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Breaking the Barriers of Time and Space: More Effective Teaching Using e-Pedagogy

by Peshe Kuriloff

When a plane breaks the sound barrier, the noise reverberates for miles around. The advent of e-pedagogy produced no sonic boom, but the message educators are getting rings loud and clear. Technology is a potentially powerful tool for more effective teaching and deeper learning. Used wisely and well, it may break down barriers to learning that traditional classroom-based instruction has unintentionally created.

Many educators identify time and space as assets to classroom-based teaching and view computer-based instruction simply as an alternative delivery system for traditional pedagogy instead of a tool for implementing new pedagogy. Because face-to-face, real-time interactions offer immediacy, personal contact, and community—all highly regarded features of a positive learning environment—instructors creating courses for online delivery have commonly considered the absence of face-to-face interaction a loss and have struggled to compensate for that loss. Experience shows, however, that there is a negative side to the time and space constraints of traditional classrooms. The opportunity to extend time and to reconfigure space in the online classroom creates the potential to improve teaching and enhance learning in unique ways.

In 1998, as I began a five-year research project on cost-effective uses of technology in teaching funded by the [Andrew W. Mellon Foundation](#) at the University of Pennsylvania ([Penn](#)), I was skeptical about the merits of e-instruction. I did not expect to add value to instruction or to discover more effective pedagogy when I took on the challenge of creating an online writing across the curriculum course as part of this initiative. At the time, Penn's writing program consisted of courses based in various disciplines (including philosophy, art history, history, anthropology, and classical studies among others), each covering different subject matter. Because I was not satisfied with this model for writing instruction, I elected not to take the more common approach of trying to replicate an existing course online. Instead, the four graduate student instructors and I decided to create an alternative and more generic model of writing instruction, taking full advantage of the opportunity to solve some existing problems and invent new strategies for instruction in writing for different audiences and disciplines. Some of the pedagogical features of our model, such as its emphasis on revision, are easily implemented in traditional classes, but we could only distribute instruction across time and space using technology.

In what follows, I will offer an overview of the online writing course at Penn along with an assessment of student performance in this course as compared to sections of the traditional writing course at the university. Based on my positive experience in this course, I will then provide a series of guidelines for an effective e-pedagogy that takes full advantage of the potential of online technology to overcome the constraints of time and space associated with customary forms of classroom-based instruction. Provided that educators realize such potential, online forms of instruction can sustain a form of learning that is equivalent, if not superior, to that provided by traditional classroom settings.

Course Design and Implementation

When we began our study, e-pedagogy was just emerging. In his article "Evaluating What Really Matters in Computer-Based Education" ([1996](#)), Thomas Reeves had offered 14 pedagogical dimensions for assessing computer-based learning experiences and determining how they differ from traditional classroom-based learning. Reeves argued that these dimensions have the potential to provide improved criteria for understanding and describing, as well as evaluating, computer-based learning. Several of the dimensions that Reeves identified directly addressed aspects of teaching and learning we sought to improve, including

program flexibility, cooperative learning, accommodation of individual differences, learner control, student motivation, and teacher role. We hypothesized that a new pedagogy that allowed for greater learner control and increased motivation, for example, would add value to the learning experience and compensate for any loss created by the absence of face-to-face interaction.

We designed our course to avoid some of the pitfalls that Reeves and other pioneers in e-pedagogy had already identified, and then we proceeded mostly by trial and error. Focusing on the capacity of technology to facilitate communication and collaboration, we designed a largely Web-based curriculum that, in order to satisfy Penn's writing requirement, required approximately the same amount of writing and included the same types of assignments as a traditional course ([Exhibit 1](#)). Unlike Penn's traditional classes, however, our courses were not focused on discipline-based content; instead, we included instruction in writing for different disciplines and audiences and relied on links to Internet sources and readings short enough to post online. Additionally, we addressed one of the most common complaints about traditional writing classes—the isolation of writing instruction from the rest of the curriculum—by requiring students to submit two papers from other classes each semester for writing group review.

To save money, we chose to work with Blackboard, which was low cost, available, and supported, rather than create our own software. We tried a number of different approaches to making teachers and students comfortable in that electronic environment. Using student surveys, anecdotal reports, instructor experience, and evaluation of students' written work by outside reviewers, we carefully assessed our teaching strategies and revised the curriculum accordingly.

Progressing step-by-step over several years, we improved our approach until we achieved our objectives and were able to produce results that showed our e-pedagogy worked as well as, and in some cases, better than, traditional classroom-based pedagogy. In the last year of the project, when outside evaluators compared the work of students in the electronic writing groups with that of students in traditional writing classes, the Mellon students were ranked highest on one assignment ([Figure 1](#)) and second highest on another. Moreover, when all writing assignments from the classes were compared, the Mellon students performed at a significantly higher level than their peers in the traditional writing courses ([Figure 2](#)). We now have a model for online writing instruction that can be formatted for any platform and modified to suit the needs of individual instructors.

The Features of Good e-Pedagogy

Although the lessons we learned through this initiative reinforced what others had already established, those lessons still offer insight into traditional pedagogy and suggest some guidelines for best practices using e-pedagogy. As in any learning environment, no single set of methods guarantees a perfect online course, but some approaches work better than others, and instructors need standards against which to evaluate their performance. Rooted in precedent, hands-on experience, and methodical analysis of their impact, these guidelines for successful electronic teaching and learning can prevent new instructors from reinventing the wheel and should influence the character of e-courses in the future:

- Establish a highly structured, positive learning environment that encourages individual responsibility and creates high expectations,
- Teach collaboratively,
- Create spaces for student collaboration and peer review,
- Redefine the instructor's role,
- Build community, and
- Exploit time.

I will discuss each of these guidelines in further detail below, with reference to how they informed the online writing course at Penn.

Establish a Highly Structured, Positive Learning Environment that Encourages Individual Responsibility and Creates High Expectations

In the tradition of John Dewey, all student-centered learning environments including e-classrooms need structure and clarity for students to take advantage of opportunities for self-determination (Kuriloff 2000). Our class Web site gave students clear, concise information about the overall course, including course objectives, requirements, and methods of assessment ([Exhibit 2](#)). Each assignment for the year was posted with its deadline clearly marked along with background information and links to additional resources for it. By experimenting, we discovered that the rhythm of twice weekly assignments, similar to twice weekly class meetings, kept students' attention but did not overburden them or their instructors. The regularity of deadlines coupled with e-mail reminders kept students on track and helped prevent them from falling behind and dropping out.

From our side, we kept a positive tone on the Web site and in all of our communications. To enliven the learning experience, we allowed students ample opportunity for self-expression; we developed, for example, warm-up assignments that required students to disguise their writing voices or to write an argument following the logic portrayed in a video clip of a Monty Python movie. At the same time, we gave thoughtful, detailed criticism from a variety of audiences, including students who had taken the class before and were selected to act as mentors; these mentors helped to set the tone and establish a standard for peer review. Students posted assignments not only to their instructors, but also to their mentors and writing group members for review and feedback and revised their work accordingly.

Since most assignments included such revision, students learned by experience that revision improved their work. The responses of their peers, mentors, and instructors gave students plenty of feedback, which provided direction and motivation for revising and improving their writing.

Teach Collaboratively

Both the physical and the intellectual effort of designing electronic courses can be a burden to instructors. To overcome that barrier, we quickly discovered ways of collaborating that made tasks easier and that enhanced the instructional environment by maximizing the expertise of each of the four instructors—all experienced writing instructors, but within different disciplines. Once we collaboratively generated the topics for the course, each instructor chose a couple of units to design, submitted each unit for collaborative review, feedback, and revision, and then posted those units on our joint Web site.

As we taught the class, collaboration continued through shared instructions and reminders to students, listserv discussions about the success or failure of particular assignments, and conversations about response strategies. Because we all used the same Web site, I could easily supervise everyone's work, and I encouraged instructors to compare their students' work and their interactions with students with one another. I was also able to review instructor feedback to students—one of the most critical elements in determining the quality of writing instruction—add my own comments when I felt it necessary and, more commonly, offer feedback to instructors ([Exhibit 3](#)). As a result of my intimate knowledge of the specific instruction taking place in the course—a level not usually possible in conventional classrooms—I was able to establish an exceptionally high standard for instruction across all the groups. From year to year, as new instructors came on board, they could review the previous year's work on the Web site and become acquainted with the curriculum, instructional strategies, and quality of student work. The availability of records helped to ensure continuity and consistency in the program from year to year.

Create Spaces for Student Collaboration and Peer Review

Collaboration improves student writing by giving writers insight into how an audience responds to their work in progress. From the beginning of our project, facilitating collaboration was a high priority. Furthermore, the research on collaborative learning consistently has shown that peer tutors learn as much from helping others

as their peers learn from them (Whitman 1988; Astin 1993). We wanted to take advantage of that phenomenon by putting all students into the tutoring role, making it possible for them to learn from each other.

The Blackboard platform enabled us to create a private discussion space on our Web site for each small group of four to six students. Every student in the group could read the work of all group members including the feedback given to them by their peers, their mentors, and their instructors. By making all writing and feedback public, we aimed to demystify the writing process and enabled students to learn not just from their instructor's feedback on their own work but also from their instructor's feedback on the work of their fellow group members. By comparing their own responses with the instructor's responses, students developed an enhanced ability to deconstruct a text, identify its strengths and weaknesses, and develop strategies for improving it. That capacity helped them to notice features of their own texts as they produced them and make appropriate judgments about how and what to revise. Additionally, the pressure of knowing that their peers were depending on them motivated students to act responsibly and pace themselves accordingly since they could not expect useful, timely feedback if they did not offer it themselves. Although a critical mass of students almost always responded, those who failed to post were noted. When they came back to the group after an absence, students generally apologized to each other and worked to catch up.

These complex interactions all took place at times convenient for the instructor and students in the small group space on the Web site. Students could post questions or e-mail each other or the instructor for clarification as needed. Once posted, revised assignments provided student reviewers with the opportunity to evaluate the extent to which fellow student writers were able to improve their writing and incorporate the feedback they received. This process provided confirmation for reviewers and helped them refine their skills.

Redefine the Instructor's Role

In the electronic environment, students experience greater autonomy, and the role of the instructor inevitably changes. Facilitating class discussions electronically, for example, involves writing observations, questions, and directions rather than speaking them. Instructors must seek to establish their authority not by standing in front of the class and conveying information but by engaging students and guiding them collaboratively through the learning experiences designed into the course. They must also develop a system for helping students pace themselves and devote an appropriate amount of time to their assignments.

Once the structure was in place, the process of teaching writing groups revolved around keeping students attentive to the progress of the class and responding to their work. In addition to coaching students through the sequence of assignments and activities, instructors primarily facilitated writing group interactions and provided expert feedback on student writing. Since students posted almost all of their assignments for peer review, when instructors entered the learning environment, they generally expanded, elaborated, or clarified peer mentor and student work. Although students greatly valued their instructors' interventions—particularly their feedback on papers—they were not dependent solely on instructors and tended to respond just as often to the contributions of their peers ([Exhibit 4](#)).

Build Community

Contrary to the expectations of many educators, e-learning offers significant opportunities to create learning communities without face-to-face interaction. For some students, in fact, the absence of face-to-face encounters empowers them to interact more openly with their peers and their instructors than they would feel free to do in a traditional classroom setting. Although I have heard instructors describe the negative consequences of this freedom (such as students attacking one another or the instructor), the positive outcomes are equally astonishing. Many students find their voices in writing, and since every student must complete each activity, every voice is heard.

To help students get to know each other, we required them to introduce themselves by creating a self-portrait

on Web pages Blackboard provided. Instructors did the same. The substantial collaboration we designed into the course, both between instructors and students and within students' assigned small groups, also fostered a sense of community. Students became familiar with each other's strengths, weaknesses, and stylistic quirks. Reading other students' writing helped group members learn about each other and taking the same risks as everyone else created a sense of camaraderie. In a comparative survey we conducted, a large majority of Mellon students (86.1%) declared they felt part of a community of learners while a significantly lower number (54.8%) reported that experience in our comparison groups in traditional courses ([Figure 3](#)).

Exploit Time

Freedom from the fifty-minute class represents one of the most positive aspects of electronic teaching and learning for all participants. Within our established course deadlines, students and instructors could complete work at their own pace at a time and place of their own choosing. Electronic delivery also created a unique opportunity to extend the length of time the course ran. Because we were outside the traditional delivery system and were not involved in room scheduling or scheduled time slots, we were able to arrange for the course to carry a single credit but continue for two semesters. The elimination of formal class meetings and the focus on shorter, more concentrated writing activities ensured that the class work felt lighter, enabling us to create a half-course each semester instead of conforming to the model of a traditional course. We expected less at high-pressure periods, such as during midterms and at the end of each semester. At those times, we concentrated on providing feedback on papers from other classes. Although students found it challenging to complete their peer reviews on schedule, instructors and mentors provided timely responses to all posted papers.

The extension of writing instruction over a full year enabled us to exploit time, making it an ally rather than an enemy of learning. The extra time allowed us to cover more topics, including subjects like voice, one often neglected in conventional one-semester composition classes; it gave students opportunities to apply what they learned in different contexts within and outside the groups; and it gave students sufficient time to think about, practice, and incorporate new writing techniques.

Conclusion

The quest for good pedagogy along with the effort to employ technology as a tool to enhance learning has introduced new thinking about how we might teach more effectively. Instructors have only just begun to rise to that challenge. As new technologies are introduced and become more accessible, they will create increased opportunities to invent new learning experiences for students that will take us further and further beyond traditional classroom-based learning. We made some progress in adding value to writing instruction using e-pedagogy, but vast unexplored territories beyond the barriers of time and space lie ahead.

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