



MAXIMIZING STAMINA IN DIGITAL LEARNING

Why schools must invest in the right equipment for e-learning success

Students and educators had a whirlwind experience with remote learning when the COVID-19 pandemic began. More than [50 million students](#) in the US were whisked out of classrooms and into makeshift setups to facilitate virtual learning. The shift that took place sharply increased the need for one-to-one technology and devices — an adaptation that is here to stay.

Some lacked access to technology; others inherited whatever equipment was available around the house. Very few had the right tools — including keyboards, mice and device stands that ensure proper posture — for the extensive hours students spent behind screens. The result was physical and mental strain that affected student performance.

Compounding the issue was that many students used tablets or laptop computers for their learning. These

mobile computing devices are designed for convenience and are not intended for long-term use yet, in many cases, they were what schools had to offer their students for fully remote learning.

As education systems move forward, this exertion must be considered in long-term planning to consider student comfort, stamina and overall health.

Now that students are beginning to return to classrooms in person, schools must be prepared to integrate technology and learning at a higher level than pre-pandemic. But the devices themselves are not enough; to ensure student well-being and engaged learning, schools must consider companion tools to help learners thrive in digital environments.

“It’s critical to have the right tools in place that allow for comfortable, sustained use of devices to optimize

“ It’s critical to have the right tools in place that allow for comfortable, sustained use of devices to optimize the learning experience and outcomes. ”



the learning experience and outcomes,” said Madeleine Mortimore, education technology innovation manager at Logitech.

THE PHYSICAL STRAIN OF POOR WORKSPACES

As office work has become more prevalent, an entire field of science has been devoted to addressing the physical challenges of prolonged sitting while at a computer. Many workplaces today create computer stations that are ergonomic, or that facilitate efficiency and comfort over hours of work time, so that employees have the proper posture to avoid injury.

An ergonomic workspace includes considerations such as:

- How the monitor is positioned to minimize eye and neck strain.
- How the hands sit on the desk to reduce stress on back and shoulder muscles.
- How the seat is arranged to keep the body in a comfortable position.

“If kids are slouched and sitting with their feet off the ground, they’re hunched over, they’re staring for hours upon hours without breaks, they can get neck strain, back strain, eye strain,” Dr. Theodore Ganley, an orthopedic surgeon at Children’s Hospital of Philadelphia and chair of the American Academy of Pediatrics section on orthopedics told [NBC News](#).

Over time, students can develop tendonitis and carpal tunnel syndrome, conditions that up until now were considered primarily adult problems.


Back pain is also a concern, particularly because established research shows that back-related symptoms that begin in adolescence can last into adulthood. According to a [study published in Spine Journal](#) that consisted of 640 children from ages 8 to 14, symptoms of information and communication technology-related back pain and headache persisted into their late 20s.


Neck and eye strain are also a concern when it comes to using mobile devices such as laptops and tablets. Developed with convenience in mind, these makeshift computing stations are often not set up to accommodate


How to Choose the Right Technology


Schools have limited budgets and must choose the equipment they purchase carefully to ensure it has long-lasting value and maximizes benefit for students. When making a selection, here is what they should consider:




 **Tablet Stands:** A stand is a great way to configure a tablet so it is propped up like a laptop, and using it minimizes neck and shoulder strain. Accompanied with a keyboard, the stand can allow the tablet to be positioned at an appropriate viewing height, addressing many of the problems with learning on devices such as iPads and Chromebooks. Many iPad keyboard cases come with built-in stands.

 **Keyboards:** Students do not need number pads and navigation keys on their keyboards, and it is best to skip these keys to keep the board short and the right size for young users. This allows the mouse to be placed closer to the midline of the body — a more natural and ergonomic posture. Keyboards should also lay flat to minimize bending of wrists.

 **Mice:** Standard mice are too big for young children, so it is important to find one that is light and fits a child's hand comfortably. The tip of the student's index finger should sit next to the scroll wheel, and the mouse should support the entire palm to create a restful position for the hand.

 **Headsets:** Headsets are headphones with mics built in. A built-in microphone improves sound quality and keeps students from hunching awkwardly to be heard. The lighter the better when it comes to technology that must be worn. Headsets should not place pressure on the top of the head, and the cushions should not squeeze the ears — particularly for learners who wear glasses. But headsets should be tight enough that they will not shift around with movement. Wireless headsets can be good for mobility, as they make it easier for students to stand up or shift positions as needed in class. Wired headsets may be easier to use in busy classrooms with many students and devices.

 **Webcams:** External webcams tend to offer a higher-quality video stream, allowing students to be more readily seen and understood and making it easier for them to share with others. Webcams provide a great tool for student projects and can be easily used in classrooms. When the quality of the video improves, students are more likely to engage and participate in video-based lessons or communications. ■

sustainable, long-term use. Looking down at a screen can put 60 pounds of additional force on the neck, compared with a screen that is at eye level, which can be concerning for young and developing children.

“Technology like a laptop computer was never designed to really be an ergonomic product,” said Alan Hedge, a professor emeritus at Cornell University, who was also interviewed in the NBC article and is an expert on ergonomics, which is the process of arranging workspaces so they fit the people using them. As classrooms rely more on devices to augment learning, caring for the student’s physical well-being becomes paramount.

THE EFFECT ON FOCUS AND PERFORMANCE

Such physical challenges are just one element of how a poorly designed workspace can affect students. Another is the effectiveness of the learning itself when it is difficult to focus, a major challenge for students learning at home during the pandemic.

Students have complained about feeling “exhausted” and “fatigued” by long hours at the computer during remote learning, as reported by the [New York Times](#). Nearly 80% of teachers said students’ ability to focus worsened during the crisis, according to [Education Week](#).

While tools such as headphones can help students stay immersed in their learning environments, lack of such equipment can cause difficulty in learning.

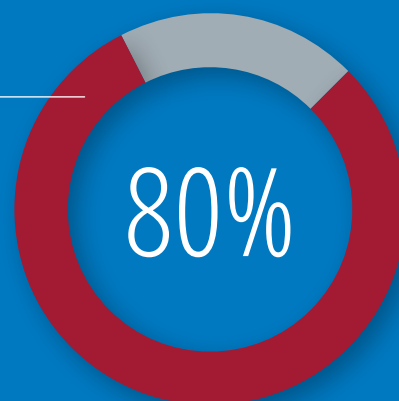
“We heard a lot about ‘Zoom fatigue’ severely affecting students, yet when we break it down there’s one key element that can be minimized with the right tools: extraneous load,” said Mortimore of Logitech. “This refers to external elements that distract from the learning process. Every time a student is unable to hear effectively, not comfortable, cannot see — this all contributes to increasing their extraneous load and, thus, negatively impacts students’ ability to learn effectively.”

The lack of engagement created when a student has trouble focusing on a lesson, or when there is too much going on in a learning environment that distracts from the lesson, naturally leads to poor performance. By having the right tools on hand, schools can ensure that technology-based learning is effective.



Teacher Survey:

80% of teachers said students’ ability to focus worsened during the crisis.



TOOLS THAT CAN ENHANCE E-LEARNING

The good news is that the right tools can prioritize student well-being while helping students focus. When learners have access to plug-and-play companion tools, such as peripherals and right-sized equipment, they can concentrate more fully, be more productive and collaborate easily. That's important, given that even low levels of sounds can increase stress and impede learning, according to [Education Week](#).

"Having the right tools minimizes students' extraneous load and, thus, frees up space in the working memory for learning," Mortimore said. "Adults have a working memory twice the size of a child, and the working memory is still developing until the age of 19."

That makes it essential to minimize distractions. Headsets can help with that, but they also must

be the right fit to ensure that discomfort does not become another distraction.

In the same vein, mice that are right-sized for little hands can help students easily navigate learning modules without turning focus away from the lesson and onto the technology. Plug-and-play keyboards also make it easy to set up shortcuts that keep kids focused on the task at hand rather than how to get there.

"The right companion devices are essential to bridge the gap between in-person and remote learning," Doug Bonderud wrote in [EdTech Magazine](#). "Improving ergonomics with purpose-built devices provides greater overall comfort and promotes mental health and student well-being for the long haul."

Ready to learn more about the right student tools to sustain engagement, focus and stamina? [Visit Logitech Education to learn more.](#) ■

“ The good news is that the right tools can prioritize student well-being while helping students focus. ”



ABOUT LOGITECH

Logitech solutions give students the power to learn and find their voice by boosting engagement, retention and achievement. With the right tools, student and teachers can engage more fully with their devices — masterminds, doodlers, note takers, listeners, and presenters alike can all find the solutions — and the learning methods — that light up their world.

LEARN MORE AT logitech.com/education.

sponsored by

logitech | for education