

Active Learning for a Post-Pandemic World



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Colleges have long wanted to make sure that all students are active participants in their learning. To help reach that goal, instructors have put a greater emphasis on group work, opportunities to solve problems, and hands-on experiences. This increase in active learning, as it's known, began to gain traction in higher education in recent years.

But then the pandemic hit, upending the educational experience for many students and professors. With in-person learning greatly diminished during the outbreak of Covid-19, where does active learning stand now and where is it headed?

To help answer those questions, *The*

Chronicle of Higher Education produced a virtual event on May 18, "Active Learning for a Post-Pandemic World." The event, which was underwritten by Adobe, included teaching and learning experts from different types of colleges who discussed what they've learned from the period of emergency remote teaching and how it may affect active learning as the world returns to an environment closer to normal.

This Implementation Guide highlights advice from the session for ways administrators and instructors should rethink approaches to teaching and student engagement after the outbreak subsides.

To watch a recording of the virtual event, [register here](#).



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Make a Big Class Feel Small

With the remote learning forced by the outbreak of Covid-19, many students felt disengaged from their classes and unmotivated to do the coursework. Eric Mazur, a professor of physics and applied physics at Harvard University, found that he was able to improve the motivation of students enrolled in large classes by placing them in small groups that were often focused on completing science projects or other tasks together. “For most students, my class didn’t feel like a large introductory science class but rather a small, seminar class,” he said during the event. “The fact it was relatively small actually helped build a sense of community.”

Mazur, [who has long advocated](#) for more active-learning approaches in college courses, said he learned that meeting with students online actually has benefits over the in-person classroom. “Online, we’re all face-to-face. There’s no sitting back in the fourth row like in a lecture hall,” he said.

The digital environment upends the traditional approach to teaching a group — the lecture — and can create a more intimate atmosphere. “The picture that comes to mind is [this illustration](#) from the Middle Ages with King Henry giving a guest lecture at a university. The people in the front row were taking notes, those in the second row were less engaged, and those in the back were sleeping. With Zoom, it’s different. Everybody is equal. They’re all sitting at the same place.”

Mazur argued that it would be [“almost unethical”](#) to return to the way he taught pre-pandemic.

Teach at the Students’ Pace

Mazur said the pandemic period had forced him to reflect on the pace that his students learn. In the traditional classroom, often that pace is set by the instructor, as well as the class schedule. But “learning is not a conveyor belt where everybody learns at the same rate,” he said.

Online, he sorted students into groups, where they discussed physics lessons and

solved problems at their own speed. If they needed help, Mazur or a teaching assistant would join the room to assist. Instead of responding to individual students’ questions as he would in a traditional classroom, Mazur said the teams “are already well prepared and have discussed any disagreements they might have, so I can address remaining misconceptions easily.”

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Focus on Projects

Active learning often involves a related approach to teaching: project-based learning. Mazur prefers to assign projects in his physics courses that require students to work together and build machines or other objects. “In a project, you have to actively do things,” he said. “So the content is not some abstract goal in its own right. It’s a vehicle to accomplish a goal.”

That switch isn’t easy for students and instructors to make, he said. In part, because it also moves away from relying on the standard course materials, like the textbook. “I used to give the students the book and say, ‘Here, learn this; it’s good for you.’ I realize that may be true in my mind, but to a student it probably sounds like a mother saying, eat spinach because it’s good for you. You roll your eyes and do it but you don’t want to really.”

During the first part of the pandemic, focusing on projects became harder because students couldn’t gather together or use a maker space or machine shop. To overcome this, Mazur and his teaching assistants sent students a kit with the parts to build simple machines.

Assess Learning Differently

Mazur said his improvements in his online teaching helped increase learning outcomes in his classes. But students also reported gains in “self-efficacy, a person’s belief in being able to succeed in a given domain,” the professor said. That is as important, if not more important, than demonstrating mastery over a content area, he said.

“The content is probably going to evaporate because they are not practicing physicists and many will go on to medical school or other disciplines where they slowly forget their physics,” he said. “But if you come out of a course thinking you can do it if you try, then you’re less likely to disengage” from a college education.

Chandralekha Singh, director of the Discipline-based Science Education Research Center, at the University of Pittsburgh, also wanted professors to rethink how they measure learning, focusing more on low-stakes incentives or assessments.

At her institution, during the outbreak of Covid-19, such a change benefited instructors when they “flipped” the classroom, requiring that students watch recorded lectures outside of class time to reserve it for discussion. That approach worked far better when professors provided completion or attendance grades. “These kinds of things really helped students keep up,” she said.

Singh also said that the pandemic emphasized the lesson that low-stakes assessments, such as weekly quizzes,

often work better than a final exam that counts for much of a student’s grade. She hopes that continues as classes start this fall because it benefits female students and students of color. “If you do low-stakes assessments that are well thought out and focused on goals and objectives, you help women and minority students who otherwise don’t do so well on high-stakes exams.”

Sell the Students

A switch to active learning, whether online or in-person, requires buy-in from the learners; they need to understand why a professor has chosen an unorthodox approach. To help with this, Mazur starts the first class of a semester the same way with his students: “I ask them to write down something they think they’re good at. Maybe it’s a sport, public speaking, writing, baking

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cakes — anything.” He then asks the students how they became proficient at the skill. Did they learn it, for example, by hands-on practice, apprenticeship or watching YouTube lectures?

Finally, he shows the results of the informal survey. Almost without fail, Mazur said, the students say they learned through active approaches, not by, say, watching YouTube. “They realize, if you want to become good at something, you have to do it. I can’t do it for them.”

Connect With Students

During the pandemic, many professors have reported getting to know their students in a deeper way, in part because they were videoconferencing with them in their homes. Singh encouraged faculty members to not let that go. “They were coming across as humans who really cared about students,” she said. “They asked how the students were doing.”

An online class during the pandemic might have started with a more informal five minutes, discussing hobbies or showing pets on screen. Singh said this should continue in person. “We cannot share pets, but we should talk to students about their lives.”

Expand Support for Faculty

During the pandemic, institutions stepped up their teaching-and-learning training and resources for faculty members. Todd Taylor, a professor of English at the University of North Carolina at Chapel Hill, said that administrators should keep these available for instructors. But he also urged them to think about the working conditions facing some, such as adjunct professors, who often face uncertain career prospects, low wages, and lack adequate benefits. “One of the

biggest barriers is the labor conditions of most of the people doing teaching in higher education today,” said Taylor. “They need the resources to move from more traditional to more active modes of teaching.”

Taylor emphasized that while good ideas about active learning are emerging from the period of emergency remote teaching, they won’t gain traction if colleges don’t invest in them. “We need to talk about the elephant in the room, which is giving faculty the support for making this kind of transformation,” he said.

Lindsay Masland, an associate professor of psychology and assistant director of faculty professional development at Appalachian State University, agreed. The pandemic has been challenging for many professors, disproportionately affecting female professors who often were stretched thin because they did more child care or took on other household responsibilities. Masland reminded the audience members to explore active learning, but not to get overwhelmed by the need to change how they teach all at once. “We have to keep in mind that this was hard for everybody. This was a lot for us who do active learning. One message I want you to hear is: You need to hold space for yourself.”

“Implementation Guide: Active Learning for a Post-Pandemic World” was produced by Chronicle Intelligence. Please contact CI@chronicle.com with questions or comments.