



Active Learning with Interactive Flat Panel Displays

Schools are investing in classroom technologies that enhance learning and collaboration while overcoming operational and financial challenges.

INTERACTIVE FLAT PANEL DISPLAYS (IFPD)



Promote Collaboration

Enabling teachers and students to interact with each other and lesson content in the classroom or from any location.



Foster Creativity

Using interactive software to draw on-screen, add images including video, for more engaging and inspiring lessons.



Increase Confidence

Providing an intuitive User Interface that teachers and students can use with confidence in front of the class.

How will today's students succeed in the workforce? According to a study of more than 1,400 executives, employees, and educators, 89 percent say the lack of collaboration or communication skills causes failure in the workplace.¹

These skills are only increasing in importance. It took just two people, Wilbur and Orville Wright, to design and build the first airplane. Compare that with the hundreds of engineers, working at sites around the world, who collaborated on designing the Boeing 787 Dreamliner.²

That's why educational agencies around the world—from the federal or central government level and all the way down to the states, provinces, districts, counties, and cities—want students to learn how to collaborate as they seek to redefine the classroom for the 21st century. These stakeholders include policy and decision makers such as directors and superintendents as well as technology managers, principals, and teachers.

Many such stakeholders already use educational technology (EdTech) solutions in the classroom to customize lessons, increase engagement, and drive collaboration. These solutions provide both in-classroom and distance learning capabilities, while improving teaching outcomes.

While EdTech can support education goals, stakeholders are cognizant of the fiscal constraints that put pressure on school systems. Therefore, any new EdTech solution must not only deliver on the promises made to students, parents, and educators, they must provide exceptional value as well as promote critical learning experiences in the classroom and beyond.

Today's generation of Interactive Flat Panel Displays (IFPDs) can offer such an EdTech solution. They support the needs of teachers, students, and parents by containing collaboration tools that benefit teachers as well as in-classroom and distance learners.

They are built on open, secure, and scalable platforms that address operational issues related to education and collaboration. These solutions also enable connectivity with cloud service providers and are compatible with a variety of off-the-shelf software and applications, increasing their functionality and cost-effectiveness.

In a global study of educators, 76 percent reported that technology and collaborative learning, in both theory and practice, strongly or very strongly improved student social and emotional skill development.³ And that success is 3.4 times more likely to occur when collaborative learning practices and technology are used frequently together in the classroom.⁴

An EdTech Solution for 21st-Century Learning

Many students today appear to prefer visual and kinesthetic learning styles. Today's IFPD solutions address those preferences, allowing students to get out of their chairs and go up to the front of the class, making them ideal for educators to create lesson plans that engage students as well as nurture collaboration and creativity.

These solutions also improve productivity in the classroom by simplifying the user interface as well as allowing streamlined videoconferencing. And in removing proprietary unified communications restrictions—often found in previous-generation solutions—today's sophisticated IFPD solutions facilitate long-term use and investment protection.

They can also solve deployment challenges by leveraging a new generation of digital whiteboard solutions that reduce complexity, simplify setup and maintenance, and integrate with other systems. These solutions also provide security features that protect student privacy and school assets.

Moreover, by equipping passionate teachers and students with a sophisticated IFPD solution, traditional instruction methods can be transformed into an experience that combines the immediacy of chalk on slate with the power of digital technology and media.

The results? Learning becomes engaging and interactive. The advantages also include providing personalized, meaningful instruction. This means that students and teachers can save and review their presentations, allowing them to go back and improve their work. Another advantage of today's IFPD solutions is the analytic component, which enables teachers to enhance and revise their content as well as to track and monitor a student's level of engagement and attention.

Tips on Selecting and Deploying an Interactive Flat Panel Display Solution



Seek Teacher and Student Input. Ask those who will use the technology to learn about their needs and how they can be addressed with an Interactive Flat Panel Display (IFPD).



Implement in Phases. A multi-year rollout gives districts more time to allocate funds as well time to train teachers on how to integrate an IFPD display into their curriculum.



Create Room to Experiment. Allow teachers to use IFPDs in different ways and in an environment where they will not be afraid to fail.



Teach the Teachers. Provide teachers with guidance and professional development, enabling them to thrive in IFPD-equipped classrooms, and continue to onboard new teachers with these skills.

EDUCATIONAL OUTCOMES



Enhance classroom experiences

with interactive learning environments that improve student outcomes



Expand learning opportunities

by enabling learning at any time, anywhere, to reach more students



Ease administrative burden

with simplified solution management that optimizes teaching time

Key Use Cases

Make courseware readily available to students and parents on an online server



Record an entire course with multiple angles, high-quality audio and video, and programmable effects



Interact in real time with remote students through an interactive whiteboard and software



Intelligently direct recordings and broadcasts and automatically upload to the cloud



Overcoming Obstacles with Intel® Technology

Three Intel® technologies—found in the advanced hardware and software used in today’s IFPD solutions—empower teachers and students to transform learning into highly visual, interactive, and collaborative experiences. They include Intel® Core™ processors, Intel Unite®, and Intel® vPro™.

1. Intel® Core™ Processors Provide the Power

As educational content becomes more immersive and complex, and with greater reliance in the classroom on cloud-based streaming media, both students and teachers want more. They anticipate an experience that is comparable to gaming and other forms of digital entertainment. To make that possible requires solutions that are equipped with high performance processors.

Intel processors make IFPD solutions powerful enough to simultaneously run a variety of software applications in the classroom, and enable them to display sharp images and videos with virtually no buffering or lagtime that can distract teachers and students.

This power enables teachers to bring lessons alive through demonstrations and other experiences. Imagine rendering a 3D model of the human body in real time in a biology class. Or using augmented reality (AR) in ancient history studies to transport students to Greece in the year 400 BC. And even using the built-in video camera and microphone to engage with students in schools across the country or around the world. Every class can be an opportunity to make teaching more engaging.

2. Intel Unite® Promotes an Immersive Classroom Environment

By enabling educators to stream, manage, and share content in real time, they can create a dynamic learning environment that, in addition to screen sharing, includes video collaboration and customized coursework.

Intel Unite extends screen sharing to laptops, notebooks, tablets, and, other mobile devices. Teachers can also enable students to not only view material on the screen, but to annotate it from their computing device so that their work appears on the IFPD and on all other connected devices.

This creates opportunities for students to share, explore, and take ownership of their work in order to build creativity, leadership, and social interaction skills. Intel Unite also

Intel® powered analytics in today’s Interactive Flat Panel Display solutions capture real-time data that enables educators to:

- Learn what drives students to engage and collaborate in the classroom
- Make quick, informed decisions about lessons and students
- Customize lessons
- Share feedback with administrators

INNOVATION FOR TEACHING AND LEARNING



Share Content



Display Presentations for Collaborative Learning



Annotate Content to Increase Engagement



Built-in Controls for Teachers

SIMPLIFIED ADMINISTRATION



Centrally Deploy, Customize, and Manage



Help Secure Shared Content



Tracking and Insight on Classroom Usage



Help Lower Costs with a Scalable Solution

helps control costs by supporting the most common devices and operating systems, making it compatible with existing technology. IT can easily implement the solution within existing classroom environments and customize the look and feel based on the needs of teachers and students.

Intel Unite delivers a great user experience while saving educational institutions time and increasing productivity.

3. Intel® vPro™ Simplifies Deployment and Lowers Maintenance Costs

Managing technology spread over a district's schools can be both a challenge and expensive if it requires technicians to manually upgrade and fix equipment on-site, especially in the middle of the school day.

Intel vPro enables the IT department to remotely overcome many technical challenges, while not disrupting classrooms, teachers, and students. For instance, school district IT personnel can remotely update software, power down systems, and perform other tasks from a central location instead of traveling to every school and classroom.

And low total cost of ownership, plus capabilities that increase productivity, help schools make the most of their budgets.

A Look at Two IFPD Solutions

Each school system will choose the IFPD solution that best meets its needs. Here are two examples, with observations on how they function.

The ViewSonic ViewBoard*

The ViewSonic ViewBoard IFPD education solution takes advantage of Intel technology and comes preloaded with software that enables teachers and students to annotate, revise, and share content so they can quickly get to work in the classroom and beyond.

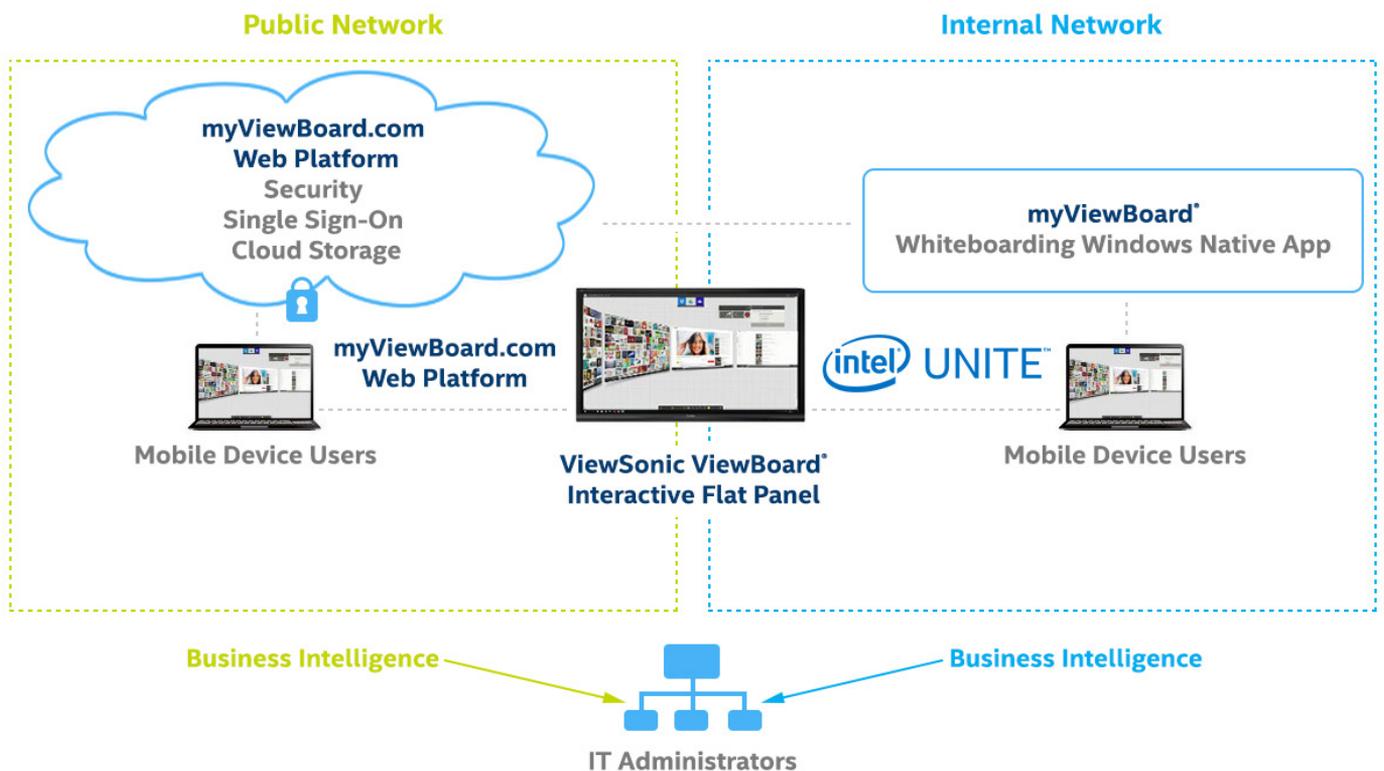
Teachers often find that using a ViewBoard in the classroom, promotes collaboration, fosters creativity, and improves productivity.

Furthermore, ViewBoard facilitates mobile engagement, remote management, lesson annotation, data encryption for security, and single-click content downloading—either locally or to a variety of cloud-storage options.

For instance, a teacher can develop lesson plans at home and save them to a cloud-storage site such as Google Drive*. The teacher can later teach that lesson in the classroom with a ViewBoard, or from another location using the remote screen-sharing function.

“We hear a lot about improvements in classroom participation and learning outcomes when teachers start using interactive flat-panel displays,” said Jason Webster, Director of Education Sales for ViewSonic. “Interactivity is the future of teaching, and it’s here right now. And our Intel®-powered ViewBoards let teachers easily use any cloud- or software-based resource in a familiar Windows environment—so they can focus on their teaching, and not the technology.”

THE VIEWSONIC VIEWBOARD



The Newline TRUTOUCH X Series Unified Collaboration System*

An IFPD solution designed for the needs of teachers and students today, this all-in-one collaboration solution runs on Intel Core vPro processors and makes teaching engaging, efficient, and productive.

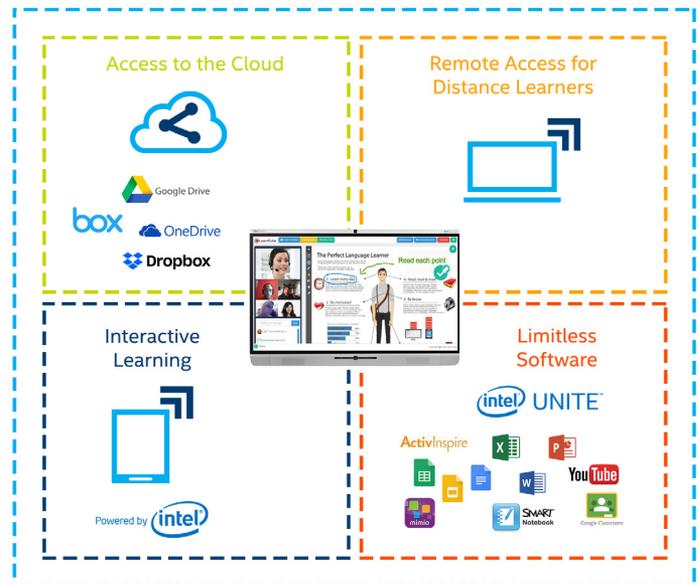
Teachers and school district IT managers will discover such benefits as ease of use in simplifying collaboration, streamlining videoconferencing, and removing unified communication restrictions.

“The TRUTOUCH X Series Unified Collaboration System was designed to enable easy videoconferencing and front-of-classroom collaboration,” explained Chris Bradford, the president of Newline. “A key part of the design was to incorporate the Intel® OPS compute module. The module integrates seamlessly with the X Series and provides users with a powerful computing platform and a great user experience.” On the Intel Unite platform, Bradford said, “It improves collaboration in the classroom and enhances the content-sharing experience between teachers and students.”

The solution accommodates a wide range of software, deploys built-in cameras and microphones that allow teachers and students to quickly begin lessons in the classroom, and comes equipped with an anti-glare glass surface that makes viewing easy from any angle.

The system offers a choice of software that enables drawing, handwriting recognition, and the ability to insert images and video into the presentation. Both teachers and students can collaborate, using the same visual materials, and then share their results.

NEWLINE ALL-IN-ONE DESIGN



EdTech Helps Students Prepare for Life

As an investment, today's Interactive Flat Panel Displays, running on Intel technology provide exceptional value. They enable teachers to use content in new ways, enhance collaboration in the classroom and beyond, and make the most out of scarce resources. Students become involved in the learning process and take pride in their work, while improving their creativity, leadership, and social interaction skills as they prepare for life after graduation.

For more information, visit the [Intel SmartClassroom website](#).



¹ <https://www.salesforce.com/blog/2012/09/nick-stein-work-post-2.html>

² <https://www.aversan.com/10-fun-facts-about-the-787-boeing-dreamliner/>

³ <https://edtechnology.co.uk/Article/skill-development-encouraged-through-tech-driven-teaching>

⁴ Ibid.

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer or learn more at intel.com.

Cost reduction scenarios described are intended as examples of how a given Intel-based product, in the specified circumstances and configurations, may affect future costs and provide cost savings. Circumstances will vary. Intel does not guarantee any costs or cost reduction.

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