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# Chapter 5

## Making Sense of Virtual Collaboration Through Personal Learning Networks

**Giuseppe Palumbo**  
*University of Trieste, Italy*

**Ann Hill Duin**  
*University of Minnesota, USA*

### ABSTRACT

*This chapter describes the use of personal learning networks (PLNs) in an online collaborative project involving technical communication students at the University of Minnesota and translation students at the University of Trieste. The authors, who acted as instructors at each end of the project, examined the PLNs produced by the students with the aim of making visible aspects of collaborative projects that have to date received less attention in the literature on both translator training and technical communication. More specifically, the analysis of PLNs – supported by a study of the exchanges that took place between the students in the course of the project – sheds some light on issues of cross-cultural competence, trust, and learning strategies and attitudes. These aspects were found to be characteristic of the students' collaboration besides the obvious and more immediate focus on questions of language and translation.*

### INTRODUCTION

Today's diverse and global workforce increasingly perform their work as part of global virtual teams (GVTs). GVTs are those teams connected via technology and composed of people in various locations around the globe. GVTs are most commonly language-diverse teams “composed of individuals who speak different mother tongues” (Kassis Henderson, 2005, p. 69). The primary objective of virtual collaboration is for a technology-mediated globally-dispersed work group to launch, develop, and complete its assigned task.

A 2016 survey of 1,372 respondents from 80 countries found corporate teams to be almost entirely virtual, with 41% never meeting in person (*Trends in Global Virtual Teams*). Even more significant is

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the finding that 48% of respondents indicated that over half of their teams include members from other countries. This percentage (48%) is up from 33% in 2012 and 41% in 2014. The survey points out that because of the ubiquity of virtual teams “team members may fail to recognize the challenge of working with culturally diverse colleagues, especially in a virtual setting... Survey participants indicated that in spite of the growing value, increasing importance, and frequency of virtual team meetings, culturally based challenges to effective collaboration and leadership continue to be significant obstacles” (p. 3). In fact, 68% of respondents reported that cultural challenges represented the biggest hurdle for GVTs. Therefore, virtual collaboration, and in this case, global virtual work, intensifies the need for members to develop intercultural competence.

As a means to develop intercultural competence, in this chapter, the authors report on one specific online collaboration project involving technical communication students at the University of Minnesota (UMN) in Minneapolis, USA, and translation students at the University of Trieste (UT), Italy. The project adopted the ‘standard’ format found in writing- translation collaborations within the Trans-Atlantic and Pacific Project, TAPP, (see the preface to this book): over one semester, UMN students prepared a set of instructions for a North American audience, conducted a usability test on the document with the help of UT students, and then finalized the same document for translation into Italian by the UT students. Unlike in other TAPP projects, however, students were not asked to produce pre- and post-learning reports but were assigned the task of producing visualizations of their “personal learning networks” (PLNs) at both the beginning and the end of the project.

A PLN visualization indicates the “collection of people, information resources, organizations, and other connections that networked individual values because the connections support and contribute to learning interests” (Duin & Moses, 2015, p. 30). A PLN is intended to enable participants to seek support for their learning, “to identify gaps in learning resources, and to discover culturally based assumptions about professional identity, knowledge creation, knowledge sharing, and the knowledge that they consider most worth having” (p. 30). The authors, who acted as instructors at each end of the project, examined the PLN visualizations produced by the students with the aim of making visible aspects of collaborative projects that have to date received less attention in the literature on both translator training and technical communication. The analysis of PLNs was supported by a study of the exchanges that took place between the students in the course of the project. The report on the study of student interactions and PLNs will touch upon issues of intercultural competence, trust, and learning strategies and attitudes – aspects that the authors found to be characteristic of the students’ collaboration besides the obvious and more immediate focus on questions of language and translation. Next, we provide detail regarding the theoretical framework, beginning with background on PLNs.

## **THEORETICAL FRAMEWORK**

### **PLNs**

Duin and Moses (2015) proposed the term intercultural connectivism as a means for reframing the academic conversation about the function of cultural dimensions as part of global virtual work:

“Intercultural denotes different cultures and social groups, and connectivism is the thesis that knowledge is distributed across a network of connections. Intercultural connectivism supports intercultural

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competence as a potential framework for constructing and traversing these networks” (p. 30). In their article titled, “Intercultural Connectivism,” they further proposed PLNs

*As a means of operationalizing culture in social contexts by making visible learners’ [i.e., collaborators’] cultural orientation to knowledge, information, and learning, and through so doing, potentially expanding learners’ understanding of intercultural communication. (p. 30).*

While intercultural communication scholars have well documented Hofstede’s model of six dimensions of national cultures: power distance; uncertainty avoidance; individualism and versus collectivism; masculinity versus femininity; long term versus short term orientation; and indulgence versus restraint (Hofstede, Hofstede, & Minkov, 2010), professional and technical communication scholars have provided in-depth criticism with regard to cultural dimension research and associated pedagogy. In particular, Thatcher (2010) urges global scholars to “avoid using approaches that implicitly espouse US or western cultural values, most notably individualism” (p. 6), and Hunsinger (2006) takes issue with textbooks and how cultural identity is taught, criticizing the fact that

*Culture is commonly treated as a prediscursive, effectively autonomous essence posing as a set of durable habits and practices, and cultural identity is something brought to communication rather than constructed and mobilized during communication. Culture and cultural identity, in other words, are allowed little flexibility and dynamism. (2006, p. 34).*

According to Duin and Moses,

*Recommendations to overcome these criticisms include greater focus on cultural intelligence defined as ‘a system of interacting knowledge and skills, [linked] by cultural metacognition, that allows people to adapt to, select, and shape the cultural aspects of their environment’. (Thomas et al., 2008, p.127).*

Hartmann (2012) suggests that rather than discarding the cultural-dimension approach, scholars should ‘unearth the underlying dimensions to complexify our understanding... (p.12). The most immediately useful contribution...would be a coherent connection to specific behavioral scripts, providing a more robust foundation for the recommendations given in handbooks of cross-cultural behavior’” (Hartmann, 2012, p.13, quoted in Duin & Moses, p. 31).

In response to these criticisms, Duin and Moses (2015) proposed to shift focus away from building environments that are accommodating of different cultural values toward building ecologies in which participants create and share knowledge and make their cultural values toward knowledge, information, and learning as transparent as possible. They encourage scholars to move beyond awareness and tolerance of cultural complexities toward pedagogies for knowledge creation in culturally diverse virtual collaboration environments.

PLNs provide just such an opportunity for learners to visualize their connections between people and materials and resources, and by so doing, to gain awareness as to the influence of digital media on cultural representation as well as the primacy of motive in the construction and maintenance of learning networks. In their investigation of personal learning networks, Rajagopal, Joosten-ten Brinke, Van Bruggen, and Sloep (2012) stress that

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*The skills at the centre of networking involve an ability to identify and understand other people's work in relation to one's own, and to assess the value of the connection with these others for potential future work... Networking supports group formation for the purpose of awareness-raising and/or socio-economic progress.*

For purposes of this chapter's study, the authors adhere to Rajagopal, Brinke, Van Bruggen, and Sloep's (2012) definition of personal learning networks:

*A personal learning network (PLN) is a network set up by an individual specifically in the context of her professional activities through online platforms to support her professional non-formal learning needs. Therefore, a professional who intentionally builds, maintains and activates her strong, weak and very weak ties with contacts within her personal network for the purpose of improving her learning — and uses technology to support this activity — is creating a personal learning network (p. 7).*

Therefore, components of one's PLN may include communication tools, learning communities, knowledge-building tools, expertise and authoritative resources, information data and resources, online tutoring and guided courses, peers with common interests, and many other potential learning resources.

While PLNs can help students advance connections, increase understanding of a discipline, and advance future employment, the authors contend that how students conceptualize their PLNs and render them visually may suggest ways in which PLNs reflect cultural values. For example, putting oneself at the center of the PLN is a useful way of conceiving of connections radiating in the direction of people, online tools, organizations, and other resources. Such deployment of PLNs seeks to increase opportunities for connected learners to build knowledge and skill on expressions of learning that emerge from making visible these multiple cultural points of view, i.e., that "personal learning networks suggest promising directions for sharing knowledge in learner-centered environments for intercultural learning" (Duin & Moses, 2015, p. 37). Therefore, the authors next provide theoretical background on virtual collaboration in technical communication and in translation along with study of building trust and managing global virtual teams (GVTs).

### **Virtual Collaboration**

#### **Virtual Collaboration in Technical Communication and Translation**

Technical communication researchers such as Spinuzzi (2007) emphasize the need for adjusting to multiple stakeholders in global virtual environments, stating, "Currently we face work structures that were hardly conceivable a few decades ago, and these work structures again require different rhetorical skills and communication practices" (p. 266). Organizational researchers such as Tannenbaum, Mathieu, Salas, and Cohen (2012) agree that we have entered a new era in that teams operate in a more fluid, dynamic and complex environment than in the past. They change and adapt more frequently, operate with looser boundaries, and are more likely to be geographically dispersed. They experience more competing demands, are likely to be more heterogeneous in composition, and rely more on technology than did teams in prior generations. Moreover, teams have become so ubiquitous that many employees and managers take them for granted and assume that they will be effective (p. 3). However, such effectiveness depends in large part on building trust.

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The training of translators is today mostly oriented towards providing students with the skills, knowledge and tools required by professional translation. This, in turn, is normally characterized as a team activity (e.g. by Gouadec, 2007, p. 108), especially as concerns the organizational aspects of the profession: translators may still be working largely on their own at the stage of text transfer, but they are often part of larger teams whose aim is that of completing a project in which roles and timelines are established in extreme detail.

The term “translation competence” is used in many studies to designate the set of skills, or “sub-competences”, that trainees are required to acquire and develop in order to perform successfully as professional translators. Although no general agreement exists between scholars and researchers as to what this set of sub-competences should include, most definitions or models of translation competence break it down as a set of interrelated components, generally including language and textual competence, intercultural competence, subject-matter knowledge, and professional competence.

Early definitions or models of translation competence were not empirically tested. A comprehensive early model proposed by Kelly (2002; 2005) has – among its extra-linguistic components – “interpersonal competence” and “strategic competence”: the former concerning “the ability to work with other professionals [...] and other actors”, including source-text authors; the latter including “organizational and planning skills”, “problem identification and problem-solving” (Kelly, 2005, p. 33). Later models have been proposed either on the basis of empirical research (see, for instance, PACTE, 2011 and Göpferich, 2013) or as attempts at providing a general reference framework drawing on previous definitions and empirical findings.

One general framework is that provided by the so-called “wheel of competences” (EMT Expert Group, 2009), a model proposed by the European Master’s in Translation. (The EMT is a partnership project between the European Commission and several translator training programs in Europe.) In the EMT model, “translation service provision” is the core competence, surrounded by “language”, “intercultural”, “info mining”, “technological”, and “thematic” competences. The core “translation service provision” competence has two dimensions: a “production” dimension and an “interpersonal” dimension. The production dimension has to do with aspects such as the translator’s ability to decide the most appropriate strategies for the job at hand and the ability to justify choices and decisions. The interpersonal dimension concerns various aspects of the relationships with clients but also the abilities related to teamwork. In particular, this dimension involves the ability to “work under pressure and with other experts, with a project head (capabilities for making contacts, for cooperation and collaboration), including in a multilingual situation” and the ability “to work in a team, including a virtual team”.

A distinction is often made (as in Colina, 2015, pp. 32-33) between “transfer” competence and other abilities such as language competence and general or specialized domain knowledge. In this view, transfer competence is the one that distinguishes translators from other, competent foreign-language speakers or domain experts. In particular, transfer competence is what makes translators able to understand the requirements of the task and to arrive at a target text that meets the explicitly agreed (or implied) quality requirements.

Most models of the translation process (i.e. the models that describe ‘how translators translate’) focus on the transfer stage and only mention in passing, if at all, the activities that involve an interpersonal dimension. One reason for this is that these models are usually attempting to illustrate the translation process from a cognitive perspective. As noted by Vandepitte (2017), quite a few cognitive approaches to translation have in fact also tried to clarify and enlighten the social aspects of translation work. Characteristically, these approaches (e.g., Larson, 1984/1998; Gutt, 1991/2000; Kussmaul, 2007/2015) tend



to share a strong concern for translator training. Yet, even in these approaches the emphasis is usually on the transfer phase of the translation process.

An established handbook for translator trainers (Kelly, 2005, pp. 102-105) does devote a section to collaborative learning, and in particular to “team/group work”. Kelly (2005, p. 102) considers collaborative activities to be useful for several reasons, especially when they are conducted in small groups: they make learning richer and more effective; they provide students with social experience; they favor the development of interpersonal skills (seen to be essential not only in professional translation but in any kind of work environment); and finally, they are more conducive to high-level cognitive skills such as “problem-solving, reasoning or justifying proposals and decisions”. Kelly’s discussion is for the most part based on in-class collaborative activities, and she only mentions the special features and implications of online collaboration in passing.

An interest in the collaborative aspects of translation is manifest in social-connectivist approaches to translator training, first introduced systematically by Kiraly (2000). In these approaches, where “project-based learning” (Kiraly, 2005) is one of the primary training strategies, the focus is on students; learning-by-doing methods and collaboration among students are emphasized; and the instructor is given an essentially supportive or facilitating role. Some recent articles (e.g. Li, Zhang, & Yuanjian, 2015; Prieto-Velasco & Fuentes-Luque, 2016) have documented collaborative projects that share a number of features with the one illustrated in this chapter. These studies found that project-based learning can “effectively enhance many skills beyond translation-specific competences”, skills that are essential for professional translators but are often “inadequately developed on conventional translator training courses” (Li et al., 2015, p. 16).

These recent contributions on the collaborative aspects of translation have started to fill a gap in translator training as well as in the research on translation pedagogy (see also González-Davies, 2017). Attention is, however, still mostly paid to collaboration in the classroom through project work. Online collaboration skills, although frequently mentioned as a component of translation competence, have to date received less attention, perhaps based on the assumption that virtual teams know how to collaborate because they are familiar with online tools and environments. And in both technical communication and translation, little attention has been paid to the importance of building trust.

## **Building Trust and Managing Global Virtual Teams**

Crisp and Jarvenpaa (2013) explored the trusting beliefs and normative actions for building swift trust in GVTs, finding a positive link between building swift trust and overall performance. Seventy-four-member teams collaborated over eight weeks to develop a business plan while working virtually. Each team had undergraduate and/or graduate students from 4 of 12 universities across four continents; all teams had access to email, listserv, and chat room technologies; and all students had the incentive of winning US \$110 per contributing member for the highest quality business plan. Researchers collected survey data at weeks 2, 4, 8, and at the conclusion of the project through use of a perceived trustworthiness scale where the focus was on measuring normative actions for setting and monitoring team performance norms as well as establishing early trusting beliefs, late trusting beliefs, and overall team performance. Crisp and Jarvenpaa state that “it is critical for a virtual team to have high early trusting beliefs because such beliefs help the team engage in normative actions that in turn make trusting beliefs resilient and positively impact final performance” and emphasize the importance of teams to “engage in better structuring of work and more intense monitoring that helps them adapt to emerging situations” (p. 54).

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Whereas a virtual team will benefit from purposefully working to build swift trust, Li, Rau, Li, and Maedche (2017) examined the effects of cultural intelligence on global virtual collaboration, specifically studying dyads given the importance of one-to-one interactions as central activities in global virtual collaboration. Li et al. state that “understanding what national cultural differences exist in interpersonal interactions is the first step toward managing cross-cultural collaboration” (p.58). Using a collaboration simulation, they used questionnaires, voice recorders, and computer logs to study 70 participants from two public universities in China and Germany. Although based on student self-reporting, Li et al. found that cultural intelligence has a strong effect on global virtual collaboration, with higher cultural intelligence significantly influencing quality of the work. They recommend training to improve cultural intelligence in a team, with specific focus on the team member with the lowest cultural intelligence. Interestingly, Li et al. also recommend that the manager should “identify the team member with the lowest cultural intelligence and sponsor him or her to join a cross-cultural community, learn a foreign language, or take culture awareness training” (p. 71).

Also in terms of managing teams, Behfar, Kern, and Brett (2006) focused on “the challenge of how to access and utilize individual members’ strengths, while at the same time minimizing coordination losses from communication problems, language differences, varying work styles, and misunderstandings” (p. 233). They compared typical challenges faced by same-culture teams (of MBA students) to those faced by multicultural teams (of MBA students) and then focused on strategies for managing such challenges, specifically noting the conditions under which managers must intervene to address the challenges. For example, they note that “People from individualistic and low-context cultures prefer direct confrontation of conflict, while those from collectivistic and high-context cultures prefer indirect confrontation” (p. 234). While they identified challenges similar to both same-culture and multicultural teams (direct vs. indirect confrontation; norms for problem solving; time, urgency, and pace; work norms and behaviors), they also found some challenges faced by multicultural teams to be quite different from those of same-culture teams (violations of respect and hierarchy; inter-group prejudices; lack of common ground (language, credit); fluency (accents and vocabulary); and implicit vs. explicit communication. In this case, managers would need to intervene to create very deliberate and structured processes for getting work done and encouraging members to better understand each other.

## **Intercultural Competence**

As can be seen from the above studies, today’s working professionals need strategies for building trust and intercultural<sup>1</sup> competence. As the majority of students will be expected to work effectively on GVTs, it is imperative to include collaborative work as a means to build trust and develop intercultural skills. Lave and Wenger (1991), in their more general social theory of learning, argue that learning is a social phenomenon that occurs through interactions of the members and for the benefit of the community. In our project, the primary focus is on helping Italian students to develop intercultural competence, translation skills, and virtual collaboration skills. For the US students, the primary focus is on helping students to develop intercultural competence, technical communication skills, and virtual teamwork skills.

According to Hasler (2011),

*The development of intercultural literacy requires the individual to learn what culture is by reflecting on his or her own culture, by learning about other cultures, and how to engage successfully with members of other cultures in various social contexts. (p. 267).*

Citing Heyward’s (2002) developmental model of intercultural literacy with descriptors of its lowest and highest levels (see Heyward’s Table 1 below), Hasler emphasizes that “intercultural learning environments need to be designed in a way that will enable equal participation of members from different cultures, in order to make students aware of their own and foreign cultures, to increase their understanding, to give them the opportunity to develop competencies, to increase their language proficiencies, and to eventually form transcultural or global identities” (p. 268).

The act of creating one’s PLN serves as a means to reflect on one’s own culture. Considering Heyward’s (2002) dimensions in terms of one’s PLN, one would expect these to increase as one documents the people, information resources, organizations, and other connections that one sees as contributing to learning interests; and by reviewing another’s PLN, one would expect to better identify different attitudes, proficiencies, and identities, and by so doing, increase overall respect and perspective. Therefore, the authors turn next to detail regarding this project and the study of interactions and PLNs.

## **METHOD**

The present chapter is an exploratory study of the ways in which PLN visualizations can be used as a means to establish stronger student-student relationships and development of trust in an online collaboration project. The authors examined the PLNs produced by the students for evidence of “intercultural literacy” and, particularly, to characterize each student’s cultural orientation to knowledge, information, and learning. Given that in the course of the project students were also required to interact with each other (besides exchanging PLNs and working on the project’s assignments), the study also briefly analyzes the written conversations the students engaged in. This brief analysis is meant to set the scene for the more detailed study of the PLNs, especially as regards the building of trust in each dyad.

The analyses of both student interactions and students’ PLNs is qualitative and proceeds on a case-by-case basis. Given the restricted number of participants involved (a total of 40: 20 students at the US end and 20 at the Italian end), the adoption of quantitative methods was judged to be ineffectual. Traits

*Table 1. Heyward’s (2002) multidimensional model for the development of intercultural literacy (pp. 16-17); condensed version as found in Hasler (2011, p. 268)*

<b>Dimension</b>	<b>Lowest level</b>	<b>Highest level</b>
Understandings	Unaware of own culture or of the significance of culture in human affairs.	Aware of how cultures feel and operate from the standpoint of the insider.
Competencies	No significant intercultural competencies.	Competencies include mindfulness, empathy, perspective taking, tolerance, and communication.
Attitudes	Assumes that all groups share similar values and traits.	Attitudes are differentiated, dynamic, and realistic and demonstrate an overall respect for integrity of cultures.
Participation	No significant participation and unawareness of cultural dimension of contact.	Well-established intercultural friendships and/or working relationships.
Language proficiencies	No significant second language competencies.	Bilingual or multilingual understanding and proficiencies.
Identities	Unformed cultural identity.	Identities are bicultural, transcultural, or global; ability to consciously shift between multiple cultural identities.

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emerging from the analysis could be used in future, larger-scale studies so as to provide quantitative corroboration to the findings emerging here.

Before presenting the results of the analysis, in the following subsection the authors provide an overview of the online collaboration project, followed by specific details regarding the University of Minnesota (UMN) course and the University of Trieste (UT) course and a comparison of the two groups of students.

### **TAPP Background**

The Translation Center with the Department of Law, Language, Interpreting and Translation Studies at the University of Trieste focuses on scientific and technical documentation and translation technology. In the European Union (EU), the main focus is on translation first, and such translation work may focus on scientific and technical communication documents. In the United States, the field of professional and technical communication is the main focus, with understanding of translation as secondary. Trans-Atlantic and Pacific Project (TAPP) partnerships offer us the opportunity to internationalize our curriculum. As stated earlier, virtual collaboration represents one of the biggest drivers of transformation in the workplace; therefore, instructors should design opportunities that provide students with relevant experience as part of a global virtual team.

Specific skills that this project aimed to help develop in students included intercultural skills, cross-cultural user experience, and virtual teamwork skills. During Spring 2017, Professor Giuseppe Palumbo from the University of Trieste (UT), Italy, and Professor Ann Hill Duin at the University of Minnesota (UMN) designed and implemented a collaborative project. Under the auspices of the Trans-Atlantic and Pacific Project, students in an upper-level writing course at UMN – International Professional Communication – and students in a first-year University of Trieste module – *Lingua e Traduzione Inglese I - Traduzione inglese-italiano* – collaborated as follows on the technical communication and translation project:

1. Professor Palumbo assigned student pairs. Immediately upon receiving notification as to one's partner, the students reached out to each other.
2. Students then began working in pairs (one UMN student with one UT student), continuing with development and exchange of visualizations of their Personal Learning Networks (PLNs) as a further means to get to know each other.
  - a. All students used two PLN tutorials for understanding and developing their PLN visualizations. Developed originally for use by UMN undergraduate students, the first tutorial focuses on what a student needs to know to create a PLN, and the second includes exposure to possible tools for use when developing the PLN visualization (2017).
  - b. The authors encouraged students to choose forms of discussion, document sharing, and exchange that would provide a record that they could share (email, google docs, private blogs, FB messages) with their instructors as part of their reflection reports due at the conclusion of the project.
3. Each UMN student prepared a set of instructions or standard operating procedures and shared it with his/her UT partner. The UT student then sent initial comment and questions about the instructions to the UMN student partner.
4. Next, the UMN student designed a usability test to be completed by the UT student. Students followed one of three options:

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- a. The UT student did the test alone, recording a video while using the instructions and talking out loud;
  - b. The UMN student conducted the test with the UT student via Skype or other internet tool; or
  - c. The UT student worked with a friend in Italy to do the test and then shared findings with the UMN student.
5. The UMN student then completed a Usability Test report and submitted it to Professor Hill Duin. Using findings from the Usability Test, the UMN student prepared a final version of the Instructions for the UT student, sending this final version along with a Translation Brief document to his/her UT partner. The UT student then translated this document, and if needed, further revised it.
  6. At the conclusion of the project, the students exchanged a revised version of their PLNs, and worked to discuss this in relation to the overall project. All students also completed reflection journals to document their cross-cultural understanding of user experience; UT students also compiled complete documentation of all interaction throughout the project.

#### **Course Details: UMN**

The students from the University of Minnesota in the US were enrolled in an online, advanced-level three-credit course titled International Professional Communication. The course overview is as follows:

*The increasingly global nature of communication presents new challenges and opportunities as communicators develop content for and work with clients and colleagues from other cultures. Professionals increasingly perform their work as part of global virtual teams using multiple synchronous and asynchronous technologies. This course includes resources and experiences designed to increase a student's skill at communicating with multicultural audiences, working as a member of international teams, and using multiple technologies as part of this work.*

By the end of the course, students should be able to do the following:

- Understand diverse philosophies and cultures within and across societies;
- Compare different cultural contexts to predict where communication breakdowns may occur and develop strategies to overcome them;
- Communicate with and develop materials for international / multicultural audiences (this includes an understanding of the problems that translators may encounter and collaboration with peers from a different culture);
- Document the changes or modifications that have to be made in the management of firms to accommodate globalization and how multinational organizations deal with intercultural communication challenges and opportunities;
- Investigate the kinds of communication technologies that work best in different cultures;
- Identify nonverbal cues that are important to communicating effectively with people from different cultures; and
- Articulate international business trends (e.g., content management, outsourcing, translation) that affect cross-cultural information development.

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At the beginning of this project, the UMN students were asked to determine and examine their level of cultural intelligence using Van Dyne’s (2017) 20-item cultural intelligence scale; the UMN students also explored cultural dimensions through use of Varner and Beamer’s (2011) textbook on *Intercultural Communication in the Global Workplace*. Although Varner and Beamer do not explicitly cite Heyward’s (2002) model of intercultural literacy, this textbook provides specific guidance for the development of all six dimensions listed in Table 1 above. Early in the course students were provided with multiple resources and exercises to guide them in their development of greater awareness of how multiple cultures feel and operate as well as the impact of bilingual or multilingual understanding and proficiencies. In later weeks, the lessons focused on development of competencies that include empathy, perspective taking, tolerance, and communication as well as multiple examples from industries working to establish intercultural friendships and working relationships. Table 2 includes themes from the entire course.

Here the authors wish to emphasize the third module, ‘Working on globally networked teams’. Regarding virtual teamwork skills, in addition to examining trade journals and corporate sites offering suggestions for global virtual teamwork, the UMN students read and provided reflections on the GVT research described earlier: the study on building swift trust in global virtual teams (Crisp & Jarvenpaa, 2013); the study on the effects of a dyad’s cultural intelligence on global virtual collaboration (Li, Rau, Li, & Maedche, 2017); and the study on managing multicultural teams (Behfar, Kern, & Brett, 2006). Again, PLN visualizations were used as a means to establish stronger student-student relationships and development of trust, and the authors examined these PLNs for evidence of cultural intelligence / intercultural literacy. Given their roles as “instructor managers” of the project, the authors also monitored overall management of the project and specific work with the dyads.

### **Course Details: UT**

The students from the University of Trieste were enrolled in the module on English-Italian Translation, as part of their three-year bachelor degree program in *Comunicazione interlinguistica applicata* (Applied Interlinguistic Communication). The module is worth six credits and constitutes one half of a larger twelve-credit course titled *Lingua e Traduzione Inglese I – seconda lingua* (English Language and Translation I – second language) that students are required to take in their first year of studies. This

*Table 2. Themes from the UMN online International Professional Communication course*

1. Increasing cultural competence	Week One -- Culture and Communication Week Two -- Language and Global Communicative Competence Week Three -- Getting to Know Another Culture, Metaphors Week Four -- Understanding Self and Groups
2. Drafting messages and documents	Week Five -- Translation, Organizing Messages Week Six -- Nonverbal Language Week Seven -- Cultural Rules for Relationships Week Eight -- Information, Decisions, and Solutions
3. Working on globally networked teams	Week Nine -- Intercultural Teams, Negotiation Week Ten -- Globally Networked Teams Week Eleven -- Structures and Corporate Cultures
4. Articulating international trends	Week Twelve -- Cross-Cultural Technology Design Week Thirteen -- Social Media and International Communication Week Fourteen -- Implications for Future Work

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course is reserved for students in the degree program that are studying English as their “second” language of choice (hence the name of the course) and another language as their “first” language (with a choice between French, German and Spanish; English is the other possible “first” language). Owing to the way admission into the bachelor program works, the students’ competence in English has not been initially screened (as happens with students who have English as their first choice). It can be assumed, however, that most students taking part in the module have already reached a competence level which is at least equal to the B2 level in the Common European Framework of Reference. (The instructor’s experience in evaluating students in this module in previous years provides support to this assumption).

The English-Italian Translation module provides a general introduction to translation and to the special aspects of translation between English and Italian. By the end of the module, students are expected to:

- Identify the main communicative function of a text;
- Recognize differences in register in English texts;
- Become familiar with the textual, lexical and syntactic features that tend to be associated with given communicative functions in English and Italian;
- Know how to apply the translation solutions that tend to be typical of English-Italian translation.

Teaching for this module is based essentially on class contact hours but students are expected to work assiduously on individual written assignments. An online learning environment (Moodle) is used by the instructor to make materials available to the class and by students to hand in written work. A special section in the Moodle space for the module is reserved for the TAPP project. The materials posted in this section included: a detailed illustration of the project, with detailed descriptions of assignments and clear indications of deadlines; videos posted by instructors from both UT and UMN, giving their respective group of students short introductions to some key notions for the TAPP project: translation, for the UMN students, and usability and PLNs for the UT students; link to shared folders for uploading files related to TAPP assignments.

Work on the TAPP project with UMN normally proceeds in parallel with other learning activities for the module and counts towards the students’ final overall mark. In previous years, the weight given to TAPP-related assignments as concerns the final evaluation was around one fourth of the final mark. In 2016-2017 the instructor decided to increase this weight, bringing it to half the final mark (with the other half based on the evaluation of a final written translation exam). The main reason for this decision was the increased weight given to TAPP-related activities in comparison with previous years. Whereas in the past UT students took part in TAPP in groups of at least two or three (who in turn were matched with one US student at UMN or another university), in 2016-2017 it was decided that TAPP groups should include no more than pairs, which was assumed to lead to an increase in the amount of work each UT student would carry out. Also, although translation into Italian remained the only assignment for UT students, these were now required to play a more active role in the stages leading up to the final draft of the source text, especially by helping UMN students conduct a usability test. Finally, giving an increased weight to TAPP activities towards the final mark for the module had the objective to stimulate interest and increase students’ motivation (as participation in TAPP was never presented as compulsory), which seems to have paid off spectacularly based on the students’ own comments and feedback on the project.

## UT and UMN Student Groups Compared

A few remarks are necessary at this stage to characterize the group of UT students with respect to their TAPP partners at UMN, as some differences between the two groups may turn out to be relevant at the time of discussing the PLNs produced by students in each group. First, the demographic profile of UT students is more homogeneous than that of UMN students and is characterized primarily by their lower average age: most UT students are secondary-school leavers, with the exception of one or two who have enrolled in this particularly degree program after spending one or two years elsewhere, e.g. having enrolled in a modern languages degree program with a view to improving their language skills and then participating in the highly selective admission test for the translation program in Trieste. Second, as should be clear from all of the above, the UT students taking part in TAPP come from a program that is heavily focused on language and translation, as opposed to the wider focus that may characterize the studies of UMN students. Finally, as they are still in their first year at university, UT students are more likely to consider job prospects as a distant possibility; UMN students are closer to the completion of their studies, and some have decided to return to university while working or during a break in their careers.

As first-year students in a translation program, the UT students are likely not to have been introduced to the collaborative aspects of professional translation, as these are normally presented to translation trainees later in the program or skipped altogether. The idea is generally that collaboration is best presented at graduate, or master's, level, especially when translation tasks are based on texts with highly specialized functions or subject matter. In the authors' view, however, a TAPP-style collaboration at the early stages of training provides students with an extremely valuable opportunity for experiencing first-hand the 'situatedness' of any translation task and engaging in dialogue with peers that is likely to improve their language and intercultural competence. As pointed out in Vandepitte et al. (2015), "communications about subject matter presuppose mediation between language and cultures" (p. 141), which is exactly the skill that UT students are being introduced to already in their first year of studies.

In contrast, of the 20 UMN students, six were graduate students in the first year of their graduate certificate in technical communication program; nine were upper-level undergraduate students in the technical writing and communications program; and five were upper-level undergraduate students from other programs (journalism, cultural studies, political science, applied business, and retail merchandising). The upper-level undergraduate students in the technical writing and communications program had been introduced to collaborative projects throughout their curriculum, and the assumption was that the graduate students, having worked some in industry, had also been exposed to collaborative work.

## **ANALYSIS**

### **Brief Analysis of Student Interactions**

UT students were asked to compile and submit complete documentation of their written exchanges with UMN project partners, submitting a final interaction report at the conclusion of the project. (The UMN students were asked to complete reflection reports; these included discussion of their interactions.) Overall, 20 "interaction files" were made available by the students, documenting the conversation that each dyad had during the whole project as far as written communication was concerned. These interaction files were analyzed qualitatively so as to identify possible patterns in the collaboration, in relation to aspects



such as: the tools or platforms used for communication; the type of questions asked by students to each other, as regards both the assignments and the collaboration itself; the type of problems or difficulties arising in the collaboration, and the ways in which these were solved; and the strategies and attempts aimed at building and maintaining trust. Such strategies have already been analyzed and discussed by Vandepitte et al. (2015) in the exchanges that took place in a similar online collaborative project within the TAPP framework.

All students used email throughout the project, in most cases complementing it with other channels: eight pairs also used Facebook Messenger; and four pairs used WhatsApp. In most cases, the exchanges showed students making plans to use video chat services (such as Skype or Google Hangouts), at first to get to know each other better and, later on in the project, to discuss aspects of their assignments or to conduct the usability test. (Recall that one assignment within the project was the usability test, for which one of the options indicated by instructors was to conduct it via a video-chat.) In a number of cases, students agreed to exchange or share documents in cloud-based environments such as Google Drive. When invited to use a particular tool or platform that he or she was not familiar with, a student would immediately agree to learn to use it, and no breakdowns of communication are documented that resulted from a difficulty in learning how to use the new tool or service.

As far questions and topics raised during the interactions are concerned, a distinction can be made between those that were aimed at establishing a rapport and those that concerned specific aspects of the assignments. As regards the former, all students opened their exchanges with a brief introduction of themselves and some information about their respective study programs. In several cases, the UMN students expressed surprise both at the number of languages spoken by the UT students and at their proficiency with English. The variety of languages and the proficiency in English on the part of UT students is of course not particularly remarkable given that they are all enrolled in a translation program where language learning is a core element. What is interesting, however, is that UMN students almost invariably picked up on this aspect. At face value, this could be seen as a sudden increase in awareness at the “cultural dimension of contact” (see Table 1 above). Taking a cue from the analysis presented in Vandepitte et al. (2015) and the above-mentioned findings in Crisp and Jarvenpaa (2013) and Li et al. (2017), however, this move on the part of UMN students could also be seen as a clever attempt at trust- and relationship-building. By expressing surprise at what they perceived to be the remarkable language competence of UT students, the UMN students were in other words contributing to building “swift trust”: what may appear as cultural naivety is in fact a sign of cultural intelligence.

As documented in these student interaction reports, most of the difficulties arising during the collaboration surrounded their attempts at aligning communication across the time zones and personal schedules. As could be expected, several exchanges were sometimes needed to agree on a date and time for a video chat. In some cases, a few days would pass before a student replied to an email from their project partner. All students seemed to be fairly tolerant of delayed responses (even though one UMN student mentioned this as an “issue” in her individual reflection report). One typical exchange ran like this: “Hi Maria! I am so sorry for the late response. This week has been hectic and busy!” – “Hi! Don’t worry I understand you. We are very busy too!” Also, although they were not explicitly invited by instructors to do so, many students commented on their respective PLNs. UMN students often noticed that the PLNs produced by UT students seemed to revolve around resources, whereas their own PLNs privileged contacts and people. In a number of cases, the observed differences between the PLNs were by taken by the students as implicit suggestions on ways to broaden their own PLN (see the next section of this chapter).

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To sum up, from the analysis of all student interactions, the following general pattern in term of moves seems to emerge:

1. Exchange of introductions and background information;
2. Surprise expressed by UMN students at language competence of UT students;
3. Several, and generally successful, attempts at aligning communication across time zones and respective schedules; and
4. Agreement on online tools and platforms to be used besides email.

Students seemed to be generally mutually tolerant in adapting to their partners' requirements and personal commitments. Common work on the assignments (the usability test for UMN students and later the translation for UT students) proceeded smoothly, and the various online services employed by the students favored the exchange of feedback and clarifications. Most students seemed to have no problems at all adjusting to each other's preferences for communication channels, which would seem to indicate that they *all* share considerable familiarity with online environments and tools.

In most exchanges, students on both sides can be seen to make an effort in being polite and understanding of each other's necessities. The general tone of the exchanges is similar to that observed in Vandepitte et al. (2015). In particular, the insistence on politeness and the repeated attempts at being "explicit and consultative" (p. 144) by students at both ends seem to be part of a careful strategy aimed at preventing conflict and building trust, a point that the authors discuss more in the next section.

### **Analysis of PLN Exchanges**

Immediately upon receiving notification of partner pairings, students reached out to each other. For example, one UMN student wrote the following in his reflection report, noting the Crisp and Jarvenpaa (2013) resource discussed earlier:

*First impressions have always been one of the most important parts of meeting someone. This might have been why I was so nervous about contacting my partner as I had no experience speaking with this sort of project. However, she contacted me first and we hit it off on Facebook quickly despite her lack of English fluency. I discovered quickly that she's easy to talk to and that helped build up our trust for one another. Brad Crisp and Sirkka Jarvenpaa explain in their study "Swift Trust in Global Virtual Teams" how gaining trust for one another greatly improves performance in a project. In my experience, this is true as we managed to trust each other quickly and completed our projects without incident.*

To create their PLN visualizations, most students used Coggle (<https://coggle.it/>), a tool suggested in the PLN tutorials. At the conclusion of the project, the students exchanged a revised version of their PLNs, and worked to discuss this in relation to the overall project.

As noted earlier, Behfar et al. (2006) focused on "the challenge of how to access and utilize individual member's strengths, while at the same time minimizing coordination losses from communication problems, language differences, varying work styles, and misunderstandings" (p. 233). Through use of the PLNs, students identified an objective as learning about each other's network. One UMN student wrote that "the main objective of this exercise is to see what we learn about because of the people that we interact with in our network... I also shared my own PLN to help [UT student] understand my own network contacts and tools that help me learn."

## Focus on Resources vs. Focus on People

As noted earlier, all students received the same instructions and were encouraged to use the same two PLN tutorials. While all students used these tutorials, the initial visualizations developed by UT students focused more on resources and tools, and the PLNs developed by UMN students focused more on people. As one example, figure 1 shows the first PLN from Alice, a UT student.<sup>2</sup>

Upon receiving this PLN, Alice's UMN partner, Mark, wrote the following in his reflection journal: "It [PLN] is not quite what I expected. Instead of showing contacts, it shows different methods and tools that she uses to learn other languages. I considered trying to ask politely for one that focuses more on contacts, but then I thought better of it."

In contrast, figure 2 shows how Mark labelled the center of his PLN with one word, "contacts," and each subsequent node focused on a cluster of contacts.

Additional quotes illustrate UMN student identification of UT student focus on resources and tools:

*Rachel: We exchanged PLNs a few days ago. It seems as though she was instructed to focus more on resources and tools and I was more focused on people. The nice thing though was that her PLN gave quite a few ideas for good resources to add to mine.*

*Laura: During our communications this week, we exchanged our first draft of our PLN's. It seems as though her professor explained the PLN as a document that includes more resources than people. I have always understood a PLN to be the network of people that are in our lives. Due to this difference, I will try to incorporate more resources in my revised version.*

In response to the UT student focus on resources, a number of UMN students encouraged their counterparts to include more contacts; e.g., Anna (UMN) sent this message to Gavino (UT) in response to his first PLN visualization:

Figure 1. Alice's (UT) first PLN

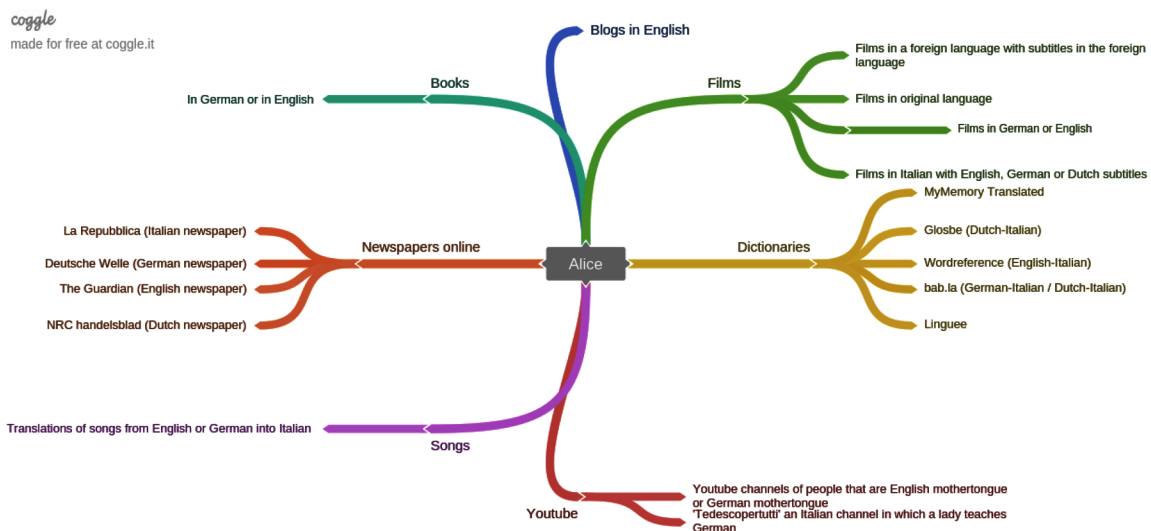
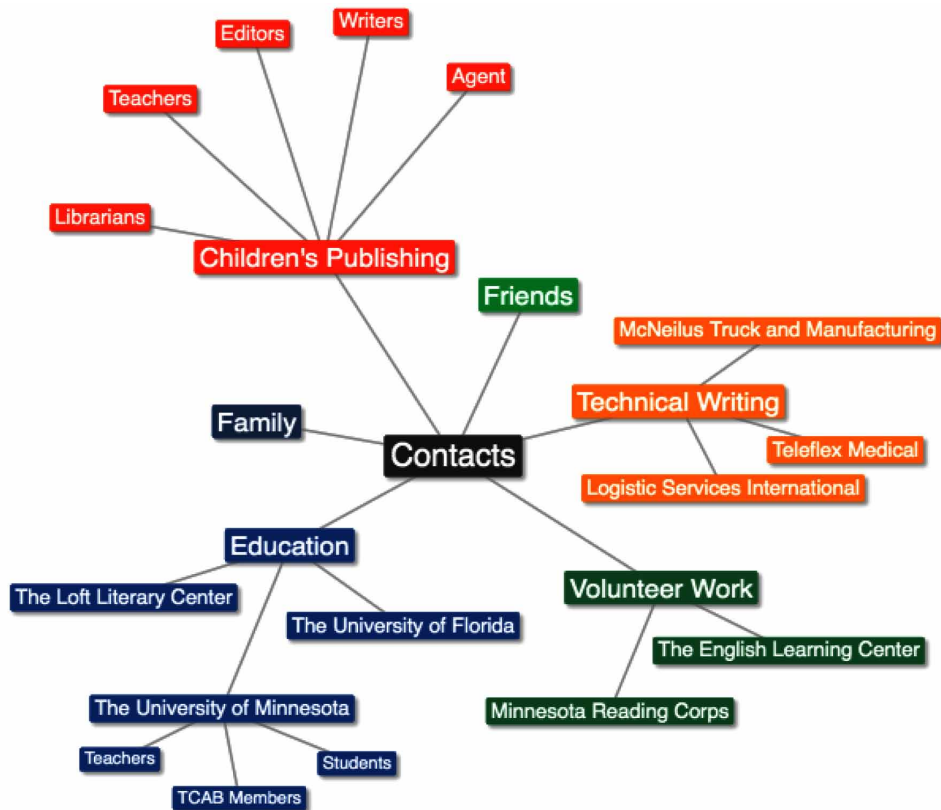


Figure 2. Mark's (UMN) first PLN



*Anna: Your personal learning network (PLN) is very large. You seem to have many valuable resources available to you, which is wonderful! However, as I understand it, a PLN is less a collection of applications, newspapers, and books than it is a collection of people who are able to help you learn as a student and a professional. You have some people in your PLN (professors, classmates) and some social networks as well. That is a good start! For your next PLN, I suggest that you include the friends you made when studying abroad and other individuals or groups of people who can help you with your learning and professional goals. You can include me in your next PLN!*

By the conclusion of the project, some UT students revised theirs to include more people (see Figure 3), and some UMN students revised their PLNs to include more resources (see Figure 4).

And Rachel wrote the following in her reflection journal:

*Rachel: Today I sent my revised PLN to Isabella and she sent hers to me. The main thing that I added was resources, while the main thing that she added was people. Originally, she just added family and friends, so I asked if there was a reason that she did not have any professionals or professors on it. She replied that she doesn't have a LinkedIn [account].*

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Figure 3. Isabella's (UT) final PLN

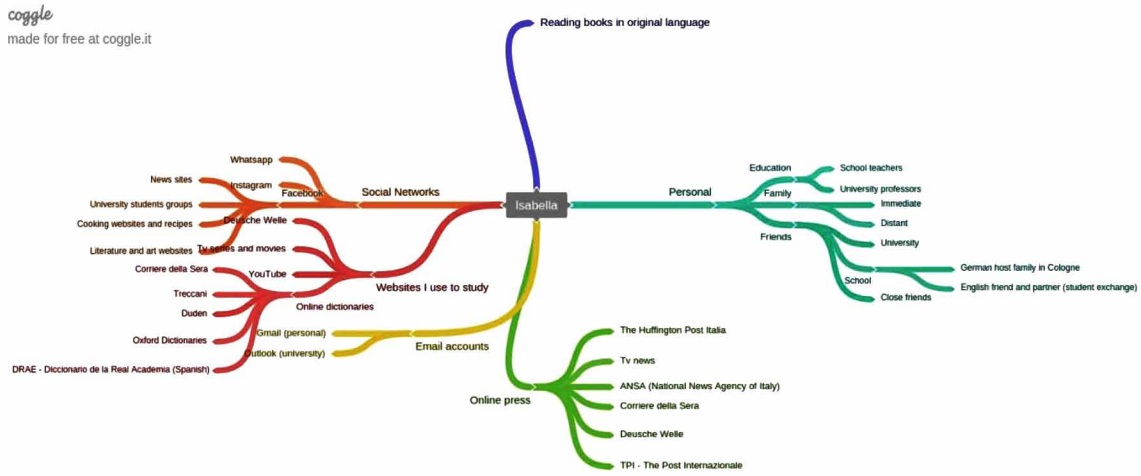
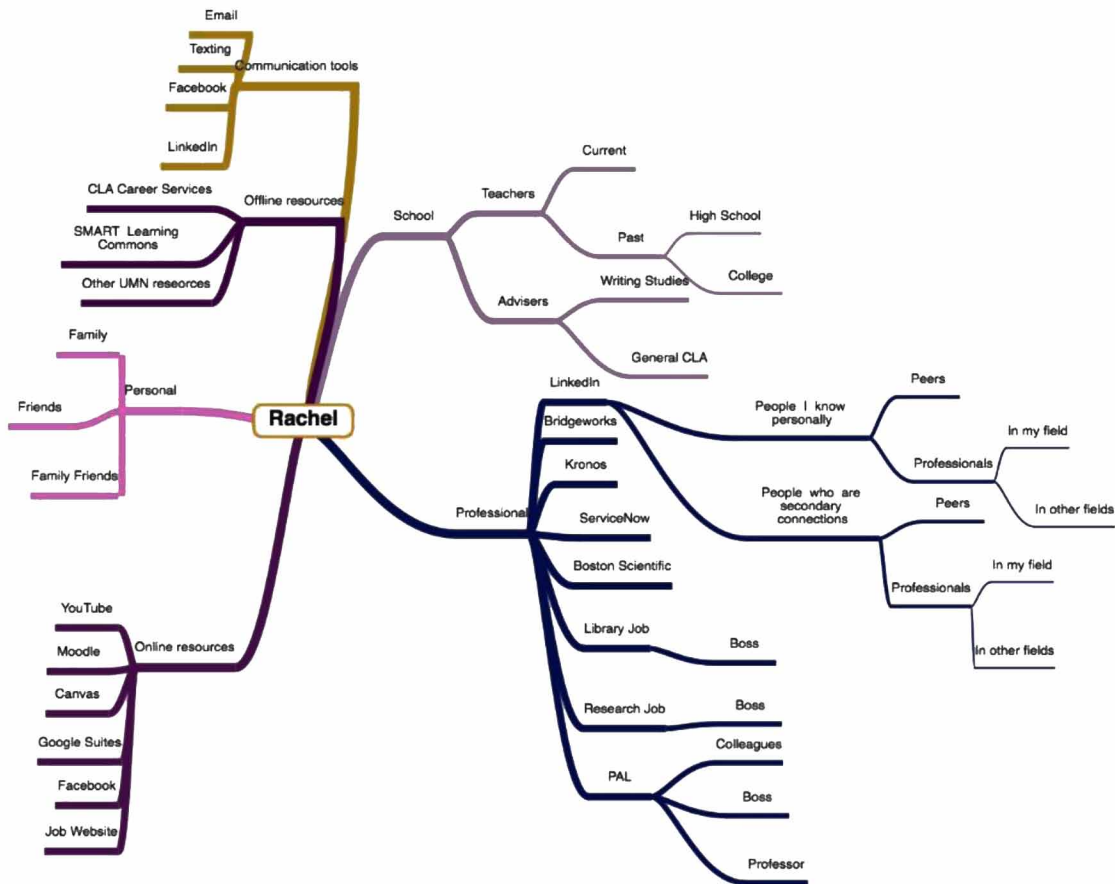


Figure 4. Rachel's (UMN) final PLN



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These final PLNs illustrate how each student's cultural orientation to knowledge, information, and learning, as exemplified in the PLN visualizations including greater emphasis on resources and contacts, began to "transfer" to each student's partner. This PLN exercise "unearthed" a fascinating cultural dimension, i.e., the apparent belief by Italian students that resources represent greater reliability than do human contacts.

Also, as noted earlier, the authors assumed that UT students would more likely consider job prospects as a distant possibility, whereas the UMN students would more likely be closer to the completion of their studies, and thus focused more on connections for their future careers. This quote from Andrew (UMN) illustrates this assumption as it relates to one dyad's discussion regarding their revised PLNs:

*Andrew: In our last meeting together, Maddalena [UT] and I solidified our ongoing professional relationship while going over the outcome of the documentation for translation project. I was pleased to see that I was the first person she added to her PLN in the category of professional connections. She said that although she understands the purpose for a PLN and its utility, she does not expect to continue using the PLN in the near future because she has limited use for at this stage in her academic career. My own take on the PLN is that I have come to appreciate it more now for its networking capabilities. Whereas before I would focus on my technical skills, recent additions to my PLN have been in the category of professional connections which is a positive sign for me as I begin looking for my first technical communication position.*

In short, the PLNs provided more detail than that included in the prior use of TAPP pre-learning reports. PLNs can be used as a means for students to learn more about each other, and PLNs work especially well for collaborative work in dyads.

### **Multimodal Representation**

Second, use of the PLN visualization provides a multimodal representation. In contrast to the more typical text-based pre-learning report used in most TAPP projects, the multimodal representation of the PLN might contribute to greater recognition and recall, as in this case, students continued to discuss the PLNs throughout the project. For example, Zack (UMN) wrote the following about midway through the project:

*Zack: We also continued to talk about our PLNs, which is where I realized the true potential of these personal learning networks. Just by sharing our personal, work, and online connections, we not only found common interests, but also aspects about our lives that we were curious about. For example, as I documented last week, I was very impressed by her language skills; whereas, Camilla [UT] was interested in my past work experiences, especially when I worked for a photography firm. I had to laugh at the fact that she was apologizing for her language skills. This is also something that I have always found fascinating. I have always thought that I should have been the one apologizing for not knowing her languages instead. She seemed to not be too familiar with Google Docs, so in the future I think I will just send her PDF files of the instructions and any other documents that I have to send over.*

## Attention to Cultural Intelligence

Third, while no explicit mention was made directing students to discuss cultural intelligence as part of their PLNs, given the focus on this topic in the UMN course, the following quotes from Mark (UMN) at the beginning and end of the project are relevant:

*Mark: My partner is Alice. I went ahead and sent her an email. As part of that, I shared with her my Personal Learning Network (PLN) visualization. I tried to be very deliberate about how I wrote my email. In this class, we are learning all about ways to communicate effectively with people from different cultures. Therefore, I did not want to make any ethnocentric mistakes. I spent some time reading about Italian culture. I learned that Italian culture is more high context than American culture. This is hard for me to apply to my email – how to add context when you don't share the same background? I know that most Europeans are better at communicating across cultures than most Americans, as they have more practice. From my experience, Europeans are good at accommodating to the American style of communicating if they have to. I also believe that they generally don't mind doing that as long as they know that you are trying on your end. Therefore, I think as long as I can show that I'm trying, Alice will be understanding. I also spent some time reading about the correct level of formality. I struggled with this a little. American emails tend to be less formal than other countries, so I should try to be more formal than normal. However, it feels very unnatural for me to write in a formal tone, especially to another university student. In the end, I opened the email with "Gentile Signora [surname]." Beyond that, I was professional but not overly formal. My hope is that that would show my positive intentions, and then I will try to match my formality level to Alice's. If she responds in a very formal way, I will try to match that. If she is more casual, I will be as well.*

Later, he wrote:

*Mark: Working with Alice has been pretty straightforward. Possibly, too straightforward? What I mean is, I worry that there hasn't been enough of a cultural interchange. Working with her doesn't feel much different from working with an American university student. I am worried that I might be missing an opportunity to learn more about intercultural communication from first-hand experience. Alice is a good contact and source of knowledge. Therefore, in order to take better advantage of this opportunity, I wrote her an email to start a discussion about the different cultural aspects of America and Italy. As a starting point for the discussion, I talked about Geerte Hofstede's cultural dimensions and how Italy and the US compare to each other.*

Other UMN students also referred to cultural intelligence in their final reflection reports. For example, Kathryn (UMN) included reference to the Li et al. (2017) article discussed earlier:

*Kathryn: In final reflection of the TAPP project, my cultural intelligence has greatly helped to support my collaboration with Giovanna. Since I'm highly motivated to learn more about other cultures and interact with people from different cultures, this makes it easy to open up to them and learn from them and hopefully they can learn from me as well. Li, et al. relayed that, "Cultural intelligence is an important cross-cultural competence that enables individuals to "adapt to, select, and shape the cultural aspects of their environment" [7, p. 126]... Understanding which effects cultural intelligence have in the specific*

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*context of virtual collaboration is particularly important, because that understanding will enable communication professionals to generalize the effects of cultural intelligence to global virtual settings and help identify mechanisms to improve global virtual collaboration” (2017, p. 56).*

### **Use of Technology**

Fourth, as expected, students used multiple technologies for exchange and discussion of their PLNs. Sally (UMN) reflected on this throughout her project:

*Sally: To exchange thoughts and feedback of our PLN, we shared our networks through a Google Doc, and provided comments there. This part of the project reminded me of the use of new technologies we have discussed as the course comes to an end, and how new applications, such as Google Docs, have become so useful when working with Global teams...*

*One of the most important aspects we discussed during the [Skype] call was how we were working on improving our PLN and growing our network. I shared with him how I was currently in the process of interviewing for an internship, and how that had been beneficial to grow my network in my professional career path...*

*Going into this project, I was concerned on how our communication with each other was going to play out, but after more than one month communicating with each other, I am not concerned anymore of working in an international environment. I believe that if you share the same goals, and establish the way of communicating at the beginning of any project, it is easier to avoid issues with miscommunication.*

Returning to Heyward’s (2002) dimensions in his model of intercultural literacy, this use of PLNs represented a means for students to identify resources and contacts, share these with someone from another culture, and by so doing, begin to recognize the significance of culture in their lives. Many of the quotes included above illustrate increased “mindfulness, empathy, perspective taking, tolerance, and communication.” As stated earlier, all students were extremely respectful, and UMN students talked openly in their online course forums about their tremendous respect for UT students’ bilingual and multilingual proficiencies. While as authors we cannot state that a direct correlation exists between the use of a PLN exchange and a resulting increase in intercultural competence and global identity, this specific deployment of PLNs unearthed specific cultural behaviors in their identification of resources versus contacts, providing students with a highly feasible and dynamic way to think about how they learn and how they interact with others.

## **DISCUSSION**

In this section, the authors will sum up and discuss findings that emerged in the previous analyses, focusing on aspects that might be of particular interest to instructors who are using, or intend to introduce, online collaborative methods in their training. The aspects taken into account are intended to add a complementary view of TAPP-style collaborative projects, many positive outcomes of which have already been documented by several authors (e.g. Vandepitte et al., 2015; Gonzalez, 2017; for many more



publications related to TAPP, see The Trans-Atlantic & Pacific Project, 2017). The present discussion might in the future be enriched by an analysis adopting alternative approaches (e.g. of a quantitative nature). Other lines of investigation might include, on the one hand, the possible link between the effort put by individual students into creating and revising their PLN and their performance on the project assignments, and, on the other, a characterization of different PLNs in terms of the types and number of nodes they contain.

## **Collaborating Beyond Language and Document Design Matters**

First, as shown in both the exchanges between students and the PLNs they produced, the collaboration between project partners is not only about language and translation. The possibility for students to practice their language skills is the most apparent advantage of a TAPP-style project: more specifically, students at the ‘translation pole’ of the collaboration can practice their comprehension and production skill, while students at the ‘writing pole’ can practice their rhetorical skills and investigate questions of audience design and usability. In the project under investigation, participants effectively engaged in discussions having to do with language matters. Having the rare, if not unique, opportunity to consult with source-text authors, translation students asked repeatedly for clarifications on points of terminology and text comprehension. Technical communication students, for their part, could receive immediate feedback on their texts, in some cases accepting and in other cases rejecting the changes that translators proposed when they were acting as ‘testers’ of the source-text drafts.

As emerged in the analysis of student exchanges, however, language matters were only one of the aspects or topics that project participants were preoccupied by. Organizational issues took up a large share of the interaction between project participants, as did discussions on the tools to be used for effective communication. This resonates with recent findings (such as in Prieto-Velasco & Fuentes-Luque, 2016) that show how online collaboration helps in the development of “instrumental” and “professional” competences in trainee translators. In their comparative study of competencies of translators and technical communicators, Minacori and Veisblat (2010) document the convergence of skills across these professions. They identify the following skills of technical translation students as most attractive to employers: analyzing, understanding, and conveying the meaning of a technical text; understanding audience; and writing clear instructions (p. 761), and technical communication curricula include assignments that focus on these areas. However, both translators and technical communicators increasingly must address ambiguous and ill-defined problems, working across “siloes” cultures and embracing non-sequential processes for developing multiple solutions demanded of complex problems (Duin, Moses, McGrath, Tham, & Ernst, 2017). As reflected in their exchanges and reports, students who participated in the project under discussion generally managed to solve such problems, which is all the more significant considering that the groups involved were placed at quite different stages of their studies.

## **Comparing Learning Styles**

The second aspect to be discussed concerns the use of PLNs as a means of enhancing the students’ experience of the project and the benefits they can derive from it in terms of exposure to other, different learning attitudes and styles. Using PLNs, participants map and evaluate their personal learning networks and report advantages of engaging with topic-specific resources, so as to gain exposure to cultural and

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disciplinary values. In particular, PLNs enable participants to seek support for their learning, to identify gaps in learning resources, and to discover culturally based assumptions about professional identity, knowledge creation, knowledge sharing, and the knowledge that they consider most worth having.

As shown in our analysis, the feature that was most frequently commented upon by project participants was the almost systematic difference in focus in the PLNs produced by each respective group of students: US students displayed a clear focus on people and contacts; Italian students tended to populate their PLNs with resources. In their reflection reports and in some exchanges the students themselves mentioned the possibility that they had been given different indications by each respective instructor. Yet the tutorials they were asked to take part in were exactly the same. As already hinted at above, one other explanation for the difference might lie in the different demographic profiles of the two groups, with one (the US students) showing more interest in job prospects and industry contacts due to their higher average age.

The authors had the opportunity to discuss this difference in PLNs during a workshop on online teaching and learning that one of them (Prof. Hill Duin) held while on a visit at the University of Trieste in May 2017. One alternative explanation that emerged during the discussion linked the different focus in the Italian students' PLNs to the more general lack of trust that Italian learners have for people as opposed to "authoritative" sources, be they in print or online. Assuming this difference in attitude is not anecdotal but reflects a wider, more established difference in learning styles and attitudes on the part of the two national cultures represented in the project, the authors believe that asking students to visualize their PLNs provided students with an extremely valuable opportunity to pool alternative resources and perspectives and to reflect on the way they learn.

While possibly reflecting differences in learning styles or attitude, the authors believe that inviting students to use PLNs had, throughout the project, an overall positive effect in sustaining their "learning aptitude", defined as "having the general skills and will to learn and the specific skills and will to learn in a particular profession and social setting", and seen as a "precondition to working successfully" (Vandepitte et al., 2015, p. 142). The visual format appears to be a significant factor in this respect: in a PLN, how each project participant learns and how they see themselves in relation to project partners, the discipline or their prospective professional context are both made immediately tangible and visible. In the project under discussion the effect was positive not only for learners but also for instructors, who had a better, more comprehensive view of the assumptions project participants started out with and the benefits they declared to have received from participation. This multimodal approach to discussing and visualizing knowledge and learning could be extended to projects linking different cultures than the ones discussed here, which could in turn unearth other possible differences in learning styles.

To sum up, the results of this exploratory study indicate that the use of PLNs in online collaboration has the potential to enhance some of the benefits that have been associated with all forms of collaborative activities carried out during training (e.g. the improved effectiveness of learning, and the development of interpersonal and instrumental skills). This seems to be mainly related to the visual nature of PLNs: the greater recognition and recall afforded by the multimodal representation typical of a PLN appears to have positive effects for all parties involved as regards expanding one's pool of knowledge, information resources, and learning strategies – all aspects that can effectively complement the development of what are traditionally seen as the core skills or competences in the discipline at hand ("transfer" in translation, and "drafting/design" in technical communication).

## **CONCLUSION**

PLNs represent a robust pedagogical tool for use in global virtual collaboration. The act of intentional identification of one's learning network provides an opportunity for student-centered learning; it provides a means to better understand the people and resources that one uses to develop personally, academically, and professionally.

Visualizing one's knowledge and learning through a PLN does not come natural. Some students initially reported difficulty in embracing this method. On the whole, however, most students acknowledged their usefulness: during a feedback session in class in Italy, one student commented that he would have like to see plans for a follow-up to the project based on the PLNs; another emphasized that during the project she had particularly enjoyed the opportunity to reflect upon herself as a learner. Use of PLNs over time, and across projects, could lend itself to studies adopting an explicit longitudinal design so as to monitor students' progress and link it to changes in learning style. Even within the short timeframe allowed by the project discussed here, the authors noticed how students were ready to repeatedly go back to their PLNs and adjust them according to what they were experiencing in the course of the project.

There is no "right" or "wrong" PLN. A PLN is Personal; it's about Learning; and its strength lies in making visible one's Network(s). This simple act of making one's PLN visible results in greater acknowledgement of how one is learning, what one hopes to learn, and how one might go about making new learning and connections possible. The fact that UT-UMN dyads included each other in their revised PLNs illustrates the presence of potential lifelong relationships. The impact of the naming, linking, and visualizing of one's virtual collaborator cannot be over emphasized. Doing so makes perfect sense.

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## **KEY TERMS AND DEFINITIONS**

**Cultural Intelligence:** The set of interacting knowledge and skills that allows people to adapt to and select the cultural aspects of their environment.

**Collaborative Learning:** Acquisition of competence that takes place through collaboration with others.

**Dyad:** A group of two people.

**Personal Learning Network:** A collection of people, information resources, organizations, and other connections valued by a networked individual who sees connections as supporting and contributing to learning interests.

**Project-Based Learning:** A teaching method favoring the acquisition of knowledge and competences through long-term teamwork on authentic, complex tasks.

**Technical Communication:** Communication about technical or specialized topics directed to a targeted audience through various media.

**Translation Competence:** The set of knowledge, skills and attitudes that enable an individual to act as a professional translator.

**Virtual Collaboration:** Collaboration taking place through online tools and environments.

## ENDNOTES

- <sup>1</sup> A brief terminological note: we use the term “intercultural” when the emphasis is on interaction, as in “intercultural communication” or “intercultural skills”; in cases where the meaning is that of “applying to various cultures”, we use the term “cross-cultural” as in “cross-cultural technology design”; finally, we keep the term “multicultural” in preferred usages such as “multicultural team” or “multicultural society”. Please also note that authors we cite might use these terms slightly differently.
- <sup>2</sup> The students’ real names have been changed to maintain anonymity.