Learning and Technology—“In That Order”

Over the past several years, I have been impressed by how fruitful it can be to solicit students’ ideas when making plans for technology in support of learning. Judging from those experiences, I thought it might be worthwhile to construct a New Horizons column from a “geographically distributed” focus-group session, inviting students from a variety of institutions to suggest what educators should be thinking about as we plan our learning environments for the next two to four years. With the help of colleagues, I was able to enlist the help of fourteen students, all of whom responded with thoughtful contributions, summarized here.

In sum, the sentiments most often articulated were: (1) too much or unfettered technology is bad and directly hinders learning; and (2) the use of technology should not come at the expense of personal interaction both in and outside the classroom.

Perhaps the most succint formulation of these ideas was: “I believe the most important thing to keep in mind about learning and technology is that they should be considered in that order” (CV). The message here is that technology needs to clearly serve learning. This idea was also expressed eloquently as: “Any technology that separates the student from the teacher or his or her peers detracts from a fundamental dimension of education” (CV); and “While IT is important, it is not always the only way to improve learning” (CS). These students were very sensitive to the circumstances and conditions of their courses. Reading through the responses, one gains the impression that they distinguished very quickly between successful and artificial implementations of technology, between usage that served their learning and usage that did not. It was also clear that they valued contact and mentoring from their instructors and that they felt any use of technology that diluted this contact worked against learning.

What distinguishes a good use of technology, according to these students, is when the technology is well integrated with real-time, personal interactions and is not a replacement for them. In good uses of technology, traditional interactive engagements—active learning exercises, group activities, demonstrations, and guest speakers” (CS)—are retained as a part of the course, and technology supports those engagements. Signs of ineffective use of technology are when there is too much reliance on it or when its use by instructors comes across as artificial: “Students can tell when you are faking it” (SH). The use of technology is artificial when it has no clear connection to the learning and so appears to be merely a placeholder. To use technology effectively, instructors must make its rationale clear, sometimes repeatedly so. As a student explained, it is vital for instructors “to remind students again and again” why they are using the technology. Instructors should “help students see connections between the technology and their learning, especially for new technology” (SH).

One student provided an especially compelling illustration of how the same technology was highly successful in one course and unsuccessful in another. We could call this “the case of good lecture capture and bad lecture capture”. “The bad lecture capture was for [a] physics class, a course with relatively large enrollment and conducted using a traditional lecture format. The lectures were recorded as ‘full video casts’ (using a videocamera positioned in the back of the lecture hall) and made available on the class website. Since the recordings were merely a repeat of what transpired in the lecture hall, these lecture recordings worked to the detriment of student attendance. No need to go to class if you can get class later online” (MA).

In the “good” case, the session recordings were made in a course that had a high degree of student interaction designed into the class meetings. As this student described it: “The class was mostly based on student presentations, and student presenters were specifically expected to invite participation from the rest of the class during their lectures.” In this course, “students essentially taught two out of every three lectures.” The student presentations “consisted of pairs of students presenting scientific papers that have built our knowledge of the subject,” evaluating those papers, and tying “them in with related issues in biomedical research” (MA). Why were these recordings valuable to the students’ learning? “The weekly problem sets were based on the material presented in all three lectures, so in all these cases, the podcasts provided a crucial tool that students could use, along with presentation slides, to review the presented material as they thought about the problems posed in the problem set questions” (MA).

In the “bad” case, the technology simply replicated transmissions and so provided a disincentive to come to class—clearly a negative result from the students’ perspective. In the “good” case, the technology was supporting a course that was already designed around a high level of student activity and that directly leveraged this activity.

What these students are urging is for instructors to avoid a “l’art pour l’art” approach to the use of technology in the
Andersen Ross/Getty Images; Frank and Helena/Getty Images

simply “technologizes” old practices: be done using online discussion sections but all students” (AS). For example, for an effect [on] not just some students always be made only after considering . . . “Major changes in educational style must or new media. This student explained: “Second Life is a compelling way to develop skills in computer programming: “Second Life caught my attention in a way that no other technology in the classroom has” (KB).

I wish to thank the following students for taking the time from their busy schedules to provide thoughtful contributions to this column: Matthew Alkaitis (MA), Dartmouth College; Kara Behnke (KB), University of Colorado; Jody Britten, Butler University; Laura Christopherson, University of North Carolina; Nicki Ciociolo-Hinkell, Colby College; Mary Ellen Estridge, Butler University; Shannon Hauser (SH), University of Mary Washington; Bert Purvis (BP), University of North Carolina; James Shinn (JS), Dartmouth College; Christina Singer (CS), University of Illinois; Andrew Smart (AS), University of Wisconsin–Madison; Coby van der Ven (CV), Hamilton College; Katie Vollmer, Butler University; Alisa Yamasaki, Dartmouth College.

Malcolm Brown, Director of Academic Computing at Dartmouth College, serves as Editor of the New Horizons department of EDUCAUSE Review.