CHAPTER 15

# TEACHING WRITING IN A GLOBALLY NETWORKED LEARNING ENVIRONMENT (GNLE): DIVERSE STUDENTS AT A DISTANCE

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*As institutions of higher education strive for global outreach and innovative distance technologies make that mandate feasible, globally networked learning environments (GNLE) increasingly enroll linguistically and culturally diverse students in university courses in which the ability to write in advanced disciplinary English is necessary for their success. However, this expectation is often difficult for diverse students to meet, especially when their learning takes place in a distance environment. In this case study, data is presented from three cohorts of linguistically and culturally diverse graduate students who participated in seminars held in a distance environment. The seminars were designed to help students to successfully complete their master's theses in engineering manufacturing at the Massachusetts Institute of Technology (MIT) in Cambridge, Massachusetts. A writing-across-the-curriculum (WAC) pedagogical approach was deemed "very useful" although student data revealed students' initial lack of familiarity with WAC strategies as well as their persistent difficulties with grammar, syntax, usage, and organization. This chapter suggests that there is an opportunity for writing specialists to expand writing pedagogy in ways that include the rich linguistic and cultural presence of diverse students, address a full range of L2 writing challenges, and when required, minimize the effects of distance technology on student learning.*

The Singapore-MIT Alliance, established in 1998, is a globally networked learning environment (GNLE) enabled by digital technology, and within that

environment, several educational collaborations have taken place. The Master of Engineering in Manufacturing degree (M.Eng) was one such collaboration between the Massachusetts Institute of Technology (MIT), the National University of Singapore (NUS), and Nanyang Technical University (NTU).[1] In this one-year graduate program, international students came to MIT for a semester to begin their graduate coursework and then returned to Singapore to continue their coursework over synchronous video while also completing a research internship in a manufacturing company in Singapore. Throughout the M.Eng graduate program, students used synchronous and asynchronous distance technology to interact with their MIT faculty, faculty in Singapore, their internship project advisors, and other groups of students.

The M.Eng (2000-2010) program illustrates a noteworthy characteristic of GNLEs. In contrast to a traditional distance education model in which academic material is packaged and then streamed from a source to a distant classroom or perhaps accessed asynchronously through academic websites, GNLEs are interactive cyberspaces that use technology to initiate and facilitate participation and collaboration between education, research, and industry partners in a globalized context. While *globalization* itself may be a contested term, Starke-Meyerring (2010) provides a useful working definition: "the increasing interdependence and integration of social, political, cultural, and economic processes across local, national, regional, and global levels" (p. 261). In a GNLE, students are linked in meaningful ways to peers, instructors, industry professionals, and to communities from diverse contexts in order to share knowledge making practices across borders (Starke-Meyerring, 2010). Rather than an export model of learning, GNLEs tend to be multi-faceted environments in which "a constellation of social and cultural factors" creates not only opportunities for research, education and collaboration but also opportunities for language and literacy development (Hawisher, Selfe, Guo & Liu, 2006).

In fact, language is central to successful participation in a GNLE precisely because the globalized environment requires such "an unprecedented level of interaction between individuals from diverse language and cultural backgrounds" (Melton, 2008, p. 185). In addition, language (written and oral) in a GNLE is likely to be disciplinary in its content and to include a range of genres, audiences, and contexts as well as a full spectrum of second language (L2) challenges to be addressed. Clearly, a GNLE with its diverse students and their multiple objectives is a learning environment in which writing specialists and English language teachers are essential to student success. But a key question is what writing pedagogy is effective in the GNLE environment? What commonly held assumptions about teaching writing must be examined and modified in order to successfully teach with writing in a distance environment with diverse students?

In this teacher-based research, I describe the challenges encountered in the Singapore-MIT GNLE as I used WAC pedagogy to help students to complete their master's theses in engineering manufacturing. I present data from student surveys that allowed me to understand student responses to the WAC pedagogy used in the GNLE classroom, and that helped me to minimize the combined effects of distance technology and linguistic and cultural diversity. In closing, I reflect on the ways in which my teaching practices were modified as a result of my cumulative experience in the distance classroom and the increased awareness of my previously unexamined assumptions.

## WRITING THE M.ENG THESIS IN THE SINGAPORE-MIT GNLE

My work with the students in the M.Eng program began in 2008 at the request of the M.Eng program directors. They and the thesis advisors were dissatisfied by the quality of the theses that the students submitted. According to the engineering faculty's assessment, the documents were characterized by multiple, significant errors that ranged from rhetorical and organizational problems to sentence-level errors. There were semester-long English as a Second Language (ESL) courses offered by MIT's Department of Foreign Languages and Literature in which students could enroll during their semester in Cambridge. However, although these courses focused on writing and oral presentation, the courses were judged by most students to be either too long or not sufficiently focused on thesis preparation to meet their needs. Also, since these courses did not count toward the coursework in their fast-paced degree program, students were reluctant to enroll. (See Fredericksen & Mangelsdorf's [this volume] description of the graduate writing course they developed to address these kinds of challenges.) In addition, M.Eng students usually did not avail themselves of the services of the MIT Writing and Communication Center. When the students returned to Singapore, there were no writing support services available to them at NTU. Thus, each year, many student theses required substantial faculty editing and hasty student revision before the documents were acceptable for submission. Not surprisingly, this process was very stressful both for the students and for their advisors.

The factors contributing to the students' difficulties in writing their theses were multiple. First, some of the contributing factors were systemic. The pace of the one-year degree program and internship was rapid with students completing their research at their internship company in Singapore even as they were attempting to analyze data and also to write about it.

In addition, there was no stable writing process in place that led to thesis preparation; frequently, the advisors were receiving a first draft of the thesis very late in the summer and only days before the document had to be submitted for acceptance. The reasons for this delay varied. Without a structured pace, many students left the writing task until the last minute. From the advisors' perspective, some were preoccupied with their own research and travel while other advisors reportedly did not want to look at the material until the student's research was "complete." Several advisors appeared to track student progress through the oral progress report meetings, a practice that often gave them an illusory sense of how well written the thesis would be. Also, several advisors persisted in the belief that writing the thesis was a simple transcription of reality ("just write down what you did!") rather than perceiving the rhetorical and organizational challenges of this task. Lastly, a few advisors were themselves multicultural and multilingual and thus their guidance on thesis preparation varied, confusing students whose peers were receiving different instructions.

Another factor that complicated the thesis writing task was the composition of the M.Eng cohorts in those years. Most of the students were from Asian countries, and many of them reported that they were non-native speakers of English (in 2008, 80%; in 2009, 100% and in 2010, 82%). They were academically-gifted, high-achieving students, and most of them spoke English at an advanced level. However, they were unfamiliar with the genre of the US-based thesis and particularly with the way the M.Eng thesis was written. Given the high percentage of students writing under pressure in a second or other language, it was not surprising that the results were often poorly organized and full of errors.

Although MIT has a highly successful WAC program at the undergraduate level, there is no similarly comprehensive approach to writing at the graduate level. However, because of my familiarity with L2 writing issues, my experience using WAC pedagogy with engineering students, and my willingness to teach with distance technology, I was asked (independent of my role with the MIT's undergraduate program) to develop resources to help the M.Eng students improve the quality of their theses.

## THE M.ENG THESIS WRITING SEMINAR

Writing-across-the-curriculum pedagogy relies on several fundamental practices: a draft and revision process, short and targeted instruction, the use of writing conferences and peer review, and the use of writing-to-learn activities that help students discover ideas, learn material, and strengthen critical thinking. Thus in developing the thesis writing seminar, I incorporated these

common WAC strategies, establishing a writing process that helped students write and revise their theses in two stages. Using synchronous video technology in a classroom at MIT, I facilitated three 3-hour seminars in which I gave brief lectures about the thesis genre followed by writing workshop activities and peer review sessions. After the second seminar, each student submitted the first half of his/her thesis that I read and commented upon. With synchronous video, I held writing conferences to discuss my comments and answer their questions. Then after the third seminar, students submitted a revised first half of their thesis along with the second half of their thesis. Again, each student received written comments on the draft, and writing conferences were held over synchronous video. Students then incorporated my comments into a revised draft that went to their advisors for technical review. Based on the advisor's comments, final revisions were made. Subsequently, when I again taught in the M.Eng program in 2009 and 2010, I held team writing conferences because I had discovered that students had many issues in common and also that students who were less confident writers seemed to benefit from the support of their peers. All writing conferences— individual or team—were held either over synchronous video or over Skype™.

Each year, my interaction with the students began with a short face-to-face (F2F) meeting in January before they returned to Singapore. At that meeting, I introduced myself, tried to learn something about each of them, and explained the work that we would do together in the GNLE. Following that initial meeting, I stayed in contact with them via email, and I occasionally attended the cohort meetings that the M.Eng director held via synchronous video. The thesis writing seminars, drafting cycle, and writing conferences began in late April as students entered their full-time internships and concluded in early August as the thesis advisors took over the last stage of the technical review. My interaction with individual students varied depending on their needs. I saw the stronger writers chiefly in the seminar sessions and writing conferences while I spent more time interacting individually with less skillful writers on email and in several cases, in Skype™ conferences.

## FACING CHALLENGES IN THE M.ENG THESIS SEMINAR

Despite my familiarity with WAC pedagogy, my years of teaching writing to engineering students, and my experience with L2 students, I immediately noticed a different atmosphere as I led the M.Eng seminars and worked with the M.Eng writers. It seemed much more difficult to get to know the students and to establish the rapport that is so fundamental to a writing classroom. As I investigated, I began to examine three of my own assumptions: that "knowing"

the culturally and linguistically diverse students was a straightforward task; that "writing" means the same thing and is taught the same way in different global contexts; and that synchronous distance technology is a clear channel that transmits information completely and accurately.

## Assumption 1: "Knowing" the M.Eng Students Would be a Straightforward Task

As I began to work with the M.Eng students, I noticed that synchronous video classroom sessions and writing conferences had a distinctly different atmosphere than I had observed when using WAC strategies in F2F classrooms with either L1 or L2 students. The M.Eng students clearly had animated relationships with one another; I could see them —during the break or as the seminar ended— talking or joking with one another on camera (but out of microphone range). However, during class, they took their seats in the classroom silently and for the most part, sat quietly, listening to the short lectures that I gave. When I initiated active learning activities, peer review, or group discussions, they complied hesitantly. It was rare for any student to ask a question or even to respond to my prompting. In writing conferences where I met them on a smaller screen in a smaller room, they were similarly reserved. Students often sat quietly, staring at their individual draft; getting a discussion started was painfully difficult.

When I asked students to write to me about their professional plans or past experiences or their hopes for the seminar, most students easily shared their responses over email. Some writers even became chatty as they shared what it meant to them to write in a second language—stories that they had hesitated to volunteer at first (see, for example, Zawacki, Hajabbasi, Habib, Antram & Das, 2007). But in the classroom, they remained silent and slow to act although basically cooperative. Although we made progress on the thesis drafts, that, too, was slow. Clearly, in that first summer, I did not know how to establish the interactive, student-centered dynamic that is common in most of the WAC-based classrooms in which I have taught. However, other insights into the M.Eng writers' experience in learning and using English helped me understand their reserved classroom presence.

## Assumption 2: "Writing" Means the Same Thing in all Contexts

To learn more about the students' experience with writing in a GNLE, I surveyed the first cohort of students at the end of the summer, 2008, and in that survey, I asked if they were native or non-native speakers of English. Yet that way of phrasing the question failed to give a full picture of their English

language learning experiences or their language profile. When the question was phrased differently in the surveys of 2009 and 2010, an expanded picture of the M.Eng writers' identities emerged. Rather than describing themselves chiefly as "non-native" speakers of English, most of them detailed their multiple abilities in several other languages other than English and documented their competency in varying roles and relationships as they navigated the global environment, shifting languages as they went (Canagarajah, 2006; Hall & Navarro, 2011).

Although the surveys did not ask for detailed information about the methods by which they had learned English, data in 2009 and 2010 revealed that English was a second language for most of them. Since most of the students were not from Anglophone countries (e.g. India) nor from locales where English was an official language (e.g. Singapore, Bangalore), it seemed probable that most students had been taught English from an English as a Foreign Language (EFL) pedagogical perspective, an approach that is based on language acquisition strategies in all four communication modes with an emphasis on achieving linguistic correctness.

In each of the annual surveys (2008-2010), I asked about the students' familiarity with WAC approaches used in the seminar, and their responses were illuminating. For example, approximately one third of the respondents had *never/ rarely* experienced active learning, peer review, or group activities in the classroom. Almost 75% of the respondents had only *rarely/sometimes* been in active, informal discussion with their teacher. More than half of the respondents had *never/rarely* participated in a writing conference. Also, more than half of the respondents had only *rarely/sometimes* received written comments on a written draft.

However another question about their level of *comfort* with WAC strategies revealed that most students had adjusted quickly. Well over 50% of the respondents reported that they had become *very comfortable/comfortable* with informal discussion between student and teacher, with active learning in class, with writing drafts of the thesis, with receiving teacher comments on drafts, and with revising writing based on those comments. (It should be noted that each year one or two students did rate themselves as *uncomfortable* with WAC methods.)

Thus, the reticent classroom behaviors that prompted my inquiry were understandable when illuminated by the data showing students to be largely unfamiliar with the informal give-and-take of a WAC classroom, active learning activities, and writing conferences. What had seemed like their lack of engagement could be better understood as their uncertainty as they tried to figure out what it was that I wanted them to do and how they should do it successfully. As Ferreday, Hodgson, and Jones (2006) note in their work on networked learning environments, participants in a new learning situation

often perceive (the new situation) as "alien" and their "actions which could be interpreted as resistance and/or reticence ... are an expected part of learning ... a new way of being in the world" (p. 237). Yet the M.Eng students' responses to the question about *comfort* suggested that despite the "alien" nature of the WAC activities, they were able to actively adapt to new expectations, "strategically realigning themselves and investing in the practices" of the unfamiliar context (Rich, 2005, Para. 10). In fact, their ability to adapt within the short time frame of the thesis seminars was further illustration of their ability as multi-competent users of language.

However, despite the draft and revision cycle, writing conferences, and peer review work and the improved thesis drafts, "writing" for the M.Eng students still meant writing correctly at the sentence level. As I show in Table 1 on the writing difficulties students reported on the survey (see the Appendix), more than 25% of respondents in each year (2008-2010) rated the challenge of writing correctly as *difficult/very difficult*. They also reported difficulty in writing clearly and concisely and in organizing complex information. In writing conferences and as I read drafts, I observed that writers with less control over the language displayed difficulty in developing enough correct prose to convey their thoughts fully. The more skillful writers could write at greater length but still struggled with sentence-level errors as they wrote about progressively more complex material. (See Phillips [this volume] for an account of the same phenomenon in the writing of the graduate student that she followed in her longitudinal case study, which she attributed to the U-shaped learning curve).

Because the thesis document was an official document of record, error-filled prose was not acceptable. Thus my comments to the writers had to address not only the larger features of the genre, rhetorical strategies, and information organization but also to provide direct feedback at the sentence level (Ferris, 2009). Such extensive commenting would be relatively unusual in WAC practice since a teacher would typically rely on more indirect methods to help the writer locate and then address the error in a revision. However, as experienced writing and EFL/ESL teachers know, second language writers who are creating and refining large amounts of disciplinary English are less likely to locate errors easily (even though they usually can address them when they do). In addition, the fast pace of the M.Eng degree program did not allow the time for students to review and revise at a leisurely pace.

In addition, the M.Eng writers tended to lapse into colloquial English. It was one challenge for them to learn the features of the genre and the rhetorical purposes of each section while writing clearly and correctly and another to acquire the appropriate register (Hall & Navarro, 2011). Again, achieving the appropriate style and tone for their thesis required time and experience.

## Assumption 3: Distance Technology Transmits Information Completely and Accurately

Entering a new classroom, any teacher must do as I did —begin to know the students and explore the students' backgrounds and expectations—if the teacher is to create a productive learning environment. Yet what proved challenging in the M.Eng GNLE was the way in which a distance environment with a highly technical interface affected my usual WAC teaching approach.

Synchronous distance technology succeeded in that it made our global interaction possible. Still, the 12-hour time difference had a strong influence since the students and I were always at the opposite ends of our day. When I taught in the evening in Cambridge, the GNLE students were barely awake; when I taught in the early hours of my morning, they were tired from a day at their internships and the evening struggle through Singapore rush hour traffic. In addition, we were affected by separate cultural rhythms that were invisible to one another. Even our weather was different, an oddly affecting factor. When there were drastic events (in 2008, earthquakes in China that disrupted some students' villages; in 2009, the suicide of a roommate), it took a measurably longer time for me to "read" the effects on the faces of the distant students, to discover the causes, and to offer support. But aside from major life events, there were also myriad small details of life that affected our moods and behaviors in the classroom: regional holidays, politics, institutional policies and patterns.

Temporal distance also meant that we struggled with what Herrington (2004) calls "real-time dominance" (p. 204). The simplest email exchange had to be timed carefully to account for sleep and internship schedules, and the most basic act of uploading documents for class work had to include an unusually large margin of time. Despite my best intentions (and theirs), it remained a challenge for us to override our actual sense of time (Herrington, 2010). Throughout the seminar schedule, time continued to be the intractable "distance" that had to be actively managed.

On the surveys, most students reported that it was *not difficult* to learn to write a thesis in this distance environment (2008, 82.4%; 2009, 85.7%; 2010, 58.3%).[2] Yet even state-of-the-art technology embodied what Winner (1986) calls the "politics of the artifact," referring to the ways in which "man-made systems ... require or ... (are) compatible with particular kinds of relationships ... and the arrangements of power and authority ..." (p. 20). For example, at times, the sound quality in our exchange was indistinct enough to make it difficult for me to understand a student and, if I asked for clarification, that request was often disconcerting for the student since, in this case, technology made the problem worse. In a F2F setting, I could have made the request quickly,

quietly, and with little fuss (Herrington, 2004). However, in the electronic classroom, my voice seemed to boom from a large screen (volume being beyond my control), inadvertently suggesting some lapse on the part of the student.

At times, a camera in Singapore was poorly focused, thus making it difficult for me to see facial expressions of students to gauge their reactions. Also, a time delay (perhaps 30 seconds) sometimes occurred, making our interaction clumsy and slightly asynchronous. Trying to correct these distractions and even to use the classroom interface involved negotiation with technicians who were in the background, manipulating and managing the connection. I appeared to be alone in the "sending" classroom, but in reality, I was team-teaching with invisible facilitators who had their own concept of what was going on and who were not always quick to understand what I needed.

The constraints of technology also had dictated the set up of the Singapore classroom. Rich with computers, keyboards, microphones, and screens, the classroom had been arranged with rigid desks and tautly strung cables. Chairs were bolted down in front of the desks. This physical setup could not easily incorporate active learning or peer review activities. Moreover, when students re-grouped to pursue these activities, they moved away from microphones so I could not monitor their interactions. In addition, the Singapore classroom configuration produced an intimidating effect since when a student clicked a button at his/her desk to ask a question, the camera then zoomed in on him/her, projecting an image on a larger screen. Not surprisingly, questions or comments were infrequent from students, most of whom were strong but perhaps not confident speakers of English.

I observed the ways in which technology cramped what McNair and Paretti (2010) call the "relational space" in which frequent dialogue (teacher-student and student-student) shapes skills and guides practice as student writers establish voice and identity and also a sense of ownership over their work. As noted, student-student dialogue was often constrained by the physical layout of the room while the teacher-student dialogue was also affected by the technical interface. Moreover, technicians opened and closed the screens through which we communicated precisely at the beginning and end of the seminars since the technology channel was expensive to maintain and since other classes often were scheduled. Thus the students and I were deprived of the marginal time that experienced teachers know is valuable in getting to know students and assessing any difficulties occurring in the course. The distance technology could not transmit completely the thousands of smaller cues (e.g. body language, tone and register of voice, eye contact) by which we create our identities and also "read" the identities of others in F2F spaces. In fact, the distance classroom with its mix of virtual and actual realities made it a challenge for students' identities

to emerge and also to establish a kind of social presence within the classroom—a presence that practitioners know is particularly valuable in writing-intensive and disciplinary classrooms in which students are learning to use language as emerging professionals (Farrell & Holkner, 2004; Ferreday, Hodgson & Jones; 2006; Grabill, 2007; Järvelä & Häkkinen, 2005; McNair & Paretti, 2010).

## ADDRESSING THE CHALLENGES OF TEACHING WRITING IN THE M.ENG GNLE

As I noted earlier, the refinement and expansion of the WAC pedagogy that I used were cumulative as I reflected on my own assumptions and observed my students, trying new strategies and also taking data from each cohort in annual surveys.

First, based on my expanded understanding of the M.Eng students as multi-competent users of English and other languages, I developed and regularly used a specific active learning activity to explore students' language profiles, their language learning histories, and their experiences in using written and oral English. (See the appendix in Zenger et al. [this volume] for an example of one such language questionnaire.) In 2008, students gave me information about their language profiles anonymously, but subsequently, I asked students not only to document all the languages that they used and where and how they used them but also to verbally share their language history with me and with their peers. They did this exercise openly and eagerly. This activity also paired well with student self-assessment (sent to me confidentially) and my greater insight into their needs and also their anxieties about completing the thesis. Even more important, the establishment of student writing identities and language histories also led easily to a discussion of the differences in writing pedagogies experienced in their home countries, in other countries, and at MIT.

Second, understanding that most of the M.Eng students were unfamiliar with WAC strategies, I explained more extensively what we were going to do and why we were going to do it. I talked to them about my expectations, e.g. describing typical student behaviors in writing conferences. I talked more about how to be a useful peer reviewer. I also included explicit explanations of my objectives in written assignments posted on the academic website. I had always introduced classroom activities and written out the assignments, but I had assumed a certain level of student familiarity. Now, I assumed that they were unfamiliar with WAC strategies, and structured more time for questions so that I could check for comprehension. Moreover, instead of merely asking for questions verbally, I invited electronic "muddy cards" sent to me during the

break in class. In a F2F classroom, students would hand in the "muddy card" (an index card with a question or a key point that required further explanation) at the end of class. However, in the distance environment, the paper-based technology was replaced by a quick email. Questions continued to be rare, but the invitation was important.

WAC strategies did not address all the problems that the M.Eng writers faced, however. Even these proficient speakers of English struggled to control written language as they grappled with complex thesis material (See Table 1). Therefore, borrowing from EFL strategies, I included gap fill exercises to help the writers choose more appropriate verbs and transitional phrases, more closely approximating the register of the thesis (Swales & Feak, 2004). I developed a style sheet to help the writers consistently use key terms and learn specialized vocabulary, a strategy more common to English for Specific Purposes (ESP) practice than WAC practice. I also developed a strategy for commenting on linguistic features of the writing while still concentrating on content, organization, and coherence, and I shared this strategy with them (Ferris, 2009). Although such intervention would be relatively uncommon in most WAC contexts, it was clear that many of the M.Eng students could not locate the errors in their prose in the time available to them. However, characteristic of many multilingual students, most students could correct those errors once they did notice them. (See Siczek & Shapiro [this volume] for another description of the merging of TESOL and WAC pedagogies).

Students not only welcomed my attention to sentence-level error, they expected it. I had described the differences between the pedagogies of EFL and WAC, but for many of them, the attention to grammatical correctness remained central to their expectations of what writing teachers were supposed to do (a trend also noted by Fredericksen & Mangelsdorf [this volume]). As I helped writers locate sentence-level errors, however, another cultural assumption was revealed. I assumed that my comments on sentence-level error were helpful but not as essential as the development and organization of substantive material. However, some M.Eng writers had a different perspective, assuming that once they had corrected errors and perhaps substituted more formal verbs or inserted some transitions, the revision was complete and the document was improved. Moreover, some M.Eng writers (especially the less skillful ones) assumed that I would correct all the sentence-level errors in their documents. They clung to this idea as the deadline came closer, despite my insistence that they take responsibility for their final drafts. In the end, some less able writers turned to skilled peers for a final proofreading and editing cycle or in one or two instances to their thesis advisors who quietly corrected or revised final drafts of documents, a long-standing but rarely acknowledged practice (Jordan & Kedrowicz, 2011).

Third, realizing that the technical interface affected our interactions, I developed the habit of talking *about* the technology, not just *through* it, so that the slight hindrances were acknowledged between us rather than ignored. For example, my observation that having a camera focus on them when they wanted to ask a question was not always pleasant brought grins and nodding of heads and made it more likely that they might send the muddy card or write to me after class time. Or once in a while, I asked for a volunteer to help me remember to upload specific material at a certain time. This small activity transferred some responsibility to them in addition to proving valuable to me (the volunteers never failed to be diligent with their reminders!).

In addition, to create more social dimension, I began classes with warm-up activities in which I elicited information from each student about weekend activities or internships. In a F2F classroom, I would have done this activity informally and in the few minutes before class, but here I learned to structure it as part of the class. Also I shared a little more personal information about my own activities than I might usually have done. This relatively brief exchange of details was culturally interesting to me and to them, as well. The result was a little more conversation in the classroom; they relaxed a bit and began to show their individual personalities, styles, and senses of humor. I also assigned short pieces of personal writing to help me understand them better as writers and then I responded to that writing.

## WHAT THE M.ENG STUDENTS FOUND USEFUL OR DIFFICULT

Curious about the students' assessment of the usefulness of WAC strategies, I asked the M.Eng students to rate the usefulness of various resources.[3] Table 2 (see Appendix) shows the respondents strong preference for interactive WAC strategies (writing conferences, commented drafts) and also shows how valuable they find the involvement of disciplinary faculty in the writing process.

In written comments, students observed:

> I found it very helpful that we constantly had someone reminding us about writing the thesis.

> I learned a lot from the conference with the writing instructor and the draft thesis returned by her and by the MIT advisor.

> I liked the writing conferences.

> I benefited most when the writing teacher talked about the various purpose of each part of the sections.

> ... it was a wonderful and fruitful experience.

The seminar series appeared to help the M.Eng writers improve their theses. Although the usual difficulties of writing about technical material in a second or other language persisted for these writers, the overall organization and focus of the theses were much improved, and the program administrators were enthusiastic. Student responses on surveys and in individual emails showed a strong, positive response to the seminar and indicated their satisfaction with their theses. However, students also reported on what they still found difficult. Table 1 (see the Appendix) gives insight into the linguistic challenges that these strong users of English still encountered as they wrote their theses—the use of correct grammar and punctuation, word choice and vocabulary, writing clearly and concisely, and organizing complex disciplinary material.

## REFLECTION ON PAST AND FUTURE WORK

Each year (2008-2010), the M.Eng writers and I worked our way toward a successful thesis for nearly all students. Some aspects of the seminar series were reassuringly familiar to me: young adults developing as professionals by writing about disciplinary material in an authentic and meaningful context. But some aspects remained challenging: the cold eye of the camera focused on distant students who appeared hesitant and reserved; the lack of relational space common in F2F classrooms but cramped in the distance setting; and the stubborn sentence errors persisting even in the improved thesis drafts.

These challenges of fast-paced, high-stakes engineering writing certainly presented learning opportunities for the M.Eng writers. For me, those challenges deepened the ways in which I came to understand diverse students as I became increasingly attuned to their multiple and subtle differences as well as their considerable strengths. Just as importantly, those challenges prompted me to refine the pedagogy I used with the diverse students in a distance setting. While my teaching practice remained grounded in well-tested, successful WAC principles, those familiar approaches became more multi-faceted and more inclusive of L2 writing issues. The challenges that had puzzled me at first turned out to be opportunities for professional development and insight.

The teacher-based research presented here highlights possible opportunities for WAC practitioners and WAC program administrators for teaching with

writing in culturally and linguistically diverse distance and F2F classrooms. In addition to representing valuable sites for professional growth and future research, these opportunities also point to contexts in which WAC pedagogies are very much needed. These new contexts, however, demand that we become aware of our implicit assumptions and our—and our students'—cultural biases. To do this, we must identify the strengths that diverse students bring: their rich language histories, multiple competencies, and a wide range of objectives for their use of language (Ferris, 2009; Johns, 2001). And it is essential that we develop sound writing pedagogies—F2F and online—to reach an increasingly diverse student population (Ferris & Thais, 2011). This endeavor means reading the scholarship in ESL and L2 writing and then adding and refining concrete skills that allow us to combine a language acquisition approach with familiar WAC writing pedagogy (Canagarajah & Jerskey, 2009; Cox, 2010; Cox, 2011; Leki, 1992; Matsuda & Jablonski, 2000; Zawacki & Cox, 2011, among others). As WAC practitioners, we must also become more adept at managing various technologies and multiple screens not only in GNLEs but also in a range of distance environments, adjusting WAC approaches to fit the challenges and constraints of those environments. As universities fulfill their mandate for global outreach and for curriculum enhancement through online access, learning to work well with technology and at a distance is becoming a valuable skill for all teachers.

These distance opportunities will require some re-vision of ourselves as practitioners, asking us to be more innovative, receptive to change, and flexible in our approach. Yet WAC practice, itself, has exhibited all these characteristics. Over the years, WAC has come to include not only writing but also oral communication, graphical communication and an increasing range of multimodal literacy. The new opportunities described here—teaching writing to diverse students in globally networked learning environments—represent the next steps in expanding WAC pedagogy to meet the needs of all of our students.

## NOTES

1. This collaboration was funded from 2000-2010. Although the M.Eng program continues, it is no longer part of the Singapore-MIT Alliance and no longer taught over distance technology.
2. Data indicates that, in 2010, more students reported that they found it difficult to write a thesis in a distance environment. However, no other information gathered explains their response on the survey and other factors (advisor influence, project success, L2 abilities, team dynamics) may have been influential

3. Other resources were assessed in the survey, but this chapter focuses on several resources common to WAC pedagogy.

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## APPENDIX

### Table1: What M.Eng students found difficult as they wrote their theses

| Element | 2008 "difficult/very difficult" | 2009 "difficult/very difficult" | 2010 "difficult/very difficult" |
|---|---|---|---|
| Using correct grammar, punctuation, and spelling | 31% | 30% | 24% |
| Choosing right words | 46% | 45% | 41% |
| Writing clearly and concisely | 62% | 61% | 63% |
| Organizing complex material | 58% | 61% | 66% |

### Table 2. What M.Eng students found helpful as they wrote their theses

| Activity | 2008 (n=15) "helpful/very helpful" | 2009 (n=13)_ "helpful/very helpful" | 2010 (n=17) "helpful/very helpful" |
|---|---|---|---|
| Writing conferences with communication instructor | 66% | 74% | 76% |
| Drafts commented by communication instructor | 84% | 76% | 100% |
| Verbal suggestions from thesis advisor | 73% | 58% | 83% |
| Drafts commented by thesis advisor | 85% | 64% | 90% |