Using Asynchronous Video to Achieve Instructor Immediacy and Closeness in Online Classes: Experiences from Three Cases

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This research sought to understand the experiences of students and instructors with asynchronous video (video-mail) using webcams in three online sections of teacher education classes at Brigham Young University. We examined the experiences of students through scores and comments posted in student ratings surveys, and the experiences of instructors through personal reports. These experiences were evaluated in terms of the observed existence of instructor immediacy and of closeness. Immediacy is defined in this study as the verbal and non-verbal signals normally achieved in face-to-face communications between instructor and students that can help establish a close and trusting relationship whereby students know their instructor and feel that they are known, where students seek support, where feedback is personal and meaningful, where students have a sense of well being, and where student motivation is positively impacted.

Purpose

In this research, we sought to understand the affordances of using asynchronous video in online classes to establish Instructor Immediacy and Closeness and other pedagogical experiences that are ordinarily restricted to face-to-face classrooms. In Winter 2008, the department of Instructional
Psychology and Technology (IP&T) at Brigham Young University (BYU) created a pilot online section of a teacher education class (Integrating technology into teaching) where webcam based asynchronous video was used by students and the instructor as a central part of the class. The use of asynchronous video was improved and developed based on lessons learned from the pilot class. Two online sections of the same class were taught by different instructors using asynchronous video in Fall 2008. Experiences from the three cases are discussed and presented in this study.

The Downside to Online Learning: Immediacy and Closeness

For many reasons including learner flexibility and cost effectiveness, online courses in higher education are becoming ever more popular. However, notwithstanding the ever increasing popularity and the benefits of online courses, it must be recognized that there are also many limitations in their ability to replicate critical features of a normal classroom environment such as social interaction, prompt feedback, engaging activities, instructional flexibility, the dynamism of a knowledgeable scholar, and adaptation to individual needs (Larreamendy-Joems, Leinhart, 2006).

Immediacy and Closeness

Close interaction between teachers and students is one important facet of an effective face-to-face classroom environment. Close interaction in an educational setting is often discussed in terms of Instructor Immediacy. Immediacy is the construct that is the central emphasis of this study and was originally defined as: “those communication behaviors, some visual others vocal that enhance closeness to and non-verbal interaction with another” (Mebrabrian, 1969, p. 213). Instructor Immediacy includes verbal and non-verbal communications (Rovai, 2002), which are easily transmitted in the close physical proximity of the instructor and student in a face-to-face classroom setting. Rovai (2000) explains that Instructor Immediacy is the immediate verbal and non-verbal communications such as smiles, head nods, use of inclusive language, and eye contact, which promote increased learning. Cutler (1995) describes instructor and student closeness in terms of a reciprocal process in which individuals are more likely to establish trust, seek support, and find satisfaction the more they know more about each other. Studies including Christophel (1990), and Christensen & Menzel
(1998) suggest that improved teacher immediacy impacts student motivation which in turn improves student learning. Frymier (1993) investigated the interaction of students’ motivation to study and instructors’ immediacy in a traditional face-to-face learning environment. Her research concluded that students who began a course with low to moderate motivation to study had increased motivation to study after interacting with a highly immediate instructor, while students with a high level of motivation were unaffected by the high level of immediacy. These cited studies on immediacy are all in context of a traditional face-to-face classroom environment. In other terms, Van Petegem (2008) states that a positive classroom climate can contribute to a higher sense of wellbeing and that interpersonal relationships between teachers and students are an important aspect of the classroom climate.

**Summary of Research Definitions and Themes**

The major themes of Instructor Immediacy and Closeness that are central to this study are the verbal and non-verbal signals normally achieved in face-to-face communications between instructor and students that establish a close and trusting relationship whereby students know their instructor and feel that they are known, where students seek support, where feedback is personal and meaningful, where students have a sense of well being, and where student motivation is positively impacted. The objective of this study is to observe the existence of these themes in three cases of online classes that use asynchronous video to provide a medium by which Immediacy and Closeness can be conveyed and established in the absence of physical proximity between students and instructors.

**Synchronous Video**

Many educational developers have attempted to bring the face-to-face interaction benefits into the online world through audio-visual technologies. Live streaming video is one of the audio-visual technologies that has been an expanding area of exploration. The rate of implementation and the availability of high speed internet connection has opened up the potential for live or synchronous video streaming over the internet. Computers and webcams are now relatively inexpensive products and there are continuing efforts being made to capitalize on the potential of live streaming in online education. However, there are still several issues in the employment of live
video streaming in education that need to be addressed. First, the whole idea of a live experience removes one of the largest benefits of online education which is the time flexibility of the learner. Second, many different technical issues exist that make it difficult to guarantee a good quality experience for learners. In any group of learners there can be diverse internet connection problems, personal computer hardware, software, and setup problems that, added together, cause different learners at different times to have a poor quality experience, or to miss the experience altogether.

Asynchronous Video

An audio-visual technology that is potentially part of the solution is asynchronous (pre-recorded) video communication. Asynchronous video takes advantage of the same internet infrastructure and personal computer availability as live video streaming but does not suffer from the same problems. Video messages, or video clips of instruction, can be recorded before they are sent over the internet, which means that if the internet connection is slow, then it will simply take longer to send, or can be re-sent later. As these video messages are recorded, the time flexibility benefit of online learning is retained as an instructor or a student can record a video message at any time, and the receiver of the message can view it at any time, and as many times as they wish, according to his or her own schedule and availability. While these asynchronous video messages do not allow for spontaneous two way discussion, they do convey many of the verbal and non-verbal elements associated with human face-to-face conversation.

Teaching Technology Integration to Pre-Service Teachers at BYU

Pre-service teachers at BYU are required to take IPT286/287, a class which focuses on the integration of technology in teaching. This class, which is titled IPT286 for secondary pre-service teachers and IPT287 for elementary pre-service teachers, is taught by the IP&T department. A substantial challenge that has been observed in this class is the wide variety of technical abilities that the students possess. The large range of student capability makes it a great challenge to know what level of technical competence the class should be designed for and how to pace the class. In an attempt to account for the variance in technical abilities, a new flexible online version of the class was designed and piloted in the Winter 2008 semester. Elemen-
tary education pre-service teachers who were required to take the class were given the option to choose between the traditional face-to-face class and the online section. For the online section, students were told that they would be required to communicate with the instructor using a webcam.

**Initial Pilot Using Asynchronous Video**

The new online section of IP&T 287 in Winter 2008 included a new innovation which consisted of students sending responses to assignments in the form of recorded (asynchronous) video clips, and the instructor sending feedback to students in the form of asynchronous video clips. Also the teaching materials included asynchronous video clips of the instructor presenting topics. The students and the instructor used webcams mostly on their own computers to record themselves responding to assignments or giving feedback. The result of using webcams to record video clips to send to students and the instructor is that the students were able to see the instructor giving instructions, announcements, feedback and encouragement, and the instructor was able to see each student responding to assignment questions and both parties were able to observe the verbal and non-verbal cues that people naturally use to convey context and overall meaning in personal communication.

**CASE 1: IPT287 PILOT ONLINE SECTION WINTER 2008**

**Class Introduction**

The first day of class, students met with the instructor in a lecture theatre to discuss the structure of the class and for the students to view and discuss a video presentation about internet safety. This was the only time that the whole class met together, and several students were not present as they either could not make the session or they added the class later. The students were then required to go to the class Moodle web site to access class documents and materials. The class assignments and lesson materials were displayed in a simple top-down format so that the students could start at the top and follow every instruction and assignment down the page until they reached the bottom.
Establishing Relationships

The first thing that students were required to do was to watch a video clip in which the instructor introduced themselves and the goals and objectives of the class. The first assignments were based on the video that was presented in the first class session and other video clips that students were required to watch on the internet plus some other readings on the subject of internet safety. The students were required to send emails to the instructor responding to several discussion questions, and the last assignment in this section required students to use their webcams to record a clip to send to the instructor. In this clip, students were required to introduce themselves, describe something unique about themselves, and to respond to a discussion question related to the assignments in the first section. Video clips were sent to the instructor as attachments in an email. On the class Moodle site, there were instructions in the form of video clips showing screen captures of how to use Windows Movie Maker to record clips using a webcam so that the resulting video clip file would be small in size. On reception of each video clip sent by students, the instructor recorded a video clip using a webcam in which the instructor responded to the personal introduction given by the student, expressed encouragement, and that the instructor would do their best to help when needed, and some feedback on the student response to the discussion question. Every student sent a video clip to the instructor, and every student received a video clip in response from the instructor.

Instructional Materials

Following the structure of the class Moodle site, at certain points students watched video clips in which the instructor was shown presenting certain topics reinforced with diagrams and pictures mixed into the video clips. The class website included textual instructions on the requirements of assignments, and in most cases screen capture video clips showing how to use the software applications. Most of the assignments involved using software programs such as Photostory, Google Earth, Movie Maker (or the Mac equivalents) to produce different types of instructional materials.

Student Assignments

Several assignments required the students to record a video clip of themselves explaining the rationale for their projects or responding to a spe-
specific discussion question. For example, in the second section of the class, prior to learning and using various software applications, students were required to create a video clip in which they explained what kind of technologies they would use to help teach a specific lesson topic for Math and for Language Arts if they had no restrictions on the availability of technology.

Instructor Encouragement and Support

From time to time the instructor sent emails with encouragement and reminders, and several times the instructor sent these messages in the form of recorded video clips instead of textual messages. The students also sent emails to the instructor when they needed help with assignments or if they had any other questions. The instructor attempted to answer all email questions by the end of the day in which they were received.

METHODS

Instructor and student perspectives were analyzed in this study. Instructor perception data were in the form of instructor journals and notes. Student perspective data were in the form of scores and comments from the student course ratings system. In addition following the second case, four students were interviewed. Student perspectives data also includes comments from the interviews. A thematic analysis was performed on the data and student/instructor comments were organized into categories relating to the main study constructs of immediacy, closeness, and social presence. The results sections below discuss patterns from both student and instructor perspectives.

CASE 1 RESULTS

Instructor-Student Relationships

The original purpose of using the asynchronous video clips for students assignments and for instructor feedback was to study whether a strong instructor/student relationship could be established with no actual physical presence. The instructor attempted to send positive messages, useful feedback, and genuine encouragement and support to students though asynchro-
nous video clips recorded with a webcam. Student feedback in the form of scores and comments from the BYU student ratings system and instructor and peer observations suggest that the instructor was able to convey immediacy and generate a positive and motivational personal relationship with students. In fact one student described the experience as superior to a face-to-face class, they stated that, “It was much more personal this way, even more so than a face-to-face class usually is.” Also, in comparing the online section with the traditional face-to-face sections, students rated the class higher than all other sections of the class in every aspect of the student ratings survey, and they also rated it higher than the face-to-face version of the class that the same instructor had taught the previous semester.

**Knowing Each Student**

There were several other benefits that emerged from the use of the webcam asynchronous video technology some of which were unexpected. One positive aspect was to have each student introduce themselves to the instructor in a video clip at the beginning of the class. Each student was asked to describe something unique about themselves and it was interesting to see students tell such unique and interesting stories about themselves and their families. This allowed the instructor to gain some insight into the individuality of the students and to make a personal connection, and what was most unexpected is that this generated far more information about students than would normally be obtained in a face-to-face classroom.

**Individualized Feedback**

The instructor was able to respond to every student on several occasions. Thus every student was able to see and hear the instructor giving them personal feedback on several occasions throughout the semester. In a traditional face-to-face classroom this would only be possible with personal interviews, and it does not seem feasible that an instructor could conduct several one-on-one interviews with 50 students over the course of a semester. It would seem that using asynchronous video clips gave students more personal real-life feedback from an instructor than would otherwise be practically possible. Initial feedback from students suggests that they feel that they received much more personal feedback than they are used to receiving. For example, one student stated that, “even though this was an online course
and I did not see the instructor as much as my other professors, he provided
me more help and one on one time than any other professor.”

Rich Student Responses

Another important result is the nature of student responses using the
webcams. Ordinarily, students respond to most assignments in textual for-
mat which obviously gives a limited view of student knowledge. Textual
responses also lack verbal and non-verbal cues that show overall tone and
context. The instructor noticed that when the students recorded themselves
in video responding to an assignment question, they would often discuss the
topic in a more open way than they would if they were writing. This hap-
pened in such a way that the instructor was able to observe to a greater ex-
tent what the students actually knew and in what tone and in what context
the responses were given. In viewing student videos, the instructor did not
have to imagine or guess what the student really meant or in what tone the
response was sent, and therefore the feedback that the instructor recorded
was more accurately based on the real progress and needs of the individual
students.

CASE 1 LESSONS LEARNED

Technology

The pilot online section seemed to meet its objectives, and the students
rated this section highly in comparison with the face-to-face sections of the
same class. Even though the overall result of the pilot was very positive,
many lessons learned were from the experience. During the semester, there
had been many issues with technology that required time and effort on the
part of the instructor to resolve. Some students purchased the most inexpen-
sive webcams and had problems with them. In the pilot class, students re-
corded video clips using Movie Maker or the software that came with the
webcam and then emailed video clip files to the instructor. Using this meth-
od caused several problems. For example, some students did not understand
what it meant to create a video clip file. They understood how to use the
software and to record a clip, but they did not understand the fact that in do-
ing so they had created a file somewhere on their computer. If they could
find the file to attach to an email, the file would often be too big to send and some students did not understand what it meant to create a smaller lower quality file that would be small enough for an email attachment. In addition, sending and receiving many video clip files meant that email boxes would become full very quickly, which frequently caused the instructor and some students problems. Posting general announcement video clips and instructional video clips on the class website proved to be troublesome due to file size restrictions and also some students who downloaded the files could not view them for various computer set-up reasons.

Development

The experience of the pilot online class and all the lessons learned provided a good base for the further development and innovation of the use of asynchronous video. The biggest area of research and development resulting from the lessons learned related to how webcams were used to create clips. It became obvious that a simple method of using a webcam to send video clips between students and instructors was required that did not require the students to have special knowledge of the nature and location of video clip files. At this time investigation revealed several web based video mail solutions. Facebook had incorporated video mail into its communication system, freegabmail.com provided a registration free video capture website, and websites such as tokbox.com provided an email style system for video mails. These and other similar technologies offered free video mail technologies that all allow a user to record video without requiring any technical knowledge about their webcam, and also video clips were recorded to a server on the web which meant that students did not need to think about the location and size of video files. Several different instructors decided to try using asynchronous video to various degrees in Fall 2008 classes, and each selected a different video mail technology.

CASE 2: IPT286 ONLINE SECTION FALL 2008

Instructor-Student Relationships

Student data from the IPT286 Online Section in Fall 2008 confirmed the same patterns that were observed in the pilot in relation to immediacy and closeness. Student comments from anonymous student ratings included the following:
Although I’ve never met the man, I feel like I know him really well and that he knows me. I loved this course!

The instructor is so involved and committed to my learning and success.

I received quick and valuable feedback from him.

I felt like the instructor made concerted efforts to encourage his students and connect with them despite the fact the class was online.

The instructor was one of the most caring and friendly teachers I’ve ever had.

It’s great to have a teacher that cares as much as he does.

In addition, students that were interviewed were asked how connected they felt to the instructor. Responses included the following remarks:

When I gained the best connection was when he would look at my video or my project and then make some kind of personal assessment or give me some response. And I was really impressed that he was able to do that as frequently as he did, so I think that’s really what helped us understand each other.

He sent us a webcam every week, and so just walking in I recognized him right away even though it was the first time I’d seen him in real life. I felt that he was really approachable. I didn’t have too many problems in the class, everything was pretty straightforward, but I feel that if I did, he was really approachable and I could ask him and he’d be willing to help.

I think the consistency of him sending webcam messages of himself; just that he was that consistent and always on top of it. I feel like whenever I did email him something I got instant feedback. That’s really different than a teacher would be in a real classroom.

The data from this case confirmed the data and showed that a positive relationship between instructor and students was formed using asynchronous video as a communications method.
Developments

The instructor that designed the first pilot further developed the use of asynchronous video in an online section of the technology integration class for Fall 2008. This new use of asynchronous video included more assignments submitted by students in the form of webcam recorded presentations and an innovative method for achieving collaborative student learning using asynchronous video. This section began by using tokbox.com as the vehicle for sending and receiving video clips. Tokbox.com allows a user to register and send and receive video mails in the same way as sending and receiving emails. While using tokbox.com at the beginning of the semester, programmers in the Center for Teaching and Learning at BYU were developing a website to use for video mails that was in the format of blogs rather than in the style of an email inbox. This new website was implemented in the class shortly after the beginning of the semester. On the video blog website, the instructor can create blog pages for group work where several students have access to post and view video clips (recorded using a webcam on the site) and the instructor can also create private blog pages that only they and each individual student can view. This allows the instructor to privately communicate through video mail with individual students, and allows students to collaborate by posting video mails on group blog pages. The instructor can also create a blog page which includes all students for general announcements. Participants receive emails when videos are posted to blogs that they have access to.

Student Collaboration

Group work between students is perhaps the most difficult pedagogical strategy to achieve in any asynchronous learning environment as the dynamic nature of spontaneous and rapid discussions is not achievable. However, certain types of collaborative learning are possible in an asynchronous environment, and some aspects of these group methods have some advantages over groups in settings of close physical proximity. Two types of group collaboration were introduced. The first is described in this study as a stepped group discussion, and the second is described in this study as a round robin group discussion.
**Stepped Group Discussion**

For the stepped group project, students are divided into groups of three or four students. Each group has its own blog page on the class website. Each student will submit two video clips to their group blog as part of the assignment. In this case the subject of discussion is Google Earth. Firstly, students watch video clips showing how to use Google Earth and specifically how to create a virtual tour. Students then record a video clip in which they describe their first ideas on how they might have secondary students use Google Earth to enhance learning. Once each student has posted a video clip to the group blog page, the instructor also posts a clip giving some insights. Next, each student must watch the clips posted by all students and the instructor on their group page. Then, they record another video clip where they must discuss the ideas of every other student in their group, and at the end of the clip they must state how their own ideas have developed and what they propose to create as a virtual tour in Google Earth. They finally create a virtual tour based on a selected Utah State learning objective.

**Round Robin Group Discussion**

For the round robin group assignment, the group consists of all students in the class. The topic of discussion was using blogs to enhance student learning. Whichever student gets there first, posts a video clip brainstorming an idea of how they might use a blog to help students learn. The second student must watch the first clip, and in their clip they must comment on the ideas in the first clip and then develop or add something new. Each subsequent student must watch the two most recent clips and comment on them both before adding their own ideas. Each student must submit two comments, and students may not submit a second comment until at least three have been posted since their first post.

**Potential of Asynchronous Student Collaboration**

Both group discussion methods are inventions that try to bring the valuable pedagogical benefits of student collaboration to an asynchronous environment. Although asynchronous group work does not include the rapid and dynamic idea generation that is possible when people are in close proximity, it does however provide some interesting benefits. Firstly, it is impossible for any student to dominate the discussion as is so often the case in face-to-
face groups. The direct result of this is that every student has an equal opportunity to contribute ideas to the group discussion. In fact, every student is required to contribute ideas and the instructor has a record of every contribution. Students are not embarrassed to share ideas as some might be if they were physically together as a group, but they still get to see and hear their fellow students and get to know them as peers.

**CASE 2 RESULTS**

At mid-semester, the instructor observes that the class appears to be following a similar pattern to the pilot class. The instructor has been able to form relationships with the students. Students are communicating openly and submitting good quality presentations to the video blog site as part of their assignments. The instructor has been able to give personalized video feedback to each student every time they submit an individual video clip as part of an assignment. Students are contributing different ideas to the stepped group discussion group blogs and are learning from each other. The technical problems that existed in the pilot have been eradicated, and there are very few technical difficulties to deal with. The instructor has developed a strategy for dealing with student video clips in that it is more efficient to watch and respond to student video clips as soon as possible after receiving them rather than waiting for a whole set of assignments to be completed and to try to respond to them all at once. The perception of the instructor is that now that this strategy has been adopted, time spent in grading and responding to student assignments is less than it would normally be for a class where assignments are submitted in written format.

**CASE 3: IPT287 ONLINE SECTION FALL 2008**

Another instructor started teaching an online version of the technology integration class in Fall 2008. The use of asynchronous video in this class was as follows. The instructor used a group in Facebook to communicate with students. The instructor sent a video to the student group at the beginning of each week explaining assignment requirements and to give encouragement. After each weekly assignment, students were required to send a video to the instructor through Facebook in which they were required to answer two questions. First they were required to describe what they had accomplished in their assignment for that week, and second they were re-
quired to describe any issues or difficulties that they had encountered in completing the assignments. Each week, the instructor sends a video reply to each student in the class. The instructor reports that it requires roughly a 2 hour period each week to respond to all of the 50 students in the class.

**CASE 3 RESULTS**

The instructor has so far reported positive results from using asynchronous video to communicate with students. The instructor states that the most important benefit that they have observed is in the videos that the students create each week to describe their weekly experience in the class. The instructor explains that they are able to observe the tones and emotions exhibited by the students to the point that it can be observed whether they are frustrated with assignments or excited about the assignments. This benefit was highlighted when the video mail function was disabled in Facebook for a two week period. In this period, students sent their weekly reports in text format. The instructor explains that during this period, text responses were much briefer than the video versions, and it was difficult to ascertain how the students were really dealing with assignments, the result was that it was more difficult to know how to meet their individual needs. The instructor, who has developed and taught the face-to-face version of IPT286/287 class for several years feels that using asynchronous video between the instructor and students allows the instructor to more effectively observe, understand, and react to the needs of students. In addition, students are able to better understand the feedback of the instructor when they are able to see and hear the instructor in individualized video clips.

**CONCLUSION**

Perceptions of students and instructors in the pilot study followed by perceptions of instructors teaching online classes using asynchronous video in the current semester suggest that it is possible to establish a positive instructor-student relationship using asynchronous video messages to convey immediacy. Instructors observe that the assignments and reflections presented by students in video messages provide a means of more accurately observing some aspects of student knowledge and student motivational levels. Instructors are therefore more able to respond to the individual needs of students and the class group as a whole. Student report that the feed-
back received from instructors in video messages is motivating and helps to builds close and trusting relationships. Initial observations seem to show that student collaboration using asynchronous video messages also appears to be yielding positive results. Students are describing in video messages the insights that they are gaining from other students who they mention by name. As a whole, the reported experiences of students and instructors from the three cases described in this study are suggesting that immediacy and closeness is established being participants through the use of asynchronous video. The construction of positive personal relationships where participants are known to each other, and where they can accurately understand one another by the inclusion of verbal and non-verbal signals, is possible through the use of this method, and further development and research is needed to help bridge the gap between all that is best in face-to-face and online learning environments.

References


Rovai, A. (2002). Building Sense of Community at a Distance. Review of Research in Open and Distance Learning, 3(1).