Not Just Words Any More: Multimodal Communication across the Curriculum

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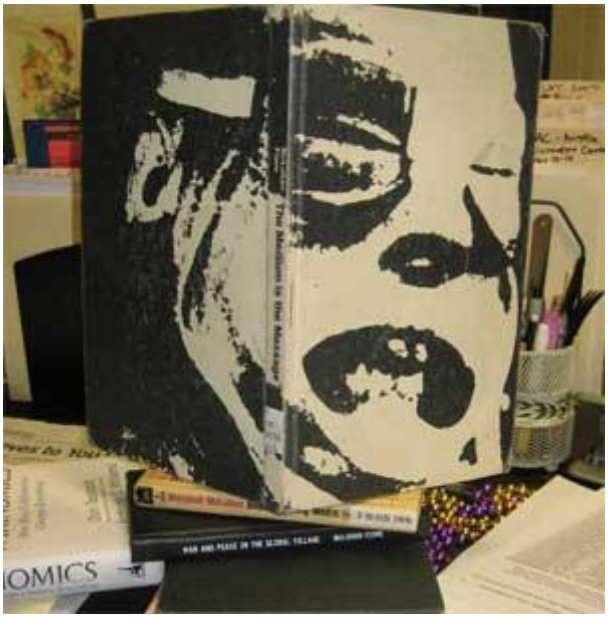
Abstract: Faculty members at a large state university engaged in discussions of 21st century communication, new media, and the demands for new communication skills as they elected to establish a Communication across the Curriculum (CxC) program in 2005. Faculty leaders reviewed communication theory (e.g., from McLuhan to Kress), best practices from other programs around the country, and multidisciplinary arguments for an expanded definition of communication. The authors report strategies they used to build consensus, collaboration, and credibility for a "multimodal" communications curriculum. They describe requirements for communication-intensive courses that are being taught in the 4 "modes" of communication (written, spoken, visual, and technological) that the faculty adopted. A distinctive feature of this CxC program is the extent to which students lead in its development and are recognized as "LSU Distinguished Communicators" as they meet high standards, produce extra work, and build public digital portfolios that showcase their outstanding communication skills. A CxC Faculty Summer Institute showcases the contributions to communication instruction on the part of faculty members who serve as consultants to other LSU faculty members. Communication studios in 4 colleges (Art+Design, Arts & Sciences, Basic Sciences, and Engineering) provide extra-curricular resources for collaboration on communication projects, e.g., enhanced technology, software, mentoring by advanced students for other students, and consultations with faculty. Finally, the authors speculate about future developments that will be needed if the program is to stay "cutting edge."

Across the Disciplines
A Journal of Language, Learning and Academic Writing
DOI: https://doi.org/10.37514/ATD-J.2009.6.2.18

wac.colostate.edu/atd
ISSN 554-8244



Invoking Marshall McLuhan at the beginning of an article on the uses of multiple communications media or "multimodality" in academic programs is more than just a trip down memory lane for the graying professoriate. McLuhan was, and still can be, influential in our contemporary work. While his media theories were not directly responsible for the decisions we made as we set up a Communication across the Curriculum (CxC) Program at Louisiana State University, his predictions were familiar to many of the original planners and ring truer now than ever before. We recognized that digital media were evolving into new forms of communication for ourselves and for our students, far beyond written or typed words, which have traditionally been privileged in academia. The "electric" media of McLuhan's day (e.g., television) led him and many others to reflect on the historical effects of media, specifically the printing press (1962), and to predict how newer media might change cultures in the future. "But there is this difference," McLuhan (1964) argued when he compared written or print-based words to what he called electronic (now "digital") environments: "… previous technologies were partial and fragmentary, and the electric is total and inclusive" (p. 64). Nevertheless, it was not until the 21st century that electronic media began to fulfill their promise of being "total and inclusive." We were persuaded, as we founded CxC in 2004, that these changes were coming rapidly and that *writing* (i.e., print-based—or at least printer-based—words with occasional pictures, charts or figures) was too narrow as the exclusive focus for our work. Writing would be at the core of our project, but we also wanted our program to include spoken and recorded words; sound; visual images, drawn or digitally created; and the technologies that make new communication strategies possible.

As prescient as some of McLuhan's other prognostications about the effects of media on humans[2] (e.g., their effects on the way we think and interpret, their interdependence, and the possibility for collaboration in a "global village") might have been, new media have not yet officially[3] altered basic structures in American higher education. Writing about digital media and the "postmodern university," Carl Raschke (2003) emphasizes the irony of this: "Today's typical college classroom, excluding perhaps its décor and architecture, does not look or function much differently from the way that it did in the 1920s. Can you imagine any other crucial pillar of culture, or sector of economy, that has not changed much in eighty years?" (p. vii). In addition to the inherent conservatism of large institutions and the enormous costs of new buildings and the technologies for them, several other factors account for this slow pace. The "silo" isolation of disciplines on college

campuses limits the exchanges that could have produced multimodal communication sooner. Secondly, the relatively "static," i.e., non-participatory (Jenkins, 2006) nature of most digital media used in higher education, at least those before recent Web 2.0 additions, have not enabled rich exchanges of multimodal communication across disciplinary boundaries, nor have they fostered the kinds of collaboration[4] that are energizing many businesses and industries. Finally, and specifically of interest to this audience, WAC and CxC programs have typically been housed in historically text- or word-based disciplines such as English, speech, and communication studies departments.

Current Contexts for WAC/WID/ECAC/CxC

Specifically in this essay, we hope to show how one of the most innovative, collaborative, and interdisciplinary curricular reforms in the history of higher education, "Writing across the Curriculum" (WAC) or "Writing in the Disciplines" (WID) (Bazerman, 1991, 1992; Bazerman & Russell, 1994; Carter, 2007; Fulwiler & Young, 1986, 1990; Herrington, 1981, 1992; McLeod, 1989, 1995, 2002; McLeod & Soven, 1992; Russell, 1987, 1990, 2002; Selfe, 1997; Thaiss, 1983, 2001; Thaiss & Zawacki, 2002; Walvoord, Hunt, FilDowling, & McMahon, 1997), is responding to these developments in new media and evolving into a multidisciplinary, multimodal enterprise as it adapts to radical changes in human communication. The cross-fertilization created in such multidisciplinary programs opens up new forms of exchange and helps to eliminate "silo" thinking.

Even before the so-called media or digital revolutions of recent decades, faculty members and administrators in American colleges and universities were attracted to WAC programs for other reasons, including faculty alarm about the "writing crisis" among American college students; the need for more active learning through writing; demands from business and industry that college graduates be better writers (College Board, 2005); and, more recently, the rapid expansion of the kind of "literacy" demanded by the developers and consumers of new media (e.g., Bamford, 2003). WAC and WID programs continue to flourish, and new ones are established every year, typically for these familiar reasons.

However, even more skills and abilities are now included in what constitutes an effective writer or communicator in the 21st century (Hawisher & Selfe, 2004; Wysocki, 2004; Yancey, 2004). In an essay about WAC, Joan Mullin (2005) of the University of Texas argues, "Today, 'writing' has come to represent for us the more realistic variety of communication across the curriculum: the oral, spatial, electronic—the visual and multimodal." For at least a decade, those who have studied technical, scientific, and business writing have been telling us that process theories for writing are largely outdated. An excerpt from a recent issue of the *Journal of Business and Technical Communication* shows just how far we have moved from a single pedagogical model that begins with defining a topic, gathering information, drafting and revision: "designing and developing new-media communication can be a dynamic, creative, intuitive, nonlinear (and sometimes childlike) process, which might explain why so much of new-media communication is dynamic, creative, intuitive, nonlinear (and sometimes childlike)" (Graham & Whalen, 2008, p. 67). The move from a linear, print-based conception of writing toward more hypertextual and multimodal forms of communication may account for the differences we are seeing in ways of working.

Just as McLuhan (1962) predicted, mainstream scholars of written, print-based communication (Childers & Lowry, 2005; Duffelmeyer & Ellerton, 2005; Faigley, 2002; Faigley, George, Palchik, & Selfe, 2004; Mullin, 2005; Orr, Blythman, & Mullin, 2005; Price & Warner, 2005) have shifted their attention to a new kind of visual communication. McLuhan (1962) argued that the printing press caused a shift from an oral/aural culture to a visual culture. The current emphases on art, graphics, design, etc., in multimodal writing are ramping up even his idea of a visual culture. At the same time,

aural/oral modes have returned; they are now embedded in texts because sound can be easily integrated into digital writing. We can debate whether we are primarily in a print-based culture, an aural/oral culture, or a visual culture, but there is no arguing with the fact of multimodality.

LSU's "Second Life" Island, created by architecture students in the Avatar Project and the Center for Computational Technology.

Web 2.0 technologies add something **else** that is new: they make it feasible for many people to collaborate in the construction of multimodal knowledge communities. Specifically for academia, digitally based knowledge communities allow researchers to share vital information across disciplinary and geographic boundaries. Readers not only respond to and interpret others' texts, but they also contribute to and alter these new "texts" as they are being written and as they continue to evolve in digital networks. *Wikipedia*, of course, is the popular example, and while some might argue that the ongoing, updated editions of print-based encyclopedias accomplished the same thing, the opportunity for more people to contribute to the process is entirely different, as is the pace of updating. Scientists were among the first to exploit these ways of working in academia, and other disciplines are quickly seeing the relevance of collaborative, multimodal knowledge communities. On a day when we were editing this article (December 15, 2008), Scientific Commons, a gigantic scientific "bibliography," contained 24,209,131 publications by 9,418,097 authors in 963 repositories.

If we explore students' digital lives, we regularly see "global villages" and over-the-top, multimodal knowledge communities cropping up in places like Facebook, MySpace, YouTube, and Second Life[5], to mention only a few of the social-networking venues popular with our students. While the substance of many of the exchanges in these environments is hardly academic, the analogy that they provide for wikis, blogs, and other kinds of digital sites that make it easy to "write multimodally," has tremendous potential for academe.

Multidisciplinary Arguments for Multimodality

All of these developments compelled us to rethink our conception of WAC as we deliberated about the kind of program we were initiating in 2004. We listened to a variety of disciplinary and multi-disciplinary perspectives. Even representatives of the traditionally word-based disciplines recommended multimodality. Our Department of English, like nearly every one around the country, offers courses in film studies, graphic novels, hyper-mediated poetry, and much, much more. Literary study is not just about the printed book any more. Communication studies and speech departments owned oral communication (i.e., "speech" as well as the analyses of printed versions of speeches) in

the 20th century (Mailloux, 2006), but more often today our colleagues in LSU's Communication Studies Department advise us that they are expanding their mission to include research and pedagogy in communication theory, no matter what the medium. Increasingly, they write about the multimodality of their discipline and others that investigate the broad field of communication—from interpersonal relations and interpersonal dynamics in teams to journalism and mass media.

Visual and aural communication studies in mass media, the sciences, and technology are creating hybrid fields such as "visualization studies," ably represented on our campus by the Center for Computation & Technology, which is hosting its fifth "High-End Visualization Workshop" this year. Indeed, every discipline or profession in higher education demands more advanced levels of multimodal and technological communication skill (Hawisher & Selfe, 2004; Johnson & Kress, 2003; Kress, 2008; Kress & van Leeuwan, 2001; New London Group, 1996; Shea, Balkun, Nolan, Saccoman & Wright, 2006).

Very early on, Dean David Cronrath of our College of Art + Design asserted, "Architecture IS rhetoric" (personal communication, March 2004). He understood immediately that a rhetorically grounded curriculum, whether based on analyses of words or images, would be useful in his field. In their writing and in their theories, design disciplines have always emphasized the rhetoric of visual communication.

Over fifty years ago in an article published by the American Society for Engineering Education, Henry Dan Piper (1953) argued for a broader range of interdisciplinary skills for scientists and engineers than writing instruction had provided during that era: "the particular humanistic habits of thought increasingly needed in their professional activities by today's scientists and engineers may be conveniently classified under the much-abused but still useful label, 'communication'" (p. x). The accrediting body for engineering schools, The Accreditation Board for Engineering and Technology (ABET), requires communication skills of all programs it recognizes in Criterion 3 of its standards.

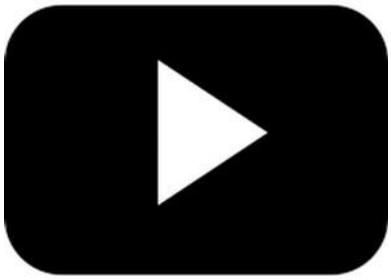
LSU's CxC Program as a Case Study

The CxC Program website at Louisiana State University.

Our collective response, then, was to design one of the first university-wide, multimodal CxC programs in the early 21st century (Dannels, 2001). The CxC Program at Louisiana State University, founded in 2004, provides an early case study of a program that has, from its inception, built on successful principles and practices of WAC/WID as it aspired to explore what it meant to be multimodal. In addition to the obvious need to expand the emphasis on writing to include other modes (Bridwell-Bowles 1995, 2006; Schroeder, Fox, & Bizzell, 2002; Shipka, 2005; and many more), LSU's decision to include these four particular modes of communication—written, spoken, visual, and technological—has had some surprising benefits.

Interestingly, after nearly four years in operation, faculty members across our university continue to use a number of pronunciations for our acronym: "C-ex-C," "C-by-C," "C squared," "C-times-C," "C-cross-C," etc. Conveniently, our very name serves as a signifier for the flexibility to adapt to different disciplinary and media cultures. It also reminds us of several other "c-words" necessary for buy-in to new academic programs: credibility, consensus-building, and collaboration. LSU did not start with a top-down decree that it would have a multimodal CxC program for its faculty and students. Rather, we have discovered in face-to-face negotiations that multimodality is inherent in the work we do in every field in the University: Our CxC program **had to be** multimodal.

Our experiences and points of deliberation can give readers the opportunity to reflect on our decision-making as they reexamine existing programs or design new programs. Our history, data, and ongoing assessment may serve as points of departure for dialogue at other colleges and universities. In addition to the material included in this article, readers can also see a video documentary[6] on the development of our CxC program. Many faculty leaders in the program, as well as administrators, describe their particular reasons for supporting the decisions we have made.



LSU's CxC Video Documentary (For a high quality Quicktime stream, visit http://studio151server.lsu.edu/~kdibene/qtmedia/CxC.mov.)

A Brief Local History

For years at Louisiana State University, a small but dedicated number of faculty members and administrators had expressed interest in introducing WAC/WID programs to the campus. Until 2004, however, none of these leaders had the funds, time, or programmatic infrastructure to support such efforts. Consequently, their attempts were limited to individual college programs (e.g., Agriculture) or collaborations among members of the English Department, the English Department's University Writing Program, the Writing Center in the College of Arts & Sciences, and some notable colleagues in other departments. The Department of English had also provided courses in writing for business and writing for engineers, but they were not taught or supervised by faculty in the College of Business or the College of Engineering. With the goal of establishing a permanent infrastructure for a WAC program, administrators in LSU's Office of Academic Affairs and the LSU Foundation proposed

such a program to Gordon Cain, a successful alumnus of the College of Engineering, who agreed to provide the funding to jump-start the initiative.

Once the funding was secured in 2004, the Department of English, the College of Arts & Sciences, and the Office of Academic Affairs hired Lillian Bridwell-Bowles, who was at that time the Director of a WAC program based on writing-intensive courses at the University of Minnesota[7]. As they negotiated the offer, administrators made a strategic decision to allocate 80% of the Director's time in Academic Affairs (the other 20% is in the Director's tenure home) in order to signal the university-wide scope of the initiative.

Believing that the success of the program would hinge upon the ideas, experience, and buy-in of faculty and staff across the university, the new Director recruited multidisciplinary Advisory Council of thirty-three members from all of the major colleges and academic support units[8] to help develop initial policies for the new program during the spring of 2004. Faculty leaders, chosen because of their reputations for research and teaching, were appointed by the Provost and agreed to serve one- to three-year terms on the Advisory Council. Throughout the first year, these leaders read media articles and essays in academic journals that made it clear that the program should consider other modes of communication in addition to writing. Faculty and administrative leaders agreed in the fall of 2004 that the initiative would officially be called "Communication across the Curriculum."

Charged with shaping policies and practices that would govern CxC, Council members were given ownership in the new initiative and agreed to promote it in their own departments, colleges, and programs. During the initial meetings, Council members studied syllabi, websites, policies, and curricula from many well-known programs [e.g., George Mason University, The University of Missouri-Columbia, Massachusetts Institute of Technology, the University of Hawai'i[9], and more]. They ratified a series of early policies, the most ambitious of which was that the program should embrace four modes of communication: written, oral, visual, and technological. The Council has continued to add policies and approaches as they have followed developments in media and model programs across the country, but these basic principles remain intact:

- Each class should include communication assignments in two of the four modes (attempting to emphasize all four at once was deemed too ambitious for most courses, but requiring two guarantees multimodality)
- Both formal and informal communication projects should be included
- C-I courses should be limited to thirty-five students (or a 1:35 faculty/student ratio that can include teaching assistants)
- Faculty should directly respond to and grade the projects
- Students should receive feedback on and revise all formal projects

Credibility, Consensus, and Collaboration

Our program owes some of its rapid success to the wisdom of our predecessors across the nation and to the initial credibility offered by outside authorities, especially their documentation of their own programs' successes. Because the Director had run a center at the University of Minnesota that was charged with developing and sustaining writing-intensive courses, she was able to draw on national leaders, inviting some of them[10] to LSU when the first Summer Institute was convened to formalize the CxC program. Because there was no pre-existing CxC structure at LSU, leaders could build in the best practices from WAC programs across the country: faculty leadership, student engagement, significant amounts of both formal and informal writing, feedback and revision, a focus on

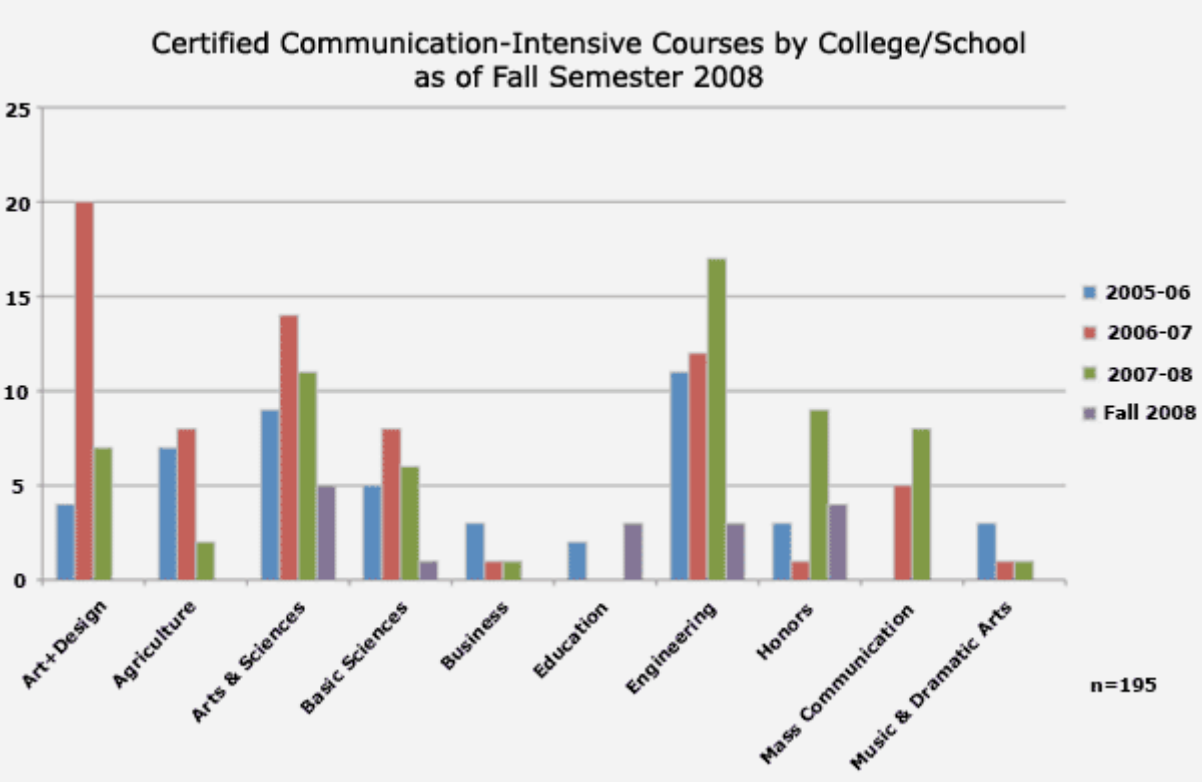
disciplinary and professional genres in upper-division courses, direct teaching by senior faculty, forums for the exchange of ideas across disciplines, active learning, reduced class sizes, strategic planning for communication-intensive courses within majors, and more.

An emphasis on multimodality was possible because of the timing of the program's establishment. CxC capitalized on the opportunity to incorporate 21st-century digital technologies into its program, as well as increasingly interactive platforms such as wikis and blogs. We also had to adapt our curricula to meet the needs of LSU students who were entering with better preparation, higher records of achievement, and more technological skills; they needed (and some of them demanded) a more advanced curriculum.

In addition to proposing reform and change, new programs nearly always have to accommodate existing structures in order to be successful. Other than the members of the Advisory Council who had recommended the multimodal scope for CxC, only a few members of the faculty had heard about WAC, if they were aware of our initiatives at all, therefore much publicity was necessary to explain the rationale behind CxC and the four modes. Members of the faculty and administrative planning teams recommended that the English Department, often the home for WAC programs, not become the home of the new program because CxC should not be the mission of an individual department. Extending outward from the Council, we presented our proposed policies to various faculty governance bodies and administrators[11] and asked them for their feedback. Knowing that CxC policies had been crafted by the original task force of 33 faculty colleagues, these leaders offered additional suggestions but generally expressed their support and encouraged us to adopt the university-wide, multimodal approach. The Vice Provost for Academic Affairs, to whom the Director reported weekly, was instrumental in arranging important introductions to deans and directors in Engineering, Mass Communication, Communication Studies, Art + Design, and other disciplines that would be attracted to CxC's expanded, multimodal mission.

A great deal of publicity was necessary then and now. Very early on, the Director and the CxC staff hosted public presentations about the four modes, the evolving requirements for Communication-Intensive (C-I) courses, and the certification for student achievement. It was during the first year of these public workshops that we made probably the most significant (and somewhat surprising) observation about the inclusion of the four modes: they gave faculty members across the curriculum multiple ways to buy into a new paradigm for Communication across the Curriculum. Like faculty members at many other universities, many LSU faculty members did not believe that they were responsible for the teaching of writing, even in their disciplines and professions; they preferred (and some continue to prefer) to outsource the job of writing instruction to the Department of English and the Writing Center. Once the lenses were opened up to include four modes, however, a range of units saw immediate connections: e.g., Communication Studies, Mass Communication, the College of Art + Design, and even Information Technology Services, which had no direct instructional mission. These presentations proved extremely useful, as they provided small groups of faculty the opportunity to ask us questions about C-I policies, clear up misconceptions, and suggest their own ideas about how requirements for writing in the four modes could be defined within their own disciplines. By giving these groups ownership in the early stages and emphasizing their disciplinary expertise as crucial to our success, we established connections that have led to broader collaboration, and interestingly, a dramatic increase in writing instruction. As of the fall of 2008, CxC had 179 C-I courses in every major at the University (see Figure 1). Because the program was launched in the College of Engineering, this College has the largest number of certified courses to date.

Figure 1: C-I Courses in Each LSU College by Year



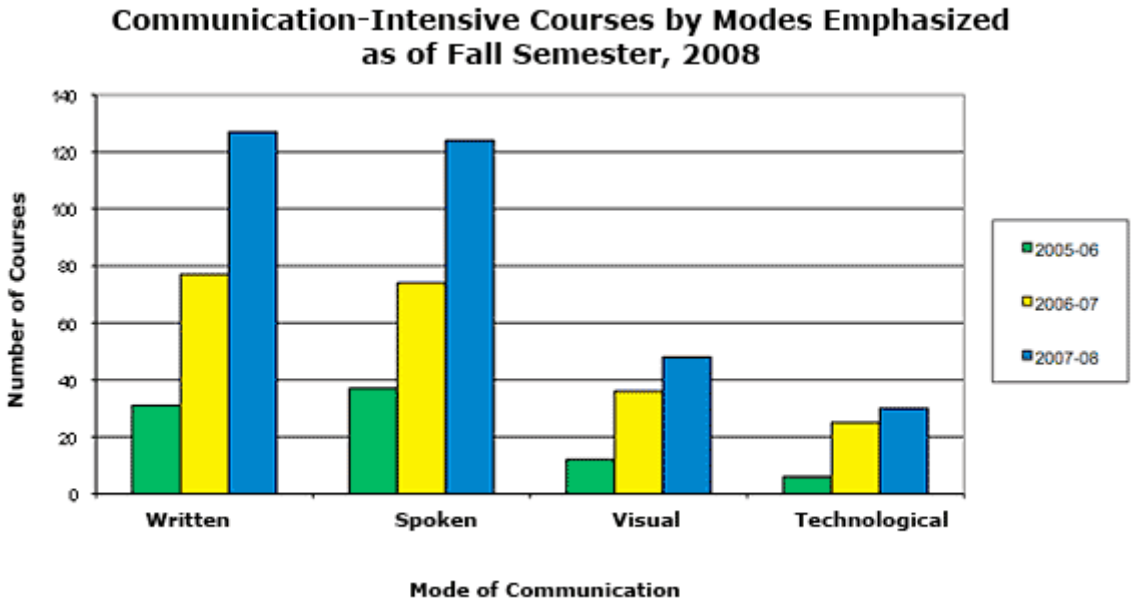
Most courses are certified for individual faculty members, so a roughly equivalent number of people are directly involved in the program. The Advisory Council determined that individuals should be free to offer a course as they saw fit, unless a group agreed to collectively teach the course as C-I, so most certifications are tied to individual professors or instructors.

To reach a larger number of faculty members interested in new curricular developments, we also collaborated with the Centers for Excellence in Learning and Teaching (CELT) to launch a workshop series (see Appendix C). Topics were designed to appeal to frequent participants in CELT programs and to the early adopters of technology. The Director facilitated each workshop, but the actual content was delivered by faculty panelists, who had designed effective assignments across the disciplines and incorporated the program's four modes into their courses. Based on their students' responses and their own exchanges with other faculty members, panelists also described how they were continuing to modify and improve their assignments. Many of these early leaders had research agendas that depended heavily on digital media, which accounts, in part, for the ease with which they made the connection to a multimodal CxC mission.

Multimodality and the University's Curriculum

Any decisions made thus far about curricular coverage of the four modes have been made locally, by departments and colleges, not by CxC. Our position, like policies in many other programs, is that we lead from strength and interest, rather than by decree. Based on observations and evaluations of workshops and our Summer Institutes (offered from 2005 to the present), we know that many faculty members have found the emphasis on new modes and collaborative characteristics of Web 2.0 appealing as additions to their courses. Written communication, followed closely by oral communication, is emphasized in the largest number of C-I courses (see Figure 2).

Figure 2: C-I Courses by Communication Modes Emphasized



Writing continues to be at the core of the program, but the number of courses taught in the other modes is growing steadily. The courses taught with visual or technological emphases are not typically in the College of Art + Design or in technology disciplines. Faculty in these disciplines and professions already had strong emphases on visual and technological communication, so they have more frequently added writing and speaking to their curricula, often with PowerPoint presentations and poster sessions included, but not as the major emphases. Faculty members in the humanities, social sciences, and basic sciences have more often added visual and technological components, including poster conferences juried by professionals or groups of faculty (e.g., a conference that often draws 100 people to a class in environmental biology), website design (e.g., a political science course in which students study websites for particular political parties and their special interest groups and then build their own), and video production (e.g., a French class in which students produced documentaries on "a day in a life" in a French speaking environment). The CxC website contains a listing of all certified courses and the modes they emphasize. Our CxC "Toolkit" contains many multimodal materials and sample syllabi. All of the resources from our Summer Institutes are archived and contain many examples of multimodal courses and the materials people have used to develop them. The inclusion of four modes in our mission has definitely given faculty members with expertise or interests in all four areas a way to contribute directly to LSU's students and to our program.

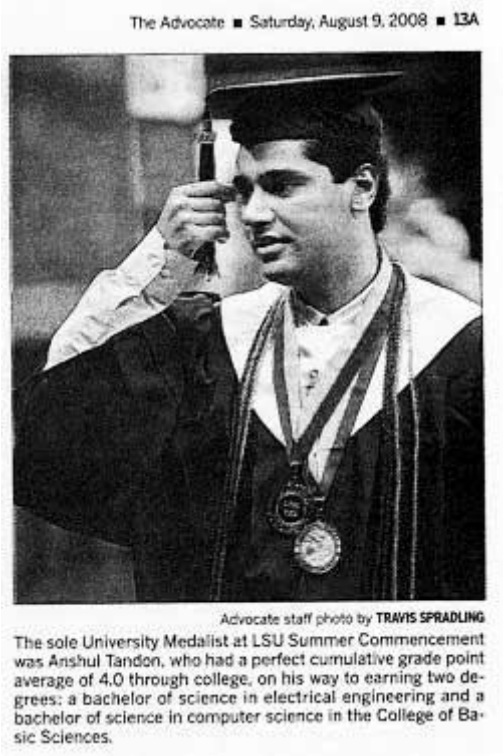
Distinguished Communicator Medal.

Student Leadership in Multimodality and Technology

Ishtiaq Rouf, Shawn Treadaway, and Stephanie Simmons, 2007 Distinguished Communicators; and Faculty Advisor Associate Dean Warren Waggenspack, College of Engineering.

In addition to the basic decision to require C-I courses to be multimodal, the initial planners agreed that there should be a formal component by which the program would engage students, who are often pioneers in new uses of technology. LSU's students are also entrusted with distributing several million dollars collected each year via the LSU Student Technology Fee for investments in new technology. In 2004-5, student leaders were already at work acquiring new equipment, software, innovative spaces needed for digital communication, and a comprehensive wireless system for the campus, so it was natural to consult with Student Government leaders and others about the future of the CxC program and to invite student representatives to sit on the CxC Advisory Council.

In the first year, the CxC Director proposed the "High-Level Communicator" certification to the Advisory Council, which endorsed its development. This program continues to give students a highly visible role in CxC at LSU. The distinction now appears on the transcripts of students who meet its high standards (see Appendix A) and has been renamed the LSU Distinguished Communicator Certification. Students also receive a medal at Commencement. Digital portfolios, made possible for all students because of their predecessors' foresight in providing digital storage space,[12] were introduced as a vehicle for showcasing excellence in communication in all four modes. From the beginning, two factors underscored the need to design our digital portfolios using state-of-the-art web design software that allowed flexibility across modes:



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Advocate staff photo by **TRAVIS SPRADLING**

The sole University Medalist at LSU Summer Commencement was Anshul Tandon, who had a perfect cumulative grade point average of 4.0 through college, on his way to earning two degrees: a bachelor of science in electrical engineering and a bachelor of science in computer science in the College of Basic Sciences.

- Frustrating limitations imposed by early web design software (e.g., "FrontPage") and commercially available portfolio products,[13] including the one offered by Blackboard, which was our course learning platform at the time.
- The students' ongoing demand that we accommodate evolving file formats, well beyond simple ".doc" files[14], which were inadequate as a representation of multimodal, "distinguished communication."

Subsequently CxC has also developed ways to provide institutional assessment using digital portfolios (Bridwell-Bowles, Powell, Liggett, & Adokpaye, 2007), but this was not and is not now the primary purpose for the digital portfolios. (See the public portfolios produced by Anino Adokpaye and other students at LSU.) The students determine the purposes, audiences and content for their public portfolios. Building a digital portfolio provides crucial practice in multimodal communication for a variety of audiences. As of Fall 2008, 33 students from 5 colleges had completed all of the requirements for the distinction and had posted public digital portfolios.

Theory into Practice for Faculty in Summer Institutes

LSU's first Distinguished Communicators, 2007, at a reception in their honor at Spring Commencement.

When we hosted our first Faculty Summer Institute in the 2005, we brought in 7 WAC/WID leaders who served as consultants to 35 LSU faculty leaders. The second year, we reduced the number of consultants to 4 because we had many of our own faculty who could serve as consultants and show others how they had successfully offered multimodal C-I courses at LSU. The third year, because of significant developments in digital technology, we brought in an expert on digital technology in CxC courses. In 2008, the institute was run entirely with LSU consultants. A team of faculty members from Auburn University also attended so that they could take ideas back to their University, which is building its own program. The pattern here, obviously, is developing and supporting local leadership, using LSU expertise in the design of courses and programs. One size does not fit all in WAC/WID/CxC, and our particular approaches fit our academic culture.

After the first year, we commissioned the Office of Assessment and Evaluation to study faculty responses to CxC and to the Summer Institutes. As we had hoped, the Assessment Office reported that focus group participants appreciated the attention given to written communication, "since writing is the area of greatest need that they perceive in their students' ability to communicate" (Matthews, 2006, p. 3). Even so, they expressed a desire for more discussion of technological communication. This mode remains the least well defined of our four modes, not because it is perceived as unimportant, but because it operates at different levels of abstraction. At times, we argue that technology is everywhere, and we do not need it as a separate category; at other times, we argue that we should have courses that focus specifically on the rhetoric and production of technological communication, *per se*, and new media. Further exploration and experience will show us how to resolve this quandary, but for now, we find this fourth mode useful. We have had discussions of other modes, as well, including deliberation in the Advisory Council on "'skill synthesis'… a combination of cognitive reasoning and interrelated psychomotor skill performance" (Castle, 2008). Discussion centered on the communication skills needed by medical professionals who evaluate and use various psychomotor skills.

LSU faculty viewing examples of students' work completed in the Engineering Communication Studio.

After 2005, when the first LSU C-I courses were taught and the Engineering Communication Studio (ECS) was established, we could provide the faculty with examples of student work that illustrated the interdisciplinary nature of the four modes of communication. Institute participants were able to see technical communication assignments that combined written text, video, animated graphics, and speech, for example. Candidates for the LSU Distinguished Communicator certification were also rapidly building digital portfolios with multimodal projects in the ECS, so in 2006, participants were able to see several of these, such as Anino Adokpaye's, on-line during the Institute.[15]

Multimodal Support in Communication Studios

One of the primary missions of the central CxC Program was, from the beginning, to provide support to faculty and students. An already efficient and productive faculty, charged with improving LSU's rankings through the Flagship Agenda, would not be receptive to expanded workloads without support. The impulse to outsource instruction that involved response and revision to communication projects was one we had to deal with directly. Therefore, we proposed the concept of a "Communication Studio" to the colleges with large numbers of undergraduates. We conceived of studios as spaces where students, faculty, and trained communications staff could interact with each other as they used multiple modes of communication. We envisioned a place where the students and faculty could work as teams on research, where students and faculty could get help with their discipline-based or professional communication projects, and where everyone could use cutting-edge equipment. Inside this dynamic space, CxC would support learning, teaching, and mentoring that complemented the work in C-I classes. CxC staff would serve as consultants to faculty and students, helping them with class presentations, workshops, course design, rehearsals, and PowerPoints.

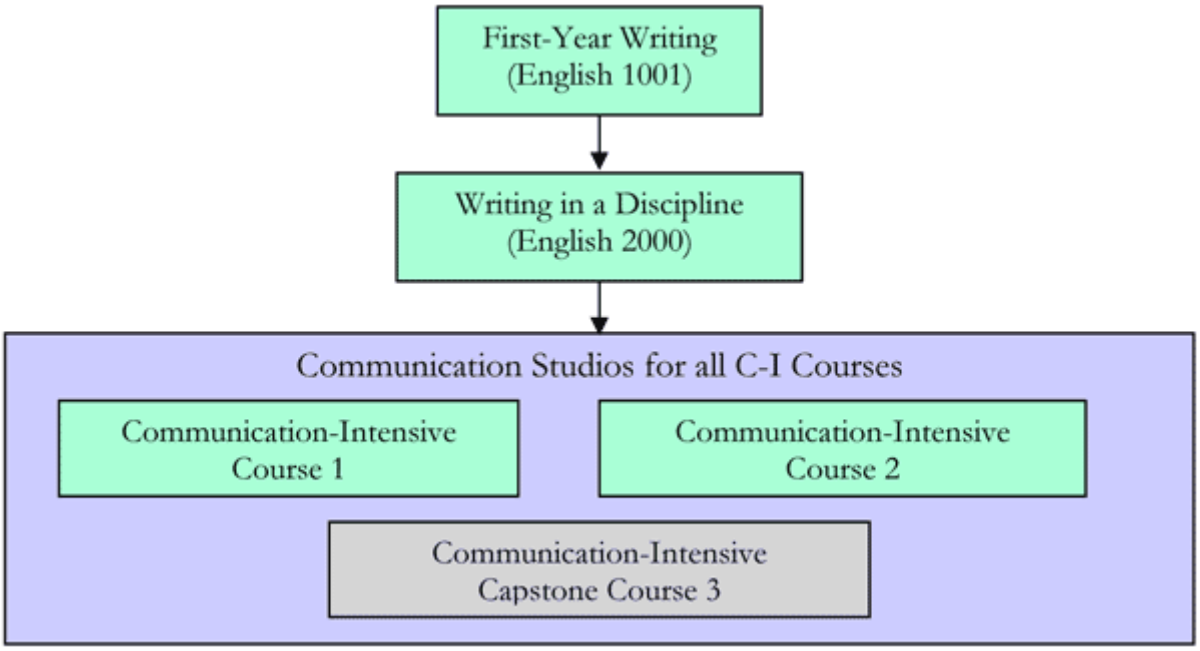
Nothing like these learning spaces existed on Louisiana State University's campus. Rather, across the campus there were specialty laboratories and centers, such as labs established for particular research programs (e.g., The Center for Computation & Technology, CCT), or for tutoring (e.g., the LSU Writing Center; the Student Technical, Application, and Resource Training (START) Program, a resource for peer-to-peer software training; and the Center for Academic Success). In addition to these spaces, students used general computer labs, primarily for word processing and Internet searches. We found few models of university-wide Communication Studios that we could emulate for the new CxC initiative—either at LSU or at other universities. One in particular, however,

Clemson University's Studio, The Class of 1941 Studio for Student Communication, was influential as we thought about a student-centered space. Since we embarked on our campaign to build studios, however, others have been opening. The Georgia Tech Coleman Family Communication Studio, for example, used designs similar to those for our Engineering Communication Studio as they opened a studio for electrical engineers (Bourgeois, personal communication, 2007).

The history of the College of Engineering's investment in a Studio illustrates several major issues that are relevant to the move to CxC and multimodality. Because the donor who established the CxC program at LSU was an alumnus of the College of Engineering, we began our work there. Faculty members and administrators in Engineering agreed easily on two things: 1) expanding the vision of communication from writing alone to multimodal communication would make it more like communication in engineering, and 2) supporting students and faculty would be crucial to the success of the program. The latter proved to be the real challenge. On an older campus like LSU's, space is at a premium. The Associate Dean of Engineering and the CxC Director engaged in negotiations, sometimes animated, to convert a general-use lab, funded by the Student Technology Fee, into a Communication Studio specializing in the four modes of communication. Initially, students were reluctant to give up their space for a variety of good reasons (e.g., the wireless system in 2005 was not adequate, not all students had laptops, and there were insufficient study lounges on campus). Ultimately, the students were convinced and unanimously voted to approve the use of the general computing lab as a Communication Studio. Their initial position changed because they knew that information kiosks—computers placed in buildings across campus—would become available for email and Internet searches (not to mention Facebook communications), what our Chief Information Officer and Director of Information Technology Services called "pedestrian computing." The students also agreed that they needed access to state-of-the-art software and hardware for technical writing, desktop publishing, presentations, visuals, posters, and more. We also agreed to support their need for an informal study area with comfortable lounge chairs, easily rearranged into working groups. Today, the Engineering Communication Studio is a lively place, with hundreds of students using its resources every semester.[16]

Another issue related to the ECS is a debate about where technical writing and multimodal communication should be housed. In the fall of 2003, Provost Risa Palm decided to dramatically decrease the number of instructors in the English Department and to add more full-time, tenure-track faculty. The result was that English was not able to staff the number of technical writing courses needed by engineering students. This created a crisis in the College of Engineering because ABET requires that students in engineering become competent communicators. While the establishment of CxC was in no way related to these developments, its establishment offered a solution to the crisis. In 2004, the Director of CxC and the Dean and Associate Dean of Engineering proposed to the Provost an alternative model for communication instruction for engineers (Figure 3, below). The model builds on foundational courses in English, which that department could continue to staff, but places upper-division instruction in the engineering disciplines.

Figure 3: Integration of Communication in Engineering, 2004

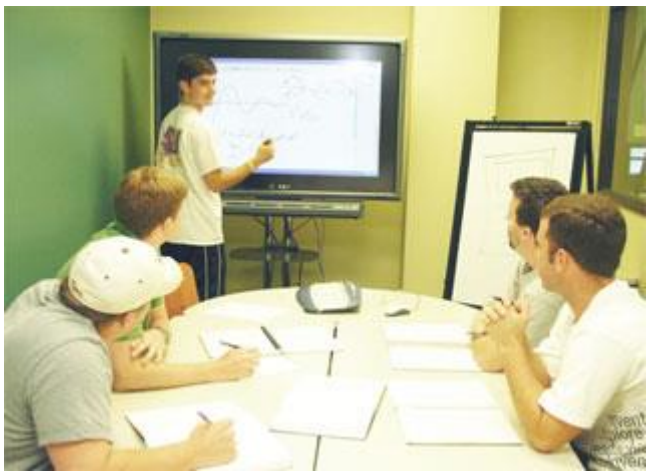


Students in each of the engineering curricula would take two foundational courses in English and three Communication-Intensive courses in their majors before graduating. Rather than taking the two English foundational courses and one technical writing course, then, the engineering students would actually be receiving more writing and communication instruction than before (five courses), and this instruction would be **expanded** to include spoken, visual, and technological communication. Moreover, because the instruction would be offered within their curricula, the engineering faculty could, conceivably, bring their professional credibility to the courses. Even though most engineering faculty members had been quite happy to have the English Department assume responsibility for the single technical writing course, both faculty and students sometimes perceived it as disconnected from engineering or lacking in real-world engineering context. We know of many respected technical communication programs that are housed in English departments or stand-alone technical writing programs. We suspect that both approaches can be successful given adequate resources and appropriate attention. In our faculty development and in the Engineering Communication Studio, we have attempted to provide engineering faculty with materials and best practices from the technical communication field; from other departments that specialize in communication on campus; from engineering programs around the country that are universally required to develop communication skills; and from successful WAC, WID and CxC programs elsewhere. Placing all of this expertise inside the main Engineering building in the ECS has, to date, been a successful way to deal with a local issue that has national variations.

For the last three years CxC, the LSU Board of Regents, and the College of Engineering have supplemented the ECS, with higher-end, specialized equipment, e.g., scanners, a 3-D scanner, document printers, a large-format printer, a SMART Board, film and projection equipment, and a 3-D deposition printer. Studio personnel have traveled to other Engineering schools and conferences where the implementation of C-I courses, assessment of CxC efforts, and the Engineering Communication Studio are conference topics. The ECS is now funded almost completely by the College of Engineering and has recently received important new enhancements funds through the College's capital fundraising campaign within LSU's larger efforts.

Typical daily usage in the Engineering Communication Studio.

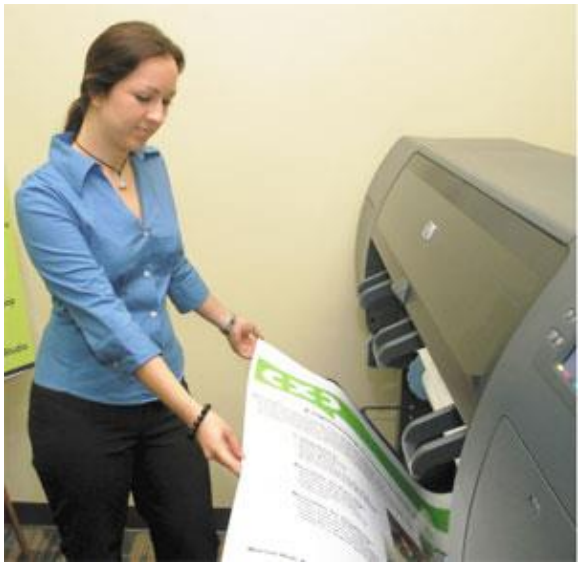
Making resources available for multimodal projects has been a cornerstone of the Engineering Communication Studio's success, and these activities often then move directly into engineering classrooms. Students reserve the Studio conference room both for team meetings around the SMART Board, where they use its technology to record and revise their designs, and to use the video-capture equipment to review and improve their presentation delivery. Both the large-format and the 3-D printers in the Studio steadily churn out projects for courses. Moreover, we have seen a more comprehensive curricular impact in engineering senior capstone projects. Typically, grades for these courses are based on an extensive written report and a presentation, often using PowerPoint and delivered before industry representatives. Students, faculty, and staff working in the Studio are supplementing these traditional media, as they incorporate hyperlinked visuals to reports and animated graphics and video to presentation slides.



Mechanical engineering students in the Engineering Communication Studio.

One recent team of mechanical engineering students in Mechanical Engineering provides an excellent example. They used the Studio's video equipment to make a compelling visual and technological argument for their work. According to one of our ECS Instructors, mechanical engineering students typically use video to show their designs in operation by setting up a tripod and pressing start on the camera. This team, however, carefully planned the frame and position of each shot so that its

racecar's wheels sped by within inches of the ground-level camera, demonstrating the acceleration of their design. In another shot the car raced toward the ground-level camera before effectively braking within mere inches of the lens. This team also excelled at another important skill stressed by the Studio staff: interpersonal communication in a team setting. This team also used Photoshop to improve the quality of their PowerPoint presentations, rehearsed their speaking roles, received feedback on their rehearsals, and struggled with design choices to make their slides more effective. The Studio Coordinator invited these students to deliver their presentation to the Studio's external advisory board of engineers, who praised their work highly. Other professors have added required poster assignments to their capstone courses to help student teams learn to deliver their design ideas more succinctly to a broader audience.



A student printing a poster as part of an assignment.

The Arts & Sciences (A & S) Communication Studio began as a collaborative partnership among CxC and the spoken and visual communication experts on campus, namely the Communication Studies Department and the Film & Media Arts Program. Based on the existing interest and resources of these units, we focused the mission of this Studio specifically on film and video production. In addition to providing digital video cameras that students check out for film projects, the Studio also hosts spaces for storyboarding projects and provides light kits, MacBook Pro video-editing stations, introductory (iMovie) and advanced (FinalCut Pro) editing software, an Apple server with web-streaming capabilities to host and showcase the projects, and large-screen projection for reviewing projects.

Students in the Arts & Sciences Communication Studio.

The A & S Communication Studio opened in January 2007. While students from courses in Communication Studies and Film & Media Arts comprise about 50% of the Studio's users, it also supports a variety of C-I courses and students from English, French, Latin, Arabic, and Human Ecology. Projects now supported by the Studio include five-minute film adaptations of selected poetry, news-style video interviews about nutrition and healthcare for the elderly, and videos demonstrating not only the verbal but also the non-verbal and visual means of communication unique to particular languages and cultures. The Studio has also already begun connecting to the lively film community in this area and has added to the season of film festivals in Baton Rouge by initiating its own "Student Film Festival."

The Art + Design Communication Studio also stresses multimodality with its mission to integrate written and oral communication with visual and technological design. For example, School of Art faculty members have asked students to combine the written genre of the "Artist's Statement" and the "Chat" (the written description that accompanies an artist's work on display) with the students' own artistic productions. Web-based documents like this article are a typical format. Faculty in Landscape Architecture are developing plans for using Web 2.0 technologies for capturing and distributing oral peer critique within streaming video environments, e.g., YouTube and CxC's Apple's Leopard server's interactive "XServe" capabilities.[17] Students in Architecture begin building digital portfolios in their sophomore year and continue to augment them throughout their five-year program. Their portfolios include reports, proposals, plans, sketches, 3-D renderings, and presentation clips. They also simultaneously create print portfolios in order to think about the similarities and differences between the print and digital versions and how their users navigate each. During their final year, many students create a public website from the comprehensive portfolio they have compiled during their baccalaureate program and place it on the College's job placement website. Those who meet the requirements for Distinguished Communicator use the same public portfolio for certification and also build the private portfolio of documents from their undergraduate courses.

A student in the Art + Design Communication Studio.

Another interesting Art + Design project involves papermaking and book making in the School of Art. Using state-of-the-art equipment acquired through grants, students make their own books, from paper to binding. Professor Leslie Koptcho has students reflect not only on their own communication projects, but also on the history of the book and the tactile, sensual experience of paper-making. Her explanation of this assignment reminds us again of McLuhan's emphasis on technologies as extensions of human bodies and illustrates yet another way of thinking of multimodal communication.

As with the other Studios, faculty members' ownership and participation in promoting the LSU CxC program's four modes of communication led to the opening of our newest Studio in the College of Basic Sciences during Fall 2007. Like the others, this Studio supports the Communication-Intensive courses in its college and students in the sciences who seek to be Distinguished Communicators. In addition, it hosts a design and drafting shop and provides concentrated support to students participating in LSU's Howard Hughes Medical Institute programs as they produce design posters and other visuals for websites, reporting the results of their independent research projects. Many of the CxC projects in this College center on the relationship between the written word and the rich visual depictions that must accompany and inform scientific writing.

In each of our Communication Studios, collaborative efforts and methodologies have been crucial: the Coordinator, graduate and undergraduate Mentors working in the Studios, and the faculty work as teams to support students as they produce multimodal projects. By taking a wider spectrum of communication directly into students' courses, and by building Communication Studios that support the work students and faculty need to do, our Studios have added extracurricular value. To the extent that we can stay abreast of student and faculty needs in new media, we expect that the Studios will continue to grow, become more effective, and reach wider audiences.

The Future

LSU students place video rehearsal from studios on blogs for peer feedback.

As we peer into our technological crystal balls, we think the next phase for CxC and for the Studios will be to extend the modes of communication that students are using primarily for social networking and entertainment into academic and research settings. Blogs, YouTube, Facebook, MySpace, etc., have already created a "convergence culture" (Jenkins, 2006) that now makes academic and research-based collaboration possible on our campuses. We expect that Web 2.0 technologies will need some translation, both for students and faculty, before they can be richly and productively mined, but the recent Digital Media and Learning Competition sponsored by Humanities, Arts, Science, and Technology Advanced Collaboratory (HASTAC) and the MacArthur Foundation (2007-8) gives us every indication that the future is being predicted now by 1,010 applicants who submitted proposals in that competition (Davidson, 2007). Faculty members and researchers at other universities provide ample inspiration for our local efforts. One such researcher, chemist Haim Weizman of the University of California at San Diego, made news in the local Baton Rouge paper by describing his own research using video-sharing via YouTube (Chang, 2007, p. 2F). By appealing to students through technologies with which they are already familiar, we hope to make their thinking

(and ours) about communication more expansive and collaborative. New media in the humanities and elsewhere (Davidson, 2008), open-source programming, and corporate applications of shared information (Tapscott & Williams, 2006) challenge us to approach both pedagogy and research differently.

In the near term, we will explore multimodal tools for communication with selected LSU faculty, brainstorming with Web 2.0 pioneers on campus and early adopters. Many of us already use, and can visualize, even more pedagogically stimulating and reliable ways to use these technologies for formal and informal communication projects in the disciplines. Everything we do in terms of peer-to-peer evaluation, for example, can be enhanced by Web 2.0 applications. See, for example, the blog for peer-to-peer assessment of video rehearsals in an English capstone course. The College of Engineering is embarking on a collaborative research project with other engineering colleges that are now using Calibrated Peer Review. The advantage of this system is that it provides "benchmarks" for feedback, but time will tell whether in-house programs like this or more public, interactive sites prove most valuable for peer and faculty feedback.

LSU's Distinguished Communicators celebrating.

As we continue to build and refine our program, we will always be adjusting our focus, sometimes changing lenses entirely as we adapt to new technologies. We will rely on the digital "global village" to keep us abreast of the latest developments in multimodal communication. We will also rely on our students, our faculty, and external critics to assess what we do. We have not forgotten the original mission of "Writing across the Curriculum" programs. Even with all of the digital media we have in the 21st century, the ability to write clear, lucid prose is as valuable and rewarding today as it was to the ancient Greeks, the inventors of the alphabet. And yet, the opportunity to extend the boundaries of what we call "writing" using visual, oral/aural, and even olfactory or tactile digital media, using tools only now being imagined, gives us and our students opportunities beyond those that even Marshall McLuhan could have imagined.

Appendix A. Distinguished Communicator Certification Requirements

- 12 credit hours of Communication-Intensive courses
  (course breakdown: at least 3 written, 2 spoken, 1 visual, and 1 technological)
- A GPA of 3.0 or better in Communication-Intensive courses
- Communication with public audiences, through an internship, co-op, service-learning, research, or study abroad experience

- Communication for leadership, on campus or in the community
- A private digital portfolio with all the documents required by CxC for certification
- A public digital portfolio (i.e., website) showcasing evidence of your communication skills (e.g., papers, speeches, graphics, videos)

Appendix B. CxC Workshops

Session Titles and Presenter Disciplines:

- "What CxC Can Do for You and Your Students" CxC Staff
- "Writing to Learn and to Communicate in Your Discipline" Agriculture, Engineering, English, CxC Staff
- "Speaking to Learn and to Communicate in Your Discipline" Communication Studies, Mass Communication, CxC Staff
- "Technology as a Medium for Communication in Your Discipline" Architecture, CxC Staff
- "Designing a Communication-Intensive Course" Art, Environmental Engineering, Geology & Geophysics, Landscape Architecture, Management, Political Science, CxC Staff
- "Responding to and Grading Communication Assignments" Chemical Engineering, Engineering Communication Studio, CxC Staff
- "Designing Formal and Informal Communication Assignments"
  Architecture, Philosophy & Religious Studies, Center for Community Engagement, Learning, and Leadership, CxC Staff
- "Providing Opportunities for Students to Communicate Visually and Technologically" Biological & Agricultural Engineering, Communication Studies, Human Ecology, CxC Staff
- "CxC Communication Studios: Resources for Students and Their Communication Projects," CxC Central and Communication Studio Staff

Appendix C. Representative Summer Institute Agenda with Sessions on Multimodal Communication

Third Annual CxC Faculty Summer Institute, 2007			
	Tuesday, May 29	**Wednesday, May 30**	**Thursday, May 31**
8:30-8:45	Light Breakfast, Introductions	Organizing	Organizing
8:45-10:00	Orientation to Institute • Why CxC? Lillian Bridwell-Bowles • Responsibilities (LBB) • Ways and Means: Karen Powell, Kim Bourque • Consultants (LBB) Overview of CxC • C-I Courses (KP) • Studios (WH) • Distinguished Communicators (LBB) • D-Portfolios (KP)	Technological Communication: Professor Dickie Selfe, The Ohio State University • Presentations • Q&A • Group Discussion	Digital Portfolios; Multi-Media for Communication; LSU Distinguished Communicators • LBB • Tiffany Walter • Jennifer Farrell • David Bowles
10:00-10:10	Break (coffee provided)	Break (coffee provided)	Break (coffee provided)
10:10-11:20	Written Communication Presentations • Srinath Ekkad, Mech Eng • Jeff Nunn, Geology • Barbara Apostolou, Accounting Q&A Group Discussion	Communication Studios • Services • Staff • Emphases • Ideas from Participants Warren Hull, David "Boz" Bowles, Jennifer Farrell, Tiffany Walter	Informal Writing, Speaking, Visualizing to Learn Cat Marshall (9th Ward images) Lillian Bridwell-Bowles (Informal Writing)
11:20-12:30	Working Lunch with people in same or similar fields. Lunch provided. Make plans for Tues. & Wed. lunches.	Working Lunch—on your own—with people in same or similar fields	Working Lunch—on your own—with people in same or similar fields
12:30-1:45	Spoken Communication Presentations • Margaret Parker, Spanish • David Bertolini, Architecture • Darrell Henry, Geology Q&A Group Discussion	Assessing Formal Communication: • Written: Warren Waggenspack • Spoken • Visual: Carol O'neil • Technological	12:30-1:45 Assessing and Reporting on Communication at LSU (Spellings Report; SACS, ABET, and other acronyms) Vice Provost Frank Cartledge Bobby Matthews
1:45-1:55	Break (soft drinks provided)	Break (soft drinks provided)	1:45-2:00 Set Up Stations: Each Team Prepares a Display Table (posters, PPt. running, handouts from each participant for all (n=60)
1:55-3:00	Visual Communication Presentations • Peter Wolenski, Mathematics • Leslie Koptcho, Art • Todd Monroe, Engineering • Barb Dutrow, Geology • Q&A • Group Discussion	Interdisciplinary Team Meetings Lod Cook or Studios (TBA)	2:00-3:30 Reception & CxC Fair with Guests • Introduce Offerings • Collect Materials from others • Learn about Support Services at LSU
3:00-4:00	Interdisciplinary Team Meetings		

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Notes

[1] The authors are grateful to the editors of *Across the Disciplines* for their helpful suggestions, as well as those from Boz Bowles (LSU Engineering Communication Studio Instructor) and Colleen Fava (LSU Basic Sciences Communication Studio Coordinator).

[2] See Nicholas Carr's (2008) recent article "Is Google Making Us Stupid?" in the *Atlantic* for a timely summary of some potential changes and for other sources.

[3] Much underground change has occurred, e.g., the "napsterization" of music and even textbooks via pirating sites; the exchange of software that is not open-source; collaborative note-sharing, including a site established by an LSU student after Hurricane Katrina, etc.

[4] See *Wikinomics* by Tapscott & Williams (2006).

[5] Those with access to Second Life software can visit LSU's island, developed by architecture students the Avatar Project, and the Center for Computational Technology.

[6] Readers can access this video at http://studio151server.lsu.edu/~kdibene/qtmedia/CxC.mov

[7] Formerly, the Center for Interdisciplinary Studies (1986-2004); now the Center for Writing Studies.

[8] The LSU Writing Center, the Center for Academic Success, Center for Community Engagement, Learning, and Leadership (Service-Learning), the Center for Assessment and Evaluation, The Centers for Excellence in Learning and Teaching, Information Technology Services, Career Services.

[9] We found the practices at many University of Hawai'i systems to be useful, including the University of Hawai'i at Manoa linked above, Leeward Community College, and Hawai'i Community College.

[10] Neal Lerner (MIT), Donna Reiss (Clemson), Christopher Thaiss (George Mason then; now UC-Davis), Martha Townsend (Missouri), Kathleen Yancey (Florida State), and Art Young (Clemson) consulted with participants at the first Summer Institute. Other consultants have included Mary Hocks (Georgia State), Richard (Dickie) Selfe (Ohio State), and Terry Zawacki (George Mason).

[11]The Faculty Senate General Education Committee, Committee on Educational Policy, Courses and Curricula Committee, and Admissions, Standards, and Honors Committee; collegiate curriculum committees; deans; and provosts.

[12] Storage space has become relatively cheap since we began our program, but we have benefitted from the convenience of storage space purchased by LSU students for other students. We have also made great strides as a result of a grant from the Board of Regents of Louisiana State University, which allowed use to expand our communication studios and to purchase a server where we permanently store students' portfolios as they graduate.

[13] Working with Information Technology Services at LSU (then Computing Services) in 2004, we compared and contrasted 12 different off-the-shelf portfolio systems and found each inadequate as worthwhile communication projects that would teach communication skills or as repositories for our students' materials.

[14] e.g., speech, sound, art, photography, video, animated graphics, presentation slideshows.

[15] Anino Adokpaye's is one of the first Distinguished Communicator portfolios; participants in the 2006 Summer Institute saw several early versions of portfolios like this one as they were evolving.

[16] See detailed reports on the progress of the ECS in various engineering journals: Waggenspack et al. (2007), Hull, et al. (2006), cited in our references list.

[17] The CxC Director has conducted preliminary discussions with Art + Design faculty regarding peer-to-peer online feedback using the example of her English capstone course, which is experimenting with YouTube and video streaming form the A & S Studio's Apple XServe: students post video "rehearsals," and peers and faculty offer comments and suggestions. This approach has widespread appeal to both students and faculty because

it removes time-consuming rehearsals from the actual classroom and allows rehearsal to take place in a comfortable space.

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Complete APA Citation

Bridwell-Bowles, Lillian, Powell, Karen L., & Choplin, Tiffany Walter. (2009, January 19). Not just words any more: Multimodal communication across the curriculum. [Special issue on Writing Technologies and Writing Across the Curriculum] *Across the Disciplines, 6*. Retrieved from https://wac.colostate.edu/docs/atd/technologies/bridwellbowlesetal.pdf