TRENDS IN THE CLASSROOM

The latest technology improves learning and meets new teaching standards.

Understand the trends driving greater engagement and learning in today's classroom and how to incorporate technology to support them.

www.benq.us/education

BenQ

Because learning matters

INTRODUCTION

Technology has a long history of enhancing the classroom environment. With humble beginnings, TV carts and overhead projectors have given way to flat panel displays and interactive projectors that support a fully immersive classroom experience. Technology is an essential component in creating new ways of teaching students, helping them deepen their knowledge of vital classroom curriculum. The latest advances in technology have completely reimagined how to teach kids in a fun, creative way that encourages class participation and collaboration for maximized comprehension. This white paper will describe the technological trends taking shape in the classroom and the best technology available to maximize the benefits of those trends.

SMARTER CLASSROOMS SUPPORT GREATER COMPREHENSION

Today's media savvy youth are so connected to digital devices that they consume content at an increasingly faster pace. With devices enabling a continuous stream of information, teachers have to compete for their students' attention and cut through the information overload that today's youth are experiencing outside the classroom. Lesson plans must be engaging, inspiring and encourage collaboration that yields greater comprehension. Many of today's new classroom methods are providing a solution to these issues. With that in mind, many schools are taking a harder look at their visual and IT equipment with the goal of installing the best, most cost-efficient technology to aid in the pursuit of a providing an outstanding education. According to a 2015 District Administration educator survey, 46 percent expected to increase or to incorporate new instructional technology this year because studies are revealing that a technology-enhanced classroom provides a better, more complete learning experience. In Arizona, a pilot program with the Arizona State Grant Program revealed children tended to learn faster and were more engaged when technology was brought into the classroom.

THE FLIPPED CLASSROOM

One of the biggest paradigm shifts driving the increasing need for technology is the flipped classroom. With classroom time freed up from lecturing, teachers must be ready to provide students with a hands-on approach to aid deeper comprehension of the curriculum. These might include collaborative exercises, small-group breakout discussions and one-on-one instruction tailored to address concepts students may be struggling to grasp. In a successful flipped classroom, technology becomes the cornerstone in creating more effective lessons that motivate and inspire students to learn, no matter their ability.

BenQ

Because learning matters

COLLABORATION

Under the flipped classroom model, collaboration has become a pivotal element in learning. Technology that is easy to use, quick to deploy, and provides advanced capabilities that enhance and engage students provides the best outcome for collaboration. When students can come together either as a class or in small groups in a collaborative learning space, they feel more open to exploring, brainstorming, and discussing subject matter. An animated classroom is an engaged classroom. Students learn creative thinking skills and how to focus, which is essential in today's world of constant information streams that cause distraction and shortened attention spans.

GAMING

Gaming can be one of the most powerful and innovative instructional tools that teachers can deploy. When gaming is introduced around a subject matter, learning becomes play-based and fun. Students grasp new concepts easier and more quickly and even experiment with different options and variables, taking new approaches that they might not have tried otherwise. Gaming can facilitate a positive experience with the content that has shown to commit it to longer term memory.

THE CLOUD

As more and more teaching resources are created for online consumption and virtualization, such as video, apps, study guides and more, the cloud becomes the hub where content is stored, the mechanism for distribution and exchange, and a facilitator in online collaboration. Cloud-enabled devices and technology grant teachers and students quick access to these resources without wasting valuable classroom time.
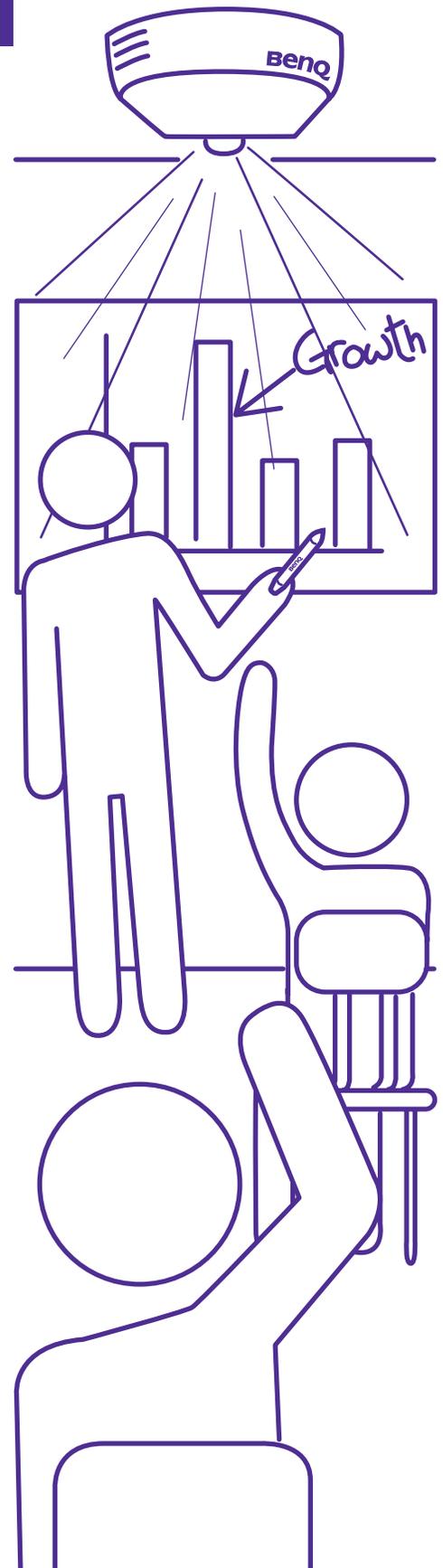

BenQ

Because learning matters
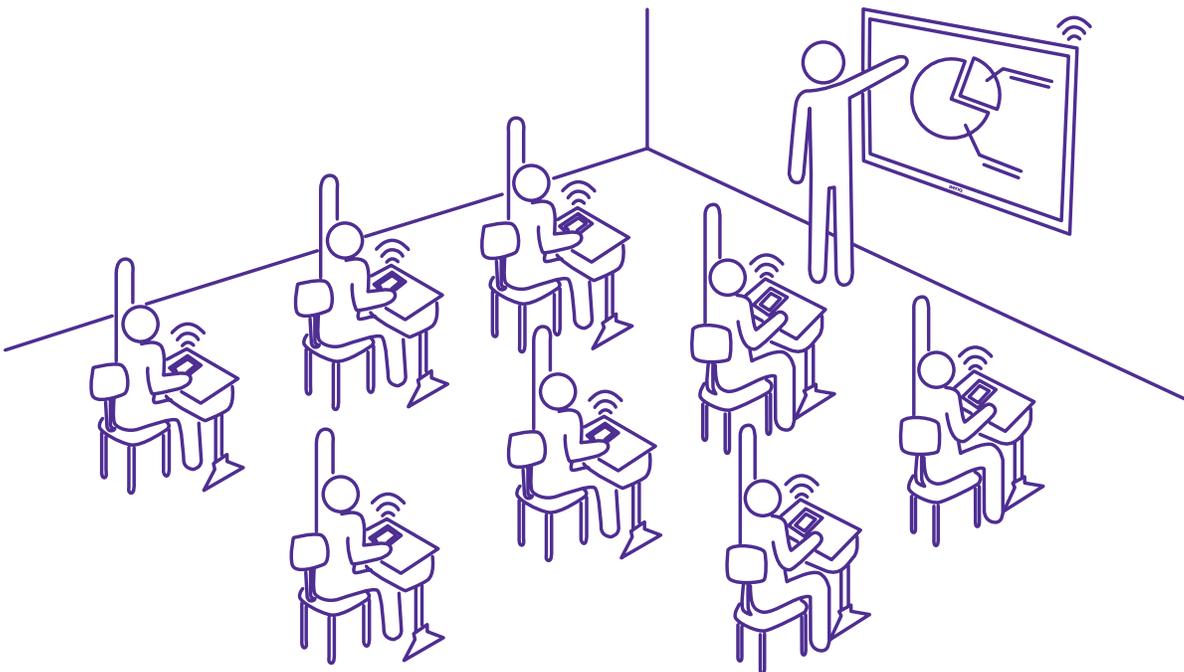
Until recently, traditional technology implementation has primarily been limited to one-to-one situations, which offers little group interactivity, or a simple monitor-type display, which isn't sized large enough to engage an entire class. In an era when ever greater demands are being placed on teachers while budgets continue to shrink, teachers and district IT staff are looking for creative, long-lasting and cost-efficient solutions that support these new teaching methods and enable a new level of interactivity in the classroom. Among those solutions are projectors and screens that facilitate an immersive environment for engaging students, and in turn, promotes a higher level of student performance.

Among the technology manufacturers leading the charge in engineering powerful and creative classroom solutions is BenQ, a renowned provider of education technology solutions, including an advanced line of feature-rich interactive education projectors and interactive flat panels. With these solutions installed in the classrooms, teachers are able to offer creative teaching methods. As a result, students feel more empowered, free to share their knowledge, while learning in the process.

Across an extensive line of ultra-short-throw projector models, BenQ provides advanced features to aid classroom learning, these include:

- Incredible screen sizes of 100 inches from as little as 3.14 inches from the screen
- 3,300 ANSI lumen brightness, delivering clearer, sharper images and text even in large classrooms with ambient light
- Elimination of distracting shadows cast by the person in front of the screen to allow students to focus on instruction at hand
- Total Internal Reflection (TIR) optical prisms to provide superior level of brightness uniformity while dramatically improving readability
- Colorific™ technology to create vibrant, true-to-life images with astounding contrast and remarkable image clarity, higher impact, and greater legibility with year-after-year color dependability. Colors will remain the same from day one to a decade later without fading, ghosted images, or yellowing
- Support for BenQ PointWrite technology, which turns any flat surface into an interactive screen that up to four students can simultaneously collaborate on.

BenQ

Because learning matters

When Plano, Texas, Independent School District (Plano ISD) needed a solution that would facilitate a better interactive experience for engagement and sustained learning, the school incorporated BenQ projection solutions to add more flexibility and capabilities to their classrooms. Using BenQ's short-throw interactive projector along with BenQ's PointDraw pen, opened up endless collaboration opportunities and enhanced the learning environment.

"This interactive technology has changed the classrooms and enhanced the learning experience for teachers and students. The interaction happens anywhere in the classroom," Mary Hewett, former executive director of instructional technology commented. "The pen can be used from any location in the classroom. In addition, traditional interactive board solutions are quite expensive. The price for an interactive white board is roughly twice the cost of the BenQ projector and it does not even include the projector."

Another option from BenQ is its line of interactive flat panels that also provide a rich set of classroom-ready features:

- Stunning 4K Ultra HD resolution with 55 pixels per inch, the highest level of achievable image clarity and readability on the market

- Sized for wireless use, engagement and collaboration on up to 84 inch displays

- Up to 20-point multi-touch interactivity

- Multi-platform connectivity for convenient connection to a classroom PC and laptop Operating System

- Multimedia I/O interface that offers every port need, from HDMI to touch USB, media USB, OPS USB, and MHL ports, plus an earphone and microphone jack with plug-and-play capability

- Hotkeys for volume and input source control, as well as functions that help direct students' attention back to their teacher

- Wireless content streaming from any smart device using BenQ's QCast HDMI streaming dongle.

SOLUTION

BenQ MW883UST ULTRA-SHORT-THROW PROJECTOR

- Delivers a 100-inch diagonal image from a distance of only 3.14 inches
- 3,500 ANSI lumens of brightness
- WXGA resolution
- Exceptional color performance for a more immersive experience
- Blu-ray 3D-ready
- Dual HDMI ports for convenient device integration
- Qcast software supported to allow users to beam pictures, videos, and content from mobile devices straight to the projector
- Supports optional PointWrite pen kit for simultaneous annotation and touch and gesture capabilities for greater interactivity and engagement
- Efficient installation features
- Filter-free maintenance
- SmartEco technology extends lamp life to up to 7,000 hours, lowering the unit's TCO.
- Integrated Wireless docking port to house optional QCast wireless adapter
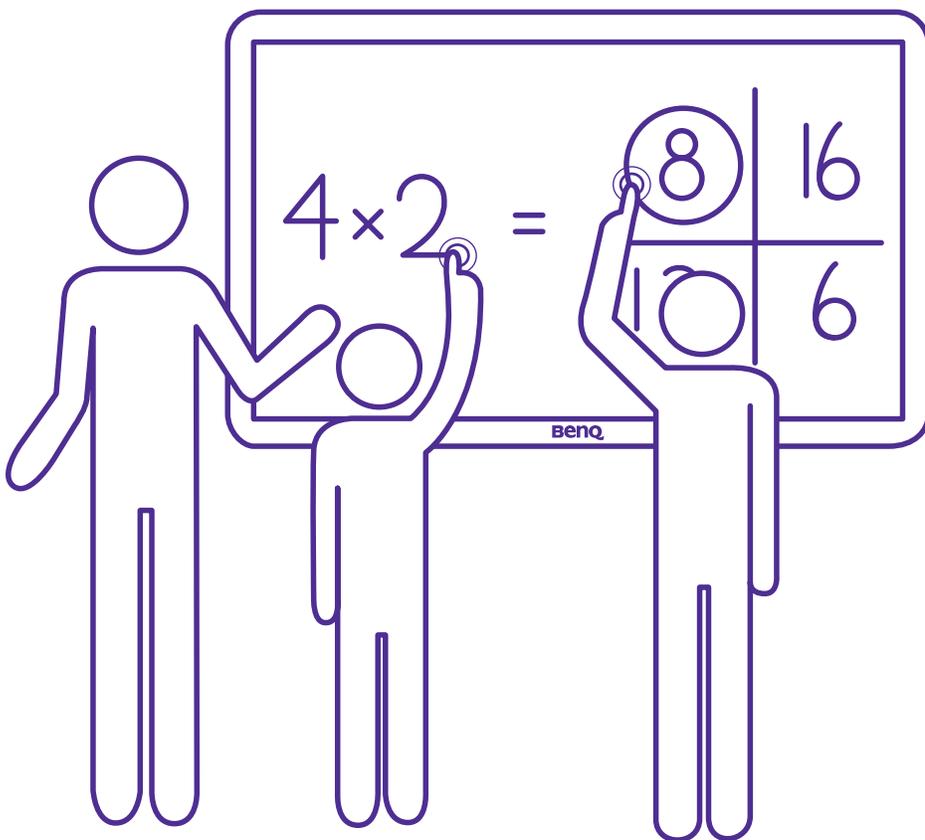
BenQ

Because learning matters

"BenQ's interactive flat panels create a classroom experience that is based on the free flow and easy access to information. Because of their flexibility, fluid tactile navigation, and incredibly bright imaging, students can walk right up to panels, work directly with information, and answer questions collaboratively in any classroom disposition - increasing freedom of movement and interaction anywhere across the room. Loaded with cost-lowering features and options for integrating the panels with other project components, the panels were instrumental in making our award-winning classroom of the future an environment that can embrace the learning styles of each individual student."

- Dennis Purcell

Vice President of Sales and Training
Saxton Bradley Inc.

SOLUTION

BenQ RP750
Interactive Flat Panel

- 75-inch interactive display
- 20 touch points
- Integrated Android PC annotation
- Equipped with BenQ's market-leading Eye-Care tools for a more comfortable viewing experience
- Equipped with DisplayNote, a free bundled desktop and mobile application, presenters can create more collaborative environments by streaming any content directly from their computers to multiple participants and across various devices
- Equipped with a powerful 20 watt audio allowing lessons to be easily heard
- EZPen feature with Near Field Communication (NFC) automatically selects pen color
- BenQ's Multiple Display Administrator (MDA) software for remote monitoring and control across multiple units in addition to administering instant equipment performance alerts for IT staff.

BenQ

Because learning matters

With the MW883US projector, you can:

1. Turn any flat surface into an interactive whiteboard.
You can touch the wall or table with your finger or a special pen, and it responds just like a finger on a phone, tablet or other touch-screen device.

2. Share picture books on the projector.
There's nothing like gigantic images of favorite stories to keep kids engaged. You can invite kids to the board to interact with the book while you're reading. For example, asking kids to circle all the pictures that start with a certain letter or to count the animals on the page.

3. Connect your iPad and use apps.
Whether you're teaching kids how to use a new app or want to play a familiar game with the whole class, either is possible. With a simple digital AV adapter connection to your iPad, teachers can connect to the projector to present content directly from tablet or smartphone.

4. Stream videos.
Whether it's dance-along learning videos, virtual field trips, or other instructional videos, teachers have advanced features right at their fingertip. With the interactive options, teachers can pause a video on an interactive projector and then use a finger or digital pen to draw directly onto the screen to highlight a point or concept?

5 Make your morning message interactive.
How many pads of paper do you go through each year when you do a daily morning message? Can you imagine how many trees you could save if you converted that message to a projected version? Since an interactive projector lets you write directly on your projecting surface, you could have your kids writing their numbers and words in digital ink.

With the RP790 IFP, you can:

1. Take calendar time to a whole new level.
When used with an interactive calendar app, kids can come up to the screen and help fill out the daily calendar.

2. Play online games and quizzes.
Hook up your computer and play your favorite learning games.

3. Teach your lessons with interactive PowerPoint.
Many teachers build PowerPoint units to do with their students, which make it possible to create games like Bingo and Jeopardy! and even track classroom behavior. Some teachers have designed PowerPoint units that invite children to collaborate on the big screen.

4. Take attendance.
This can be particularly fun with an interactive option. For example, kids walk up to the screen and slide their fish from one side of the board to the other to indicate that they are at school.

5. Host a Google Hangout with another class.
Interactive flat panels are a cool way to let your class learn alongside students across town or on the other side of the world. Fox had a Google Hangout with another middle school class across town by connecting a laptop to her BenQ interactive flat panel. The classes could see and talk with each other on the 70-inch screen so they could collaborate on robotics code they were writing for a class project. More Google Hangout ideas include virtual author visits and "mystery hangouts" with a class in another state or country, where students take turns asking questions to guess the location of the other class.
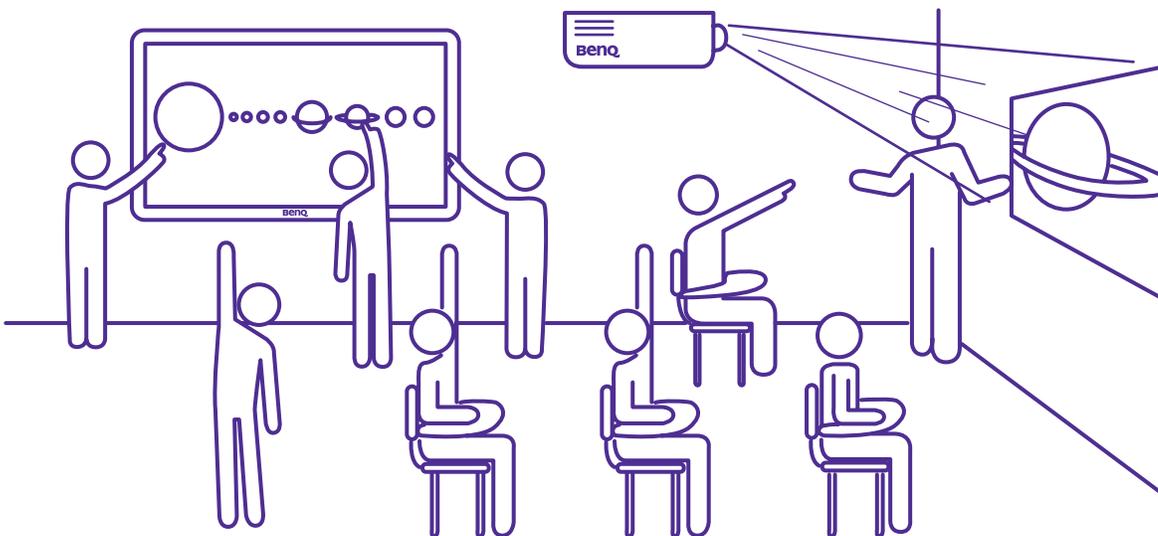
BenQ

Because learning matters

Beyond supporting new teaching methods that increase collaboration and engagement to promote greater comprehension, other factors contribute to the overall success of these solutions in the classroom, including a lower total cost of ownership (TCO), viewing features that enable a more comfortable experience, enhanced software options and management tools.

Lower TCO

More and more educational tools have become integrated in the classroom and in many ways. Display devices, in general, are reputed to be time-consuming and costly to install, set up, manage and maintain. However, with BenQ IFPs and projectors, these concerns are eliminated. These solutions are designed to support various types of classroom environments, requiring minimal effort for installation setup and maintenance, outstanding long-term performance even when powered on continuously — all lowering the TCO. Dust-proof seals prevent damage caused by dust and provide long lasting service, further improving upon the TCO.

Advanced Viewing Features

BenQ's Eye Care feature, built into its interactive flat panels, is designed to prevent eye strain and eye fatigue typically caused by spending too much time in front of a visual display — otherwise known as Computer Vision Syndrome (CVS). BenQ's eye-comfort solution is comprised of BenQ's proprietary suite of technologies, including ZeroFlicker, Low Blue Light and Anti-Glare displays. First, BenQ eliminates uncomfortable screen glare by applying anti-glare treatment to the glass surface. Second, BenQ blocks out harmful blue light that studies show have adverse effects on the eyes and the human body, including eye strain, lack of focus and even mental fatigue. BenQ displays feature TÜV-certified Low Blue Light mode to effectively eliminate blue light emissions. Finally, BenQ's ZeroFlicker technology delivers steady, smooth lighting that prevents the eye strain associated with conventional display image brightness level that uses a backlight technology called Pulse Width Modulation (PWM), which cycles the backlight on the display on and off up to 200 times per second to achieve the desired brightness level, creating a level of flicker that the eyes cannot see but can certainly feel.

Enhanced Software

InstaShow: With just a quick connection and the push of a button to start presenting, InstaShow allows multiple presenters to immediately switch to wirelessly projecting full HD content without driver installation or extended cable runs. Its 5GHz 802.11ac WiFi operation ensures absolutely smooth wireless streaming without lag or buffering.

Multiple Display Administrator (MDA) Display Management System: Using MDA, IT staff can easily manage and add more panels to create more flexible learning spaces while controlling the devices through a school's local network — automatically monitoring issues such as screen health in order to reduce maintenance costs.

BenQ

Because learning matters

Interactive technology has become an integral part of today's classroom and the key to creating a dynamic, interactive learning experience for today's tech-savvy learners. Technology plays a crucial role in transforming the way teachers and students need to communicate, interact and collaborate. BenQ's interactive projectors and IFPs aim to bring a new level of collaboration and learning to the classroom, supporting new methods of teaching and engaging students like never before. With these solutions, teachers can freely incorporate dynamic resources into their lesson plans, as well as invite their students to interact and collaborate together using a variety of system capabilities and features, sparking creativity, imagination and lots of fun. When learning is more rewarding, students gain better critical-thinking and problem-solving skills, as well as the positive attitude, teamwork spirit and confidence that gets them ready for the real world. BenQ's interactive projectors and IFP solutions also meet IT administration demands because they offer a lower TCO, outstanding long-term display performance, even when powered on continuously, and central control and monitoring.

For more information visit www.benq.us/education

electron

nucleus

BenQ

Because learning matters