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Without dialogue there is no communication, and without communication there can be no true education.

Paulo Freire (1997, 73-74)

Our collaboration began inside a thatched hut in the Andes.

The year was 1987, and Lowell Monke and I were colleagues at an international school in Quito, the Ecuadorian capital situated 9,000 feet above sea level in "the Avenue of Volcanoes." Lowell taught mathematics and computer science, while I taught English and U.S. History. Our respective disciplines might well have kept us apart, as academic departments often divide faculty within schools. What's more, Lowell was in the final year of his contract, preparing for repatriation to his home state of Iowa, while I was a new teacher from Massachusetts trying to find a niche in a foreign school and culture. It would have been easy for us to slip past each other, our paths crossing briefly while we headed in opposite directions, our work and studies grounded in what some consider opposite realms. However, we shared a few common experiences, including farm life and fading athleticism, along with an enduring bond: affection for ideas and people who cared about them, people with the courage to examine their convictions.

There was also the matter of amoebas.

Ecuador, though blessed with wondrous geography, is cursed with microscopic parasites eager to meet *gringos* lacking intestinal fortitude. Lowell and I were pure *gringo* in this regard, which meant that when a new eating establishment opened near Academia Cotopaxi and one found it possible to lunch there without acquiring amoebic dysentery, well, one did that—on a daily basis. That is what led this odd couple, one teacher from the Sciences and the other from Humanities, across *Avenida Naciones Unidas*, past the shopping complex that proved a harbinger of things to come, and through a narrow passageway to the

small, round hut situated on a quiet, residential street behind the mall. The food was simple, but consistently good and healthy. The owners specialized in seafood from "Manabi," an area along the Pacific coast of Ecuador. Our daily regimen consisted of fried fish, lentils, banana chips, and incessant argument. As *rico* as the food may have been, it eventually became an excuse for the even richer discussions. So began my lunches with Lowell, as close to Wallace Shawn's dinner with Andre as anything I've ever known, and every bit as rewarding (Shawn 1982).

We were, like many teachers in mid-career, struggling to keep the faith, cognizant of limitations within ourselves and our academic disciplines. Those limitations made us hunger for something more satisfying and holistic. We'd grown weary of "administrivia" and the petty politics of colleagues jockeying for positions within existing hierarchies; we'd also lost patience with clichés, the oft-recited, seldom examined, school maxims concerning pedagogy and pupils. Education had become a series of strategies and bumper stickers, the work of technicians who espoused one gimmick after another at workshops, confident that their techniques were the panacea for what ails today's schools. What of the art in teaching, though? What of all those questions for which we didn't have answers (or at least satisfying ones)? Where should one turn when a planning book full of strategies and tactics collided with questions that the latest workshop didn't address?

If nothing else, "The Manabi Hut," as it came to be known, was a quiet haven from the lunacy of a school situated in the footpath of the national soccer stadium, the flight path of Quito's international airport, and the worn path of more students than it had space to accommodate. Within that school we heard the disputes of self-righteous individuals with superficial answers to everything from the physical plant to the class schedule, yet little to camouflage the self-interest that informed their views. The Manabi Hut, meanwhile, presented a forum, a place for the exploration of ideas, often beginning with a question we could not resolve, extending from one lunch to the next. Lowell enjoyed my comments on literature, particularly the fault I found with students who resisted it, while I appreciated his critiques of the computer, and the inability of students and faculty to perform elementary functions with it. Typically, we supported positions that confirmed our views and dismissed those challenging them.

With time, though, we allowed our guard to fall, exposing the doubt that is an integral part of one's faith. While seated at our table in Manabi, we found ourselves crawling from one side of it to the other, defending our colleague's discipline and students against simplistic critiques. This effort to play devil's advocate allowed us the novelty of trading places, exchanging a seat in the Humanities for one in the Sciences, or vice versa, adopting views of the Other for a time without forfeiting the rights to our original seat. We were new to this

game, groping our way intuitively toward an understanding of how to play it. As I look back, however, I realize that those discussions confirmed the observations of a philosopher who tried describing "the mathematical and the intuitive mind" as well as an inherent irony of argument:

In disputes we like to see the clash of opinion, but not at all to contemplate truth when found. To observe it with pleasure, we have to see it emerge out of strife. So in the passions, there is pleasure in seeing the collision of two contraries, but when one acquires the mastery it becomes brutality. We never seek things for themselves, but for the search. (Pascal 1958, 38)

Our discussions helped us reach an important destination: the point at which we tired of our own rhetoric. We were reluctant to make the next step, confessing ignorance or uncertainty, especially when friends joined us and we reverted to the clash of opinions rather than the pursuit of truth. To cross the next threshold we needed to shed our vanities, those parts of ourselves that clung to the desire for victory at the expense of truth. Only later, away from the theater of The Manabi Hut, in the absence of our passions and pride, did we quietly digest food and thought, conceding that our counterpart was right about a certain matter. Well, perhaps. This begged an obvious, though troublesome, question: How could we inspire students to engage in open-minded inquiry when we barely had the capacity for it ourselves?

The Indispensable Opposition

Eventually, we realized the particular themes of our discussions weren't as important as their aim. Contained within our dialogues were learning opportunities rarely discovered in the school environment. To seek truth or "think out loud" in a faculty meeting would invite ridicule. The preoccupation in that environment is political persuasion, particularly when administrators arrange meetings like a press conference rather than a forum for discussion. Nonetheless, as the academic year drew to a close Lowell and I shed previous defense mechanisms, initiating new inquiries with little more than, "You know, I was just wondering why . . ." Though we didn't speak of it at the time, we understood the trust implicit in that phrase, for we make such gestures only when we believe the listener will meet us with equal wonder.

Eventually, our lunch sessions helped us construct more satisfying answers through the paradoxical idea of "supportive opposition," the presentation of an antithesis that helps refine another's argument rather than destroy it (Kinneavy 1980). This liberated us from the one-upsmanship of competitive debates, transforming confrontations into collaborations. Nevertheless, we occasionally

clashed, disagreeing with such passion that neighboring diners had to wonder if we were friends or foes. Perhaps we were both, but that seemed inevitable for people trying to discover truth. Politely accepting platitudes or nodding at unexamined beliefs wouldn't serve our purpose. We needed to do more than tolerate opposing viewpoints; we had to find ways to encourage them, for reasons that the historian Walter Lippman had articulated upon the eve of war:

The opposition is indispensable. A good statesman, like any other sensible human being, always learns more from his opponents than from his fervent supports. For his supporters will push him to disaster unless his opponents show him where the dangers are. So if he is wise he will often pray to be delivered from his friends, because they will ruin him. But, though it hurts, he ought also to pray never to be left without opponents; for they keep him on the path of reason and good sense. (1984, 501)

We were on the verge of adapting Lippman's philosophy, like two alchemists combining the foes' aggression with the friends' empathy, when our lunches came to an end. In June 1988, Lowell and his family returned to North America; I traveled with my family to Great Britain and graduate work in Renaissance drama. My summer's study would reveal the method to the madness of our verbal skirmishes as well as the flaws of pedagogical approaches I had inherited from mentors. The simplicity of this insight was maddening, and within it lay the seed for telecollaborative projects, a topic that Lowell and I had never broached during all those lunches. It was the idea of *dialectical discourse*, a practice that is "characteristically oral and dialogual, not written and monologual" (Kinneavy 1980, 187). It informs much of our work, from personal correspondence to telecollaborative projects, but while it was a common expression of seventeenth-century drama, this concept may seem foreign to twenty-first century students.

The Drama of Dialectics

Though it seems an odd request in a book about telecollaborative learning, imagine traveling back in time, not just a decade or two, but four hundred years, to the start of the seventeenth century and the country that gave birth to the United States of America. The sights and sounds of a terribly foreign culture would greet and bewilder a time-traveler. However, stepping out of our own time and place—approximating the experience that Lowell and I enjoyed as expatriate teachers in Ecuador—helps us see our contemporary situation more clearly. What's more, by looking backward at the peculiarities of a culture that shaped the English language and American identity we may help ourselves envision the future of online culture and telecollaborative learning, which would undoubtedly strike our ancestors as equally strange and foreign.

Upon arrival in a village outside London in the year 1600, the vibrant sights, sounds, and smells might overwhelm us. However, as our senses adjust we begin to notice what's "missing" from this new environment. While we see more trees, animals, and pedestrians, we also notice an absence of motor vehicles, telephone lines, and Tv antennas. Quite soon, we realize that the presence of certain things doesn't affect us as profoundly as the absence of others, particularly the absence of modern media. There is no Internet, no television, no radio, no telephone, and almost no books or print publications. Where do these people turn for news and information, or print and electronic entertainment? The primary broadcast medium is spoken language, though it sounds quite different from modern English. Nevertheless, that language, and the stories it conveys, shapes this culture and society. Nothing proves this more emphatically than a trip to a London theater.

Indeed, there is plenty of news and information, as well as entertainment, in the British theater of 1600. All walks of society gather within this public space to exchange news and information, tell stories, and enjoy the entertainment of bear-baiting, juggling, fencing, and various other activities—including professional drama (Gurr 1987). Here again, the modern visitor notices what's missing. There are no female actresses, for instance, and few special effects. Some stages are equipped with trap doors and a few quaint, primitive devices. However, the lack of special effects compels some of the most extraordinary poetry and prose ever written, because the primary means of delivering "news and information"—while entertaining, inspiring, and moving an audience—is language. As a result, playwrights of that time period had to think of language as their medium, one that not only communicated lofty thoughts, but also advanced the plot. In the absence of modern lighting, for example, one of Shakespeare's characters must tell us "the morn in russet mantle clad/Walks o'er the dew of yon high estward hill" (Shakespeare 1969a, 935). In other words, "Look, the sun is coming up!"

I call attention to this because it reveals how far we've traveled since 1600, particularly with respect to media and communication. At the turn of the seventeenth century, language was the primary means through which dramas could define character, create suspense, prompt laughter, provoke tears, and describe universal conflicts. The playhouses of London furnished a marvelous medium for communication, giving expression to human comedies and tragedies, histories and romances. However, some of these expressions would disappoint modern visitors, particularly those seeking resolution to conflicts. For while its elaborate language and dramatic presentations engaged the audience's thought and emotions, this art form, particularly as it matured, often resisted the impulse to resolve deep tensions. Love did not *always* conquer Envy; if it did, Othello would overcome Iago and live happily ever after with his wife. Nor did virtue *always* get the better of vice, for if it did we might never witness a tragedy—or discover painful truths.

Perhaps this is the most important discovery for a modern visitor to the seventeenth-century theater: the lack of "closure" in dramatic performances. What caused this trend? Why did playwrights of the latter Elizabethan and (with King James' coronation in 1603) "Jacobean" period engage in something so contrary to the standard fare of twenty-first-century television and film? What lessons might we learn from this tolerance of dramatic tensions? If nothing else, these dramas help us realize that the emergence of media since the turn of the seventeenth century has enabled new ways of *telling* stories, but not necessarily better stories. Just ask the Hollywood producers who turn to Shakespeare for scripts. Unfortunately, cinematic productions seldom prove faithful to these dramas, for a preoccupation with visual style dilutes their narrative substance. What's more, they often compromise the spirit of Renaissance drama by forcing resolutions where none were intended, forgetting that the playwright's work gave life to *dialectics*, a dialogue seeking truth.

In it, characters confront problems, seek ways to resolve them, and try to convince one another that they have resolved them. But they themselves are simply fictional hypotheses that function as the author's instruments of inquiry. They are his means of examining with sensitivity questions that are of continuing concern. (Altman 1978, 105)

This is essential for the modern audience trying to understand these dramas—or follow the argument of this book. We may engage emotionally with characters, but must, like the playwright, remain detached enough to reason, mature enough to accept ambiguity and tension. This feat requires a sophisticated control of anxieties, born as they are of conflicting forces within us. The desire to resolve, the Jacobean dramatist believed, was often the desire to destroy, since it did violence to the dialectics that exist in the natural world. The art of Renaissance drama invites the audience to balance passion against reason while watching the writer's "instruments of inquiry" struggle with "continuing concerns." This explains why eleven of Shakespeare's thirty-seven plays end without conclusion, and why Prospero invites his former enemies, the men who usurped him, to step into his "poor cell" for a night of "discourse" at the end of *The Tempest* (Shakespeare 1969b).

However, imagine the plight of a classroom teacher trying to explain such noble gestures to adolescents at the start of the twenty-first century. Not only is Shakespeare's language foreign, but so is the idea of "the rarer virtue" that Prospero demonstrates, the profound empathy and understanding that he extends to people who not only opposed him, but left him and his infant daughter to die at sea. How many of us are capable of forgiving such adversaries, valorizing empathy more than revenge? For all our technological progress in the intervening centuries, popular Western culture often celebrates simplistic, violent conclusions to complex problems. How does one argue with the opposition, or engage

in dialectics, when there is so little support for reason, compassion, or understanding? How do we teach adolescents to think critically when their culture is saturated with images of people who shoot guns first, and think later—if they think at all?

Whether conducting a classroom discussion, a Model United Nations' simulation, or a global telecollaboration, educators ask students to entertain "continuing concerns" that simultaneously excite passion and stimulate reason. This is remarkably challenging, however, for students uninitiated to the world and self, particularly if they are impatient with ambiguity and unaware of the difficulties involved in trying to define the "self." My studies of Renaissance drama provided an important, historical perspective, describing the sixteenth century as a critical turning point, a time of

increased self-consciousness about the fashioning of human identity as a manipulable, artful process. Such self-consciousness had been widely spread among the elite in the classical world, but Christianity brought a growing suspicion of man's power to shape identity: "Hands off yourself," Augustine declared. "Try to build up yourself and you build a ruin." (Greenblatt 1980, 2)

Here at the start of the twenty-first century online interactions present new challenges to self-fashioning. As Sherry Turkle has observed, the "imperative to self-knowledge has always been at the heart of philosophical inquiry" but that imperative acquires even greater urgency for adolescents who "struggle to make meaning from our lives on the screen" (1995, 269). Prior to the Renaissance, religious dogma discouraged meddling with the self, but today cyberspace presents challenges to the very notion of "self." Indeed, the postmodern view "questions the existence of a rational, coherent self and the ability of the self to have privileged insight into its own processes" (Faigley 1992, 111). This should concern anyone involved with telecomputing, because online activities complicate the issue of identity for adolescents. Students must "read" others, interpreting who they are and what their words mean at a time in their lives when they themselves are trying to discover a personal voice and identity. Often, they define themselves by opposing "the Other," anyone they perceive as hostile or threatening, but what are the consequences for a generation that participates in such online behavior? Although they may think it a harmless diversion, just a game of words and wit, they are developing discourse practices and a worldview that contradict the spirit of collaboration. How far removed is this from our Renaissance ancestors, who defined themselves in relation to a "threatening Other" who "must be discovered or invented in order to be attacked and destroyed" (Greenblatt 1980, 9)?

The student of Renaissance drama understands the consequences of this impulse: self-destruction. The protagonist's desire for revenge, and the resolution

of conflict by silencing the "opposition," precipitates the death of Hamlet, Othello, Lear, Macbeth, and more. Yet how many twenty-first-century students, ignorant of such dramas and metaphysical concerns, understand this phenomenon? Might their ignorance subvert dialectical discourse online, prompting verbal assaults that destroy educational opportunities? Could the disrespect bred in Internet "chat rooms" sabotage telecollaboration, causing the premature dismissal of opposing viewpoints? There are no "plug and play" solutions to such problems. Rather, they require careful attention to discursive habits, a reorientation that encourages students to embrace the opposition as a supporter rather than an antagonist. How do we help them understand this paradox? Perhaps an architectural analogy will help.

To an architect, the strength and reliability of a wooden bridge depends as much upon opposition as it does the integrity of materials. The wooden bridge of the seventeenth century featured crossbeams exerting equal and opposing force upon one another. The frame could only support weight with the maintenance of these opposing forces; to remove the crossbeams would collapse the bridge. Similarly, to remove opposition from an individual would remove the restraint preventing that individual's fall, morally and spiritually, and isolate him from the truth. These principles, when applied to society, call for opposition to sustain order. To prevent chaos and disaster the individual must confront opposition without trying to destroy it. The Elizabethan and Jacobean dramas help us realize, ultimately, that opposition restrains self-destructive passions. While we're encouraged to sympathize with the characters, we are not expected to resolve the greater tensions that fashion better human beings.

For obvious reasons, these dramas require an audience that accepts ambiguity and tension. Their creators dedicated themselves to the exploration of complex forces and ideas; their theaters celebrated the pursuit of truth, not power. In their paradoxical way, the plays demand engagement and detachment, urging us to suspend judgments and resolutions, for if we hasten to end problems we will politicize issues that transcend politics, pursuing Power where we ought to seek Truth. If dramas, and dialectics, conclude, it is because we, the audience, force them to do so. However, our reward is a misguided embrace of facile "solutions" to complex problems. What these dramas argue for, what Lowell Monke and I propose for educational telecollaboration, is an acceptance of opposition that creates the "salutary anxiety" necessary for learning (Greenblatt, 1980). Without that tension we spoil our intellectual odysseys, arriving at premature conclusions. However, our shortcomings will be exposed when the Caroline curtain falls upon the stage. For while we may enjoy the momentary catharsis that fiction supplies—Hamlet's virtue conquering his foes' vice—the conflict between opposing forces will resume outside the theater (and classroom), presenting far less conclusive endings to dialectical dramas.

The Lion and the Man

This brings us back to the twenty-first century, and public discourse about telecollaboration in the classroom. Above all, Lowell and I wish to join this discussion as teachers. We cannot speak on behalf of all classroom practitioners, but by starting from our experiments with telecollaborative learning we hope to stimulate a conversation that *must include* teachers—not just researchers, administrators, and policymakers. Since classroom teachers are often pushed to the periphery of such discussions, the first step is to make room at the table, letting those with an alternative viewpoint speak before the dominant discourse overwhelms them. An ancient fable reminds us why this is significant:

A Man and a Lion were discussing the relative strength of men and lions in general. The Man contended that he and his fellows were stronger than lions by reason of their greater intelligence. "Come now with me," he cried, "and I will soon prove that I am right." So he took him into the public gardens and showed him a statue of Hercules overcoming the Lion and tearing his mouth in two. "That is all very well," said the Lion, "but proves nothing, for it was a man who made the statue."

Moral: We can easily represent things as we wish them to be. (Jacobs 1984, 50)

Aesop's Man is alive and well at the start of the twenty-first century, holding forth in discussions concerning computers in education. We've heard this Technological Man in presidential rhetoric that championed the Information Age, state and federal proposals for infrastructure expenditures, and educational research prophesying the triumph of computer literacy over traditional "letteracy" (Papert 1996). In each instance, Technological Man has portrayed the computer as a *smart* machine that will deliver us from the evils of ignorance and fulfill our dreams of technological utopianism. Persuasive though he may be, we must not allow this Man to silence Aesop's Lion. Educators have experienced enough reform movements to know that today's technological panacea may become tomorrow's placebo. Indeed, we ought to receive the rhetoric of Technological Man with a healthy bit of skepticism. While he extols the virtues of telecomputing, reciting a clichéd chorus of hopeful possibilities, he may forget to deduct 'Net losses from the 'Net gains that fully describe the 'Net effect of telecollaboration in the classroom.

This book, a collaborative effort, represents things as we have found them, not as we have wished them to be, while introducing telecollaboration to our classrooms. This does not, however, mean that we cheer for the Lion to overwhelm Man's argument by roaring "Refuse it" (Birkerts 1994). The Lion, and his pride of latter-day Luddites, would have us dismiss computer technology, admonishing listeners to prostrate themselves before Nature's altar. For all their nostalgic appeal, however, such pastoral yearnings repress the human impulse

to shape the world. They also deny a fundamental truth. Our infatuation with human creations rivals our affection for Nature. Those creations, whether technological or artistic expressions, spring from the desire to imagine and construct a different world (Bronowski 1973; Frye 1964). While technology often introduces new problems even as it solves old ones, we cannot erase our signature upon the Faustian pact signed when *homo sapiens* first cleared a space to build shelters and cultivate gardens. Thus, we are forced to accommodate conflicting desires, our ambivalence evident in advertisements depicting Technological Man reclining upon a pristine, tropical beach with his cellular phone and laptop computer nearby.

Neither the beach nor the Man will recover their prelapsarian state, nor will the cell phone or laptop disappear. Together, they give expression to the dialectical tensions that define our moment in history. The primary aim of this book, informed by the same principles that have guided our work as telecollaborative educators, is to inspire healthy, dialectical discourse, an exploratory discourse rooted in the belief that "truth was found in dialogue" (Kinneavy 1980, 187). By allowing both the Man and the Lion to have their say, we hope to temper the hype and hysteria that frequently attend discussions of computers in education. Unless restrained, our passions may overwhelm the opposing viewpoints necessary for developing effective pedagogical practices, prompting the hasty adoption of bad innovations. Such actions demonstrate the educator's ability to adapt and survive professionally, but they neglect the fundamental need for pedagogical experimentation and invention.

We began *Breaking Down the Digital Walls*, and the telecollaborative projects it describes, with a desire to interrogate educational telecomputing, subjecting it to rigorous inquiry. By doing so, we hoped to shed light on contemporary efforts to introduce computer technology to classrooms, drawing attention to oftneglected issues. In its 1999 report, the National Center for Education Statistics announced that Internet access in κ –12 schools had increased from 35% in 1994 to 89% in 1998 (NCES 1999). However, extraordinary investments in infrastructure have failed to stimulate comparable investments in educators, the people who will be held accountable if this experiment fails. Recent studies on state, national, and international levels reveal a paucity of "teacher training," a term that one national U.S. survey broadly conceived as only "nine hours of training in educational technology" while admitting the results of their study "tell us nothing about the quality of these professional development efforts" (Wolk 1997, 41).

Such neglect betrays a misguided faith in technology to stimulate learning. Educators charged with the integration of new technology frequently employ variations of traditional pedagogy, borrowing methods from activities such as correspondence courses, which stressed the "delivery" of material for distance learning. This is hardly a recipe for educational progress. Rather, it invites the transfer of teaching methods from one medium to another, dressing inade-

quate pedagogy in electronic robes while pretending alterations are unnecessary. This tendency manifests itself in a number of ways, but perhaps one of the most telling is the embrace of misleading terminology.

The use of networked computers to send or retrieve information qualifies as a "telecomputing" activity, but genuine interaction is required for "telecommunication." To take the work to a more sophisticated level, enabling students separated by distance to "share the labors" of research and inquiry would require what has become known as "telecollaboration." However, as our experience will demonstrate, this proves far more difficult than many people admit. What's more, we lose important distinctions if we think of these terms as interchangeable, embracing the idea that any use of networked computers is at once a telecomputing activity that inspires telecommunication and a robust, telecollaborative community. While this is a convenient way to represent things, and a temptation for educators and entrepreneurs who prosper from the Internet gold rush, it proves counterproductive to the diffusion of effective, educational innovations.

Research has demonstrated that only 2.5% of a given population fulfills the role of "innovators," while roughly 13% prove to be "early adopters" of new innovations (Rogers 1995). This is especially significant when we consider how little is known about the efficacy of telecollaborative activities and what exactly "goes on" inside them. What do the students do? What do they learn? How can we measure that learning? What pedagogical practices ought to be encouraged? Which should be discouraged? Certainly, computer technology introduces new possibilities, but it also introduces new problems and responsibilities. It is incumbent upon all members of a social group, therefore, to test an innovation before embracing it. This underscores the importance of our historical moment, since the educational telecomputing paradigms and praxis we endorse today will determine the diffusion of innovations tomorrow.

Unfortunately, contemporary emphasis of educational "outcomes" often distracts us from student reading, writing, and research practices. As a result, the processes involved suffer relative neglect. While espousing constructivist principles, advocating the *ideas* of "telecollaboration" and "global classrooms," educators and policymakers have assumed that certain activities will automatically occur once schools are connected to the network infrastructure. Of primary importance, as electronic mail and the World Wide Web lose their novelty, is discussion of classroom experiences by classroom practitioners. That conviction has motivated the action research that Lowell and I have conducted for nearly a decade, prompting numerous trials, and even more errors, with telecollaborative activities. More than anything, we've tried to inspire critical thinking, helping students interrogate information and assess the credibility of sources they encountered online. Initially, that prompted us to consider the ramifications of project designs.

In developing a taxonomy for educational telecollaborative activities, Judi Harris has identified three primary genres: interpersonal exchanges, information collections and analyses, and problem-solving projects (1998). Despite researchers' admonitions, early adopters of these paradigms have frequently settled upon "keypal exchanges" (interpersonal exchanges) and "scavenger hunts" (information collections); unfortunately, keypal exchanges often suffer poor reciprocity and superficial inquiry (Levin 1989) while scavenger hunts lead students into the cul-de-sac of "infotainment" where information is confused with knowledge. What's more, the third paradigm, that of problem-based learning, suffers a disappointing reductionism when students seek premature resolution of complex problems rather than resisting closure to extend their inquiry. Without realizing it, therefore, the inexperienced teacher who hopes to create a "telecollaborative" project might achieve little more than "telecomputing" if the project's design emphasizes information collection without demanding analysis or problem-solving; meanwhile, we settle for recreational forms of "telecommunication" if we allow "interpersonal exchanges" to become self-indulgent discussions of social lives.

Given these limitations, and the potential for "paradigm paralysis," a most compelling question arises. How might we design and facilitate telecollaborative projects that encourage students to ask questions rather than embrace superficial answers that become "inert ideas" (Whitehead 1929)? If we approach this with a dialectical spirit, then we must find a way to satisfy both Hirsch's idea of a memory schema developed through a "core curriculum" and Sizer's demand for better "habits of mind" (Hirsch 1987; Sizer 1996). For online activities to promote learning, they should encourage student research that assists the development of a mental schema while providing opportunities to interrogate information, transforming data into knowledge through socially constructed meaning (Duffy 1996). In other words, we need to emphasize both the process and product of telecollaborative learning, thinking of ways to help students graduate from simple "telecomputing" activities to more challenging forms of "telecommunication" that culminate in truly "interactive" learning activities.

I won't dispute the potential for meaningful interaction among students separated by time and geography, yet connected by computer networks. However, I would argue against feeble definitions of "interactivity," because educational discourse suffers whenever we confuse the click of a hyptertext link or post of a discussion forum message with genuine interaction. What we must accomplish is the quantum leap from potential to reality. Without that leap telecollaborative activities frequently creep toward the extremes of the "keypal exchange" or "scavenger hunts" that offer diversion, but fall short of the educational objectives we set for our students. Ultimately, we must inspire students to move beyond the "presented problems" of traditional exercises, in which the

teacher generates the questions and students offer "correct" answers, to exercises that encourage the investigation of their own "discovered" and "created" questions (Getzels 1982).

The resulting activity, we have discovered, is a telecollaborative paradigm that is both dialectical and dramatic in nature. This book serves as an introduction to those dialectics and the dramas they engender. We invite readers into an exploratory discourse rather than a demonstrative one, applying ancient methods to decipher modern riddles (Altman 1978). To participate, one needs little more than intellectual curiosity seasoned with patience and persistence. We shall explore issues that telecollaborative experiments have prompted, resisting facile conclusions while investigating the universal concerns of classroom practitioners around the world. We take it as an article of faith that the truth is located within dialogue, and that our purpose is to help ourselves and other educators engage in a more meaningful discussion of educational telecollaboration. That can only be achieved, however, through critical inquiry interested in creating and discovering more thoughtful questions rather than embracing simplistic answers.

I must admit that certain risks influence the form, if not the purpose, of this exploration. As we all know, many educational technology texts are obsolete by the time they reach educators. Consider, for example, the "How-to" books dedicated to obsolete software applications that are presently collecting dust on bookshelves. The computer industry's pace and the dynamic quality of the World Wide Web defy the writer of "How-to" books, for their contribution is neither lasting nor definitive. Therefore, we need texts of a different kind, ones that blend theory and practice, so that even if hardware and software change by the time a manuscript goes to press the philosophy underpinning the book remains valid. Lowell and I think of this as a "Why-to" book, a hybrid for educators who wish to understand logistics without sacrificing philosophical concerns, yet expect theoretical musings to speak directly to classroom pragmatics. Our line of inquiry extends from "myth and wonder to rumor, to division of topic, to belief, to conjecture, and finally to serious thought" (Kinneavy 1980, 165). This is as it should be, for the rush to "integrate technology" often prevents careful scrutiny of the myths and rumors it promotes, precluding serious conjecture and thoughtful discussion.

As educators, we must continually pause for reflection, simultaneously exploring and articulating the knowledge that is implicit in our actions (Schon 1995). Failing that, our efforts will simply reinforce impoverished definitions and inadequate pedagogy. Perhaps the best way to avoid that fate is to ask two fundamantal questions before initiating a telecollaborative project: "What will my students gain from this? What might they lose?" This is, indeed, the crux of our dialogue—the dialectical tension that compels more than superficial success stories or knee-jerk dismissals.

Two Hemispheres, One Brain

As globe-trotting teachers, Lowell Monke and I have sustained our discussion of continuing concerns across four continents. By August 1992, we found ourselves half a world apart; Lowell settling in Des Moines, Iowa, while I moved to Kuala Lumpur, Malaysia. Our conventional, "snail mail" correspondence was lethargic, but our desire for dialectics undiminished, so when the computer coordinator at the International School of Kuala Lumpur mentioned his interest in experimenting with electronic mail I volunteered to help. In early 1993, Lowell and I began Project Utopia, with students in Kuala Lumpur and Iowa exchanging ideas for a fictional utopia via primitive telecommunications link. Within a year, I had a private e-mail account. Predictably, I sent my first e-mail message to Lowell. Since then, we've exchanged thoughts on an almost daily basis, reviving dialectics through asynchronous conversation. The humanities teacher would send his message while the computer teacher slept in the antipodes; the computer teacher replied, furthering discussion by sending questions and counterarguments via satellite to the slumbering humanities teacher on his side of the Pacific.

We became, in effect, two hemispheres of a sleepless brain, one continually pondering the rhetorical situations in which it found itself. The Western hemisphere, suffering a plutocratic government masquerading as North American democracy, confronted an information explosion with more television, radio, video, and Internet access than it could absorb; the Eastern hemisphere, meanwhile, witness to a benign dictatorship masquerading as Asian democracy, confronted government censorship of print and electronic media, a "blacking out" of images that "outrage the modesty" of citizens or portray the government unfavorably. This rhetorical situation, and the dialectical tension it describes, has inspired several telecollaborative experiments and endless e-mail discussions since 1993.

From their inception to their design, dissemination to coordination, our projects have relied upon telecollaboration and dialectics. However, they seldom reinforce the polarized rhetoric one hears about online learning. For while the hype claims every use of the Internet results in "computer-enhanced pedagogy" the hysteria tells us to refuse it. The best resistance to such extremism is open-ended inquiry, a dialogue that continues to ponder new possibilities while wrestling with the myriad problems encountered online. Through it all, Lowell and I have managed to rendezvous only three times since this work began. Thus, the Internet has served as our primary medium for communication, enabling us to plan and coordinate educational projects and undertake our most ambitious telecollaborative effort to date: writing this book.

Perhaps none of this qualifies us to judge the net effect of telecollaboration in the classroom. However, it should provide assurance that we'll deliver something more than theory and far less than hype. We draw upon practical experience to raise significant questions, and inspire discussions without forcing others to take sides or resolve the tension that ensues. We've asked our students to do the same, cajoling them to consider opposing views rather than allowing preconceptions and competitive instincts to limit their pursuit of truth. As any teacher of adolescents can tell you, however, this is not easy. Nonetheless, despite its elusive nature—in classrooms as well as online—we believe dialectical exchanges among students and teachers offer the best learning opportunities. We offer this book in that spirit, inviting readers to argue with us, pursuing truth through the kind of discourse that is missing from simplistic telecomputing activities. After all, to invent better paradigms for educational telecomputing we must include multiple perspectives and complex interactions within a community that embraces the indispensable opposition.

Obviously, this places the technical concerns of hardware and software in the background. We prefer to discuss pedagogical issues and philosophical concerns, taking turns with the narrative to convey both the form and content of our work. At the end of this chapter I will fall silent and Lowell will speak, revealing the dialectical nature of this book's composition and narrative. This presents challenges for the reader who prefers a simple thesis and conventional narrative. However, those who find truth in dialogue will understand why we've approached the narrative in this fashion, leaving certain questions unanswered and several threads exposed, rather than silencing ourselves with superficial answers or the liquidation of our individual voices. Experience with the Internet, as well as encounters with Renaissance dramatists, has taught us to resist the self-immolating rush to resolution. As a result, our exchanges often find us taking opposite sides of the table, with the humanities teacher arguing for new possibilities within the rhetorical spaces created online while the computer teacher cautions against its seductions and limitations.

Clearly, we are two authors in search of a patient reader, someone willing to reflect upon contradictory experiences and assertions without demanding resolution. This runs counter to modern culture, which often valorizes the speed of telecommunications without pausing to consider its vices. Educators must resist this temptation, however, for if we value efficiency and speed more than civility and understanding, what hope is there for healthy dialectics in cyberspace? We must slow down to help ourselves, and our students, find ways to make sense out of these exchanges and the information they convey. This is where the network technology cannot help us, for it privileges speed over contemplation. No new software application will serve us as well as the experience of seasoned correspondents who understand the consequences of heated exchanges. How do we help students engage in dialectics when they lack emotional maturity, contextual understanding, and composition skills? How can we encourage them to "argue" respectfully when their correspondent is a disembodied

voice, a faceless individual they cannot see blush from embarrassment or rage while reading e-mail?

These are good questions, certainly, and they deserve our attention. Indeed, they are key to breaking through the stubborn walls—of commerce, curricula, and clichés—that prevent the discovery of a more satisfying truth. We promise, therefore, not to dodge difficult issues, glorifying "Net gains" while neglecting "Net losses." Nor will we pretend that telecollaboration is simply a matter of acquiring Internet access. What's more, we empathize with readers encountering our words for the first time as much as we empathize with students and teachers who are new to telecollaborative learning. Imagine what students feel while seated before a computer screen composing words that will be broadcast to a global audience? They address strangers in countries they've never visited and try to articulate their thoughts when they don't really know who they are or how their prose voice sounds to others. Indeed, we should empathize, and we must be realistic about the challenges this type of activity presents. After more than a decade of talking across tables and computer lines, Lowell and I still "misread" each other from time to time. It's disappointing to find an "emoticon" necessary for one's counterpart to catch an ironic e-mail inflexion. However, such moments help us discover our own limitations and reach a deeper understanding of "the Other" and the media through which we communicate.

Finally, we're mindful of the confusion caused by having more than two parties engaged in a dialectical discussion. Do the dynamics of an electronic mailing list explode that idea altogether? Is there such a thing as a tri-lectic? Poly-lectic? Is it possible to cultivate truly interactive relationships in online discussions that provide little opportunity for "mutual interruptibility" (Stone 1996)? These questions are especially pertinent for students who have yet to learn the importance of "looking at" and "looking through" media (Bolter 1991; Lanham 1993). Imagine the consequences for those who devote so much time to "looking at" their words and images on a computer screen that they neglect "looking through" this medium to the human beings at the other end of the line? We need a way to pull students from the screen and help them listen to their counterparts, lest we sacrifice the "indispensable opposition" required for self-knowledge and self-fashioning.

One way to do this is to invite people into a print version of The Manabi Hut, where they may eavesdrop upon our dialogue and use it to question their own views of telecollaboration in the classroom. The original Manabi Hut, it's worth noting, grew from humble origins to great popularity in short time. Within a few years it was one of the most popular lunchtime haunts in Quito. Then, just as suddenly, it was gone. There's a cautionary tale in this, one that speaks to the current infatuation with cyberspace and neglect of the hidden prices we pay for 'Net gains. Educators may wish to use the Internet to pursue truth rather than disseminate trivia or propaganda, but this is no simple feat.

Distance learning paradigms dedicated to the "delivery" of material rather than dialectical exchange have established unfortunate precedents. What's more, the extraordinary expenditures on technology coupled with the relative paucity of professional development opportunities for teachers hold little promise for innovative practices. We need to explore new paradigms for educational pedagogy, but without sacrificing the dialectics that compel students—and teachers—to do more than send and retrieve data.

So, welcome to our little hut. Pull up a chair. Join our table. You're welcome to pitch in whenever you like, so long as you seek the truth. "We can easily represent things as we wish them to be," but it's more satisfying to present them as they truly are, believing there is a truth out there, not just solipsistic waves passing through the 'Net. If it's politics you desire, an opportunity to manipulate people to serve your own interests, we'd kindly request that you have a seat at another table. Don't take that personally. It's just that we're tired of those who, like the Man in Aesop's fable, wish to "spin" the tale to suit their needs, beckoning the naive listener with glib promises ("Come now with me and I will soon prove that I am right"). There's room for everyone in The Manabi Hut, but this table's reserved for those seeking truth—and wisdom. If you don't mind, we'd prefer to let both the Lion and the Man speak, while restraining the lying man from senseless roaring.