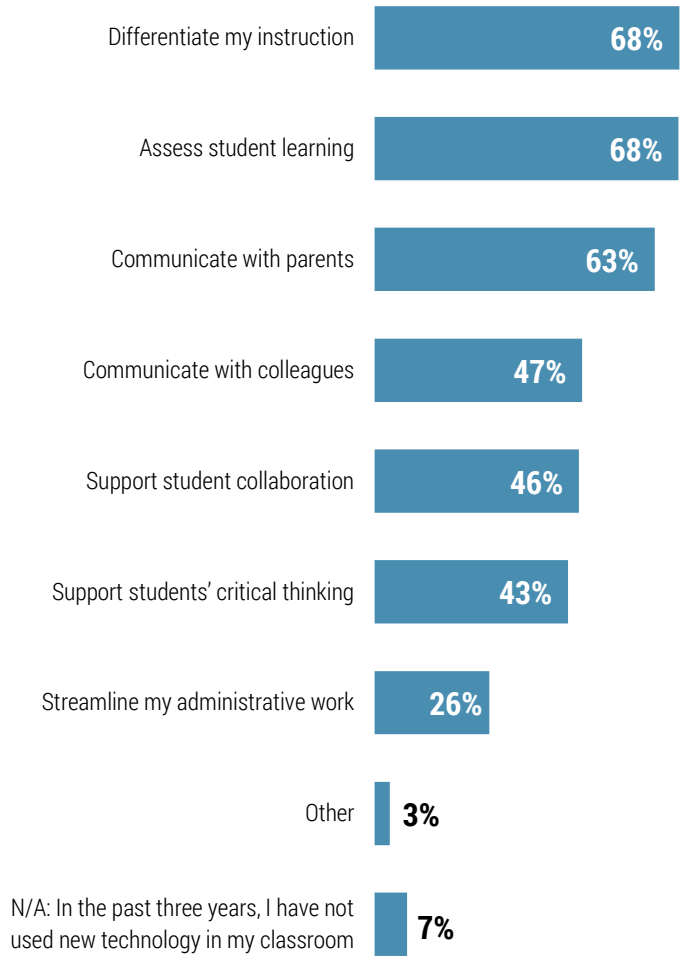
How are Teachers Innovating with Ed-Tech?

Use of New Technology

Teachers are most likely to use new ed-tech innovatively to differentiate instruction, assess student learning, and communicate with parents.

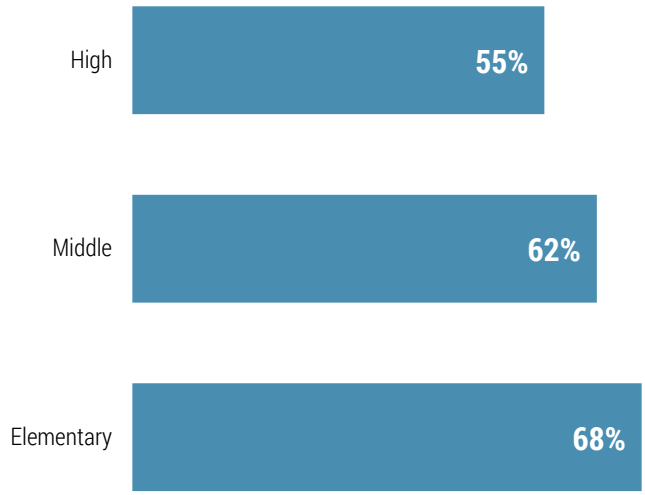
In my classroom during the past three years, I have used NEW technology to:



Communicating with Parents

Elementary teachers are most likely to have used new technology to communicate with parents.

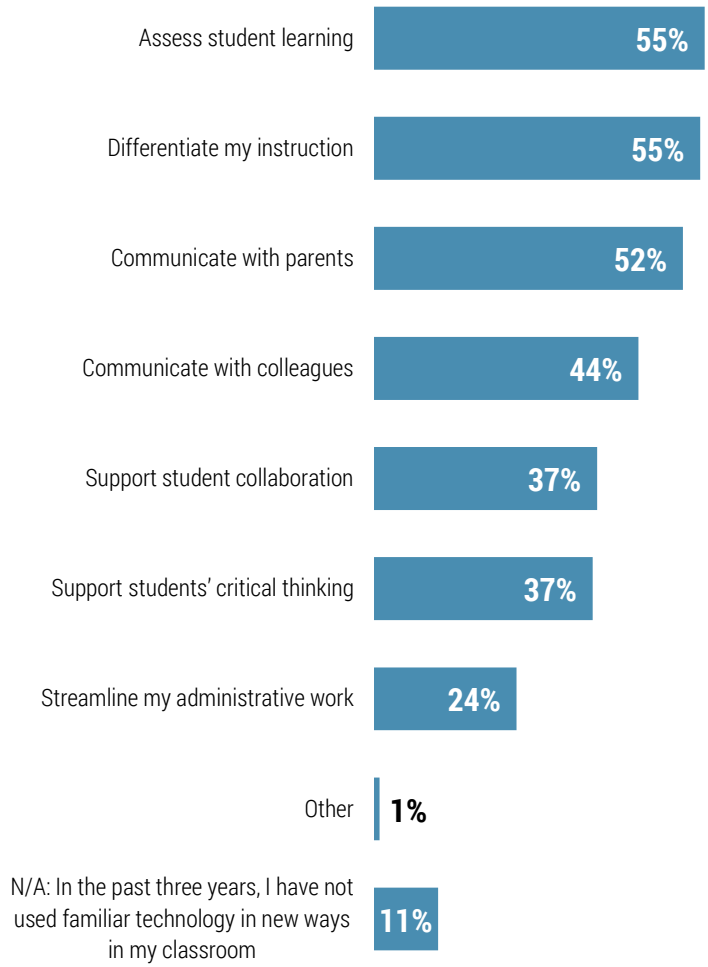
In my classroom during the past three years, I have used NEW technology to: Communicate with parents



Use of Familiar Technology in New Ways

Teachers were asked how they had used familiar technology in new ways over the past three years. As with new technology, innovative uses of established tools are most common in assessing student learning, differentiating instruction, and communicating with parents.

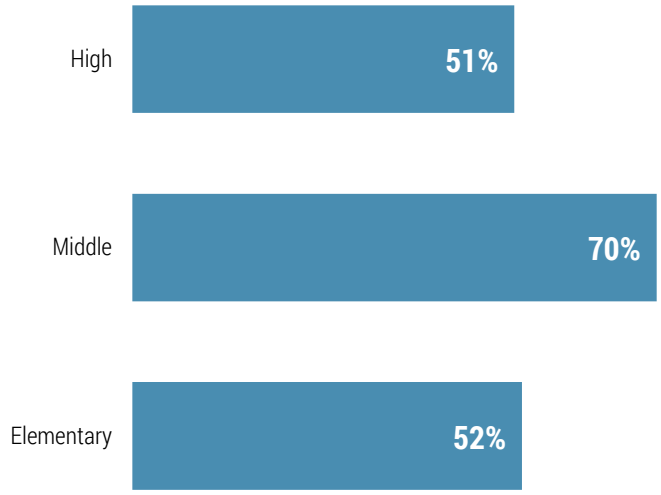
In my classroom during the past three years, I have used FAMILIAR technology in a NEW WAY to:



Assessing Student Learning

Middle school teachers are more likely than their high school and elementary colleagues to use familiar technologies in new ways to assess student learning.

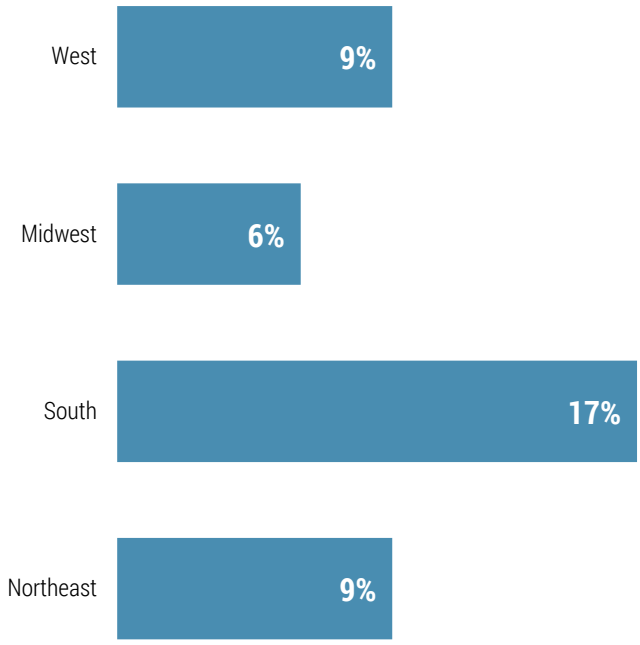
In my classroom during the past three years, I have used FAMILIAR technology in a NEW WAY to: Assess student learning



Regional Differences in Innovation

Southern teachers are significantly more likely than their peers from other areas of the country to say they have not used familiar technologies in new ways in the past three years in their classrooms.

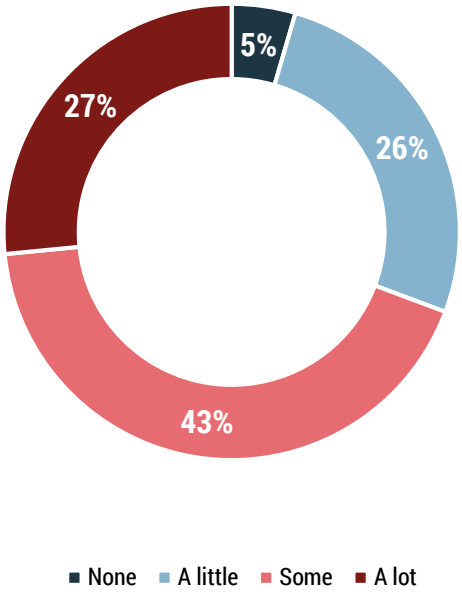
In the past three years, I have not used familiar technology in new ways in my classroom.



Has Ed-Tech Innovation Changed Teaching?

Just 27 percent of teachers say technological innovations have created a lot of change in their work. An additional 43 percent say innovations have led to some change.

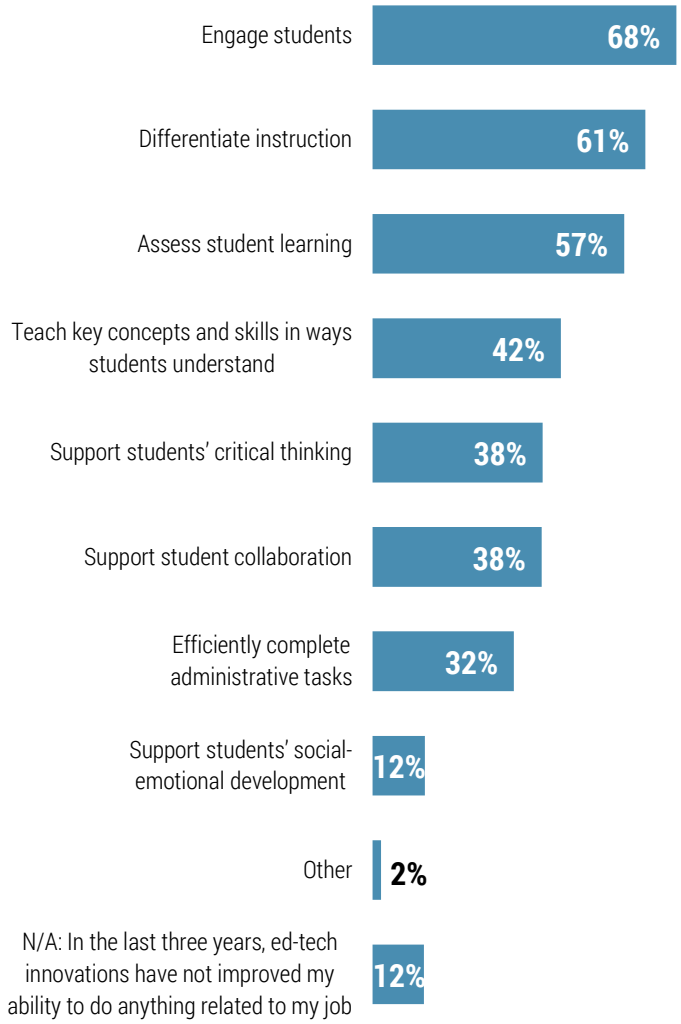
During the past three years, how much have technological innovations changed your work as a teacher?



Improving Teacher Capacity

The majority of teachers say that ed-tech innovation has improved their ability to engage students, differentiate instruction, and assess learning. A much smaller share says innovations help them improve students' social emotional skills or ease administrative tasks.

During the past three years, ed-tech innovations have significantly improved my ability to:



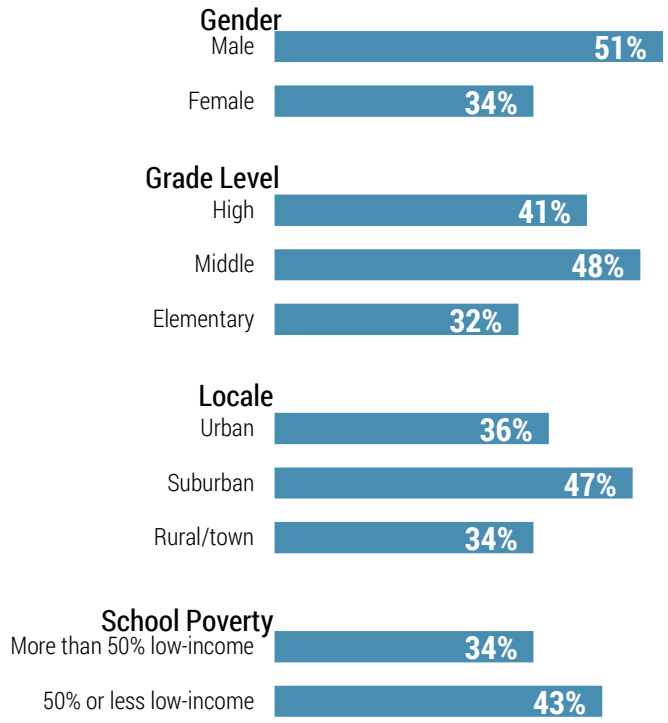
The Collaboration Conundrum

Using technology to effectively collaborate is an important objective in a world in which workplaces increasingly focus on team efforts and employees are more readily based in remote locations.

However, different groups of teachers differ significantly in the degree to which they perceive that ed-tech has supported their ability to support student collaboration.

Male teachers, for example, are significantly more likely to say that ed-tech innovations have improved their ability to support student collaborations. So are suburban teachers, middle school teachers, and instructors who work at schools with lower poverty rates.

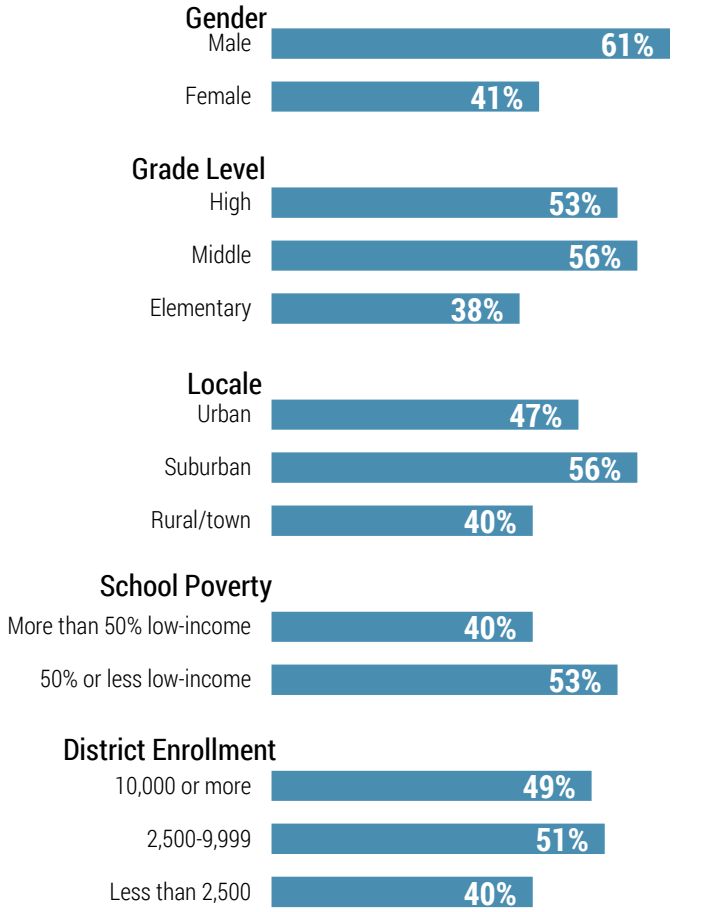
During the past three years, ed-tech innovations have significantly improved my ability to: Support student collaboration



Use of New Tech to Support Collaboration

Male, suburban, and middle school teachers, along with those in lower-poverty schools, are also more likely to report that, in the past three years, they have used new technology to support student collaboration. Teachers in medium-sized school districts are also more likely to report using new technology for this purpose.

In my classroom during the past three years, I have used NEW technology to: Support student collaboration

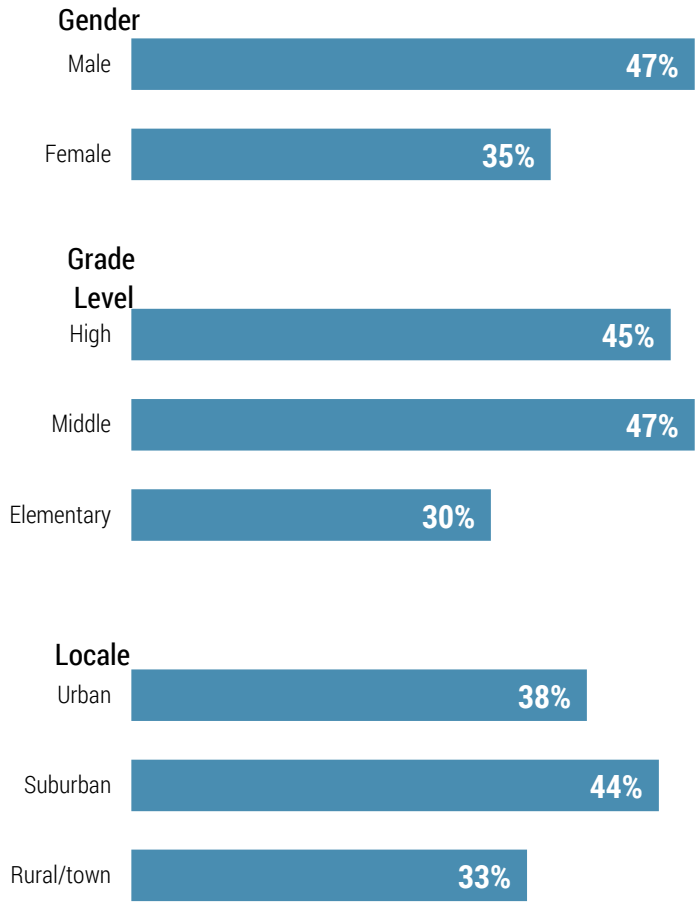


Use of Familiar Tech to Support Collaboration

Male, suburban, and middle school teachers are more likely to say that, in the past three years, they have used familiar technology in innovative ways to support student collaboration.

These results raise questions about the extent to which all students are using technology to improve their ability to collaborate with their peers.

In my classroom during the past three years, I have used FAMILIAR technology in a NEW WAY to: Support student collaboration

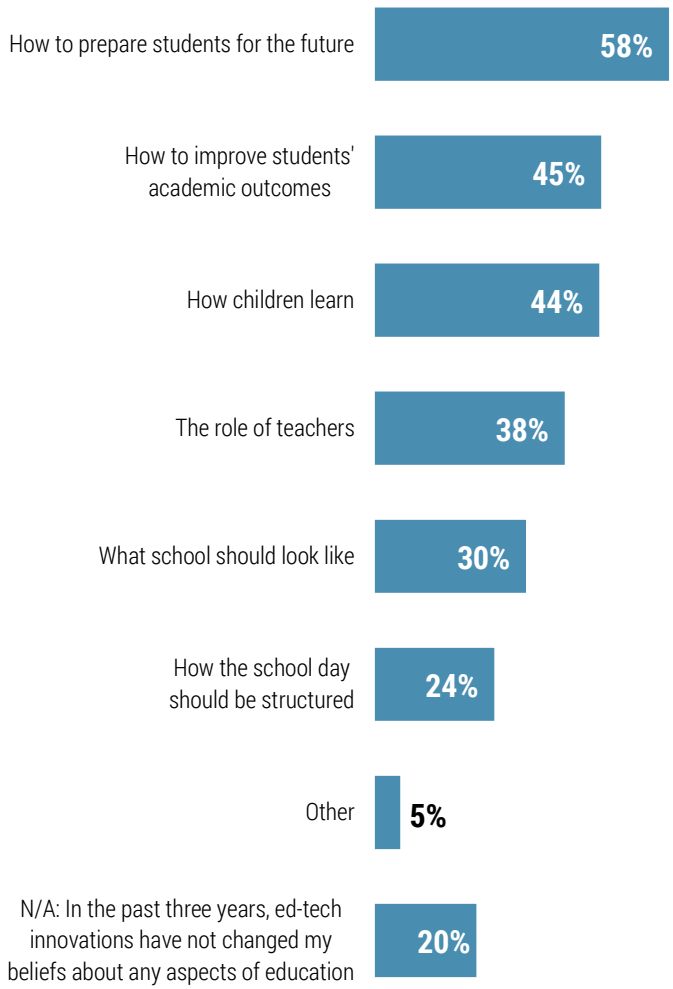


Has Ed-Tech Innovation Changed Teacher Beliefs?

The majority of teachers (80 percent) indicated that, in the past three years, ed-tech innovations have changed their beliefs about some aspect of education.

Beliefs about preparing children for the future are most likely to have changed, followed by perceptions related to improving academic outcomes and understanding how children learn.

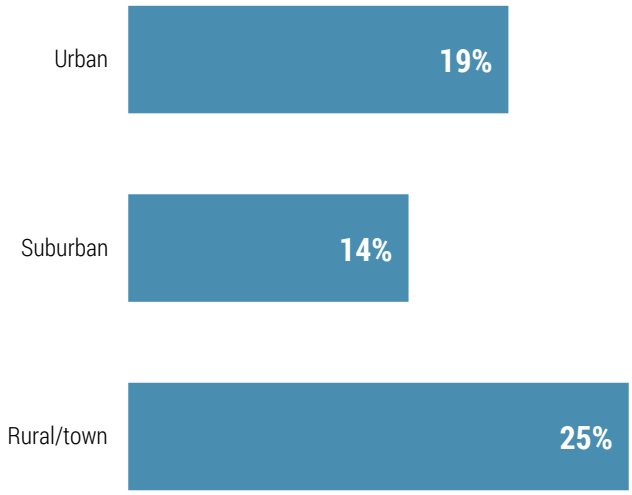
In the past three years, ed-tech innovations have changed my beliefs about the following aspects of education:



Impact of Innovations Differs by Region

Rural teachers are significantly more likely than their urban and suburban peers to say that ed-tech innovations have not changed their beliefs about any aspects of education.

In the past three years, ed-tech innovations have not changed my beliefs about any aspects of education.

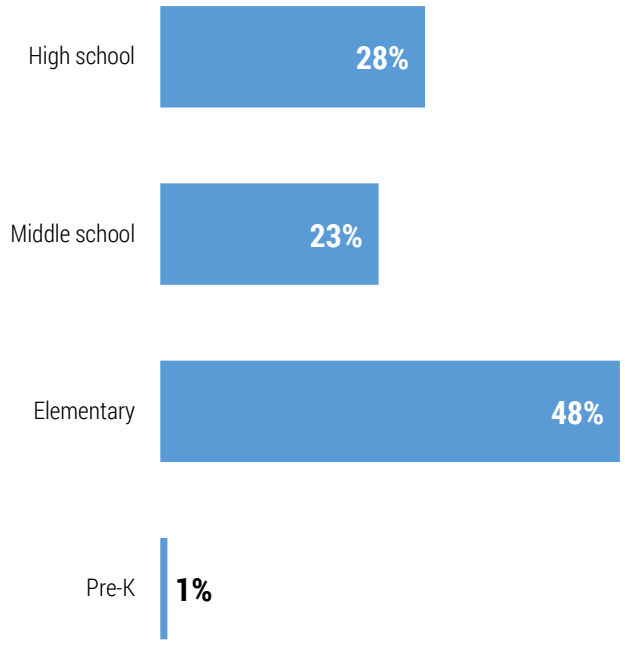


Demographics

Grade Level

Nearly half the teachers surveyed work at the elementary school level.

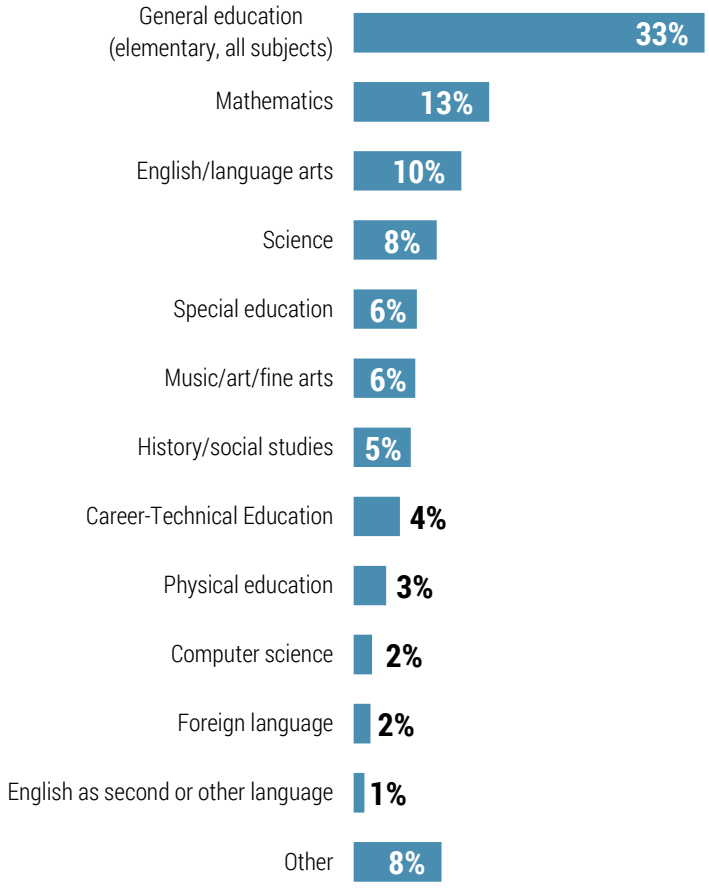
Which of the following best describes the grade level(s) you teach this school year?



Teaching Assignment

General elementary education is the most frequent teaching field for survey respondents, followed by mathematics and English/language arts.

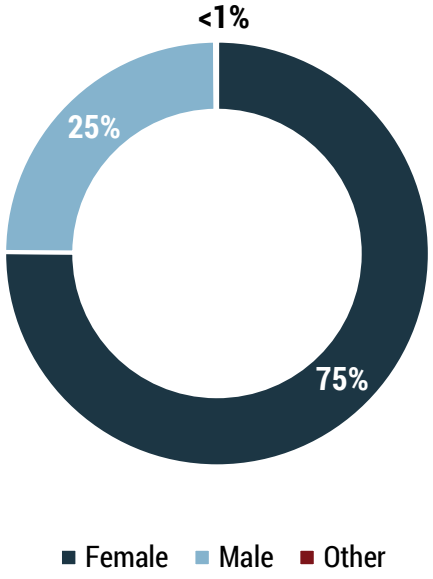
Which of the following best describes the subject you teach this school year?



Gender

Like the majority of teachers in the United States, the majority of survey respondents are female.

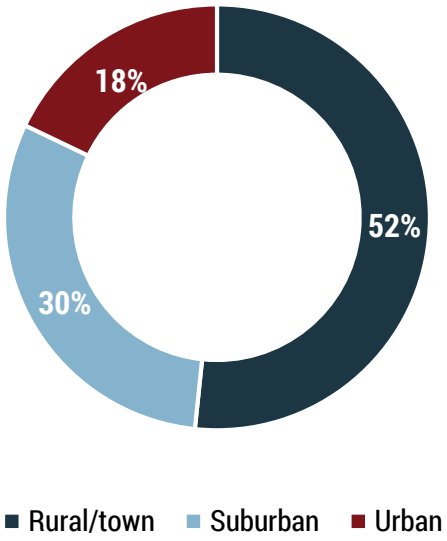
What is your gender?



Location

Just over half of survey respondents work in rural schools.

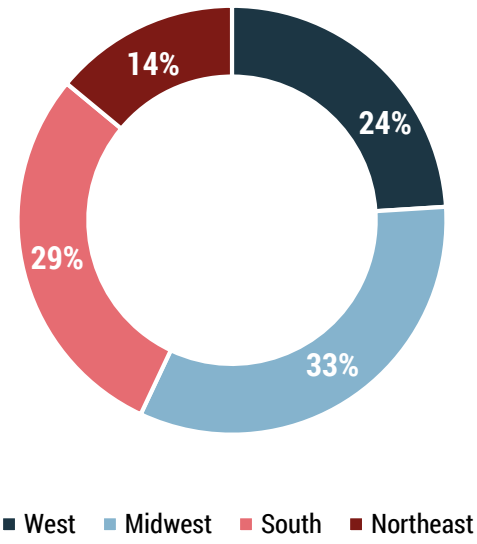
Which of the following best describes the location of your school?



Region

One in 3 survey respondents are Midwesterners. Nearly as many (29 percent) are Southerners. The remaining respondents are located in the West (24 percent) and the Northeast (14 percent).

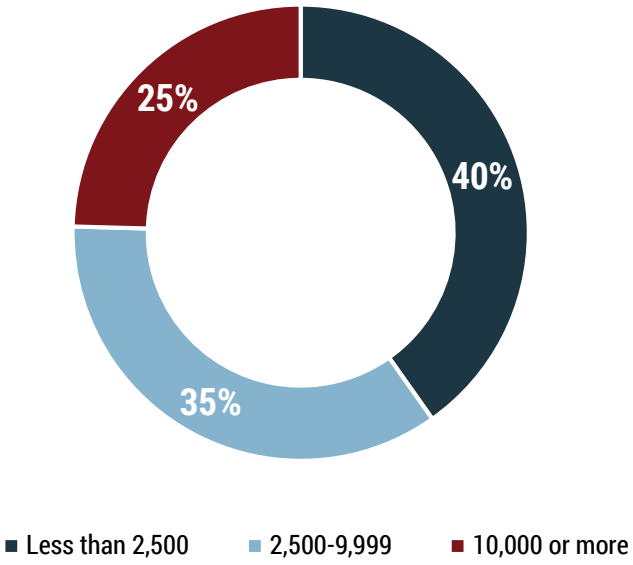
Where do you teach?



District Size

Forty percent of survey respondents work in districts with fewer than 2,500 students. The remainder work in districts with enrollments of 2,500 to 9,999 (35 percent) or 10,000 or more (25 percent).

How many students in your district?



School Poverty

Just over half of respondents work in schools in which the majority of students are from low-income families.

Which of the following best describes the percentage of students from low-income families at your school?