Learning a New Field: How Writing Can Help

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Letters & Science
Program in Writing Across the Curriculum

Teaching students about ways of thinking and writing in specific disciplines is a teaching challenge for faculty across campus. It’s not an easy task to introduce students to a new subject area, especially in just 15 weeks! One outstanding example of an introductory graduate-level course in the Educational Psychology department taught by Assistant Professor David Williamson Shaffer is designed to help new Master’s and Doctoral students think and act like learning scientists through an innovative combination of web-based weekly writings and a longer, sequenced term project that integrates original data collection with theoretical analysis. What’s more, the 10-19 students from across the learning sciences who enroll in the class perform these communicative acts in a highly collaborative setting where they enjoy substantive peer review and instructor feedback while learning from others’ shared public writings.

Professor Shaffer’s own research as an Assistant Professor of Learning Science in the Department of Educational Psychology investigates the ways that technology mediates thinking and learning and the ways that professions like architecture, engineering, and journalism are models for technology-enhanced education. For the past five years at UW-Madison, Shaffer had called on his training from the MIT Media Laboratory and his interests in cognition and learning to design and construct a two-semester graduate course sequence in the Department of Educational Psychology (Ed Psych 795 and 796) titled Introduction to the Learning Sciences I and II.

Students who enroll in 795 and 796 conduct original research on how people think and learn, whereby they regularly write and communicate with one another about the design of learning environments and theories of the nature of the human mind. Throughout the two-course sequence, they are reading high-level research, making sense of socio-cultural and symbolic perspectives of cognition, and designing and conducting original research projects.

Using Writing to Learn Course Material

Because the course was designed around learning about learning, it was important to Professor Shaffer that students be able to internalize the ideas they were studying for the course. Believing that writing would be a good method for accomplishing that goal, Shaffer designed the course so that students were using their writing to think by regularly posting to the course website, sharing their work publicly, and collaborating and revising their thinking as a result of participating in a learning community: “It was a priority for me to create a public audience for student work,” he explains. “Students are able to internalize their read-

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ers’ critical advice and revise based on how their writing gets taken up. That’s what it means to be in graduate school and to be introduced to thinking like a professional researcher.”

Informal Writing Sets Up the Major Project

Introduction to the Learning Sciences combines a series of shorter informal writings students post on the course website with a longer, more substantial report written, reviewed, and revised during the last 10 weeks of the semester. To prepare for that final paper and the formal data analysis it demands, students write short commentaries on the weekly readings they do for class and post them the day before class meets that week. “Assigning these informal web-based writings helps me see how students understand the theories of the course,” Shaffer maintains. Commentaries must include a brief summary of the main points of one of the readings for that week, along with a question or issue that the reading raises. Shaffer then uses these commentaries to launch class discussion.

While students are reading, commenting, and raising questions about the course through their weekly informal writing assignments, Shaffer ups the ante by moving students from the role of a classroom learner to the role of researching other students and learning contexts. Students in 795 and 796 thus conduct short data-gathering sessions of about 3-4 hours where they collect ethnographic data from a variety of learning environments. They then write a 1000-word description of their observations and post them to the course website, another shorter assignment that prepares them to write their final analytic paper.

Shaffer is committed to having students share their work with each other through this stage of their learning process in the class. It enables what he calls “constructing a public gaze on student work.” Sharing writing among classmates, Shaffer contends, allows students to learn from each other and to gauge what are typical and acceptable standards for reporting data. “They are learning what it means to be researchers in this field,” Shaffer contends. “Part of that means reading and commenting on other researchers’ work.”

The Major Project: Making It More Manageable Through Sequencing

In the major project, students analyze the data they gathered from their observations, using the ideas and theories they’ve read about for the course. Explains Shaffer: “Students put theory into practice and use ideas about learning to understand with some depth and subtlety how learning takes place in an environment, using the readings of the course as models.” Papers address topics like technology use in a mathematics course for pre-service high school teachers and learning in a high-intermediate class in a Madison Chinese school. The genre is very much a social-scientific report that includes an introduction, a description of the theory students are using to explain their data, a description of the setting and observations of the study, a connection between the data and the theory used, and a conclusion that points to implications of the research.

To make the project more manageable for students, Shaffer sequences it into four stages: topic proposal, rough draft, full draft, and final draft. He points out that for beginning graduate students in the learning sciences, “this is a difficult and ambitious project. It’s important they learn how to do this kind of research and writing well.” Because he sequences the final paper into smaller steps, students can concentrate on each stage more fully. For example, Shaffer sees the topic proposal stage as extremely important to the process of writing the final paper. Students should “focus in particular on how studying this learning environment helps explain something about the relationship between individual and group activity in learning,” he writes in his syllabus.

After topics are approved, students move to the rough draft stage of the writing process. A rough draft includes an outline of the paper, some sections of the text, and graphs, figures, or examples from the data. Students don’t receive comments on this draft; rather, its purpose is to show that substantial progress is being made. One week later, students turn in a full draft to the course website. This draft is “a complete paper that would be acceptable to turn in as a final draft,” says Shaffer. It receives extensive feedback from Shaffer (see sidebar on page 4), including a tentative grade for the paper as a whole.

Then, students present and review each other’s drafts in class over the course of about 3 weeks. Peer review helps students work through their understanding of the theories they use to interpret the data they gather.
Below is an excerpt from the Boyer Commission on Educating Undergraduates in the Research University’s report titled “Reinventing Undergraduate Education: A Blueprint for America’s Research Universities.” In the report, the Commission makes several recommendations about communication skills and subject areas, reprinted below. We thank the Commission for allowing us to reprint this section.

Section V.
Link Communication Skills and Course Work

Undergraduate education must enable students to acquire strong communication skills, and thereby create graduates who are proficient in both written and oral communication.

The failure of research universities seems most serious in conferring degrees upon inarticulate students. Every university graduate should understand that no idea is fully formed until it can be communicated, and that the organization required for writing and speaking is part of the thought process that enables one to understand material fully. Dissemination of results is an essential and integral part of the research process, which means that training in research cannot be considered complete without training in effective communication. Skills of analysis, clear explanation of complicated materials, brevity, and lucidity should be the hallmarks of communication in every course....

Communication in Every Course

From the freshman seminar to the senior capstone course, communication skills should be integrated with the subject matter. Freshman composition must be cast in a new form intimately related to a student’s other courses. Instructors throughout the curriculum need to build opportunities for written and oral presentations into their course outlines, so that experience and confidence can grow continuously. Faculty members need to assign papers as part of normal course expectations and to create examinations that require demonstration of writing and analytical skills. Communications must be similarly emphasized in the education of graduate students.

Recommendations:

1. All student grades should reflect both mastery of content and ability to convey content. Both expectations should be made clear to students.

2. The freshman composition course should relate to other classes taken simultaneously and be given serious intellectual content, or it should be abolished in favor of an integrated writing program in all courses. The course should emphasize explanation, analysis, and persuasion, and should develop the skills of brevity and clarity.

3. Writing courses need to emphasize writing "down" to an audience who needs information, to prepare students directly for professional work.

4. Courses throughout the curriculum should reinforce communication skills by routinely asking for written and oral exercises.

5. An emphasis on writing and speaking in graduate courses will prepare teaching assistants for research, teaching, and professional roles.
for their papers, allowing students the freedom to hear and make comments on each other’s work over the course of the writing process. Says Shaffer: “When students read each other’s work regularly, it helps them understand the theories better as they are mediated by their classmates’ writings.” Revision is necessary too because of the length limit: just 2000 words. “Having a limit like that makes revision more economical,” he says.

Students are often surprised by how helpful the revision process is. Said one former student: “Hearing others’ criticism really helps me see and know how my writing gets interpreted.” Shaffer emphasizes that students should be prepared to explain to their peer review group what they’re claiming in their papers. “I want them to be explicit and constructive in their claims and in their responses,” he notes.

The Value of Writing
Professor Shaffer’s Educational Psychology 795 is certainly a lot of work for beginning graduate students in the learning sciences, and Shaffer admits that not all of the students immediately appreciate the extensive writing and reading they do. As the course moves toward the major project, though, students see the value of having written about the course readings on a weekly basis, as well as the importance of having read each other’s weekly writings. They are better able to retain and recall the theories they’ve learned and to use them more critically when they analyze their data.

“Writing about the weekly readings helps students get ready to do the work of taking a text from the course and digging more deeply with it when they analyze their data,” Shaffer says. “And peer review helps them understand theories of the course better.”

These two steps combined help to coach students toward success with their final papers. And, with the substantive feedback they get from Shaffer and their peers through the review process of their drafts, most students end up doing quite well in the course. “Shaffer sets it up well for us,” said a former student. “I learned a lot through the writing assignments, and I realized that revision is a big part of what it means to be a writer and researcher in the learning sciences.”

To view the syllabus for Educational Psychology 795 and 796, visit <http://www.education.wisc.edu/edpsych/facstaff/dws/>.

Sidebar:
Professor Shaffer responds to a first full draft

Student’s Draft: According to the American Planning Association code of ethics, the primary obligation of planners is to serve the public interest. As a result of planners’ commitment to serving the public interest, they engage in the process of public participation. Planners owe diligent, creative, and competent performance of the work they do in pursuit of their client or employer’s interest. Such performance, however, must be consistent with their faithful service to the public interest. To mediate this conflict, planners call upon their skills, knowledge, and values to exercise independent professional judgment on behalf of their clients and employers while dealing fairly with all participants in the planning process. Important planning values include serving the public interest, working for the truth, and maintaining the honesty of the data.

Shaffer’s Comment: oh, just lovely! go get ‘em, Tiger!

Student’s Draft: This study examined Urban and Regional Planning 912, a capstone practicum planning workshop that provides graduate students with training in planning practice. In the class, 25 urban and regional planning graduate students, 14 females and 11 males, all white,

Shaffer’s Comment: how much of that demographic info is important to your argument? presumably you’re not going to tell me about their hair color. is there some reason to think their skin color or gender is any more important here?

Student’s Draft: worked in teams of four to six over the course of the semester to develop a plan to address an applied community issue.

Shaffer’s Comment: what does that mean?

Student’s Draft: The course’s goal was to help them sharpen

Shaffer’s Comment: colloquial. do you mean “improve”?

Student’s Draft: their planning skills while

Shaffer’s Comment: odd choice. do you mean "through"? or are you implying that it was important pedagogically that they were actually helping someone? if so, you might say that more clearly. but if the latter, how do you know? isn’t that actually evidence, rather than method?

Student’s Draft: assisting a local community group, government agency, or non-governmental organization.
Welcome to the Writing Center’s New Science Writing Specialist!

As the newest member of the Writing Center’s academic staff, Nancy Linh Karls was thrilled to join UW-Madison in August 2005. She’s especially excited about the opportunity to work in the UW’s world-class writing center, which she notes is internationally renowned for its impressive integration of theory and best practices. Nancy also carries a deep respect and admiration for her Writing Center colleagues, who “continually go above and beyond” to assist students and faculty with writing issues of all kinds.

In her new role as Science Writing Specialist, Nancy wears a number of different hats. She conducts one-to-one sessions with graduate and undergraduate students on writing in general and on science writing in particular. She also teaches a variety of Writing Center classes, which range from “Writing for Graduate Nursing Students” to “Writing Literature Reviews” to “Writing Research Posters.” In addition, Nancy works closely with faculty across the curriculum, facilitating writing workshops in such disciplines as Biochemistry, Dietetics, Geology, Pharmacy, and Veterinary Medicine.

Nancy recently returned to the Midwest after four years as Assistant Professor of English and Director of the Writing Center at the University of Colorado at Denver and Health Sciences Center. Although she misses the natural beauty of the Rocky Mountains, Nancy is very happy to return to her Wisconsin roots. A cheesehead from “the only Waunakee in the world,” Nancy received her B.S. in Biology and English from St. Norbert College and her M.A. and Ph.D. in English from the University of Wisconsin-Milwaukee, where she specialized in rhetoric and composition.

Visit the WAC Website!

- Find discipline-specific pedagogical advice for teaching with writing.
- View and adapt sample writing assignments.
- Arrange for individual consultations with Writing-Across-the-Curriculum staff.
- Find out about training for Communication-B instructors.
- Read advice about responding to student writing.
- And much more!

http://mendota.english.wisc.edu/~WAC
**COMING IN SPRING 2006: FACULTY SEMINAR ON TEACHING WRITING IN YOUR DISCIPLINE**

This spring semester, join the Writing-Across-the-Curriculum Program for an exciting new seminar series on teaching writing in your discipline! In this 4-part event designed for faculty and instructional staff, we will cover the following topics:

- Designing and developing successful assignments;
- Responding thoughtfully to student writing;
- Conferencing with students one-on-one about their writing;
- Knowing the current research on using writing to help students learn course material; and
- Integrating writing assignments into a content-heavy course.

The seminar series will take place from 12:30-2pm every Friday in February. To ensure full participation, attendees are expected to attend each session. Space is limited to allow for good discussion and active participation.

To enroll, please contact Brad Hughes, Director of the L&S Program in Writing Across the Curriculum, at 263-3823 or at bthughes@wisc.edu.

We hope to see you in the new year at the Faculty Seminar on Teaching Writing in Your Discipline!

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**THE NEWSLETTER OF THE L&S PROGRAM IN WRITING ACROSS THE CURRICULUM UNIVERSITY OF WISCONSIN-MADISON**

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