



Fordham University

Global Encounters: Incorporating Global Voices Into Local Classrooms

Joachim K. Rennstich
Fordham University

and

Julian C. Westerhout
Carleton College

Prepared for the 2006 International Studies Association Conference, San Diego, CA, March 22-25, 2006

Marked entries are further discussed in the Appendix.

Global Encounters

Globalizing the Classroom

Low-cost internet-based technologies are now widely available around the world even in areas previously de-facto cut off from the core of Western educational centers. These technologies enable us to build bridges across the North-South divide in our classrooms, allowing educators to add individual and truly global voices to the multiple sources of information their students are exposed to directly in their classrooms. This provides a low-cost and unique experience for students that adds often marginalized voices, views, and experiences to the agenda set by the global news media. This type of learning-experience is especially important to a new generation of students (often characterized as "millennials") that tends to be more open to learning based on personal discovery rather than a passive reception of textbook-based arguments.

This paper discusses the technological and theoretical implications of virtual encounters in a class-room setting and for scholarly collaborations, provides concrete examples, and demonstrates the use of these encounters for a discovery-based learning experience of concepts such as levels of analysis, agenda setting, bounded rationality, cultural and contextual-based theories, complex interdependence, to name just a few.

Virtual Encounters

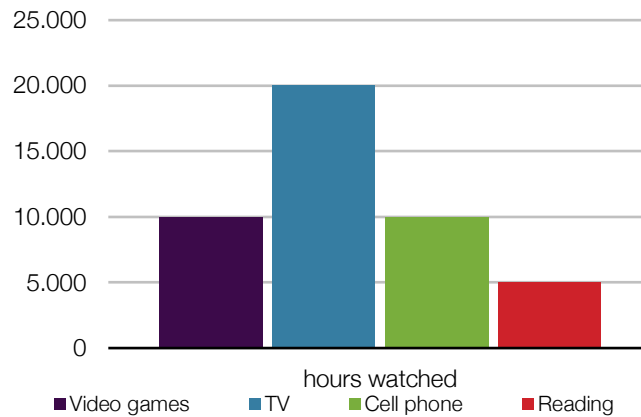
The Concept

The basic idea behind the concept of "[virtual encounters](#)" can be easily summarized: it aims to bring the world's diversity into local classrooms facilitating digital technologies. Today's students -- "[digital natives](#)" belonging to the so-called "net-generation"¹ -- have surprisingly little difficulty in accepting interactions that take place in a virtually mediated manner as natural and "real" as face-to-face encounters. Conversations that started in class are seamlessly continued over instant messaging (IM), only to be continued over a cell-phone and finalized over dinner in the cafeteria. For these students, the acceptance of a virtually mediated encounter is high, mostly as a result of their own upbringing: by the age of 21, an average person now will have been exposed to 10,000 hours of video games, will have sent and received 200,000 emails and instant messages, watched 20,000 hours of TV, chatted away 10,000 hours on a cell phone, and will have tugged away just under 5,000 hours of reading as well.²

¹ For a comprehensive overview, see Neil Howe, and William Strauss, *Millennials Go to College: Strategies for a New Generation on Campus: Recruiting and Admissions, Campus Life, and the Classroom* (Washington, DC: American Association of Collegiate Registrars and Admissions Officers, 2003).

² Marc Prensky, "Digital Natives, Digital Immigrants," *On the Horizon* 9, no. 5 (2001). See also, Marc Prensky, *Digital Game-Based Learning* (New York: McGraw-Hill, 2004).

In other words, these digital natives are digitally literate (in the sense of the social aptness³ in the use of digital technologies), highly connected, experiential, immediate, and very social.⁴ In order to educate these students effectively, educators should aim to allow them access to the material in a multitude of media, including the use of visual, experiential, and social mediation tools. Complementing the analytical material traditionally presented in text-based form and reinforced in the lecture-based narratives of the instructor and group discussions in class with other forms of mediated information, is crucial for the efficacy of teaching the net-generation.



The digital tools available today allow educators easy and low-cost access to the means necessary to complement the text-based information with experiential forms of learning, such as an application of the theoretical concepts to “real-life” cases they follow over the course of the semester with student involvement in various forms (or even the establishment of student-developed cases).

The inherent danger of such a form of mediated experience -- first-hand, individual-level accounts tend to draw more emotional reactions than reinforce rational, analytical observation -- is also its great advantage. The personal experience of multiple levels of analysis allows students to engage on a much deeper level with the presented theoretical material. This is especially true with the students that belong to the net-generation. Students from this generational cohort are much more visually oriented, want to be engaged in a learning through personal discovery. It requires however awareness of this and other effects of these forms of mediation that need specific attention by the educator in the preparation of the case(s). This papers presents therefore not only the means to establish such encounters, but also the inherent social aspects of such mediated interaction.

Despite some of the potential problems of virtual encounters discussed below, the opportunities in adding another level of mediation in the experience of students of a “global reality” are striking. By adding another set of experiences for students, their perception or awareness of issues is enhanced on multiple levels:

³ This is an important distinction. Net-generation students often feature a very low level of technological sophistication in technical terms. They do, however, feature a very high level of aptness in the social adaptation and use of technologies in their everyday lives. This aspect is reflected in the the transformation of descriptive technology nouns (email, IM, Google) into active verbs (emailing, IMing, Googling).

⁴ Diana Oblinger, and James L. Oblinger, eds. *Educating the Net Generation* (Boulder, CO: EDUCAUSE, 2005).

- **General awareness:** a striking number of students do not engage in a regular exposure to news (online, TV, or print) beyond a superficial level (i.e., Yahoo/Google/CNN-news headline summaries). Students tend to pay more attention themselves to information once they have been “introduced” to a certain (or general news) agenda.
- **Specific awareness:** instructors can use specific key themes that capture or highlight the *problematiques* that are part of the course content. For example, a class on security issues might want to follow developments in specific conflicts around the world that expose the general features of these kind of conflicts (e.g., civil war involving ethnic divisions) as discussed in the analytical material used in class.
- **Ontological awareness:** students experience first hand the importance of agenda setting in global issues, opening up ontological aspects as being part of the analysis that usually remain beyond the realm of a regular class.

While there many ways to develop experiential learning tools for students, we focus here on the facilitation of person-to-person interactions necessary in the development of comprehensive case-studies that present students not only with the contextual information of the case (from prepared case-studies, news articles, books, filmed documentaries, news-reports, etc.), but build a direct and personal link into this context by establishing an interpersonal link to the case. This link can take shape in the form of regular interaction with peers (facilitating an infrastructure such as [ePals](#)), personal exchanges with experts or activists involved in the case (using technologies discussed in greater detail in this paper), or “student ambassadors” (involving students in an exchange or other program at a partnering institution or even former students).

The advantages of a continued, multi-mediated exposure to such cases are abundant:

- Familiarity with the contextual circumstances reduce the need to put students in the know about a specific case, providing more time to make the link between the theoretical material and the case(s), demonstrating the application of analytical processes and different methodologies.
- This allows the educator to expose students to similar cases more easily once they are able to make the basic connection between the theoretical material and the case(s).
- Students can be integrated into the further development/treatment of the cases, either in groups or individually, providing further outside material to enhance knowledge of the case, interact with individuals (as part of a virtual encounter that involves for example a student or other group in the case-country).
- Students can also be asked to develop additional cases following the model they have been exposed to in the course setting, thus preparing them for the analysis they will provide in a final paper. This allows a significantly higher “buy-in” of students into the course material (of both the analytical material and contextual knowledge).
- The preparation of additional cases by students not only broadens the spectrum of contextual knowledge of the students in the course, but also provides opportunities for them to develop better presentational and literacy skills (broadly understood, including multi-media competence, etc).
- Normative issues can also be made part of this guided form of self-exploration-based learning.

- This approach also allows for a better leverage (if applicable) of the diversity in the student body, allowing students with different cultural, ethnic, or linguistic backgrounds to facilitate their respective prior-knowledge in a more comprehensive manner, avoiding the usual problem of “minority-representing-all-minority-issues” problem.
- Gender can be made part of the experience of students on a variety of levels, from the differences in foci in the classroom, to the exposure of gender-specific aspects of cases.

Virtual encounters can be employed not only in classroom settings, but also to facilitate collaborative “virtual research groups” between academics across the globe. This is especially important in the context of the continued marginalization of scholars from the global south that are often “priced-out” of the academic market of exchange of scholarship, in terms of access to not only sources in the form of high-priced academic journals or the necessary funding for extensive (and often therefore expensive) research tools, but also in their ability to supply their scholarship in the academic fora of the global north. One way to overcome these obstacles is to facilitate scholar-networks (often established on an interpersonal basis during graduate school or in other collaborative venues) that take into account the obstacles of travel (cost, visa), time differences, and language.

The emergence of email-based communication, but also the explosion of access to cheaper phones even in remote areas of the world, has greatly improved the situation for scholars engaged in such collaborations. Here we will present further collaborative tools that allow for cheap, internet-based visual and audible forms of collaboration and participation (for example, in the form of a virtual participation at a conference). It is important to notice that these tools not only help to improve the obstacles that result from the the global north and south divide, but also help to alleviate the extraordinary burden put on women aiming to remain engaged in scholarly networks.

The Practice

Virtual encounters are all of those instances that employ “virtual” mediated-communication rather than “real” face-to-face encounters. Three main modes exist for such mediated forms of communication:

- (1) **videoconference (VC)**, where two or more parties communicate through audio-visual aids, such as video-links or video Instant Message (IM) connections; and
- (2) **audioconference (AC)**, where two or more parties communicate with each other through audio channels, such as a telephone connection or computer-based audio-chats;
- (3) **computer-mediated communication (CMC)**, such as IM, email, or other forms of text-based chats.

These channels of (mediated) communication are increasingly being used for contacting experts not readily available for Face to Face (FTF) meetings, to improve response time, and to save money. Widely in use in multinational corporations, governmental organizations, and the military, the relatively low cost of the involved technologies now allows the use of these communication channels in academic settings as well.

Videoconferences	Audioconferences	Computer-mediated Communication
high level of complexity	medium level of complexity	low level of complexity

Videoconferences	Audioconferences	Computer-mediated Communication
high technological and literacy demands	medium technological demands, low to high literacy demands	low technological demands, medium to low literacy demands

Videoconferences (VC)

VCS allow participants to see real-time images of and hear the voices of other participants located elsewhere. Typically, they have been largely confined to meeting rooms equipped with the requisite technology, but recent advances in both hardware and software, as well as the spreading ubiquity of high-speed internet connections, have made VCs increasingly mobile and less tied to particular locations. VCs are the most complex forms of mediated-communication, both in terms of their technological requirements, but also in terms of the necessary literacy-skills of those involved in the communication, as the interaction pattern in VCs is very close to those present in a face-to-face (FTF) encounter. The mediated nature of VCs, however, must be taken into account in their planning and use, as the technology and virtual character of the encounter.

Audioconferences (AC)

ACs often go beyond simple voice conversations between multiple participants, but unlike VCs, do not allow participants to see real-time images of each other. Depending upon the particular technologies employed, participants in ACs may share images, data, and other materials to supplement and augment their voice communication. ACs are still fairly challenging forms of mediated communication. They provide a lesser degree of complexity than VCs as the visual element is missing, but still require a relatively high degree of technological literacy, especially if auxiliary materials are incorporated into the AC experience.

Computer-mediated Communication (CMC)

CMCs provide a mediated channel for a different set of virtual encounters than both ACs and VCs. The mostly text-based nature of CMCs requires less sophisticated technical literacy and equipment, and also work well in situations where internet bandwidth is limited. CMCs allow participants to share images, data, and text, but lack real-time video or audio components. CMCs include instant messaging, text messaging, internet chat rooms, and computer applications that allow real-time viewing and modification of databases and other documents.

Opportunities and Challenges: the Dynamics of Virtual Encounters

Most research in mediated communication focuses on comparing a given medium with FTF communication or compares different media for specific tasks, such as negotiations. In this report, we step back and evaluate virtual collaboration for a broad range of task types and across VC, AC, and CMC. A recent study⁵ provides the most comprehensive review currently available that addresses the issues involved in utilizing technologically-enhanced alternatives to FTF meetings. They review the literature of the past 30+ years covering remote collaboration, and conclude that while advances in technology have made some of the problems that were the focus of older studies less of an issue today (such as the

⁵ Lynne Wainfan, and Paul K. Davies, *Challenges in Virtual Collaboration: Videoconferencing, Audioconferencing, and Computer-Mediated Communications* (Santa Monica, CA: Rand National Defense Research Institute, 2004).

problems posed by high latency and low frame rates in live video and audio communication) others, such as local versus remote participant perceptions and the differing effects of social cues in different collaborative formats, are still extremely relevant today.

Contextual Differences between FTF and Virtual Encounters

One major difference between FTF and virtual encounters is the differences in the type and effect of cues participants use to help them understand meaning and put actions into the correct context. All group activity participants utilize vocal intonation and phrasing as well as visual cues such as facial expressions and body language to help them properly understand intent and meaning. According to Mehrabian⁶ 93 percent of the cues used to determine meaning are vocal or visual in origin. Clearly, then, in comparison to FTF encounters, of all virtual encounters CMCs are the most likely to suffer from the effects of unintended interpretation, as they almost completely lack active visual and vocal cues (although the use of emoticons such as smiley faces in messaging can provide some degree of visual cue to assist assigning meaning, and are often used precisely to counter or reinforce the tone of the text they accompany). While the lack of visual and aural cues in CMCs can lead to possible confusion and misunderstanding, its anonymity can also lead to more involvement by some group members who would otherwise be less inclined to participate for fear of being censured by more dominant group leaders.⁷ This potentially promotes the possibility of positive results from more outside-of-the-box thinking, although it can also lead to problems as a result of less guarded exchanges or extreme positions being easier to make.⁸

Although they provide more aural and visual cues than CMCs, VCs and ACs also are still less rich in context-providing cues than FTF encounters, due to the constraints of the mediums. ACs lack any visual cues, and VCs' cues effects are different than those in FTF encounters due to constraints of technology, proscribed individual positioning and interaction effects caused by room configurations and time constraints. In ACs participants can have trouble following who is participating in dialog, in interpreting discussion, and in managing the flow of conversation. Visual cues are so ingrained in the speaking habits of most people that Harmon⁹ found that participants in AC encounters looked and made gestures to the speakers broadcasting the audio. However, the absence of visual cues in ACs can sometimes lead to greater clarity -- although findings are mixed, it appears that in some cases, the lack of visual cues allows AC participants to more reliably detect lying, as non-verbal masking and distractions are not present.¹⁰

In the case of VCs, although aural and visual cues are present, they are not necessarily of the same nature and impact as they are in FTF encounters. Image resolution, distances from speakers to the camera, and the screen size used to project the image of the remote participants all have effects on how both verbal and non-verbal cues are received and interpreted. The effects of these variables can be observed even with very small groups, and the problem increases with

⁶ A. Mehrabian. *Nonverbal Communications* (Chicago, IL: Wadsworth, 1971).

⁷ See T. Bikson "Groupware at the World Bank," in C. Ciborra, ed. *Groupware And Teamwork* (New York: Wiley, 1996) and S. Weisband "Group discussion and first advocacy effects in computer-mediated and face-to-face decision making groups." *Organizational Behavior and Human Decision Process*, Vol 53, 1992, pp. 352-380.

⁸ S. Keisler and L.S. Sproull, "Group decision making and communication technology." *Organizational Behavior and Human Decision Process*, Vol 52, 1992, pp. 96-123.

⁹ J. Harmon. "Electronic meetings and established decision groups: audioconferencing effects on performance and structural stability," *Organizational Behavior and Human Decision Process*, Vol 61:2, 1995, pp. 138-147.

¹⁰ J. K. Burgoon, G. M. Stoner, J.A. Bonito, and N.E. Dunbar. "Trust and deception in mediated communication," *Proceedings of the Hawaii International Conference in Systems Science* (Kona, HI: 2003).

group size. Daft and Lengel¹¹ have found that VC participants find it difficult to identify who in a remote group is speaking, to establish eye contact, and to control the floor -- all problems that are lessened in FTF encounters. In VCs, ACs, and CMCs we have observed a difference in the effect of medium-generated contextual effects on participants' behavior that correlates with their exposure to and comfort with technology. While we need to conduct further study to confirm our observations, we believe that, all other things being equal, younger participants are less affected by the limitations of the contextual differences between virtual and FTF encounters. This is most likely a result of their increased comfort with and exposure to the technologies involved. It is important to note, however, that while younger participants do seem less troubled by the contextual differences, for the most part they are still affected in the same way by these effects as are their older compatriots, just in different degrees of magnitude.

Group Dynamics and Virtual Encounters

Virtual encounters also differ from FTF encounters when it comes to group dynamics. As noted earlier, in CMCs, group tendencies toward more rigid hierarchical structures can be diluted or disappear. A similar effect can be observed in VCs, especially in groups where hierarchies are not firmly established. In contrast to FTF encounters, VCs tend to promote more evenly distributed participation, and hierarchies of control that do emerge tend to be less lasting and less stable than those that emerge¹² in FTF groups, and conversations tend to be less social in nature than those in FTF encounters.¹³ While increased participation and less dominance can generally be viewed as positive effects, it must be recognized that increased participation can also reduce efficiency, and so that should be accounted for in planning virtual encounters.

ACs, in contrast, tend to have the opposite effect on group hierarchies -- individual dominance usually increases in comparison to FTF encounters among group with already established structures. According to Wainfan and Davies, research by France, Anderson, and Gardner "found that the most dominant individual in audio conferences took part in 45 times more pairwise conversations than did the least dominant individual," a level of dominance about three times that found in FTF encounters.¹⁴ France, Anderson, and Gardner argue that the lack of visual cues in combination with knowledge of the existing group hierarchical structure inhibits less dominant participants, making them less likely to take turns speaking. While this might lead to greater efficiency, it also tends to limit participation. Depending upon the type of conference and its goals, this may prove problematic, especially if the goal of the encounter is collaboration and group building rather than more straightforward information dissemination or instruction.

Another potential problem to be acknowledged in virtual encounters (particularly in ACs and VCs) is the tendency for differences to emerge that promote an "us versus them" dynamic in which participants in one location more closely identify with each other as opposed to the remote participants. Wainfan and Davies note that the technologies used in many AC and VC encounters can promote the formation of this sort of in-group exclusionary identity through use of mute buttons that allow remote participants to be excluded from local group discussions at will.¹⁵ In addition, the lack of visuals in ACs allow group members to communicate to each other their opinions of a remote participants comments in

¹¹ R. L. Daft and R.H. Lengel, "Organizational information requirements, media richness, and structural design," *Management Science*, Vol 32, 1986, pp. 554-571.

¹² L. H. Strickland, P.D. Guild, J.C Barefoot, and S. A. Paterson, "Teleconferencing and leadership emergence," *Human Relations*, Vol. 31:7, 1978, pp. 583-596.

¹³ K. E. Finn, A.J. Sellen, and S.B. Wilber eds. *Video-Mediated Communication*. (Hillsdale, NJ: Lawrence Erlbaum Associates: 1997).

¹⁴ Wainfan and Davies, 2004:24.

¹⁵ Ibid:33.

ways that are not possible in FTF encounters. Although VCs limit the scope of this sort of one-sided communication, fixed camera angles allow similar “us versus them” messages to be transmitted to the members of the in-room group.

There are a number of areas in which dynamics and contexts differ in FTF and virtual encounters. While their impact may vary depending upon the type of encounter and the experience and personalities of the participants, in our experience, these differences can and do impact the course and effectiveness of virtual encounters. The degree to which they can be problematic depends in large part upon the training of the encounter organizers and participants, as well as the type of encounter. For example, guest lectures given using AC or VC technologies are less likely to suffer from negative group coalition dynamics than are student or faculty collaboration sessions, but they are equally likely to suffer from misinterpretation or missed information as a result of missing or limited visual and aural cues.

Training participants and facilitators on the proper use of the technologies involved as well as establishing and enforcing a common set “etiquette rules” for virtual encounters can help minimize potential difficulties and maximize the benefits to be gained from the opportunities presented by a global pool of partners able and eager to participate in virtual encounters.

Global Voices

A core goal of virtual encounters is to facilitate a learning experience that provides a higher level of instructional and pedagogical efficacy when dealing with net-generation students. As pointed out earlier, however, this is far from being the only aim of such digitally-enabled encounters. Another important aspect of this project is to provide scholars with tools to overcome some of the persistent divides between the global south and north. One of these divides is being reinforced by the globalization and incorporation of previously independent news-media into larger, global media corporations. We believe, it is therefore very important to make students aware of the impact different forms of mediation have on their own, but also collective perceptions of issues.

This awareness in turn also complements the attempts of educators to bring up in students the importance of awareness of prior assumptions in the evaluation of information, a crucial factor in the transition from domain knowledge to strategic knowledge and thus engage in so-called “expert thinking.”

The case conceptualization presented here is based on the larger framework of “Cognitive Apprenticeship,” part of the [CADE](#) model developed by the Jesuit Distance Education Network. Cognitive apprenticeship provides a framework for both teaching and learning based on the traditional notions of apprenticeship where the expert (or teacher) models authentic ways of doing work in a field for the novice (or student) and then gradually, through guided work, fades back as the student takes on more and more of the critical tasks. Experts do not simply know more than novices, they approach a problem differently. Cognitive apprenticeship requires teachers to make visible all of the strategic knowledge that often remains invisible in novice learning contexts. Cognitive apprenticeship consists of seven key concepts -- modeling, coaching, scaffolding, fading, reflection, articulation, and exploration -- that help to translate the best face-to-face teaching practices to the online environment.

A very effective way to get students to appreciate the importance of the various levels of analysis for the evaluation and analysis of information and the meaning that the various kind of mediation attach to these data and turn them into different “facts” is to expose them to the multiple realities first-hand through exploratory learning techniques.

Case Design

While there are many ways to develop experiential learning tools for students, this paper focuses on the facilitation of person-to-person interactions necessary in for the case set-up proposed here. This case set-up consists of a prepared case-study that provides students with the necessary contextual knowledge, a continued active news coverage throughout the semester of the case, and virtual encounters to supplement and complement these narratives.

Case Study - Contextual Set-up

These set-up case-narratives should present students first with the contextual information of the case through the use of previously developed case-studies. Several vendors offer such material already, either in print or in for use in course management programs such as Blackboard. Alternatively, instructors can develop cases themselves in the preparation of the course facilitating information from news articles, books, filmed documentaries, news-reports, etc. Ideally, such a case study should:

- include multiple media (including text, audio, and video) not only to accommodate the special needs of the net-generation students, but also to set up the multiple use of media in the continued treatment of the case;
- include multiple levels of analysis in the narrative;
- provide students with “anchor points” to which they return back in the continued coverage in the case (for example, the case could include a narrative from a certain individual, who later communicates with the class in a virtual encounter).

This initial contextual set-up should be presented to students at the beginning of the course in addition to the theoretical/analytical material (textbook, journal articles, etc.).

Active News Coverage

Throughout the course of the semester, students should stay involved with the case material, through continued exposure to the most recent developments as they are presented in the various channels of mediation. Facilitating tools such as the below discussed Buzztracker allows students not only to stay connected to the case material, but more importantly:

- allows the instructor to demonstrate the effects of different forms of mediation of information, allowing the students to experience these differences first-hand;
- provides opportunities for students to engage in self-, group- or guided-exploratory learning;
- schools students in the effective, differentiated, and thus critical use of different channels of mediated information and thus provides an opportunity to enhance their literacy in a multitude of media.

One freely available software, [Buzztracker](#), has proven a powerful tool way to provide students with an easy, interactive, and yet still powerful tool allowing them to explore the issues surrounding questions of agenda-setting, western-centrism of the news-agenda, especially if used on a regular basis over the course of the semester. It provides the necessary context for students to get a better understanding of global news-mediated awareness (or lack thereof) and the few places that remain at the center of the news and the fluidity of attention on a the global level.

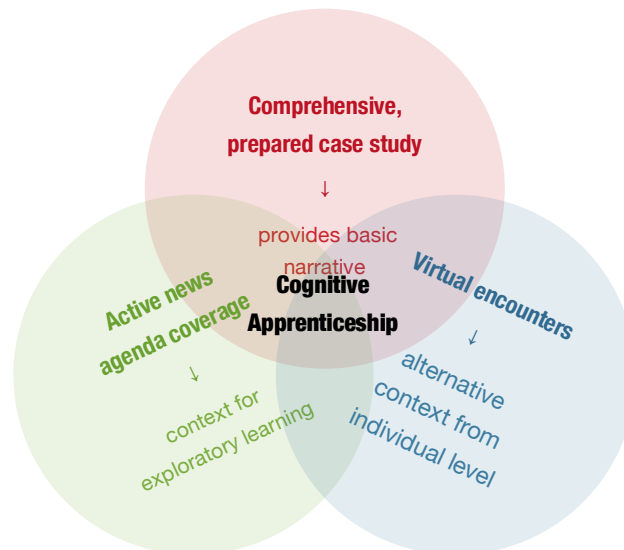
Using this tool, students can experience first-hand the global level of analysis from several angles in a way that speaks to a multiple of literacies: visual orientation and exploration; interactivity allowing exploratory learning, as well as text-based information (from the connected news-articles) that links the course-material to the “real world” as it is experienced by most in a news-mediated fashion.

Throughout the semester, students can therefore develop the necessary skills to move from the domain (factual) knowledge to strategic (analytical) knowledge in their cognitive apprenticeship.

Virtual Encounters (Digital Speakers/ePal Groups)

Complementing the global-level analysis provided in the active news coverage, virtual encounters can build a direct and personal link into this context by establishing an interpersonal link to the case, ideally integrated into the initial case study. This link can take shape in the form of regular interaction with peers (facilitating an infrastructure such as ePals), personal exchanges with experts or activists involved in the case (using technologies discussed in greater detail in this paper), or “student ambassadors” (involving students in an exchange or other program at a partnering institution or even former students). Two main forms of virtual encounters have proven effective in this context:

- **Digital speakers** - individuals who appear in class through an internet link-up (video/audio), much in the same way a guest speaker would in class.
- **ePal groups** or **student ambassadors** - instructors can set up an internet-based link to one or several groups (students, in the case of ePal, but the instructor could also set up a link with other groups, facilitating personal, NGO-based or other infrastructure and links) directly involved in the case. The use of student ambassadors (former students or students engaged in exchange and other programs) have also proven an effective source to establish successful virtual encounters.



Technologies

Videoconferencing

In the past few years advances in VC technology have dramatically reduced the costs and increased the availability of VC as a virtual collaboration tool. There are two primary types of systems in use today -- fixed internet protocol (IP) systems and peer-to-peer server systems. Many universities and research institutions have invested in fixed IP systems, and there are a number of peer-to-peer alternatives available that work on many modern personal computers.

The fixed IP systems require assigned IP addresses that function in a manner analogous to traditional phone lines. In order to utilize these systems, users must have the specific address of the other party, and communications can be established between systems using the IP address. These systems are largely what most people think of when they visualize video conferencing technology -- they typically are installed in a dedicated room that includes a conference table, the camera and speakers, and a video screen. [Polycom](#), the leading vendor of these systems, makes integrated units that allow for a fair degree of flexibility in use. Users can utilize external video recorders and audio recorders in order to provide archival records, and in some cases, additional cameras to include other participants or materials such as whiteboards that can be displayed in a split screen.

A major drawback to Polycom systems is that they typically require dedicated facilities on both sides of a VC, and are relatively costly -- both initially, and in continuing costs, including maintaining a dedicated VC facility. These costs have limited the proliferation of Polycom systems, and in particular make them ill-suited to bridging the global north-south divide.

The proliferation of personal computer-based software clients for VC applications, along with the increasing amount of broadband capacity, represents the greatest area of growth for VC collaboration due to relatively low costs and flexibility in implementation and use. A variety of options exist that use either consumer-level video cameras or [webcams](#) (small video cameras with built-in or attachable microphones that connect to computers) in conjunction with software users can use for free or for little cost. These systems typically utilize servers or peer-to-peer networks, and do not require fixed IP addresses for connecting to one another. This allows for greater flexibility for users, as with a laptop computer, a good webcam, and broadband access, users can participate in VCs in a variety of settings, allowing for the technology's use in classrooms, offices, and other, less conventional settings such as student lounges. This flexibility in VC locations can increase participants' comfort levels, thereby improving the chances that the virtual encounter will be productive.

While there are a number of software options available for VC, in our experience the combination that provides the best video and audio quality combined with the least difficulties in use is an Apple Macintosh computer running OS X 10.4 utilizing Apple's free [iChat](#) software (which utilizes AOL's IM system and protocol). Provided that at least one of the VC participants is using a very recent model Macintosh computer, this combination allows for VCs with multiple participants (a recent model Macintosh is required because multi-party VCs require a relatively large amount of processor power, which is only found in the newer computer models). In addition, a number of low cost third-party software add-ons are available that allow recording of VCs, greater control of focus and lighting, and other enhancements.

Another option that shows promise, especially for multi-platform VCs and ACs, is Sightspeed, a provider of software that works with personal computers running Microsoft's Windows operating system as well as those running Apple's Macintosh OS X. Sightspeed, while not as polished or smooth in use as Apple's iChat, allows users with a variety of equipment and varying operating systems to participate in VCs. As it develops, Sightspeed could provide a good option

for VCs and ACs, especially among groups with diverse equipment collections -- a condition often found in north-south virtual encounters. The ability to send short videomails also enables an easier asynchronous exchange between student groups, but also digital speakers. For example, students could develop questions about a particular issue in the case, prepare video questions (individually or in groups), send them to their virtual encounter partners (ePal groups, student ambassadors, or digital speakers), who can respond to them at a time of their convenience and send back their replies also in video, audio, or text-form.

The combination of high quality and relatively low cost allows VCs to be utilized in a number of ways to facilitate learning and research. Guest lecturers (digital speakers) and ePal groups who are halfway across the globe are relatively easily able to present material and interact with students, students are able to interact with other groups of students on different campuses or in different countries. and researchers are able to collaborate in real time with minimal investment of time or monetary resources. The technologies involved in VC are improving remarkably rapidly, and along with improvements in presentation quality and setting flexibility, these improvements have been dramatically lowering the cost of VCs, making them more broadly available to groups who as recently ten years ago might have found the technologies to be well beyond their financial resources.

Audioconferencing

Many of the above discussed technologies while considered "low-cost" in a global north context, remain still beyond the reach of many of the potential virtual encounter partners, for lack of the necessary infrastructure. This is an important point to take into consideration in the selection of partners, as one of the main aims of these virtual encounters is to provide a voice to those whose voices often remain marginalized.

In recent years the global spread of mobile communication devices¹⁶ as proven an critical antidote to this marginalization. Even in remote areas or parts of the world usually not associated with modern infrastructure, mobile communication has proven to be a digital technology with global ubiquity. Somalia, Afghanistan, and post-war Iraq might lack a stable centralized government, but they can boast of a variety of mobile phone providers. Pre-paid phonecards have not only made it possible to establish this technology in areas without other functioning local credit systems, but even act as credit systems in parts of the global south. The integration of mobile phone networks in the global voice network allows a direct link to literally billions of people around the world for relatively little cost to the user.

Skype (VoIP)

A number of AC technologies exist but one provider stands out in its usefulness in the context of virtual encounters. Skype is a provider of so-called Voice-over-Internet-protocol (VoIP) technology that facilitates an integration of phone services with internet-based forms of audio-based exchanges. Users can talk to each other through the Skype network for free, using their computers, a microphone, and the freely available Skype software. It is also possible to create free voice conferences, allowing multiple users to take part in a virtual encounter at the same time. More importantly, however, it is possible to tap into the existing phone network (mobile or land-based) for relatively low cost. As the caller carries the cost of the communication in most parts of the world, it is therefore possible, to establish virtual encounters with little or no cost to the participants. It would also be possible for instructors to make pre-paid phone cards (and even phone) available to participants for a fraction of the cost of a visit in person. Skype also provides a database of users (who wish to be listed there) that makes it a very useful tool to identify potential partners in virtual encounters.

16 "The Real Digital Divide," *The Economist* (2005). See for an overview of recent developments <<http://www.economist.com/research/backgrounders/displaybackgrounder.cfm?bg=1258181>>

ACs can be facilitated in a similar manner as VCs. It has proven very useful to provide students with a visual image (for example, a picture of the participants pasted into a PowerPoint slide) of the participants in a virtual encounter during the conversation, similar to the use of pictures of correspondents in TV reports who are connected to the host through a phone, rather than a visual link.

ACs can also be useful in the establishment of scholar networks, as they allow for very low cost and multiuser connections for regular exchanges between researchers that might be separated by long distances.

Global Virtual Encounters

A strange effect of the ubiquity of global news and their carrier technologies has been that up to a billion people at times follow a single sports or cultural event but at the same times the voices of millions affected by, say the effects of an earthquake in Pakistan, can easily be drowned out as the news agenda moves quickly on to other, seemingly more important (or commercially viable) items. And even if the spotlight is a certain focal point of interest to us, we are often presented with the similar images of leaders stepping out of planes or cars, at news conferences dominated by carefully crafted, generalized comments.

No doubt, those images are important, as they make up part of our news-mediated collective global reality. And they can be easily substituted with additional channels of information and mediation. But the additional information costs of even basic forms of engaging in such substitution can and often prove to be immense for students trained in different literacies (less text-based, more visual) than those who instruct them. As a result, an approach to provide students with more domain knowledge falls short of the goal of the educator, who hopes to empower students to become expert thinkers as a result of the exposure to the breadth of the presented domain knowledge. After all, haven't we provided the students with the necessary theoretical toolkit, together with hard-hitting real-world examples reaching from the Cuban Missiles Crisis to Iraq? Clearly, they must now yearn to apply these tools in the same manner we do and develop the critical, strategic knowledge pool over the years we wanted to instill in them?

We all know, that this ideal is often far from our experienced outcomes. The reasons for the shortfall are multitude and need to be discussed in a broader context beyond the reach of this paper. The developments laid out above make it even more important to reassess our approach to teaching to take into account the unique characteristics of those we seek to train as. We not only suffer from the traditional generational differences, which can easily be overcome through the model of an apprentice-expert approach to teaching. What is important to keep in mind is the broader change in the information environment we all -- experts, apprentices, and earthquake-affected child in Pakistan alike -- face. If we are serious about our role as experts, we must take into account the changes in literacies our students bring to the table and need to train them not only in the literacies familiar to us, but train attention-deficit-prone, visually-oriented net-generation students as cognitive apprentices to develop the necessary critical skills and move from a mostly domain-knowledge oriented approach to information to one that enables them to engage in strategic thinking. To do so effectively, requires us to "speak" to them in these languages as well. This paper hopes to provide a basis for experts to do just that.

It also aims to facilitate the same digital technologies that shaped the transformation in the literacies of our students for a more inclusive approach to scholarship that helps to transcend the divides between the all too familiar geographical and gender fault-lines.

Bibliography

- Bikson, T. 1996. "Groupware at the World Bank," in C. Ciborra, ed. *Groupware And Teamwork*. New York: Wiley.
- Burgoon, J.K., G. M. Stoner, J.A. Bonito, and N.E. Dunbar. 2003. "Trust and deception in mediated communication," *Proceedings of the Hawaii International Conference in Systems Science*. Kona, HI.
- Daft, R.L. and R.H. Lengel. 1986. "Organizational information requirements, media richness, and structural design," *Management Science*, Vol 32, pp. 554-571.
- Finn, K.E., A.J. Sellen, and S.B. Wilber eds. 1997. *Video-Mediated Communication*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Harmon, J. 1995. "Electronic meetings and established decision groups: audioconferencing effects on performance and structural stability," *Organizational Behavior and Human Decision Process*, Vol 61:2, pp. 138-147.
- Howe, Neil, and William Strauss. 2003. *Millennials Go to College: Strategies for a New Generation on Campus: Recruiting and Admissions, Campus Life, and the Classroom*. Washington, DC: American Association of Collegiate Registrars and Admissions Officers.
- Keisler, S. and L.S. Sproull. 1992. "Group decision making and communication technology." *Organizational Behavior and Human Decision Process*, Vol 52, pp. 96-123.
- Mehrabian, A. 1971. *Nonverbal Communications*. Chicago, IL: Wadsworth.
- Strickland, L.H., P.D. Guild, J.C Barefoot, and S. A. Paterson. 1978. "Teleconferencing and leadership emergence," *Human Relations*, Vol. 31:7, pp. 583-596.
- Wainfan, Lynne, and Paul K. Davies. 2004. *Challenges in Virtual Collaboration: Videoconferencing, Audioconferencing, and Computer-Mediated Communications*. Santa Monica, CA: Rand National Defense Research Institute.
- Weisband, S. 1992. "Group discussion and first advocacy effects in computer-mediated and face-to-face decision making groups." *Organizational Behavior and Human Decision Process*, Vol 53, pp. 352-380.

Appendix: Terms and Sources

Term	Description	Sources
Audioconferencing (AC)	Audioconferencing (AC), or audiochat are terms used to describe two or more parties communicating with each other through audio channels, such as a telephone connection or computer-based audio-chats.	See IM sources
Buzztracker	Buzztracker is a website that visualizes frequencies and relationships between locations in the Google world news directory. It is a very useful tool to provide an instant overview for students of the global news agenda. However, Buzztracker currently only tracks English-language news sources.	Buzztracker < www.buzztracker.org > Also available on RSS feed (for news aggregators). Free.
CADE	<p>Grounded in a 450-year scholastic tradition, the Jesuit attributes of higher education are universal attributes that provide a powerful model for high quality learning. Jesuit education moves the learning experience beyond rote knowledge to the development of the more complex learning skills of understanding, application, analysis, synthesis, and evaluation. Intellectual rigor and critical thinking have long been the hallmarks of a Jesuit education.</p> <p>To support these Ignatian values, JesuitNET developed and now offers its innovative Competency Assessment in Distributed Education (CADE) course design model that uses evidence-centered design to identify and assess student competencies, and cognitive apprenticeship to promote student mastery of higher-level thinking skills. CADE-designed courses focus not only on what students know, but also on what they can do with what they know.</p>	<p>CADE <www.jesuit.net></p> <p>Go to <http://www.jesuit.net/workshop/mod1/nav.html> to view a presentation on the CADE methodology and case study.</p>

Term	Description	Sources
<p>Emoticons</p>	<p>Emoticons are icons used in IM and other CMCs that allow users to convey emotion and add emphasis to their words (examples include :) for happy, :(for sad). Emoticons originated in the early days of CMCs, and there are a very wide variety of expressions that have emoticons. Many modern IM clients come with a set of graphical versions of common emoticons.</p>	<p>Computeruser.com emoticon listing: <http://www.computeruser.com/resources/dictionary/emoticons.html></p>
<p>Global classroom links</p>	<p>There is no need to start from scratch to establish a network to facilitate person-to-person/peer communication.</p> <p>You can also create networks of your own, using for example the following methods:</p> <ul style="list-style-type: none"> • stay in touch with former students and use them as “ambassadors” • contact peers and ask them to cooperate with you • contact NGO workers and ask them to connect you with a local group/class 	<p>ePALS Classroom Exchange <www.epals.com/> One of the leading platforms for global classroom exchanges. Established in 1996. Provides easy-to-use, comprehensive tools, a well-established infrastructure (over 6 million students and teachers, ePALS has 111,642 classroom profiles bringing people in 191 countries), and is multilingual (avoiding English-only biases). Free.</p>
<p>Instant Messaging (IM)</p>	<p>Instant messaging (IM) is a term used to describe real-time text conversations over the internet using client software on individual computers. This is the most common form of computer mediated communication (CMC) used in virtual encounters. There are a number of providers of IM software, most of which offer their products free of charge. A number of these programs also provide AC and VC options.</p>	<p>AOL Instant Messenger: <www.aim.com>. Free.</p> <p>ICQ: <www.icq.com>. Free.</p> <p>Skype: <www.skype.com>. Free.</p> <p>iChat: <http://www.apple.com/macosx/features/ichat/>. Included with Apple Mac OS X.</p> <p>Sightspeed: <www.sightspeed.com>. Free and paid options.</p>

Term	Description	Sources
Polycom	Polycom is a commercial provider of dedicated IP to IP AC and VC equipment. As such, the quality of the technology is stable and reliable, but not ideal in all classroom settings (often they are installed in dedicated VC rooms) and far too costly and impracticable for scholars in the global south.	Polycom: < www.polycom.com/home >
Videoconferencing (VC)	Videoconferencing (VC) or videochatting are terms describing two or more parties communicate through audio-visual aids, such as video-links or video Instant Message (IM) connections.	Polycom:< www.polycom.com/home > Also see IM sources
VoIP	Technology that facilitates data-networks (similar to those that make up the "internet") for voice communication.	The VoIP Wiki: < www.voip-info.org >
Webcams	Webcams are small, highly portable video cameras with built-in microphones that connect to personal computers. They are used in ACs and VCs. Very inexpensive models are available that use USB 1.1 connections, but slightly more expensive models using USB 2.0 (a faster type of USB) or Firewire connections typically provide far better video and audio quality. The use of external microphones should also be considered for better audio. Some webcams provide this option.	Apple iSight: < http://www.apple.com/isight/ >. Logitech (makers of a variety of webcams): < www.logitech.com >. Creative (makers of a variety of webcams): < www.creative.com >