

Introduction

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During the last decade, technical communication instructors and program directors have been discussing and experimenting with teaching technical communication from a distance using technologies such as audio, video, telephony, and wide-area networks. The first reports of courses taught from a distance appeared in the field's professional journals in 1994. Since then, developments in digital media have rapidly accelerated the growth of distance education, opening up possibilities unavailable just a few years ago. In the technical communication field alone, 22 U.S. colleges and universities currently offer courses, undergraduate degrees, and/or graduate degrees via digital media, and when we consider how many faculty members are now creating or planning to create online courses at institutions across the country, the need for information about best practices in online education is staggering.¹ It is also urgent because many of the scholar-teachers developing these online courses and degree programs are under pressure to act quickly. This pressure has three main sources: 1) institutional pressure to launch courses and programs rapidly in order to keep up with, or ahead of, the competition; 2) sales pressure from the developers of the hardware and software, who are anxious to suggest how and why we should use their products; and 3) pressure from the technology itself, which has developed in dazzling, tempting profusion, at a faster rate than the theory needed to guide our use of it.

Many of us now have access to a variety of technologies that allow us to teach students anyplace and anytime, but we are still discovering the implications of teaching with these new instructional media, and we have only begun to discuss

¹By "online education" we mean computer-mediated, interactive instruction, currently characterized by such features as synchronous and asynchronous discussion boards, email, and other uses of the World Wide Web and Internet.

how best we should use them and why those uses are the best. Unless we promote this discussion, we run the real risk of allowing the technology and its creators to determine for us how online education should be done.

THEMES AND REFRAINS

One of the themes of this book is the importance of making sure that our use of technology is driven by our pedagogy, rather than vice versa. We should no more allow the way we teach online to be determined by the available educational software than we should allow the way we teach in a traditional classroom to be determined by the way the custodians think the chairs should be arranged (which at our institution is typically in tight rows, facing forward). Unless we discuss what constitutes effective online instruction, we also risk being lulled into the idea that teaching through electronic media is essentially the same as teaching in a traditional classroom, only easier (or harder). *Online Education: Global Questions, Local Answers* takes the position that teaching through electronic media is neither better nor worse but a different experience for teachers and students, that some aspects are harder and others easier than they are in a traditional classroom, and that before teachers can succeed with the new media they need to examine a range of issues and revise many of their own and their students' expectations that have been developed through decades of experience in traditional classrooms.

This book therefore focuses on the relationship between the best online education practices that have been developed and the theories on which they are founded. We believe online education in the early 21st century is at a theory-building stage, a stage at which we need not only to take stock of what we are doing with the new technologies, and what we might do with them, but also to examine and discuss our rationales for those practices. Building theories of good online education involves asking ourselves which of the principles and practices that have guided instruction in traditional classrooms can be transferred or adapted to work in the new electronic class spaces that have become available to us, which ones must be discarded or replaced, and what new practices must be developed for these new spaces.

Online Education: Global Questions, Local Answers brings together 24 college educators experienced in various aspects of online education to present and discuss those issues and to explain what they have done to address them. The book focuses on what we think are the most important questions that scholar-teachers and administrators need to address if they are committed to developing high-quality online education programs. We call these questions "global" because they transcend the particular situations of individual institutions. They are questions all of us involved in online education need to address: What are the issues to consider when first developing and then sustaining an online education program? How do we create interactive, pedagogically sound online courses and

classroom communities? How should we monitor and assess the quality of online courses and programs? And how should recent developments and innovations in online education cause us to reexamine our roles and responsibilities as educators in technical communication?

While these global questions affect all of us in one way or another, we believe they demand the kinds of different local answers that the authors discuss throughout this collection. Readers will need to consider which of these local answers might apply to their own situations and how those answers might need to be adapted to reflect the particular needs of their own institutions. As we reflect on the contents of this collection, it becomes clear to us, even as we search for the best practices of online education, that there is no single most effective model for all situations. For example, Texas Tech and Utah State both began their online master's programs around 1997, addressing working professional communicators as their main clientele. Both programs include distance courses as part of professors' regular teaching loads, and both programs admit students through their Graduate School, but Utah State's program is administered and funded by an Extension office while Texas Tech's is administered and funded through its English Department. Another example where local solutions obviously differ is individual programs' choice of primary discussion technology. The graduate programs at Texas Tech and Mercer both use synchronous chat sessions as their primary discussion technology while East Carolina State University, Georgia Tech, and Utah State prefer asynchronous threaded discussions. Furthermore, programs that use the same primary discussion technology, such as Texas Tech and Mercer, may employ this technology differently, as illustrated by the chat protocols illustrated in Carolyn Rude's, Susan Lang's, and Helen Grady and Marjorie Davis's chapters. Extending this point one step further, it is even possible that instructors within programs may use the same technology differently, depending on pedagogical (course) requirements and student needs. These similarities and differences reflect some of the global questions that individual programs and instructors must address—How will the program be administered, and how will instructors and students interact within courses?—as well as the local answers specific programs have developed.

In some cases, our authors mention specific software that has helped them reach their local answers, but this book is not simply a celebration or promotion of any of today's software. We acknowledge that online education would not be possible without technological innovations and that the lure of what can now be done with technology is motivating many schools to begin offering online education. However, we have tried to keep the focus of this book from being on the features of particular software solutions that, in a few years, are sure to seem as quaint as five-and-a-quarter-inch floppy disks and daisy-wheel printers seem to us now. Documenting the software in use at this point in our profession's evolution has some historical value, but we hope the book will serve a more important purpose: to initiate and promote a meta-discussion about the issues of pedagogy and

instructional design we think should continue to guide our choice of available software in the next decade—and, more importantly, ought to guide the development of new educational software during that time.

Two chapters in the collection speak to this purpose, Avery, Civjan, and Johri's discussion of VisOC in Section 3 and Faber and Johnson-Eilola's discussion of Crateware in Section 4. As possible directions that future applications may take, these are examples of technological innovations currently on the horizon that oblige us to reconsider our pedagogies in light of what might be done in an online environment. What we think is most interesting about these innovations is the global questions they raise: How should these applications be used in the future—for teaching or research purposes? How will they affect the online teaching environment in which they are used? What are the ethical, political, and social implications of these applications and future applications like them? The local answers to these questions found in this collection are just that—local answers. We anticipate that readers of this book will want to ask the same global questions and seek answers that best fit their local contexts.

Another theme running through this book is that online education and technical communication have a natural affinity for each other—that although not all teaching methods translate readily from traditional classrooms to online classrooms, technical communication teachers already tend to favor the kind of interactive, constructivist approaches to instruction that seem to suit online classes. The book might be said to have a dominant refrain that repeats in various forms: Both technical communication and online education allow participants to remove or cross traditional, restrictive boundaries of discourse and discipline, and the environments that result from such border crossings are rich, complex, diverse, messy, difficult to control or describe neatly, and full of variables, disconnections, imperfections, and contradictions. In such environments, we have the best chance of success if we accept those characteristics and learn not only to live with them and make allowances for them but also to take advantage of them, looking for the opportunities they provide for learning and growth. This theme appears notably in the chapters by Carolyn Rude and Susan Lang, where they describe the controlled frenzy of synchronous discussion; by Kristin Walker on activity theory; by Mark Zachry on paralogy; by Locke Carter and Rebecca Rickly on gaps; and by TyAnna Herrington and Yuri Tretyakov on the unpredictability and confusion of an intercontinental online education project.

FOUR GLOBAL QUESTIONS

The first section of the book addresses the global question, “How do we create and sustain online programs and courses?” Its four chapters identify the issues that teachers and administrators need to consider as they prepare to develop a new online program or course. Marjorie Davis opens by making the case that technical communication teachers are ideally prepared to be leaders in the field of online

education, showing how the knowledge domains of technical communication equip them to guide the development of good online programs. Angela Eaton, in Chapter 2, asks who online students are and reports on a survey of these students, describing their demographics and the aspects of online education that they like and dislike, suggesting the survey's implications for the design and marketing of online programs. In Chapter 3, Kelli Cargile Cook argues that we need to notice the impact of technology on writing practices and on instruction and to adapt instruction to the new medium, but to avoid letting technology determine pedagogy. She provides a pedagogy-driven heuristic for developing online courses. The first section of the book concludes with Carolyn Rude's chapter, in which she reviews the issues and questions that a teacher or administrator should consider in order to set up a program that is supported by theory and driven by pedagogy rather than technology.

The six chapters in the second section of the book address the question, "How do we create interactive, pedagogically sound online courses and classroom communities?" They show how familiar elements of face-to-face instruction change, or must be changed, when teaching online and also describe innovative practices, not found in onsite classes, developed for the new online teaching environment. In Chapter 5, Nancy Coppola reviews the literature on faculty roles to explore ways in which cognitive, affective, and managerial roles change as instructors learn to teach online. Helen Grady and Marjorie Davis then draw on principles of instructional design to show how instructors can create an authentic interactive, collaborative learning environment online by providing students with visual, verbal, textual, and procedural scaffolding. In Chapter 7, Locke Carter and Rebecca Rickly discuss the ways in which space (physical, virtual, and cognitive) is transformed in an online classroom and examine how online instructors need to look out for the gaps or differences that can occur in this virtual space—gaps that can become obstacles if ignored or opportunities if given the right attention. Chapters 8 and 9 both discuss the translation of particular activities from traditional classes to online classes. Lee-Ann Kastman Breuch, in Chapter 8, shows how virtual peer review differs from peer review in traditional, face-to-face classrooms, arguing that, while the pedagogical assumptions remain unchanged, the practices need to be modified for peer review to work in the virtual classroom. In the next chapter, Susan Lang considers how the student-centered discussion that is typically the core activity of a face-to-face graduate seminar in technical communication can be recreated in an online class, arguing for the importance of synchronous discussion. Mark Zachry concludes this section of the book in Chapter 10 by arguing that graduate students in technical communication need to have their trust in principles of clear communication challenged by the discovery that real communication is not logical but rather paralogical, causing clarity of meaning to be unpredictable. Asynchronous online discussion, Zachry argues, is the ideal medium in which students can experience how easily their best attempts at clear written communication can fail.

The global question uniting the chapters in section 3 of the book is “How should we monitor and assess the quality of online courses and programs?” The first two chapters in this section assess and address the needs of students in online classes. Philip Rubens and Sherry Southard’s Chapter 11 opens section 3 by recounting their early efforts to create an online classroom environment that could easily be accessed and used by all students, including the technologically impoverished. They discuss the problems their students encountered and ways they solved them. While almost all the chapters in this book discuss online education at the graduate level, Kristin Walker in Chapter 12 shares her experiences with undergraduates. Drawing on activity theory as a guiding principle, she reminds us to consider all the possible variables that might be in play in an online class and that might require teachers to make allowances or modifications. Keith Grant-Davie follows in Chapter 13 with the story of an attempt to create a research internship in a graduate technical writing program. Although the assignment was eventually shelved as too ambitious for the existing resources, he uses the story to demonstrate the importance of praxis—the practice of continually reflecting upon and improving instruction—as we continue to discover the best practices of online education.

Self-reflection is one of a number of methods of assessing online instruction that Kelli Cargile Cook and Keith Grant-Davie review in Chapter 14. They note the richness of the data available for assessment in online class archives and discuss whether online assessment should look for evidence of minimal standards or of excellence. The richness of online course archives is also the subject of the final chapter in this section of the book. Cassie Avery, Jason Civjan, and Aditya Johri describe the development and performance of a new computer application that creates a graphic representation of patterns of student interaction within the copious records of online discussion, helping instructors locate places in the archive where they might find evidence of particular kinds of interaction.

The three chapters in the final section of the book are united by the global question, “How is online education challenging our assumptions?” In Chapter 16, TyAnna Herrington and Yuri Tretyakov describe the Global Classroom Project, a jointly developed project in which students from the United States and Russia interact online. The authors draw parallels between the unavoidable “chaos, confusion, and disarray” that they have observed in this project and the interdisciplinarity, lack of unifying theory or subject, and resistance to neat, tidy description that they see in the field of technical communication. They caution against trying too hard to clear up such conditions, arguing instead for the value of experiential learning—learning to cope with the mess—which may be the best method of achieving “contextual functionality.”

Online Education: Global Questions, Local Answers concludes with two provocative chapters that openly challenge readers to reevaluate some accepted assumptions and practices. Brenton Faber and Johndan Johnson-Eilola in Chapter 17 ask us to rethink the ethical and political implications of turning educational technology developed at universities into profit-making enterprises.

They argue that open source software, in which users have access to the source code and can adapt it to their own purposes, is more consistent with the principle that knowledge developed in an academic environment should be freely disseminated rather than marketed for financial gain.

The book opens with Marjorie Davis's assertion that teachers of technical communication are ideally qualified to be leaders in the development of online education at their institutions. It concludes with Chapter 18, in which Billie Wahlstrom and Linda Clemens call on technical communication teachers to expand their leadership roles in another direction and set national standards for lifelong learning. They argue that online education can give us the means to remain in touch with former students, continuing to share new knowledge with students long after they have graduated and joined the workforce.

OTHER QUESTIONS IN SEARCH OF ANSWERS

Although it includes 18 chapters written by 24 authors, *Online Education: Global Questions, Local Answers* does not provide an exhaustive analysis of issues in its subject. We are well aware of some important aspects of online education that we were not able to address in detail in this collection. One such issue is the extent to which online education meets the needs of students with disabilities. Online education seems to render some disabilities invisible. For example, wheelchairs, speech impediments, and hearing disabilities need not be apparent in online discussions. On the other hand, students who are blind or have visual disabilities may have a harder time in an online class than they might in the oral environment of a face-to-face class. Those of us who have taught students with disabilities online have learned that we must consider accessibility when designing our online materials. And, although we can offer advice gained from experiences working with students with disabilities, as Carter and Rickly do in their chapter, accessibility remains a surprisingly under-researched area of online education in technical communication. We hope this deficiency will soon be addressed.

Although Eaton's chapter provides a profile of online students in technical communication, a subject that is not addressed in her chapter or in others in the collection is the status of online students relative to traditional students—and the increasing difficulty of making that binary distinction. This issue recently came to our attention at Utah State over a question of eligibility for the university's top recruitment fellowships for graduate students. The criteria for these fellowships are a telling indication of the kinds of student that an institution values and wants to attract and enable. Students applying to our master's program in Technical Writing, which is delivered online, have been ruled ineligible for the most valuable fellowships available to graduate students. The fellowships are to be reserved as enticements to recruit the best students to come to campus for their studies. The

main reasons—or rather, assumptions—offered to justify this decision are that students on campus are more valuable because they enrich the intellectual life of their departments through extensive interactions outside class and that students who come to campus have more need of fellowship support because they incur greater expenses than students who continue to live at home while pursuing their studies online. While both assumptions may be true for individual students, we take issue with them as general principles that apply to all students. We believe students are capable of interacting outside class just as much online as when they are on campus and that students taking online classes from remote locations may have living expenses as high as, or higher than, those who live on or near campus.

More fundamentally, though, we take issue with the assumption that online students and on-campus students belong to two discrete groups and that their membership in either group is fixed from matriculation to graduation. Terms like “online,” “remote,” and “distance” may be valid descriptors of students and classes at any given moment, but they are questionable when used as qualifiers to label students when they matriculate. A few examples of our students at Utah State should illustrate how the categories “online” and “on-campus” can become confused. One of the students in our online Technical Writing program works on campus as a university employee and lives in Logan. She takes mostly online classes, but she has also taken a number of on-campus workshops and occasionally meets with us to discuss her work. Is she an “online student,” and should she be ruled ineligible for a fellowship? Is she a significantly different type of student from the two who live in Bermuda and Okinawa, respectively, and take online classes in the same program but have come to campus in the summer for face-to-face workshops or from another student in Israel who has never met his instructors face-to-face? Then again, there is our graduate student in American Studies (a program in which all the classes are traditional, face-to-face seminars), who lives 85 miles away and commutes to our campus. She arrives just in time for each class and heads home to her family immediately afterwards. She is clearly not an online student, so she would be considered eligible for a fellowship, but is she contributing any more to the intellectual life of the campus by her brief presences than the students in our online program, who interact with each other several days a week on class discussion boards and through personal email?

Online education has already developed to the point where simple equations between online education and distance education soon deconstruct under examination, as do simple distinctions between on-campus education and online or distance education. We believe that students will continue to complicate and undermine these categories as online education becomes more pervasive, the students appearing as an integral part of an increasing number of traditional classes that meet face-to-face on campus but continuing their discussions online between class meetings. After all, students and instructors can interact online even when they are working side by side at computers in the same classroom, so physical

separation or “distance” is neither a necessary nor a definitive feature of online education. Online education just happens to be a good way to overcome the communication barriers that distance might otherwise present.

Rather than trying to classify students once and for all as one type of student or another and attaching financial implications to that classification, we prefer to say that students may now find themselves in a number of possible instructional situations. Each of these situations might be described by the medium (or media) of instruction used in the class and by the student’s and the instructor’s locations (in an on-campus or off-campus classroom, or somewhere else), as illustrated by the matrix in Table 1.

Using the matrix, we can identify different instructional situations by combining items from each of the three columns in the table. For example, 1-A-a would describe a traditional class where students and instructor meet together in a classroom on campus at set times each week, and 1-B-b would describe an instructor traveling some distance to a remote classroom to meet face-to-face with students from the surrounding area. For a few combinations in our table, it is hard to imagine functional instructional situations—for instance, 1-C-a or 1-B-c. If students and instructor are remote from each other, face-to-face communication isn’t possible. However, most combinations do correspond to familiar instructional situations. 1-C-c would be a field trip. 3-B-a describes some traditional extension classes on campus, where the instructor teaches from a studio on campus, using audio-visual media to conduct a lecture and demonstration that is transmitted to students who have gathered at a number of different remote locations around the state. At these centers, the necessary technology has been installed to allow students to see the instructor and ask questions. 2-C-c would describe classes taught in our online master’s program in Technical Writing, where students and instructors can log in to the virtual class space from their workplaces, their homes, or any location that allows Internet access.

Table 1 lists only three options in each column, but it should be clear that they are only examples and that more might be added to give the table more fine-grained descriptive ability. Furthermore, we should point out that a class can include more than one combination of medium, student location, and instructor location and that multiple combinations can occur in parallel or serial relationships. For instance, 1-A-a and 2-A-a might both occur simultaneously in a course taught by an instructor in an on-campus classroom full of computers; or a class might start as a 1-A-a traditional class and then shift at some point in the term to become a 2-C-c class as participants stop meeting face-to-face and start interacting only online—a serial shift from one instructional situation to another. This kind of shift happened in our department when one of our faculty members had a baby in the middle of the semester and continued to teach her classes online from home. A similar shift can happen when an instructor goes away for a conference and, rather than cancel an on-campus class for a week, moves the class

Table 1. A Matrix Describing Instructional Situations

Class Medium	Student Location	Instructor Location
1. Face-to-face	A. On-campus classroom	a. On-campus classroom
2. Online interaction through Internet	B. Off-campus classroom	b. Off-campus classroom
3. Other media (e.g., correspondence, telephone, interactive TV)	C. Elsewhere (work, home, field trip destination, Internet café, etc.)	c. Elsewhere (work, home, conference, field trip destination, etc.)

online during his or her absence. Alternatively, an onsite class might include both 1-A-a and 2-C-c situations in parallel throughout the term, where online discussion is used as a supplement to face-to-face discussion.

In any case, the point of Table 1 is not to provide an exhaustive typology but simply to suggest a way of thinking about classroom space that recognizes the expanding variety of instructional situations, involving various kinds of technology, that are now available or becoming available. We still find ourselves using terms like “online student,” “remote student,” and “traditional student” out of habit and convenience, but we are becoming more wary of the ways that such labels can be used politically to privilege some students over others in ways that we don’t think are justified. At any given moment in a semester, many of our students defy singular classification as they may be participating in several different instructional situations in their various classes, and those situations may well change from week to week.

Our thinking about ways to describe online classes and the students who take them was precipitated by a very local issue—the disagreement with some of our colleagues at Utah State about graduate fellowship eligibility—but we wonder whether this experience may be just one example of the kinds of skepticism, prejudice, or fear that many of us involved with online programs will need to engage and overcome at our individual institutions before online education can be fully understood, accepted, and respected across campus and beyond. Surely we aren’t the only ones who have heard our more reactionary colleagues express suspicion and preconceptions about online education with remarks like these: “You mean you might never *meet* these students?” “How do you know they are who they say they are?” “How do you know it’s their work?” On the other hand, even if this kind of resistance is as widespread as we suspect, we are reassured by Marjorie Davis’s comments in Chapter 1 that technical communicators have the knowledge and persuasive skills needed to lead our colleagues in the development of online education.

Considering the distinctions between traditional and remote students has also led us to reconsider the distinctions and importance of institutional and programmatic identities commonly defined by faculty and disciplinary specializations. Online education has created opportunities for remote, adjunct professors who are experts in technical communication to teach remote students, creating situations in which neither instructor nor students are located at the course’s institutional (geographical) home. Perhaps we should add a fourth item to the second and third columns of our table. 2-D-d or 3-D-d would indicate instructional situations where technological media are allowing classes at one institution to include students at another institution and to be taught by an instructor at a third. These remote, adjunct professors bring a richness of knowledge and experience to an institution’s technical communication faculty and student body that was only possible in the past through visiting professorships, which few working professionals were able to accept or fill. An adjunct faculty member’s presence can

enhance a student's programmatic experience but, at the same time, it modifies the character of the program in general. However, see Davis and Rude (Section 1) for further discussion of the potential drawbacks of this practice. What is the effect, then, of employing remote professors on a program's identity, and how do remote or distant professors fit into a faculty's programmatic and pedagogical profile? Furthermore, how important are these institutional and programmatic identities for undergraduate and master's students' educations? Shouldn't students have the opportunity to take courses from the best in the field, wherever they are geographically located, and why should institutional boundaries, as Clemens and Wahlstrom refer to them, prevent online students from learning from the best professors available? Such questions have led us to reconsider our assumptions about programmatic identity and to begin to think seriously about the positive and negative implications of consortia, a concept suggested by several of our book's authors. Although we do not claim to have an answer for these questions, we hope that this book will promote meaningful discussions about them.

Collectively, the book's authors have considered many questions and issues that concern us as online educators and that, we believe, will concern others who are currently teaching technical communication online or planning to do so in the future. Each chapter, whether its focus is on concrete, practical matters or on the more abstract theories that underlie these matters, offers a possible map for the successful design, delivery, or evaluation of online courses. In addition, the authors model the kinds of reflective thinking they have employed to create and sustain effective online classrooms. Such reflection, we argue, is the hallmark of bold, new, and effective learning spaces, whether they are found in traditional or online classrooms.