Through the words of experts: Cases of expanded classrooms using conferencing technology

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1. Introduction

This paper captures a series of experiences from two cases of classroom implementation of synchronous conferencing: one in K-12 classrooms using videoconferencing and another in graduate courses in a school of education employing both videoconferencing and Web conferencing. In each case, conferencing technology connected outside experts with students in real-time, resulting in expanded learning and reflection opportunities. The purpose of this paper is three-fold, with each element building off the other toward a more thoughtful perspective on the integration of such synchronous forms of conferencing. First, these two cases illustrate how videoconferencing and Web conferencing can be used effectively in different types of classroom settings and forums. Second, this paper documents the processes and considerations one must entertain before utilizing such technology. Third, we will provide a series of lessons learned based on different expert sessions that we have

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observed, as well as helped implement, for over a decade.

Increasingly, we view these expert conferencing sessions as opportunities for authentic learning and the start of learner apprenticeship. Such sessions can capture student interest for a new field of study, culture, or social situation. Any enhancements in understanding aspects of particular people, studies, cultural practices, or situations can more readily prepare learners for the future. In fact, in the twenty-first century, there is an increasing demand that young people experience a field and contribute to it through an internship, practicum, or some type of volunteer position. Prior to such an experience, a synchronous conferencing experience with one or more experts can inspire young learners to try out a particular activity or field of study. The expert can provide knowledge, connections, and resources to help start the learner on such a path.

First, it is vital to define our notion of the "Expanded Classroom," as well as provide a brief theoretical rationale for implementing expert sessions via interactive technologies. As such, an overview of pertinent research literature from learning theory and global education will be detailed. After that, we will present two long running examples of synchronous conferencing implementation that the two authors of this paper have designed and participated in. The pedagogical and technological issues that arose during the implementation of different videoconferencing situations will be detailed. Equally important, the lessons learned across these sessions will be summarized with embedded insights that might help guide others attempting similar classroom events or experiences.

What will become clear is that powerful learning experiences are

now possible for young as well as older learners with videoconferencing. Given these possibilities, this paper provides a set of guidelines and caveats from our experiences that others might build upon, blend together, or attempt to recreate in their own settings.

2. Expanded Classrooms

<u>The need for expanded classrooms</u>

Educational opportunities during the past two decades have significantly widened through the use of Web-based collaborative technologies and open educational resources (OER). Effective use of open educational content can grant learners more opportunities to direct their own learning. In effect, shared and open online resources provide a unique form of access to expertise beyond typical classroom teachers and books. Classrooms are expanded both physically and conceptually through direct interactions with the experts in the field.

In terms of this paper, experts are available through different forms of synchronous conferencing technology. We use the term "expanded classroom" to refer to a classroom environment whose boundary has been significantly altered and enhanced through interactive, real time connections with experts in the field by using various interactive videoconferencing and Web conferencing technologies. As the following sections reveal, the use of such experts varies tremendously. Nevertheless, their influence can foster opportunities for class discussion and reflection on key multicultural issues and diverse perspectives.

Theoretical framework

We view learning as a highly social and interactive process. From this perspective, learning is not an individual act but a social activity and a collaborative process propelled by cultural goals. While such ideas extend as far as Dewey (1897, 1910) and Vygotsky (1978, 1986), the past few decades have seen an especially lively discussion of this view, mainly from researchers and educators of social constructivist and situated cognitive orientations (Bonk & Cunningham, 1998). Many educators have made an active effort to implement such ideas more explicitly into their critical practices. As documented in recent decades, people learn through membership within a community of shared practice (Barab & Duffy, 2000; Hay & Barab, 2001; Lave, 1993; Wenger, 1998) where knowledge is constructed, debated, and refined. Myriad research efforts during the past few decades have stimulated the development of instructional methods such as discovery learning and inquiry, while prompting the development of many student-centered learning programs.

As mentioned earlier, social constructivist ideas and educational approaches have been developed based primarily on Vygotsky's (1978, 1986) theories and principles of learning. Such views emphasize the role of social interaction in learning and understanding. Social constructivists emphasize that learning happens as a result of social interaction, such as when participating in various class activities with one's peers. From this view, the processes shared among group or community members can be appropriated, as needed, for one's later independent problem solving and decision making (Rogoff, 1990, 2003).

For this reason, social and cultural contexts are critical to the

learning process (Palinscar, 1998). Learning is enhanced when students engage in collaborative efforts with their more knowledgeable peers as well as other experts (Vygotsky, 1978, 1986). A related view argues that learning is best understood by looking at participation in communities of practice (Wenger, 1998). Experts who enter the classroom via videoconferencing offer insights and role modeling regarding cultural practices in the real world. When such connections are successful, novice or young learners can peer into the world of the expert and ask questions as well as offer examples of their projects and ideas. Galleries of student work can be compared, critiqued, and rated by specialists in the field. Such expert feedback and advice can accelerate student understanding of a topic and discipline. As such, interactions between novices and practitioners in the community provide learning and knowledge that is situated in practice. In this regard, providing the environment where students in the classroom can interact with practicing professionals or well-known authorities is a first step toward that membership.

As detailed in the next section, there is a rich history related to the use of various learning technologies for interaction and enhanced cultural awareness. Synchronous technology such as videoconferencing, in particular, offers a powerful mechanism for sharing personal perspectives, experiences, and insights.

Cultural benefits of technology

Emerging technologies today offer multicultural and global educational events that can foster shared understanding, dignity, respect, and the exchange of highly current and intriguing

information (Rasmussen, Nichols, & Ferguson, 2006). With technologies such as blogging, podcasting, wikis, videoconferencing, and chat, content can be presented that has not traditionally been part of the curriculum or that may take years to find its way into textbooks (Beldarrain, 2006). At the same time, meaningful conversations can transpire among people who will likely never meet physically. Clearly, the forms of global sharing, collaboration, apprenticeship, and mentoring are expanding at a rapid pace. Each year new forms and types of collaborative learning technologies emerge for potential use in the classroom.

As an example, those global and collaborative opportunities might appear on one's mobile devices. Paul Kim and his colleagues at Stanford, for instance, have successfully shown how mobile technology can make a significant impact on the mathematics and literacy skills of disadvantaged youth (Kim 2009; Kim, Buckner, Kim, Makany, Taleja, & Parikh, 2012; Kim, Higashi, Gonzales, Carillo, Gàrate, & Lee, 2011). Their innovative research on mobile storytelling among Palestinian and Israeli youth is a prime illustration of how such technology might foster greater cross-cultural awareness as well as higher order thinking skills (Buckner & Kim, 2011). Stories and insights can be digitally created and shared among these youth while experts scaffold the process with task structuring as well as offer feedback and suggestions as needed.

Such forms of online interaction may be exactly what is needed at this time. For decades, educators have been pointing to the importance of global understanding, cross-cultural awareness and perspective taking, and world peace (Longview, 2008; Merryfield, 2007, 2008; Merryfield & Kasai, 2009; Riel, 1993; Schrum, 1991). In

his edited book, *New Directions in Social Education Research: The Influence of Technology and Globalization on the Lives of Students* (2012), Brad Maguth emphasizes the critical need for schools and educators to better prepare our young learners for an increasingly global community. As several chapters of this groundbreaking book detail, many unique projects and programs available today offer such cross-cultural opportunities to millions of learners around the globe, including ePals, iEARN, Seeds for Empowerment, Taking It Global, RoundSquare, and Soliya. Such opportunities for global interaction and sharing will only increase in the coming decades.

> Importantly, these types of programs can foster greater cross-cultural awareness and empathy for those located in regions that one might never physically visit. For instance, research from Sugar and Bonk (1998) revealed that sharing perspectives with Internet technology can enhance perspective taking and social cognitive abilities of young learners. As such, the extended use of videoconferencing technology might foster greater interpersonal understanding and mutual knowledge (Selman, 1971, 1980), especially as they work within common zones of proximal development (Bonk, Medury, & Reynolds, 1994). A live global conference can also provide such a shared space for idea exploration, collaboration, and mutual knowledge (Schrage, 1990).

Undoubtedly, more research and experimentation is needed. Ethnographic research from Lee details how the use of videoconferencing technology—such as in the International Studies In Schools (ISIS) project—can connect people in previously isolated or rural parts of the world to foster greater cross-cultural awareness

and understanding (Lee & Hutton, 2007). Intercultural educational events can foster shared understanding, dignity, respect, and the exchange of highly current information as well as enhanced interpersonal skills (Lee, 2007, 2010). Fortunately, the cost of such technology has lowered significantly during the past few years. In fact, it is often free for those with a computer and an Internet connection. As such, experts, peers, and other instructors can be invited into one's classroom at any moment deemed appropriate.

The next section of this paper offers specific information about the ISIS project and how videoconferencing with experts and authorities from different cultures can play a vital role in global and multicultural education in K-12 classrooms (for more detailed descriptions and examples, see Lee & Hutton, 2007).

3. Cases of Expanded Classrooms

With these rapid developments in technology and the subsequent changes in our view of education, many educators now consider expanding their classrooms to more global and international stages. There are myriad reasons to bring in a guest from the outside. In the following section, we present two such cases of using videoconferencing to bring experts' perspectives into the classroom.

The case of International Studies in Schools (ISIS)

As indicated earlier, the International Studies In Schools (ISIS) program at Indiana University serves as a prime example of using videoconferencing technology to connect learners with content

experts on a global scale. ISIS was explicitly designed to provide learners with access to other cultures through live interaction with experts on topics of global significance. ISIS uses two-way IAV technology through fiber optic lines and Internet Protocol (IP) connections.

ISIS was founded in 1995 as a joint endeavor of Indiana University's Office of International Programs and the Center for Excellence in Education (CEE[2]), with the support of a two-year Content Providers' start-up grant from the Corporation for Educational Communications (CEC). Due to its popularity, the program was expanded two years later with the combined support of an International Awareness Grant from the Indiana Humanities Council and Office of International Programs, world area studies centers at Indiana University (IU)[3], and the IU Center of Research on Learning and Technology. ISIS is continuously supported with various funding and online resources as well as by voluntary presenters and staff from IU. The world area studies centers at IU take care of providing qualified presenters for the requested programs. They also make available the necessary materials for that particular program. IU contributes its IAV technology support personnel and systems, including paying for the line charges. The first author of this article worked with the ISIS program as a speaker

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2) CEC has changed its name to the Center of Research on Learning and Technology (CRLT)

3) These include the African Studies Program, the Center for Latin America and Caribbean Studies, the Center for the Study of Global Change, the East Asian Studies Center, the Inner Asian and Uralic Resource Center, the Russian and East European Institute, and the West European Studies National Resource Center.

as well as a researcher/designer from 2000-2003. In terms of the latter role, Lee conducted a yearlong ethnographic study that will be further explained below.

In this ethnographic study of two rural middle school classrooms, a series of ISIS sessions were implemented into the social studies curriculum for the entire 2002-2003 school year (see Lee, 2006, 2007). This implementation of culturally meaningful and interactive videoconferencing events not only provided the students and teachers with novel opportunities to go beyond the textbook, but also reiterated the critical need to establish the framework with which the educators could use these sessions.

The two rural teachers that she studied had full authority over selecting the number of sessions and the countries of speakers based on the World History curriculum of their school districts. Each teacher selected 6-7 countries of interest and then requested the speakers from ISIS. For the entire school year, speakers from each country presented on a particular unit (e.g., a Chinese scholar presenting for the unit on China). Due to the regional isolation of these two rural schools, the teachers as well as the students rarely had an opportunity in the past to interact with people from other cultures. For this reason, the ISIS sessions served as a necessary platform of authentic learning for these students. The two teachers especially appreciated the real time, synchronous nature of these interactions where questions were asked and answered spontaneously on the spot and the expert speakers' presence was felt rather closely through the screen.

<u>"Talk with Experts" series</u>

Our second case deals with a series of expert talks implemented in a graduate classroom that utilized both videoconferencing and Web conferencing technologies. While this course was initially designed in 1990, the first time in which it used videoconferencing technology to bring in experts was in the spring of 1995. During that semester, the second author taught a course on "*Interactive Tools for a Learning Community*" between Indiana University (IU) at Bloomington and Indiana University-Purdue University Indianapolis (IUPUI). He invited experts such as Elliot Soloway from the University of Michigan and David Palumbo from the University of Houston-Clear Lake into the class via a software program called CU-SeeMe.

The class was taught each week via videoconferencing using PictureTel technology made available throughout the IU campus. However, the guests each lacked access to a room with PictureTel. At the time, CU-SeeMe was the most popular free Web conferencing option available. With some timely technology support, these two popular videoconferencing systems were integrated into one fairly seamless classroom experience. In fact, the entire classroom environment was transformed. At the time, it was a highly innovative instructional approach (for more details, see Bonk, Appelman, & Hay, 1996).

Added to that course was a weekly asynchronous discussion using VAX Notes. At times, these discussions generated intense student debates and even heated criticism over the ideas of the scholars and researchers whose work they were reading. Interestingly, the same students who discarded the ideas and perspectives of these experts

were seen agreeing with nearly all of the experts' points when they were brought into class using videoconferencing. Students in the course found out that one article did not represent all of the ideas of a particular scholar and that people's ideas can (and do) change over time. The live meeting though the marrying of two videoconferencing systems provided a perfect opportunity to test ideas related to global interaction with experts, while guiding the learners into a community of practice about the role of technology in education.

Nearly two decades later, in the spring of 2013, Bonk had a former student, Dr. Kira King from Orlando, Florida, visit his class using Adobe Connect. The course topic that week was related to the role of collaborative and interactive technologies. King spoke about her different work-related experiences in instructional design and development since graduating with her doctorate 15 years prior. While she was currently engaged in developing scenario-based learning for interactive simulations in the healthcare field, she also shared her experiences working with museum schools, the World Bank Institute, the military, financial services companies, and the Disney Institute. Each student benefitted from her rich background. As this situation revealed, classes can now tap into such experts at a moment's notice.

While each of these synchronous events was highly memorable and rewarding both for the learners as well as the instructors, we rarely bring the same people back. Classes benefit from diversification. Students learn from events that are fresh and perhaps even spontaneous. Moreover, there are typically many other authorities on a particular trend or topic that can be contacted.

While replicating a highly positive experience has definite advantages, designing a fully unique experience is motivational for both the instructors as well as the learners.

4. Discussions

Contacting experts

There is little doubt that the resources for teaching and learning are rapidly changing and accelerating across all educational sectors. Fortunately, advancements in learning technologies enable innovative and pervasive ways to obtain access to expertise. Those seeking an expert from a particular country or discipline can typically locate and contact more than one such person in relatively short time. They can also ask colleagues for recommendations as well as personal stories or situations when such an activity proved successful. Perhaps the goal is to learn from an expert practicing in a highly specialized field. In the twenty-first century, such individuals need not be located in or near one's institution or organization. Mobile technology, Web pages, and email allow for relatively easy access and interaction.

It is vital that decisions about guest experts be a highly thoughtful process. To help make wise decisions, instructors should review the articles, resources, and activities that they have organized for the course. Are particular assigned articles or books highly complex or complicated? Might one of the articles in the syllabus address a recently popular topic? Is there someone you know or have met recently who would excite your students? If so, contact that person and explain your idea.

There are many ways in which to contact such experts. In the case of ISIS, the expert speakers are mainly recruited with the help of regional studies centers associated with the university. In the case of Bonk's classes, the channels are more open, flexible, and continually evolving. Sometimes we contact them directly when visiting a university or at a conference or professional development session. More typically, a functioning email address is the primarily vehicle for communication. We find that the vast majority of people will reply to an email request. Many of these experts are colleagues, former students, or acquaintances. Less frequent are attempts to solicit interest from someone we have never met. Among the latter are individuals whose research prominently appears in a particular week of the semester or someone that was recently mentioned in the news. Once there is agreement, then decisions must be made about the timing of the event as well as the delivery mechanisms. The planning will continue right up to the time of the event itself. In addition, debriefing on the synchronous conferencing session should also occur soon after it has ended. In addition, a link to the session archive should be posted for additional student review as well as for those who missed it.

The role(s) of the experts

There are many functions or purposes that the guest experts can offer. With younger populations, the expert might be more of an informant who excites learners toward a particular field of study or topic(s) within that field. The purpose of the session might also be to expose learners to cultural practices and norms common in another part of the world. Friendships might emerge as students work on

joint projects or share their designs across geographic regions of the world. Projects like Taking It Global (TIG), ePals, iEARN, and Round Square offer services for such sharing (Maguth, 2012). Importantly, in projects like TIG and iEARN, young learners have an audience for their work that extends beyond the instructor (Furdyk & Keith, 2012; Gragert, 2012). Such international projects engage learners in unique global interactions that better prepare them for later life experiences and opportunities for participation in the increasingly global workplace. At the same time, such experiences can foster awareness and sensitivity for social justice as well as global education movements and perhaps even arouse involvement in them later in life.

Each videoconferencing event and class project is different, however. Most ISIS presenters, for instance, focus on the everyday life and culture of their particular country. Such a focus was especially true for the presenters who worked with the two rural schools studied by Lee (2006). ISIS speakers provided an opportunity for students from these rural schools to meet and talk with the people from that part of the world. As this occurred, the various subject matters found in "*The World History and People*" (the title of their social studies textbook) were given an authentic context.

In contrast, when dealing with adult populations, there might be a more balanced approach between presenting personal anecdotes and lived experiences and responding to student requests. Adult learners might want to probe specific research that the expert has conducted or recently reported. Personally knowing the researcher who authored a seminal report or popular book will make a guest appearance in your class highly motivational. That was the case with

one speaker, Dr. Insung Jung from International Christian University in Japan, during the fall of 2012. As an expert in e-learning and blended learning evaluation, Dr. Jung was someone whom many of the students had heard about. She also wrote a report on the quality in distance education and gender preferences that was assigned reading for the course. It was included in their reading assignments even before Dr. Jung was solicited to make an appearance.

Given that she authored the report, students could ask specific questions about it. They might question particular findings or note specific tables, figures, or quotes from the article that they resonated with. They might also inquire about the implications and limitations of the study. Such an approach creates a more learner-centered and empowering experience for those enrolled in the course. Student input directs much of the discussion and interactions with the expert scholar. In the process, they get a sense of identity in the field, albeit modest at best.

Given that most of the students who enroll in Bonk's emerging learning technologies course are returning adult learners, the experts selected to present in his class have assumed a more professional role than those whom Lee studied in ISIS. Some of the experts Bonk has brought in have recapped or expanded upon particular articles they have published, thereby making them easier for students to understand. In contrast, many of the others decide to present on any topic that is currently of interest to them. This second option provides the class with a window into current events and evolving ideas of the expert. A third role might be considered more reactionary. Students might post specific questions, comments, or insights from one or more articles, books, shared online videos, or

other resources of the expert. They might also post direct quotes of the author or inquire about charts or figures from specific publications or interviews of the guest. We have recently piloted this approach and found much success.

At the same time, the instructor can help the entire class reflect back to prior studies from one or more guest experts that the students might not have read. The instructor can also ask questions that reveal cutting-edge research that the guest is currently engaged in. As this unfolds, students can begin to understand the journey of that researcher as well as what it takes to become a leading expert in some topic areas. In addition, they will begin to appreciate the need for adequate planning, organization, design, communication, and networking skills to survive in the real world.

Planning with the experts

There are many pedagogical activities that can be selected when bringing in an expert. In February 2012, Professor Ray Schroeder from the University of Illinois at Springfield discussed massive open online courses (MOOCs) as well as recent technology and economic trends impacting higher education. That same month, another guest, Dr. George Veletsianos from the University of Texas at Austin, discussed adventure learning as well as social media. In each case, students reviewed the websites and recent articles of the university professor prior to the session. However, they were not required to bring any specific questions about their articles or findings.

In contrast, during the spring of 2013, Dr. Rey Junco, now from Purdue University, was an expert guest in Bonk's Emerging Learning Technologies course. For his session, Dr. Junco was asked

to elaborate on his research on social media (i.e., Facebook, Twitter, chat, etc.). Once he agreed to a time and date, Bonk took screen shots from various articles that Dr. Junco had published during the previous few years and uploaded them to a PowerPoint slide deck. During the guest expert meeting in Adobe Connect, Dr. Junco responded to most of those figures and charts while suggesting that certain ones be skipped that were not vital to the points he was making. After that, he responded to student selected quotes from his various articles. During the session, it was clear that Dr. Junco was highly skilled at performing in such a "hot seat." Overall, it was a highly spontaneous, interactive, and successful event.

Selecting the technology

There are seemingly endless possibilities for global and cross-cultural interaction today. During the spring of 2013, the second author experimented with the combination of Google Hangouts and Adobe Connect Pro for his weekly synchronous class sessions. He utilized Adobe Connect for PowerPoint presentations, text chats, polling, and Web explorations, whereas Google Hangouts was used for discussion and reflection about such presentations as well as the weekly readings, videos, and Web resources from the detailed syllabus. In addition to these synchronous conferencing options, Bonk also assigned weekly discussions in an asynchronous forum. It is important to point out that whereas Adobe Connect sessions could be offered to a nearly unlimited audience, Google Hangouts currently allows no more than 10 participants. For classes of more than 10 students, teaching assistants or team leaders might be put in charge of different Google Hangouts or one might try

Google Hangouts On Air.

5. Lessons learned

Based on our collective experiences of working with experts in the classrooms, we offer some lessons learned below. Needless to say, each situation is different. One must reflect on the course or curriculum goals, timing within the course, available technology, and learner familiarity with the technology.

Lesson Learned #1: Preparing the speakers ahead of time will greatly facilitate the presentations.

Instructors can make it easier for their guests to enter a course using video- or Web conferencing by preparing questions, screen shots, or quotes for them to comment on or respond to. If it is an open and flexible environment, the guest can skip any item that he or she is not comfortable with. Such an approach makes for a more relaxing yet highly focused discussion on the relevant ideas and content produced by that individual.

Despite the fact that you can connect with anyone at any time and invite that person to join your class, preplanning with the experts is always recommended. Based on student interests, we have brought in guests to discuss trends in open education, virtual worlds, digital books, and social networking.

In the spring of 2013, Bonk contacted Steven Carson, Director of External Relations from the MIT OpenCourseWare (OCW) project. Carson was asked to discuss OCW issues such as certification, quality, and retention with the class. The session was extremely

engaging and informative. However, it was not flawless. Bonk only selected a few screen shots from a document that Carson had forwarded a few days earlier. Worse, he did so just prior to the event. As a result, he had no time to inform the guest expert which figures he included from the document nor could Carson make suggestions. Fortunately, myriad insightful student questions drove the session in addition to the key visuals that Bonk had quickly inserted from the document. It did not hurt that Carson was flexible and open to answer a wide variety of questions and concerns. Without his flexible nature and the high level of student interest in the topic, the entire session could have floundered.

Clearly, synchronous events with experts often require much planning. If you do not plan ahead, it can be chaotic. You do not want to waste valuable moments of the expert's time. In addition, without proper planning, the expert might become less committed to the purpose and goals of the event.

Along these same lines, it is important to have clearly communicated the start and end time of the session with the expert speaker. Take into consideration the differences between the time zones and even daylight savings time within the U.S. If you have a fully online class, find an online world clock that can calculate and display the correct time for students in different parts of the world. In addition, time keeping and management during the synchronous sessions is an important responsibility of the instructor or the session facilitator.

Lesson Learned #2: The spontaneity of synchronous sessions can serve as a huge advantage.

No session can be entirely preplanned. From our experience, the spontaneous nature of these sessions brings forth an increased sense of authenticity to these real time interactions. In the case of ISIS, expert speakers planned the content of their own sessions but left enough room for the students to ask questions during the sessions. Surprisingly, these middle school youth typically had plenty of insightful questions. The range of questions ran from personal ones (e.g., the presenter's hometown and family, the challenges faced in the U.S., etc.) to some that could be seen as "sensitive," but all the more interesting and enlightening given the fact that those questions WERE asked (e.g., "rumors" about eating specific animals for meat, wild animal attacks on babies, etc.). While these types of questions revealed student misunderstanding about other cultures, the speakers welcomed them and saw an opportunity to correct such misconceptions.

Another example of spontaneity occurred in the spring of 2013 when Professor Sara de Freitas and her colleague, Jim Hensman, from the University of Coventry in the UK entered Bonk's class using Adobe Connect. Near the end of the session, both de Freitas and Hensman mentioned a couple of their recent grant projects and experiences. Bonk probed this topic for aspects of these grant projects that might be highly relevant to his students. Soon his UK guests mentioned their growing need to collaborate with other institutions and scholars. They encouraged visits to their Serious Gaming Institute while noting the possibilities for postdoctoral study. Spontaneous introductions and connections were immediately made

with several of Bonk's students who were about to graduate. Given these experiences, we recommend that the instructor be open and flexible throughout the synchronous conferencing session to topics and opportunities that may arise and be capitalized upon.

Lesson Learned #3: Having asynchronous activities around the synchronous sessions will foster knowledge construction and critical interpretations.

In order to optimize the outcome, it is important to build asynchronous activities before or after the videoconferencing session. Such an approach stretches students to think more deeply. When successful, students begin to grasp and grapple with new ideas and perspectives. Often they will rethink their previous positions and perspectives. In the case of the ISIS project, research from Lee (2006, 2007) pointed out that the reflective after-session events would be beneficial to students in making sense of the session contents. Such events would include asynchronous interactions with the expert presenter. The ISIS sessions served as a platform to teach about many similarities and differences between the cultures of the students and those of the presenters.

However, without a critical framework or lens from which the learners can interpret these seemingly different cultural practices, such videoconferencing events at times run the risk of further exoticising other cultures. Young learners, especially, can benefit from guided reflections on how one should interpret the differences, what stereotypes and assumptions one has about other cultures, and what those ideas actually mean.

In Bonk's class series, having asynchronous activities in class

prior to the expert session has proved to be extremely effective. As highlighted earlier, Bonk's class had a highly memorable experience with Drs. Elliot Soloway and David Palumbo back in 1995 wherein students debated key ideas from their scholarly articles about the impact of computer programming on thinking skills a week before they met them. As indicated, that session was highly engaging and informative. Since that time, he has tried this approach—asynchronous discussion of articles first, followed by a synchronous meeting with the author(s))—in slightly different ways and with various newer technologies. It always works.

Lesson learned #4: Students prefer current and immediately useful issues presented by an expert speaker in a highly personalized way that is rich with interesting stories, examples, and other specific contextual information.

To inspire as well as motivate learners, it is vital to offer current and immediately relevant issues for students to reflect on. The immediate interactions between learners and guest presenters are a key factor in explaining why synchronous conferencing is often a highly successful event.

For instance, on one occasion, Bonk brought Sarah Robbins and her husband, Mark Bell, into his class to discuss the popular virtual world tool called Second Life. Robbins and Bell had recently published a book entitled "*Second Life for Dummies.*" At the time, Second Life was prominent in the news and growing in popularity; however, most students in the class had difficulty grasping how to use Second Life in different educational settings. Fortunately, his two guests could detail many educational applications and uses

across a range of disciplines. Robbins, in fact, had taught her English Composition courses at Ball State University using Second Life as the delivery platform. After the session, several students were able to immediately apply the knowledge that they had gained in their own Second Life activities. Similar reactions occurred during the same topic the following year when Miguel Lara, a doctoral student in Bonk's program, discussed several tools for creating 3D animated movie characters in lessons (e.g., cartoonish videos). Two weeks later, many students had successfully incorporated that knowledge into their final projects.

Another memorable videoconferencing session that was rich in context and filled with highly current information was when our colleague, Paul Kim from Stanford, presented in the fall of 2010 on the use of mobile learning for literacy training of disadvantaged youth. Students in the class were so energized by Dr. Kim's presentation that they volunteered to help with his widely acclaimed "Seeds of Empowerment" program. While some students expressed interest in traveling with Kim on his next project visit, others wanted to research the program or help with his grant writing efforts. In effect, the synchronous conferencing session with Kim drove the students to action. Without that videoconference, it is unlikely that the learners in the course would have reacted so passionately to Kim's program or to the possibilities of mobile learning in impoverished corners of the world.

Lesson Learned #5: The instructor and the expert speaker should have a clear understanding of the technology selected and test it prior to the session.

This final lesson points to the importance of testing the

technology ahead of time. In case of our ISIS experiences, the technology staff at the two rural schools Lee studied corresponded closely with the technology team at the ISIS project office in preparation for the sessions. The speakers were also given a short training session on the workings of the videoconferencing technology as well as other technologies available during the session (e.g., the document camera). The technology set-up for ISIS was highly consistent and simple such that one form of videoconferencing technology was used throughout the series and the expert speakers always presented in an IU studio. In effect, the standardization of the technology set-up made the sessions more reliable and the results more consistent.

In the 1990s, Bonk often experimented with teleconferencing and chat tools for bringing in guests. Now in the twenty-first century, the options have expanded. Even when you test everything prior to the session, the technology may not always work. Consequently, it is vital to have a back-up plan and alternative date in mind in case the connection goes awry or problems are encountered. The instructor should prepare questions, collect and upload all the necessary resources and slides, test the system, and share all pertinent information related to accessing the system ahead of time. A practice session with the guest expert is typically warranted. At that time, they can test out their microphone and video camera or headset.

The technology testing phase becomes somewhat more complex, and, hence, all the more crucial, when the expert is not using standardized equipment. Some Web conferencing technologies require participants to wear headsets; without them, there may be

irritating feedback experienced by all the participants or problems with the volume level. As a result, we try to test the technologies with the guest expert at least 30 minutes, if not a few days, prior to the session. If the guest is not willing to obtain or wear a headset and an echo from using an internal microphone continues to exist, the guest may need to be replaced by someone else.

The five lessons listed above are key takeaways from more than a decade of experimenting with videoconferencing and Web conferencing technology. Suffice it to say, while there are many more, these are the main ones. Additional issues may depend on the technology savvy and location of the guest as well as the novelty or boldness of the activity, such as when several guests make appearances simultaneously.

6. Conclusion

This paper provided the theoretical rationale for reaching out to experts who might enhance or even transform one's class. When effective, experts can introduce students to a community of practice in which they could eventually take part. Fortunately, the tools for such technology-driven practices are often free and readily accessible.

Incorporating expert presentations and interactions expands the reach of the classroom from K–12 schools to higher education and beyond. Such sessions can inspire learners to seek additional information about a particular topic, activity, finding, or cultural practice. Today, synchronous technologies offer unique opportunities for contacting such guests as well as for discussing expectations

ahead of time, testing out the system, and reflecting on how it went overall.

There has never been a time in the history of formal education when a classroom space could so swiftly be altered or transformed by online expertise. Today, there is a stream of possible class guests. The time is ripe for those in K–12 schools as well as institutions of higher learning and perhaps even corporate and military training departments to experiment with use of guest experts. Not only do the learners benefit but instructors simultaneously learn about current trends, topics, and techniques that they can refer to in future instructional situations. They might even become reenergized about their own course content. Through the words and wisdom of experts, the course evolves and perhaps even transforms while instructors continue to expand their social networks and possibilities for extending their classrooms in the future.

References

Barab, S. A., & Duffy, T. (2000). From practice fields to communities of practice. In D. Jonassen, & S. M. Land. (Eds.), *Theoretical foundations of learning environments* (pp. 25-56). Mahwah, NJ: Lawrence Erlbaum Associates.

Beldarrain, Y. (2006). Distance education trends: Integrating new technologies to foster student interaction and collaboration. *Distance Education*, *27*(2), 139-153.

Bonk, C. J., Appelman, R., & Hay, K. E. (1996). Electronic conferencing tools for student apprenticeship and perspective taking. *Educational Technology*, *36*(5), 8-18.

Bonk, C. J., & Cunningham, D. J. (1998). Searching for learner-centered, constructivist, and sociocultural components of collaborative educational learning tools. In C. J. Bonk, & K. S. King (Eds.), *Electronic collaborators: Learner-centered technologies for literacy, apprenticeship, and discourse* (pp. 25-50). Mahwah, NJ: Erlbaum.

Bonk, C. J., Medury, P. V., & Reynolds, T. H. (1994). Cooperative hypermedia: The marriage of collaborative writing and mediated environments. *Computers in the Schools*, *10*(1/2); 79-124.

Buckner, E., & Kim, P. (2012). Mobile innovations, executive functions, and educational development in conflict zones: A case study from Palestine. *Educational Technology Research & Development*, *60*(1), 175-192.

Dewey, J. (1897, January). *My Pedagogic Creed. School Journal*, *54*, 77-80. Retrieved May 30, 2008, from http://dewey.pragmatism.org/creed.htm.

Dewey, J. (1910). *How we think*. Boston, MA: D. C. Heath; revised as *How we think, a restatement of the relation of reflective thinking to the educative process* (Boston, New York & London: Heath, 1933; London: Harrap, 1933).

Furdyk, M., & Keith, S. (2012). Global education as a catalyst for social change. In B. M. Maguth (Ed.), *New directions in social education research: The influence of technology and globalization on the lives of students* (pp. 117-134). Charlotte, NC: Information Age Publishing.

Gragert, E. (2012). The role of the teacher and technology innovations in professional development: Toward a scalable and sustained global education. In B. M. Maguth (Ed.), *New directions in social education research: The influence of technology and globalization on the lives of students* (pp. 155-175). Charlotte, NC: Information Age Publishing.

Hay, K. E., & Barab, S. A., (2001). Constructivism in practice: A comparison and contrast between apprenticeship and constructionist learning environments. The *Journal of the Learning Sciences, 10*(3), 281-322.

Lave, J. (1993). Situating learning in communities of practice. In L. B. Resnick, J. M. Levine, & S. D. Teasley, (Eds.), *Perspectives on socially shared cognition* (pp. 17-36). Washington, DC: American Psychological Association.

Lee, M. (2006) "Going global": Conceptualization of the "Other" and interpretation of Cross-cultural experience in an all-white, rural learning environment. *Ethnography and Education, 1*(2), 197-213.

Lee, M. (2007) "Making it relevant": A rural teacher's integration of an international studies program. *Intercultural Education, 18*(2), 147-159.

Lee, M. M. (2010) "We are so over pharaohs and pyramids!" *Re*-presenting the *othered* lives. *International Journal of Qualitative Studies in Education (QSE), 23*(6), pp. 737-754.

Lee, M., & Hutton, D. (2007, August). Using interactive videoconferencing technology for global awareness: The case of ISIS. *International Journal of Instructional Technology and Distance Learning, 4*(8). Retrieved December 6, 2011, from: http://www.itdl.org/Journal/Aug_07/article01.htm.

Kim, P. (2009). An action research for the development of mobile learning system for the underserved. *Educational Technology Research & Development, 57*(3), pp. 415-435.

Kim, P., Buckner, E., Kim, H., Makany, T., Taleja, N., & Parikh, V. (2012). A comparative analysis of a game-based mobile learning model in low-socioeconomic communities of India. *International Journal of Educational Development, 32*(2), 329-340.

Kim, P., Higashi, T., Gonzales, I., Carillo, L., Gàrate, A., & Lee, B. (2011). Socioeconomic strata, mobile technology, & Education: A comparative analysis. Educational Technology Research & Development, *59*(4), pp. 465-486.

Longview Foundation (2008). *Teacher preparation for the global age: The imperative for change*. Longview Foundation for World Affairs and International Understanding, Silver Spring, MD. Retrieved April 29, 2013, from http://www.longviewfdn.org/files/44.pdf.

Maguth, B. M. (2012). *New directions in social education research: The influence of technology and globalization on the lives of students*. Charlotte, NC: Information Age Publishing.

Merryfield, M. M. (2007). The Web and teachers' decision-making in global

education. *Theory and Research in Social Education*, *35*(2), 256-276.

Merryfield, M. M. (2008). The challenge of globalization: Preparing teachers for a global age. *Teacher Education & Practice 21*(4).

Merryfield, M. M., & Kasai, M. (2009). How are teachers responding to globalization? In Walter Parker (Ed.), *Social Studies Today: Research and Practice* (pp. 165-173). Routledge.

Palinscar, A. S. (1998). Social constructivist perspectives on teaching and learning. *Annual Review of Psychology, 49*, 345-375.

Rasmussen, K. L., Nichols, J. C., & Ferguson, F. (2006). It's a new world: Multiculturalism in a virtual environment. *Distance Education*, *27*(2), 265-278.

Riel, M. (1993). Global education through learning circles. In L. Harasim, (Ed.), *Global Networks*. Cambridge, MA: MIT Press.

Rogoff, B. (1990). Apprenticeship in thinking: Cognitive development in social context. NY: Oxford University Press.

Rogoff, B. (2003). The cultural nature of human development. Oxford. NY: Oxford University Press.

Selman, R. (1971). The relation of role-taking to the development of moral judgment in children. *Child Development*, *42*, 79-91.

Selman, R. L. (1980). *The growth of interpersonal understanding: Developmental and clinical analysis*. New York: Academic Press.

Schrage, M. (1990). *Shared minds: The new technologies of collaboration*. NY: Random House.

Schrum, L. M. (1991). *Telecommunications: Working to enhance global understanding and world peace*. Paper presented at the American Educational Research Association annual convention, Chicago, IL.

Sugar, W. A., & Bonk, C. J. (1998). Student role play in the World Forum: Analyses of an Arctic learning apprenticeship. In C. J. Bonk, & K. S. King (Eds.), *Electronic collaborators: Learner-centered technologies for literacy, apprenticeship, and discourse* (pp. 131-155). Mahwah, NJ: Erlbaum.

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge, MA: Cambridge University.

Vygotsky, L. S. (1978). *Mind in society.* Cambridge, MA: Harvard University Press.

Vygotsky, L. S. (1986). *Thought and language* (rev. ed.). Cambridge, MA: The MIT Press.

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화상회의 테크놀로지를 이용한 전문가의 수업 참여 사례 연구

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최근 수십 년간 등장한 여러 형태의 협력테크놀로지(collaborative technology)를 통해 학생들은 다양한 전문가들과 수업시간 실시간 화상으로 교류할 수 있게 되었다. 특히 그 중에서도 화상회의 테크놀로지는 문화 간 커뮤니케이션, 전문가의 수업시간 참여, 해외강사들과의 질의응답 등을 가능하게 하는 기술로 자주 학습에 이용되고 있다. 본 논문에서는, 인디애나대학 (Indiana University) 산하의 *International Studies in Schools(ISIS)* 프로그램과, 전문가들을 초대하는 대학수업시리즈 라는 두 가지 사례를 살펴보고, 이에 다년간 참여해왔던 두 저자의 경험과 연구에 근거한 다섯 가지 교훈과 실행지침을 제시한다.

Key words: Conferencing technology, expert sessions, cross-cultural communication
핵 심 어: 화상회의 테크놀로지, 전문가의 수업 참여, 문화간 커뮤니케이션

Attempts to use computer technologies to enhance learning began with the efforts of pioneers such as Atkinson and Suppes (e.g., Atkinson, 1968; Suppes and Morningstar, 1968). Learning through real-world contexts is not a new idea. For a long time, schools have made sporadic efforts to give students concrete experiences through field trips, laboratories, and work-study programs. In many fields, experts are using new technologies to represent data in new ways—for example, as three-dimensional virtual models of the surface of Venus or of a molecular structure, either of which can be electronically created and viewed from any angle. This easy way to use technology in the classroom adds a multimedia element to your lessons, which can effectively resonate with visual learners. Research has shown that the use of animated videos can positively impact a child's development in several competence areas including memory, creativity, critical thinking, and problem solving. 5. Co-ordinate Live Video. You don't have to limit yourself to pre-recorded videos, as conferencing technology can allow subject matter experts to deliver lessons. Whether it's a contact from another school or a seasoned lecturer you reach out to, bringing an ex... Synchronous conferencing is the formal term used in computing, in particular in computer-mediated communication, collaboration and learning, to describe technologies informally known as online chat. It is sometimes extended to include audio/video conferencing or instant messaging systems that provide a text-based multi-user chat function. The word synchronous is used to qualify the conferencing as real-time, as distinct from a system such as e-mail, where messages are left and answered later.