

Hybrid Learning in Higher Education

ScreenBeam Screen Sharing as a Reliable and Scalable Solution for Higher Education

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more than wireless display

What is a Hybrid Classroom?

The hybrid classroom, where some students participate in person and others join remotely via video conferencing, combines traditional in-person teaching with online learning. Hybrid classrooms represent a shift towards a more flexible and inclusive learning environment that dramatically increases opportunities for learning by leveraging recent advances in institutional technology and the expanded use of popular personal devices. While students' modes of attendance are mixed, students participate simultaneously in what has proven to be a flexible, adaptable, and successful learning experience.

While technology has only recently made the hybrid classroom a reality, the concepts behind hybrid classrooms are not radical or new. In fact, today's hybrid learning environments are the result of a natural progression of how technologies, including network communications, media protocols, personal devices, and theories of learning, have come together over decades.



Evolution

Since the advent of local and wide area networking as early as the 1960's, forward thinking colleges and universities have led the way in leveraging that connectivity for learning. In those early years, universities often outpaced industry in finding new and better uses for advancements in network technology. First lauded as tools for research and collaboration connecting leading authorities and university researchers, schools soon found ways of increasing student engagement with online discussions to reinforce a lecture. Advances in campus media technology centers provided ways to preserve and rebroadcast presentations across campuses, while some aligned with public broadcasting networks thus taking education beyond the walls of the classroom and eventually beyond the campus. In more recent years, advancements in the speed and availability of the Internet, along with the advancement and convergence of media protocols used to deliver information, has created fertile ground from which new, more effective tools for teaching and learning are growing. The COVID-19 pandemic served to highlight the importance of online learning strategies for institutions around the globe, driving the advancement of the technology and challenged traditional definitions of learning spaces and methods. One of the most promising advancements in classroom technology, one central to the hybrid model, was the wireless display.

Today, a "friendly" wireless display set-up typically uses popular technologies like Wi-Fi or Bluetooth enabling teachers and students to share content from their personal devices (laptops, tablets, etc.) onto a central display without needing physical cables. The most successful installations are flexible enough to allow students and presenters to Bring Your Own Device, or BYOD. Removing the constraints of traditional wired setups makes for easier

collaboration, enables educators to employ more dynamic teaching techniques, and increases student engagement.

The most advanced wireless display set-ups, like those equipped with ScreenBeam1000-series receivers, do much more than just deliver media signals to a screen. They prioritize ease of use and work in concert with other devices in the classroom. With the ScreenBeam receiver, for example, users are not required to download special apps to connect and screen share, as the ScreenBeam devices are designed to work with the native protocols that come with popular devices. This is a good example of how responsible classroom technology should support more diverse and dynamic educational settings.

Benefits

For both students and institutions, one of the paramount benefits of a hybrid classroom is the flexibility that its blended environment offers. When students aren't tied to a physical classroom or lecture hall, it allows for a better balance of the diverse responsibilities that modern society presents. In a hybrid environment, students and educators can better balance work, family, and travel by combining in-person and remote learning sessions. In addition, this flexibility presents unprecedented opportunities for physically challenged, commuter, and rural learners. So, it should not be a surprise that students typically state a preference for the hybrid model for its mix of interaction and independence. But there is more.

A hybrid environment is easily adapted for various teaching techniques and can support multiple pedagogical models, like the 'flipped' classroom, active learning and adaptive learning models.

In a 'flipped' classroom, the typical cycle of content delivery and application is inverted. Students first encounter new material outside of the classroom, typically through videos or readings. Employing this model, class time can then be devoted to more active learning activities like discussions, problem-solving, and collaborative projects, for which hybrid installations are ideal. Once students are engaged, educators can focus on facilitating deeper understanding and application of knowledge during class sessions, making time in the classroom more valuable.

Active learning is a student-centered teaching approach that is also facilitated by a hybrid environment. In an active learning model, learners actively participate in the learning process rather than passively receiving information. Learning happens through students engaging with the material through activities like online discussions, problem-solving, and hands-on tasks, rather than the traditional one-way communication when they are only listening to lectures.

Where learning experiences need to be tailored to an individual student's needs, the ease-of-use and flexibility of hybrid environments are ideal for developing personalized learning paths in an adaptive learning model. Being able to easily tailor content, pace, and resources, instead of a one-size-fits-all curriculum, this type of engagement provides individual students with optimal learning challenges, keeping them engaged and progressing effectively.

Finally, deploying hybrid classroom technology empowers educators and students for the future. ScreenBeam's products, particularly in the education sector, are notable in this area because in addition to the added connectivity they provide, they support and enhance the use of AI tools in the classroom. For instance, ScreenBeam's Orchestrate platform offers schools a comprehensive classroom

management solution that can integrate with forward-looking AI tools and assistants like Microsoft CoPilot. A subscription-free, 'lite' version of Orchestra is included with the purchase of a ScreenBeam 1000 EDU receiver, so there is no additional cost to schools. ScreenBeam receivers designed for education also include built-in apps like a whiteboard, a digital signage player that supports HTML5.0 standards-based digital signage streams, and advanced security features to keep screen sharing safe.

Knowing the benefits of hybrid learning, the obvious question for most decision makers is 'What do we give up with a hybrid classroom strategy?', but meta-analyses show hybrid learning often yields higher academic performance than the traditional learning models.

Challenges

When students prefer the flexibility of hybrid learning and multiple independent studies are indicating improved outcomes, it's easy to see the upside of the hybrid classroom experience from the students' perspective. However, in order to create and maintain an environment suitable for successful hybrid learning, institutions need to recognize and address the issues that can impede the effort—some obvious, others less so and learned through missteps and painful restarts that can undermine the goals of hybrid learning.

First, institutions must understand that there is an infrastructure investment. To be successful, hybrid models require a dual infrastructure; so both physical classrooms and robust digital platforms are required. The former is seemingly



a known quantity for many, given that physical classrooms have historically been the norm, but the latter tends to be more complex. While traditional classroom spaces and hybrid spaces may have a lot in common, space design including agile room layouts, support for multiple display collaboration, and keeping a reasonable in-class vs remote attendee balance all play a role in creating positive outcomes for hybrid learning. While more decision makers are coming to see building out digital platforms as a priority, simply retrofitting a traditional classroom with new technology doesn't address many of the important aspects of a successful hybrid classroom design. Even before budgeting for new technology, deciding on what constitutes a prudent investment in technology—and how to justify it—is what keeps academic technology decision makers up at night.

Accurately calculating a return on an investment (ROI) for technology presents a less tangible, but no less important, challenge for schools. A number of considerations must be factored into a comprehensive analysis that seeks to balance benefits to students with the school's mission and vision for growth. This type of calculation can be especially uncomfortable for institutions of higher learning at a time when college enrollments are declining, policy makers and others are questioning higher education's role in producing a workforce needed to sustain the economy, and government funding is waning. However, in the end, institutions must find a way to embrace new models, like the hybrid classroom, that can leverage technology to broaden the horizons for education.

Finally, creating successful hybrid environments for learning requires adequate preparation, including understanding any 'digital divide' (a lack of devices or network connectivity that limits the full online participation of certain student groups), faculty upskilling, and the institutional coordination needed to maintain

proper student engagement. This preparation not only helps to ensure the success of any pedagogical models that are employed, but also bolsters academic integrity and, ultimately, becomes a driver for optimal academic outcomes.

Technology Required

The choice of reliable and scalable technology for the network and the classroom is key to creating a successful hybrid learning environment. For assessing suitable technology to expand an existing technology framework to support hybrid learning or to design a new hybrid learning infrastructure, the following are key factors decision makers should consider:

- Technical reliability
- Device compatibility
- Support for active collaboration
- Scalability and cost control
- Institutional control

In practice, each of these key factors support the ultimate measure of the success of a hybrid learning environment: positive user experience. The experience of both the student and teacher using technology deployed is often the most important factor in determining the actual return on investment. If the user experience on either side suffers from issues with connection stability, excessive latency or device compatibility, learning is impeded and frustration with the system undermines the teacher's efforts. Environments that lack support for active collaboration often fail to make learning experiences inclusive if popular technologies are not supported resulting in classes where all students can't participate equally or presenters are hobbled by cumbersome set-up rituals or connectivity issues. The technology needs to support each of the key factors to guarantee a successful outcome.

Fortunately, a new generation of smarter devices and network software designed specifically for collaboration in educational settings are becoming available. Devices and strategies are built for the classroom rather than repurposed from corporate markets and are focused on delivering the best possible user experience in educational settings. One such vendor, mentioned earlier, is ScreenBeam, who provides award-winning technology with enterprise-grade stability for classrooms along with software and a winning strategy for centralized management.

As an example, the Screenbeam1000-series receiver mentioned earlier offers outstanding device compatibility by providing app-free native screen casting across major platforms. This means that whatever device a presenter chooses to use, they are not required to have special cables or dongles to connect in the classroom. Both teachers and students can be confident using their own devices as needed to present and participate. In addition, multi-display sharing with a wide range of devices encourages more active collaboration and successful group learning sessions.

ScreenBeam technology, in particular, stands out for its ability to address the unique challenges presented by institutions of higher education. In fact, ScreenBeam was recently awarded Best Wireless Display Solution at the

2025 HETMA Awards at InfoComm. HETMA is the Higher Education Technology Managers Alliance, whose highly sought-after awards are a mark of excellence and innovation for higher education audiovisual (AV) classroom technology. The industry recognition that comes with HETMA awards honors both manufacturers and the community of higher education professionals building connections that translate into outstanding product designs and installations.

Especially in these challenging times for education, the best choices for technology in higher education applications must not only be innovative, but also include options to control costs. ScreenBeam does this by providing appropriate product tiers for large and small installations, along with follow-on options to support planned and ad hoc growth. In addition to scalability, ScreenBeam designs support the institutional control needed to configure devices in a flexible and secure environment for a varied population of users. Options like the ability to configure devices for dual networks can enhance security by maintaining separation between the internal (employee) network and a guest network. This important feature could be used to create an environment where wired Ethernet connections are used for staff and a wireless bridge is available for guests, improving both performance and security while simplifying wireless display and collaboration.



Any widely deployed educational solution should provide efficient administration tools, like ScreenBeam's central management system that allows for remote administration of individual devices and managed deployments. For hybrid learning environments, remote central management of screen sharing devices makes for more efficient upgrades and device deployments, while allowing a single network technician to monitor realtime usage and address issues encountered from across the network, all without having to be onsite.

Conclusion

Hybrid environments, along with the careful choice of technology and technology partners who understand the demands of institutions of higher learning, can increase learning possibilities for many, provide the flexibility that both students and teachers desire, and dramatically increase the reach of institutions once bound by a fixed number of seats and the walls of the classroom.

Now more than ever—even for higher education—being able to compete in reaching and satisfying the customer is critical to survival. In many cases, hybrid classrooms present the best option to accomplish this, especially when deployed on a platform that supports easy collaboration and remote learning. While schools face unique challenges, one thing is certain: Those that fail to invest in the technology to reach and educate students risk them investing their tuition dollars elsewhere.

To learn more about ScreenBeam wireless display and collaboration solutions for higher education environments, visit <https://www.screenbeam.com/solutions/higher-education/>