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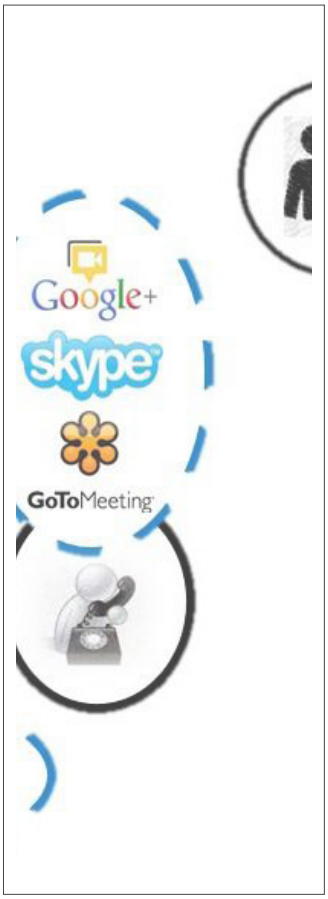
Education and training for globally-distributed virtual teams

Preparing the workforce of the future



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From the editors

EDUCATION AND TRAINING FOR GLOBALLY-DISTRIBUTED VIRTUAL TEAMS

Preparing the workforce of the future

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Keywords. Education, Training, Globally-distributed virtual teams.

The New Model of Work

Today, information and communication technologies (ICTs) allow individuals located in different nations to collaborate almost as easily as if they were located in the same physical office. As a result, globally-distributed virtual teams now support the work of organizations across a spectrum of products and services. Such teams are used by a range of for-profit and nonprofit organizations including businesses, government organizations, military organizations, and educational institutions. These organizations are increasingly employing individuals located in different nations to engage in various types of collaborative work via ICTs.

As a result of these factors, much of the modern workforce is now migrating toward a virtual model of work in which individuals in different locations use online media to collaborate on projects. At the same time, forces associated with globalization are changing the nature of competitiveness in the new economy and prompting more organizations to use ICTs to distribute work internationally. Today's workers, in turn, must often adapt rapidly to virtual

environments and do so with little or no formal preparation in the types of professional communication practices essential to success in such contexts. As a result, individuals working in internationally distributed teams must generally learn from their mistakes, an effective but often costly approach. Moreover, these individuals must also adapt to working in an environment in which they are regularly paired with new colleagues and clients from different nations, cultures, and language groups.

The Need for Training

The modern distributed workplace described here requires employees to account for and address three central factors—technology, culture, and language—in order to succeed in most work-related tasks. An all-important question arising from this global workplace is,

How can we better prepare individuals for this international, online context?

Answering and addressing this question, however, is a more complicated process than it might seem at first.

A 2012 *IEEE Transactions on Professional Communication* special issue on global training reveals, however, that very little information on training—particularly training related to communicating effectively in globally-distributed virtual teams—has been published in the major professional communication journals in the last ten years (Brewer, Tan, & Melton, 2012). Additionally, many employers note that they are unable to provide workers with the training needed to interact effectively in these globally-distributed virtual teams. Brewer's (Brewer, In press) research with communication and engineering professionals, for example, revealed that 68% of the subjects surveyed admitted their employers provided little or no formal training related to working effectively in international online contexts. Additionally, while 17% of the survey subjects noted that their employers provided some form of training in this area, many thought this training was limited in some way. Such issues need to be addressed if educators, trainers, and corporate employers alike wish to prepare adult learners to be successful participants in current (and future) organizational practices and processes.

This special issue on education and training for globally-distributed virtual teams seeks to examine this topic through a variety of articles (research, industry perspectives, and teaching cases) that present different ideas, approaches, and insights on how best to prepare individuals to succeed in this new workplace.

The Contents of This Issue

This special issue begins with Leonard, Sherblom, Withers, and Smith's article reporting their focus group research involving 200 participants who completed a virtual-team training program. The authors' analysis reveals a complex relationship of presence and identity to communication openness and conversational interactivity. Through identifying and examining such factors, their results and analysis contribute to our understanding of the types of training methods that best prepare participants to communicate effectively in globally-distributed, professional communication teams.

Further exploring the effects of presence in virtual teams, authors Weems-Landingham, Rose, and Cook-Euell analyze the importance of availability, presence, and silence and their effects on virtual team communication. The authors point out that understanding the effect culture has on online presence will result in enhanced training and preparation for GVTs, increased collaboration, swifter adaptation, more effective communication, and greater organizational success.

Next, Lin and Yu's industry perspective provides an effective overview of the aspects of globally-distributed work examined by other entries. In this article, Lin and Yu draw from interviews conducted with people working in such virtual teams to identify practices that best facilitate communication in virtual workplace contexts. Through these interviews, Lin and Yu examine technologies for, challenges related to, and success strategies for communicating in virtual teams.

The Lin and Yu article is followed by three teaching cases, the first of which is Hanson's report on an online graduate course she developed to prepare students to negotiate the boundaries of language difference in online contexts. As Hanson explains, through a series of scaffolded explorations, students developed

and implemented strategies for interacting on an internet site using an unfamiliar language. In fact, using Hanson's strategies, students were able to sustain an online conversation in a language with which they were not familiar. Such strategies can hold important implications for how organizations might better prepare their employees to negotiate languages in online teams.

In a second teaching case, Clark,Berardy, Hannah, Seager, Selinger, and Makanda report on the effects of group tacit knowledge in globally-distributed virtual teams. To examine this topic, they observed international students (from the U.S. and Uganda) interacting in a Twitter-based game. The authors then conclude that players who develop tacit knowledge during the game display an increased interpersonal capacity for leadership, empathy, and cross-cultural thinking – all of which enhance collaboration between diverse groups. This teaching case thus yields important insights for developing tacit knowledge in order to improve interpersonal skills in globally-distributed virtual teams.

The third and final teaching case—by Sorensen, Hammer, and Maylath—provides readers with a look into the current state of a longitudinal teaching partnership—the Trans-Atlantic & Pacific Project (TAPP). As part of TAPP, the authors have facilitated global virtual team projects between students in the U.S. and Europe for 15 years. The authors use these experiences as a foundation for discussing how projects can be adapted to diverse disciplines and technologies, how to manage such projects, and the tools participants have developed to aid in project management for this undertaking.

As a whole, this issue provides valuable perspectives and approaches for better preparing individuals to work in and manage globally-distributed virtual teams. We, the editors, hope readers will view this collection of work as a key stepping stone—if not a crucial first step—to understanding how ideas on, attitudes toward, and perspectives of culture, language, and technology can affect how members of different cultures interact in globally-distributed virtual teams. ■

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Research articles

TRAINING EFFECTIVE VIRTUAL TEAMS

Presence, identity, communication openness, and conversational interactivity

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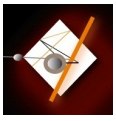
A recent survey of professional communication practitioners (Blythe, Lauer, & Curran, 2014) shows the broad range of technologies they use to collaborate across an equally broad range of topics and communication purposes. Responses to the survey also demonstrate that effective collaboration requires more than versatility in the use of technology. Collaboration requires communication openness and conversational interactivity among work team members. Geographically-distributed virtual teams often find this openness and interactivity difficult to achieve (Jarvenpas, Shaw, & Staples, 2004). Several computer-mediated communication theories suggest the influences of social presence and online identity on team openness and interactivity. The study reported here draws on the insights of these theories to analyze the focus group responses of 200 participants who completed a virtual-team training program. The analysis shows a complex relationship of presence and identity to communication openness and conversational interactivity. A discussion of responses adds to an understanding of the types of training methods that best prepare participants to communicate in geographically-dispersed professional communication teams.

Keywords. Presence, Identity, Trust, Communication, Openness, Interactivity, Virtual teams.



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Effective teamwork requires communication openness and conversational interactivity among team members (Jarvenpas, Shaw, & Staples, 2004). Members of online virtual teams often express concern over a lack of openness and interactivity among members. Such factors can become more pronounced when geographically-dispersed individuals meet to work as teams in online virtual spaces. As a result, individuals can benefit from a better understanding of the dynamics affecting the openness and interactivity of virtual teams.

This article presents the results of a study designed to investigate the relationship of presence and identity to openness and interactivity in virtual teams. The study took a "communication as design" intervention and invention approach to creating a more effective virtual-team communication training program (Aakhus, 2007, p. 112). Communication as design occurs in the intentional creation of specific techniques, ongoing intervention activities, and invention of procedures designed to reshape the possibilities for interactivity within a communication medium. The purpose of the present study was to examine the habits, practices, expectations, and technology uses that participants have built up within a communication medium. The results, in turn, provide us with insights on how to create an intentional design program to actively advance participant knowledge about the influences that shape, structure, and condition the communicative discourse within that medium (Aakhus, 2007). Through examining such issues, individuals can gain a better understanding of the factors that affect interactions in geographically-dispersed virtual teams as well as insights into what training activities can help prepare participants to work in such contexts.

Presence and Identity

Participant presence and identity are important to virtual team communication. *Presence* is a psychological state in which virtual objects are experienced in a sensory way that is associated with a level of interpersonal warmth and intimacy (Lee, 2004). *Identity* includes the presentation of self and trust in how others

present themselves. Identity "is a crucial element for any social interaction" (Junglas, Johnson, Steel, Abraham, & MacLoughlin, 2007, p. 91).

Presence

Presence is a broad term that includes conceptualizations of telepresence, social presence, copresence, and social copresence (Aymerich-Franch, 2010; Lee, 2004). Telepresence describes a person's psychological state and subjective perception as affected by, and filtered through, the technology (Lombard & Jones, 2007; Nowak & Biocca, 2003). Becoming immersed in the reality of a movie or a video game is an example of telepresence. Social presence describes the degree to which a communication medium facilitates social-emotional communication as well as information exchange (Short, Williams, & Christie, 1976). With more social presence, participants can more easily express emotions and develop relationships.

Copresence defines the sense of connection felt with other participants (Nowak, 2001). Social copresence expresses a mutual sense of social connectedness, relational communication satisfaction, and emotional accessibility among participants (Fägersten, 2010). So, with copresence participants feel others are present with them. With social copresence, participants perceive whether those others have similar feelings or emotional responses. Each of these aspects of presence affects how participants present themselves in an online virtual team, the trust they place in the presentations of others, and how much communication openness and conversational interactivity they engage in within the team.

Identity

Establishing an online identity and reputation is also important for participation in a virtual team. The relative anonymity of online virtual worlds, however, can make identity development somewhat difficult (Junglas et al., 2007). Three theoretical perspectives—the social identity of deindividuation effects (SIDE) model (Postmes, Spears, & Lea, 1998), social information processing (SIP) model (Walther, 1994), and hyperpersonal perspective (Wang, Walther, & Hancock,

2009)—consider the influences on virtual identity development. In summary, the SIDE model focuses on the influence of the medium, the SIP model emphasizes the human agency in construction of an online identity, and the hyperpersonal perspective explores the strategic use of the medium in identity construction and relationship development. Together, these three perspectives provide some basic insights into the multiple influences of identity on virtual team communication.

Social Identity of Deindividuation Effects (SIDE). The SIDE model emphasizes two main effects of the reduced social cues/lack of nonverbal cues available in computer-mediated communication (CMC). The first effect is that communicators overemphasize the remaining cues found in the communication style, word choice, paralinguistic peculiarities, and typographic language (Postmes, Spears, & Lea, 1998). For example, to develop their opinions about others, individuals focus on the words used rather than the facial expressions and vocal intonations that are available in face-to-face situations. These cues promote more stereotypic assumptions about a participant's class, gender, race, ethnicity, and social identity in ways that affect group participation and relationship development (Hancock & Dunham, 2001).

The second effect is how visual anonymity decreases a person's self-awareness and increases group identity and conformity (Sassenberg & Boos, 2003). The SIDE model argues, therefore, that by obscuring certain social cues, CMC encourages more stereotypical communication and conformity to group norms (Flanagin, Tiyaamomwong, O'Connor, & Seibold, 2002; Rains, 2007). So, in online contexts, individuals are more likely to go along with a group decision than to think critically about an outcome.

Social Information Processing (SIP). Social information processing focuses on the strategies of communicators who actively engage in CMC. Team members strategically substitute verbal content for missing nonverbal cues and adapt their information-gathering strategies to make use of the medium's characteristics

(Walther, 1994). Common examples of such substitutions include explicit verbal statements of emotion and relationship, such as "I am happy with the outcome" and "I enjoy working together." The relative paucity of vocal and physical cues means that information gathering and communication may be slower, and communicators may require more time to develop interpersonal relationships (Tidwell & Walther, 2002). Active communicators, however, develop those relationships nonetheless (Walther, 1994).

Hyperpersonal Perspective. The hyperpersonal perspective acknowledges the impoverished social cues, use of verbal substitutions, time needed for relationship development, and effects of anonymity (Walther, 1996; Wang, Walther, & Hancock, 2009). Communicators, however, are motivated to be liked by others. Participants, therefore, strategically plan, compose, edit, and review their messages; consider their responses; and strategically manage the social information they present to construct a desirable self-image (Tidwell & Walther, 2002; Walther & Parks, 2002). Hence, participants may show a greater tendency to overstate or exaggerate their professional experience or expertise.

Through a reciprocal process of impression management, group members form mutually-idealized perceptions of each other that encourage more open communication. This open communication can reduce interpersonal inhibitions, facilitate greater self-disclosure, and encourage the development of personal relationships (Pena, Walther, & Hancock, 2007). These relationships further facilitate interpersonal trust, intimacy, affection, and positive emotion in ways that often surpass face-to-face interactions (Robinson & Turner, 2003; Walther, 1996).

These theoretical perspectives recognize that presence and identity are strong influences on virtual team communication. Presence affects a person's communication openness and conversational interactivity within the group. Telepresence with the medium, personal social presence within it, copresence with others, and social copresence in the feelings of mutual awareness and understanding among group members all influence participation in the group.

Identity affects group communication and relationship development in complex ways. The reduced social cues, potentially skewed impressions, and visual anonymity all affect how participants present themselves and get to know each other.

Media Naturalness

Media naturalness, a psychobiological theory, predicts that variations in cognitive effort are demanded by a communication medium based on human evolution (Kock, 2004). Media naturalness thus offers an evolutionary theory that predicts that cognitive effort, time, and experience also play a role in developing virtual team communication (Kock, 2004). According to the tenants of media naturalness, participants use cognitive schema (how people are expected to act) and social abilities (how one should respond) to manage presence and identity. These cognitive schema and social abilities also affect a virtual team's communication openness and conversational interactivity.

Through biological and neurological adaptations, human sensory motor organs and brain functions have become optimized for communication in a synchronous, face-to-face medium that uses auditory and visual cues (Kock, 2005). In essence, the ability to communicate through speech and hearing has become important to human cognitive processing. Consequently, a communication medium that incorporates speech, facial expression, body language, colocation, and synchronicity, appears more natural and facilitates more complex human communication. The less a communication medium incorporates speech, the greater the cognitive effort required to convey and understand each other's meanings. For example, face-to-face conversation is more natural than using the telephone, while the telephone feels more natural than email. The more natural a medium, the more easily people can align their mental schema and coordinate multiple, potentially disparate, meanings through their communication. It is, for example, typically more difficult to accurately interpret a complex relational meaning expressed in an email than in a face-to-face conversation. People can, however, learn the new cognitive schema and social

abilities needed to communicate through a less natural communication medium (DeRosa, Hantula, Kock, & D'Arcy, 2004.) This learning takes time, cognitive effort, and experience (Kock, 2008; Kock, Verville, & Garza, 2007). When people develop these new cognitive schema and social abilities, however, the medium feels more natural and participants become more effective in their communication (Kock, 2004, 2005).

Trust, Openness, and Interactivity in a Virtual Team

Interpersonal trust, communication openness, and conversational interactivity are important to team effectiveness but can be difficult to develop in a virtual team. This is particularly true when the members are geographically-dispersed and have never met. Developing the social presence and online identity of team members can enhance their trust, openness, and interactivity.

Trust

Trusting a team member means believing that person will be responsive, competent, and benevolent as well as show integrity in interactions. Trust is based on an assessment of the potential for violations of one's expectations and develops over time in each person's willingness to take a chance and become vulnerable to the other team member (Feng, Lazar, & Preece, 2004; Himelboim, Laricsy, Tinkham, & Sweetser, 2012; Sarker, Ahuja, Sarker, & Kirkeby, 2011). In face-to-face relationships, trust typically is based on a person's appearance, facial expression, communication style, and social reputation (Morrison, Cegielski, & Rainer, 2012). In geographically-dispersed virtual teams with little or no face-to-face interaction, trust is associated with degrees of presence, identity, and cognitive schema, built up through experiences with the medium (Beldad et al., 2010; Leonard & Toller, 2012). Anonymity, reduced social cues, and optimized messages, when combined with a lack of cognitive schema and social ability, can slow the development of trust in an online virtual team (Beldad, Jong, & Steehouder, 2010; Turilli, Vaccaro, & Taddeo, 2010). Developing this mutual

understanding and trust can be particularly difficult when group members come from diverse backgrounds. An absence of trust negatively affects group communication openness and conversational interactivity (Himelboim et al., 2012; Sarker et al., 2011).

Openness and Interactivity

Communication openness and conversational interactivity are closely related concepts. *Communication openness* describes the level of comfort and ease with which participants share their thoughts, opinions, and emotions in conversation (Ayoko, 2007). This openness is revealed in a person's willingness to self-disclose personal information (Jourard, 1971). *Conversational interactivity* includes both communicator style (i.e., how someone presents information) and responsiveness (i.e., how someone reacts to information that has been presented).

Communicator style involves the degree to which a communicator is contentious, open, dramatic, dominant, precise, relaxed, friendly, attentive, animated, and cooperative (Tu & McIssac, 2002). Responsiveness describes the timeliness, immediacy, synchronicity, rate of information exchange, and feedback of participants in a conversation (Tu & McIssac, 2002). Interactive conversations are more immediate, synchronous, and dialogic.

Communication in a Virtual Environment

In a virtual world, a participant presents and establishes an online identity through an avatar. This avatar is "a manifestation of the self beyond the realms of the physical, existing in a space where identity is self-defined rather than pre-ordained" (Reid, 1994, p. 38). The sophistication in avatar design and perceived realism of the three-dimensional virtual space produce a sense of presence.

Participants meeting in a virtual environment report high levels of social presence as they participate with others perceived by them as avatars (Aymerich-Franch, 2010). Through their avatar-based communication, participants can develop an identity, assess each other's trustworthiness, and engage in

communication openness and conversational interactivity (Leonard & Toller, 2012; Morrison et al., 2012,). In such contexts, participants compensate for reduced social cues, take advantage of the alternative cues that environment provides, and develop group communication that is effective and responsive (Turilli et al., 2010). An individual's verbal and nonverbal communication choices—such as the words, conversational topics, verbal style, avatar appearance, and frequency of interaction—provide explicit and implicit cues. (For example, word choice can set a more formal or informal tone; express class and cultural differences; and provide age, gender, and ethnic background markers.) Through word choice, a person can strategically reveal or conceal personal information to represent an idealized self, present certain aspects of a personal self, and construct an identity that affects group communication openness and conversational interactivity (Adrian, 2008; Gottschalk, 2010).

The study presented here examines the relationships of presence and identity to communication openness and conversational interactivity in geographically-dispersed work groups. The authors used qualitative analysis of focus group data to investigate these relationships as they occur in task-oriented virtual project training teams. The objective of this research was to examine the habits, practices, expectations, and technology uses of participants, and to intervene with a specific set of techniques, activities, and procedures to reshape the communication openness and conversational interactivity for more productive virtual team meetings.

Research Questions

Two main research questions frame this examination.

1. How do geographically-dispersed virtual team members develop a sense of presence, identity (as expressed in self-presentation and trust in others), communication openness, and conversational interactivity?

2. How do differences in the presence and identity of geographically-dispersed team members affect the communication openness and conversational interactivity of virtual work teams?

To address these questions, the authors used a communication as design approach (Aakhus, 2007). Over the course of five years, the team communication projects and activities of a training program were strategically modified, in response to focus group feedback, to provide more positive opportunities for social presence and online identity development. This approach resulted in positive changes to team communication openness and conversational interactivity.

Method

To examine the pattern of relationships among presence, identity, communication openness, and conversational interactivity, the researchers used responses from five focus groups having an average of 40 team members each (*N*=200). All virtual team members enrolled in the training program were encouraged to participate in these focus groups. Institutional Review Board approval was obtained for this study through the first author's institution. The focus groups were held in Second Life® at the conclusion of each of five 12-week projects. Second Life is one of the largest and most well-known three-dimensional virtual worlds used by professional organizations today. Numerous for-profit and non-profit professional organizations, including the American Cancer Society, Coca-Cola, Crescendo Design, Kraft Foods, IBM, Pepsi, Pizza Hut, and Starwood Hotels, use Second Life for geographically-distributed virtual team meetings (Sherblom & Green-Hamann, 2013).

The project leaders of these training programs were well versed in CMC and Second Life. They also had experience with teaching interpersonal and small group communication online. These leaders provided the training sessions on a virtual campus in Second Life. Participants who had no prior experience communicating in Second Life performed a series of individual and team focused professional work-related tasks. These tasks included individual research and

interviewing assignments, group discussion, decision making, problem solving, and report writing summarized as follows:

1. Research assignments included going to Second Life historical sites, libraries, museums, shops, pubs, and nonprofit agencies to explore the values and culture of diverse communities in Second Life. From these visits participants learned the diversity of community values and orientations.

2. Interviewing involved asking Second Life residents about their personal media use. Participants learned to question their assumptions about standards of media use.

3. Each team of four or five members had a specific meeting place in Second Life to discuss their research findings and develop each of two consecutive research reports. The first report was on media use and a second one was on the characteristics and values of a particular virtual community in Second Life. Writing these collaborative reports involved extended online virtual team discussion, decision making, and problem solving. During the first project, participants learned some of the challenges of working and writing together in an online virtual environment. In the second project, they applied their knowledge and honed their skills.

4. Each team made written and oral presentations of their media use and virtual community reports to the larger participant group. These reports provided an opportunity for reflection on initial assumptions about standards of media use, community values, and, more importantly, initial impressions formed of the other members of the virtual team.

At the end of each 12-week project session, focus groups were held. These 40-minute focus groups, held in fall 2008, fall 2010, spring 2011, fall 2011, and fall 2012, were facilitated by a project leader not involved in the training session. Participants in each focus group responded to a series of open-ended questions. See Appendix A for a list of these focus group questions.

Based on responses made in these focus groups, the training leaders collaborated to refine the activities used to increase participant exploration of the virtual environment, research, interviewing, communication, and team-building skills for the next session. In addition, the project leaders introduced changes between the training sessions to the use of communication channels. For example, in the fall of 2008, participants used only text for the projects. In the fall 2010, spring 2011, and fall 2011 sessions, project leaders used audio chat (voice) along with text to provide instruction, while team participants continued to use text only. In the fall 2012 session, each team selected one team participant to deliver voice presentations summarizing their projects.

The authors used a constant comparative method to analyze and thematize the participant focus group responses (Strauss, 1987; Strauss & Corbin, 1990). Each of the authors individually coded the focus group participant comments to identify ideas and themes. Then, in a group meeting, the authors compared and discussed each individual code until consensus was reached over the meaning and thematic placement.

For the purposes of this process, a participant idea was considered the unit of analysis. For example, each of the following utterances expressed an idea as part of a longer statement: "It was hard to get your point across"; "Some people can be more open"; and "Group communication was better in Second Life because everyone felt like they had a role" (see Appendix B). Hence, a participant could offer several ideas within one message or complete one idea across several consecutive messages that were interrupted by comments from other participants (Krippendorff, 2004). This analytical approach allows for the investigation of patterns that emerge in discussion of experiences.

The authors grouped similar expressions into coherent and consistent themes such as participant comments about presence, avatar presence, and telepresence. During the process, the authors compared each new idea to the previously created themes. If an idea did not fit into one of the existing themes, a new theme was created. For example, expressions of concern over another member's anonymity, deceptive self-presentation, and trust between team members became a second theme. Themes with substantial overlap were merged

(Creswell, 1998). Through this coding-comparison-consensus process, four major themes emerged.

Results

The study identified four major themes from the responses of participants in geographically-distributed virtual teams: presence, identity, openness, and interactivity.

1. **Presence**. The first theme includes participant discussions of presence in expressions of embodiment, connectedness to one's avatar, and connection to others.

2. **Identity**. The second theme considers issues of identity, as expressed in self-presentation and trust in the presentation of others. Self-presentation includes concerns over authentic representations of self. Trust in others includes concerns about being deceived and judgments about the degree of commitment and accountability shown by **team** members.

3. **Openness**. The third theme is communication openness as expressed in a willingness to communicate **and** the level of comfort in sharing ideas and opinions.

4. **Interactivity**. The fourth and final theme focuses on conversational interactivity in the rate and amount of contribution, equality of participation, and interactive conversational nature of the team communication.

It becomes clear that social presence and online identity are necessary for communication openness and conversational interactivity. Participant experiences of presence and identity change across the five time periods (fall 2008, fall 2010, spring 2011, fall 2011, fall 2012) and the communication openness and conversational interactivity of the teams change with them. Descriptions of how these themes emerged from each focus group are presented below; see Appendix

B for more examples of participant comments supporting each theme from each focus group.

Fall 2008 (Both project leader and participants use text only for communicating.)
In the fall 2008 focus group, participants show a relative lack of presence as evidenced in statements about it being "harder to connect with others" and "judging the person behind the avatar." This lack of presence connects to concerns of identity and mistrust in the identity of others expressed in comments such as "I don't really know who I am talking to," "it is harder to get to know someone in Second Life because people can be… someone that they are truly not," and "deception is a big factor." These concerns lead to difficulties with communication openness as seen in statements such as "being honest but coming across nice can be difficult" and "you didn't want to make people mad but also didn't want others to take over or not do their part so being honest is necessary at times." Participants described communication as challenging (e.g., "to get your point across you had to say it more than one time" and "I had a difficult time keeping up"). The fall 2008 focus group participant statements focus on the difficulties of group discussion in Second Life and show a lack of social connectedness.

Fall 2010 (Project leader uses voice and participants use text only for communicating.)
Focus group participants in the fall of 2010 still express a separateness and distance from their avatars in comments such as "My avatars don't influence my actual behavior," but indicate somewhat greater presence in talking about being a "somebody" in the virtual team (e.g., "It was weird to be somebody else."). They show an explicit consideration for how they present themselves in the virtual team in statements like "It felt like I was presenting another side of my personality." This interest in presenting an idealized self-image conveys a sense of connection to others, and a greater sense of identity, trust, and level of comfort in sharing their ideas and believing that others are listening (e.g., "I didn't feel as nervous.

The barrier made me more comfortable in expressing my ideas and feelings."). Their concern for getting to know each other shows a change in their perceptions of presence, identity, trust, and openness, even while some conversational interactivity concerns persist. They still comment on their inability to coordinate their talk as a team in comments such as "It was hard to keep up with the conversation sometimes because so many people were typing at once."

Spring 2011 (Project leader uses voice and participants use text only for communicating.)

The spring 2011 focus group participants express more connectedness to their avatars in their use of "I" language, and show more presence in their virtual teams in statements such as "I decided to change my race," "More residents spoke to me when I was a pretty girl," and "I didn't feel like it mattered what I looked like too much." Identity and trust become explicit topics of discussion. This talk focuses on seeing one's avatar as representing a real-world self (e.g., "When my avatar represented my RL identity it was easier to talk to people.") and believing that one can read others' identity cues (e.g., "You get to know them differently. You can find information that they may have not presented to you F2F."). Participants make positive expressions of trust and communication in the virtual team. Communication is seen as open, comfortable, and heard in comments such as "It can be easier to disclose" and "Some people can be more open because they are normally socially awkward but they feel more secure in SL." These positive statements of openness foster honesty in self-disclosure and a sense of getting to know each other. Participants still express some concern for keeping up with the conversation, but describe the communication openness and interactivity in more positive terms (e.g., "It was easy and hard at the same time. It was easy because it easier to be honest about your opinions, but harder because it takes longer for a response.").

Fall 2011 (Project leader uses voice and participants use text only for communicating.)

In the fall of 2011, participants express a presence with their avatars and with others in the virtual team. Their statements contain an increased use of "I" when talking about the avatars, showing an increased presence and identification (e.g., "I was more outgoing as a fox than as a human," "I made my hair green," and "I felt more comfortable in skin that looked like mine."). Their self-presentation statements such as "you got to know your group members" and "have to trust that someone will actually do their part on time" focus attention on team tasks, getting to know others, and expressions of trust. They show a greater level of comfort in exchanging ideas ("everybody had ideas and wasn't afraid to say them"), more humor in their communication ("we put a lot of humor in our chats"), and less embarrassment ("messing up was never embarrassing"). They convey standards of professionalism for team interactivity and expect others to respond in a timely manner in statements such as "If it takes too long to answer I find it unprofessional" and "Responding quickly makes things more efficient." Their statements indicate their greater willingness to communicate more openly and also reveal more conversational interactivity in faster, more spontaneous responses.

Fall 2012 (Both project leader and participants use text and voice for communicating.)

The fall 2012 focus group responses show a change in the conceptualization of presence with a recognition of the communication differences that occur at different locations in Second Life such as "I found that the perception of my avatar, and myself as a user, varied based on location in addition to avatar appearance alone" and a concern for the impressions they personally make on others: "I found myself worrying about whether I was boring or annoying the people I was interviewing." Identity statements include concerns over being perceived as a "newbie" (a Second Life novice) and an increase in identification as a group and more trust and comfort with members of the group (e.g., "Personally, I felt more comfortable and trusting and "the group started to trust and be more

open to one another."). Recognizing subtler differences in location, as well as appearance, shows the influence of experience on identity, which affects interpersonal trust, openness and interactivity on the team. The more the team works together, the more members become comfortable, relaxed, and willing to share ideas. Participants describe greater conversational interactivity in a willingness to work together ("We started working together more than individually."), strategically confirming each other's ideas ("Group communication was better in SL because everyone felt like they had a role and had to confirm when someone talked."), and making decisions as a team ("We made decisions as a group.").

Discussion

The focus group responses show a pattern of interrelated differences in participant presence, identity, trust, communication openness, and conversational interactivity. When participants perceive more presence, they also express greater identity in presentation of self and in trust of others. With greater presence and identity come team communication openness and conversational interactivity.

A summary of the focus group results shows that in fall 2008 there is a lack of presence and trust along with difficulties in team communication openness and interactivity. Fall 2010 shows a greater sense of presence and identity is expressed, and there is an engagement with the medium and concern for others as well as an increase in communication openness and concern for the process of interactivity rather than just the mechanics of communicating. In spring 2011, a greater sense of self-presence, identity of the self, and of the social presence others emerge along with an increase of communication openness and interactivity demonstrated in higher rates of disclosure and lively discussion. Fall 2011 demonstrates an even greater sense of presence and identity through strategic choices in self-presentation and getting to know team members as well as an increase in communication openness (humor and lack of embarrassment) and interactivity (quickness of responses, coordination of talk, expressions of honesty, and expectations of professionalism). Finally, the fall of 2012 presence is

presented in terms of "being there" with others. Identity roles are expressed in appearance, accountability, comfort, trust, and the ability to work together in this virtual environment. Communication openness, expressed through the sharing of ideas, making contributions, and expressing concerns, becomes more relaxed and comfortable as the team works together. This conversational interactivity is perceived as leading to better team decisions. Communicating through the virtual medium may slow down their sharing of ideas, but respecting the roles, developing explicit expectations of others, and achieving a common group goal gets easier with experience.

This changing pattern of responses across the five focus group sessions shows a growing sense of presence and identity. With greater presence and identity come more interpersonal trust, communication openness, and conversational interactivity. The 2008 participants express concerns over the reduced social cues and visual anonymity. As the social identity of deindividuation effects model suggests, this concern leads to an expressed anxiety for the potential of deception and comparatively less trust, openness, and interactivity in the team. The 2010 participants focus on active, strategic means of presenting themselves and for gathering information about other participants. The 2011 participants shift the conversation further to a self-presentation of their real-life identities.

As social information processing predicts, these teams express increasingly less concern with deception and focus more on ways of strategically gathering information from the multiple available sources in the medium as a way of getting to know team members, although these methods are somewhat different than those used in face-to-face relationships. Following a hyperpersonal perspective, the spring 2011 participants describe editing their social cues and self-presentations, getting to know other team members in a positive way, and trusting those others to do their part of the work. The 2012 participants move beyond these self-presentation concerns to expressing a desire of not wanting to bore or annoy their fellow participants. Media naturalness theory argues that these changes in presence and identity represent shifts in the cognitive interpretive schema enacted by participants.

As participants learn new cognitive schema and social abilities appropriate to the communication medium, they become more comfortable in their relationships and shared understandings. This increased level of relational comfort leads to more interpersonal trust, which stimulates greater team communication openness and conversational interactivity. The increased openness and interactivity, in turn, create a more efficient and effective communication medium through which team members can better get to know each other, and more easily coordinate and manage their multiple meanings.

The training program developed in ways that helped participants explore individual, personal, social, geographic, and cultural differences in media use. For example, various training sessions involved interacting with a Canadian university group, a Norwegian military organization, and an instructor presenting an online lecture while being physically located in Beijing. Group discussions after each of these sessions sharpened participant focus on personal-cultural assumptions and the need for explicit communication to negotiate multiple, diverse understandings. Even among geographically-dispersed team members within the same cultural group, the need to strategically use the medium to generate greater communication openness, conversational interactivity, and coordinated team member understanding became apparent. Learning to expect differences in understanding, rather than assume implicit agreement among team members, and finding ways to explicitly discuss those differences in assumptions and orientations became key aspects of the training program.

Conclusions

The purpose of this study was to create a more effective virtual-team communication training program by using a communication as design intervention and invention approach (Aakhus, 2007). The intent was to design and modify an ongoing set of practices, procedures, and intervention activities for use in the communication medium that facilitate participant knowledge of the influences that shape, structure, and condition communicative discourse in virtual teams.

The human process of communication is not distinct from the medium within which it takes place (Fenwick, 2010). There is a relationship between the human action and the technological context that affects the online communication and knowledge sharing within the potentialities and affordances of the technology. Participant assumptions and communication medium factors influence a virtual team's communication and interactivity in ways that affect team development and knowledge sharing (Majchrzak, Faraj, Kane, & Azad, 2013). Participant knowledge, skill, and expertise cannot be isolated as single elements or dimensions of the larger communication system. Shared team understandings and ways of interacting constantly emerge through the communication, and the influences of the medium continuously interact with that emergent process in ways that bring forth that shared understanding. Professional communication practitioners can enhance the effectiveness of their communication within the medium by using specific communication strategies that make use of those influences.

Communication is key to training geographically distributed virtual team members who meet in online environments. An effective training program must influence the communication patterns in ways that validate participant contributions and construct positive group dynamics within that medium. The present results show that

1. Improvements in a participant's skills in using a technology and changes in expectations for communicating through that technology can facilitate team communication. These changes in skills and expectations are necessary but not sufficient to establish greater presence, identity, trust, openness, and interactivity.

2. Experience and expertise with a medium, however, can improve a participant's sense of presence, identity, trust, openness, and interactivity through the formation of more effective cognitive schema and social skills in using the medium.

3. Participants who develop these skills, experience greater presence and identity, and demonstrate more communication openness and conversational interactivity.

4. A training program that focuses on specific virtual communication strategies that describe the communication choices made, and explicitly explores the resulting thoughts, feelings, and perceptions of participants, can facilitate the development of an online presence and identity.

5. A training program in which participants are held accountable for thinking about communicating strategically and encouraged to listen to diverse opinions develops a better sense of mutual trust that facilitates participant motivation to collaborate in virtual team decision making.

6. Encouraging reflective virtual team observation, such as explicitly describing an experience from multiple perspectives, imagining how others might interpret the event, and considering alternatives, helps develop a complex cognitive schema among team members.

7. Training participants to pay attention to issues of social presence and online identity facilitates their cognitive schema development in ways that benefit team communication openness and conversational interactivity.

8. Actively evaluating the communication behaviors that occur in the virtual team; describing the strengths, weaknesses, and influences of the medium when communicating through a technology; considering the resulting group dynamics; and reflecting on ways to improve team decision-making and problem-solving, help to build communication openness and conversational interactivity.

The present study's results demonstrate the development of participants' abilities to use the technology and, through explicit reflection on their assumptions and expectations of communicating through that technology, facilitation of a greater sense of presence, identity, trust, openness, and interactivity. The "communication

as design" intervention activities and tasks employed in the present project included both individual and team chores that helped participants become more familiar with communication in Second Life. The individual tasks were designed to facilitate participant development of their own sense of presence and identity within the medium. The team tasks provided participants the opportunity to develop a sense of presence, identity, and online reputation within the presence of others with whom they worked. These activities improved the participant ability to collaborate with others in the virtual environment. Both the individual and team activities helped build communication skills so team members experienced the medium as more natural, and their collaboration became more effective and efficient within the team.

Today's professional communication practitioner must choose both an appropriate communication medium, including the simultaneous use of multiple technologies, and the communication strategies to engage in each stage of a team's collaboration. To choose the best medium, today's professional communicators must become broadly knowledgeable and competent in the use of technology, but technological proficiency alone is not sufficient. Increases in personal knowledge, experience, and skill with a medium can lead to a reduction in CMC apprehension, an increase in motivation, and an ability to communicate through the medium in ways that positively affect presence, identity, openness, and interactivity (Sherblom, Withers, & Leonard, 2013).

Communication training programs that go beyond just developing expertise with a medium and facilitate communication presence and identity can foster more effective personal cognitive schema, social skills, group communication openness, and conversational interactivity in a virtual team. Training programs that include activities designed to specifically develop participant awareness of others can increase that sense of presence and identity. Explicit training exercises that use guided experience and growth in expertise with the medium can increase virtual presence and online identity. Consistent with media naturalness theory, as participants perceived the online environment as a more natural communication medium, they reported an increased sense of presence, identity, trust, openness, and interactivity. This, in turn, facilitated team

communication openness and conversational interactivity, and team decision-making and problem-solving effectiveness followed.

Limitations and Future Research

There are, of course, limitations to this study that should be considered along with these implications. The present results provide strong evidence of a relationship among presence, identity, trust, openness, and interactivity, but given the nature of the present study, a causal relationship cannot be established at this time. To better understand the complexities of relationships and influences, future studies should explore the causal relationships among presence, identity, trust, openness, and interactivity more fully. ■

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Appendices

Appendix A: Focus Group Questions

Directions: Please have a seat. We're going to get started with general questions and comments about the collaboration projects.

1. Describe your experience communicating with the other residents of Second Life (SL) using your avatar.
   - Did other SL residents communicate differently with you based on your avatar?
   - Why do you think there were differences in the communication?
   - Why do you think there were no differences in the communication?

2. Let's move to any comments you have about each of the team projects you completed. How would you describe your team's communication during the team project?
   - What worked well in terms of the team's communication on the project?
   - What were the challenges to team communication on the project?
   - How did your team overcome those challenges in the project?

3. During the second team project, did your team's communication change now that you were an established team? How?
    - Any changes in the team's dynamics?
    - Use follow-up questions as necessary to get specific examples.

4. What did you like about communicating in Second Life (SL)?
    - How do you think SL compares to face-to-face (FtF) communication? How does SL compare to other forms of computer-mediated communication (CMC)?
    - Can you think of situations in the future in which using SL might be advantageous?

5. What did you not like about communicating in SL?
    - What are the disadvantages to communicating in SL?
    - What strategies did you use to try to overcome these disadvantages?

6. Did you choose any other technology (in addition to Second Life) to communicate with your team during these projects? If so, which media did you choose, and why?

7. How did you feel about communicating using the combination of text and voice?

8. How did you feel about the use of voice for the team presentations?

9. If you logged in to Second Life from home (or elsewhere), how did that affect your communication with the team?

10. How will your experience here help you adapt to new technologies in the future?

11. Any final thoughts? Thank you for the feedback.

Appendix B: Sample of Focus Group Participant Comments[1]

Focus Group Participants (N = 200)	
Presence	
Fall 2008 (n=33)	We get to be cartoon characters. We still have stereotypes, because in SL you are judging the person behind the avatar, you are judging the avatar. It is harder to connect with others. I think that I felt more connected with [others] in RL.
Fall 2010 (n=37)	It was weird to be somebody else. My avatars don't influence my actual behavior.
Spring 2011 (n=52)	I decided to change my race. More residents spoke to me when I was a pretty girl. People were more likely to talk to me when I was skinnier. When I looked like the Kool-Aid man my interactions were more superficial. I didn't feel like it mattered what I looked like too much.
Fall 2011 (n=38)	People were much friendlier to me when I was a robot avatar. More people talked to me when I was a girl. I was more outgoing as a fox than as a human. I made my hair green. I felt more comfortable in skin that looked like mine.
Fall 2012 (n=40)	People could totally tell if you were a newbie. I found myself worrying about whether I was boring or annoying the people I was interviewing. It might just be the location because some people were talking to me the same when I was a male as when I was a female.... It might just be some places are more uptight. Much easier to get people to talk to you as a female. I found that the perception of my avatar, and myself as a user, varied based on location in addition to avatar appearance alone.

[1] Note: CMC = Computer-Mediated Communication; F2F = Face-to-Face; IM = Instant Message; RL = Real Life; SL = Second Life.

Identity/Trust	
Fall 2008 (n=33)	I think it is harder to get to know someone in SL, because people can be anything and they may be someone that they are truly not. I don't really know who I am talking to. Deception is a big factor. All those aspects makes it hard to know what people were thinking or their personality.
Fall 2010 (n=37)	It felt like I was presenting another side of my personality. It was more who I really am. It was more like the "ideal" me. There was no "getting to know you" phase as in RL, which saved time, but might have us feel less accountable to each other. I think I would always doubt whether or not I "knew" someone in SL.
Spring 2011 (n=52)	When my avatar represented my RL identity it was easier to talk to people. There were a lot of identity cues that people would bury in their profile description if you took the time to read them. You get to know them differently. You can find information that they may have not presented to you F2F.
Fall 2011 (n=38)	You got to know your group members. I couldn't tell who the other person really was. You really had to divide up the work and hope everyone did it well. Have to trust that someone will actually do their part on time.
Fall 2012 (n=40)	Personally, I felt more comfortable and trusting. Yea, we gained trust for each other which lead to us working better together. The group started to trust and be more open to one another. I think a team has a better sense of accountability and a better grasp of the way things need to run in order to be efficient in their work. We knew everyone's roles and there was more trust that was established.
Communication Openness	
Fall 2008 (n=33)	It was hard to get your point across and not sound mean at the same time. It is hard to type criticism because it does sound mean. Being honest but coming across nice can be difficult. You didn't want to make people mad but also didn't want others to take over or not do their part so being honest is necessary at times.

Fall 2010 (n=37)	I felt I was more apt to speak up here than in a RL. I didn't feel as nervous. The barrier made me more comfortable in expressing my ideas and feelings. It was like hiding under the table but your voice is being heard at the front of the table... (ha, ha). In face to face I get really nervous that group members will think my ideas are stupid...in CMC, I can't tell if they think my ideas are stupid, so I feel more open about sharing. CMC was better for me than F2F because I felt like everyone listened to me.
Spring 2011 (n=52)	Some people can be more open because they are normally socially awkward but they feel more secure in SL. It can be easier to disclose. More open than face to face. People were generally open. There was the shield (anonymity). Not having to worry about being face to face made it much easier. Easier to disclose information.
Fall 2011 (n=38)	You can say a lot without consequence. People have fewer qualms about being blatantly rude. Everybody had ideas and wasn't afraid to say them. We put a lot of humor in our chats. We were really comfortable with one another. People are more apt to throw ideas out I think. You could say things or bring up topics you might not face-to-face. Messing up was never embarrassing.
Fall 2012 (n=40)	The more we worked together the better the communication was. We were already more comfortable with each other. Everyone's expectations were aligned for the last project so communication wasn't a huge issue. People were more willing to share ideas, contribute, express concerns, etc. The more we worked together the easier things became. We became pals! There was more camaraderie. We were able to joke around more and still get work done. We were much more relaxed on the second project. People were more likely to participate.

Interactivity	
Fall 2008 (n=33)	There can be more information and communication presented in little time. There were times that to get your point across you had to say it more than one time because it may have been something that someone skipped over reading, or was too busy typing that they missed it. I had a difficult time keeping up. It was hard to keep up with the conversation sometimes because so many people were typing at once.
Fall 2010 (n=37)	I feel like [text] chat made it hard. We can all talk at once, and sometimes stuff gets lost in the shuffle. Just coordination really, you would try to establish roles or make a decision but some people aren't reading the logs and then when you go to make a final decision someone has an issue because they didn't agree.
Spring 2011 (n=52)	It was easy and hard at the same time. It was easy because it easier to be honest about your opinions, but harder because it takes longer for a response. In SL it was hard to have group discussions because you couldn't keep track of everyone typing and talking. Everyone talks at once. So many different conversations and topics were being discussed at once. Sometimes the discussion would be going three different ways.
Fall 2011 (n=38)	If I was late or something, I could quickly IM them. Synchronous [communication] didn't have to wait for responses. Sometimes comments got lost. If it takes too long to answer I find it unprofessional. Responding quickly makes things more efficient.. It's easy to delay response.
Fall 2012 (n=40)	Group communication was better in SL because everyone felt like they had a role and had to confirm when someone talked. It was difficult at first, I think, because we were trying to understand the style of each group member. I think CMC slowed us down as far as sharing thoughts, ideas, concerns, etc. We started working together more than individually. The more we worked together the easier things became. We made decisions as a group. As a group you work to gain a common goal, but as a team you learn to divide work and get an effort that allows everyone to be proud of their work.

	CMC gives you more time to think and say what you are thinking, while trying to respect the expectations of others. Communication between all of us was really good. It was a good process; Everyone communicated well.

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NEGOTIATING AVAILABILITY WITHIN GLOBAL VIRTUAL TEAMS (GVTs)

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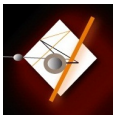
This paper explores the relationship between culture and negotiating availability within global virtual teams (GVTs). Dimensions from the GLOBE (Global Leadership and Organizational Behavior Effectiveness) research program are used to theorize the effects that four cultural dimensions (Uncertainty Avoidance, Power Distance, In-group Collectivism, and Gender Egalitarianism) have on articulating availability within GVTs. Research (Panteli, 2004) on articulating presence in virtual organizing suggests that availability (i.e., an individual's presence and willingness to commit to interdependent work) is not scripted or mandated, but negotiated among the members of a virtual team. Better understanding the impact that culture has on articulating presence will result in enhanced training and preparation for GVTs, increased collaboration, swifter adaptation, more effective communications, and greater organizational success.

Keywords. Global virtual teams (GVTs), Articulating presence, Negotiating availability, Culture, GLOBE, Communications, Uncertainty avoidance, Power distance, In-group collectivism, Gender egalitarianism.

This paper explores the relationship between culture and the negotiation of presence within GVTs. In particular, it looks at four cultural dimensions from the GLOBE Research Program: Uncertainty Avoidance, Power Distance, In-Group



Collectivism, and Gender Egalitarianism to understand varying ways in which GVT members negotiate availability. The purpose of this article is to understand how each dimension impacts the articulation of three states of availability (Panteli, 2004): *present availability, absent unavailability, and silenced availability*. After which, best practices for negotiating availability are proposed. In order to achieve this end, we provide a brief overview of key concepts, review the hypothesis and methodology enlisted, discuss cultural dimensions, and hypothesize their influence on articulating presence. Finally, we conclude by offering best practices for negotiating availability within GVTs.

An Overview of Key Concepts

Global Virtual Teams

Global virtual teams (GVTs) are comprised of groups of culturally and geographically dispersed individuals working interdependently to complete a specific task or tasks (Jarvenpaa & Leidner, 1999; Maynard et. al., 2012; O'Hara-Devereauz & Johansen, 1994; Walther, 1995). These individuals typically possess the expertise needed to complete the assigned tasks related to a given project. However, knowledge alone does not predetermine success for the overall group. Success is instead dependent upon a number of factors, including the ability for group members to work collectively in order to accomplish clearly stated and mutually accepted interdependent goals (Javenpaa et al., 2004; Kankanhalli et al., 2006, Saunders et al., 2004). Virtual global work begins when the members of a group communicate their availability and willingness to participate in a common project or activity.

Cultural differences in communication style can complicate GVT formation (Egan et al., 2009; Liu et al., 2008; Ruppel et al., 2013). Initial efforts must be made to clearly communicate availability before team formation can proceed (Baba et al., 2004; Lee-Kelley & Sankey, 2008; Weems-Landingham,

2009). It is only after members articulate their presence, availability, and desire to participate that the work can begin.

Articulating Presence & Negotiating Availability

Panteli's (2004) study on articulating presence serves as a framework for understanding the need to communicate presence within GVTs. This work suggests that availability is neither scripted nor mandated, but negotiated among members. Panteli (2004) found that these negotiation efforts result in three separate and distinct states: present availability, absent unavailability, and silenced availability.

The first and most desirable state is *present availability*. Here, members articulate their availability and willingness to participate in a GVT (e.g., "Yes; I would be willing to participate."). *Absent unavailability* is the next desired state, and potential members articulate, through various methods, their unavailability and/or unwillingness to participate (e.g., an email response noting that they are unable to provide the required support). As a result, team formulation moves forward by pursuing other resources needed to complete interdependent tasks. Finally, *silenced availability* is the least desired state. In these cases, potential members do not respond to inquiry at all. They instead remain silent to requests for assistance and membership, and this state proves problematic as it hinders GVT formation. (In essence, team members continue to wait for a reply that does not come, and team formation and interaction are put on hold.)

Within a GVT context, silence lacks the cues needed to interpret meaning—that the lack of response means "No; I am not interested in participating." By default, this silence promotes misinterpretation and leads to frustrations and a sense of lack of commitment (Panteli & Fineman, 2005). The interpretation of silence, however, is reliant upon culture. For example, the Japanese view silence as a sign of respect (Gudykunst & Nishida, 1984; Morsbach, 1973; Sano et al., 1999). Also, evidence suggests that members of eastern cultures often regard silence as appropriate, and subordinates consider it a show of respect when receiving emails from superiors (Lee, 2002; Straub, 1994).

The critical importance of Panteli's work is not simply indicating the various ways we articulate presence, but is also uncovering the process of negotiating it.

Culture & Articulation

One way to look at individual differences and the effects they can have on articulation of presence across cultures is to first acknowledge cultural differences. For the purposes of this article, *culture* is defined as learned beliefs, values, rules, norms, and traditions which define the way of life for a group of people (Gudykunst & Ting-Toomey, 1988). People differ in many ways, and culture is merely one of them. While embracing cultural differences allows us to communicate more effectively, we must caution that overreliance on inflexible generalities can lead to counterproductive behavior (e.g., prejudice and stereotypes).

Several well-known studies have been conducted to determine how individuals differ in terms of communication expectations across cultures (Hall, 1976; Hofstede, 1980 & 2010; McClelland, 1961; Trompenaars, 1994). Of all the research, Hofstede's (1980 & 2010) cultural dimensions have received the greatest acclaim and criticism. Hofstede became renowned for raising awareness of the effects cultural differences have on work-related values and practices. Hofstede's work described five cultural dimensions: uncertainty avoidance, power distance, future orientation, individualism-collectivism and masculinity-femininity. While critics (e.g., Ailon, 2008 & 2009; McSweeny, 2002a & 2002b) are quick to highlight the perceived limitations of Hofstede's dimensions, his research remains an important pillar to our understanding, exploration, and application of culture to everyday life.

In his work, Hofstede (2010) discusses the use of and expansion of his cultural dimensions, and he warns that researchers should be modest in their uses of these dimensions to construct representations of cultures. He further states that these dimensions do not "exist," writing the following:

> Dimensions should not be reified. They do not "exist" in a tangible sense. They are constructs, "not directly accessible to observations but inferable from verbal statements and other behaviors and useful predicting still other observable and measureable verbal and nonverbal behavior" (Levitin, 1973:492). If they exist, it is in our minds – we have defined them into existence. They are supposed to help us in understanding and handling the complex reality of our social world. If they cannot do this they are redundant. (Hofstede 2010: 1344-1345)

In sum, Hofstede is saying cross-cultural dimensions are not necessary truths but ideas, constructs instrumental to understanding and predicting cross-cultural communication practices—particularly in global virtual environments.

GLOBE Research Program

No research has been more comprehensive in studying cultural difference than the GLOBE research program initiated by Robert House in 1991 (House et al., 2004). This effort involved 160 investigators across 62 cultures and studied 17,000 managers within 950 organizations. The purpose of the project was to understand cultural differences affecting cross-cultural interactions and effectiveness. The GLOBE studies, in essence, expanded Hofstede's work to nine dimensions impacting the success of cross-cultural interaction (see Table 1).

In this paper, we explore four of the nine GLOBE dimensions (Uncertainty Avoidance, Power Distance, In-Group Collectivism, and Gender Egalitarianism) to bring continuity, understanding, and construct knowledge, and to further our understanding of negotiating availability in GVTs.

Table 1

The GLOBE's Nine Dimensions Impacting Cross-Cultural Interaction

Uncertainty Avoidance	The extent to which a cultural group relies on preestablished norms, rules and rituals to prescribe behavior. This dimension promotes the idea that some cultures communicate in a more structured, ritualistic, and predictive manner than do others.

Power Distance	The extent to which a cultural group accepts the unequal distribution of power among members. This dimension promotes the idea that some cultures communicate differently based upon money, prestige, status, and other perceptions of power.
Institutional Collectivism	The extent to which a cultural group values organizational interests over that of the individual. This dimension suggests that some cultures communicate with greater concern for the group's interests than do others.
In-group Collectivism	The extent to which a cultural group values pride, loyalty, and cohesiveness within the group. This dimension promotes the idea that some cultures communicate because of loyalty, devotion, and commitment to the group while others may not.
Gender Egalitarianism	The extent to which a cultural group accepts and promotes gender equality. This dimension suggests that some cultures minimize gender differences or consider gender a nonissue when communicating while others do not.
Assertiveness	The extent to which a cultural group accepts confrontation and aggressiveness behavior as a norm. This dimension suggests that some cultures communicate more assertively and forcefully than do others.
Future Orientation	The extent to which a cultural group engages in behavior associated with future planning and delayed gratification. This dimension promotes the idea that some cultures are more planned when communicating while others prove more spontaneous and focused on the present.
Performance Orientation	The extent to which a cultural group rewards members for performance outcomes. This dimension suggests that some cultures associate communications efforts with outcomes and performance rewards while others may not.
Humane Orientation	The extent to which a cultural group encourages and rewards members for being fair, altruistic, and kind to others. This dimension suggests that for some cultures communications are expected to be kind, fair, and socially supportive. This may not be true for others.

Hypothesis

This paper explores the relationship between culture and the negotiation of availability within global virtual teams (GVTs). It hypothesizes that culture impacts GVT members' negotiation and articulation of availability. In order to be effective, culturally and geographically disbursed members must communicate by sending and receiving messages using information and communications technologies (ICTs). At its onset, this process involves negotiating availability. Collaboration proceeds when members articulate a *present available* status. Negotiation continues when prospective members indicate *absent unavailability*. Failure results when prospects remain silent or nonresponsive.

While the GLOBE study puts forth nine cross-cultural dimensions associated with cross-cultural collaboration, we consider four to be the most salient in terms of examining GVTs. These four dimensions are

- Uncertainty avoidance
- Power distance
- In-group collectivism
- Gender egalitarianism

We decided to focus on these four dimensions in particular because they inform us as to the processes and behaviors within teams widely studied in the fields of business, psychology, sociology, anthropology, political science, education, and communications. Understanding these group dynamics helps explore the influence of culture on the negotiation of availability in relation to the initial attempts to form groups and participate in effective GVTs.

To illustrate this relationship, we look at and hypothesize the influence these four dimensions have on the articulation of availability: *present available*, *absent unavailable*, and *silenced availability*. To this end, the research reported here seeks to answer the research question: How do cultural differences in uncertainty avoidance, power distance, in-group collectivism, and gender egalitarianism influence the negotiation of availability with GVTs?

Discursive-Articulation Methodology

To achieve the goals of this research, we used a method of "discursive-articulation" in which the literature from one significant area of study is intertwined with the literature from a separate area of study (Rose, 2015; Foucault, 1984; Brown, 1977; Bourdieu, 1977; Habermas, 1971). The use value of this method is to reinvigorate an area of study that can significantly impact social praxis and values. The areas of cultural studies, critical sociology, and political studies have utilized elements of discourse and articulation to reveal an understanding of cultural practices and values (e.g., Blommaert & Bulean, 2000; Habermas, 1984; Hall, 1980; Gramsci, 1971; Rose, 2015; Rose, 2012). In this case, the purpose of using this approach was to identify everyday practices that a range of audiences can use in negotiating availability within GVTs and how they are initially formed. In studying negotiated availability and examining the cultural factors in those negotiations, this methodology is both appropriate and valuable in the construction of knowledge, perspectives, and culture in GVTs.

Cultural Dimensions

The following sections apply the methodology of discursive articulation to explore the influence that 1) uncertainty avoidance, 2) power distance, 3) in-group collectivism, and 4) gender egalitarianism have on negotiated availability within GVTs.

Uncertainty Avoidance

Uncertainty avoidance is defined as the extent to which members rely on preestablished norms of behavior, rituals, and procedures to avoid the unknown (Hofstede, 1980; House et al., 2004). Cultures that are high in uncertainty avoidance (e.g., The Netherlands, Sweden, and Germany) use strict rules, guidelines, and procedures to make availability more predictable and less uncertain. Those cultures that are low in uncertainty avoidance (e.g., Poland, Albania, Ecuador, and Morocco) do not rely on prescriptive approaches to

articulating availability. Group members from these low uncertainty avoidance cultures are therefore more apt to use unstructured rules, guidelines, and procedures that make availability less predictable and more uncertain.

In these situations, individual personality and/or local improvisational norms may play a role in shaping the exchanges. In the end, we find that members from cultures high in uncertainty avoidance are more likely to articulate/respond directly with language indicating *present available* or *absent unavailable*. These articulations will lead to more effective outcomes for those GVTs with that makeup provided these GVTs are comprised of individuals from different cultures. When GVTs contain members low in uncertainty avoidance, there is a likelihood that *silenced availability* may result because standard methods and procedures for communicating availability are less likely to exist. For these reasons, we suggest that a level of flexibility along with additional communication and collaboration efforts be enlisted to ensure quick and easy confirmation of member availability and commitment.

Power Distance

Power distance is defined as the extent to which members agree that it is acceptable for personal and position power to be unequally distributed (Northouse, 2013). Cultures high in power distance accept and agree that not all members should have power. When interacting in GVTs, individuals from such cultures will tend to segregate members and expected articulations in accordance with organizational status, power, authority, and position. Those teams comprised of members high in power distance assume varied responsiveness and alter communications tactics accordingly depending on the known status of the individuals participating in the GVT. Those cultures low in power distance (e.g., Denmark, Finland, and Sweden) do not vary inquiries and tactics. Instead, they use a relatively uniform approach for interactions, regardless of the status of those participating in the group. This unilateral approach may cause issues with member buy-in and commitment. Why? Because those unconcerned with power will often

articulate present and/or absent unavailability, while those high in power distance may remain silent, expecting more personalized communications efforts.

In-Group Collectivism

In-Group Collectivism is defined as the degree to which GVT members express pride, loyalty, and cohesiveness within their team and organization (Northouse, 2013). Cultures high in this dimension (Taiwan, Guatemala, Panama, Venezuela, Columbia, Indonesia, Pakistan, Costa Rica, Peru, and South Korea) have a sense of belonging which mediates responsiveness to inquiry in order to maintain ties to/membership in the community. Thus, they will most likely articulate presence out of commitment and obligation to the collective. Those low in collectivism (e.g., New Zealand, Ireland, Switzerland, and Denmark) will be less likely to respond because they lack feelings of connectedness which promote loyalty, commitment, and enhanced communications efforts. When members possess smaller degrees of devotion, additional communication and collaboration efforts including use of power may be needed to ensure that availability is clearly articulated. For example, individuals might have to use mutually accepted personal and professional networks as means to gain access and responsiveness from these individuals.

Gender Egalitarianism

Gender egalitarianism measures the degree to which GVT members accept gender inequality. Cultures high in it (e.g., Greece, Hungary, and Finland) minimize gender differences and promote same treatment regardless of members' biological sex. High gender egalitarian cultures have more women in positions of authority, less occupational sex segregation, similar levels of educational attainment for males and females, and afford women greater decision-making roles in community affairs. GVTs comprised of members with high gender egalitarianism do not expect or condone differences in communications and responsiveness based upon gender. Communications efforts are the same for both

men and women. Presence, in turn, is articulated based upon dimensions outside of gender.

Those cultures low in gender egalitarianism (e.g., Egypt, Kuwait, and Turkey), much like power distance, embrace varied responsiveness and communications tactics. In these cultures, individuals communicate with men and women differently. Women, for example, will most likely be expected to articulate their presence, availability, and commitment. Men, by contrast, will be afforded the luxury of remaining silent and require more espoused communications efforts.

Best Practices for Negotiating Availability within GVTs

While critics have clearly highlighted weaknesses in the way researchers have used certain cultural dimensions, the facts remain: People differ across cultures (Hofstede, 1980 & 2001; House et al., 2004). These differences require that we alter our cross-cultural communications efforts in ways which facilitate adaptation, increase collaboration, and enhance effectiveness (Egan et al., 2009; Lin et al., 2014). In this section, we offer suggested best practices for managing uncertainty avoidance, power distance, in-group collectivism, and gender egalitarianism when communicating across geographically and culturally dispersed boundaries. While we caution against using generalities to bias expectations (i.e., Alion, 2008), we embrace the possibility that enhanced awareness will promote greater success. The following are best practices associated therein.

Negotiating Presence

When communicating within GVTs, it is important to begin by developing a basic understanding of the team's cultural makeup. This includes a list of members, country of origin, and cultural cluster (e.g., Sub-Saharan African, Eastern Europe, Middle East, Latin America, etc.) according to GLOBE (House et al., 2004). This independent work will help members develop a perfunctory understanding of the team and provide valuable insight before attempting to communicate.

A cultural awareness will assist members in developing communications strategies. Checking culture-based assumptions, however, will be paramount to successfully negotiating availability. Remember, culture is one aspect of individual difference as is personality, race, age, ethnicity, etc. A deeper understanding of diversity will be important to obtain an accurate perception of GVT makeup.

Finally, GVTs must establish expectations regarding the articulation of presence. This means developing measures for and rewarding responsiveness. Members will be more apt to negotiate availability if they know that doing so is expected. Establishing methods for avoiding uncertainty, managing power distance, increasing commitment, and promoting equality will ensure members know what needs to be done, their role in it, and what others expect.

Addressing Uncertainty

GVT members from cultures relying heavily on preestablished norms of behavior will be more likely to negotiate their availability. Those low in uncertainty avoidance may not. All can benefit from the establishment of procedures and processes which ensure the articulation of presence (e.g., using out of office email attendant, implementing standardized voicemail messages indicating availability, using scheduling tools, responding to messages within an allotted time frame, etc.). Swift collaboration results by communicating expectations up front. Communicating to those individuals from cultures that are high in uncertainty avoidance should be emphasized in order to increase the comfort level of those individuals. When communicating with those low in uncertainty avoidance, keep it brief, clear, and to the point.

Managing Power Distance

GVT members from cultures condoning unequal distribution of power among members may be more likely to remain silent when negotiating availability. Silence, however, is not always an indicator of lack of commitment. Instead it may be a cue that additional efforts are needed. Additional communications efforts

might include those listed in Table 2. Those low in power distance may be more apt to negotiate availability and share information more willingly.

Collaboration efforts for those high in power distance should be customized to eliminate bureaucratic power structures without compromising flexibility needed to effectively manage the flow of information across borders.

Table 2

Communication Strategies for Working with Silence

Customizing or individualizing communications	To do so individuals could move away from drafting standard emails and instead customize emails for particular members/audiences.
Establishing clearer lines of communications	To do so individuals could clearly define GVT member goals, roles, and responsibilities. Establishment of expectations could be written into a team contract in which all members participate in creating and sign in agreement.
Enlisting media choices which circumvent power structures	To do so individuals could enlist the use of discussion threads, wikis, and other tools which make the use of power less apt.
Exploring more readily available subject matter expertise	To do so individuals could develop and use knowledge bases as opposed to relying solely upon individual member expertise.

This approach means incorporating ICTs that address members' communications needs and circumvent biases. For example, one could develop discussion boards to facilitate equality of input on the part of all members. An understanding of the task (i.e., who is involved, what information they need, where they reside, why they have been selected, what tasks need to be accomplished, and how work will be conducted) will facilitate the negotiation of availability and exchange of information critical to success.

Enabling Commitment

GVT members from cultures which express pride in membership, loyalty, and commitment will be more apt to articulate a *present available* status when they feel connected to the team. Thus, efforts should be made to ensure they feel included at the onset. To the contrary, those low in in-group collectivism will not feel bound to the team and thus have an affinity toward *absent availability* or *silence*. Collaboration with these individuals may require interventions to build relationships and foster a sense of belonging. Efforts might include integrating team building activities throughout the lifecycle of the team, discussing and celebrating short-term wins, enlisting informal communications to develop trust and camaraderie, and integrating ICTs which aid in developing personal connections (e.g., pictures, Facebook, Instagram, etc.).

Promoting Equality

GVTs whose makeup consists of cultures that accept gender inequality may experience problems with men being nonresponsive to women. In these instances, guidelines and rules of engagement must be communicated to ensure responsiveness. The ground rules might include those listed in Table 3.

Table 3

Suggested Rules for Engagement for Teams with Varying Perceptions of Gender Inequality

Clarifying cultural differences	This objective can be achieved by being aware of culture-based gender bias and ensuring that it is not taken personally but communicated openly to minimize its impact. Asking team members to complete a short survey or participate in a blog/wiki where knowledge is shared about cultural differences that team members might know about, have experienced, or wish to keep from experiencing.

Setting expectations regarding nonbias responsiveness	This objective can be achieved by developing guidelines which ensure members communicate and respond to all members, regardless of gender and other biases. Guidelines can be produced from survey responses of team members or participation in a blog/wiki. It is important to produce and share these expectations in writing, emails, or on a shared website/blog that is open to all team members to review and comment.
Articulating consequences	This objective can be achieved by articulating expectations and consequences associated with biased behavior. Team members can be asked on a team contract to develop consequences and agree to follow the guidelines and accept consequences.
Establishing procedures for addressing concerns	This objective can be achieved by developing methods for bringing problems to light and creating effective solutions. For example, provide instructions or protocols for team members for when concerns might arise.

Conclusion

In conclusion, culture affects communication and collaboration within all teams. This effort is compounded when working within global virtual teams as culture alters how members code, communicate, and decode information. This paper highlights four dimensions from the GLOBE research program: uncertainty avoidance, power distance, in-group collectivism, and gender egalitarianism in attempts to better understand their relation to articulation of presence. Through this examination, we conclude that GVTs comprised of members high in uncertainty avoidance are least likely to be silent yet available. They will articulate presence in accordance with personality traits when in mixed company. Those members and GVTs adhering to power distance and gender inequality will most likely need to alter communications efforts to ensure articulation of presence and commitment when membership is varied (hi and low). Finally, those from more

collectivist cultures will be less likely to be silent articulating availability due to a sense of loyalty and commitment.

An understanding of best practice for negotiating availability will enhance training and preparation for GVTs. Knowledge on negotiating presence, avoiding uncertainty, managing power distance, increasing commitment, and promoting equality will increase the awareness of individuals participating in GVTs, and this awareness of expectations and behavior differences allows for divergent views to be acknowledged and challenged when needed. This knowledge will also allow swifter adaptation due to this increased awareness and clearer approaches to communications needed to accomplish interdependent goals. More effective communications will result from the ability to more readily discern availability and commitment early on. Finally, greater organizational success will arise when members understand and accept difference, for doing so helps to establish clear, mutually accepted, interdependent goals and formulate GVTs in a timely fashion. ■

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Focused commentary and Industry perspectives

A MANAGER'S BEST PRACTICES TO COORDINATE GLOBALLY DISTRIBUTED TEAMS

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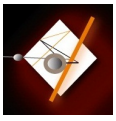
The Modern Workplace

Every morning, Lucia (all names used in this industry perspective are pseudonyms) stops by the Adolfo café in downtown Montevideo to get a small latte to go. She gets to the office and logs onto Lync, her client's choice of instant messenger. Her office is quiet this early in the morning because her officemates are not yet in, but Lucia's colleagues on her project are already hard at work. They just happen to be in a different time zone. In fact, they're in a different country. Lucia tries to align her schedule as much as possible with that of her team located in Chicago, and that means being online a few hours prior to her usual office hours in Uruguay.

Lucia works for an international consulting firm where she is a quality assurance analyst for software, websites, and mobile apps. Her fluency in English allows her to work with a multitude of English-speaking firms, such as the one in Chicago. Lucia's situation is not unique. It is estimated that approximately 29% of the global workforce in 2013 was considered to be anytime, anywhere information workers (Schadler, 2013). An array of mobile devices—smart phones, tablets, and laptops—enables employees to be connected at all times. Software such as



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WebEx, Skype, and GoToMeeting has replaced face-to-face meetings and the need to be located in the same time zone, much less the same physical office space. All this access translates to teams who are able to work and collaborate remotely.

Although this plethora of connectivity, devices, and tools promises to make working on international teams seamless, managers of such teams face other challenges. The typical workforce is no longer homogenous in terms of cultural background, language, and customs. While corporate culture certainly exists in many companies, it may not translate across teams who are located in different offices, cities, and countries (Adler & Gundersen, 2008).

In many cases, such as Lucia's, her teammates are not even in the same company. Although her manager in Montevideo may be sitting a few cubicles away from her, Lucia's success depends on her client; and she gets her direction from the development manager in Chicago. And that manager may be responsible for team members across various offices and countries in addition to Lucia in Uruguay. What can managers working with globally distributed teams do to ensure success for their teams?

In this article, we present the results of interviews we did with a number of global workers; the purpose of these interviews was to determine what might be steps managers can take to facilitate effective communication in globally distributed virtual teams. In addition to the Uruguay-based quality assurance analyst Lucia, we interviewed a number of other individuals who regularly work as a part of globally distributed teams. These individuals are an Israel-based engineer working for a Chicago-based software company and several U.S.-based user experience designers from the financial services industry and the electronics industry.

Methods

Our interviewees were chosen for their experience working in globally distributed teams. Lucia, who works for an agency in Uruguay, mainly supports a team based in Chicago, Illinois. Bill and Tara, U.S.-based interaction designers, frequently

work with teams located in international corporate offices. And lastly, Anna, an American software engineer who moved to Israel, telecommutes in her work with an otherwise U.S.-based team.

The interviews focused on how these industry practitioners communicate and collaborate with virtual team members. In conducting the interviews this way, we examined the technologies they use, the challenges they encounter, the success they have, and their suggestions to management on how to prepare employees for collaborating with globally distributed team members. (See the appendix for interview questions.)

Interviewees provided written feedback to the interview questions. Because all interviewees are fluent in reading and writing in the English language, the questions were provided in English; all of them also chose to provide their feedback in English. These professionals' advice intersects as five practices, which we explain in greater detail.

Practice 1: Form Relationship Action Plan

Our interviewees suggest that when a new team forms and a new project starts, managers need to help team members get to know each other, reach consensus about the team's goals and milestones, and understand each team member's responsibilities. These tasks should be addressed at a kickoff meeting before the onset of the project. This initial "face time," as Lepsinger and DeRosa (2010) write, is crucial for building trust among team members from the get-go, before any negative sentiments or behaviors occur.

If meeting and interacting on site is simply not possible, our interviewees suggest having someone experienced with the project virtually sharing their knowledge with remote team members to fill them in on project details. Such knowledge sharing can take the form of writing up best practices and placing them on a wiki or holding a teleconference. At the same time, managers should strive to create social space online to build interpersonal relationships. Settle-Murphy (n.d.) suggests dedicating an hour to hold a virtual kickoff meeting for members to talk about their background, family, interests, etc. for team bonding.

But what if it's an ongoing project? When a new team member is inserted into a project midstream, how does one know whom to ask what question and when? In order to get new members off to a good start, Ritesh Idnani, CEO of Seamless Health, gives every new executive two weeks to interview people who are "important to know" about all aspects of the company and the job (Ferrazzi , 2014).

This exercise can also benefit individual contributors to a team, particularly those who will be working with colleagues they will never actually meet face to face. Almost every interviewee, when relating their experience of working on a globally distributed team, commented on the cultural differences that cause unexpected issues. As Lucia (personal communication, 11/14/2013) says, "Cultural differences are an obvious challenge when working with international teams. Usually nobody tells you how the culture is, you have to learn on your own." Meeting new colleagues over the phone or even Skype one-on-one for a brief introductory session as part of an onboarding process can help alert team members of cultural homework they may need to do (e.g., noting cultural differences in and researching the etiquette for communication). It can also help alleviate the pressure of learning the culture in the moment.

Each new member should also be given the opportunity to learn and gather knowledge about people's roles and responsibilities prior to the need arising under a deadline. Reporting what they have learned at the end of the two-week period to their manager would provide new members an unofficial deadline to this assignment and help them share with their manager what they have learned as well as address any outstanding questions that they still may have.

Practice 2: Establish Communication Cadence

For Bill (personal communication, 11/14/12), a user experience designer in the financial services industry, one of the challenges working with remote stakeholders was all the time spent planning design sessions. These sessions are meant for collaboratively establishing a design approach for a new initiative. Delaying these meetings held up important decisions. "I wish I'd known more

about the amount of lead time that is needed in planning design sessions with stakeholders in other locations," says Bill. "Planning weekly or even daily meetings at the start of a project goes a long way toward making sure you have time set for regular communications."

As a project gets rolling, issues and questions inevitably arise. If the team is located in the same place, it's fairly simple to walk over to someone's desk and get an immediate answer. It's also possible to have impromptu meetings and, in Bill's case, ad hoc design sessions. However, within a global team, prompt responses may mean a day's delay and it's virtually impossible to have an ad hoc meeting with more than two people involved.

A manager can help prevent such uncertainties by setting expectations about the right amount of status meetings at the right time and by making such factors clear at the beginning of each project. Although independent information seeking or problem solving via instant messenger, email, and phone calls is still possible (despite the time differences), it can be very useful to get everyone in a meeting together to provide updates and voice roadblocks before they impact the project and workflow.

These meetings should not be considered as mere opportunities to solve problems and therefore only scheduled when problems arise. Rather, they should be thought of as opportunities to share knowledge. Research suggests that virtual teams, more so than local teams, find it important and beneficial to share knowledge (Lin, 2011). Knowledge sharing in virtual teams also enhances team members' team commitment, and both factors ultimately will enhance job effectiveness (Lin, 2011). To enhance knowledge sharing, teams can have a daily short status meeting if they are in time zones that overlap or weekly meetings if that makes more sense to the project team. Whichever cadence is chosen, the manager should set the expectation early on to get everyone on the same page. According to Lapsinger and DeRosa (2010), this should be one essential task to assess and determine during the project kickoff meeting.

Practice 3: Establish Tools for Asynchronous Communication

Synchronous communication such as VoIP and teleconferencing are commonly used by virtual teams. These communications can disseminate urgent messages (Brown, Huettner, & James-Tanny, 2006) and are useful for simultaneously focusing team members' attention to make decisions or reach agreement (de Almeida & Duranti, 2012).

At the same time, if people are not in the same time zone and have different work schedules, team members often will not be able to have real-time communication to get immediate answers to questions or provide updates on a regular basis. In these cases, asynchronous communication becomes important. Asynchronous communication can be as simple as using an online tool that securely archives documents and discussion threads. This process allows team members to access saved information at their leisure and to take time to compose or process information (de Almeida & Duranti, 2012). As such, it is more effective for task-focused activities such as sharing code and design (Serçe, Swigger, Alpaslan, Brazile, Dafoulas, & Lopez, 2011, p. 500) and may be particularly appreciated by members who are not communicating in their primary language (de Almeida & Duranti, 2012).

When selecting asynchronous tools, one should consider tools that are able to present complex verbal and visual information and support collaborative authoring and editing. The tools chosen should include features such as the ability to:

- Construct discussion threads.
- Search archived information.
- Upload documents in various formats.
- Ideally, allow real-time collaboration.

There are many such tools available at low and, sometimes, no cost, for example, forums and bulletin boards, wikis, intranet, FTP, and various file-sharing software

(Brown et al., 2006). Some of these tools are also capable of tracking revisions, which makes collaborative authoring easier. Wikis, for instance, maintain revision histories so documents can be restored to a previous version if needed (Brown et al., 2006). Likewise, both paid and open-source software (e.g., SVN or Git) are available and allow version control in document sharing and collaborative editing. Team members will frequently discover their own tools and try to explore or experiment with these tools on their own. As a manager, however, it would help to establish and encourage a common set of tools to ensure that all members have access to the software and hardware and can access the work being done (for reference even if they are not directly involved).

Once the tools are chosen, do not assume that they will continue to work; or, if the company already has its common set of tools, do not assume that they necessarily work or work for all involved. Instead, a manager should periodically check in with team members and be open to experimentation. Tara (personal communication, 11/12/13), a designer for an electronics distributor, learned that email and WebEx are not necessarily the most efficient way to communicate. But using a tool like Conceptboard allowed her greater flexibility. Conceptboard is an online tool that allowed Tara and her team to sketch out designs and share them with remote members across multiple continents and time zones. It also allowed them to save the concepts with annotations to refer to later, so that colleagues didn't have to be participating in real time. As Tara says, "I assumed we'd have robust communication in place given that we regularly work with colleagues in Singapore but there wasn't one. I'm glad I suggested Conceptboard. It's been really helpful."

Practice 4: Learn to Empathize

Managers often wear many hats. Being attuned to their team's performance health is certainly one of the important tasks. Being mindful and listening to team members along the way is important to staying ahead of any issues that may be arising and to having ample time to correct the course. Being mindful is challenging even when everyone is in the same location. How does one attain this

receptive stance when team members are not sitting together or meeting face to face? Body language is lost in emails and instant messages, tones can be fuzzy to discern in web meetings, and language barriers and unparalleled cultural norms compound how one may interpret team members' reactions. Though these are challenges that one cannot avoid when working with globally distributed teams, our findings suggest that being empathetic to cultural differences can help managers cope with them.

Empathy is the ability to manage someone with his or her own unique point of view in mind, an ability that is positively related to managers' job performance (Gentry, Weber, & Sadri, 2010). In virtual teams, team members' points of view will frequently be seen through a cultural lens to which a manager may not always be immediately privy. Broadly defined, a cultural lens may include many different perceptions regarding workflow and habits, organizational hierarchy, and norms of interaction. Therefore, it's important to understand cultural nuances and, instead of seeing them as communication limitations, leverage them to relate better to each team member and foster collaboration across all team members. In Gentry et al.'s (2010) words, an empathetic manager in today's workplace is someone who is able to "cross organizational and cultural boundaries" and "create shared direction, alignment and commitment between social groups with very different histories, perspectives, values, and cultures" (p. 3).

Interviewees noted that a manager should have one-on-one meetings with each team member on a regular basis and listen to his or her issues. It is important to encourage team members to voice concerns when they seem reluctant to do so. Remember that not all team members necessarily share the same cultural assumption or company culture that encourages them to feel free reporting problems without feeling it is their own fault for allowing the problems to arise in the first place. For this reason, it may be helpful to set up an anonymous system through which team members can submit their concerns if they are reluctant to come forward to the manager directly. Managers can also periodically survey their team, anonymously if need be, to gauge whether the globally distributed members are running into any issues and if the tools they are using are functioning as intended.

Anna (personal communication, 11/12/13), an Israel-based software engineer working with a U.S.-based firm, had once felt disconnected with her team members and found that she was consistently playing catchup on her projects. After much hesitation, she approached her manager. Her manager listened to her concerns and, understanding her unique situation, including time difference, connected her with other remote employees who helped her understand some of their techniques and resources that she was able to apply to her own practices with success. "I wasn't sure I can share these challenges I was having at the time with my manager, but in retrospect, I should have done it sooner," says Anna.

Being empathetic alone, as Earley and Peterson (2004) say, is not enough. Managers need metacognitive skills of understanding and learning culture (Earley & Peterson, 2004). This skill is not merely about having specific cultural knowledge or examples. Rather, with globally distributed and multicultural teams, it is more important for managers to have the ability to incorporate new cultural information, to inductively understand new cultural situations, and to continuously reflect upon their own cultural knowledge (Earley & Peterson, 2004, pp. 106-107). If a manager lacks personal experience with virtual teams, a particular method to develop these metacognitive skills is to turn the tables around and learn from team members who have been successful in global projects in the past. Leading by example, successful managers know to encourage experienced colleagues to share those experiences, possibly with the entire project team.

Practice 5: Share Leadership

When managers consciously and continuously practice empathy and learning, they can start to foster a style of shared leadership—whether they or their companies name it as such. Shared leadership is found to be particularly relevant for managing dispersed teams. According to Muethel and Hoegl (2010), in virtual teams, team members reside at different locations and have different information bases, so they are each uniquely positioned to identify issues and changes as well

as initiate actions. Moreover, Muethel and Hoegl find that, if encouraged by the management, each team member will not only monitor his or her own tasks and contribution but that of other team members, urging them to take actions that they otherwise may not.

Shared leadership is also especially relevant for teams in the technology industry who practice the Agile development methodology, which is an iterative and lightweight approach to software development (VersionOne, 2014). Within the Agile development methodology, each project team is dedicated to one product and functions as a self-organizing and self-managing entity. Team members collectively divide the product features into smaller chunks, determine deadlines for each feature, and use continuous coding-testing-release to incrementally refine the product (VersionOne, 2014). The goal is to go through the development life cycle in small, iterative steps and release software updates and new features faster.

Within the Agile methodology, managers play the role of facilitators, especially in a globally distributed team. Although the team determines its own cadence for delivery, a manager can identify any issues arising and ensure the team's success by sharing leadership and relying on each team member to take action and accountability.

Conclusion

Regardless of everyone's cultural background and work style, chances are they share one thing in common: they want to succeed and do their job well. In this article, we interviewed several distributed global workers and proposed several best practices for their managers. These practices include forming a relationship action plan, establishing communication cadence, identifying communication tools, and being an empathetic facilitator who shares leadership. By following such practices, managers can help ensure the success of their globally distributed teams. ■

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Appendix

Interview Questions

1. Briefly describe your role: what industry are you in, what are your main work responsibilities, and what are some of your daily tasks?
2. How much do you correspond with people who are located in different parts of the world? Who are they and where are they located?
3. What's the nature of your correspondence and work with these globally distributed teams: E.g., what media do you use to communicate (email, Skype, teleconference, or something else still)? What do you communicate about? And how frequently do you communicate?
4. What are some of the challenges you face in communicating and working with globally distributed teams? Are these challenges caused by technology, time differences, cultural differences, or anything else still? Do you have a bad experience to share?
5. On the other hand, what are some things that work well for you in communicating and working with globally distributed teams? What do

you believe are the reasons for these successes? Do you have a success story to tell?

6. What is the one thing you wish you had known when you first started working with globally distributed teams that you know now?
7. What do you think companies like yours can do to better prepare employees for working with globally distributed teams?

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Teaching cases

PREPARING GLOBALLY DISTRIBUTED VIRTUAL TEAM MEMBERS TO BRIDGE BOUNDARIES OF LANGUAGE DIFFERENCE

A graduate program teaching case

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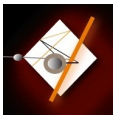
This teaching case describes an elective course in an online graduate program in technical and professional communication at the University of Wisconsin-Stout. The course was developed to prepare students to negotiate the boundaries of language difference. The theoretical framework for the course was based primarily on translingual literacy theory (Canagarajah 2009a; Horner, Lu, Royster, & Trimbur, 2011), which challenges the monolingual orientation to communication that is prevalent in the United States. Course topics included language change, writing systems, World Englishes, editing for global audiences, and contrastive rhetoric. Through a series of scaffolded explorations, students developed and implemented strategies for interacting on an internet site using an unfamiliar language.

Keywords. Translingualism, Language difference, World Englishes, Workplace writing, Globalization, Virtual teams, Machine translation, Experiential learning.

Members of globally distributed virtual teams are likely to encounter language difference among team members because such teams are culturally diverse (Angouri, 2013; Brandl & Neyer, 2009; Fredriksson, Barner-Rasmussen & Piekkari, 2006; Gibbs, 2009). The language difference might be limited to variation in pronunciation or word choice, such as occurs between Australian



English and British English, or it might be as extensive as the difference between German and Mandarin Chinese. Even though English is widely used as the *lingua franca* of electronically-mediated global communication (Duff, 2005; Newton & Kusmierczyk, 2011), the performance of global teams may be hindered by the lack of English language proficiency of one or more team members (Chen, Geluykens, & Chong 2006; Fredriksson, Barner-Rasmussen & Piekkari, 2006; Louhiala-Salminen & Kankaanranta, 2012).

Language difference within globally distributed virtual teams may result from geographical separation, but due to the increasing transnational flow of ideas, resources, and people, the teammates who use different languages may be located in the same home office (Dutton, 1998; Roberts, 2010; Ryan, 2013; Thomas & Gregory, 1993; Vertovec, 2007). Effective, inclusive workplace communication thus requires that members of globally distributed virtual teams possess attitudes, strategies, and language technologies that will help them to bridge language differences.

This teaching case describes an online graduate course that was developed and taught at the University of Wisconsin-Stout to prepare students to meet the challenge of communicating in multilingual environments. Drawing on research and insights from three academic fields—technical communication, applied linguistics, and rhetoric and composition—the course prepared students for an unusual culminating assignment in which they achieved sustained interaction on a non-English-language blog or online forum. This teaching case explains how it was possible to prepare students to communicate across language difference, and it highlights the positive learning outcomes that resulted from the assignment. The Appendix and References sections provide materials that can be adapted for use in a range of educational settings.

Theoretical Framework

The theoretical framework for the course relied primarily on translingual literacy theory (Canagarajah, 2009a; Horner, Lu, Royster, & Trimbur, 2011), which is an alternate approach to thinking about language difference. It is an approach that

attempts to more accurately describe what actually happens in real-world communication among people who do not share a strong command of the same language. The course design also drew upon the scholarship of World Englishes (Jenkins, 2009; Kachru, 1992) in order to provide a global context for the language that would be most familiar to students, English. Finally, basic theories of contrastive rhetoric (Connor, 2002; Connor, Nagelhout & Rozycki, 2008; Thatcher, 2004), and technical communication (Bokor, 2011; Ehrenreich, 2010; Fraiberg, 2013; Holdaway, 2010; Kohl, 2008) guided the course's focus on written communication. To integrate such theoretical perspectives into the course and to prepare for the final project, students discussed a range of cross-disciplinary readings and explored language features and language technologies. In the final project that challenged them to achieve sustained interaction on an internet site using an unfamiliar language, students not only learned about translingual literacy theory, they put it into practice.

Defining Translingual Practice

Translingual practice refers to both written and oral communication in which people who may not be native speakers of the same language employ all of their language knowledge and their full range of communicative resources to achieve mutual comprehension. In other words, it describes communication that is not limited by the notion of a person having one "native language." Translingual practice includes the strategies, languages, signs, and genres that people can use to communicate effectively in global contact zones. This approach to communication sees language difference as a resource more than a barrier. For example, Canagarajah (2013c) describes a code-meshed, "unconventional" essay written by a multilingual student in a U.S graduate course as one example of translingual practice in written communication (p. 1). Likewise, he points to a successful transaction between a Catalan-speaking passenger and an Italian-speaking cab driver as an example of translingual practice in oral communication (p. 4).

Other labels have been used by scholars across the disciplines to refer to cross-language meaning-making in language contact zones (Bailey, 2007;

Blommaert, 2008; Canagarajah, 2006a, 2009b; Creese & Blackledge, 2010; García, 2009; Jacquemet, 2005; Jørgensen, 2008; Pennycook, 2010; Pratt, 2010; Young, 2004). In addition, the term *translingualism* has been used by a range of scholars who might interpret the term in slightly different ways. This teaching case relies on the meaning of translingual practice as developed in a series of publications by Canagarajah (2006a, 2006b, 2007, 2009a, 2009b, 2011, 2013a, 2013b, 2013c, 2014) and on the similar definition articulated collaboratively by leading scholars in the field of rhetoric and composition (Horner, Lu, Royster & Trimbur, 2011). The reason for this choice is that these early and rigorously developed definitions of translingual practice focus on written and oral communication in academia and the workplace.

Translingual Literacy Theory

Translingual literacy theory is rooted in applied linguistics research and has also received significant theoretical attention among writing specialists in the field of rhetoric and composition (Canagarajah, 2013b; Horner, Lu, Royster, & Trimbur, 2011; Horner, NeCamp, & Donahue, 2011). The translingual paradigm acknowledges that communication across language difference is a normal occurrence throughout the world (Canagarajah, 2009a). It seeks to discover and promote effective strategies for cross-language communication and to recognize and amplify the meaning-making that language difference affords. As Horner, Lu, Royster, & Trimbur (2011) assert, "[A translingual approach] sees difference in language not as a barrier to overcome or a problem to manage, but as a resource for producing meaning in writing, speaking, reading, and listening" (p. 303). Thus, a translingual orientation requires a shift in perspective, one that may challenge people who have been educated to believe that the only means for cross-language communication is reliance on translation or achieving native-like proficiency in the relevant languages.

A translingual perspective relies on the foundational assumption that communication is social. Meaning is not constructed by one individual and then transferred to another individual; it is a social activity. As Canagarajah (2014)

notes, "Translanguaging is social. My successful communication depends on you." This idea grows out of research into the ways that multilinguals negotiate meaning when conversing in English. This research shows that participants in multilingual conversations work together to achieve intelligibility (Canagarajah, 2009a, p. 19). As Canagarajah (2009a) demonstrates, the term *translingual* exists not only as an adjective or as the noun *translingualism*, but it has also come to be used as a verb, *to translanguage*. It is something people do, when needed.

Translingual practice is not the only solution to the problem of cross-language communication. It will not replace translation or make learning foreign languages obsolete. It also does not eliminate the very frequent need to produce grammatically perfect discourse. Nevertheless, including translingual practice in the repertoire of communication practices does conflict with a monolingual orientation to communication because it rejects the expectation of linguistic homogeneity and standardization in every communicative situation. For this reason, a translingual orientation is not always readily accepted among educators despite its widespread application in practice.

Translingual literacy theory repudiates the monolingual, native-speaker ideal of language use that is prevalent in the United States. Despite the increasingly global flow and functioning of people, information, resources, and economic production, United States education at all levels most often enacts a monolingual "English only" orientation (Horner & Trimbur, 2002; Horner et al., 2011). This monolingual perspective views languages as discrete, fixed systems and assumes that an individual's identity is associated with one "native" language.

A monolingual orientation produces the expectation that people identify with one, fixed native language and learn and use other languages one at a time. Two related assumptions can hamper communication across language difference. The first is an uncritical affirmation of "Standard English" (or a standard for any other language) and the expectation of grammatical "correctness" (according to the standard) in all types of communication (Horner & Trimbur, 2002; Horner et al., 2011). The second inhibiting assumption is that advanced fluency in another language is required in order to attempt communication in that language (Canagarajah, 2013c; Horner & Trimbur, 2002).

The course that is described in this teaching case, ENGL 712 Communicating in Multilingual Environments, was designed to unsettle the assumptions of a monolingual orientation in order to equip professional communicators with the language awareness, attitudes, and skills that would enable them to collaborate more effectively with colleagues in linguistically diverse global teams. This preparation was achieved through readings, investigations of language change and variation, observations of multilingual interactions, and participation in an online conversation using a language other than English, which was the language of instruction for the course.

Defining Language Difference

ENGL 712 focused on language difference as difference in systems of linguistic elements (vocabulary and syntax.) However, this distinction is an artificial one because the linguistic system of a language cannot be dissociated from its cultural home. This is because language and culture are inextricably intertwined. Language behavior is flexible, variable, and strongly influenced by a communicator's personal history and social identity (Chambers, 1995; Labov, 1972). A person's cultural background fosters unspoken or even unconscious assumptions about language behavior and communicative practice, and these assumptions have a critical impact on communication (Connor, 1996; Hall, 1976; Hoft, 1995; Thatcher, 2004). Nevertheless, differences in the purely linguistic elements are complex enough to warrant specific attention apart from the influence of cultural assumptions.

In addition, cultural issues are often addressed in intercultural communication courses, while the problem of communicating across differences in language as systems of linguistic elements is rarely attempted outside of courses focused specifically on translation (Bokor, 2011; Flammia, 2005; Maylath, 1997). While acknowledging the importance of cultural issues, ENGL 712 emphasized strategies for communicating across differences in language as systems of linguistic elements.

Precisely defining what constitutes language difference can be a thorny issue. On the one hand, the system of linguistic elements labeled "Japanese" is obviously different from the one labeled "English." On the other hand, recognizing when the differences between World Englishes become significant enough to impede mutual comprehension is not as straightforward. In fact, some of the most problematic misunderstandings may occur among team members who use different varieties of one language (Chen, Geluykens, & Chong, 2006; Gilsdorf, 2002). For example, phonological and lexical differences can cause problems, such as when a speaker of Singapore English remarks, "We use to have meetings on Mondays." A team member who speaks American English would likely conclude that the Monday meetings no longer occur, when in fact the Singapore colleague meant that meetings are usually held on Mondays. The misunderstanding may not be immediately apparent to either team member because the linguistic construction used seems comprehensible to both of them, (even though it is not grammatically perfect in American English). Anticipating and negotiating a range of language differences was thus a key learning target for ENGL 712.

Course Content

ENGL 712 was an online seminar in the University of Wisconsin-Stout's graduate program for working professional and technical communicators. Students from Florida to Oregon were able to participate in the course by means of the Desire2Learn (D2L) learning management system. Students exchanged ideas and discussed readings on a D2L discussion board. In addition, students shared observations and plans for the culminating assignment, the Multilingual Interaction Project (MIP), on a course wiki hosted by Wikispaces. The course introduced students to theories and concepts relevant to communicating in multilingual environments, including

- principles of language variation and change,
- different perspectives on the global role of English,

- the implications of different writing systems for electronic communication,
- contrastive rhetoric,
- research on writing in the global workplace,
- translingual communication strategies.

These six units and the culminating MIP assignment are described below.

Unit 1: Language Change

Language change was the first topic covered in ENGL 712. Students began with nontechnical readings and a short exploration of the history of an interesting word of their choice, using the Oxford English Dictionary as an etymological resource. This activity allowed students to start with something familiar and then expand their understanding. Beginning with the topic of language change at the outset of the course challenged the perception of language as an isolated, fixed, "pure" system. Instead, students saw that "languages" interact and are shaped by social circumstances. Students then completed the first "Language Exploration" assignment in which they observed language change by comparing texts from different time periods about a similar topic or event. They selected texts from either the *Time* magazine corpus or from historical and current newspapers accessed through the university library. Readings about the history of English and audio clips of Old English and Middle English complemented this assignment.

The texts selected for these readings were relevant excerpts from Allan, Bradshaw, Finch, Burridge, and Heydon (2010), Curzan and Adams (2012), and Rickerson and Hilton (2006). One goal for this unit was to use English as a case study of language change. Another goal was for students to think about how all languages change over time, and to note how language contact and the political relationships between speech communities contribute to language change. Optional background readings about general topics in linguistics and linguistic terminology were provided for interested readers. These texts were also drawn from Allan et al. (2006) and Rickerson and Hilton (2006).

Unit 2: Writing Systems and Electronic Discourse

In the second unit of study, students read about and reported on different writing systems. Students were required to investigate a writing system that does not use the Roman alphabet (e.g., abjad systems, syllabic systems, and logographic systems). They also discussed the differences between spoken and written language, noting how electronic discourse tends to blur this distinction. This unit built on the previous one about language change as students noticed that the written code tends to be more stable over time than spoken discourse. The unit also gave students the opportunity to think about the affordances of language systems other than English, and to consider how language technologies have influenced language use.

All of these topics were relevant to communication across language difference because they prepared students to grasp key assumptions of a translingual orientation toward communication. By gaining awareness of different writing systems, students realized that human communication can employ a range of semiotic resources (such as writing systems), and that a writing system is not the language itself, but an artifact rooted in a particular time, place, and purpose. They also learned that communication does not have to be restricted to one kind of code or semiotic system; adaptation is possible. Additionally, they realized that, as literate English users, they had already developed different ways of using language, including registers and genres that were appropriate for writing and others suited for speaking. Acknowledging that they were already negotiating these kinds of language differences was a step toward bridging other kinds of language difference.

Unit 3: World Englishes

In the fourth week of the semester, students began a series of readings about World Englishes drawn mainly from Jenkins (2009), a "flexi-text" in the Routledge English Language Introduction series that can be read topically across

eight different strands[1], or comprehensively through an introduction, development, exploration, and extension of all eight strands. For the purposes of ENGL 712, we touched briefly on the first two strands (historical, social and political context, and pidgins and creoles), but spent the most time on strands four, five, and six (these strands focused on variation in Englishes across the world, the standardization of different Englishes, and English as a *lingua franca*). This focus was selected because these strands were sufficient to introduce the concept of World Englishes, and there was not time to cover the entire textbook. Appreciating the worldwide variation in Englishes not only prepared students to communicate with users of different Englishes, but it also continued to disrupt a monolingual orientation to communication. Additionally, the study of World Englishes reinforced the social nature of language change, and illustrated both the arbitrary nature and the social role of language standards.

Unit 4: Writing in the Global Workplace

The fourth unit of study focused on writing in the global workplace. An introduction to Kohl's *Global English Style Guide* (2008) was central to this unit. In addition, students read research reports about editing texts for international audiences and using machine translation (Leininger & Yuan, 1998; Rychtyckyj, 2007). Students then applied Kohl's editing strategies to evaluate the global readability of a marketing text. They also carried out a limited usability test of an edited portion of their own academic writing. Students who were non-native English speakers and who were enrolled in an advanced English as a Second Language (ESL) writing class were recruited to read and evaluate three versions of each excerpt of academic writing: the original English text, the edited English text, and a machine translation of the edited text (translated into the ESL student's home language). This language exploration assignment presented the

[1] The eight strands are (1) historical, social and political context, (2) pidgins and creoles, (3) debates about English today, (4) variation in Englishes across the world, (5) the standardization of different Englishes, (6) English as a *lingua franca*, (7) Asian and European Englishes, and (8) the future of Englishes in the world.

graduate students in ENGL 712 with their first opportunity to experiment with communication across language difference. Because ENGL 712 was offered in an online format, students were not able to meet in a face-to-face setting with the ESL students who evaluated the texts. Instead, the instructor collected ESL student feedback and relayed it to the ENGL 712 students.

Unit 5: Contrastive Rhetoric

The fifth unit of study considered the topic of contrastive rhetoric from three perspectives. First, students were introduced to the topic of contrastive rhetoric and important criticisms of it in Atkinson (2004), Connor (2002), and Kaplan (1966). Next, they used the notion of contrastive rhetoric as a means of examining the strategies of multilingual writers when reading articles by Canagarajah (2009a, 2006b), Kachru (1992), Thatcher (2004). Finally, students selected one research report from Section II, pages 45-191 of Connor et al. (2008) to read and summarize for the class. Each of these research reports investigated the differences in a specific genre (such as newspaper editorials) from different parts of the world.

Key learning goals of this unit included

- Learning strategies for reading research articles, a key genre for graduate students.
- Recognizing the role of genre and culture in shaping written communication.

Awareness of the contributions of genre and culture to communication practices is crucial for people working in globalized virtual teams who may come from different cultural backgrounds and who may collaborate in the creation of a range of genres. These topics may be more fully covered in intercultural communication courses; however, reminding students of this issue allowed them to integrate concepts related to culture and genre with ENGL 712's primary focus on language as a system of linguistic elements.

Unit 6: Translingual Approaches to Language Difference

In the sixth and final unit, students read and discussed the Horner et al. (2011) landmark articulation of translingual literacy theory, as well as a few related articles about approaches to language difference (Horner & Trimbur, 2002; Jacquemet, 2005; NCTE, 1974). By this point in the semester, students were ready to comprehend the new term "translingual" and the related theoretical arguments because they had been exploring key concepts of translingual literacy theory since the first week of the semester. The readings applied directly to student experience because at that time students were also fully engaged with the culminating project of the semester, the Multilingual Interaction Project (MIP).

The Multilingual Interaction Project

The MIP was more lab experience than seminar paper. (The assignment description is included in the Appendix.) The project was scaffolded in a series of small steps as students moved from observing non-English language websites in weeks 5-7, to developing strategies for participation in weeks 8-11, to achieving sustained interaction on a website using an unfamiliar language during weeks 12-14. Students completed a weekly record of their experiences (a kind of "lab notebook" that each student kept and submitted electronically to a dropbox), submitted a progress report midway through the project, and summarized and reflected on their experience in a final report. Throughout the project, students shared their experiences, suggestions and mutual encouragement through discussion board interaction with classmates and posts to a shared project wiki.

Machine translation was an essential aid to communicating online in a language other than English in the MIP, so students were guided in its use. Before attempting to participate in a non-English language online discussion, students carried out exercises using machine translation. For example, after studying strategies for editing English-language texts for maximum readability and efficient translation, students tested the effectiveness of their edits by soliciting feedback from non-native English speakers about the English-language versions and a machine-translated version of a text. Students also carried out

repeated cycles of machine translation, translating a text from English to a target language and then back into English as a way to estimate the comprehensibility of the machine translations. The goal of these exercises was to introduce students to the usefulness and limitations of machine translation.

Despite its shortcomings, machine translation was an essential component of the MIP because language technologies, including machine translation, have become an essential part of translation and localization practices in a globalized workplace (Kohl, 2008; GALA, 2010, Nov 22; GALA, 2010, Dec 15). In addition, the quality of machine translation continues to improve even as its availability increases. The quality of translations produced by statistical machine translation tools—Google translate is one example—depends on having a massive database of parallel translations in multiple languages. As more content is added to the database, the quality of the translation produced can improve, especially when qualified community members help add to and correct the parallel translations (Google Translate, n.d.). The availability of such tools increases as their creators add features and platforms. For example, when this article was being written, Microsoft was publicizing progress in research toward real-time machine translation of spoken conversation using Skype (Microsoft Research, 2014) and Google was announcing improvements to its phone app (Gilsinan, 2015).

The increasing availability and effectiveness of machine translation technologies means that members of globally distributed virtual teams must be ready to choose and apply them appropriately. Machine translation will never replace the need for human translation. However it can be used to translate materials that are not important enough to merit the expense of human translation, and machine translation can be used when a general understanding of the communication is needed quickly and there is not time for a full and accurate human translation.

The need for machine translation in the MIP was one reason why it was so important to expose and critique a monolingual orientation to communication early in the semester. Machine translation was not proposed as a solution to language difference, but as a limited tool that could play a role in an overall multilingual communication strategy. By the time students had to make public

posts online in a language other than English, they were aware that successful communication across language difference can occur despite a lack of grammatical correctness if all parties involved are willing to work together to achieve intelligibility. The MIP put students in the position of having to participate in this kind of negotiation of meaning.

Initially, several students were wary of using machine translation because previous, foreign-language teachers had strenuously warned them not to use it. Their teachers had emphasized that machine translation was unreliable, and that their translated texts were very likely to fall short of grammatical correctness. Interestingly, a student who was initially the most resistant to using machine translation was the only one who was bilingual. (She was required to make MIP posts in an unfamiliar third language.) In her early non-English posts for the MIP, she explained that she was using machine translation and apologized for the grammar errors that her posts might contain. Her classmates eventually persuaded her that adding the apology was not a rhetorically effective strategy. This bilingual student's behavior suggests that a person's desire for universal grammatical correctness—part of a monolingual orientation to communication—does not necessarily correspond to the number of languages that a person can use.

Although the MIP seemed like an impossible task to students, their ultimate response to the project was positive. For example, one student noted:

> The MIP immersion process provided insights that the typical read-about-it and write-about-it approach to learning could not have; it gave students direct exposure to the social challenges and human emotions of a linguistic outsider wishing to engage authentically in a global conversation.

Another student explained:

> …as we come to the end of the [MIP] project, I am pretty positive that without this exact type of assignment, none of us (I know I never would have, at least) would have ever really taken the leap to do something like communicating in a language you don't know how to speak, much less write in. We would not have

> connected the dots between our readings and an actual understanding of what it means to work in multi-lingual environments.

These students articulated key learning outcomes for the course. They were pushed outside their comfort zones, but in a tolerable way. And they communicated successfully despite being a *linguistic outsider*. This experience might engender empathy, creativity, and persistence in future translanguaging opportunities in a globally distributed virtual team, which would be especially valuable when someone else on the team might be the "linguistic outsider."

Conclusions

The content of ENGL 712 surprised students and challenged them to think in new ways about communicating with colleagues from different language backgrounds. However, it was the trial-and-error experience of communicating online in a language other than English with people they had not previously encountered that caused students to marshal their own unique set of language resources into a translingual communication strategy. This experience prepared these students for today's workplace because it mirrored some of the same tensions that they are likely to face when working on globally distributed virtual teams. These students will have more realistic and empowering expectations for communicating in multilingual environments because they will not be limited by the inhibiting expectations that result from a monolingual orientation to communication. The following conclusions highlight specific observations about what made the course successful and about the value of ENGL 712 for future members of globally distributed virtual teams.

ENGL 712 Meets an Unrecognized Need

This course met needs that the students who enrolled in it did not recognize that they had when the course began. The course changed the way students thought about workplace communication by challenging the monolingual paradigm. A monolingual orientation can be so pervasive that it is taken for granted, invisible.

Without being offered an alternate perspective, students may not be able to imagine that any other approach would be possible. At the beginning of this course, even though the syllabus clearly stated that "students will develop effective approaches for participating in a multilingual, interactive blog or social networking site," students did not expect that they would actually be required to communicate in a language other than English. They believed that "multilingual" interaction would occur in English, or that it would be a topic to read about rather than an activity that they would carry out themselves. In addition, students did not appreciate the range of language resources that they already possessed. When required to communicate in a language other than English, high school foreign language classes became relevant, and the taken-for-granted ability to shift between academic and social registers became a generalizable skill.

World Englishes and Global Editing Practices Are Unfamiliar Topics

The sequence of readings for the course worked well. One student commented that the assignment sequence "create[d] a 'just in time' learning experience. Questions form in my head and suddenly the next set of readings speaks right to those questions." The two topics that generated the most engaged discussion among students were the topic of World Englishes and the readings about editing for global readability and machine translation. Students were not familiar with the concept of World Englishes, despite the fact that scholarship in this area has been flourishing since the 1982 publication of Kachru's seminal book *The Other Tongue*. Likewise, despite its prevalent use among large, globalized organizations, students were also unfamiliar with the concept of controlled authoring and editing for translation. Knowing about World Englishes will likely prepare students to be more accepting of the different varieties of English that they encounter among members of globalized virtual teams. Being familiar with editing for global readability and translation will help students to communicate more successfully in writing with clients and colleagues from other language backgrounds.

Experiential Learning Is Vital

Crucial to the success of this course was its experiential aspect. The MIP report was perhaps not as lengthy as the typical graduate school seminar paper, but completing the project produced a paradigm shift in the way students thought about multilingual interaction. Leading up to this culminating project, the language exploration exercises lured students out of their comfort zones in a gradual way. The first two language explorations raised students' awareness of what language is and how it works. Then the third exploration that involved editing texts for a real audience of ESL readers provided direct preparation for the MIP because it offered interaction. This exercise could have been made even more valuable if the students had been able to present the texts to the ESL students online in real time using Skype, Blackboard Collaborate, or another virtual meeting software so that students could have directly observed the ESL students' reactions and could have received their feedback firsthand.

Process Is More Valuable Than the Product in ENGL 712

Within the MIP itself, setting a low expectation for "sustained interaction" and allowing ample time to achieve that goal was important. The process required a "trial and error" approach. The students learned to seek out topical, discussion-board websites rather than blogs, though the range of possible interactive sites is varied and will continue to change. Conducting a series of reviews of multilingual websites was a valuable first step in the MIP, even though students often did not discover suitable websites for interaction this way, which was the original purpose of this step when the assignment was created. Nevertheless, conducting the website reviews provided valuable practice navigating websites in languages other than English, and these reviews affirmed the tentative, "trial-and-error" approach that was needed for finding and posting to interactive, non-English language websites.

Requiring students to interact on a non-English-language website, the final step of the project, was a risk, but it paid off. Even students who struggled with finding a suitable site and an appropriate "presence" when using a different

language did eventually benefit from the experience. One student commented, "My personal experiences, at first, were rather frustrating. However, after receiving great feedback from my instructor and my peers, I was able to get more successful results." In ENGL 712, the goal was not for students to produce high quality posts in an unfamiliar language. It was instead for students to recognize that interaction across a substantial degree of language difference is possible. This experience, and the shift in thinking that it engendered, helped to prepare students to work across boundaries of language difference as future members of globally distributed virtual teams. ■

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Appendix

Multilingual Interaction Project (MIP) Assignment Description

Overview of what you will do:

Stage 1 **Exploration**

Visit and review multiple multilingual websites. I will provide a list of suitable web sites, but you are more than welcome to explore beyond it and add to the list

The list of suitable web sites will be provided on a course wiki. The wiki will be for our class only; it will be closed to the public

You will post three website reviews to the wiki

You will begin to keep your record of experiences in Stage 1, and you can do this on an individual page in the wiki or in a separate Word document.

Stage 2 **Interaction**

Achieve sustained interaction on a multilingual website of your choice

Write a report about your experiences

Learning Goal for the MIP

Each student will develop and practice strategies for communicating online across language boundaries.

Behavioral Goals for the MIP

Each student will…

Explore different types of multilingual websites and review three of them. The reviews will be posted to a class wiki.

Achieve sustained interaction on one site that uses at least one language that is unfamiliar to the student. Sustained interaction is defined as a minimum of three posts or comments made on different days, preferably with response from another user of the site. Sustained interaction might require attempts at involvement on more than one website.

Keep a record of experiences. Think of your record as a "lab notebook" or as a reflective journal in which you can write about your intentions, plans, actions, and results of attempting to communicate on a multilingual site. The purpose of this record of what you see and do is to gain insight about the nature of multilingual interaction and to develop strategies for cross-language communication that you can use in the future.

Create a written progress report in Week 11 of the semester

Summarize your experiences in a report that will be shared with the class. You can use graphics, audio, and video in your report if desired.

About the author

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GROUP TACIT KNOWLEDGE AND GLOBALLY DISTRIBUTED VIRTUAL TEAMS

Lessons learned from using games and social media in the classroom

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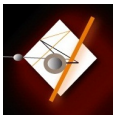
Until recently, communication over long distances was limited to one of three technologically-mediated choices: phone, fax, and post. However, new technologies have revolutionized cross-cultural communication by offering a myriad of platforms for rapid, asynchronous, and multimedia messaging, including Twitter and Skype. Thus, globally distributed virtual teams now demand new kinds of interpersonal competencies, such as the ability to empathize, lead, deliberate, and negotiate in channels mediated by novel technologies. Existing literature establishes the role of *tacit knowledge*, or contextual knowledge gained thorough experience, in creating more effective teams that collaborate in more traditional ways. However, there is a lack of understanding of the role tacit knowledge plays in teams collaborating digitally. In this article, we present a teaching case involving virtual collaborations between students in the U.S. and Uganda via a Twitter-based game. We observe that players who develop tacit knowledge during the game display increased interpersonal capacities. This teaching case yields important insights for developing pedagogical practices that facilitate tacit knowledge development as it relates to improving interpersonal skills for globally distributed virtual teams.



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Keywords. Social media, Tacit knowledge, Digital communication, Interpersonal competency, Digital divide, Interpersonal skills

Successful business, government, military, and/or academic team collaborations require effective communication among team members. For traditional teams working in close physical proximity, the role of tacit knowledge, or contextual knowledge gained through experience, in creating effective and collaborative teams is well established. However, cultivating effective communication among global virtual teams (GVTs) remains a challenge, and the impact of tacit knowledge among GVTs remains unexplored.

In this paper, we explore the relationship between tacit knowledge, information and communication technology (ICT), and teams to inform improved training methods for GVTs. We first discuss how technology has transformed teamwork, including the challenges that GVTs face for successful collaboration. We then define tacit knowledge and summarize its importance for teams as discussed in the literature. Next, we present a teaching case involving an educational game where students attending Arizona State University and Rochester Institute of Technology in the U.S. as well as Mountains of the Moon University in Uganda communicate via Twitter. The game demonstrates experiences of a newly formed GVT that we can use to inform strategies for overcoming challenges to digital collaboration. Observations of the game suggest that tacit knowledge can augment the interpersonal capacities of diverse individuals interacting through social media, ultimately leading to more effective virtual teams. Based on our findings, recommendations are provided for improving training methods for future members of GVTs.

ICT Challenges for GVTs

Substantial research exists in the realm of collaboration among teams, particularly on the role of verbal communication in coordinating joint activities among groups. For example, collaborative discourse theory identifies the role of dialogue

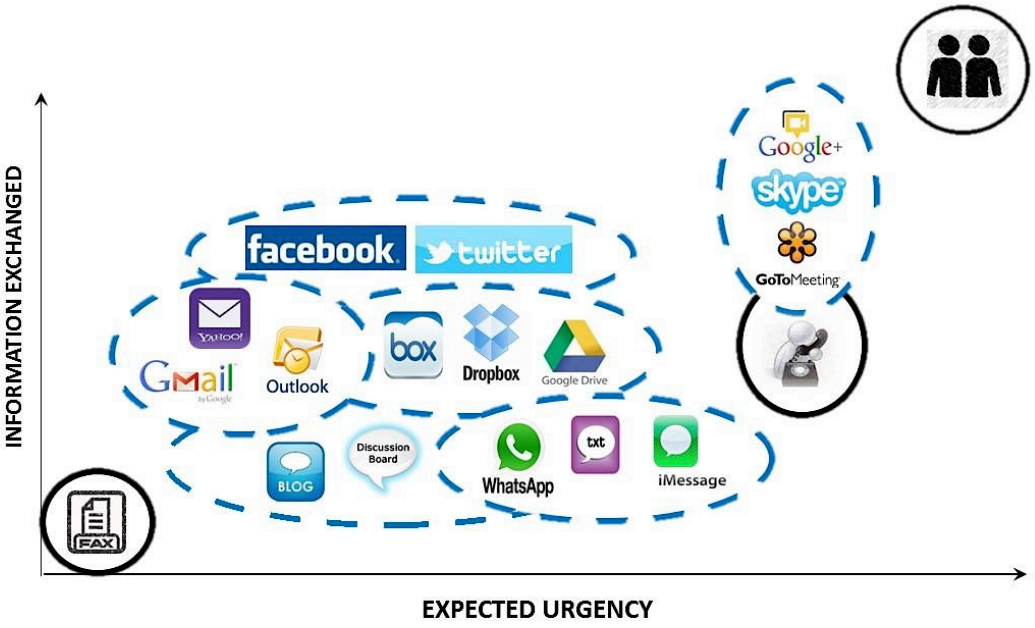
in the formulation and implementation of plans to achieve a shared goal (Hardy, Lawrence, & Gant, 2005). Joint intention theory suggests that successful collaboration in dynamic and uncertain conditions demands an open channel of communication to coordinate teamwork where heterogeneous beliefs and fallible actions among group members are the norm (Cohen & Levesque, 1991). Prior to the digital revolution, communication among teams was limited to face-to-face dialogue or one of three technologically mediated choices: fax, phone, or post. Today, ICTs, such as email, video chat, and social media, have introduced a suite of technological choices that facilitate the formation of GVTs, which enable faster and easier communication over large geographical distances.

Despite the increase in speed and efficiency, the growing reliance on ICTs creates challenges for GVTs. Whereas the norms of using nondigital forms of communication (i.e., face-to-face, fax, phone, and post) are well recognized and understood, communicating via ICTs often involves unestablished behavioral norms of a myriad of new technologies (see Figure 1 on page 116). For example, it is often unknown what the expected urgency is for replying to an email, as this is left out of most guides on email etiquette (Agnew & Hill, 2009); depending on the situation, an email may go untouched for weeks or it may be replied to immediately. Also, many ICTs quicken the pace of team member interaction (Gere, 2008) and thus speed up cross-cultural encounters on GVTs. Although faster communication capabilities yield many benefits, digital forms of communication may be vulnerable to misinterpretation. That is, condensed written forms, such as those found in text messaging, can lack the context required for accurate interpretations, especially when used across cultures (Zorn, 2005). Figure 1 displays a portfolio of ICTs and arranges them according to their expected urgency and the amount of information exchanged between team members.

Sending a fax, making a phone call, or talking to another person are distinct pathways for communication, where the information shared and the expected urgency are well understood (shown in black and white in Figure 1). In contrast, many ICT platforms overlap in their ability to transmit information and have relatively unclear expectations for response (shown in blue dotted lines

Figure 1

ICTs are arranged by the expected urgency of response (increasing from left to right) and the amount of information exchanged (increasing from bottom to top)



in Figure 1). Furthermore, the use of ICTs introduces communication problems related to the varying capacities of technologies to connect people in different parts of the world, especially those located in technologically disadvantaged nations.

Unfortunately, the technologies that offer the broadest participation and accessibility are ones that generally exchange the least amount of information. For example, analog mobile phones, which are capable of sending short text messages (160 characters or less at a time), are used by 7 billion people today, in comparison to the 4 billion with Internet access, and 1.2 billion with fixed telephone lines (International Telecommunication Union, 2010). GVTs functioning in areas with limited bandwidth for ICTs need individuals who can decipher meaning from short messages between digital devices. This presents a tradeoff between the

international reach of a particular ICT and the quality and/or quantity of information exchanged.

Contributing effectively to GVTs therefore requires team members who can communicate using a range of ICTs, adapt to changing virtual environments, and have the ability to appropriately communicate with people from different cultures, given current technical limitations. These challenges will no doubt be partially alleviated by team members who have strong interpersonal competencies.

Interpersonal competency is recognized as the ability to motivate, enable, and facilitate collaborative and participatory research and problem solving. This ability includes strong skills in communication, deliberation and negotiation, collaboration, leadership, empathy, as well as pluralistic or transcultural thinking (Wiek, Withycombe, & Redman, 2011). However, strong interpersonal skills may be insufficient for effectively contributing to GVTs, where ICTs are changing faster than social or behavioral norms and protocols. The authors contend that tacit knowledge, or contextual knowledge gained through experience, may augment an individual's interpersonal skills, enabling more effective communication in less familiar virtual environments. We believe this to be the case because additional tacit knowledge enhances comprehension of effective methods for leadership and fosters empathy among colleagues, both of which facilitate productive dialogue.

Review of Tacit Knowledge and Teams

Whereas explicit knowledge, or easily expressed or codified knowledge, is simple to aggregate and store and can be gained through logical deduction, tacit knowledge is difficult to transfer through communication because it is intuitive and dependent on context (Nonaka, 1994; Polanyi, 1966). *Tacit knowledge* is the know-how acquired through informal learning of behaviors and procedures, is embodied in the individual, and is tied to physical experience and intuition gained through shared group experiences and socialization (Erden, von Krogh, & Nonaka, 2008). For example, the crew of a ship with a broken navigation system was able to make it to safe harbor because each crew member intuitively knew

what to do and how to function without the system guiding them because of a high level of group tacit knowledge (Erden et al., 2008).

Moreover, tacit knowledge can only be acquired through immersion in the society of those who already possess it (Collins, 2011). In the workplace, tacit knowledge is considered key to managerial success as well as a way for workers to augment academic learning and experience (Smith, 2001). For example, managers benefit from tacit knowledge about teams of employees that possess different types of expertise than their own, as is the case with managers of large scientific projects (Collins & Sanders, 2007). Tacit knowledge is also considered a competitive advantage because it enables adaptability to changing conditions, which can improve organizational effectiveness in a way that is difficult to replicate (Berman, Down, & Hill, 2002; Erden et al., 2008; Jackson, 2012; Johannessen, Olaisen, & Olsen, 2001). For our purposes, we summarize these definitions and define tacit knowledge as contextual knowledge gained through experience. Thus, tacit knowledge is essential to working effectively in GVTs because advanced group tacit knowledge allows the team to more effectively respond to rapid change and provides for better teamwork and understanding.

Most research on tacit knowledge and teams focuses on the individual level and how it can facilitate interactions between teammates, such as leadership, negotiation, and conflict resolution (Berardy, Seager, Selinger, & Uhl, 2013; Collins, Evans, Gorman, 2007; Collins & Sanders, 2007; Johannessen, et al., 2001; Panahi, Watson & Partridge, 2012; Smith, 2001). Alternatively, Erden et al. (2008) consider the importance of *group tacit knowledge* for successful teams. Group tacit knowledge is the degree of implicit understanding present in a group, which enhances coordination and collective action. Erden et al. claim that group tacit knowledge at its best quality allows a group to function as a collective unit in diverse and complex situations in the absence of explicit rules or directions, making the team more efficient at achieving its goals. Such tacit knowledge allows groups to function in this way because it allows groups to address complex tasks with integrated knowledge through coordinated actions between group members that are implemented without the need for explicit rules or communication (Erden et al., 2008).

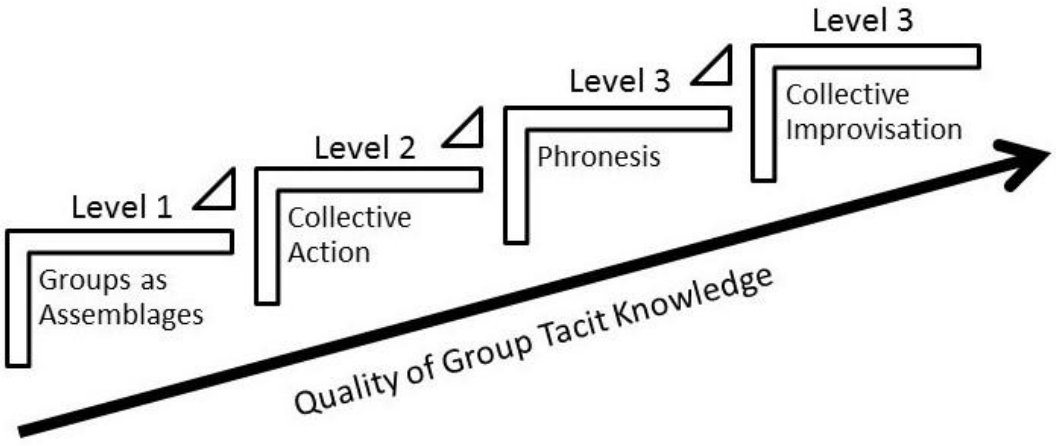
As shown in Figure 2, the development of group tacit knowledge is a progression of group behavior that begins with an assemblage of individuals (level 1) that, through shared experiences, work their way through stages of collective action (level 2), phronesis, or the wisdom to take action for the common good, (level 3), and eventually collective improvisation (level 4).

Level 1 represents a newly formed team that acts as a collection of people with no shared experience and weak group ties, providing no basis for group tacit knowledge. An example would be a newly formed soccer team with players from around the world with different age groups, experiences, motivations and understandings about soccer. At this level, players will be difficult to coach, they won't be able to coordinate team strategies, and individual players will not want to or know how to pass to other players.

Level 2 is achieved after some shared experiences help the group understand how to act collectively, and it develops routines and group culture so that there is a sense of belonging, and familiar obstacles are overcome by repeating past successes. An example would be a soccer team that has practiced a few times

Figure 2

Adapted from Erden et al. (2008) – Quality of group tacit knowledge in teams



and knows a couple of plays very well, but requires a coach to tell them which ones to use.

At *level 3*, the team is advanced to the point that they can manage themselves and determine the best action for the common good of the group. A soccer team at level 3 would not require a coach because they are able to collectively identify the best actions in new situations based on previous experiences.

Finally, *level 4* is the highest quality of group tacit knowledge, where group improvisation is possible because each member is a trusted expert. The group now has a collective mind and intuition guiding actions, and the team becomes more than the sum of its parts. At level 4, the soccer team can quickly adapt to change (such as a player injury) and develop new and appropriate tactics during a match without discussion.

It is worth noting that there are significant opportunity costs for developing group tacit knowledge, as tacit knowledge development requires time, attention and investment, such as money directed at team building exercises, which could be used elsewhere, or keeping an existing team in place even if more qualified employees become available. Additionally, not all situations require the highest level for a successful outcome, but increasing this characteristic will help groups deal with uncertainty and increase loyalty among group members (Erden et al., 2008).

To date, researchers have focused on the importance of tacit knowledge among teams working together in close physical proximity (Collins & Sanders, 2007; Erden et al., 2008; Johannessen, Olaisen, & Olsen, 2001; Smith, 2001), but there is a paucity of research on the importance of tacit knowledge for teams communicating digitally. A 2001 study recognized the changing conditions for companies as digital forms of IT, such as email and text messaging, first became popular, but the focus was not on tacit knowledge in digital communication (Johannessen et al., 2001). This research explained the influence of IT on tacit knowledge, and argued that as companies invest in IT, the speed of explicit knowledge transfer increases, shifting priority away from developing shared tacit knowledge. As a remedy, the authors suggested that companies need to balance

explicit and tacit knowledge promotion as both are needed together to bring about innovation and sustainable competitive advantage. Our teaching case builds on the 2001 study by observing how the development of group tacit knowledge augments interpersonal capacities among digital teams to improve their ability to work collectively. The goal is to inform methods for training that will enhance students' capacity to contribute effectively to GVTs.

Collaborations between students in the U.S. and Uganda via Twitter

The Externalities Game

Students at Arizona State University (ASU), and Rochester Institute of Technology (RIT) in the U.S., as well as Mountains of the Moon University (MMU) in Uganda participated in a two-week educational experience called *The Externalities Game* (TEG). TEG uses Twitter for asynchronous communication between players in different locations during game-play and requires that participants communicate, strategize, and negotiate with other players to coordinate actions for group success. Thus, TEG is an example of a GVT playing a noncooperative game, which means that players make decisions independently and any cooperation is self-enforcing. The nature of the game places a tension between individual incentives and positive group outcomes because each player can only advance their grade at the expense of others. That is, students must work together to achieve outcomes that are beneficial for all players.

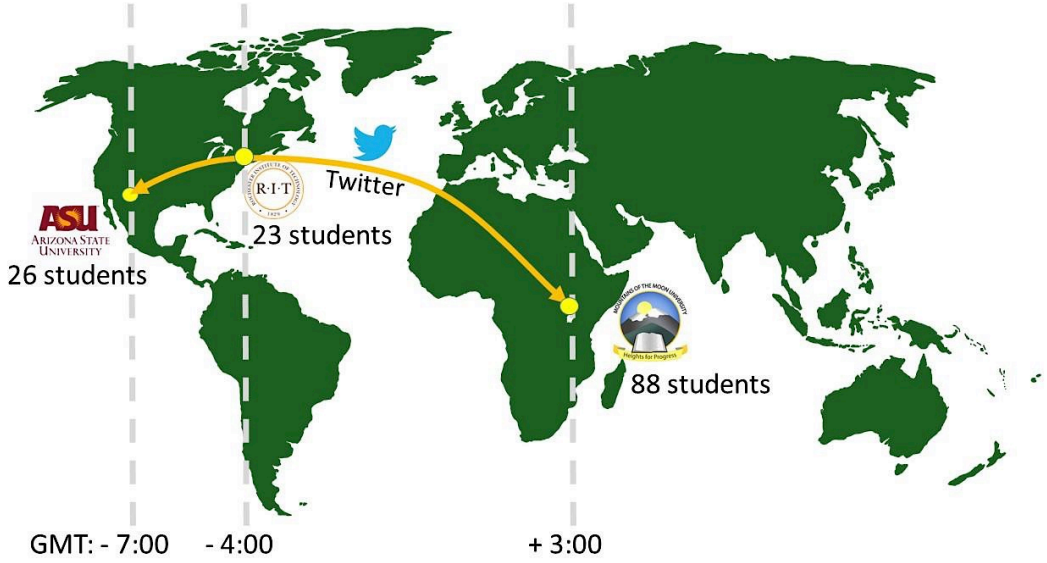
TEG has been used in a variety of contexts, including several multiple-university situations. The primary objective of TEG is to experientially educate students about environmental externalities. Although TEG was not specifically designed for research on GVTs, we think that the ASU-RIT-MMU experience is particularly relevant for informing training methods for GVTs because it allows us to examine how a GVT of students developed group tacit knowledge, illustrated by their ability to act collectively towards limiting externalities.

Participants in this game were college students attending ASU, RIT, or MMU. Figure 3 shows the locations of the institutions, the number of players and the differences in time zones (e.g., MMU was 7 and 10 hours ahead of RIT and ASU, respectively). Students at ASU and RIT were a mix of undergraduate and graduate students taking a Sustainability Ethics class designed to experientially teach students about ethics related to sustainability issues. The students at MMU were taking a class on business development, which included aspects of business ethics. All students communicated in English (English was not the first language of the students attending MMU but classes are taught in English at the University).

Data was collected through pre and post surveys, submitted decisions by individual players, digital communication records from Twitter and an online discussion board, as well as observations by instructors. This study was exempt from IRB review and all students were aware of the study and consented to participation (see information letter to students in Appendix C). At each institution, the instructor of each class introduced the game to students and oversaw

Figure 3

Map showing details of the ASU-RIT-MMU case study



their participation. TEG was integrated into each class as a graded assignment (the value of the game varied by class). Game instructions provided to the students are included in Appendix A.

The logistical challenges for the TEG players were high. Limitations for online communication in Uganda (e.g., unreliable electricity access and poor Internet service) meant that the SMS capabilities of Twitter offered a way for MMU students (all of whom had mobile phones) to communicate with other students during game-play. Calling cards were purchased for the MMU students in advance, and all students were provided with instructions on how to access Twitter using SMS on their mobile phones, thus ensuring students had the explicit instructions and access to resources necessary to participate in the game (see Appendix B). The American students could also use other forms of ICT to communicate across classes that were less available to the Ugandan students (e.g., an online discussion board), and each individual player could communicate in person with their classmates during class time. Figure 4 on page 124 shows the envisioned communication pathways for the game.

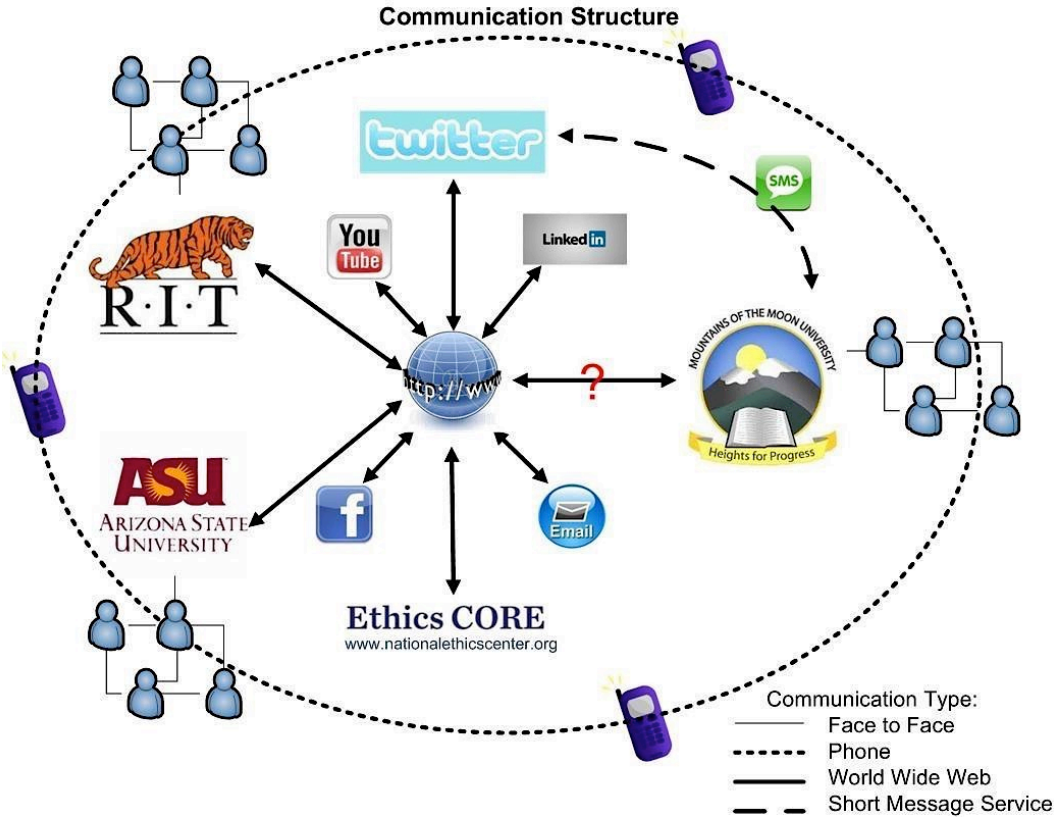
While a detailed description of TEG is beyond the scope of this paper, we provide a brief discussion of the game as it relates to virtual interactions between players (for more information on TEG, see Hannah, Berardy, Spierre, & Seager, 2013). Players in each class are randomly divided into three different levels of goods producers: luxury, intermediate, or subsistence. Note that all three types of producers were present in each class and generate varying levels of profits (in terms of grade points for the individual) and externalities (which subtract from all students' grades) as follows:

- Luxury players gain the most points per unit of production, but emit the greatest amount of externalities. The instructors assigned 10% of students in each class a luxury role.

- Intermediate players gain a medium level of points per unit of production, and emit a medium level of externalities. The instructors assigned 30% of students in each class the role of intermediate.

Figure 4

Envisioned communication pathways for the ASU, RIT and MMU Game



- Subsistence players gain the least points per unit of production, and emit the least amount of externalities. The instructors assigned 60% of students in each class the role of subsistence.

There are two steps to the game:

1. First, players decide how much they want to produce and negotiate the allocation of grade points, knowing that their production results in negative externalities (negative points) affecting the entire class.

2. Second, players may transfer the points they earned in the first part of the game to other players.

In our case, players were required to submit their individual decisions to the game administrator using Twitter via public or private message and to do so before a preestablished deadline. The game administrator reported all player decisions to participants at each step using private identifier codes and an Excel spreadsheet that was published online and provided to each instructor.

During the game, students faced three key challenges to developing group tacit knowledge that are relevant to GVTs, including technological failure, digital culture shock, and individualistic vs. collectivistic approaches to the game. Each challenge is discussed in detail in the next parts of this section.

Technological Failure

The ASU and RIT students seamlessly accessed Twitter and initiated communication. However, when the 70 students at MMU simultaneously tried to create Twitter accounts using SMS on their mobile phones, the Uganda Twitter network failed. Eventually some MMU students were able to access Twitter, but it took persistence on their part. This factor positioned MMU students at an early disadvantage because students at ASU and RIT began strategizing before MMU students were even able to get on Twitter. Technological failure may also have influenced players at RIT to act less cooperatively than they would have otherwise. The RIT instructor reported that his students gave the impression that they were interested in working collaboratively early in the game, but their behavior changed once technology constrained their ability to do so.

The failure of Twitter represented the digital divide problem, or the unequal access to, use of, and/or knowledge of ICTs and the benefits that they enable. The digital divide is a real limitation for GVTs that engage colleagues in areas that lack the infrastructure necessary for reliable ICTs. The World Economic Forum's Global Information Technology Report (2014) indicates that the digital divide is problematic for many areas around the globe including Mexico, many countries in South America, Latin America, and parts of South

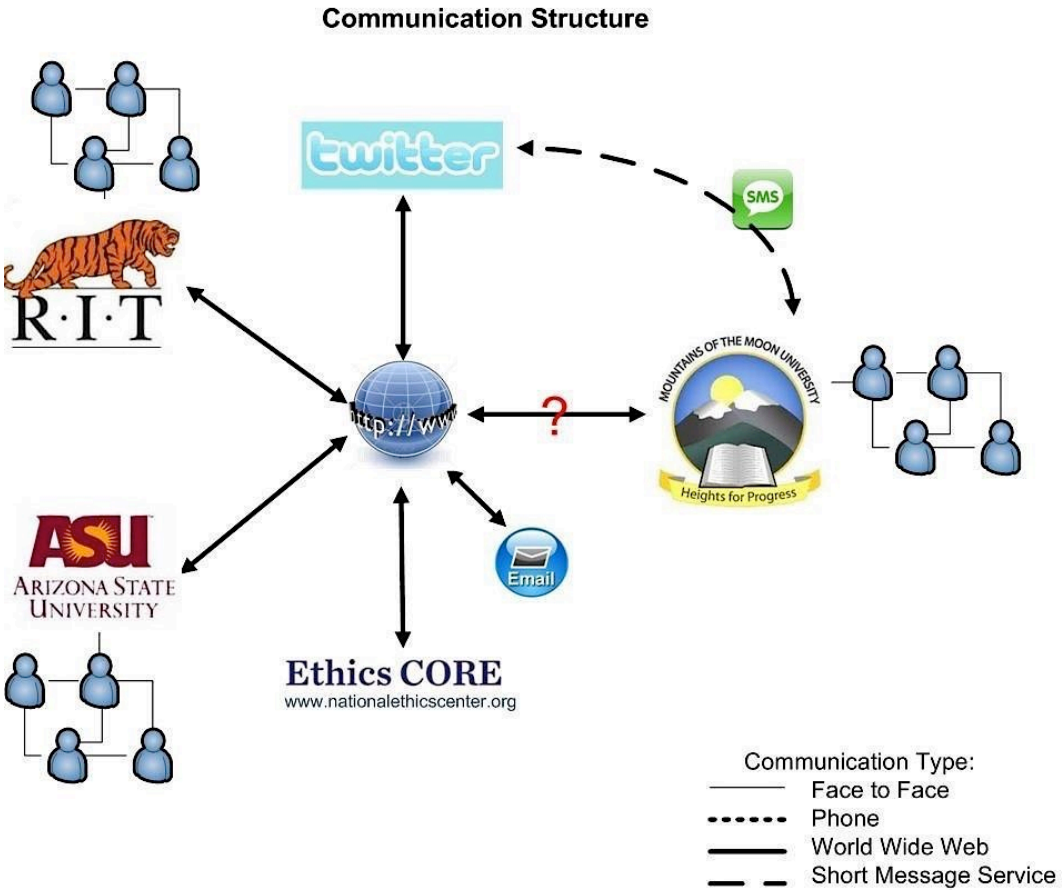
Asia, and is particularly severe for countries in Sub-Saharan Africa (Fuchs & Horak, 2008). Because TEG engaged students in Uganda, the divide was especially problematic, but the unforeseen complication provided an invaluable learning moment, allowing students to consider how to appropriately continue the game, given MMU's unequal access to ICTs and a diminished ability to communicate with other players. GVTs that have members in the areas listed here should be aware of the potential for technology to limit the participation of individuals. As observed in TEG, these technological failures will likely hamper the development of group tacit knowledge and may be especially limiting when the failure occurs during the early stages of team-building.

Furthermore, in GVTs it is especially important for all members to have the opportunity to shape a team's work. This requires team members to be attuned to whether and how all members have an opportunity to contribute. Of note in TEG, we observed an MMU student, in response to a power failure, seek to create an alternative way to participate in the early strategizing process by tweeting "have no power, can't visit discussion board. What else can we do to help?" The U.S. students failed to directly acknowledge this request and draw the MMU student into the work of strategizing. The U.S. students were not accommodating to their international team member's need and desire to participate in the important early strategy work. Ultimately, in not attending to the MMU student's request, the U.S. students reduced the capabilities of the communication structure shown in Figure 4 and communicated in a more limited manner as is shown in Figure 5 on page 127. Put another way, the U.S. students' actions lessened their ability to leverage all team members' expertise in formulating a strategy for playing TEG, inhibited collective teamwork, and ultimately reduced progression through levels of group tacit knowledge. Consequently, many students (especially at RIT) were unable to move past the assemblage stage of Erden et al. (2008) levels of group tacit knowledge.

Twitter failure in Uganda during TEG suggests that relying on ICTs can actually reduce communication capacity for GVTs, which is in opposition to the popular notion that ICTs broaden or enhance communication pathways. Unlike the newly formed group of students, GVTs that possess higher levels of group

Figure 5

Utilized communication pathways during the game



tacit knowledge would be more resilient to surprises like technological failures because they would have previous experiences to draw from on how to adapt to new operating conditions.

Digital Culture Shock

The second major challenge for students was what we describe as *digital culture shock*. Drawing from Furnham and Bochner (1986), "culture shock" is defined as

the psychological consequences of exposure to unfamiliar environments. In the game, we observed the impact of culture shock via Twitter, which can be described as quick, low doses of culture shock through short text messages that are surprising, unfamiliar, and lack context for interpretation.

Digital culture shock equates to unexpected behavior that weakens initial relationship building among GVTs. For example, one of the first and most surprising tweets from an MMU student was the following: "The world was to end in 2000 millennium and the dead were expected to join the living! Should we continue waiting?" Another student wrote, "The Woman was got from Man's rib becoz God knew how much knowledgeable the Woman was compared to the Man," and "if you were to make one wish before you go to bed, what would you ask God?" These statements of religion were unexpected and alarming, especially to the American students who are accustomed to a relatively secular society compared to Uganda. The U.S. students did not respond right away, as if they were taken back by these religious statements. The MMU students, having never used Twitter before, seemed to treat it as a microphone to declare their religious values to the world.

Digital culture shock in TEG revealed another dimension of the digital divide problem, which describes individuals who are less experienced in communicating through ICTs. Twitter has its own digital culture and behavioral norms that can seem unfamiliar and challenging to those with less ICT experience. For example, many of the MMU students who had never used Twitter before had to learn the norms of Twitter through experimentation with tweeting before they were able to communicate effectively. For some MMU students, the failure of Twitter in Uganda was enough to make them stop trying to connect, and those that did get on Twitter had to learn the rules of tweeting (using 140 characters or less, hash tagging, using the '@' symbol). The Twitter record reveals instances where students seemed to be experimenting with how to use Twitter, for example, tweeting nothing but their own twitter handle. Ultimately, digital culture shock is something that newly formed GVTs may experience as well, especially if members of the team represent distinct cultures and where individuals have little to no previous experience using the ICT

platforms required of them to communicate. Allowing for unjudged technological experimentation for novice team-members might alleviate some of the frustrations of this type of digital culture shock.

Individualism vs. Collectivism

The third and last major challenge in TEG also derives from cultural differences. We observed an individualistic approach towards the game by the American students compared to the more collective approach exhibited by the MMU students. While an individualist values personal freedom and achievement, collectivists emphasize conformity and discourage individuals from standing out (Gorodnichenko & Roland, 2011). The cultural distinction we observed is supported by comparing the Hofstede individualism scores (a measure of comparison for cultural differences among countries) for the U.S. with countries in Sub-Saharan Africa (Hofstede, 2001, 2011).

We saw this individualism versus collectivism distinction in the player decisions and grades, as well as their communication on Twitter. In the first part of the game, all but one of the MMU players followed an egalitarian strategy, whereas many more American students overproduced, going against the collective strategy. For example, the initial grades of the subsistence players at MMU was an average of 84.6% (with a standard deviation of 2.2 points) compared to an average grade of 110.5% among the American subsistence players (with a standard deviation of 49.5 points).

In reflecting upon these findings, a more collective approach may reduce barriers to group tacit knowledge among GVTs, whereas individualistic tendencies will likely increase the difficulty of coordinating actions. Such a perspective would seem to confirm Ardichvili's (2005) identification of individualism vs. collectivism as a potential knowledge sharing barrier for online international exchanges related to cultural differences. In TEG, the presence of individualistic tendencies hampered the progression of group tacit knowledge. Being aware of individualistic cultural tendencies among GVTs will help teams find ways to overcome this cultural challenge.

Overcoming Challenges to GVTs

Despite the challenges of technology, digital culture shock, and the clash of individualistic and collective approaches, the students playing TEG figured out strategies to overcome these challenges and showed signs of growing group tacit knowledge, which is promising for GVTs confronted with similar challenges. When TEG began, the students were unable to agree on a strategy, let alone coordinate actions. They were operating on what explicit knowledge they had of the rules of the game, previous perceptions and generalizations they had about individuals at the other institutions, and any previous experience they may have had using Twitter and other ICTs. They were behaving as an assemblage, just as Erden et al. (2008) describes level 1 of the group tacit knowledge (see Figure 2 on page 123), and were unable to function tacitly as a group.

We did observe some ability of the individual classes to organize themselves in productive debates and discussions (among students with whom they had previous face-to-face experience). For example, students at ASU rearranged their desks to form a circle that would facilitate a more collaborative environment and students took turns speaking during class. However, as soon as the digital communication commenced across classes with people they didn't know and had no prior shared experiences, the group was incapable of collective action. For example, in the ASU class, students were accustomed to raising their hand when they had something to add to the conversation, where digital etiquette for communicating across classes was unknown. In a similar way for GVTs, it will also be easier for team members that are in close proximity to one another (or even in the same time zone) to communicate more effectively because communication protocols are likely to be either previously established or easier to organize. In other words, achieving successful collaboration will be more likely among GVTs that are relatively homogenous (geographically and/or culturally) compared to those that are not.

The fact that most of the players were able to earn grades above an 85% (out of 100%) indicates that students were generally successful in coordinating actions, and an indication of the students moving up Erden et al.'s levels of group

tacit knowledge (see Figure 2 on page 119). Particularly relevant for GVTs are the interpersonal skills we observed being implemented among the students to coordinate actions and develop group tacit knowledge, including leadership, empathy, and cross-cultural thinking. Additionally, the individual capacities of the students to lead, empathize, and think pluralistically were not only ways for the class to organize and act collectively, but are also evidence that the growing group tacit knowledge enabled these interpersonal skills to be influential, as summarized in Table 1 and discussed next.

Interpersonal Competency and Group Tacit Knowledge

Perhaps the most influential interpersonal competency among students was leadership—defined here as someone who exhibits influence on others to accomplish a common task. In general, the student leaders weren't chosen or elected,

Table 1

Observations of students developing group tacit knowledge by class

Levels of group tacit knowledge	ASU Arizona State University	Mountains of the Moon University	R·I·T
1. Groups as assemblages No cooperation or shared goals	Individualistic actions	Religious declarations via Twitter	Lack of Twitter communication
2. Collective action Work towards common goals	Student leadership on Twitter as game progressed	Collectivist strategy	Not observed
3. Phronesis Actions in the interest of the common good	Point transfer to MMU at game end	Plea for more communication on Twitter	Not observed
4. Collective improvisation Deals with uncertainty or disruption easily	Not observed	Not observed	Not observed

but organically emerged when students communicated to their class ways that they should behave and by transferring knowledge from one class to another on Twitter. Within this context, the characteristics that marked students as "leaders" were those that went above the requirements of the game to organize, coordinate, and/or communicate strategies for group success. In the case of the MMU students, the few that were able to access Twitter and communicate were obligated by the situation to represent their classmates, as if they were Twitter ambassadors. These student leaders provided a sense of stability in an otherwise complicated and uncertain circumstance.

Evidence of this leadership is exhibited when we plot the number of tweets contributed by each student in TEG (Figure 6 on page 133). A few active students (mostly from ASU & MMU) made most of the contributions to the group. The observed power-law relationship of contributions is indicative of student leadership, at least in terms of participating in online discussions. Despite the overall low participation on Twitter by MMU students, several tweets show great enthusiasm for communication across classes. For example, one MMU student was pleading with the American students to communicate with them by tweeting "Hi, everybody is quiet!! Not made up ur mind?"

In general, the online contributions by the most active players seemed to greatly influence the strategies that led to the collective solution between ASU and MMU. That is, they influenced the disparate groups to cooperate with each other instead of taking the more individualistic approach to the game. Such influence could be seen in behaviors like explaining the reasons behind strategies of the game and referring to moral principles of justice and fairness that helped persuade others to follow the egalitarian strategy.

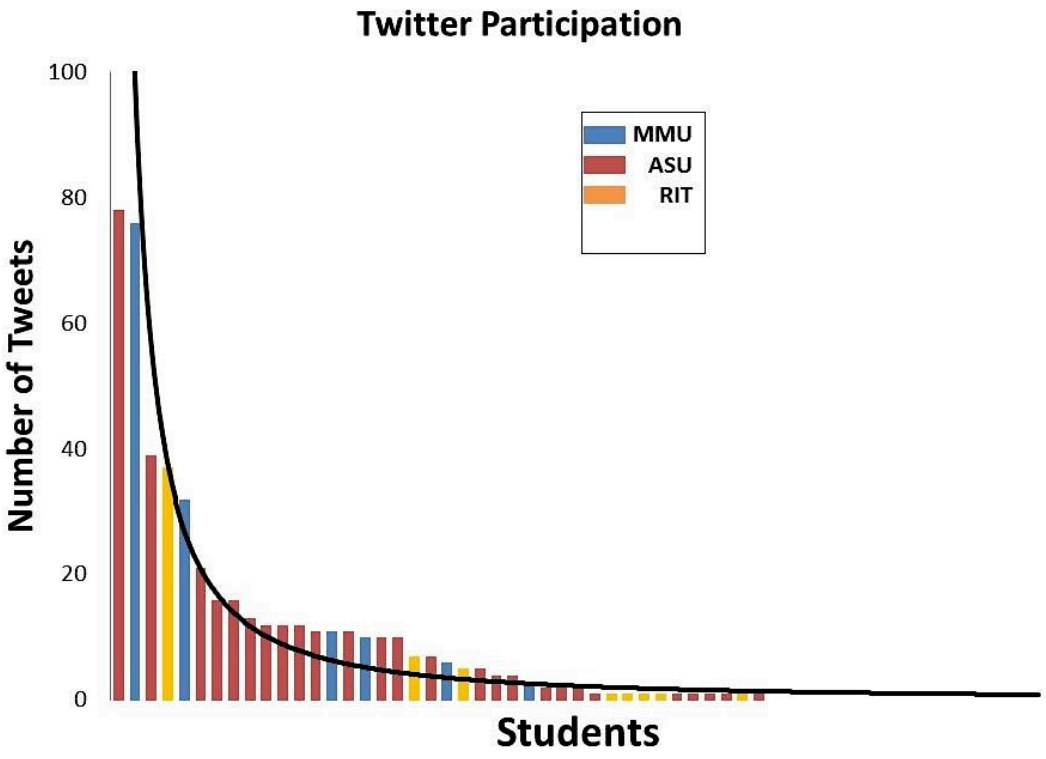
The influence of student leaders in TEG suggests the criticality of strong leadership among GVTs and offers evidence of group tacit knowledge. An individual with great leadership skills will be unable to lead if a newly formed GVT is unwilling to listen to instructions or, in the case of TEG, when that leader is struggling to even communicate with many players in the game. The same leader will have more success influencing the group after the group has time to establish some basic behavioral norms, such as listening while another person is

speaking, which is also characteristic of group tacit knowledge. By recognizing behavioral norms, the students were able to overcome some of the communication problems and provided the group with shared experiences that resulted in the development of group tacit knowledge. Consequently, the increased group tacit knowledge reduced further barriers to communication and collective action, as well as augmented the existing interpersonal leadership capacities of players.

In a similar fashion, the recognition of behavioral norms enabled students to better navigate cultural differences, another example of group tacit knowledge.

Figure 6

The total number of tweets contributed by each student playing TEG



The black line represents a power-law function, showing that a few students dominated the conversation on Twitter (left side of graph), while most students contributed minimally or not at all (middle to right side of graph).

Specifically, as time passed the tweets from the increasing number of MMU students on Twitter changed from religious declarations to questions about the game. When the digital culture shock subsided and the character of the communication on Twitter changed, the digital leaders at ASU emerged as they became active on Twitter and engaged with players at MMU. It was as if the American students overcame their initial feelings of unfamiliarity and discomfort with responding to the religious statements and moved forward with the game at the same time that the MMU students began to understand that their religious statements were not helping them play the game. Thus, our observations indicate that tacit knowledge and leadership may be strategies for overcoming, or at least alleviating, digital culture shock among GVTs.

The ability of the students to move past the initial digital culture shock experience may have been influenced by an in-class discussion at ASU about the role that religion played in the everyday lives of the Ugandan people. ASU had the benefit of an instructor that had visited Uganda in the past year. The instructor possessed tacit knowledge of the importance of Christianity to the people living there, which enabled her to codify her experience into explicit knowledge for the students. The explicit knowledge from the instructor enabled the ASU students to better understand their experience with the MMU students communicating their religious values, and may have facilitated further group tacit knowledge among the ASU and MMU students.

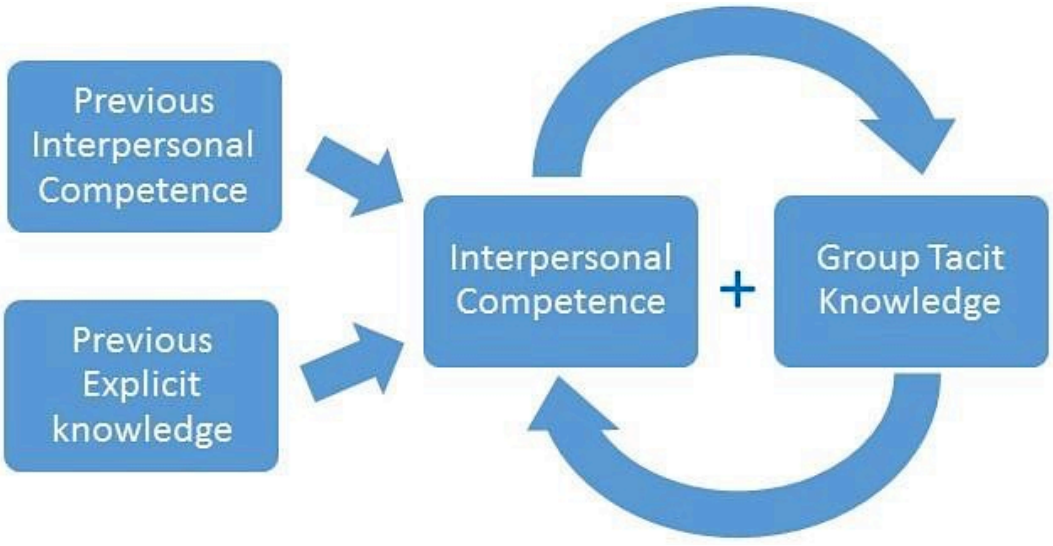
The instructor also gave the students insights on the limited access that MMU students had to the Internet and how power-outages were a common occurrence in Uganda. This information inspired some American students who, after hearing about some of the everyday hardships of the MMU students, had a greater sense of empathy for the MMU students and began to reconsider how to more ethically approach TEG in a way that benefited the MMU students. Possessing empathy can be thought of as an example of group tacit knowledge because it is defined as an ability to understand and share the feelings of another. In this way, we observed students developing their capacity for cross-cultural thinking and empathy, while simultaneously developing their group tacit knowledge.

The implication for GVTs is that obtaining explicit knowledge about the people you are engaging with virtually may increase the likelihood, and perhaps the speed, at which they are able to develop group tacit knowledge. The improved group tacit knowledge then enables individual interpersonal skills, such as empathy and cross-cultural thinking, to be more effective at guiding the group toward cooperative outcomes. Thus, we envision group tacit knowledge and interpersonal competence as a positive feedback loop, driven by individuals' previous interpersonal competencies and explicit knowledge (Figure 7). The initial development of group tacit knowledge in newly formed GVTs provides an environment for interpersonal skills (both obtained before and during the GVT experience) to become increasingly influential and effective in aligning group interests and ultimately shaping and allowing for success.

An example of the positive feedback between explicit knowledge, group tacit knowledge and interpersonal competencies in TEG occurred at the very end of the game, when the ASU students chose to pool points to send to the MMU class

Figure 7

Positive feedback loop between interpersonal competence and group tacit knowledge observed during the ASU-RIT-MMU case study



for distribution. Doing so conveyed a greater understanding of the technological limitations, showed an acceptance of MMU's more collective approach to the game (as opposed to the more individualistic approach of most American students), and was an act of kindness and altruism from ASU to MMU, given the disadvantages experienced by the MMU class during the game. This transfer allowed the MMU students to all earn final game grades of 89%, while the ASU students accepted a lower grade of 85% for all but one player, who gave a few less points. In this case, the information about the MMU students (previous explicit knowledge) encouraged the American students to empathize with and think more pluralistically about the game from another point-of-view (interpersonal competencies), which created a greater understanding and atmosphere for group cohesion (group tacit knowledge).

Recommendations

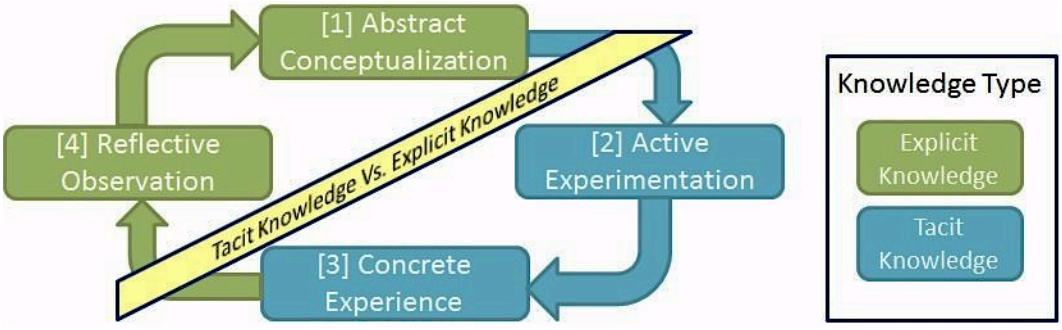
In the game, we observed a feedback loop between the advancement of interpersonal competence and group tacit knowledge, fed by group members' initial levels of interpersonal competence and explicit knowledge gained prior to and during the game. This feedback was observed in the ability of the ASU and MMU students to move up to higher group tacit knowledge levels, despite the challenges to communication and collaboration due to leadership, empathy, and cross-cultural thinking among students. These interpersonal competencies logically support group tacit knowledge, as they foster better communication and trust, and likely accelerate the process of moving up the different group tacit knowledge levels. Therefore, we recommend that training for GVTs should involve activities that transfer both explicit and tacit knowledge related to international cultures, ICT, and interpersonal skills. The explicit knowledge will help reduce some of the digital culture shock, and the interplay between tacit knowledge and maturing interpersonal skills will help teams navigate the quickened pace of communication and the potential technological limitations as well as reduce the likelihood of misinterpretation.

Explicit and tacit learning outcomes can be achieved by designing course activities to bring students around the entire Kolb Learning Cycle (Kolb & Kolb, 2005). The Kolb Learning Cycle is a widely used approach to learning that employs both active and passive components, including abstract conceptualization (i.e., thinking), active experimentation (i.e., doing), concrete experience (i.e., feeling), and reflective observation (i.e., watching), as shown in Figure 8.

The passive stages of the cycle (1 & 4 in Figure 8) involve reading, listening, watching lectures, and thinking about cultural concepts. These passive learning stages are useful for transferring explicit knowledge about another culture or technology. The active stages of the cycle (2 & 3 in Figure 8) involve real-world problem solving, active experimentation, interacting with other students, and even emotional experiences that students will instinctively and tacitly draw from later in their career. These active learning stages are useful for gaining tacit knowledge about another culture or technology, but also provide opportunities for students to practice their interpersonal skills. Particularly for GVTs, these activities should include real exchanges with people from other cultures using ICT, as our students did in TEG. Over time and through repeated international interactions, students will become more comfortable with the pace and forms of communication as well as develop a sense of what is appropriate given the context of the collaborating team.

Figure 8

Mapping tacit and explicit knowledge onto the Kolb Learning Cycle



Based on the ASU-RIT-MMU game experience and the above discussion of the Kolb Learning cycle, we recommend the following actions for implementing tacit knowledge development into educational activities:

- Design courses with experiential and active learning activities involving collaborative work through ICTs, which will help students develop interpersonal skills and provide an opportunity to practice strategies for group tacit knowledge development.

- Provide explicit knowledge to students about cultural differences that will lessen digital culture shock and enhance individual capacities for empathy.

- Inform students about various digital platforms for collaboration and provide opportunities for students to practice and develop tacit knowledge of ICTs. Practice with ICTs will reduce the experiential dimension of the digital divide.

- Discuss limitations of ICTs relevant for collaborating with individuals located in areas with technological disadvantages. This will help alleviate technical complications of the digital divide.

- Focus on learning outcomes related to interpersonal competencies that will build skills for effective communication and leadership. Doing so will accelerate the feedback between interpersonal competencies and group tacit knowledge.

Conclusion

This paper explored the role of group tacit knowledge for GVTs using a teaching case study involving students in the U.S. and Uganda playing an educational game via Twitter. We discussed the key challenges that students faced in the game, including technological failure, digital culture shock, and reconciling individualistic vs. collective approaches. Then, we discussed how small increases in quality of group tacit knowledge complemented the interpersonal capacities of leadership, empathy, and cross cultural thinking, making them more effective at

overcoming these challenges, and, ultimately, allowing for further progression of group tacit knowledge. Thus, we observed a positive feedback loop between group tacit knowledge and individual interpersonal skills. Based on the discussed teaching case, we recommend that training for GVTs involve experiential opportunities for gaining tacit knowledge about ICTs and developing interpersonal skills, in addition to providing explicit knowledge focused on cultural differences and the digital divide. ■

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Appendices

Appendix A: The Externalities Game Instructions for Students

In TEG you and your classmates will confront a non-cooperative game theory problem. Non-cooperative game-theory problems are characterized by conflicting tensions between personal interests and what is best for the entire group. You will be deciding how to allocate a limited number of grade points with your classmates and students at two other universities. You may choose to produce as many points as you can to earn yourself a good grade, but you will only be able to do so at the expense of the grades of other students. Thus your decisions will directly affect the grades of every other student playing the game. Will all the players in the game be able to find a way to solve the collective action problem like the Coase Theorem suggests?

In the game, you will be randomly assigned one of three producer roles: luxury, intermediate or subsistence. Each role produces individual grade points and externalities (or social costs) differently, according to the descriptions below:

- *Luxury players:* gain the most points per unit of production, but also emit the greatest amount of externalities. *Luxury players can produce between 0 and 10 production units.* There are about 15 Luxury players in the game, 9 at MMU, and 3 at ASU & RIT.
- *Intermediate players:* gain the second most points per unit of production, and emit the second highest amount of externalities. *Intermediate players may produce between 0 and 50 production units.* There are about 40 Intermediate players in the game, 26 at MMU, and 7 at ASU & RIT.
- *Subsistence players:* gain the least amount of points per unit of production but emit the least amount of externalities. *Subsistence players may produce between 0 and 240 production units.* There are about 82 Subsistence players in the game, 53 at MMU, 16 at ASU, and 13 at RIT.

  ***Note that players can only produce whole units up to their maximum production capacity and not less than 0. (No negative production).

Figure 1 illustrates how your grade will be determined. For every player, individual production points accumulate at a diminishing rate, whereas the shared externality points increase exponentially. Your grades will be calculated by subtracting your share of social costs (generated by the entire class) from your total production points earned individually.

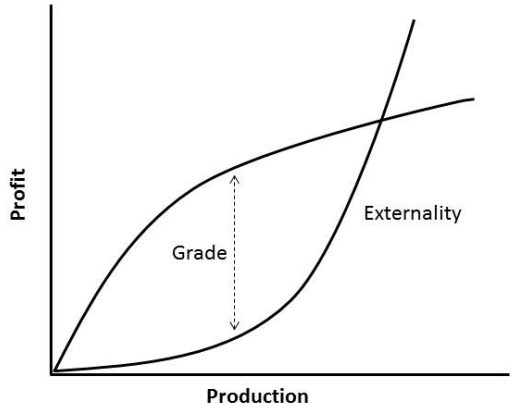

Figure 12. Individual points accumulate at a diminishing rate, whereas the shared externality points (or social costs) accumulated exponentially.

Registering with EthicsCORE (online discussion board):

Go to http://nationalethicscenter.org and click on the 'Register' link in the upper right hand corner of the page. You will be asked to input a username, password, and email address. EthicsCORE will send you a confirmation email to complete registration. Once registration is complete, you can join our group by navigating to "My Hub" and clicking on the "All Groups" link at the bottom of the "My Groups" box. Then you can search for our group in the "Find a Group" section by typing '**ASU_RIT_MMU Game-play**' in the search box. Then click on the group name to enter the group page. To join, click on the "Join Group" button in the upper right hand corner. All of the game materials can be accessed and downloaded by clicking on the "Resources" tab. You may use the "Discussion" and/or the "Chat" tabs to communicate with others in the group.

Game-play:

A round of play consists of two parts: 1) a period of across-university contract negotiations by students ending with production decisions by all players, and 2) a period of contract settlement.

1) As of **Saturday, September 15th** students at all three universities will be ready to start the first part of the round, by negotiating and strategizing about production

decisions. Feel free to contact and communicate with students in your class and students at other universities about strategies. You can communicate however you like. We have step-by-step instructions for you to use Twitter and short message services (SMS) with your phone. You can also follow the instructions above on how to register with EthicsCORE online to read and contribute to chats and discussions with other students. You may also call and email other students if you prefer. Ultimately, it is up to you and your classmates to figure out the best way to communicate during the game.

A copy of the spreadsheet that will be used to calculate your grades can be downloaded from EthicsCORE and may be available on a computer in the classroom. You may want to experiment with different game strategies by inputting various production decisions into the red columns. The resulting grades are calculated and displayed in the blue columns.

You will have about four days to negotiate about production decisions with other students before your final decisions are due. **All decisions are due by Sunday, September 23rd and must be submitted to the username 'TEG_submit' on Twitter (either online or via SMS).** To keep your production decision confidential, you can send a direct message to TEG_submit. See separate "Instructions for Twitter and SMS" for more details. Results will be available about 2 hours after submission and will be announced via Twitter and will be posted on EthicsCORE.

2) As of **Monday, September 24th**, the grades of students at all three universities will be revealed. At this time, the second step of the game begins and you are free to communicate with other students about contract settlements. Each player can transfer points to any other player. Note that negative scores earned in the first part of the round must be overcome by transferring points in this part; however, you cannot receive a final game grade less than zero. **The deadline for contract settlement is Sunday, September 30th**.

   If you choose to transfer points to other players you must indicate how many points you want to transfer with which particular player, identified by specific player roles. For example, if I am Luxury player 01 and I want to share 40 points with Subsistence player 42, I would send the following message to TEG_submit: 01_luxury share 40 points with 42_Subsistence. You can share points with multiple players as well by indicating how many points you want to give to each specific player. If the decisions are unclear, no points will be transferred. **Final grades will be revealed via Twitter and EthicsCORE by Monday, October 1st.**

Remember that all players can make deals during the game to limit production or share points for the greater good; however, **the Instructor cannot enforce agreements**. Players may lie to each other about their behaviors, and in many cases these lies may go undetected. Good luck!

Appendix B: Twitter via SMS Instructions

This document will guide you through playing TEG with your phone using only SMS. It is important to create a **new** account using your mobile phone for game-play if you want to keep your responses anonymous. You will deactivate this account once game-play is complete. If you are an MMU student and you cannot get Twitter SMS to work with your phone, you may submit your decisions by sending a regular text message to **0001 (602) 753-6539** (this is a U.S. number).

I. Sign up for a new twitter account via SMS

1. Send a text message with the word **START** to your Twitter shortcode (e.g. 40404 if you're in the US, 179 for MTN or 86444 for Orange and Vodafone carriers in Uganda).
2. Twitter will send you a reply and ask you to reply back with your **full name** to sign up.
3. Instead of your full name, reply with an **alias** to keep your identity anonymous.
4. Twitter will then send a message back to you and assign you a **username** based on the name you enter.
5. You're all set. Send a **text message** and it will post as your first Tweet! **Note that tweets are limited to 140 characters or less.**

II. Change Username to Assigned Role

Once you receive your role (in class), then change your username to reflect your role appropriately by typing:

SET USERNAME [new username]

Your new username should be in the following format: ['2 digit number_role']

Example: If assigned the role of 01 luxury then your new username would be '01_luxury'. If assigned 10 subsistence then your new username would be '10_subsistence'.

Once everyone has changed their username, players can follow other players by typing FOLLOW and new usernames. You must follow other players to see what they are saying:

Example: If I want to communicate with 01_luxury I would type in my phone:

FOLLOW 01_luxury.

III. Communicate!!!!

Feel free to experiment with twitter and communicate with one another about the game using SMS. **Remember you must follow other users to see what they are saying.**

How to Post a Tweet via SMS:

6. First, make sure you've created a Twitter account via SMS using directions above.
7. Simply send a text message containing your Tweet to your short code (40404 for the U.S., 179 for MTN or 86444 for Orange and Vodafone carriers in Uganda).
8. Your tweet will be sent to everyone that is following you.

IV. Follow TEG_submit

TEG_submit is the username of the administration account for our game.

To follow others type **FOLLOW [username]** which allows you to start following a specific user, as well as receive SMS notifications. Example: **FOLLOW TEG submit.**

You must follow TEG_submit so that you can submit your decisions before the deadline.

V. Deadline for production decision: Sunday, September 23rd at 9pm for ASU, 12am (midnight) for RIT, 7am for MMU.

> **You will send your production decision to the administrator, TEG_submit.**
>
> A direct message will keep your decision confidential from other players.
>
> **To Direct Message administrator** your production decision type **D TEG_submit [your production number].**

VI. Preliminary grades will be announced (via SMS and EthicsCORE) about two hours after decisions are sent to TEG_submit.

VII. Deadline for settling of sharing contracts is Sunday, September 30th at 9pm for ASU, 12am (midnight) for RIT, and 7am for MMU.

VIII. Final grades will be announced (via SMS and EthicsCORE) about two hours after decisions are sent to TEG_submit. They will also be announced in class.

IX. Deactivate account

> **STOP, QUIT, END, CANCEL or UNSUBSCRIBE:** will deactivate your account if you are an SMS-only user. If you completed the sign-up flow on the web, sending any of these commands to your Twitter short code will simply remove your phone number from your Twitter account.

Appendix C: Information Newsletter

Multi-University Game-Play for Sustainability Ethics Research

Dear Participant,

We are a team of researchers from Arizona State University and Rochester Institute of Technology. We are conducting research that examines how groups of diverse

participants organize and make decisions when confronted with a collective action problem.

As part of this course you will be playing one or more educational games that will encourage you to engage with other students in exercises where your grade will be influenced by the performance of others. These games will be played with students attending class at other Universities using digital technology (online discussion boards, SMS, and Twitter).

We are inviting your participation in providing data for our study that will be gathered during game-play and associated activities. These include pre-game and post-game surveys, writing exercises, class and online discussions, as well as observations of behaviors in class. Your participation in the game is a course assignment; however your participation in providing data for this study is voluntary. You have the right to not participate in surveys and the right to not have data collected from your actions, communication, or responses. If you choose not to take part in providing data for our study, we will exclude observations about your particular behavior and actions during game-play and disregard your responses. You will not be penalized for not participating and your grade will not be affected. You must be 18 or older to participate in this research.

There are no foreseeable risks or discomforts to your participation in the study. The data collected will be archived and studied in order to advance National Science Foundation project # 1037236, "An Experiential Pedagogy for Sustainability Ethics." Data collected from your participation may be used in dissemination material that discusses the project such as peer-reviewed scholarship, conference papers and presentations, and dissertation material. Should your responses be published, all information will be kept anonymous.

If you have any questions concerning the research study, please contact the research team:

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Dr. Evan Selinger	email: evan.selinger@rit.edu
Susan Spierre, M.S.	email: susan.spierre@asu.edu

If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

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SYNCHRONOUS AND ASYNCHRONOUS ONLINE INTERNATIONAL COLLABORATION

The Trans-Atlantic & Pacific Project

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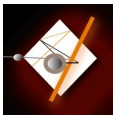
Since its inception in 1999-2000, the Trans-Atlantic & Pacific Project (TAPP) has involved 19 universities in 12 countries. Participating institutions have collaborated simultaneously on translation, usability testing, and editing projects, affording both American and European students the opportunity to collaborate on a wide variety of topics, via both synchronous and asynchronous communication technologies. Although the TAPP is facilitated with students on university campuses, it focuses on writing, translation, and editing projects that mirror what students often encounter in professional positions after graduation and which prepare students to work collaboratively across great distances in online and virtual workspaces in cross-cultural virtual teams. In this longitudinal teaching case, we provide some background of the TAPP, discuss briefly its adaptation to diverse disciplines and technological spaces, and address the difficulties in managing projects across great distances and the tools developed by 2014 to aid project management.

Keywords. Asynchronous, Collaboration, Intercultural communication, Localization, Project management, Synchronous, Technical writing, Technology, Translation, Usability testing, Virtual teams.



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After providing a brief overview of the Trans-Atlantic & Pacific Project (TAPP), as well as some of the ways in which it has evolved in terms of diverse collaborators, technologies, and disciplines, this article focuses attention on the difficulties in managing projects across great distances and the tools that we developed to aid in this process. In many ways, the TAPP models complex project management situations in which our students may one day find themselves working. These range from participating in translingual, -national, and -cultural teams to the tracking of multiple texts and versions of texts. From such often-complex partnerships, students and instructors alike gain experience managing data, negotiating meaning, and managing relationships. Thus, the purpose of this article is to familiarize readers with a proven learning-by-doing model for training language professionals to work in globally distributed virtual teams. Further, it presents project management tools developed to smooth the students' collaborations. Finally, it assesses the increasing number of evolving communication technologies that students and instructors have employed over the 15 years during which the TAPP collaborations have taken place.

Overview of the Trans-Atlantic & Pacific project

At its start in the 1999-2000 academic year, the Trans-Atlantic Project, as it was known originally, connected a writing class in the U.S. state of Wisconsin with a translation class in the Belgian province of Flanders. Over time, and with an expanded name, the Trans-Atlantic & Pacific Project (TAPP) has involved 19 universities in 12 countries on four continents. Moreover, it has connected dozens of instructors and thousands of their students via emerging communication technologies as they become available. Participating institutions have collaborated internationally on writing-translation projects, often including usability testing, and translation-editing projects (a full list is available at http://www.ndsu.edu/english/transatlantic_and_pacific_translations/). The TAPP affords African, Asian, European, and North American students the opportunity to collaborate on a wide variety of topics. Students engage not only in the collaborative creation of

meaning in texts but also in a mutually dependent exchange of cultural knowledge.

Although the TAPP is facilitated with students on university campuses, it focuses on writing, usability testing, translation, and editing projects that mirror what students may encounter in professional work after graduation. Technology, culture, and language are all central to the curriculum. At its most complex, for example, technical writing students in Spain and the U.S. coauthor sets of instructions on engineering topics, join students in Finland in conducting usability tests of their texts, and assist students in Belgium, France, and Italy in translating and localizing the texts for use in the respective languages and cultures of Flanders, Paris, and northern Italy. They do so using an array of communication technologies, often including email, Facebook, Skype, FaceTime, WhatsApp, documents on Google Drive or OneDrive, and full-class live videoconferences. TAPP partnerships prepare students to work collaboratively across great distances in online and virtual workspaces in what are often called cross-cultural virtual teams (CCVTs).

Growing the Trans-Atlantic project into the Trans-Atlantic & Pacific project: Seeding, grafting, and cultivating

The seeds of the TAPP international network germinated when two former classmates of the University of Oslo discovered that both of them were assigning their students to work with procedural texts or instructions. At the University of Wisconsin-Stout in the US, Bruce Maylath was teaching his students in an introductory technical writing course how to write instructions and to prepare them for translation (Maylath, 1997). At Belgium's Mercator College of Translation & Interpretation (now part of Ghent University), Sonia Vandepitte was planning to teach her students in an introductory translation course how to translate instructions.

At first, Vandepitte thought that she would have her students locate instructions already printed in English and translate them into Flemish Dutch. However, on discovering Vandepitte's plan, Maylath asked her if she would consider substituting the texts that his students would draft. With some slight adjustments in their calendars to accommodate the collaboration—mainly moving the writing assignment earlier in the semester and the subsequent translation assignment later in the semester—students were paired, as much as possible by common interest in a topic chosen by the writer, and the Project was launched.

The benefits to students became apparent as soon as they began introducing themselves to their partners via what at the time was a communication technology still fairly new to most of them: email. Going far beyond what was expected, many partners began sending each other descriptions about their lives and cultures. They were often prompted by seemingly banal exchanges of logistical information, such as "I may not answer my email for a few days while I'm on spring break," leading to questions such as "What do American students do on their holidays?" In one memorable thread, a Wisconsin student described her life as a foster mother while her Flemish partner answered her questions about how he was able to translate her instructions when he was legally blind.

Most beneficial, however, were the discussions of a text's meanings as translation students strove to render the meaning of the source language accurately in the target language. Especially instructive was this question from one of the translation students in Ghent, Belgium: When the technical writing student with whom she was collaborating sent her his instructions for "Cleaning Your VCR," she asked, "What do you mean with a 'wall outlet'?" Although the writer had gone through his text carefully and included a glossary of technical terms, he had not considered "wall outlet" a term that required definition or clarification. Through their subsequent email dialogue, the writer and translator discovered why a simple, everyday phrase in the US turned out to be so confusing initially:

1. If the writer had included the word "electrical," the meaning of the phrase would have been transparent. With this critical word assumed and thus invisible, the phrase on its surface appeared to refer to a window or door opening in a wall.

2. "Outlet" to mean an electrical receptacle is peculiar to American English. Living just across the North Sea from Britain, the translation students in Belgium had, naturally enough, been taught British English. The British say "socket." If the writer had written "socket"—a term found in American English as well—the translator would have understood.

3. Including the word "wall," but not "electrical," prompted further confusion, instead of clarity. When the translator read "wall outlet," what first entered her mind was an automatic teller machine (ATM). Because so many ATMs in Europe appear along the sidewalks in the outer walls of banks, Flemish speakers of Dutch are fond of uttering their idiom "go to the wall," when they wish to withdraw money from an ATM. Wondering why cleaning a videocassette recorder suddenly required cash, the translator decided that she had better ask the writer what he really meant by "wall outlet."

Such serendipitous episodes are the hallmark of TAPP collaborations. They can never be planned ahead of time or learned just from a textbook. Rather, they are the inevitable result of languages in contact. When the writing process includes the translation process, the meanings of a text and its ambiguities must be examined closely. More than any other readers, translators have to know exactly what their source-text writers mean to say; otherwise, they will introduce errors in the target text. The TAPP instructors of writing courses commonly point out that what their writing students learn best from their translation partners is that the texts that they write are not nearly as clear and unambiguous as they think that they are.

This benefit and others, along with the basic operations and workflow of TAPP collaborations, are detailed in a series of the earliest publications about the Trans-Atlantic Project (Humbley, Maylath, Mousten, Vandepitte, & Veisblat,

2005; Maylath, Vandepitte, & Mousten, 2008; Mousten, Vandepitte, & Maylath, 2008). As more instructors in more countries joined the TAPP network, they began cultivating other arrangements and assignments, in particular translation-editing projects reversing the direction of "text travel," a phrase introduced by our Danish colleague Birthe Mousten. To this point, projects began with the writers, who wrote their own texts in English as the source language, then sent the text traveling to translators, who translated the texts into their native languages as the target languages. In reversing the direction of text travel, the process works like this: instead of texts originating with writing students who transmitted their texts to translation students, the translation students start the project by choosing a text (often a news article) published in their language and translating it into English. Students in the US then review and edit the text to make sure that it is idiomatic (deliberately rerendering the translators' British English into American English). All the while, the editors hold a dialogue with the translators about the meaning found in the source language. This approach, along with analyses of other improvements and benefits of TAPP collaborations, is detailed in a subsequent series of publications (Mousten, Maylath, Humbley, Scarpa, Livesey, & Vandepitte, 2010a; Mousten, Maylath, Vandepitte, & Humbley, 2010b; Mousten, Humbley, Maylath, & Vandepitte, 2012; Verzella & Tommaso, 2014).

Because TAPP collaborations are open to whatever permutations that two instructors agree upon, the network has grown easily to include those who teach other sorts of writing courses. Examples at North Dakota State University (NDSU), which now serves as the TAPP's hub, include

ENGL-120: College Composition II
ENGL-320: Business & Professional Writing
ENGL-321: Writing in the Technical Professions
ENGL-322: Creative Writing I
ENGL-324: Writing in the Sciences
ENGL-325: Writing in the Health Professions
ENGL-326: Writing in the Design Professions
ENGL-358: Writing in the Humanities & Social Sciences
ENGL-467: English Studies Capstone Experience

In addition, starting in 2010 and continuing every other autumn, several TAPP instructors band together to join their classes in multilateral projects. Grafting together the usual bilateral writing-translation and translation-editing projects, students in NDSU's ENGL-455/655: International Technical Writing course learn project management skills as they collaborate in extensive CCVTs with partners in as many as six other countries at one time.

For their writing-translation project, these students coauthor instructions with engineering students taking technical writing in English at Universitat Politècnica de Catalunya (also known as Barcelona Tech) in Spain. Both groups then conduct usability tests in engineering laboratories in their respective universities while also communicating with students testing the same English-language texts for usability at Vaasa University in Finland. As tests are underway, translation partners at the Ghent University in Belgium, the University of Paris—Diderot in France, and the University of Padua in Italy begin translating the texts into Dutch, French, and Italian, respectively.

As the writing-translation projects reach their final stages, the translation-editing projects begin, with the same classes in Belgium and France, plus a translation class at Aarhus University in Denmark or Aristotle University in Greece. The translation students translate news articles from their respective languages into English, which the students at NDSU then review and edit. Readers can learn the details of multilateral projects in the most recent series of publications (Maylath, Vandepitte, Minacori, Isohella, Mousten, & Humbley, 2013; Maylath, King, & Arnò Maciá, 2013; Hammer & Maylath, 2014; Vandepitte, Mousten, Maylath, Isohella, Musacchio, & Palumbo, 2015).

Positioning Trans-Atlantic & Pacific project collaborations in diverse disciplinary and technological spaces

As mentioned earlier, the growth of the TAPP has inevitably led to both challenges and innovation. When Hammer began to participate in the TAPP as

an instructor of writing courses at NDSU in 2011, for instance, the TAPP had not previously ventured far beyond the realm of technical writing courses. The courses Hammer taught, and first integrated into the TAPP, were

- ENGL-326: Writing in the Design Professions (a course designed primarily for students studying architecture)
- ENGL-358: Writing in the Humanities & Social Sciences (a course notorious for students' wide variety of majors, from music to exercise science to sociology)

Both of these courses focused on the production of texts that students will likely encounter as they enter their chosen professions.

Therefore, instead of focusing solely on the tasks of editing and preparing texts for translation, students in these discipline-specific courses were asked to integrate their own fields of study and independent research projects with their newly acquired knowledge of linguistics and translation. For example, students in Writing in the Humanities & Social Sciences not only undertook primary research, wrote discipline-appropriate texts, and prepared them for translation; they also approached their research from an international perspective. One student studying criminal justice was particularly interested in recidivism rates (individuals who are repeatedly incarcerated) in the US. Prior to this collaboration with students in Paris, she had read little or no research regarding these rates outside of the US. Yet, with some help from her partner who gathered and translated some articles and book excerpts, she was able to access French recidivism research and write a much more detailed and nuanced report that approached recidivism as a cross-cultural issue.

As another illustration, students in the Writing in the Design Professions course at NDSU were asked to propose a solution to a design problem specific to Paris. Because most of these students had little or no knowledge of Parisian culture and infrastructure, they too relied on information from their Parisian partners. Additionally, several U.S.-based students had already formulated their projects prior to meeting their CCVT partners, and were forced to change their

focus or designs as a result of advice from a "local." One NDSU student had initially proposed to design a rather large urban park. However, after consulting with her partner in France, she decided to design a "pocket park" in a Parisian shopping district, a much more appropriate design in terms of both size and function.

Students in discipline-based writing courses at NDSU are often proficient researchers, writers, and designers in their local contexts. However, they learn very quickly that they need to build and negotiate collaboratively with people rooted in very different locations, cultures, and linguistic systems. As a result, their work exhibits more carefully nuanced considerations, as they are able to draw knowledge directly from members of other cultures, rather than relying solely on secondary web-based research.

Of course, these collaborations require a great deal of interpersonal communication and dialogue, often more than email typically facilitates. Even though email is a virtually synchronous communication technology, students typically find that emails tend to travel once or twice per day. (This situation is due primarily to the time zone difference between the US and their partners overseas.) Instead, truly synchronous communication technologies like real-time textual and video chat provide a space wherein multiple exchanges may take place in the space of a short period of time. Students are also encouraged to connect with their partners using social media platforms like Facebook. While this activity seems at first glance to be less task-oriented and more social, Hammer and Maylath (2014) note—echoing Blattner and Fiori (2009), Omar, Embi, and Yunus (2012), and others—that the seemingly peripheral communication facilitated by social networking technologies actually contributes to more satisfying and successful partnerships, as well as meaningful personal and professional relationships.

As the TAPP continues to grow into new disciplinary and technological spaces, instructors and students alike continue to encounter challenges and innovate solutions to deal with these complex partnerships. As we alluded to before, these challenges are often the most valuable moments of the semester. In fact, from the outset of each TAPP collaboration, instructors remind students

that, while the TAPP is a long-standing project, it is also new every semester in terms of challenges and opportunities to navigate a highly complex and rewarding project.

Challenges in communicating over distance

As international collaboration becomes more prevalent in academic programs—and especially as classrooms take on multiple, simultaneous projects with multiple partners, nationalities, languages, and cultures—tracking project status and direction of text travel becomes critical. While complex assignments require students to develop strategic processes and project management techniques, partnerships involving multiple participants require the insight of experience to foresee the potential pitfalls of each project. To facilitate student learning and improve collaboration, we developed several project management spreadsheets for students and instructors to use as aids to organization.

While the TAPP collaborations are, on the surface, academically focused, the project management tools developed and used can be of benefit in a business environment as well. As Austin, Browne, Haas, Kenyatta, and Zulueta (2013) observe, there is currently a "lack of project management within higher education" (p. 76) and there is a "scarcity of academic research" (p. 77) on project management. It is difficult to claim with certainty that all project management skills honed in the TAPP collaborations will relate directly to business. However, the complexity of multilateral projects in particular does mimic what students may find in their workplaces after graduation. For example, "Given the growing use of virtual teams in international business activities, business schools must provide students with experiential learning opportunities that prepare them to work in virtual environments" (Gavidia, Mogollón, & Baena, 2004, p. 52).

Students whose first opportunities for multinational collaboration occur in school are likely to be more ready to transition into international working relationships in the business world than students who have had no such exposure. The ability to work flexibly across borders is becoming more and more important. As Kerzner (2001) observes, "The world is becoming a global village where the

accessibility to and the reliance upon other nations in business is becoming the norm, one of the ways for our business base to grow" (p. 988). Projects like ours are becoming foundational to producing nimble students who are ready to work across distances and cultures.

Project management in particular is a difficult subject matter—one that often is honed only through experience. Project managers normally estimate time (allotted to each step within a project) based on previous experience (Harris, Shaffer, Stokes, & Goldstein, 1987, p. 3.4). Because students don't have this experience, teachers need to provide planning aids to smooth the process. Developing materials that will help these employees transition more efficiently into these complex projects saves businesses time and prevents employee dissatisfaction or frustration.

The spreadsheets that were designed to aid students and teachers not only provided them with tools to track their projects and communication with international partners but also illustrated for them the complexity involved in professional international project management. As the term ended, students reported that the spreadsheets assisted them greatly in learning processes of technical writing, translation preparation, and editing. They also reported gaining a better appreciation for project management in general because their success relied heavily on keeping track of texts' points of origin, direction of text travel, stages of development, and other related details.

The challenges faced in TAPP classrooms would not be unusual in a collaborative international business environment. Students had multiple projects on which they were working simultaneously; they had multiple partners with multiple nationalities, languages, and cultures. According to Taras et al. (2013), "Global competencies are increasingly becoming a workplace requirement, regardless of the industry or geographic location" (p. 415). Taras et al.'s large study, which "involved more than 6000 students from nearly 80 universities located in 43 countries" (p. 416) found that "the most obvious benefit of GVT-based [global virtual teams] projects lies in the opportunity to experience the challenges of working in multicultural virtual teams and practice how to deal with them" (p. 416). The experiences enriched their education in ways that students

"typically gain only outside of the classroom" (p. 418). The hands-on experience working with this complex system of communication and with managing it with project management tools gives students the closest thing to "real life" experience (outside of internships and service learning) that academia can offer.

The tools

The project management tools developed for this project are spreadsheet-based. As new and more interactive technologies are developed, it is logical to foresee these tools becoming cloud-based. Our current tools are aimed at getting students to a common "starting line," where the work ahead is clear and can be easily documented. Gavidia et al. (2004) note Weick and Roberts' concept of "collective mind" (p. 53) and its importance in team members' understanding their part in the social structure of the group—as well as "their tasks and their contributions toward common goals" (p. 53).

In summarizing Wegner's "Transactive Memory System," they also note, "In order to rely on other people's memories, people need to build a database of who knows what in the team" (p. 53). In short, Gavidia et al. (2004) explain that students from a diverse variety of backgrounds can have difficulty developing a sense of who can do what and so struggle to find strengths and weaknesses on their team—a problem that results, at first, in students being much more willing to follow than to lead. Because of students' natural tendency to shy away from leadership at the beginning, supplying them with ready-made project management tools may help them avoid losing precious time. Project management tools can also provide a guide for keeping track of the accumulated experience; they are the physical database that can easily be referenced by members of the team.

One of the obstacles that had hampered TAPP multilateral collaborations in the past was the difficulty in trying to keep track of the direction of text travel (e.g., who had the document and what stage of composition or translation the document was in). In addition, it was hard for participants to know which student (in which country and at which university) was currently working on the text and

the date on which the text was last transferred from one partner to another. Instructors found that project management tools are needed to aid both teachers and their students. They have to be updatable, easy-to-use and -reference documents that assist in keeping records. Furthermore, they ought to be as simple as possible, because a cumbersome method of documentation would likely be ignored and therefore be obsolete from the beginning. In the end, three spreadsheets were created for instructor use, and one was created for student use.

The first project management tool (see Appendix A) contains just the names and contact information of the U.S. students in addition to columns to register receipt of their prelearning brief and translation brief, the topic of paper, the title of paper, the word count, and notes. U.S. student names are divided by course number (e.g., "ENGL-455/655"), as some students can be enrolled at the 600 graduate level and others in the 400 undergraduate level, when enrolled in International Technical Writing, with its multilateral projects. Although the teams may not be set up to discriminate between graduate and undergraduate students (that is, European students are matched with their U.S. partners based more on interest in topic than on level in school), it was determined that U.S. instructors would find the sheet easier to use if the course numbers and students belonging to each one were kept separate. Directly opposite the names and contact information for the writers are blanks for the names and contact information of their translation partners overseas.

The second project management tool (see Appendix B) contains the names and contact information of all students and their partners. In addition, the European partner contact information is to be listed. The third and final project management tool (see Appendix C), intended for instructor use, clarifies the partnerships and uses spacing to make it easier to scan and know, at a glance, which sets of students were partnered with whom. Because some partnerships are duos and others are trios or more, this spacing becomes critical in clarifying which members belong to which groups.

Halfway into the semester, the student-focused project management tool was developed. This tool was expanded to include not just transoceanic translation, but also additional sets of students in yet another country, who would

test and edit the instructions. This new dimension increases the complications and the difficulty inherent in project management—in other words, it closely replicates what these students might realistically experience on the job as technical writers and translators. This spreadsheet, therefore, differentiates the direction of text travel for participants. For the writing-translation project, the text traveled from Catalonia to North Dakota to Finland, then Flanders, France, and Italy. For the translation-editing project, the text traveled from Denmark, Flanders, and Italy to North Dakota. This management tool also contains columns to register receipt of their prelearning brief and translation brief, the topic of paper, the title of paper, the word count, and notes—much like the original spreadsheets.

How the tools enriched the process

According to Kerzner (2001), when tasks are unfamiliar to students, they need more instruction and guidance in order to produce quality results. (p. 550). In addition, Kerzner lists what he calls "consequences of poor planning," but the list is really presented as stages in a poorly planned process: "project initiation, wild enthusiasm, disillusionment, chaos, search for the guilty, punishment of the innocent, promotion of the nonparticipants, definition of the requirements" (2001, p. 550). Of course, as Kerzner points out, the final stage should have been the first if the project were to be successful. The tools used in TAPP collaborations help students see and understand the expectations of their projects before they have their first meeting.

The authors of this article also found that it was beneficial for the students to experience the complications involved in a project that needs to be truly managed and not just completed. While students have extensive experience juggling their own workloads and obligations, trying to juggle what is necessary for themselves while keeping in mind the needs of project partners (who are not in the same location) can show them the importance of attention to detail, punctuality, and clarity in business. In working on such projects, students have to stretch beyond their own needs, their own schedules, their own instructors' expectations and consider what timeframe their partners may be working with,

what expectations their partners may have, and what their partners' instructors may expect. Lessons like these expand thinking and awareness—things that can be nearly impossible to teach without these types of projects. Without the project management tools provided to the students, they may have given up in frustration.

Providing ready-made project management tools relieves students of the necessity to design similar mechanisms on their own and addresses factors such as the following:

- Designing spreadsheets is new to some of them.
- They may not realize how important such a tool can be until the project is already underway (and badly unorganized).
- Designing a spreadsheet would take time away from their learning language skills, at the heart of both writing and translation courses alike.

The lessons that students learn about project management are likely just as impactful with these basic project management documents provided as they would be without. After using these tools and having seen what good project management tools look like, students should be able to create similar aids for themselves in future projects as both students and professionals.

Electronic Tools and Resources

What follows are a few tools that have been used or could be used to facilitate collaboration across distances:

Dropbox: A file-sharing site that can be accessed from anywhere with an internet connection. Users get a minimum of two free gigs of space, but additional space can be purchased at minimal cost. (www.dropbox.com)

Email: Though the oldest of the technologies listed here, it remains the mainstay of TAPP collaborations. Interestingly, although many partners quickly migrate from email to other communication technologies, especially Facebook, after several weeks a surprising number migrate back

to email. Rooted as it is in the development of memoranda by the British East India Company for record-keeping (Locker, 1982; Yates, 1989), email often provides the best record for lengthy dialogue over time.

Facebook: Partners can set up a group and make posts and have discussions, much like on personal Facebook pages. The group can provide documentation of discussion as well as file-sharing and storage. (www.facebook.com)

FaceTime: Apple's version of video (or audio-only) chatting software that can be used for free on one of their devices via Wi-Fi or data network. (www.apple.com/mac/facetime/)

Google Drive: Partners can work on documents either synchronously or asynchronously. Formatting options are limited. Documents are best created in the site, rather than uploaded to it. (www.google.com/drive/)

Google Hangout: Users in Google Hangout can, using a variety of hardware, have multiuser video, audio, and text chats. The service is free to use, requiring only a Google+ account. Additionally, Google's suite of applications is available during the hangout, including Google Drive. (www.google.com/+/learnmore/hangouts/)

Live Stream: Without cost, users can broadcast and view live and ad-free streaming video. With an upgrade, users can archive broadcasts and embed broadcasts into a range of social media sites. (http://new.livestream.com/)

Microsoft OneDrive: See Google drive. (see previous entry in this list)

PiratePad: Also known as Etherpad, Piratepad is a very basic real-time collaborative text composition and editing tool, and also features a chat window. It does not require an account or login, so users concerned with privacy or ethics of larger web-based companies may find this tool a desirable alternative. (www.piratepad.ca/ or www.piratepad.nl/)

Skype: Users can communicate via three types of computer-to-computer chat, including typewritten, video chat, and voice only. The basic service is free, but for minimal expense, users can call phone numbers from their computer. (www.skype.com/en/)

Soundcloud: A web-based service that allows users to upload sound files to their profiles, share with groups and/or the larger community of Soundcloud users, comment on others' sounds, and collaborate. It is available as a free version, or a paid version with expanded space and features. (https://soundcloud.com/)

Trello: A free, web-based application for collaborative project management. Groups can create "cards" that represent tasks in a project, move them to different stages of completion, and pass them to other users. They can also create to-do lists, deadlines, and engage with one another in comments, messages, and notifications. Trello synchronizes with multiple devices and applications. (https://trello.com/)

WhatsApp: In the autumn of 2014, one NDSU undergraduate in the International Technical Writing course communicated in real time via WhatsApp with one of his coauthoring partners, an engineering student at Barcelona Tech. He reported that WhatsApp was particularly useful as they went step by step through the instructions that they had written to see if they had left out any essential steps or information. In communicating this way, they discovered that they had. (www.whatsapp.com)

Conclusion

This project resulted in a number of highly successful collaborations. Students practiced real-world techniques of project management while at the same time working with international partners. They were able to choose from a variety of communication media that best suited the style of their individual teams.

Through working together across content generation as well as translation of text, students learned about ambiguities in their own writing. Although true replication of professional circumstances is never possible in an academic environment, students participating in the Trans-Atlantic and Pacific Project were able to acquire and practice skills that produce effective writing, collaboration, and translation. ■

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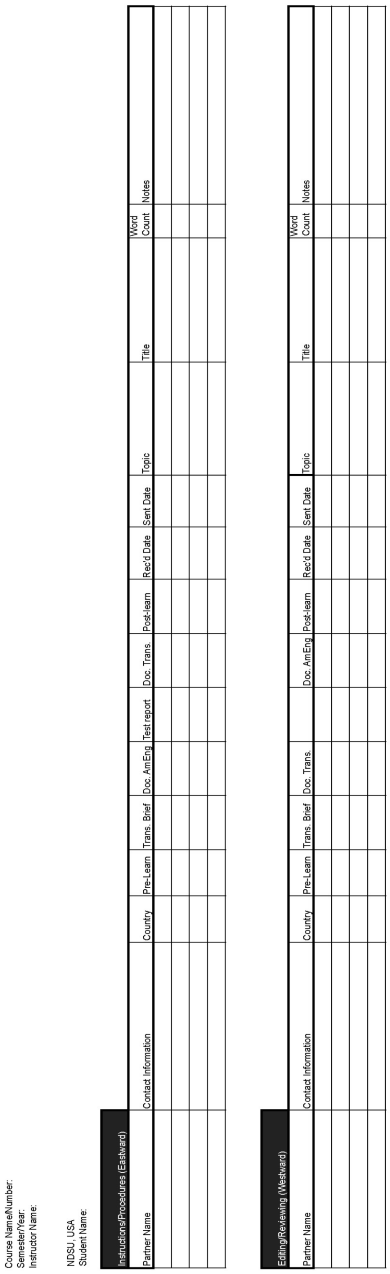
Appendices

Appendix A: Document and Transferral Record



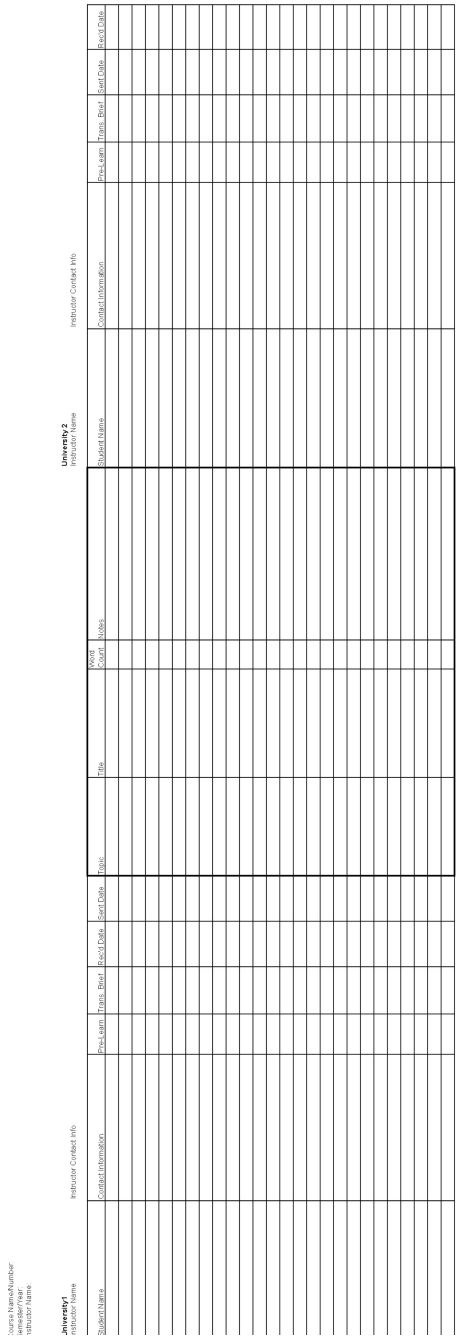
Course Name/Number:
Semester/Year:
Instructor Name:

NDSU, USA
Student Name:

Instructions/Procedures (Eastward)																				
Partner Name	Contact Information	Country	Pre-Learn	Trans. Brief	Doc. Am.Eng.	Test report	Doc. Trans.	Post-learn	Rec'd Date	Sent Date	Topic	Title	Word Count	Notes						

Editing/Reviewing (Westward)																				
Partner Name	Contact Information	Country	Pre-Learn	Trans. Brief	Doc. Trans.		Doc. Am.Eng.	Post-learn	Rec'd Date	Sent Date	Topic	Title	Word Count	Notes						

Appendix B: Student Contact Information



Course Name/Number
Semester/Year
Instructor Name

University 1
Instructor Name

Instructor Contact Info

Student Name	Contact Information	Prev Learn	Trans. Read	Read Date	Start Date	Topic	Title	Word Count	Notes

University 2
Instructor Name

Instructor Contact Info

Student Name	Contact Information	Prev Learn	Trans. Read	Read Date	Start Date

Appendix C: Student Partnerships

Course Name/Number:
Semester/Year:
Instructor Name:

NDSU, USA
Instructor Name:

Aarhus University, Denmark
Instructor Name:

Student Name	Contact Information	Pre-Learn	Trans. Brief	Recd Date	Sent Date	Topic	Title	Word Count	Notes	Student Name	Contact Information	Pre-Learn	Trans. Brief	Sent Date	Recd Date
Student 1										Student A					
Student 2										Student B					
Student 3										Student C					
Student 4										Student D					
Student 5										Student E					
Student 6															
Student 7										Student F					
Student 8										Student G					
Student 9															
Student 10										Student H					
Student 11															
Student 12										Student I					

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connexions INTERVIEWS

connexions interview with
TATIANA BATOVA

Transcript of the interview with Tatiana Batova, Assistant Professor of Technical Communication at Arizona State University, in the United States of America. Tatiana has also worked as a medical and pharmaceutical translator and writer, as well as a language specialist, interpreter, project manager, and consultant.

The interview was recorded for issue 3(1). It was conducted by Han Yu, via Skype, on January 23, 2015. The interview was transcribed from the recorded interview by Han Yu, *connexions*' section editor.

The video recording of this interview is available on the *connexions* Vimeo channel at https://vimeo.com/channels/852448

Can you describe your present career in light of international professional communication?

Definitely. Well I'm an assistant professor of technical communication at ASU, and I teach currently global issues of technical communication classes and I teach user experience classes. And in my user experience classes, I bring the idea of writing and creating user experiences for international, global, cross-cultural, multilingual audiences. And I think that international professional communication has always been my very big research interest. For example, in one of my current projects, I'm working with the

Center for Information Development Management, and we are trying to determine best practices of multilingual quality in a topic-based authoring environment. So what we are looking at is how do we define, how do we understand what a high-quality information product is when it is in multiple languages and how does it depend on our backgrounds, experiences, our education, expertise, and how can we negotiate it if we work in a large team and so on. I'm also co-developing a software which is supposed to help small businesses create and evaluate texts written for global audiences... so with the ideas of global English style guides and writing for translation and localization. So I think that everything I really do has something to do with international professional communication.

I'm also working on a research project from a previous research, which deals with multilingual informed consent documentation in clinical trials… and so how can we make sure that participants, patients, in clinical trials can actually get the best benefits of an informed consent brochure. So I'm looking at multimodal and digital informed consents in multiple languages and assembling them differently for different readers, so.

What previous experience in international professional communication, if any, has prepared you for your present career?

Everything, possibly. My first degree was in foreign language education and my second degree was in technical translation and my PhD was in technical communication, but I think throughout all the years I focused on localization, collaboration, technology, and technical communication. And I worked as a freelance technical translator and interpreter in healthcare settings. I have worked as a localization project manager. So I think everything I really have done in my life had something to do with international communication.

[. . .]

Oh definitely. I think with the whole idea of the global issues class came from my experiences because what I'm trying to do in the global issues of technical communication is bring together different ideas. We talk a lot about culture, and... these are undergraduate students also, so we start by talking about cultural frameworks and how they were developed, when they work, when they do not work, how you can

create stereotypes when you really rely on them, how can we think critically about what culture is, what a different language is. But then I'm also trying to teach students very practical skills and connect our discussions about culture and language with the discussions going on in localization industry... and the community of translators. And try to teach them, well, let's imagine that you're working for a company and this is your job, and... well, you have to work with international audiences, what are you going to do, what you need to know... the global English, the machine translation, computer-assisted translation, when they work, when they do not work, how do you make a point to your... your boss, your manager, why could localization be better than translation in this case or maybe vice versa. So, I'm trying to combine the... also, I'm trying to include the very, very practical component in it. Everything, of course, comes from my own experiences in project management and as a translator. That's an excellent question.

What would you say are particular accomplishments of international professional communication practice, research, and/or pedagogy in your region of the world or elsewhere?

I think that one of the biggest advantages that I see is that we start thinking a lot more about global and cross-cultural classes that we teach in professional and technical communication curriculums, and we pay a lot more attention to international communication in most of the communication classes. And the way I know this is that I keep hearing less and less, almost not at all, that "Oh we don't have time for this international stuff. We have so much stuff to teach already in this class the way it is." So, and I think this is a big step. This is a big step in a very good direction. And I like that we reconsidered the terms we use for international communication to not just talk about communicating with customers, users, readers, audiences from around... from different countries, from around the globe, but we also pay a lot more attention to people who come from different linguistic and cultural backgrounds within our own country, so I think this is also a very big step.

Also, international professional communication is becoming more integrated generally in people's research agendas because for a number of years, in my experience, you would go to a conference and see all the very different tracks and there is a panel and this panel is international communication and you would have three topics that really,

the only common denominator would be that they talk about something international, but they have nothing to do with one another. And I don't see that that much anymore. So the different topics, kind of... that have to do with something international are more dispersed and better connected with other areas so I really like that and I would like to see more of that also.

And another thing is that the companies in industry with which I'm working, you can see that some companies are outpacing other companies by how they consider that not just the marketing should be adjusted to meet the needs of global consumers but also any types of communication and they start thinking about rethinking their approaches, maybe including localization and transcreation into their practices. And I think this is... this is a start of something really good, so.

What would you say are some challenges of international professional communication practice, research, and/or pedagogy in your region of the world or elsewhere?

Well, I think this is connected to something I've just said also because like I said, well, some companies are really thinking about the ideas of localization but... the challenges are, and especially for smaller companies, that we really have very few and definitively not enough of well-defined and also available best practices of how to do it. So that if it is a small business and they realize, well, we could really benefit from localization, what are they going to do without a huge, very huge initial investment? Because there are really very few guideline which I think could become comprehensive.

And I think the biggest challenges, the biggest challenges I think, are the information silos and the different gaps between areas of knowledge and of expertise. And I'm thinking between... even different academic departments and programs, between academy and industry, between units within one company, between disciplines, like technical translation and technical communication. And I think we should be having more connections and we are not... Sometimes we see some of them formed but really not enough.

And maybe another challenge is that... in many cases still when you have people talk about translation as part of international communication, you see that communicating with the global audiences is... there is this rhetoric around that this

is a problem and some type of an obstacle that you need to resolve and overcome, not an opportunity. And I think that's a challenge in the mindset that we need to work on changing.

It is an opportunity. Because it is an opportunity on very many different levels. There is an opportunity for researchers to do research,you know, exciting topics... For businesses, there is an opportunity because all the sales levels that they can have in different countries. This is really an opportunity, not just something that we need to... well, this is something we need to find... we need to solve this problem. This is not a problem, not the way I see it. And I think this positive approach is a lot more... can be a lot more fruitful.

How do you see technology or changes in technology impacting, maintaining, or altering international professional communication practice, research, or pedagogy in your region of the world or elsewhere?

Definitely, and I think the technology I'm working with the most is the component content management technologies. And you can see them a lot in international technical communication specifically. And these are other strategies and technologies together so I'm not just gonna say just technologies. But they come with the promise of saving a lot of time and a lot of money and making actually... communication products better. But I'm a very big localization proponent and I think that with component content management technologies we still have a long, a really long way to go before we can use the affordances, the promises that this technology makes to actually improve technical communication products beyond consistency, to think about usability. And... I always hear that tight budget and faster turnaround times, and they are not going away, but then if you think about user-friendly, high-quality technical communication, it's extremely important for so many reasons: ethical, rhetorical, legal, financial, what not. And so, I think... when I think about what technology has to offer, and… thinking critically about what it has to offer and what the disadvantages could be... and my hope is that with component content management, what we can do is we can learn how to use it to adapt information products for global audiences, not just based on language, but based on different information needs, based on different preferences of different users. And it still sounds a little bit out there, but I hope it makes sense what I'm saying.

I think machine translation made very big, a huge progress over the years, but... we still have such a long way to go for machine translation to be a good enough solution. And machine translation is great for something very low fidelity, like when you just want to get some kind of idea of what the text is about. But for anything that really is directed at the users of technology, I think that we have a really long way to go and quite a few years before we can actually say that machine translation can replace... I don't know if we will ever be able to be that far... The whole question of artificial intelligence comes in because the language changes so fast, so unless we think about technology learning constantly and constantly adapting... The language is just too tricky.

What kinds of international and intercultural experiences and skill sets has higher education taught students to help them transition to industry? In what ways could higher education do a better job preparing the next generation of graduates for international professional communication?

Well, I think we are actually in a pretty good place right now with how much attention we pay to the idea of culture and thinking about the terms for describing international communication critically, like cross-cultural, how is it different from intercultural and international. And even the whole idea of culture: How can we define it for different purposes? You know, how can we not define it too narrowly. I think that what I would like to see more, again more practical applications of all those conversations. So, for example for students, if you have experience, you have knowledge, and you talked a lot about what culture is, about social justice. And now it is your first job and you are working on documents or any type of communication products in a company, where are you going to begin? For example, you still have those budgets and those time-lines, right. And you cannot just expect that the things are going to change because you want them to be different. So how are you going to, what are you going to start with? How are you going to make a point? How are you going to help other people with change management. So I'm thinking about the practical applications and I think what I would also like to see... a lot with education is more collaboration between communication programs and translation programs. And in my experience I have not seen enough and we are such natural allies, so I think we should be making more connections, maybe co-taught classes where students get to work on similar projects with students who are

studying something different... but the same in the end because communication and translation, they are so similar from so many different perspectives.

What has industry done well to help higher education teach international and intercultural experiences and skill sets or to help their own employees develop such experiences and skill sets? What else might industry do to help prepare the next generation of graduates for international professional communication?

I think this is the most difficult question of all the questions. Because I think with industry it is so difficult to say because it depends on the particular institution or particular company or industry. This is always so place-based in my experience, and I think, partnering with... between practitioners and academics to do research, for example, on best practices is a very good step or student internships, a lot of exchanges, or having speakers invited for workshops within the universities. But then again it is so very place-based. I think that involving students in technical communication programs in industry professional organizations is a great approach and I think this is something we should be doing more. But this is also so extremely challenging on so many different levels. Even if you think about calendars, right. The fiscal calendar and the academic calendar. It is so hard to put them together for students and for instructors. And I think one thing that I always think, and I have been saying a lot about this in the academic environment but also for industry, more connections between technical communicators and technical translators. So within companies, there are more conversations, and I hear this more and more that yes, we should involve technical translators earlier on, not just in documentation development but in product development. But I think this is the area that is really going to bring very many interesting results. And I'm hoping to see more of that.

Well, a technical communicator, in my opinion, is the person…and this is a very difficult question, because a technical communicator does so many different things. But if I were to very much simplify the idea, I think this is the person who develops information... and information products in the source language. And then the technical translator would be the person who develops the same information and the same information products in a target language, so not the source language. For US,

that would be English, for example, and Spanish, or English and Chinese, English and Russian, right. So this is the person who has a lot of experience in the culture... and again... over simplifying how I understand culture but for the sake of this interview... Not even culture, but even the local context of the language, the particular... I don't like saying culture and country together, but I'm going to say just country. So this is why I think there are so many decisions that they should be making together. Because the way you create information in the source language, for example in English, is going to influence so much about how the same information will be portrayed in a different language by the technical translator.

And technical translator I think is a title which is also very limiting, but I don't have a better one so I'm going to keep using it. Because technical translators do not just translate. Many of them are good with localization. Many of them are transcreation experts who know the industry, who know the specifics of this product in a different country. And they don't really translate, they just recreate the information products that can be even in a different genre, a different type of information product for a different language. So they have a very wide area of expertise, not everybody, but some.

Is there anything else that you would like to add?

The global user experience. The user experience is such a large area of study and practice and it's becoming closer to technical communication where technical communicators do a lot of work with user experience, and I think global user experience would be a very interesting area. And some publications are starting to appear. There was just a book published, I think, last year about global user experience. And I'm very excited to see that, that something like this is happening. We are thinking about creating user experiences, and not replicating them but creating different user experiences for people who have different cultural expectations and linguistic expectations. ■

About the Interviewee

Tatiana Batova is an assistant professor of technical communication at Arizona State University. Her major research interests are in the areas of cross-cultural business, technical, and health care communication, content management, digital media, and rhetoric of technology. She has worked as a medical and pharmaceutical translator and writer, as well as a language specialist, interpreter, project manager, and consultant. In 2010 she received the Frank R. Smith Outstanding Journal Article Award from the Society for Technical Communication for "Writing for the Participants of International Clinical Trials: Law, Ethics, and Culture."

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connexions interview with

RONIT MAYER

Transcript of the interview with Ronit Mayer, Director of Knowledge Management at SAP, in Israel.

The interview was recorded for issue 3(1). It was conducted by Han Yu, via Skype, on February 10, 2015. The interview was transcribed from the recorded interview by Han Yu, *connexions*' section editor.

The video recording of this interview is available on the *connexions* Vimeo channel at https://vimeo.com/channels/852448

Can you describe your present career in light of international professional communication?

Sure, absolutely. I'm a director of knowledge management in a global company called SAP. My job today is to ensure that the product goes out with professional communication, and that includes all kinds of deliverables. In the past, we used to speak about a whole shipload of books, pdfs, and printed materials. Nowadays, professional communication is so much more than that. It's books, it's videos, it's social media, it's all of the above and more, and the field is developing all the time. So not only is my job

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to deliver, it is also to stay in touch with what's going on and to be able to predict the next thing so that my company stays ahead.

What previous experience in international professional communication, if any, has prepared you for your present career?

In my previous career, I was also in a global international company, so that was a very good preparation for where I am now. And I had similar responsibilities and of course similar global connections. I would say that the biggest professional... the biggest preparation for my professional career has actually come from the nonprofessional arena. Being a person that has lived in different countries in the world and who has traveled a bit and who's really living in a society with many, many, many different peoples from different areas, it is so impossible to be insular and to only have one type of facet or identity. You rub off and you learn from others and you integrate with others. And by virtue of this interconnection, you grow and that certainly helps your professional communication skills.

What are some countries and/or cultures that you have lived in?

Well, I grew up in Africa... in South Africa... my father was from South Africa and my mother was from Zimbabwe. And I moved after a period of time and I lived in North America—in Canada—for short periods of time. And I'm currently living in Israel. So I've literally been on three continents and have embraced and enjoyed the cultures of all the different continents and in addition, along the way, I have met many interesting people.

What are some particular knowledge and skills that you gained from living in these different countries/cultures that you were then able to use in your work?

First of all, professional work is divided into two. There is the kind of work that we do with others, the projects that we work on in our technical communication areas, infrastructure, architecture, delivery. We would like to rely on the best possible structures and the best possible practices in order to optimize our working environment. And this

means, first of all, getting this information from different people who have had this experience in different parts of the world. You cannot gauge best practices if you cannot speak to people and you cannot learn through their experience and see through their eyes what they are going through. So the first aspect of really enjoying different cultures is learning how to speak to people and learning how to take from them what they have to offer in the manner that they would like to give it to you. So that is about really being a person who is able to align with global strategy.

Then the other aspect is, of course, the delivery itself. As writers today, we absolutely need to be aware of what the consumers want and we absolutely need to know how to give it. And the consumers are different. Not only do they have different roles, but in the different countries, there are different expectations as to how documentation and the user assistance is delivered. So we also need to be sensitive towards that. We need to be sensitive towards the way they consume different types of information and also, of course, local regulations and local standards and legal guidelines for what is the bare minimum requirement.

What would you say are particular accomplishments of international professional communication practice, research, and/or pedagogy in your region of the world or elsewhere?

Absolutely. I think that I would like to speak a little bit about Israel here because Israel is a very interesting country. It has 8 million people and not a lot of natural resources, so a lot of our energy and a lot of our deliverables, our international deliverables really come from the intellectual properties. And as such, there are almost 800 startup companies rolling out of Israel every single year. So I would say that the one thing I really like to mention is the innovation that is coming out this corner of the world. Everyone says that necessity is the mother of invention, and that is true. And a lot of innovation comes from necessity, and a lot of innovation comes from creativity. And one huge asset that you have in Israel—and we see it time and time again—is really the inventive and sometimes crazy ideas. But in the end ideas just grow and become socially acceptable and are even acquired across the different locations in the world. So I would say that that's very, very significant here. There is a mindset for change, there is a mindset for innovation, there is a mindset to do, to try, to dare. And that is very much part of the

local culture. And I think that anyone who is working in an international atmosphere, that is something they have grown to expect from Israelis. Definitely that would be something I would like to stress.

What would you say are some challenges of international professional communication practice, research, and/or pedagogy in your region of the world or elsewhere?

I think one of the major challenges that we have on the one hand is our global nature and on the other hand is our global nature! If you look at Israel specifically, it is a company developing in the international arena... it's a country whose native language is not English and therefore when you are out to create a product that also delivers on technical communication, you have to really go out there and find the right people to deliver this message. And that means looking from amongst the people in the area who can deliver the message. How can they deliver it? Can they do it in a manner that is globally and internationally accepted? So that is one of the big challenges is finding really the right professionals to really bolster your product.

I think that another challenge is also in general in professional communication is knowing what are trends and what is here to stay. I think there is a lot of hype around lots of different social media. And it's hard to know what will become standardized delivery and where we should put the focus. And I think that international... or companies that deal with technical communication professionally really need to be sure that they are jumping on the right bandwagon before they try everything. But the good news is that this means that for companies who want to invest in research and in really benchmarking, there's always a lot of research to be done and there's always ways to see who is using what. And the global community is, in the end, it's so small. So we really have very good ways to check whether there is a high level of adoption or not.

What are some of the changes and/or research that are happening in your company?

In SAP, we are currently moving... we are in a very, very large transition stage moving into the cloud arena. And this has required a massive change in mindset and a massive

paradigm shift from a technical communication perspective. And the move is welcome and it's something that we are all very much looking forward to. But it's hard work. For a company that for many, many years has been... given on premise delivery to welcome mobile and now to welcome cloud, you have to be ready from a tools perspective, from an infrastructure perspective, and most importantly, from the perspective of the people who really need to deliver.

How do you see technology or changes in technology impacting, maintaining, or altering international professional communication practice, research, or pedagogy in your region of the world or elsewhere?

You know, I remember very many years ago the key word or the buzz word was "single sourcing." And now people seem to have really aligned on that one and now we've moved on to DITA. I know that DITA was something that we embraced several years back in SAP. I think that what we are looking at now, at least in a setting wherein lots and lots of deliveries are created every day, is reuse. Looking at ways to reuse information in a manner that is both feasible and enables us to do language translation in an accommodating and an economical way. So I think that we are very much looking at the bigger picture now and the technology has supported us so far. And where it hasn't supported us, I think we are still looking for the next best thing.

What kinds of international and intercultural experiences and skill sets has higher education taught students to help them transition to industry? In what ways could higher education do a better job preparing the next generation of graduates for international professional communication?

I think that what higher education is doing very well is putting a finger on the pulse of the different types of industries out there and what the industries needed. There is a lot of technical knowledge and technical understanding as to what is happening in the world. I think where we need to be doing better is soft skills. At the end of the day, technical communication is more about communication than it's about technical. And what we need to be doing is really embracing and trying to develop our communication skills as opposed to our technical skills. Once you have a technical aptitude, once you

have the technical know-how, it's kind of a binary, you know. Your understanding is there, but the communication side, that the harder side to develop and therein lies the challenge. And I think that higher education needs to be putting a focus there.

As you mentioned, you have benefited from your international and cross-cultural experiences. How can our education system help provide or simulate that experience for students?

I think that there is nothing like having on-the-ground experience, so if students have the opportunity to travel or if the students have an opportunity for exchange, then that is probably the first prize. But there's no doubt in my mind that that's not always feasible either because schools cannot facilitate it or because funds don't allow it. And frankly, we live in a world in which if you can meet someone face-to-face over the computer, then you don't necessarily have to duplicate that experience in a real-person setting. It can also be done digitally. So, I would say that how we can facilitate such a thing is really to create intercultural experiences and workshops across different higher-education institutions. So, to get technical communication students from different arenas and different places in the world to do joint projects together. I know that this is done in some schools already. But not necessarily just to work on a technical communications project, but to work on a cross-cultural project, to work on the challenges that people face when they work across the different arenas and really need to deal with different types of people with different ways of expressing themselves. So I would say, yeah, let's enable our students to have a cross-cultural experience with soft skills as the focus.

What has industry done well to help higher education teach international and intercultural experiences and skill sets or to help their own employees develop such experiences and skill sets? What else might industry do to help prepare the next generation of graduates for international professional communication?

I think that the industry is listening to what is happening. It's very exciting to watch. But educational institutions are really, really plugging in to what's going on. You know, in the past, who would have imagined that we would have courses on blogging and social

media? Who would have imagined that we would be talking about the way graphics can enhance deliverables and even replace them instead of standard documentation? Who would have thought about augmented realty? But the communication skills are really getting into the subject, so they are really listening to what is happening out there. And I think at the same time there also is certainly a sensitivity to diversity and to the uniqueness that the diverse voice brings into the picture, and whether that diversity be looking at the trends in communication from youngsters, or looking to how the third generation uses technology, or how do we prepare ourselves for the millenials entering.

I think that the higher education institutions are really in tune to the changes and to the undercurrents that are happening in the society. And that is really pushing towards the change in technical communication. So I think that they need to continue listening. I think that at the same time, we need to continue to really set the expectations, to give our needs, to make them clear, and to say as the technical communication mangers today, what we need is a generation of writers and story-tellers and visual artists who are here to bring a narrative across in a simple and easy-to-consume manner. We need to express that gone are the days of sitting in front of the screen and trying to decipher what complex procedure we need to write. Now we have to think in terms of usability, ease of accessibility, how the information is presented, what is presented, how we write as little as possible but in the most clear and comprehensible way for the user. So we need to be telling the industry and we need to be telling the educational institutions that we have identified certain trends in the world and based on these trends we also would like to see students being educated.

Is there anything else that you wish to add?

Well I would like to say one thing. I think that when I was younger, I didn't really imagine myself... I'm not sure that I even knew that technical communication existed as a profession. So I would imagine that, as a young child, what I was imagining that I would be when I grow up is a writer. And one of the first experiences of writing that I had was reading an international magazine for children and finding a pen pal in…or two pen pals in different countries. And I think if I have to, you know, I was thinking about it before this interview, that was probably my very, very first non-professional international communication. And it was a very, very exciting moment for me to write

the letter, to send it off, to receive a response from someone on the other side of the world. How fabulous was that, you know, how wonderful was that experience, to make the world a smaller place and to know that you are touching and talking to someone on the other side of the world.

Today, it's so much easier to do that kind of communication, but I don't want us to lose the thrill of that first time that we make communication and correspondence with someone on the other side of the world in a very unique and special way. So I hope that as much as the careers associated with technical communication develop and as much as the profession develops, I hope that it doesn't always feel like a profession and it feels more like something that we love doing. You know, we love writing, we love communicating, we do it well, and we never kind of lose the pen pal relationship with our user that maybe I had as a girl when I was 10 years old. ■

connexions interview with

AFAF STEIERT

Transcript of the interview with Afaf Steiert, President and cofounder of Afaf Translations LCC, in the United States of America. Afaf also works as a conference Arabic interpreter.

The interview was recorded for issue 3(1). It was conducted by Quan Zhou, via Skype, on January, 2015. The interview was transcribed from the recorded interview by Pana Moua.

The video recording of this interview is available on the *connexions* Vimeo channel at https://vimeo.com/channels/852448

Can you describe your present career in light of international professional communication?

I'm a founder of AFAF Translations LLC, and this is a translations services company. And we have been found since 2004; I'm having my cofounder as my husband, Matthias Steiert. And… we have started with Arabic language and German language, and we went from there to all other languages in the United States. So it covers about 50 plus languages around the area.

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What previous experience in international professional communication, if any, has prepared you for your present career?

Our international communication experience in our lives was more regarding our real life rather than in academic life. I would say our exposure was more learning the languages we did fluently in schools where we stressed out in our education and our areas—we come from two different areas in the world. I'm from North Africa, he's from Europe—and we stressed out a lot in our education regarding languages as French. And then it took us from there, we went into Science—we are both scientists originally—where we studied; I studied molecular biology and he has a PhD in biochemistry. And this actually recommended us to fly all over the world because science, you couldn't be in one place as a hub. You have to go internationally. So we had actually to interact, communicate with people around the entire world. So we had about ten years of our life, mainly traveling every two years between different countries and different languages. I had to study Italian, a bit of Dutch, some German. I forgot my French on the way… and I just landed in USA where I met every nationality you can ever think of like... in Bay Area we are very fortunate to have every Asian... like language you can get introduced to, where you actually tend to understand the culture through the communication. And I still feel like, even if we do speak English, we still can have a barrier. Once you do speak to the person with his own language, is very different to convince him of your point. You can only say "Hello," "Goodbye" and "You're a very nice person" but you cannot do a real connected relation except when you start to speak the person's language.

And from there, we went into, like... we can see that the science is only dominated by English, except for French—the French, only scientists, they're the ones who keep the articles into English, a little bit of Arabic; they keep it up, which nobody reads their papers, scientifically. And from there it came to us the idea that we have to do a scientific translation company where it's focusing—when it's coming to technical or scientists, it's not only translators who do the job; besides language, you need to have also background on what you are translating.

So our present and past and future is actually all about international communication. It's not only languages, it's also the brain, the way you are educated, the way you are thinking, and the way you want to deliver the information. Does it go

through your brain, or doesn't it go through... Especially when it comes to technical cum scientific, it's different from literature, like, since a long time has been translated the novels of Nagib Mahfuz and lots of nobel prize laureats for writers where you can go with the writer and imagine... But really, like, not easy times where it came and still very new... the patterns right now for translating into Middle Eastern languages—Arabic... California now is getting very cautious about when you want to give an information for parents or new immigrants about their kids, everybody's very important for him—their health, their children, their education—and it's very important for a new immigrant, even if he knows "Hello," "Goodbye," to get the information written, printed, well done, translated, that you can reach to him. Then he will follow what you're saying; whatever is the rules; whatever you want him to help his child as. So you're definitely convincing the origins of the entire world once you're international communicating with them through their own language.

What would you say are particular accomplishments of international professional communication practice, research, and/or pedagogy in your region of the world or elsewhere?

Our practice—we are more into practice, we research a little bit, you know, at this point, because we are not really researching into translation. But through our start-up, when we started in 2004, we definitely accomplished a lot. I can explain to you regarding technical translation and regarding scientific translation... I can say we have definitely reached to a perfection in Arabic translation; definitely into a lot of other languages, as Spanish for medical field. So we definitely have delivered a lot of information very precisely, and this is very important... where we included as well localizations beside translation. And this is a big accomplishment, because a lot of times you can see localization is a little bit working away of translation in some situations.

What would you say are some challenges of international professional communication—practice, research, and/or pedagogy in your region of the world or elsewhere?

When you speak about the region of the world, because we do work with a lot of regions of the world. We do work with... once we are translating, we tend to work with

the entire world because there is good translators in the United States, there is very good translators in Europe, very good translators in the Middle East, as well. So when I'm speaking about the region of USA and the challenges we are facing, the speed is very good with IT. We are actually really on the spot and we are definitely finishing our deadlines in the speed of light. But it's still very challenging to reach to a point where you want to know how perfected is the work done within the short time. It's really nice that we are having Skype, it's so good we are having the cloud, we are having localization program. But it's so hard to find... like... a person who knows most of everything. It's so hard to find the translation agency who does everything, and that's a big challenge. And when you want to go to a store to shop something, it's much easier to shop everything in one store, rather than you keep going to five stores to get your five items. One place localization; one place desktop publishing; one place translation; one place interpreting; one place specialized in science; one place specialized in novels. It would be great if we are all one world or we are at least knowing how to work together and knowing how to get... introducing each other; not only on the value of money and the time; it's also on the value of the importance of every step in the whole process.

How do you see technology, or changes in technology, impacting, maintaining, or altering international professional communication research, practice, or pedagogy in your region of the world or elsewhere?

It's a bit related to the previous question, where definitely technology is never harmful because without it, by now, I wouldn't be introduced in the translation field. For example, if it was twenty years ago, I wouldn't have had the idea and the skills of... like... how would I enter this field without all this technology we are having. So we do have abundance of technology. The only problem of this challenge is the human beings which you are working with. Because there is a lot of people who are behind the technology, a lot of people who are advanced in the technology, and you have to work with both of them... because you need to meet them one point. There is lots of skilled translators who are not so updated on what's going on in localization—they don't get it, the point of... like... let us work in Excel sheet, "Let us think about the left to right"—the Panjabi, where it has zillions of fonts. They do not get it. "Why do you want this exact font?" This one translator, I'm... like "We do need this word because we need it

for the localizer to work on this exact font." And he doesn't have it on his computer. So that's a challenge. There is a lot of challenges we have to work on it, and it's mainly involving... besides the IT in the international communication, and the technology, it's the people. We need to train them, we need to explain to them, we need to tell them why are we wanting to do it this way—not just the other different way.

What kinds of international and intercultural experiences and skillsets has higher education taught students to have them transitioned to industry? And in what ways could higher education do a better job of preparing the next generation of graduates for international professional communication?

In the USA, I would say higher education can do much more than this—definitely! Because I'm seeing a lot, and I rely a lot on interns, I have to tell you. Every summer, every holiday, I get from high students to bachelors to undergraduates of linguists. And I see a lot of barriers. I find, like... students who know how to speak Spanish well; they can know how to understand but they don't know how to make a project manager work. There is a lot of outreach programs has to be done. This is like an organization of American Translator Association they are starting, where they encourage every translator or everybody in the industry should go and speak a little bit to the higher education students... like in the high school or in the middle school. Besides loving the language, you need to have some skills besides you want to speak, because you are not going to speak to your computer while you're project managing. You need to have the skills of... you want the material to be perfected. You like the computer, you want to actually work in some formatting issues, which is nothing to do with languages! It's a matter of you want to deliver a good quality at the end of the day. And this needs to be explained and experienced with the undergraduate higher education students. They need a lot of guidance; they do not understand what is the importance of international communication. It's like, "I'm needing a degree and I need a job! And I need to sit in front of a computer, and everything will come by itself." No, it doesn't come by itself! You need to train your translators, you need to communicate with your translators, you need to be on the spot—very strict. You need to meet deadlines, you need to work seriously. It's not a fun job where we just wander around because it's languages. We will not speak about weather all the time. We have to speak serious things at a certain

point. And the industry is actually very demanding, besides the language. If you have a mother-tongue, it's a great plus. You don't have to love the language because your mother and father are speaking Chinese, or Korean, or Spanish. You are actually forced as an American immigrant that your parents keep saying, "You need to know some language for your family when you return back home."

So this is something we can actually introduce in the schools that is very good—that you can manage a language. You don't have to over-perfect it. You can actually use your skills as a computer engineer, or as a localizer, or a programming... like accounting program for translators. So lots of different—you can be even like scientist like me, and you can end up in translation because there is a need for you. Because we are needing your field in specification regarding with your language, your mother tongue or, if you know a certain level, if you are really super good and you're so passionate on sitting and translating... everybody... when I started my company, "So what language do you translate?" I'm "I don't translate anymore. I started as a freelancer. I translated myself. Once you're a company, it's completely different. It's not like you sit and translate. It's either you perfect your work, either you find a good translator, or you find a desktop publisher. You have to have a talent in one of the steps, but you don't have to be all the steps."

Last question, what have industry done, well to help higher education teach international and intercultural experiences and skill sets or to help their own employees develop such experiences and skill sets and what else might industry do to help prepare the next generation of graduates for international professional communication?

Luckily, because the market is needing international professional communications, actually we are really doing a lot in the right track. A lot of internships are really stressed out right now in the undergraduate field where they come from the second year to check it out. I have very good interns... where they are having some skills, but they couldn't have it all. The best intern person I got was a person who... who just wanted to study lots of languages. He don't only like one language, and he don't want to only to study grammar. He actually wanted to study several languages. Because he even didn't want to work on translation anymore, he wanted to work in a... like, international field.

So, definitely to train him in a translation company wasn't bad at all for him, it's helping him for his career.

Internships, associations, let the students... I feel, like, the participation of students very low in conferences. Why not give them a boost instead of a scholarship per semester—and honor for who is ever good in a certain... like, field or want to introduce themselves to the translation field? Let them get introduced. And they do have a lower rate, but students barely can cover their own semester rate, so in a semester... budget money, so they definitely will never be in a conference, and... and this is a good introduction: associations, conferences, internships, outreach programs. There is definitely lots of things to be done. And the hardest thing to explain to them... the more technology is going on, the more they are not getting more money. This is a real issue for the new generation. They think that "Boom!" you know, "You will just make it as a project manager in languages." And they just waiting for you. The thing is that the computer is working and everybody can work... like, with one person as five-person work, but then, we still need the very good of the whole crowd. The best person who is having the skills of taking it seriously, working hard, trying to see what is well needed in the field. This is what we need to deliver to the higher education—where they have a guidance to keep going on it so we can reach to a good industry, a strong good industry. We definitely need it for our future.

Is there anything else that you want to add to the interview?

Mainly we should keep international communication starting from home, which is USA. When we started as a translation agency, there is lots of translation agencies. All what we thought of... what will keep us, you know, working is mainly science. But after we finished the science, you know, we are now so good in IT; we are now so good in localization; we are now so good in other projects where we can actually be more in demand of PowerPoints. So we do have a lot of skills, lots of skilled translators, lots of skilled team we're having. And it's harder the more you narrow everybody... like, "You're a small company." "You are a scientific company." "You are only a DTPR." "You are only a localizer." We can really talk together. We don't have to say, you know, "I am taking per hour this and that, and you're taking per hour this and that." you know. It's always this comparison where this is more than important than that, so we never actually, a lot of

times, see that we work with a localization company. We can see the steps, but we never see how is it all together connecting. And this would help us a lot; that if we manage to connect with a localization company, that they work for us instead of we work for them; that we can actually collaborate and we can finish a lot of work and a lot of load with... on them that we can manage definitely to finish it. It's not like, as a translation company, we couldn't do anything else.

What other suggestions do you have for academic programs and curriculum?

Academic programs in the translation field specially... it needs actually a lot of programs to be made, because when I first started as a freelancer, I was like, "Where is the courses? Where is the interpreting? Where is hands-on?" There is nothing in the United States, beside New York, Monterey Institute for languages. I was digging for them and I thought "That's my only way to be a proper academically qualified translator in the market." But actually for lots of languages besides Spanish, there is no... any lights on it, and people are starting to be less encouraged even, to look for it because they can find a job without it. But then it doesn't... like... give you the backgrounds; it doesn't give you the steps. I still had to go for interpreting a couple of workshops to get the hints of "How do I take notes? How do I reach to this speed?" You couldn't be all this natural talent all the time in everything. You have to learn something. And there is these... books and things, but actually it's much better when it's a small course or a training course. So definitely, academically can work on their courses more.

Secondly, if there is... like... specialization of linguists—now I can see lots of students are actually interested in linguistics—they don't know where or what they would end up in. They just want to find a job with linguist, international studies, international communication. But they need the hands... they need... like... hands-on internships exchange. The exchange programs really helps a lot. The kids, when they are exposed to different countries, they can see how things are differently—how things are taught in a different way. And the basic is always the foundation for our working hard, preciseness, catching up with the technology, trying to grow—is the only basic foundation... is academic. We cannot do all of this flying, you know, which we are doing right now. We are actually running, and sometimes jumping and flying, but we do need a stronger foundation. It starts from the schools where it says languages... is important.

You use it or not; it's still important. It has to be stressed out that there has to be some, you know, communication, some interaction where you will use it one time in your life. It's never going to be vanishing. Like, even my French when it's vanished, I still can manage to how... understand the French translator mentality. So it's still... it's never evaporated, you know! The way when you learn how to speak, you learn how the brain is working. So it's all connected.

It sounds like there's a theme in what you said about the practical application of language of linguistics. I have taught at several Universities and we have technical communication, technical writing, professional writing. We also have literature and sometimes linguistics. Do you think that the universities don't do a very good job in sort of connecting some of that academic knowledge with industry means.

Not, you know, not doing a good job. Their foundation is more based on old times. Old times was "Let us learn grammar to learn the language." They don't know what this using Trados® means—the students. They don't know what is even Trados® in the first place. Trados® is a machine translation helper computer program—very famous. Like, first thing when you are a translator, it's actually allowing you, through a TM—a glossary... um, translation memory—that you are actually building your own strength in a certain field with... where it's your own terminology, and you keep it up, besides the grammar part. So besides the basics, which you are teaching in academia—which is the grammar—they need to get a little bit, at least seeing the struggles, what does it looks like? It's not that complicated... program. It's a bit of a pricey program, but every translation agency must have them. Because if you want to finish 2,000 words, 3,000 words per day, they need to just feel it because if they want to be a translator only, they need to know how to do that. If they want to be a proofreader, they need to understand. Like, I am actually explaining this week to my team of translators the differences between proofreading and editing, and this is—I wonder if it's only in Arabic or is it in every translator, because I'm asking other people who are working in different language and they say "We don't have that big problem," because they don't differentiate between proofreading and editing. They give me their opinion when I tell them proofreading, they say "The translation is perfect." I'm like "No, we are

working per hour. We need to perfect it." And this what I just posted on my Facebook, you know, of my company like yesterday... because I'm really arguing with several translators, which they are really good translators, but they just feel like "Why do we have to go through 10,000 words to perfect it?" I'm like "That's our work! That's what we are paid for! This is what we need to prove to our client that we are doing this job." And this is... as academic, is hard to explain it, definitely, without the practice. So, you know, if they just can just go through a whole project... I know that in my days... was like to have a course of translation, the teacher give us a paragraph—and they still test us this way in United Nations and another department... US state department—give you a paragraph and just translate. I'm like, "Good, that's for a good translator. But what if this translator wants to be an editor, what if this translator wants to be a project manager? Proofreader?" He doesn't have to be all of that, but he needs to know all of that. So it's nice to give the paragraph; give it in parts,. Give it translating; one group editing; one group proofreading; one group localizing it; one group desktop publishing it—and see the whole project at the end. Like, the whole class can work on the one project and see how much work it will be. So they need to appreciate and understand the other side behind the computer—this whole team was working, and they all need to work it together. And this is always a challenge in international communication. Once you are a project manager, it's not only the project manager has to be the perfect... but he's a strong core... but the whole team needs to understand what does the importance of... like, a lot of times, the desktop publisher do something where the client just wants a small tab or a small... just really important for the client, you know, to have this paragraph, you know, just space, and the, you know, the desktop publisher say "Why is the small details we have to discuss them?" I'm like, "This is perfection! This is when we want to, and you're definitely, as an editor for, for a maga... a newsletter I believe so, you definitely see these challenges." And imagine when it's in a different language, and imagine when you are sitting in front of a text or a font where you never saw, like, before—and you still have to work on it! So this is what the students need to understand because they're always like, "Huh?!" You know, when they come as an intern "What is this language?" "This is Arabic—from right to left!" I'm like "Wow! You know, you don't even studied it? You never heard of this?" There is often, like, no introduction and definitely, you know, I know that academia needs to, you know, to teach a little bit of

a lot of introductions and definitely the foundation. And maybe when the foundation goes a bit backward from high school, you can have time in the undergraduate to give a bit—the newer stuff. Because you are stuck in the undergraduate with lots of curriculum—when it's the foundation they never heard of before—so then you don't have time to go a bit further than this. So it's a bit more like the flow—just... we need the water to flow a little bit further. This is my imagination.

I really liked the part about the industry and academic programs and, as the audience of this journal is mostly academic scholars, teachers and some practitioners, I hope that, through bringing voices like yours and a lot of other peoples', we will start and build programs in these areas. You know that's how everything starts at a university, when there is a demand and...

Yeah, I really... I really hope so because, definitely, I met a lot of professors of languages... like, in different language—that was in the Foreign Council Association or it's the ACTFL, so it's a Foreign... American Translation Council for Foreign Languages [American Council on the Teaching of Foreign Languages], and they were actually trying to set out the basics for the tests—how to evaluate professionals. For example, the government of the United States; how do you evaluate the level of his language to put him in a position where he can be in the consulate of USA somewhere else in the world, for example? Or he can be in a profession in the US State Department outside of his country, as a representer for his country. And I saw the professors were really excited about the test, as they are academics. Because the test is mainly, um, how do you... it's nothing, like, written, you know, from what we have... were looking into... it's more like you are evaluating the way... how you are organizing your speech. So it doesn't have to be a certain subject; it doesn't have to be a certain question. There is some few questions where you start with, but then it takes you from level to level where you can know where is the education of this person has reach linguistically and academically, in a different field even. And the ones who were really excited about it was the academic professors of the languages. I noticed that they were like, "This is just, you know, really hard to evaluate the person: Level 1, 1 and a half, or 2?" And there was a lot of argument as like, there was just a little bit of "Uh, uh, but the person is so strong in this language." So you can definitely see that the professor wants to work on reaching to perfection

where it comes to evaluation of languages. Or... once you are putting someone in a position you want him to be a perfect speaker for example. It depends on what jobs you want him. So I can see that, you know, a lot of professors has a lot of ideas of putting lots of workshops and practical things, and they do have lots of energy. And they know actually what's going on in the market, besides, you know, like... in the working industry. They know what is exactly needed, because it's not like a professor doesn't know what is an interpreter—*What is he doing?* for example. He actually knows well, you know, and I met a couple of them. They say that "We know how it is to market. It's hard, you know, for yourself as a freelancer. For agencies, how hard it is to get contracts." So all of this, they have a lot of ideas about it, and they just don't know how to reach it to their students. The method, I can imagine, it's all about hands-on because this is what a lot of us, you know, in the industry of translation, we simply go and do it. And we see, Are we good in it? Are we learning from it? Are we leaving it? So we don't really, like, study a book and say, you know, I failed or I passed, you know... ■

About the Interviewee

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