Scenario

Denise, a senior at a private university that stresses service learning, is on her way to the first day of her seminar class. She has downloaded the video apps required for the course and introduced herself to the eleven other students in the course online forum, all of whom, like herself, are English majors. When Denise arrives, Professor Rogado is setting up a class-to-class video call with high-risk students in a local public high school. When the image appears on the projector screen of the classroom of high school students, Dr. Rogado explains that the college students will provide one-to-one support to improve writing skill. They can meet by phone; work through e-mail, passing documents back and forth; or use video for the first half of the term.

Denise is paired with Matthew, one of the at-risk students, and she decides to begin working with him by having a short videoconference the next afternoon. As Matthew shifts nervously in his chair, Denise chats with him, trying to get him to relax, and her cat jumps up on her desk. Matthew laughs and explains he used to have a cat named Shark. When they practice screen sharing, Matthew smiles as he sends a document from his screen to hers.

After the first week, Denise and some of the other students talk on the phone and send documents back and forth by e-mail, but they all agree that video interactions are better—they can share documents, make corrections, and still see each other's faces. As they move from one-on-one instruction to group discussions, video makes even more sense. In the first session, Denise starts by introducing Matthew's work, which she thinks is his strongest so far. His colleagues are generally positive, cautiously offering one suggestion each for improvement.

By semester's end, the dynamic has changed. Three recorded videos of their tutoring sessions have been archived in a library where they can be referenced by students from either participating school. The students are committed to each other's success and have participated far beyond Rogado's expectations. The high school students are excited about their improved grades and are talking about continuing their critique group after the term ends.

1 What is it?

Live video communication is becoming a staple in educational venues, where instructors employ it for office hours, online courses, presentations by special lecturers, just-in-time learning, or coordination with researchers in the field. It can offer a convenient venue for faculty meetings, staff liaising, and project planning when not all parties are on-site. Students use it for team study, interviewing experts, and other communications that benefit from a face-to-face exchange. In all of these situations, the term "video" refers to synchronous transmission rather than recorded video, with a focus on informal, peer-to-peer educational use. Currently many web tools support this kind of video communication, such as Skype, Google+ Hangouts, Meetings.io, Zoom.us, VSee, and Oovoo. Most work across multiple platforms and are easy to use on mobiles, tablets, or laptops with video cameras.

2 How does it work?

Video communication can be as simple as a Skype call from a student to an instructor during office hours. Both parties employ a webcam so that they can see one another, and the connection is a simple one-to-one arrangement. When the videoconference involves a one-to-many or many-to-many connection, as for class lectures or study-group interactions, other technologies may come into play. To coordinate calls from multiple locations, many traditional teleconferencing systems use hardware called a multipoint controller that allows all members of a group to communicate. Web tools such as Blue Jeans, Zoom.us, and Google+ Hangouts handle this coordination in the cloud, performing effectively across multiple platforms and mobile devices. The ease of use provided by such apps creates an excellent informal videoconferencing environment for office hours or tutoring sessions.

3 Who's doing it?

Video communication is finding its place in large-scale degree programs and in efforts spearheaded by individual faculty. The design of the new Direct2Degree program for the Kentucky Community and Technical College System, for example, will use videoconferencing to connect students in the online program with professional academic support staff at each campus. At the University of Nevada, Reno, one faculty member uses Skype in an online course where students present parts of their capstone projects in simulated "live presentations." In an otherwise asynchronous course, this initiative offers students the chance to talk to one another in real time and to exchange ideas about the work they have done. At Emory University, two professors use Skype and FaceTime to bring together students, audiences, and performances of Shakespeare from around the world. Classes in India, Morocco, and South Africa use their

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cultural vantage point for a Shakespearean production, joining a class at Emory in Atlanta via video. The initiative has been so successful in promoting dialogue among the groups involved that Tribal Schools from North Dakota are soon to be added, as are additional classes from other countries.

4 Why is it significant?

Online video tools enable classroom activities that previously were only feasible at considerable expense and logistical coordination. These new tools are easy to use and require little support. Video connectivity allows students to join a class from home or from the field with technology that provides a sense of personal interaction. In science and technology courses, a live video demonstration can illustrate a process or procedure and follow that up with a question-and-answer session. A second demonstration might even become part of the response. In the fine arts, students can invite instructors, coaches, or peers to monitor a live video performance and offer immediate critique through the same mechanism. In any field, a guest speaker can lecture from anywhere and respond to questions from the class. Tutors can meet students by video and share screen content to discuss papers, troubleshoot issues, or provide advice on a student project. Video has also become a useful tool for proctoring exams.

5 What are the downsides?

As with any technology, **novices may need support** as they engage in real-time video communication. Newcomers may need to be cautioned to check camera angles and video output, lest viewers find themselves focused on a half-eaten sandwich or staring at an ear. Users may need to tweak elements of lighting and setting and may wish to employ headphones to reduce feedback. Joining a conference from a laptop might require a separate webcam, which can make students responsible for troubleshooting any issues it may cause. On most web apps, students are also responsible for muting their microphones when not in use; their failure to do so can result in disturbances from construction machinery or barking dogs. Such matters of etiquette may need to be addressed through a list of tips provided to students prior to video use. Online video tools might limit the number of meeting attendees, and instructors setting up a conference session for larger groups might need to use conferencing systems like Blackboard Collaborate or Adobe Connect, which can typically accommodate far more connections to individuals engaged in the conversation. Bandwidth, too, may be an issue: those coping with a weak signal or busy connection are likely to have a less than optimal experience. Finally, not all faculty and students are comfortable with video and may prefer conferences where live images are not projected.

6 Where is it going?

Video communication is on its way to becoming a standard tool for online and blended classes and one-on-one instruction. Currently, not all institutions support synchronous video in the classroom, and many instructors who use it do so on an ad hoc basis, selecting free tools that suit immediate, specific purposes. But as mobile use for academic activity increases, expect wider use of enhanced tools—including video—that function across multiple devices and operating systems and enjoy full campus technical support. **A broader feature set could emerge for web-based video tools**, including improved screen sharing and the ability to post resource links during conferences. Real-time video connections may also prove to be a boon to the personalized curriculum environment, offering learners face time with advisors and peers and facilitating by-appointment access to the voice and face of an instructor.

7 What are the implications for teaching and learning?

Synchronous video interaction can make learning more personal by providing a close approximation of the human, one-on-one experience, and a growing list of tools allows users to engage in this kind of communication quickly and easily, without the technical or financial overhead of traditional videoconferencing systems. Online video tools can make it reasonable for faculty to offer review sessions or to host guest speakers. At the same time, they allow students to run their own real-time video communication sessions to work on class projects, meet with tutors, or join classes they cannot physically attend. Scholars can set up informal virtual meetings to discuss findings, exchange ideas, duplicate experiments, and troubleshoot issues. And in all such cases, content can be recorded and made available for asynchronous use later. In fact, one of the great advantages of employing this technology is that in an online or blended course where students watch live lectures via video, the same tool that transmits the image can create a record for later viewing or archival purposes.

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