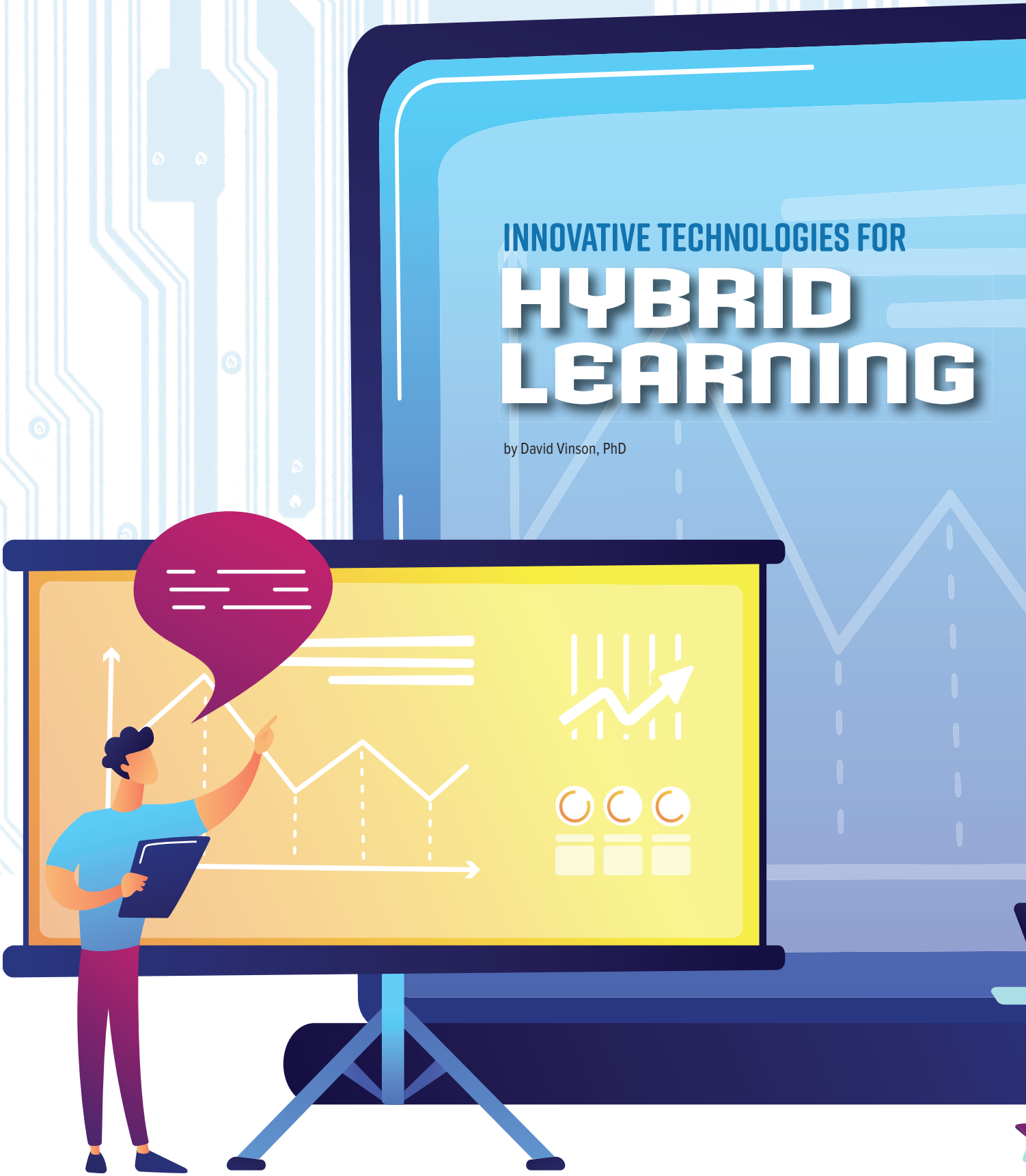
INNOVATIVE TECHNOLOGIES FOR

HYBRID LEARNING

by David Vinson, PhD



In response to the Covid-19 pandemic, administrators and faculty have been scrambling to solve the considerable challenges posed by the hybrid classroom. By most accounts, in-class learning is ideal, but because a large percentage of students are attending remotely, there exists a pressing need to create a learning environment that feels as if everyone—faculty and students alike—is together in the same room. The hybrid classroom complicates how pedagogy can be delivered and received, and for courses that encourage student participation especially, the manner by which students collaborate with each other is hardly straightforward.

Let us first acknowledge what is too often overlooked in conversations about the challenges posed by hybrid learning—even in-person communication can be difficult. For any teacher in the classroom, language choices can prove the difference between a widely successful lesson and that which is substantive only to a few students. Just as language choices matter, the speaker's volume and clarity of speech matters, too, particularly for hard of hearing students and non-native speakers. The mandate of mask-wearing by all persons inside the classroom only exacerbates these challenges. Of course, the methods of pedagogical delivery are key, as well. Some students struggle to keep up unless they are allowed to directly engage with the material, whether by way of group collaboration, through discussion, or by seeing the material and taking notes. In-person learning, as such, often demands the implementation of a variety of pedagogical methods during a single class meeting. The hybrid classroom must address the very same demands, in addition to any potential confusion that may surface as a result of a hybrid learning environment.

Fortunately, technology is here to help. What follows is an overview of common practices and the technologies that aid them in hybrid learning environments. A silver lining of the pandemic is that teachers and students alike are being pushed out of their comfort zones. To engage with new technologies makes us all more versatile communicators, and perhaps we each will discover something new about the ways in which we best internalize and share knowledge.

Video Technologies in Hybrid Classrooms

Classrooms are increasingly being transformed into "smart" spaces, equipped with the technologies that create seamless and exciting learning experiences. But not all function in this way, not by any means, and for those still a step behind, a class not set up for hybrid learning can result in serious growing pains for teachers and students. If the visual and auditory components in the classroom are insufficient for hybrid learning, the first step is to ensure the teacher and the in-class students can see the remote students. The best solution would have the students joining from a designated video conferencing tool, and the remote students simultaneously appear on a confidence monitor positioned in the front row. This design focuses the teacher's attention on all students and creates a more engaging experience for the remote students.

Another interactivity challenge concerns the classroom camera, which should ideally focus on the instructional area and follow teachers as they move throughout this area. The camera tracking feature is necessary so the teacher can move freely at the front of the classroom. The camera, however, must also have easily navigable presets to give teachers control to change the focus from whiteboards to lecterns and other presentation tools. For the best experience, the camera should be positioned among the classroom students just like the confidence monitor. This perspective gives remote students the sensation of sitting in class.

Audio Clarity for In-Person and Remote Students

With both in-person and remote students, a teacher must contend with two distinct audiences, and the students in one of them are

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masked and have to stay six feet apart. And if the classroom isn't wired with microphones around the room, chances are the remote learners will be unable to hear the conversations particularly well. Remote learners are also at risk of feeling disconnected from the action taking place inside the physical parameters of the classroom.

Audio clarity, as such, is of great importance. It lets the remote students know they can be heard, and that they can easily ask questions or contribute to in-person discussion. Moreover, the combination of audio and video allows both in-class and remote students to pick up on the verbal and nonverbal cues critical to engagement and participation.

The classroom microphone system should have excellent coverage of the entire instructional area to clearly amplify the teacher's voice. Blue microphones can deliver clear audio with simply plug-and-play functionality, and the microphone must also be able to clearly amplify the voices of students occupying a 20-foot by 30-foot classroom. With proper audio processing, the system will filter out unwanted noises and leave only intelligible communication, which in turn allows the teacher and students to freely engage with one another. For remote learners concerned about having an online experience equivalent to the classroom environment, headsets can help to level the playing field, delivering an intimate and direct audio experience. Headsets also provide clarity of voice, which is critical for their peers on the other end.

In addition to audible and video communication, chat features in web-conferencing platforms can be shared with all participants. Chat is a great way to queue questions without disrupting a presentation and keep everyone on the same page.

User-Friendly Technologies and Their Long-Term Benefits

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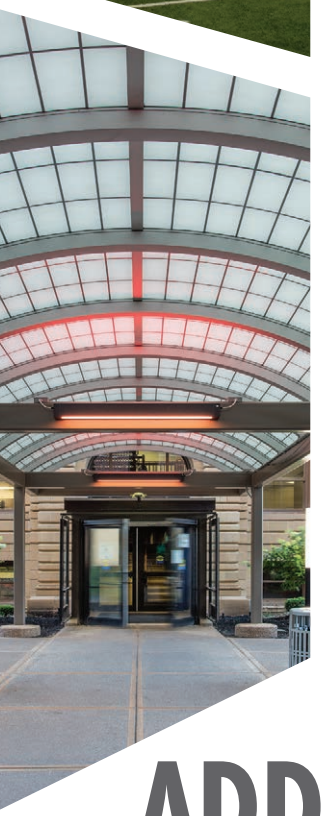

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One-touch join for classes is the most efficient way to accomplish this, and there are web-conferencing systems available that are pre-programmed to work with calendaring and Learning Management Systems. All that should be required is the press of a "Start" button to begin class.

None of us can be certain of how long the pandemic will impact in-class learning, but the good news is that several hybrid technologies will prove useful for years to come. Web-conferencing systems can be used by students to review and study. Access to recordings will benefit students in need of certain learning-based accommodations, who can replay them as often as they may need. If a student is sick, having a remote option allows for participation even if attending class in-person is not possible. The same applies to students who are compelled to travel as a result of extenuating circumstances, or to student-athletes who may miss for university-sanctioned events. Hybrid-friendly technologies allow these students to attend remotely or review recorded sessions.

Managing Group Activities with Technology

Breakout groups are a function that several web-conferencing systems offer, and this is necessary in group work not only for remote students but also for in-person students who are prohibited from leaving their seats due to social distancing measures.

Teachers can enhance group sessions for in-class and remote participants by creating a room that allows for movement within the classroom. Further, students in the classroom can use web-conferencing systems to collaborate with the remote learners. This would help foster a sense of community among the two groups who may have no opportunity otherwise to collaborate. Also, in what is called the "fishbowl" method, a few students can form a circle and discuss a topic while the rest of the class observes. Some of the observers might then summarize the group's conversation. Afterwards, students can reconfigure to form another small discussion group—all of which can be managed by way of web-conferencing systems.

Collaborative note taking, in which students take turns working in a shared online document to take notes on a class discussion, is another way to foster community.

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The execution of an engaging hybrid classroom requires recognition of the major obstacles in place: maintaining the integrity of the classroom experience with accessible and compelling pedagogy; ensuring equity for both remote and in-person students; supporting a familiar teaching environment; fostering collaboration between the two groups of students; and keeping the community safe. Technology in hybrid classroom settings give teachers and students options, and it takes trial and error to determine which strategies work best.

One final strategy for using technology in such a setting is to ask the in-class students to join the remote students on a web-conferencing system. This allows every participant to appear individually—a lovely way to foster community. The problem, however, is that if every in-person student logs in by way of a laptop or tablet, their proximity to each other creates terrible audio feedback.

The solution is to stitch together three separate rooms on the web-conferencing system. This is managed by combining feeds from the student laptops with the faculty camera shot, and then with a third and separate room. With automated control that allows all three rooms to open at once, remote students can read the boards, see their fellow classmates individually, view the teacher, raise their hand, and easily participate—this kind of connectivity is remarkable, really, for it engages all of the remote students and makes them feel as if they are sitting inside the physical classroom.

Covid-19 has upended campus life, starting with the classroom. But with technologies capable of bringing in-person and remote students together, the hybrid format of teaching is no longer so daunting.

ABOUT THE AUTHOR: PUPN staff writer Dr. David Vinson has a PhD in English with specializations in transatlantic literature and cultural studies. He is a committed scholar, teacher, husband, and dad. If you ever meet David, avoid the subject of soccer. His fandom borders on the truly obnoxious.

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