LINKING ENGINEERING STUDENTS IN SPAIN AND TECHNICAL WRITING STUDENTS IN THE US AS COAUTHORS

The challenges and outcomes of subject-matter experts and language specialists collaborating internationally

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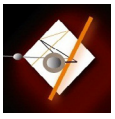
In a first-of-its-kind international collaboration, technical writing classes in Spain and the US matched engineering students with international technical writing students to coauthor procedural instructions. These were then tested for usability by students in Finland and the US, and subsequently translated and localized by students in Belgium, France, and Italy. The coauthors faced challenges in gaining expertise, communicating clearly in a lingua franca, handling differing cultures, testing for usability, and



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managing differing semester schedules and time zones. Insights from these experiences yield recommendations for instructors who wish to replicate such collaborations.

Keywords. Collaboration, Engineering communication, Intercultural communication, Localization, Technical writing, Technology, Specialized knowledge, Translation, Usability testing.

Introduction

For over 13 years, the Trans-Atlantic Project (TAP) has frequently paired technical writing classes—many filled with engineering majors—in the US with translation classes in Europe to collaborate in localizing procedural documents for both a source-language market and one or more target-language markets (Humbley, Maylath, Mousten, Vandepitte, & Veisblat, 2005; Maylath, Vandepitte, & Mousten, 2008; Mousten, Maylath, Vandepitte, & Humbley, 2010; Mousten, Humbley, Maylath, & Vandepitte, 2012; Maylath, Vandepitte, Minacori, Isohella, Mousten, & Humbley (2013). Not until autumn 2012, however, did the TAP link a technical writing class taught in English for engineering students in Spain with an international technical writing class in the United States.

The course in Spain aims to develop students' English language proficiency and writing competence in international engineering contexts. It is adapted to the European Higher Education Area (EHEA)[1], arising out of the Bologna process, a university reform seeking the harmonization of degrees across Europe and the adoption of a learning-processes-and-outcomes model specified as a series of competences to be acquired. This

course is offered as an elective in the engineering curriculum's last year at the Polytechnic University of Catalonia (Universitat Politècnica de Catalunya, UPC). With TAP integrated into the course, engineering students confront an authentic professional situation in which they must apply appropriate skills and strategies for effective technical communication, mirroring the challenges and processes found in real-life contexts.

The international technical writing course in the US aims to immerse students in globalization and localization processes that technical writers must know to handle cultures, languages, and rhetorical strategies in documents used in nations and language areas outside their own. Though open to engineering students and others at North Dakota State University (NDSU), based in Fargo, it typically draws senior undergraduate and graduate students almost entirely from the English Department. Previously in the TAP, technical writing students had always been their own subject-matter experts (SMEs), choosing topics for which they could be both author and authority simultaneously. In the 2012 project, however, students in this course served instead as English-language and technical documentation specialists, relying on the engineering students in Spain as SMEs. (See details below under "Design of the Project")

As procedural writing is the one of the most common types of technical writing, widely applicable to different audience levels (e.g., technicians, lay users), and lends itself to usability testing, it provides valuable authenticity for a technical writing assignment. The TAP thereby provided realistic challenges, as technical writing students at UPC took on the role of engineers while simultaneously the technical writing students at NDSU took on the role of language experts.

To a striking degree for the students in both classes, their collaboration led to deeply realistic challenges, namely the integration of specialist engineering knowledge into a collaborative communication task through a distance partnership of distributed work (cf. Paretti, McNair, & Holloway-Attaway, 2007). Within this context, students in both locations had to cope with challenges arising from

1. language and communication—English as a foreign language, processes and conventions in technical writing, student-student communication to develop the task, intercultural communication;
2. the use of technology;
3. task management—meeting deadlines, negotiating roles, as well as dealing with diverse views and expectations related to SME/language expertise within the project.

In this article, instructors from both sides of the Atlantic present a teaching case detailing their students' partnerships. After situating technical communication within an engineering degree and arguing for real interdisciplinary collaboration, we provide an account of the design of the project with its successive stages and goals, a narrative of what transpired, challenges along the way, and lessons drawn for use by others.

Literature Review

Although engineering students sometimes seem to come to class with an aversion to learning language skills, professional engineers recognize that much of their work relies on their ability to communicate clearly, often in more than one language. Among those calling for engineers competent in language are Downey et al. (2006); Swearingen, Barnes, Coe, Reinhardt,

and Subrahanian (2002); and Lohmann, Rollins, and Hoey (2006), who list "proficiency in a second language" as the first of five required competences (p. 128). Reflecting these dynamic multi-competence views of engineering, current curricula in the US and Europe include, as part of expected learning outcomes, the development of cross-curricular competences related to communication, collaboration and multidisciplinary work (cf. ABET [2012] for ABET descriptors in the US, and Joint Quality Initiative Informal Group [2004] for "Dublin" descriptors in Europe).

Along these lines, technical writing courses in English as a foreign language, such as UPC's for engineering students, can be aligned with the tradition of English for specific purposes (ESP) courses at European universities, which prepare students for academic and professional work in English (Räisänen & Fortanet, 2008; Gustafsson et al. 2011). ESP teaching focuses on specified learner needs, using the texts, activities, and practices that are characteristic of the students' discipline, with an emphasis on authentic materials and tasks, as well as interdisciplinary collaboration (e.g., Dudley-Evans & St. John, 1998; Belcher, 2004). Increasingly globalized academic and professional contexts where English is used as a lingua franca call for the need to prepare students for professional challenges requiring realistic communication and collaboration with authentic topics and tasks. In these internationalized academic settings, current trends move towards multidisciplinary approaches to the integration of content and language (ICL) in order to cater for discipline-specific academic literacies. Thus specific programs are being designed as a result of the close collaboration of content and communication specialists (e.g., Gustafsson et al. 2011).

Despite the allowances provided by technology to overcome geographical barriers, international coauthoring between engineering

students and professional communication students still remains rare. Wojahn et al. (2001) describe the benefits that they saw in placing engineering and technical communication students in collaborative teams; however, their teams were composed of students at a single university with English as the working language (also reported in Ford and Riley [2003]). Experimenting internationally, Paretti et al. (2007) teamed up engineering students in the US with communication students in Sweden to create Web sites and write white papers; however, the engineering students were not only SMEs but also native language authorities. In contrast, our project gave each team member singular expertise: the engineering students were SMEs while the international technical writing students were English-language experts in communication.

Design of the Project

While international language-project partnerships have grown numerous, virtually all have paired only two classes from two countries (Thompson & Carter, 1973; Jarvenpaa & Leidner, 1999; Moreno-Lopez, 2004; Du-Babcock & Varner, 2008; Flammia, 2005, 2012; Herrington, 2005, 2008; Humbley, Maylath Mousten, Vandepitte, & Veisblat, 2005; Gerritsen & Verckens, 2006; Herrington & Tretyakov, 2006; Stärke-Meyerring & Andrews, 2006; Goby, 2007; Stärke-Meyerring, Duin, & Palvetzian, 2007; Fitch, Kirby, & Greathouse Amador, 2008; Kennon, 2008; Maylath, Vandepitte, & Mousten, 2008; Mousten, Vandepitte, & Maylath, 2008; Anderson, Bergman, Bradley, Gustafsson, & Matzke, 2010; Flammia, Cleary, & Slattery, 2010; Mousten, Maylath, Humbley, Scarpa, Livesey, & Vandepitte, 2010a; Mousten, Maylath, Vandepitte, & Humbley, 2010b; Klein & La Berge, 2012; Mousten, Humbley, Maylath, & Vandepitte,

2012). However, in 2010, universities in five nations linked an international technical writing course in the US with a usability testing course in Finland and translation courses in Belgium, Denmark, and France. In this iteration of the TAP, described in Maylath et al. (2013), students in the U.S.-based course chose their own topics to write instructions. Working with students in a usability-testing course in Finland, they then tested their self-composed instructions, recruiting subjects in both the US and Finland. Using the test results to revise, they prepared their texts for translation, according to the guidelines in Maylath (1997). In the final phase, they partnered with students studying translation in Belgium and France to localize and translate accurately their texts into Dutch and French, respectively.

In its 2012 iteration, all arrangements were the same but with two important additions:

1. SMEs—the engineering students in Barcelona—would choose the topics, according to their interests and expertise, and then partner with the students in Fargo—all majoring in English—to coauthor the texts, and
2. a translation class in Italy would join the classes in Belgium and France so that each text would be translated into a third target language, Italian.

The first addition proved far more significant than the second. Although technical writers are rarely their own SMEs, when they took on both roles at once, they benefited from discovering what was opaque or ambiguous in their own writing as they, as SMEs, often took for granted how much they already knew and thereby left gaps or ambiguities in their instructions. When the roles were split, the benefit of discovering what

experts take for granted was transferred in large part to the SMEs at UPC. In turn, the English-language experts at NDSU gained the benefit of facing the far more realistic, though also more challenging, experience of depending on SMEs for content and accuracy. The trade-off seemed worthwhile going into the project and remains so in hindsight.

What Transpired

For the first time, the engineering students were faced with the complexity of communicating online to accomplish a professional task: producing an authentic technical text in English. As their course had led up to the project, they had worked on the concepts of audience, purpose, and situation; with the project underway, they found these concepts emerging in the flesh. Consequently, students were faced with a learning-by-doing context different from any previous learning situations they had been in. On one hand, the focus was no longer on language itself but rather on communication for the task; on the other hand, they were required to contribute their engineering knowledge to an interdisciplinary project involving the integration of different types of competences, in keeping with current ESP courses in engineering curricula. As SMEs, the engineering students chose the topics, some of which were highly specialized, in close relation to their studies, e.g., "How to conduct a Charpy impact test" and "How to use Ansys to make a water deposit," while others were addressed to a wider audience, e.g., "How to create effects with Photoshop" and "How to make a Wiki text."

Because the TAP required students to go through the different stages in the writing process, it aligned fully with the course syllabus, based on the notions of process and genre in specific socially-situated contexts (Hyland, 2003). The courses in both Spain and the US pivoted around the TAP as

the central course project, thus reflecting a typical ESP situation whereby students become the source of knowledge while the instructor acts as a language consultant willing to engage in interdisciplinary activity (Dudley-Evans & St. John, 1998; Freire, 2000; Belcher, 2009). In both courses, as the instructors taught procedure writing, they gradually revealed the project's stages and requirements. The engineering students found themselves doubly challenged: immediately they had to put into practice technical communication skills as they were studying them; in addition, the TAP required that they immediately apply sophisticated disciplinary skills, even if not adequately developed. This situation meant that students sometimes had not had the opportunity to work through the course materials thoroughly before each stage of the project, or gain as much practice as they would probably need before they were required to act as SMEs in a challenging, authentic communicative situation.

Challenges

Gaining Expertise

Given the above mentioned role of instructors as ESP language specialists, the engineering students had enormous responsibility and discretion as they did not have an expert engineering consultant to turn to. Thus, the whole project depended largely on them as SMEs. As such, they were required individually to choose suitable topics and to make sure that the instructions were testable (i.e., concrete enough and doable in terms of equipment needed). Through class discussion, the number of topics was refined to match the final number of teams coauthoring in the TAP. While engineering students were trusted as true experts in their field, they were provided thorough guidance in the

structure, organization, and language of technical instructions, often through questions that required them to clarify their meanings and reflect on what makes an appropriate instructive text. Without putting too fine a point on it, *the engineering students had to write in a foreign language*—English. Unlike the translation students in Belgium, France, and Italy, to whom they would later send their coauthored documents, the Spanish and Catalan engineering students were much more varied in their English language proficiency and in their degrees of self-confidence in expressing themselves in a foreign language. For many, it was the first time that they had to express themselves in English in a "real" situation, i.e., in which real people depended on the clarity and accuracy of their English communications; and for all of them it was the first time that they had to use technical English to convey ideas with which the reader was not familiar. Mastering English language and communication skills posed the chief challenge to engineering students in the TAP.

For the NDSU students, all of them majoring in English, most engineering topics and contents were foreign. Some of their UPC partners, whose proficiency in English was limited and who, to this point, lacked awareness of what is involved in collaborative writing, relied excessively on the NDSU students as language experts, thus relinquishing, to a certain extent, the SME role that they should have adopted. This situation meant that the U.S.-based writers had to learn key engineering concepts fast to cope with the demands of the project by interpreting and understanding texts on subjects of which they had little or no knowledge. Additionally, the translation students in Belgium, France, and Italy often sought answers to their questions from the U.S.-based technical writers, but because these writers were not SMEs, the NDSU students often had to reroute questions

to the engineering students at UPC. A change took place over time: initially, the Fargo students viewed their expertise in the instructions' topic as external to themselves and also far distant in Barcelona. However, as they conducted their own usability tests in laboratories in Fargo, they began to become aware that they had acquired knowledge about the procedure and were identifying possible quirks or flaws that the engineering students might have missed before receiving the test results. Gradually, the NDSU students began acknowledging that they too were becoming authorities, through the testing and authoring process.

Communication

Both classes grappled with communication appropriate to the task, which involved setting up the partnership: introducing themselves to each other and establishing the media to develop the TAP—e-mail, Dropbox, Google doc, etc.—then negotiating the approach and procedures for the task, writing and revising drafts, and setting intermediate deadlines. Communication thus took place at different levels and in different genres: engineering content in the procedural text, metacommunication about technical communication—structuring the text, language questions, etc.—as well as social interaction and task management.

From this experience, what came to the fore were the linguistic pragmatics of intercultural communication—negotiating their roles as coauthors—even as one was naturally the SME and the other the language expert (cf. Mousten et al. [2012]). Additionally, but naturally enough, the UPC students felt challenged in having to communicate in English with their U.S.-based partners. Conversely, the NDSU students frequently faced

the challenge of having to interpret engineering concepts and jargon in far-from-standard English.

Differing Cultures

Added to this were cultural differences. In one notable case, a NDSU student was surprised to receive a message from a UPC student signed off with the phrase "Good night kisses," which the recipient felt to be overly familiar. She mentioned it to her instructor, who passed the message on to the instructors in Barcelona, who then discussed the issue with the entire class. When the students were asked to suggest what might be wrong with the phrase as written, they immediately identified that there should, at least, be a comma after "Good night," but could see nothing else wrong. In fact, they were very surprised to hear that this phrase—a literal translation from a typical Spanish complimentary closing—could be considered inappropriate for some people. At first they expressed the feeling that this was just typical Anglo-Saxon "coldness"—unaware that the predominant culture in Fargo is Scandinavian—but, after some discussion and looking at other examples, they quickly came to understand and accept a need for cultural sensitivity and to be wary of literal translations, as in the example above. One of the instructors pointed out that such a closing could convey a dismissive tone, revealing something about assumed or expected roles, such as, "I'm the technical expert, and here it is up to you to manage the info and write the text"; in other words, remarks that could appear rather blunt in response to the American student's question.

The episode likewise was fodder for discussion during a subsequent class meeting at NDSU. On seeing the exchange, two of the students who had spent time in Spanish-speaking countries and who were double-majoring in

Spanish, as well as English, pointed out to their classmates that "Good night kisses" was indeed a direct translation of a common sign-off in Spanish. For both classes, this small *kerfuffle* proved a useful window into the ease with which interlingual and intercultural *faux pas* can be committed.

More generally, there was a tendency for some Spanish students to be more direct than would be usual for a native English speaker—and far more direct than is common in America's Scandinavian Upper Midwest—thereby running the risk of appearing rude. Also, a lack of high-level language skills could easily contribute to an appearance of bluntness, such as the message to which the "Good night kisses" closing was attached: "If you want to put it that way then do that." We are reminded of Paretti et al.'s (2007) observation of their engineering students collaborating internationally, who took

> a very narrow, task-oriented approach to communication . . . that, ultimately, hampers their ability to collaborate. The possibility that communication is a process of dynamic exchange or dialog did not come into play; instead their approach was highly task oriented ("do what you need to get it done"). (p. 343)

Although Paretti et al., referencing Downey et al. (2006), note that "U.S. citizens tend to minimize cultural differences; professionals and student alike tend to see others as more like than different from themselves culturally, and thus often miss key barriers to cross-cultural communication" (p. 334), in our project, the class in Fargo seemed to be more sensitive to cultural differences than the class in Barcelona. This could perhaps be a reflection of the students' major areas of study: the students in Fargo had included cultural studies in their coursework, many having already taken courses named Language Bias or Social and Regional Varieties of English. Four were enrolled in the PhD

program named Rhetoric, Writing, and Culture. Quite a few had already studied abroad or were preparing to do so. In addition, three had grown up abroad—two in Europe, one in Africa—and continually pointed out to their classmates differences that they saw between American culture and their own. In contrast, the students in Barcelona were enrolled in an engineering curriculum, which has little space for courses in the humanities and social sciences. For many engineering students, a technical writing course is one of their few contacts with instructors in the humanities, and they have even fewer opportunities to link with fellow students in the humanities.

Usability Testing

To fulfill one of their course assignments, the U.S.-based students conducted usability tests of their coauthored documents. To do so, they had to gain access to equipment in engineering laboratories on their own campus. Though many were able to do so, some difficulties arose, namely differences in equipment. The engineering students had been warned to choose topics for procedures that could be tested easily elsewhere and were simple enough for nonengineers to learn. Fortunately, the instructor in Fargo was able to secure enthusiastic cooperation from the university's College of Engineering and Architecture to have the international technical writing students conduct their usability tests in the local engineering laboratories with suitable test subjects.

However, on viewing the 18 topics chosen in Barcelona, the engineering faculty in Fargo reported that the labs lacked the necessary equipment to test eight of the procedures. Thus, close to half of the procedures went untested. Some of the topics were particularly machine specific, for example, "Programming a robot to solder a chip"; in other cases, confusion arose as

the machine used for the usability testing turned out to be a different model from that used in Barcelona. Thus, instructions that worked in Barcelona initially failed in Fargo. Also, some procedures required the use of additional machines not covered by the instructions. To gain experience at planning and conducting a usability test and in writing a usability test report, the NDSU students whose procedures could not be tested teamed up with those whose procedures could. Although the UPC students did not take part in the testing directly, those whose procedures could be tested were often consulted during testing when results indicated missing or unclear information. These students thereby benefited greatly as they became aware of what they had taken for granted or what they had not clearly communicated. In contrast, both in Barcelona and Fargo, the coauthors whose procedures could not be tested never had the opportunity to gain such benefits, other than obliquely from the results of classmates' tests.

When it became apparent that many of the procedures could not be tested in Fargo, hope emerged that some could be tested in Vaasa instead. However, when the Finnish class checked with their engineering labs, they discovered that they could test only six of the procedures—all ones being tested in Fargo as well. Hence, all eight that could not be tested in Fargo were also untestable in Vaasa. Moreover, two texts that were being tested in Fargo could not be retested in Vaasa. Thus, the six procedures that were tested in both Fargo and Vaasa yielded an embarrassment of riches for the coauthors who benefited from the results of testing at two sites, even as the coauthors for the completely untested procedures were left to revise nearly blind, with zero test results and only peer reviews from classmates to go by.

Time

Even as testing was taking place, the differing semester schedules and deadlines among the three European universities bringing translators to the project resulted in two of the translation classes' starting to translate the texts even before they could be revised with the benefit of test results. The class in Ghent required a draft first; the class in Paris, a week later. Because Italian universities start their autumn semester a month or more after those in Belgium and France, the class in Padua benefited from seeing much revised text, as the first set of procedures that they received arrived immediately following usability testing. Because translation agencies now compose technical documents in multiple languages simultaneously, not even labeling a source language or target languages (T. Thomson, personal communication, 1 May 2009), the experiences of the translation students in Ghent and Paris were actually more realistic and better preparation for what they would eventually face as practicing translators; however, they were also more frustrating, naturally enough, as the coauthors kept sending changes to the source text that the French and Dutch-language translators had already begun to translate.

Beyond the challenge of staggered starts to semesters, unshared holidays were sometimes a surprise when students *en masse* would inform their partners "I'll be out of contact the next few days for our Thanksgiving vacation," resulting in days of smooth progress falling victim to a pattern of fits and starts. In addition, the 7-hour difference in time zones proved difficult for some students, even as others were able to use it to their advantage as they "passed the baton" across their interlocking diurnal schedules—or, in the case of quite a few students, nocturnal schedules. Those who did not adjust in this way found it difficult to maintain a dialogue in real time, though some

eventually found some success by agreeing to use Skype during the project's latter phases. Interestingly, most of the students shied away from using real-time media early on. Indeed, on their own, they seemed to discover what Paretti et al. (2007) observed in their international collaborative project:

> Although rich media increase attention and motivation, they decrease participants' ability to process information; it is much harder, in other words, to come to a complex decision in a virtual chat or video conference than through an asynchronous e-mail discussion where each party has time to digest the information. (p. 333)

As iChat, Skype, Webex, etc. were largely ruled out, students came to rely on asynchronous communication such as e-mail, Dropbox, Google docs, and even Facebook, i.e., written communications that could be used as a record for reference later. This occasionally led to delays and may not have been as efficient as synchronous communication but was generally seen as an acceptable solution. As time went on and dialogue stretched out, more and more opted for the immediacy of real-time communications.

From the project's initial phase—selecting topics—to its final phase—translation and localization—having a long supply chain of skill centers stretching from Barcelona and Fargo through Vaasa and on to Ghent, Paris, and Padua meant that getting an answer to a question could take longer than anticipated, as the engineers usually did not respond directly or immediately to the translators, even when their e-mail address was included in queries. Instead, they tended to look to their coauthors in the US as the information hub, even when a translator's question could realistically be answered only by a SME. At times, Paretti et al.'s (2007) observation of their own students seemed to hold true:

> ENGR students had far less incentive to collaborate; most of their work was related to the engineering design, in which the virtual collaboration played little role. The situation replicates many workplace collaborations between technical writers and product developers (p. 339).

With such a large number of people involved in the document's supply chain, any delay with one student often meant a knock-on effect at all the other skill centers, with the danger that information could be lost along the way. In one case early in the program, a student in Fargo failed to communicate for long enough that the project had to be abandoned, thus forcing her coauthor in Barcelona to join a classmate's project, but this also meant that the translators and testers originally assigned were left without a project, and they too had to be assigned to another.

As a project finale, the instructors arranged a real-time final videoconference connecting all parties simultaneously, i.e., coauthors, usability testers, and translators. However, with over 100 students participating among the six sites, only a portion of all the texts could be discussed during the two-session videoconference—starting at 2 p.m. in Finland, 1 p.m. in Western Europe, and 6 a.m. in North Dakota. Nevertheless, as had been the case in 2010, the students found the live connection both exciting and informative. For many, it was the first time that they had seen images of their partners beyond, perhaps, photos posted on Facebook. Afterward, many remarked that their partners had never seemed more real.

Conclusions

Though the project was far more challenging, and naturally frustrating, than students had ever experienced in any course they had taken, the vast majority reported, via postlearning reports, that they felt that they

had also learned more as a result of the TAP's realism, complexity, and learning-by-doing approach. As their instructors, we too are satisfied and pleased with the learning outcomes: the whole process, as revealed through prelearning and postlearning reports, proved valuable to raising students' awareness, prompting them to reflect on their writing, the challenges that they encountered through the process, and the finished products that they achieved by dint of effort.

For those who wish to replicate such a project, our experience leads us to offer the following advice:

1. *Start small, linking two classes internationally, then expand in increments.* As mentioned at top, the massive size of this undertaking, across seven nations in two simultaneous projects, began only after many years' practice on projects with much smaller dimensions. Except for the instructors newly added from Barcelona, instructors at all the other sites had gained practice over the years in bilateral projects. Recruiting partners at international conferences is relatively easy. Most of the TAP partners joined the network by that route. Whether international collaboration begins with coauthoring, with joint testing, or with translation/localization does not matter; choose a willing partner and gain practice. With success, you will be motivated to expand and will have gained the knowledge to manage additional partners.

2. *Make your best effort to align the courses with the project*. Learning works best when the course contents match the various stages of the project. That said, make peace with the things that cannot

be changed, especially universities' varied schedules and differing national holidays.

3. *Prepare the students for what is to come*. Engineering students need to be made aware of their critical role as technical communicators as well as their primary role as SMEs, if only to make the whole process easier and more effectual. As Paretti et al. (2007) put it,

> their assumptions about the degree to which workplace roles will be clearly defined a priori represent a significant learning opportunity. If they assume roles will be clear, then they will most likely lack the communication skills needed to identify or establish such roles in the absence of structure. (p. 347)

4. *The early stages are crucial*, especially the choice of appropriate topics. The whole project depends on the topics and procedures chosen. Once chosen, they cannot easily be changed. In our project, the instructors were all language experts, not engineering experts, so it was necessary to allow the students a great deal of freedom and integrity in the choice of subjects and the production of texts. In general, this worked extremely well. If the instructor understands her or his role as a monitor/facilitator, then the students stand to gain a great deal of experience and confidence from their work.

5. *Make sure that students are aware of potential communication problems*, including those arising from encountering a different culture. We have noticed that discussing problems that have arisen in the past is most effective at awaking students to what might go awry in their own communications. Obviously, the

accumulation of experiences is a help to teachers, so again we encourage readers to gain practice in increments. Also, at every class meeting throughout the project, it helps if instructors ask overtly how communication between partners is going so that misunderstandings can be cleared up and lessons drawn for the whole class to learn from. ■

Note

[1] Information about the EHEA and the Bologna process of university reform in Europe can be found at http://www.ehea.info/

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