



ENHANCING SAFETY AND SECURITY IN ACTIVE LEARNING ENVIRONMENTS

An Intel® Solution Brief for Education



As we approach the third decade of the 21st century, it has become axiomatic that students show significant improvements in their knowledge skills and attitudes when they are actively engaged in the learning. This engagement takes a variety of forms based on grade level, subject matter, teacher skills, and educational achievement goals, but common among most classrooms is the increasing use of technology when the student is independent of the direct supervision of the teacher.

The risks to student safety and security increase with each step toward independence from the classroom. In September 2018 the FBI warned, “Malicious use of this sensitive data could result in social engineering, bullying, tracking, identity theft, or other means for targeting children.”

Of course the lack of supervision is not the only reason that independent student engagement has security concerns. When students are learning and collaborating outside of the classroom they are using computers and servers that may not have adequate protection against Trojans, viruses, ransomware, and other types of malware. They may be using public devices where their information can be collected by nearby intruders.

Finally, the more that students are asked to collaborate with other students and members of the community, the more they are at increased risk for cyberbullying. That is, using the internet, mobile phones or other devices to send or post text or images intended to hurt or embarrass another person. Because the sites where students collaborate are not necessarily secure, the bully could be an intruder posing as a collaborator.

Some of these threats to student safety and security are mitigated when students use computers at school. Malicious and unsafe sites are usually filtered by the school's servers and many schools log the sites visited.

“Malicious use of this sensitive data could result in social engineering, bullying, tracking, identity theft, or other means for targeting children.”

U.S. FEDERAL BUREAU OF INVESTIGATIONS, 2018

DELIVERING A SAFER EDUCATIONAL EXPERIENCE

Benefits for administrators

- Powerful Intel® Core™-based devices help to future-proof your investment for years to come.
- Supports teaching and learning of real-world skills and practices used throughout a school system in a safe, secure, and managed environment.

Benefits for educators

- Improve student learning by having students more safely engage in active learning on the internet.
- Assign projects with the assurance that each student has equal access to resources.

Benefits for students

- Use Internet resources while reducing fear of identity theft, cyberbullying, etc.
- Collaborate with other students and their educators.
- Have ready access to resources to complete projects.

THE RIGHT SOLUTION FOR TEACHING AND LEARNING

Whether a large-scale deployment or shared device model, every student needs a device that has been equipped with hardware and software that helps protect them while they are connected to the internet - regardless of if they are going through the school's server. Since students who are engaged in active learning pedagogies use a variety of online resources, the devices must have several components to help protect both the student's safety and security.

Hardware-based two-factor authentication

Safe use of the internet begins with assuring that only individual students and authorized school personnel have access to their student accounts. This will help defend against identity theft and impersonation.

Virus protection

A second defense includes installing virus protection software that uses Intel® Threat Detection Technology. This will not only help secure the students' devices, but will also help protect the school's IT system.

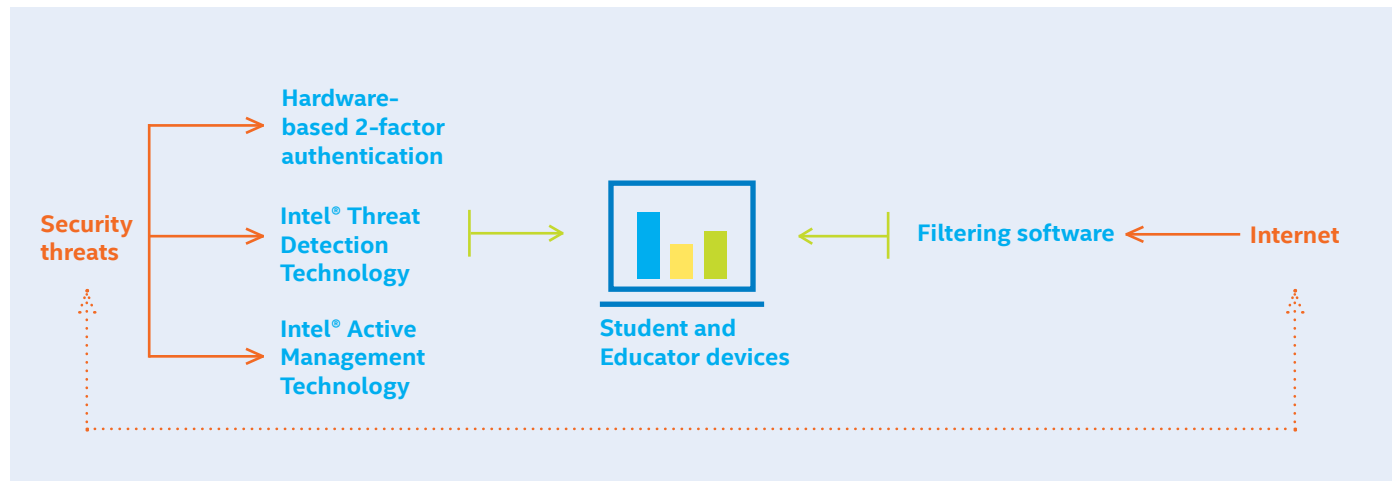
Internet filtering

Internet traffic will be filtered to assure that only sites that are approved by the school can be accessed by a device.

EXAMPLE USE CASES

- In a flipped classroom most of the direct instruction takes place outside of the classroom using videos, websites, and other online sources.
- In project based learning students usually do independent research using search engines and work with their team members as they collaborate on reports and discuss plans and assignments.
- When student create media they use online tools and post their products to online collections.

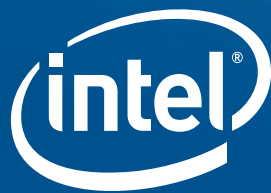
HOW HARDWARE-BASED SECURITY FEATURES WORK



“Safeguarding student data starts with teachers and administrators...but it also depends on robust practices and policies and the right technologies. ”

EU GENERAL DATA PROTECTION REGULATION

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