

PANDEMIC'S REMOTE LEARNING IS SHAPING INSTRUCTION FOR THE FUTURE

As the world moves toward a new normal, many institutions are looking at whether changes they made during the pandemic could enrich in an ongoing way the communities they serve. At the School of Biological Sciences, we are closely examining this question as part of our responsibility to provide the best possible education.

When safety restrictions were put in place, we had to rapidly change how we teach our students. Zoom, YouTube and other digital tools replaced in-person classes in a matter of days. This shift prompted faculty to rethink their instructional design and implement changes that help students sustain success while learning virtually.

Transition to remote teaching provided faculty the choice of offering synchronous or asynchronous instruction. In synchronous instruction, all students log in for live teaching at scheduled times, which allows for in-class discussion but requires reliable, high-speed internet for both students and instructors. On the other hand, asynchronous instruction enables students to work at their own pace within the constraints of their home internet environment; however, it limits interactions among students and faculty. Our faculty used different approaches, including a combination of synchronous and asynchronous instruction. For example, instead of the traditional 50-minute lecture, Molecular Biology and Behavior Professor of Teaching Brian Sato opted for a series of short (5-15 minute) videos to “scaffold” learning, created student groups that could interact

over Zoom outside of assigned class times and provided online resources to aid in learning. We expect the use of both online instruction techniques to continue past the pandemic and complement traditional in-person teaching.

Besides refashioning instruction methods, faculty also had to change how they measured student achievement during the pandemic. With testing moving online, some faculty adopted software tools to help proctor exams, for example, using webcams to monitor students during exams. However, proctoring software has disadvantages, such as requiring reliable high-speed internet, and was not widely used within BioSci. Moreover, some faculty wish to encourage collaborative work even as they need to assess individual student performance. BioSci faculty created novel solutions to this dilemma. Molecular Biology and Biochemistry Associate Professor of Teaching Pavan Kadandale gave his students descriptions of a hypothetical experiment with made-up data several days before each exam. They were not, however, given any questions. Students were encouraged to collaborate in groups to analyze the data and apply concepts learned in class.



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This approach allowed them to think much more deeply than possible during a 1-hour exam. On exam day, students received questions based on the data, which they answered individually. This format allowed for collaborative learning and critical thinking while also permitting the individual assessment of each student.

Educational institutions worldwide will need to balance distance instruction with safe school reopening. Many aspects of the learning process at BioSci may never go back to how they were before the pandemic. However, during the lockdown, our innovative faculty created new tools and teaching strategies that will help increase student success at the school and beyond.

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INCLUSION
DIVERSITY
STUDENTS
SOCIAL DISTANCING

PANDEMIC
VIRTUAL ASYNCHRONOUS
ZOOM
REMOTE LEARNING
SYNCHRONOUS EDUCATION