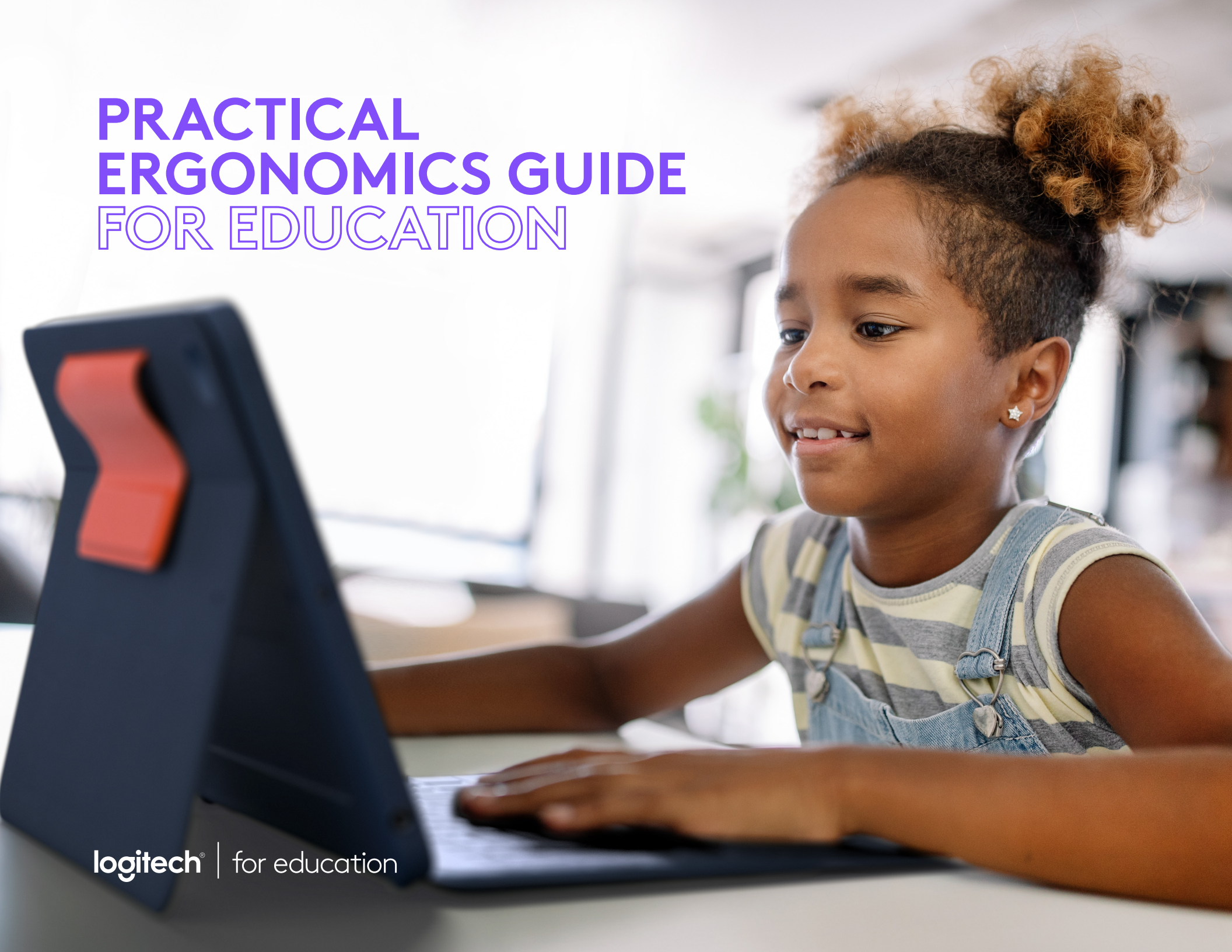


PRACTICAL ERGONOMICS GUIDE FOR EDUCATION



logitech® | for education



THE LOGI ERGO LAB

“We do better when we feel better.”

That core, systemic belief underpins the rigorous work we do at the Logitech Ergo Lab, based in Switzerland. We take a human-centered and scientific approach to support the development and reinvention of tools that help people feel better at work, school or home.

Our researchers collaborate with academics, practitioners, designers and product teams to make the future of work and learning more people-friendly, with ergonomic products and solutions that reduce muscle strain and improve posture, comfort and overall well-being.



EDTECH AT THE CENTER. ERGONOMICS AT THE FOREFRONT.

It's no secret that the usage of technology both in and out of classrooms has increased.

That increase, however, leads to more ergonomic concerns. In a survey exploring ergonomic issues associated with laptop use, 60% of students between 10-17 years old reported discomfort using laptops without companion tools.¹ That's not all. Learning and vision problems can also result from increased technology use. Did you know that children require sound to be 300% louder than background noise, otherwise learning loss can occur?

Moreover, 42% of teachers reported that students in the classroom had trouble seeing images and other material from the other side of the classroom.²

Ergonomics isn't just critical for physical wellness. It equally impacts learning outcomes. Seventy four percent of educators said that students' level of physical comfort while using educational technology impacts their level of engagement in learning.³



Studies also show that without correct posture and proper equipment, symptoms of information and communications technology-related (ICT) back pain and headache that occur between the ages of 8-14, can persist into late 20s.⁴ Today's tech-driven classrooms require more than the "sit up straight" method. Students and teachers need practical tips they can realistically use to impact overall ergonomics and physical wellness.

No matter the setup or where learning takes place, this guide outlines simple and realistic actions to implement in your school to improve well-being, ergonomics and productivity.

ERGONOMIC STRATEGIES

Here are four simple things educators and students can do to improve wellbeing and productivity



BANISH GLARE

Glare can increase eye strain. Eyes adapt to the brightest level of light, so it becomes harder to see details in duller/darker areas.

SOLUTION

Put the screen perpendicular to windows. Close curtains or shades during lesson time.



AIR QUALITY

CO₂ levels rise surprisingly fast, especially in crowded spaces! High levels of CO₂ can result in drowsiness, headaches, poor concentration, loss of attention and more.

SOLUTION

Open a window for a few minutes, several times a day, to let in fresh air.

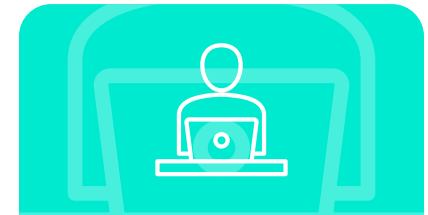


MOVEMENT

The human body is not designed to sit or stand all day, it is designed to move! Breaks show marked improvement in cognitive function, reading comprehension, and productivity.⁵

SOLUTION

Switch between sitting and standing in 30-60 minute intervals. Walking around a bit while standing is even better.



POSTURE

When laptops are used on a desk, the head angles down by about 10 degrees. When placed in a person's lap, that angle increases by 5 degrees. That tilt makes the head feel double its weight putting extra strain on the neck and shoulders.⁶

SOLUTION

Place laptop and tablet screens at eye level, especially during longer viewing periods.

A photograph of two students, a young woman with glasses and a young man, sitting at a desk. The woman is in the foreground, looking down at a laptop. The man is behind her, smiling and looking at the laptop. The laptop is on a blue and orange ergonomic stand. The background shows a window with a view of trees and a desk with various items like a pen and a small container.

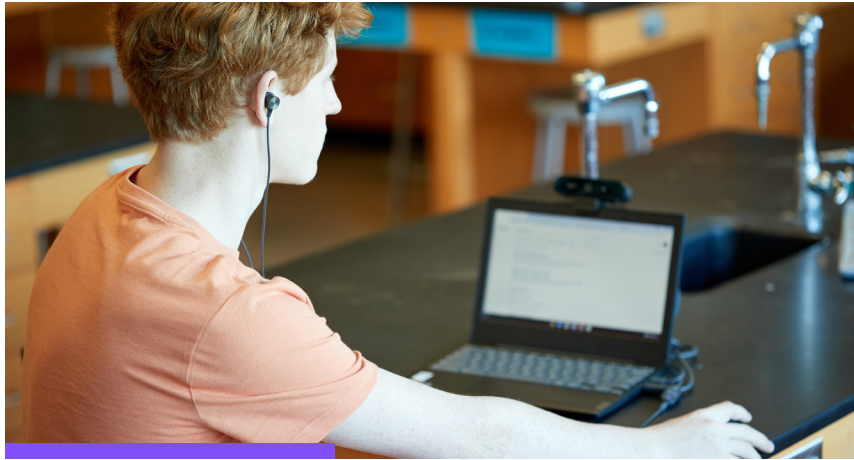
ERGONOMIC SOLUTIONS FOR STUDENTS

Mobile setups allow for greater flexibility, but they also increase chances of working in suboptimal conditions. This increases the risk of discomfort or even pain. The neck and shoulders are particularly vulnerable.

This section provides realistic tips students can practice to optimize workstations for ergonomic impact.

OPTIMIZING SETUPS WITH LAPTOPS & TABLETS

With laptops and tablets, the screen and input are tethered together, forcing an ergonomic trade-off: Adjusting one to improve ergonomics will worsen the ergonomics of the other.



ADJUSTING TO THE SCREEN

If the screen is at an ergonomic distance and height, reaching can be difficult, and hand and wrist posture can be awkward without the use of external peripherals. This can increase the risk of discomfort and strain.



ADJUSTING TO THE INPUT

If the device is placed so that input devices are used comfortably, then the screen will likely be too close to the student, and too low, increasing the risk of eye strain and the risk of neck and shoulder strain.

SOLUTION

Laptop, table stands and external mouse and keyboards provide similar ergonomic benefits to an external screen. They lift the screen, encouraging a more natural neck posture and reducing neck and shoulder strain. Because these screens tend to be smaller, adjusting the font size can help reduce eye strain.



POSITIONING TABLETS

- Avoid placing tablets in laps or holding them in hands.
- Place tablets on a surface (table or desk) to reduce neck strain from looking down at the screen and wrist strain from holding it up.
- Place tablets arms-length away to reduce eye fatigue, and increase font size to see better if needed.



ADJUSTING TO THE ACTIVITY

- When reading, watching and typing with an integrated physical keyboard, use the steeper angle on a stand, and avoid putting the tablet flat on a table.
- Prop the laptop or tablet up with books if needed to reduce eye and neck strain.
- When drawing, writing or typing on a virtual keyboard, use the lower angle of the stand, or lay the device flat on a table for a better hand and wrist position.



HEADSET FOR EFFECTIVE LEARNING

Headsets and external microphones with good sound quality and noise cancellation provide a more effective learning experience. Using headsets, especially ones with built-in microphones, have a number of ergonomic and well-being benefits.

BENEFITS

- Students are less likely to lean towards the computer or tablet to hear or be heard, which can put strain on eyes, neck and back.
- Wireless headphones allow students to move around while listening, which helps to avoid prolonged stationary positions.

CONSIDERATIONS

- Sound levels should be adjusted to less than 75 decibels (or no more than 60% of the maximum volume).⁷
- The World Health Organization recommends children spend no more than 40 hours listening to a personal audio device per week.⁸
- Regular breaks are recommended, especially for extended use.



ERGONOMIC SOLUTIONS FOR TEACHERS

Technology for educators is just as important. The right edtech can save energy, focus and promote overall well-being! Using external peripherals, especially an external screen, mouse and keyboard, can create an optimal desk setup and offer micro-adjustments that can make a big difference.

THE IDEAL SETUP

EXTERNAL WEBCAM

An external webcam placed on top of an external screen rather than on a laptop ensures teachers look straight ahead. This improves neck posture and reduces neck and shoulder strain.

EXTERNAL SCREEN

Positioning the laptop at the right height and distance reduces the need to bend the neck. To improve posture and minimize neck, shoulder and eye strain, sit the laptop on a stand or pile of books.

EXTERNAL MOUSE & KEYBOARD

External peripherals let teachers select the device that is the right size for them and with the right functionalities for their unique tasks. This encourages long-lasting comfort and productivity.

HEADSET & EXTERNAL MIC

Using a headset (with a built-in or external mic) ensures that educators can hear and are heard better, and reduces the need to lean forward which can put strain on your back.



POSTURE AND POSITIONING BOTH IN CLASSROOM & HOME

An adjustable table and chair are ideal. No matter what setup a teacher chooses, these guidelines should be the aim.

Place feet flat on the floor with knees, ankles and hips at about 90° angles.

Keep elbows at about 90° when typing or using a mouse.

Provide support for the lower back with backrest or pillows.

Support thighs by adjusting the seat pan, or sit further back in the chair.

Avoid crossing legs, sit up straight and change positions from time to time.

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