

FIRST-YEAR COMPOSITION THROUGH A GLOBAL ENGINEERING PERSPECTIVE

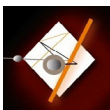
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This teaching case describes three sections of first-year composition taught within a Global Engineering Cultures and Practices Learning Community. As members of a learning community, students were concurrently enrolled in two first-year engineering courses and one first-year composition course, while also participating in cocurricular events. These composition courses were designed to achieve the goals of the composition program while simultaneously supporting the goals of the learning community and meeting the needs of the first-year engineering students enrolled in the course.

Keywords. First-year composition, Learning communities, Engineering education, Collaborative teaching.

Internationalization of higher education brings opportunities and challenges at all levels. At our institution, Purdue University—a large public research university in the Midwest of the US—it manifests itself in numerous ways as the university expands its global presence through global collaborations and exchanges of students, instructors, and researchers¹. Addressing



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internationalization through the engineering curriculum is an especially compelling issue at Purdue, as international students comprise 25% of the enrollment of the School of Engineering, the highest percentage of any school on campus (ISS, 2012). The first-year composition (FYC) program at our university, known as Introductory Composition at Purdue (ICaP), faces a similar imperative because, as at most schools, nearly all undergraduates are required to enroll in an FYC course, which leads to high numbers of engineering students and international students in FYC courses. For most writing programs, dealing effectively with cultural and linguistic diversity in FYC has been an ongoing challenge (Matusda, 1999, 2006; Preto-Bay & Hansen, 2006; Shuck, 2006; Williams, 1995).

In this article, we provide an account of how we addressed the need to integrate international education in both engineering and FYC through our participation as writing instructors in a Global Engineering Cultures and Practice Learning Community (abbreviated as Global Engineering Learning Community, or GELC). In addition to describing course curriculum and assignments, we explore how global engineering issues and multicultural communication were addressed through course structure and cocurricular activities. As the FYC instructors in the GELC, we coordinated our composition curricula and assignments around issues in engineering to prepare students for their academic and professional careers by

1. Enabling students to explore engineering issues and discourse communities through their composition assignments.
2. Encouraging students to consider international audiences in their research and writing.
3. Promoting collaboration among diverse groups of students.

Overall, we believe that the combination of our theoretically-grounded course designs, curriculum-supporting activities, and focus on professionalization provided a rich learning environment where students were able to grow their knowledge about writing, engineering, and international communication.

Learning Communities and Global Engineering at our Institution

To help incoming students adjust to social and academic life on campus, Purdue offers a number of learning communities that students can join. A learning community consists of a group of first-year students who share a common academic interest, take two or three courses together, and (may) live in the same residence hall. The offerings span a range of colleges including Agriculture, Education, Engineering, Liberal Arts, Health and Human Sciences, Technology, and the School of Business.

Moreover, these learning communities are just one program among several within the Student Access, Transitions, and Success Programs (SATS), whose mission, vision, and values statements focus on the development of and collaboration between staff and students, a commitment to diversity, and an emphasis on integrity and accountability in order to

assist students in progressive stages of development; and have as their ultimate goals an increased rate of student degree completion, future employment or study, dedicated citizenship, and responsible leadership in the state, nation, and world (SATS, 2012, para. 1).

In addition to achieving academic success, students are also encouraged to become responsible leaders and dedicated citizens while having the support of the university.

More broadly, learning communities have been part of a growing movement in higher education since the 1990s as a way to help student acclimate to higher education and to improve retention of first-year students (Zhao & Kuh, 2004). In addition to these benefits, Levine (1999, as cited in “Learning Community Description,” n.d., para. 3) points to others, including “academically-based social networks among peers” and increased faculty-student interaction and student engagement in academic and social life on campus. Data gathered from surveys distributed to Purdue’s learning community students show that this program does have an impact on student retention since its initial launch during the fall semester of 1999 (“Learning Community Successes,” n.d.).

Of the 63 total learning communities at Purdue, the ICaP program participates in 18. In our case, the three authors were writing instructors for the Global Engineering Cultures and Practice Learning Community, one of several learning communities within the College of Engineering. This learning community engages first-year engineering students in the development of their communication, leadership, and technology skills within an expanding global network. By enrolling in one of the courses within the Global Engineering Program, in addition to another introductory engineering class, students “explore the meaning of culture and cultural sensitivity as they relate to engineering design and sustainability, [and] they will begin the process of developing global engineering competence” (“Global Engineering Cultures and Practice,” n.d., para. 1).

For this reason, the learning community cultivates a multicultural, global community by creating contexts where students with similar academic and professional interests can get to know their peers from diverse cultural backgrounds. Students in the GELC enrolled in two engineering courses:

a general engineering course open to all first-year engineering students (Transforming Ideas to Innovations I), as well as an engineering course more specific to the goals of the GELC (Global Engineering Practice and Design), which was cotaught by the associate director of the Global Engineering Program—an assistant professor of engineering education—and a graduate research assistant, who served as the primary instructor of the course.

Curriculum Design

In designing our curricula, we wanted to tailor the writing courses to the GELC and to maximize the opportunities for our students to develop their writing knowledge and skills while simultaneously learning about engineering through their writing. On the one hand, as members of a mainstream introductory composition program, we were not operating in the context of an overtly interdisciplinary course (e.g., as in a WID [writing in the disciplines] or a WAC [writing across the curriculum] program). However, given the institutional partnerships created by the learning community, we tried to design our courses in a spirit of mutual engagement and interdisciplinarity (Leydens & Schneider, 2009; Paretto, McNair, Belanger, & Diana, 2009).

Our FYC program offers a variety of FYC courses; the core model is a one-semester, four-credit course with one instructor and 20 students, which meets five times a week with three 50-minute classes—including one day in a computer lab—and two 50-minute conference days. This model provides a structured environment that supports the writing process through the submission of drafts and final drafts while instilling in students an understanding of the basics of visual rhetoric that comes with multimodal instruction. The program gives instructors a good deal of autonomy in how they develop a curriculum to fit this model; instructors can choose from

one of eight alternative syllabus approaches that have been approved by Purdue's Introductory Writing Committee under the ICaP program—such as *Writing Your Way into Purdue*, *Academic Writing and Research*, *Composing with Popular Culture*, etc. Although the theoretical rationales of each syllabus approach differ, they are connected by ICaP's overarching Goals, Means, and Outcomes for English 10600 and the FYC Outcomes of the Council of Writing Program Administration, which emphasize an attention to rhetorical knowledge, critical thinking, reading, and writing, writing processes, knowledge conventions, and technology.

International students have the option of enrolling in a section of FYC for international students, which was created for students whose education was primarily in a language other than English and whose speaking and listening skills are not as strong as their writing and reading skills in English. Placement of second language writers into appropriate writing courses has been an ongoing issue for FYC courses—and writing studies more broadly—given the differences between L1 and L2 writers and the associated implications for curriculum and placement (Silva, 1994, 1997). To allow instructors to better address the distinct linguistic and academic needs of second language writers (Silva, 1993), the program's basic FYC model was adapted for international sections in several key ways.

Most notably, enrollment is limited to 15 students and there are fewer class sessions but more individual student-teacher conferences. In terms of curriculum, this model of FYC is designed around a sequenced approach developed by Leki (1998), in which students choose their own topic and research and write about this topic for four writing assignments, composing multiple drafts for each assignment and receiving instructor feedback throughout the composing process. This sequenced approach is based on the

belief that the students in the course will develop their language and writing skills best when each of their writing assignments builds directly on the experience and knowledge gained from the previous writing assignments.

As instructors in the ICaP program, we were required to design our curricula under the aegis of one of these approved FYC models; Mary used Writing about Writing, while Gracemarie and Matthew used the sequenced writing syllabus approach for international students. As instructors in the GELC, however, we wanted to adapt the “standard” FYC models to meet the needs of our GELC students and to provide a challenging, meaningful experience for them, especially given their linguistic and cultural diversity. Although we took two different approaches to our FYC sections, we maintained a fundamental cohesion among our courses by incorporating into our assignments and activities a focus on global engineering. Furthermore, all three sections followed the guiding principles of collaboration among instructors and students, consisted of both class meetings and student-instructor conferences, included both written and multimedia assignments, shared many extracurricular activities, and fulfilled the same number of credits for all students within the learning community.

Collaboration among instructors began informally during the preceding spring and summer, when we developed tentative curricula. It became more formal shortly before the semester began, when all three FYC instructors and the primary instructor for the Global Engineering Practice and Design course attended a Learning Community Instructor Training Workshop. In addition, all four instructors and the learning community assistant met twice before classes began and at least twice a month during the fall semester to share instructional activities, plan and schedule events, manage the budget, and prepare for the end-of-semester showcase. Because

they shared the same curriculum, Gracemarie and Matthew worked together more frequently and shared documents and resources through Dropbox , a cloud-based file storage service.

Writing about Writing Syllabus Approach

Mary taught one section of FYC under the Writing about Writing (WaW) syllabus approach, which borrows its theoretical rationale from Downs and Wardle (2007), who advocate for a revised FYC course that resists the misconception that a universal academic discourse divorced from content and context can be taught to students in one or two semesters. Instead, a WaW approach encourages students to see writing as a subject of scholarly inquiry. An experience instructor in this rhetoric- and composition-based approach, Mary adapted the syllabus to include a global engineering focus in her FYC section. Through discussions and readings centered on the discourse practices of their discipline, students considered how professional engineers communicate to both general and scholarly audiences within a global context, expanding their metacognition of research writing as conversation.

Mary's WaW syllabus featured five major projects that drew on students' experience with literacy and language to investigate how writing practices are situated within the varying discourse communities they belong to. Although definitions of discourse community vary, Swales (1990) proposes one understanding of the term to mean a group of individuals who share a "broadly agreed upon set of common public goals" (as cited in Wardle & Downs, 2011, p. 471). The course's assignments included a literacy narrative, a digital literacy narrative, an ethnography, an analysis of a scientific accommodation, and a digital portfolio. Following Downs and Wardle's suggestions, the assignments were designed to help students

build an awareness of writing to multiple audiences while understanding that writing is a rhetorical activity instead of a set of general skills. While the parameters of the first two assignments were left broad to encourage students to explore their own personal connections to literacy, the last two projects before the digital portfolio were adapted to direct students to investigate the communication and writing practices of their selected branch within the larger field of engineering. Although students worked on each project individually, they collaborated in small writing groups throughout the semester, during conference days. Students also broke into their writing groups during classes when engaging in group work or conducting peer review. By regularly commenting on others' work, they eventually grew familiar with one another's writing styles and became more receptive to receiving constructive feedback.

In the literacy narrative, students reflected on their own literacy histories while articulating their own understanding of literacy, which often departed from the conventional associations of print-based, alphabetic literacy. In the digital literacy narratives, students were then asked to remediate their written narratives into a video that they would post on YouTube for public viewing. Next, they used their newly developed understanding of literacy to investigate the discourse practices in a community of their choice through primary research, and discussed their findings in an ethnographic essay. Students then transitioned to explore the kinds of writing and thinking valued in a particular academic community by comparing them to more popular forms of writing and thinking and by considering what these differences suggest about the values of academic writers. For the last two projects, students read articles like Jack Selzer's (1983) "The Composing Processes of an Engineer" to learn how to conduct primary research as well

as how to discuss how engineers' writing practices have changed over time. Finally, students designed a digital portfolio showcasing the final drafts of the previous four projects while reflecting on the progression of their rhetorical knowledge and writing skills.

While students were free to research other communities for their ethnography assignment, many students selected organizations on campus related to engineering, such as the Formula Society of Automatic Engineers and Society of Hispanic Professional Engineers. In their projects, students discussed how engineering projects, concepts, and challenges engage both engineering and nonengineering students in both local and global communities. Students then applied this working knowledge of discourse practices to their analysis of a scientific accommodation, in which they reflected critically on how the writing style, language, and content of a scientific article and its accompanying popular report revealed the rhetorical situation and audience for each. Jeanne Fahnestock's (1986) "Accommodating Science: The Rhetorical Life of Scientific Facts" was especially useful in helping students identify the writing practices for a specialist versus a nonspecialist audience.

To supplement the last two engineering-focused assignments, Mary also arranged to have an engineering librarian visit her class to talk to the students about engineering scholarship and research. Mary had previously met with one of the engineering librarians—who also teaches one of the introductory engineering courses—to discuss how to build students' research skills and increase their awareness of the engineering research resources available to them. The librarian visited the class twice—once to talk about how to conduct primary research when the students were writing their ethnography essays and another time to highlight different engineering

databases like Compendex and INSPEC and popular science resources from which students could cull articles for their science accommodation article. Because the librarian mentioned that students' research skills tend to improve over multiple, shorter class visits instead of a single longer visit, Mary scheduled two 20-minute sessions during the second half of the semester. In the reflections to their science accommodation project, students noted the usefulness of the class visits and agreed that the introduction to engineering-specific academic databases would be useful for their future coursework and research.

Mary also invited a construction engineering faculty member to come for one class period to discuss the importance of clear, effective communication within engineering professions. Although the readings for the last two projects focused on the relationship between engineering and writing, Mary also knew that having an expert in the field affirm these same points would give credence to the material. Moreover, such a visit also aligned with the WaW syllabus' objectives of introducing students to the contextualized, rhetorical writing practices of their specific academic discourse community. During his 50-minute presentation, the faculty member addressed strategies for delivering polished, professional presentations and stressed the value of producing concise, well-organized memos and emails to both clients and management. Because this guest lecturer was also the management director of internships for the engineering program, students recognized the importance of establishing a professional relationship with this important contact.

Sequenced Writing Assignment Syllabus Approach

Matthew and Gracemarie each taught one section of FYC for international students. The basic sequence of assignments for this section consists of a writer's autobiography, a personal narrative, an interview report, a literature review, and an argumentative essay. Apart from the writer's autobiography—in which students explore their development as writers—these assignments all center on a research topic of the student's choosing. In the personal narrative, students write about their personal interest in and experiences with their topic. Students then research their topic. For the interview report, students find and interview an “expert” in their research area—often a professor or graduate student. For the literature review, they find scholarly and nonscholarly sources relating to their research topic, summarizing these sources and providing a critical framework that analyzes the sources in relation to each other. Finally, students write an argumentative essay in which they support a claim about some aspect of their research topic.

In designing our curriculum for the GELC, we wanted to adapt this basic sequenced structure in order to make it more relevant to students' academic focus on engineering, to provide increased opportunities for extended collaboration, and to give students the opportunity to practice composition in a digital space. The most significant revision was to constrain students' topic selection. We asked students to consider issues in global engineering they would be interested in studying for the entire semester. Then, through a series of collaborative activities, including ice breakers, online forum posts, and “speed-dating”—where pairs of students spent a few minutes talking about their interests—students selected groups of classmates with similar interests, and together these groups chose a single problem in global engineering which they wanted to study in depth.

Before students began working on their global engineering problem, they first wrote a personal narrative. We combined the writer's autobiography and personal narrative assignments into a new assignment—the engineer's autobiography. In this assignment, students described their motivation for pursuing a major in engineering at Purdue. Though this shift in focus from the writer's autobiography to the engineer's autobiography eliminated the opportunity for students to write explicitly about their backgrounds as writers, it opened up a space for them to use writing as a tool to think critically about the motivations of choosing their career paths. Most often, students' work on this assignment focused on the impact of particular relationships on students' lives or problems in students' home countries that they wanted to solve through engineering. This increased attention to students' surroundings and especially the people in their lives promoted an outward-reaching mindset that is critical to successful professional communication in a global context.

Because students worked in groups on the same general topic, we were able to adapt the remaining assignments in the curriculum sequence to be more collaborative in nature. For the literature review, students worked together to select a set of articles and online sources that would be helpful for understanding their topics. Then, students divided these sources among themselves and each student wrote an individual literature review. By taking this approach—as group members' annotations served as brief summaries and analyses of these sources—students were able to access more information about their topics without having an excessive reading burden placed on them. In group conferences, we helped each group to find ways to work together well by, for instance, collaborating on introductory paragraphs and dividing their research into subtopics of their area of inquiry. We also

introduced students to research tools to help them work more efficiently, including library databases and reference management tools such as *Zotero*.

For the second assignment in the sequenc—the interview report—students worked together to select an expert on their topic. In class and in conferences, Matthew and Gracemarie assisted students to develop strong interview questions based on students’ work in the literature review. As a group, students conducted a single interview with their selected expert, after which each student wrote his or her own report on the interview. The main benefits of this revised approach to the interview were the need for fewer interview subjects—translating to fewer logistical problems and demands on faculty time—and students’ recognition that the same artifact—in this case, an interview—can be viewed from multiple, divergent perspectives. For instance, one group member might write about the entire interview through a descriptive narrative, while another group member might focus on the background of the interviewee and only a few important points from the interview.

Since the first two assignments were primarily individualistic in terms of products, we also wanted to allow students to participate in fully collaborative writing projects. Thus, we asked students to write the next paper in the sequence—the research paper—as a group. In most cases, students approached this task by dividing their papers into sections based on each student’s particular area of interest or research within their broader topic. However, students faced the task of working together to create a cohesive organizational framework—including an introduction, a logic order for sections, smooth transitions between sections, and a conclusion. Additionally, through group conferences with the instructor and a variety of class activities, students learned about the challenges of maintaining

a consistent voice, consistency in editing, and the logistical aspects of collaboration—file-sharing—as well as team dynamics through this process. For instance, we implemented various forms of peer review and used several class periods as collaborative writing workshops in which students wrote together in their group on a single computer, with the instructor moving among groups to provide feedback as needed.

We also wanted to give students the chance to both practice their digital composition skills and present all their research to a global audience. To achieve these goals, we asked students to build a website about their research that would convey their expertise on their topic to a diverse, international audience. To account for a range of technology experience and designed skills, we asked students to develop their websites through *Wix*, a customizable, user-friendly platform. We also used the last several weeks of the semester to talk about visual and web design from a rhetorical perspective, which helped to emphasize the audience-based focus of the entire course.

Cocurricular Activities

To complement our course designs, we worked in conjunction with the engineering instructor and the student assistant to plan activities that would be engaging for students both academically and socially. Each instructor was provided with an activity budget by the LC program, which we chose to pool together to fund activities outside of class in addition to in-class activities. On a weekly basis, the instructors hosted “study tables” at an on-campus location—a reserved conference room in a dormitory. Students who attended these sessions had the chance to work individually or collaboratively on course projects and homework assignments and seek assistance from

instructors. Weekly study tables also became a place where students engaged in social and cultural activities.²

We also facilitated several one-time academic and social activities to help students gain social and professional experience. On the social side, we hosted a bowling night and a trivia night. In terms of career-related activities, we held two presentations by engineers. Following the logic of the presentation in Mary's class by an engineering faculty member, Gracemarie planned a panel on writing in engineering for members of her class. During one of her class periods, four graduate students in engineering (two international and two domestic students) briefly discussed their experiences with writing in both graduate school and industry. Students then asked questions about the panelists' backgrounds, experiences, and beliefs about writing. This panel provided a comfortable setting for students to discuss their concerns about writing with near-peers, and they later indicated that they were grateful for the chance to gain an inside perspective about real-world communication.

Another successful activity was a field trip to a local wind farm, which was made possible by funding from Purdue's Common Reading Program³. During this trip, students attended a presentation on wind farms, which focused on the Indiana community in which the farms were constructed, and observed windmills up close. Overall, this trip gave students a greater understanding of the interactions among engineers and the local communities in which they work, as well as an opportunity for building camaraderie.

The final cocurricular activity served as the capstone of our courses: the end-of-semester student showcase. For several months, we coordinated this culminating event with the engineering instructor and the student assistant. Our goal was to give students a chance to display their FYC work

in a context that would allow them to publicly present their work to and interact with a diverse audience. At the showcase—which was set up like a conference poster session in a large classroom)—students displayed their websites on laptops and talked with visitors about their semester projects. During the showcase, we displayed a Prezi on a large screen; this multimedia presentation—created by the instructors and some student volunteers—included video-recorded student reflections about what they had learned through the semester, pictures from activities, and other information that provided an overview of the GELC.

To provide an audience beyond the classroom, we invited instructors in the ICaP program, faculty members in the English and Engineering departments, and administrators in the Learning Community program. Thus, students had a large, diverse, and very real audience to whom they could present their research: in addition to the 50 or so members of the learning community in attendance, around two dozen visitors had the opportunity to vote on the best student projects in a number of categories. The extracurricular context of these presentations provided additional motivation for students during the semester as they worked on their projects, and perhaps more importantly, it served as a low-risk, high-reward opportunity to gain professional communication experience⁴.

Learning from the Global Engineering Learning Community

Teaching first-year composition through a global engineering perspective was highly rewarding for us as writing instructors because it challenged our assumptions about how we conceive of and teach FYC. We believe that both FYC approaches were successfully adapted to the needs of the GELC and its students, and we received encouraging feedback from students and other

stakeholders. One of the things we learned through our collaboration is that each approach had its own strengths and weaknesses. We thus conclude with a comparative reflection of the two approaches, followed by a discussion of some of our programmatic concerns.

A primary strength of Mary's Writing about Writing course was its theoretical approach centered in rhetoric and composition scholarship, which provided a powerful means for familiarizing students with the engineering discourse practices of their own discipline. Moreover, this course introduced students to core rhetorical concepts like genre, discourse community, and rhetorical situation. With its focus on discourse, the WaW approach enabled students to examine language in specific contexts. However, because Mary allowed students broad latitude in their choice of discourse communities, not all students worked on issues related to global engineering. Additionally, because students worked individually on their projects, they had limited opportunities for collaboration.

By contrast, in their sequenced assignment approach, Matthew and Gracemarie had students work only on engineer-related topics, and students worked in groups throughout the semester. Thus, students had continual opportunities to collaborate as they explored their global engineering issues in depth. However, because the sequenced approach focused on the process of writing multiple drafts, the course did not prioritize theoretical concepts from rhetoric and composition. Instead, such issues were usually addressed in student-teacher conferences as they came up. While this flexibility had its advantages, the course could be strengthened by incorporating readings and discussions of some of the core rhetorical concepts from the WaW approach. Mary's WaW course would, in turn, be strengthened by relating more

projects (e.g., the ethnography assignment) directly to global engineering and by incorporating more collaboration among students.

One of the clearest lessons we learned as instructors was the value of collaboration. As writing teachers, it was immeasurably beneficial to share ideas and resources for planning, instruction, and assessment. Teaching is a notoriously isolating profession, but we found that our collaborations with other writing instructors and with an engineering instructor led us to rethink how we taught and pushed us to innovate (Leydens & Schneider, 2009). Ultimately, we feel that it was our commitment to collaborative teaching that led to the learning community experience being much more than the sum of its parts. Whether our students were aware of it, we were modeling the same types of collaboration and professional communication that we hoped to inculcate in them.

The collaborative structure of the learning community also meant that students had additional social and academic support as they faced the usual challenges of an FYC course. For instance, when choosing a topic and finding an expert to interview, students consulted with their writing and their engineering instructors, and in most cases, with other students in the learning community. A great deal of support came through the social networks that students developed by living together, attending classes together, and participating in activities together. This type of support network is one of the primary benefits of a learning community (Shapiro & Levine, 1999), and we sought to incorporate it directly into our writing assignments. By finding people in the classroom and on campus who shared their interests, students could engage with their interests through their writing. Indeed, writing in such a context is not an isolated or mere “academic” activity, but a method of investigation and problem solving, a

form of communication and community building. We believe that students benefited from extended engagement with each other and with their topics. By focusing on their chosen topic or discourse community—researching and writing about it from multiple perspectives, in multiple genres, both individually and collaboratively—they developed both their knowledge in an area of their professional or personal interest and their ability to more effectively communicate this new knowledge.

Despite the successes in the GELC, we do have some concerns about the future success of this course, especially as an interdisciplinary partnership between engineering and composition programs. We were supported with additional funding and resources to make our collaborations possible, but such support may be difficult to attain when many programs and instructors are being told to “do more with less.” We also recognize the difficulty of getting students to participate in extracurricular activities. Most such activities were optional during the semester, but we always took attendance and students received extra credit toward one of their engineering courses. The student showcase was incorporated into the curriculum, as we made it clear to students from the outset that they would be presenting their work in this public forum. More importantly, students worked hard to prepare for the showcase and they enjoyed participating in it⁵. We consider the activities to have been successful by most measures, but we found—through our experience and from talking with colleagues in other learning communities—that it is crucial to plan interesting activities and to find ways to motivate students to attend these activities.

Finally, on a programmatic level, one of the challenges for this type of course is its long-term sustainability. The writing courses stand on solid theoretical and pedagogical ground, but it can be difficult to secure

sufficient institutional and financial support. Even at our own institution, other successful interdisciplinary composition courses have come and gone⁶. Clearly, our GELC writing courses were only possible because of the involvement of numerous stakeholders. This interdisciplinary collaboration was key to the course's success (Paretti, 2011); if such a FYC course is to have real value in the engineering curriculum and any chance of success, it needs to be supported by an engineering program, learning community, or another program with similar goals and values—or ideally, a combination of programs, as in our case. The benefits to all involved—and most especially to the students—make this type of global engineering FYC course well worth the efforts. ■

Notes

- ¹ As of 2012, Purdue currently enrolled more than 8,500 international students and had more than 1,000 international faculty and staff (ISS, 2012).
- ² For example, we provided pumpkins for student to carve at one of the October study tables and brought several boxes of cookies from a local bakery on another night.
- ³ The common reading book for the year, William Kamkwamba's *The Boy Who Captured the Wind*, is an account of how a young man in a poor African village built his own windmill to generate electricity. The book dovetailed nicely with our focus on global engineering and served as a model for writing about engineering in the genre of a nonfiction narrative.
- ⁴ Students' rhetorical and communication skills were challenged, as they had to repeatedly and concisely discuss their projects over the course of an hour and to tailor their presentation to different audiences. In addition, preparing for the showcase allowed us to talk with our students about cultural norms that may be hidden to some students, such as how to dress and comport oneself in a professional context in the US. We also emphasized the importance of this type of event for their professional development, emphasizing the weight that it would carry on their résumé and in interviews for internships, research positions, and jobs. In addition, we created a certificate of participation for each student, and to provide further recognition, we created a number of categories for the audience to vote

- on. These were Best Overall Project (Group & Individual), Best Visual Display (Group & Individual), Most Original Project (Individual), and Most Potential for Impact (Group).
- ⁵ In fact, several students from the learning community also entered their projects into the ICaP Showcase, held at the end of the following semester.
- ⁶ See Matsuda & Silva (1999), for a description of a now-defunct cross-cultural FYC course involving the business school and enrolling a mix of international and domestic students.

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