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Restructuring Student and Teacher Roles: Dealing with Struggle

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Abstract: To be actively involved in their own writing requires that students make decisions. In order to build a new approach for our Technical/Professional Writing classes, we assessed our individual teaching practices and past experiences, studied current scholarship on teaching writing, and conducted research on technical writing in our local community. Using this information we developed a teaching model that involves students in discovering/establishing the class content, creating time frames/project plans, selecting tools to complete projects, contributing to evaluation criteria, and working with the local community. The success of this approach requires students to reconstruct their roles and their attitudes toward the dynamics within the classroom. It also requires the teacher to rethink his/her role in the classroom, sense of authority, and perceptions of how knowledge is created. These changes, however, are not achieved without challenges and struggle. While our programmatic approach has proven successful, we found the need to help students view struggle as a normal part of the decision making processes that writers experience.

Keywords: program development, student decision making, struggle, teacher roles, student roles.

I. Introduction.

In this article we discuss our experiences with the scholarship of teaching and learning as we have begun to rethink/recreate our students' roles and have begun to observe the changed dynamics in the classroom and beyond. While change has been beneficial for students, it has also challenged them, with some students demonstrating resistance. We discovered that these changes often bump up against the practical realities of students' prior experiences, expectations, comfort zones, and personal objectives; we had to find ways to help students with what may feel like a sense of struggle, when in fact what they are experiencing is the process of decision making that writers inevitably go through. While our discussion here focuses specifically on our technical/professional writing classes, we find this approach that we have developed applies to all of our experiences in the classroom.

Our goal in developing this approach was to change students' perceptions of themselves as recipients of information to active shapers of the teaching and learning that occur. This approach restructures student roles, as students help to establish the class content, create time frames/project plans, select tools to complete projects, and contribute to evaluation criteria. We structure our classrooms as democratic places. All students of diverse backgrounds, interests, and abilities have a chance to succeed as they become central in the process of molding and forming the activities and results of classroom learning. In "A New Paradigm for Undergraduate

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Education," Robert B. Barr and John Tagg discuss the need to shift the focus of education from an instruction paradigm to a learning paradigm. With this shift the purpose of education is "not to transfer knowledge but to create environments and experiences that bring students to discover and construct knowledge for themselves, to make students members of communities of learners that make discoveries and solve problems" (3).

II. Building a New Approach.

In order to build a new approach for our technical/professional writing classes, we evaluated our individual teaching practices and past experiences, studied scholarship on teaching writing, and we conducted research on technical writing in our local community.

In the process of building this approach, we examined our introductory service course, Principles of Professional and Report Writing. This was a collaborative process, with both of us examining our past practices, thinking through our approach based on generic/established knowledge models—characterized by an emphasis on form/end product—and identifying theoretical or pedagogical foundations for these practices.

As we discussed our classroom interactions, we realized that we were moving away from the instruction paradigm often found in some technical communication classrooms. In our discussions of how to effect a paradigm shift, we took note of what Richard Fulkerson stresses in his article entitled "Composition Theory in the Eighties." Published in 1990, it continues to have significance for reflective teachers who are examining the pedagogies they enact in class while endeavoring to expand their definition of teaching and learning. He states that every theory should encompass four components: (1) axiological, (2) procedural, (3) pedagogical, and (4) epistemological. The first component, axiological, refers to values and value judgments. This component helps teachers define what they "want students to achieve" (411). The second component, procedural, refers to how writers "should go about creating texts" (411). This involves the "means by which writers can reach the ends specified by the axiology" (411). In regard to the pedagogical component, teachers seek to find ways to help students achieve writing that is valuable. Finally, the epistemological component refers to the "assumptions about what counts for knowledge" (411).

We used Fulkerson's model as the foundation for our shift. First, we decided that we want students to write texts that effectively engage a particular audience that is affected by the writing. Second, we want our students to search for the content of texts within community settings that are important to them and then collaborate with others to effect creation/development and revision for the texts they produce. Third, we create our curricular designs to assure that students determine what valuable writing is for them. Fourth, we stress that knowledge includes having students experiment, encounter challenges and setbacks, and re-think and evaluate their approach to learning in order to make choices that effect solutions. These four components have to align with each of the others in order to construct an effective model for the classroom. If we say we value students being active agents in the learning process, but then make all of the choices for students—such as prescribing the purpose, audience, and the kind of document they should create—our theory is not aligned with our practice.

To continue building on this base, we looked to technical communication theorists and researchers. In *Information in Action* M. Jimmie Killingsworth and Jacqueline Palmer discuss the writing effort in terms of the writer's context of production and the context of use. The essential idea Killingsworth and Palmer make is twofold: (1) the technical writer is influenced by the

context in which he/she produces documents—an extensive context involving a writer's understanding of purpose and goals, his/her prior knowledge and technological experiences, and existing resources and (2) the context of use—the audience or consumer of the document, his/her expectations, needs, previous background and knowledge, and how the document will be used. Based on these ideas about contexts, we decided to individualize assignments based on what a student brings to a setting and what he/she encounters in a specific learning situation. This approach, we thought, would better engage the students with the contextual issues that writers, especially technical writers, need to address.

Robert Johnson, in his text *User-centered Technology: A Rhetorical Theory for Computers and Other Mundane Artifacts*, also discusses the importance of context and audience. He focuses on the use of technology and makes the end user the center of the development process, the context for each technological system that a developer builds. We adapted Johnson's model to our efforts and used his "User-Centered Model," which is constructed with interlocking circles wherein the user inhabits the central circle. In our view of pedagogy, we see the student as the end user of the development process and thus place the student at the center of the learning process, a learning process that can be visualized as a series of interlocking circles wherein the student inhabits the central circle. Within the outer circles are a student's prior knowledge/experience, university requirements, theories and principles within a major, future career goals, community connections, and knowledge of tools.

This theoretical base had implications for our pedagogy. We found significance in the three teaching principles outlined by John C. Bean in *Engaging Ideas: The Professor's Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom.* First, our pedagogy should create cognitive dissonance. A teacher would "decenter" tasks to move a student to approach an effort from a different stance or role (33). Second, our pedagogy should present knowledge as dialogic rather than informational. A student will be engaged in making meaning through interaction, argument, and persuasion. Third, our pedagogy should create opportunities for active problem solving that involve dialogue and writing. Therefore, in developing the model for our program, we noted that students would begin their efforts within specific contexts in our South Texas community.

The kind of emphasis we desired is evident in the ideas promoted by Gail Hawisher and Cynthia Selfe. They see the need for models "that offer strategies for acting productively in the face of social change" as many students "see little connection between traditional literacy and the world problems [we all] face" (3). In order to create these connections, we encourage students to situate themselves in a community setting—non-profit agencies, small businesses, health clinics—identify a need, and use the skills they are learning in class to address that need.

Because the course focuses on technical and professional writing, we sought to determine what technical communicators need to be able to do in the workplace. As many of our students will remain in the local area, we wanted to gain concrete knowledge of what technical communicators need to be effective in the community. We studied the results of a survey sent to a representative sample of organizations in the area, a document asking employers in refineries, medical and educational facilities, and other agencies about the writing done in these settings. Forty-seven entities responded to the survey, which included some of the following questions:

- What types of jobs do you have in your company/organization that require technical/professional writing skills?
- What types of documents are produced in your company/organization?

- Which skills/experiences would be beneficial for students to have to prepare them for jobs in your company/organization?

The information gathered from the survey responses revealed that many positions in our area require technical writing expertise, including grant writer, fraud security investigator, computer website technician, documentation specialist, and project manager. The types of documents reported include numerous types of reports, proposals and grants, technical manuals, and Internet writing. The specific skills/experiences employers identified that would help students prepare for jobs within their organizations include planning, collaborating, designing documents, interviewing, researching, using multi- media and making oral and visual presentations. Through the survey, we discovered the contextual needs of our community, and we used that information as we developed the program.

All of the information we gathered—from evaluating our own teaching models, from reading scholarship on teaching writing, and from gathering information about the local community—led us to understand that the particular context and need drive the rules and tools used to create documents and how these are distributed and consumed. Thus, we worked to align our pedagogy with our axiological and epistemological beliefs by anchoring our approach in the community, in the changing workplace, the workplace of electronic communication and project management where employees are expected to take a problem and solve it. And since solving problems requires making many decisions, we built that aspect into every part of the program. Specific skills include attention to inquiry, critical thinking, information gathering, problem solving, collective and individual decision making, and reflection on complex issues. We agree with Cynthia Selfe that our job as teachers of technical communication is to help students become "…critically informed technology scholars rather than simply expert technology users" ("Lest We Think the Revolution is a Revolution" 322).

III. Implementing the New Approach.

In this section we describe how we have implemented the approach in one of our Technical/Professional Writing courses, Principles of Professional and Report Writing, and illustrate how the activities of the course reflect the new emphasis on context specific learning, building community connections and active decision making on the part of the students. In the course outline, we provide the large framework for key assignments and leave the specific goals and content of each project and the decisions for how to develop each project to the students. The three assignments, completed as portfolio projects, include Writing on the Job: Understanding Workplace Literacy, Applying for a Job, Graduate School, Internship, or Scholarship: Identifying and Implementing Strategies, and Identifying and Addressing a Community Need: Generating Options. Assignments 1 and 2 prepare students for the third assignment.

A. Portfolio One: Writing on the Job: Understanding Workplace Literacy.

In the first assignment we ask students to go to the kind of workplace where they want to see themselves after graduation, identify and interview a person who can inform them of his/her duties and responsibilities, examine the kinds of documents that the interviewee creates to effectively accomplish his/her responsibilities, and learn about the clients--real individuals and lives affected by these documents. Students also request copies of documents written by the interviewee. (Sometimes the nature of the documents prohibits this sharing. In these instances,

students find models of the types of documents used in this context.) After studying these documents, the students produce a sample model document based on the documents they collected. This document should relate to the particular professional context. The student who interviews an investigator in a state child protective agency and examines the documents written during and after an investigation establishes the context for the writing and the specific content; he/she focuses on one specific writing process, molded by specific purposes and conventions. Students turn in portfolios that include a memo describing the contents of their portfolio and the process of developing the portfolio assignment and a memo discussing the interview they conducted. For some students the context for this interview becomes the site for the third portfolio assignment.

B. Portfolio Two--Applying for a Job, Graduate School, an Internship, or a Scholarship: Identifying and Implementing Strategies.

Although this assignment may look like the typical resume and cover letter endeavor, we have many decisions built into this portfolio as well. Since our students are at different places in their endeavors, they identify what their current needs are and implement the strategies to fulfill those needs. For example, some students are interested in developing a new resume that reflects their enhanced awareness of documents and their users. Those graduating at the end of the semester identify actual jobs, study mission statements of organizations, and develop a resume and cover letter to actually send to an employer. The students applying for graduate school focus on the application process, gather letters of recommendation, and write philosophy statements. And we always have a handful of students who are barely sophomores and do not know much about the type of job they want to get, so they conduct a job review, and, building on the information they gathered in portfolio one, they conduct additional interviews and gather information through our Career Center and numerous other resources. Their portfolios again include an introductory memo describing the contents of their portfolio and the process of developing the portfolio assignment and the documents they produced and related information. In the first portfolio, all of the students follow similar processes; in this portfolio we begin to move students in many different directions related to their needs as learners.

C. Portfolio Three-- Identifying and Addressing a Community Need: Generating Options.

In the third portfolio, we extend the connection to the community even more, and present more decisions for students to make. We ask students to go into the community and identify a problem/need that requires solving. We have many community partners who offer projects that students can choose from. We have these posted on our website. Many of our students build on their own community connections and identify agencies and/or individuals to work with. As soon as the student identifies a group or organization, the first step is to study its mission and goals and the clients it serves. The students continue to gather information and formulate options for solving/meeting the need(s) they have identified. The final portfolio again includes an introductory memo describing the contents of their portfolio and the process of developing the portfolio assignment and the documents they produced and related information. The writing that students produce for this portfolio assignment take many forms, including for example, grant proposals, computer databases, web sites, brochures, manuals, reports, and many more. The products are not always newly created documents. Often students analyze existing documents

and revise and redevelop the documents. Students meet regularly with the teacher, with a community partner, and other students. They provide regular updates on their progress. The students are involved with every aspect of the decisions making process, and while this engagement can be difficult at times, the students find that they are very proud of the work they produce.

IV. Opportunities for Student Decision Making.

These assignments are structured to enable students to actively build and guide their learning experiences. Students do this by discovering/shaping the class content, establishing time frames/project plans, selecting the tools needed to complete the project, and establishing the criteria for evaluation.

A. Students Discovering/Shaping the Class Content.

As is evident from the descriptions of the three main assignments for the course, students make many decisions regarding how they will participate in the course. Instead of saying to the students, "These are the principles of tech writing; this is how you write technical documents; these are the documents you need to write," students discover what is involved in the writing process by making the decisions about the writing, including what types of documents they will produce. We do not distribute handouts that tell the students these are the "Principles of Report Writing," these are the "Principles of Applying for a Job," these are the principles of "Writing a Proposal." Instead, the students gather the information about the work they need to do and that guides the process for the type of writing they are engaged in. The students develop their own understanding of what they need to write within a particular context, what type of document will satisfy the needs of the situation, why the document is needed (which is very different from doing it just because the teacher assigned it), the audience they are addressing, what type of information they need to include, what constitutes effective writing within a particular context, what specific formats and conventions direct the writing, what tools they need to complete the job, and how to evaluate their work as it develops.

B. Students Establishing Time Frames/Project Plans.

To complete the first assignment on workplace literacy, students make individual contacts through university teachers, friends, employers, or family, and they search web sites on the Internet to secure background information, mission statements, and agency/company goals. After initial contacts with a prospective interviewee through phone calls or email messages, they create time frames for when to meet or visit the workplace, or when to conduct interviews through email or by phone. Through the use of email, students are not limited as to the kinds of community contacts they can make. Thus our definition of community can be as broad as to include international contexts. Students realize quickly that they may encounter setbacks. They then must create alternate plans and new timelines when they realize that people in workplaces are not always available to them.

One of our students, Sammy, successfully worked on a manual for a surveying company, demonstrating individual decision-making and independent thinking to address a real problem that affected the company owner and his employees. This contextually-situated manual reflects

the kind of learning experiences we seek for our students. Since Sammy wants to enter the surveying field, he interviewed the owner/president of a surveying company. He communicated his needs/goals effectively, arranged a meeting with the company president, learned about the daily responsibilities of the job, and studied the types of documents this surveying company develops. The president of the company gave Sammy a rough draft of the employee operations manual, an actual document relevant to the context, as the manual needed to be revised for new employees. Having purchased a mapping company to enlarge his business, the president needed a revision of the document to orient the new employees. Some of the new employees did not know how to write proposals for prospective clients, a situation which translated into operating errors and loss of income. Sammy created a timeline for the project and completed the revising and editing of the manual through phone calls and emails to the company owner/president. The writing and the schedule were aligned with the needs of the president and employees. Revising to meet the needs of new employees was a large responsibility, and the process Sammy undertook helped him understand technical writing and, specifically, the manual in a real sense and the importance of planning and time management in its creation. He made decisions within the context of the expectations and responsibilities relative to the specific operation of this company. The process that Sammy experienced represents the pedagogical shift that makes students the key agents in determining what activities they need to participate in and what decisions they need to make to complete a project. The additional benefit is that Sammy's efforts and decisions greatly affected how the owner/president perceived him, because due to the work Sammy produced, the owner/president became interested in Sammy as a future employee.

C. Students Selecting Tools to Complete the Project.

One of the decisions we ask students to make is to determine what tools they will need to create the documents they have chosen to work on. By tools, we refer not only to software programs, which are often one decision involved in this process, but also to tools such as Websites, online sources, company websites, federal agencies, desktop publishing and printing experts, website developers, subject matter experts, and translators. For the third assignment, "Identifying and Addressing a Community Need: Generating Options," Erica, who had already completed an internship with the local police department, visited the instructors in charge of staff development for all police officers. The instructors described a departmental need for a cultural diversity training program. Erica generated ideas in conversations with the instructors and created a Power Point presentation that could be used by these instructors and the officers. The program included many large graphic files, which posed a problem when Erica needed to email her work to the instructors. She was not familiar with the process of zipping files of this nature, so she sought out the help of our computer help desk personnel and learned about the programs we have available to handle large file transfers. This did not completely solve the problem, however, because the instructors did not use the same file compression program. (And at that time, file compression programs were not as widely used and distributed as they are today.) So the instructors at the police department put Erica in contact with their technology support staff and they worked with her to zip the files using the program that was available in that agency. Not only did Erica learn about what she needed to do to create an effective Power Point training presentation, she also learned about delivering the presentation. In an essay entitled "Composition and the Circulation of Writing," John Trimbur points to our lack of attention to the "means of production and delivery" of writing. Trimbur's argument is that "writing instruction

has isolated delivery" from "invention, arrangement, and style," which "has led writing teachers to equate the activity of composing with writing itself and to miss altogether the complex delivery systems through which writing circulates" (189-190). Delivery is a very important issue for technical writing because if we create a document that cannot be used by the audience, we have affected little change. By involving our students in the delivery of the products they produce, they are learning about that part of the decisions involved in the process of writing as well.

D. Students Helping to Establish the Criteria for Evaluation.

As students work through the key assignments, they become familiar with how the documents are created, specifically how texts are written, presented, and used within each workplace context. In a memo as part of the portfolio, students convey this information, and we, in turn, use this information to evaluate the document they create. In this manner they help establish the criteria used to evaluate the work they submit. As Erica, the student mentioned in the last section, worked through creating the Power Point presentation, she encountered other challenges in addition to how to deliver the document, such as determining what kind of message the audience needed, what information could be used to send the desired message, and how she could make the presentation different from previous formats to create awareness and alter attitudes toward cultural diversity. Realizing that she needed feedback and assessment, she elicited responses from the police instructors. Before we evaluated the work that Erica completed, she had already made changes based on the feedback she received from the instructors in the police department. We find that when students, like Erica, work within the constraints of an agency—limited tools, insufficient budgets, multiple readers—they discover that they have to redo work to satisfy the agency supervisors or the staff. Students learn that teachers are not the only evaluators or the only experts. Actually, Erica, having completed an internship with the department already, has more experience than we do regarding what is needed to make this type of presentation successful. In their article, "Computer Conferences and Learning: Authority, Resistance, and Internally Persuasive Discourse," Marilyn Cooper and Cynthia Selfe support the idea of minimizing the role of teacher as the expert. In discussing the expansion of students' language use, they call for non-traditional forums that "allow interaction patterns disruptive of a teacher-centered hegemony" (847). The context in which Erica chose to work, with the police trainers, promotes these types of patterns. Erica emerged as the expert because of her interaction with the trainers. For Erica evaluation took on a very broad dimension.

V. Students' Struggle with Changes.

While we are pleased with the changes to the course and the program and we believe that students are much more involved in the decisions that writers need to learn to make, the changes have not met with enthusiasm by all students. For many students this open, student-specific approach upset their understanding and expectations of what should occur in a class and how they should function, such as reading assigned chapters, taking tests, and following specific instructions to complete projects. Some students responded negatively to the changes, voicing frustration and confusion. As they were used to being given all the parameters for their writing, they did not think we were doing our jobs. They wanted us to prescribe their behaviors. During the writing of the first project, a student commented on her needs: "Well, the first thing I need to

do is get with the teacher and have her explain what she expects from us on our project and how we should set it up." Another student, uneasy about the learning environment, commented, "No one around me is doing anything like me." Some students wanted to focus on product, not the process of discovery, of searching, of thinking and reflecting. For these students the known is reassuring; the unfamiliar does not allow them to anchor their work on what they have experienced in their past learning contexts. In our end of semester student evaluations, we receive many comments that reflect students' recognition of their growth as writers, such as "I enjoyed the flexibility that allowed me to make decision about my learning," and "I have never been so involved in a writing project before. I learned a lot." We also receive other comments that record their dissatisfaction, such as "I don't know what you want."

Providing opportunities for students to make choices produced one extremely unexpected outcome. When a student continually complained that she did not understand what was expected of her and how she should proceed with her work, she was asked to critique the instructional approach, which centered on evaluating the course web site, for her third project. She was guided to answer two essential questions: "What are the weak points in the instruction?" and "What are its strengths?" During the oral presentations for her completed project, the student offered a scathing evaluation of the web site and the instructor, citing a lack of specificity, unclear expectations, and a general lack of direction. A few of her peers in class gasped as she became bolder and bolder in her assessment, as clearly they did not agree with the assessment. In closing she stated, "I never knew what I was really doing." According to this student's advisor, the student has above average grades in other courses, which indicates she is successful in the student role that asks her to complete assigned tasks within very specific parameters. Her frustration, then, may stem from the lack of prescribed activities that characterizes the revised approach. Assigning the student yet another decision making activity--critiquing the instructional approach--that did not dictate how she should proceed caused more anxiety. The task was intended to help the student take on the kinds of behaviors that would expand her role, such as becoming an analyst and informed evaluator. However, the independence the assignment offers increased the stress the student already felt and also engendered hostility.

VI. Addressing the Struggles of Students.

Responding to students' struggle involves changing the way we do things. We begin by explaining our new model. We talk about student-centered learning during the first days of class. We emphasize the roles that we expect for ourselves—guide, advisor, and facilitator—and for them—initiator, experimenter, collaborator, decision-maker, problem-solver, and expert. We tell students that in these roles they may find themselves at times in a state of disequilibrium. To address any concerns at the student's point of need, we regularly ask for updates on their experiences as they are immersed in a particular project. At the end of the first month in class this fall semester, the students were asked to respond to three questions: "What is working for you in the class?" "What is not working, and why?" and "What do you need from me?" One student responded to the first question: "I get to think for myself and figure out how I am going to do the project." Another student responded to the same question: "The things I need sometimes is a better understanding of what exactly you want in different assignments." This student's statement appears to mean "Tell me what you want, and I will give that to you." It is a vestige of the Instruction Paradigm that many of our students embrace and feel secure with. In each of our classes there are students who voice this same need. To assuage frustration, we send

emails to our classes, encouraging students to send us their questions or concerns as they encounter them. During the first assignment, we answer many questions. As students move to the second and third projects, they ask fewer questions and become more comfortable making their own decisions. As the semester progresses we are asked fewer of the types of questions that relate to what we as teachers want them to do, and the questions switch to specific matters, such as audience, document design, and evidence/support.

Another strategy that has served to assist students with the changes in our teaching has been to ask students to serve as class leaders (usually five students will serve as class leaders for a class of twenty-five students) who answer questions, listen to the ideas of fellow students, make suggestions, and identify resources. This allows students who are more comfortable making decisions to utilize their skills as leaders and provides more support for students who have not had experience in this area. It also looks good on a resume for a student who has not had much work experience. As an example, a class leader showed a fellow student how to find maps online of the Brownsville/Matamoros border to identify the existing bridges between the southern United States and Mexico. The student, whose brother is a Border Patrol agent, was working on solutions to the problem of congested traffic as drivers cross from Mexico to the United States. We encourage such collaboration among our students to meet the challenges within the projects. The student-centered pedagogy allows them to emerge as experts.

VII. Teachers Accepting the Change.

In this type of approach teachers must be able to look at their roles differently as well. They must be able to give students freedom to work on projects as they make discoveries, encounter difficulties, and change directions when they need to. Students will be in charge of these matters. Further, teachers must be willing to share authority as contact persons in the community will be involved in directing the students' learning, providing feedback, and assessing documents. In evaluating students' work, the teacher must look individually at each student's goals for a project, recognizing that the learning that is important for one student will differ from the learning of another. Knowing what to look for in these student-specific assignments requires not so much more attention but a different perspective. There is no one acceptable end product to look for. We evaluate as much the process and the growth and change from where the process occurred as we do the final documents. And various methods of evaluation are needed due to the varied nature of the projects. Finally, teachers must be prepared to deal with the anxiety and frustration of those students who find security and success in the traditional instructional paradigm.

VIII. Conclusion.

Now, when we step into the classroom, we embrace the role of learner, we share with students the reasons why we use these approaches, and we continually assess students' needs and progress. This alteration in our roles affects the roles that students assume as well. In our course we stress that learning is a process that occurs through social interaction and problem solving. We recognize the importance of describing to students how we have restructured the learning opportunities and explaining that we expect them to extend their roles to include more decision making and personal investment. We tell them that we will have more contact with them and that

contact will be in various forms that may be different from what they are used to receiving in their other classes.

When students walk into our classes they ask "What is technical writing?" In our model technical communication becomes an individual set of decisions, and students internalize the process of making choices. The model has broader implications. Our students represent many majors from across the university. Their experiences in our classes help them to begin to put a face on writing; they understand that the documents they create have a great impact on the lives of many. And even as we continue to work to address the struggle that students may experience, we are changing the expectations they bring to our classrooms. We are moving them away from a dependence on us, away from passive learning. By allowing students to make their own decisions, we help create their authority as students and as technical writers who can think critically. Our model is one response to the call for change issued by Selfe: as public spheres involve more complex issues, not helping students to address "these issues at multiple levels signals our own ability to lead productively as professionals and citizens" (322).

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