



Wireless All-in-One Displays

Why Starting with Wireless Just Makes Sense

How all-in-one displays keep teachers tied to the front of the classroom – and why this is bad in today's learning environment.

All-in-one smart displays may have revolutionized classroom technology. But there's actually a better way to present lessons, putting the teacher – not the screen – at the forefront of the students' focus. Increasingly, teachers are learning that an all-in-one smart solution may not be wisest choice, after all. Let's explore an alternative that puts teachers – not technology – back in control of their classrooms.

In the past several decades, all-in-one **“smart”** classroom displays that integrate an interactive whiteboard, projection systems, and internet connectivity have become the go-to solution for virtually every classroom, from K-12 up to higher education.

Teachers are tasked with delivering content and curriculum on this glorified whiteboard. Upsells like click boxes, pens, and gizmos promise to help these devices achieve their full capabilities, but often create a clunky interface that is difficult to use.

But think about this: How “smart” does your classroom display really need to be?

In a world where less is more when it comes to technology – and simplicity reigns supreme – the all-in-one interactive flat panel has become too complex for practical use. Apart from being needlessly sophisticated, it can actually hold teachers back from optimizing their instructional time.

A Morning in the
Life of a Modern
Teacher

4

page

Screen Time: How
Much Is Too Much
for Students?

5

page

Technology
Should Keep
Teachers in the
Power Zone

6

page

The Perils
and Pitfalls of
Interactive Flat
Panels (IFPs) and
Free Wireless
Display Apps and
Solutions

7

page

The High Cost
of Installing
IFPs Across
an Educational
Facility

8

page

The Magic of
ScreenBeam: Your
Wireless Display
That Keeps
Teachers in the
Power Zone

9

page

Conclusion

11

page

A Morning in the Life of a Modern Teacher



Teaching has always been hard work. But shifting curriculum standards, ever-changing technology, and growing demands from parents and administrators – along with the socio-emotional challenges today's children face – makes it even harder.

Teachers spend hours at home prepping lessons and content and arrive at school ready to share their lessons through an entirely different medium – the big screen at the front of the room. However, since the content was created on the laptop, the teacher may not use all the tools within the IFP.

When connectivity issues arrive – as they often do – the teacher becomes understandably frustrated, wasting precious class time. Inevitably, the students begin to lose focus, and now the teacher must bring them back on task.

Does it really make sense to spend all the time and money buying and supporting complex systems when there just might be a simpler way?

If this scene sounds familiar, you might be an educator in a modern school.

But the IT and AV professionals in school districts, especially those who spec the equipment, should also be aware of this scenario. While the nuts and bolts and dollars and cents are important, your goal is to serve the needs of teachers and students by creating an effective learning environment using the right technology.

We have been forced to believe the complex environment is better, when we really can just take the simple and make it super.

But before we broach the benefits of wireless displays, the antidote to complex all-in-one systems, let's discuss the substantial role a front-of-room display plays in education – and why, perhaps, its role should be diminished in favor of more flexibility and student-teacher interaction.





Screen Time: How Much Is Too Much for Students?

You might be surprised to hear an AV company – a company named ScreenBeam, no less – speaking out against screen time for students. But the research is compelling.

Correlational studies have shown that 8-to 11-year-olds who exceed screen time recommendations scored lower on cognitive assessments, with compliance recommendations explaining about a fifth of the overall variance in cognitive scores⁰¹. A combination of screen time and too little sleep has also been associated with heightened impulsivity in the same age group.⁰²

Yet, if you've pursued quotes and estimates for in-room technology, no doubt the integrators emphasized the screen as the focal point of classroom instruction.

Before you sign on the dotted line for costly displays with all the wires, dongles and accessories they need, stop and consider these questions:

Is focusing on a screen all day the right pedagogical approach for your faculty?

Does more screen time equal better learning outcomes?

How much time do teachers lose when they don't understand the software well enough to make the technology work?

How much time do teachers lose when technology fails?

What happens to the students' attention when the teacher is stuck at the front of the room interacting with a display screen?

This last point is key. Every minute teachers spend interacting with the display at the front of the room is a minute they aren't focused on the students. It's another minute of teaching outside the power zone.

01 (The Lancet Child & Adolescent Health, Vol. 2, No. 11, 2018)

02 (Pediatrics, Vol. 144, No. 3, 2019)

Technology Should Keep Teachers in the Power Zone

What is the Power Zone in education? The Power Zone is widely considered one of the five fundamentals of exceptional instruction, as outlined in the 2021 book *The Fundamental Five Revisited* by Sean Cain, Mike Laird, Sherilynn Cotten, and Jayne Ellspermann.

For the uninitiated, the book's authors outlined the five fundamentals as follows:

- 1 Frame the lesson.
- 2 Recognize and reinforce.
- 3 Frequent, small-group, purposeful talks about learning.
- 4 Critical writing.
- 5 **Work in the Power Zone.**

Teaching in the Power Zone is “the mortar that connects and strengthens the other fundamental practices,” according to the authors.

The Power Zone is directly about the physical space, “the teacher being in close proximity to students during instruction or monitoring. The Power Zone is where effective teachers spend more of their instructional time to ensure learning is occurring,” the book reads.

In his groundbreaking book *Teach Like a Champion*, Doug Lemov referred to teaching in the Power Zone as “*Breaking the Plane*.”

Lemov describes the plane as an imaginary line that runs across the front of the room, separating the teacher from the students as if the teacher were on a stage. Many teachers already hesitate to break the plane.

An interactive, touchscreen flat-panel display full of software and gadgets at the front of the room pulls the teacher's focus directly out of the Power Zone and pushes them behind the plane, not just for comfort but convenience.

On the other hand, research shows that when a teacher spends more time in the Power Zone:

- On-task behavior increases
- Retention increases
- Discipline issues diminish
- The teacher has more opportunities to leverage high-yield instructional practices

One peer-reviewed study⁰³ on the influence of teacher-student proximity, teacher feedback and near-seated peer groups on classroom engagement showed that teacher-student proximity enhances the effect of teacher feedback. The study also showed that proximity engagement improves classroom teaching and management.

But how do technology integrators rectify the situation, given the significant role these front-of-room displays play today?

Before a major equipment upgrade, ask these questions of your teachers and administrators:

Given another option, would teachers still prefer to be tethered to the front of the room at a touch screen?

How would their teaching and student engagement improve if technology permitted them to work in the Power Zone more often than not?

How much time and training resources go into helping teachers learn the software, display, and how it integrates with the classroom tech stack?

If you could design your perfect classroom, without any cost barriers, what would it look like?

Could a wireless display system change the game?

03 Plus One, Published online 2021 Jan 7.





The Perils and Pitfalls of Interactive Flat Panels (IFPs) and Free Wireless Display Apps and Solutions

Interactive flat panels (IFPs) are costly to purchase and install, bulky, and often difficult to use.

Yes, you can gain the benefit of “untethered teaching” with a free, built-in wireless solution that integrates with your IFP. But this subjugates an essential, effective teaching principle (untethering teachers) to a free service.

As a result, you'll face some or all of the following drawbacks:

Non-native, App-based solutions that often don't do the basics well. All your devices already have wireless capabilities, but non-native, app-based solutions are designed to bypass their capabilities in favor of software that doesn't even accomplish the basics.

Bloatware on the screen that delays startup. Turning on a screen to connect to a device shouldn't require a manual and a separate training for every app. The process should take seconds, not minutes.

Lack of consistency in versions and availability year over year. Display companies change or upgrade apps with alarming frequency. Each time an app is replaced with a newer version, staff needs more training.

Poor performance in dense RF environments. Today's schools have high RF density, with hundreds of children and teachers each with their own wireless device – sometimes more than one if students carry smartphones along with their tablets, netbooks or laptops.

Trying to operate a wireless display in that environment requires specialized technology that's not found in typical all-in-one displays.

Little to no dedicated support for wireless display.

Wireless display apps are often a free add-on, which means that when something goes wrong, you can't get the service and support you need.

No support for 4K content. You may have a 4K screen, but most apps won't let you send 4K content from another device to the all-in-one display at the front of the room.

You're still tethered to the front of the room. In spite of the ability to send wireless signals through the app, all eyes are still on that monster IFP at the front of the room. You have little flexibility to re-direct students' attention to other screens.

The High Cost of Installing IFPs Across an Educational Facility

Wireless challenges aside, there are also high, sometimes hidden, costs that are associated with a full deployment of IFPs as the standard across your educational facility.

Installation. Installing a huge IFP is a heavy lift compared to projectors or a standard display.

Cost for management. If you don't have a service agreement for management, you've got to update each screen individually, which could cost as much as \$9 per month for each display. In an average-sized school district, these costs add up quickly.

Out of warranty replacements. An IFP can cost \$1,500 to \$3,000 to replace if the warranty has expired. Newer models may have a different OS, which means more time spent training staff.

If one part breaks, it all breaks. All-in-one displays, by definition, are integrated. That means if one component breaks, you lose access to the whole system while it's being repaired. For example, if the main display needs repairs, you lose access to any software running on that panel, including wireless connectivity capabilities. Since most classrooms can't operate without their front-of-room display, you'll need to keep extras on-hand.

Staff Time (for training and use). Basic tasks that take seconds on a laptop, like opening a website or doing an image or video search, can take 39 seconds up to 1:21 minutes on an IFP. Those time estimates come from staff who have already been trained on the software for at least three hours. The time teachers spend on these tasks – which can add up to 35 minutes per week, or almost a full class period in a high school – is time the teacher is at the front of the room with her back to the class.





The Magic of ScreenBeam: Your Wireless Display That Keeps Teachers in the Power Zone

When IT and AV managers build out technology for the classroom, they should start with evaluating what effective teachers need and find solutions that meet those needs within the school district’s technology budget.

Counterintuitively, IFP manufacturers start with the premise that you will use their technology all the time in the front of the room. These manufacturers place the essential needs of a teacher in the hands of a free app with little to no support and rarely take budgetary constraints into consideration.

ScreenBeam	All-in-One Displays with Free Apps
App-free, cross-platform wireless operation	Non-native, free apps to add wireless capabilities
Integrated Digital Whiteboard Application	Integrated Digital Whiteboard Application
CMS Enterprise: Management console with no annual license fees	Updates can cost as much as \$9 / screen per month
ScreenBeam Conference BYOM Solution	Restricted to flat panel display at front of room
Multi-view mode without an app	Reliant on apps
Emergency messaging capabilities	N/A
4K max resolution	Limited display capabilities for 4K content
Dedicated and reliable U.S.-based service and support	Service for free apps may not be readily available
No wires or dongles	Wires connect all-in-one display, tethering teacher to the front of the room
Intuitive system doesn't require hours of training	Requires 3+ hours of training for staff
Reduced latency; works as quickly as your wireless device	Basic functions such as opening a website can take up to 1:21 minutes
Affordable, scalable solution	Expensive to install, service, and maintain
Free movement around the classroom	Tethered to IFP display at front-of-room

Standardizing on ScreenBeam creates a dedicated wireless solution that works with any display by connecting with native software for an intuitive, user-friendly experience.

ScreenBeam offers the app-free solution IT and AV managers and teachers, alike, have needed for decades, without realizing these capabilities were possible. It is not dependent on apps or software to function. It is not dependent on cannibalized, third-party solutions which may or may not have support.

If you were to reverse engineer an effective instructional environment, it should start with finding a solution like ScreenBeam, proven to untether teachers and allow them to teach with technology as comfortably as they can teach without it.

“ScreenBeam changes the dynamics of our classrooms. When both teachers and students can move freely around the classroom, the level of interaction exponentially increases.”

Jason Murray

District Technology Coordinator
Cornwall-Lebanon School District

With ScreenBeam, enhanced features don't get in the way of normal use.

Here are just some of the benefits today's teachers will discover when they abandon all-in-one displays for a true, native wireless solution:

- App-free, cross-platform experience
- Integrated Digital Whiteboard Application to enable functionality on dumb interactive displays
- Latency-free Touchback with our patented Ghost-Inking (Windows exclusive) – maintain the benefits of a touch screen without staying tethered to the front of the room
- CMS Enterprise: management console with no annual license fees reduces operational costs
- Native mirroring and extended screen modes
- ScreenBeam Conference BYOM solution (1100P only)
- 4K max resolution
- Multi-view mode without an app (up to four screens at once)
- Digital signage player platform
- Orchestrate by ScreenBeam™ (for classroom management)
- ScreenBeam Alert function for emergency messaging adds advanced capabilities
- Quick switch mode to change users without disconnecting saves time
- Classroom agility enabling teachers to work from the Power Zone
- Dedicated and reliable US-based service and support



If untethering teachers is essential (which, based on research studies, it is!) it makes sense to build your classroom around a solution that emphasizes that objective and frees teachers to leave their battle stations at the front of the room and explore the **Power Zone**.

The combination of ScreenBeam 1000 EDU G2, a dumb interactive flat panel, and a highly-capable teacher device loaded with instructional applications provides a complete solution that puts the power in the teacher's hands, makes the classroom completely flexible, and reduces the total solution cost.

"Complexity creates confusion, simplicity focus."

Edward De Bono

Maltese physician, psychologist and inventor

ScreenBeam is here to help with the solutions you need in school districts of any size. Reach out today to get started.

