

Instructional Technology and Faculty Development: How iWRITE Challenges Course Design and Teaching Methods

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Abstract. Use of the web-enabled software iWRITE in courses across the disciplines at several Canadian universities demonstrates that implementing instructional technology can lead faculty members to reconsider and reformulate their teaching methods. iWRITE operates in course-specific sites. It supports the integration of writing into disciplinary courses by displaying examples of past student work alongside grading criteria and instructor comments. Instructors unfamiliar with learning theory that validates the use of models may initially fear student copying or distrust the adequacy of student samples as guides, but many have rethought their assignments and strengthened other methods of instruction to take advantage of this method. In co-taught courses, selecting benchmark papers and formulating grading criteria requires examination of disciplinary values and frank discussion of standards. The effort of writing clear comments on the student samples also requires explicit formulation of disciplinary assumptions about the nature of knowledge and the relationship between writing and thinking.

Keywords: instructional technology, writing in the disciplines, faculty development.

1 Introduction and Background: The Design and Aims of iWRITE

Instructional technology can both help and hinder our teaching. We need to know more about how it affects our work—both our larger aims and our practical activities—before we can decide how best to employ it. It may well bring us efficiency in the long term, but only if we know what we want to do with it and how it fits with the principles that shape our work.

As Coordinator of Writing Support at a large research-intensive university, I have had ample opportunity to study the impact of one piece of instructional technology in a range of university disciplines and a variety of teaching situations. My software iWRITE is intended to help instructors demonstrate their expectations for written work, a major challenge in any effort to integrate writing within disciplinary courses.

It operates in the form of course-specific websites with password-protected access. Each site offers examples of past student work (used with the consent of their authors, and mostly chosen from good or very good papers) that are displayed near a course statement of grading criteria and side by side with detailed instructor comments—thus *showing* as well as *telling* what qualities are valued in written work for the course. iWRITE sites may also include idea-generating Prompter exercises and an online Peer Review component. Except for Peer Review exercises, using iWRITE is always voluntary. Each site has a built-in survey asking for user feedback. The PHP program itself offers instructors a set of interconnected spaces to fill with the samples they select, framed by the criteria statements they formulate, and explained by the detailed comments they write. In other words, instructors have to work hard to create an iWRITE site. I offer them technical help as needed, and also make clear that I or another writing instructor will be available to discuss the content for their sites [1].

In fact, that is one reason iWRITE was designed as empty boxes rather than pre-filled containers—to bring together course instructors and writing instructors to work through questions about the instructional design of specific courses. iWRITE does presuppose two interrelated principles of instruction that may challenge unstated assumptions about power and ownership of knowledge. The basic principle underlying its design is the use of models or examples for learning. iWRITE directly challenges current anxieties about plagiarism and copying by supplying students with relevant texts to imitate in their own work. Logically speaking, the inclusion of those texts in an instructor-sponsored course site makes copying impossible, but fear of plagiarism is still the first reaction of many instructors to the idea of showing student samples. As Howard and Hillocks have both noted [2,3], many faculty members seem to retain Romantic ideas about originality, and may envision students using the samples as templates rather than expressing their own ideas. Others express misgivings about "spoon-feeding" the students by being so directive in the comments and the prompters. I am less sympathetic when they phrase this misgiving as "giving too much away."

A related and sometimes unsettling principle underlying iWRITE is that people can learn from their peers as well as from their teachers. Learning theorists including Vygotsky [4], Lave and Wenger [5], Bandura [6] and Bruffee [7] point out the ways apprentices progress by observing those who are just ahead of them in the process of becoming skilled practitioners. Some instructors, however, feel that giving prominence to students' immature and flawed work threatens disciplinary standards and undermines their own authority. As early theorists of online writing instruction realized [8,9], full use of the new electronic media generates so many different types of texts, including those created by students themselves, that there are literally many authors, not just one spokesperson for the approved type of discourse.

iWRITE was commissioned initially by university administrators who wanted me to "do something with technology" to help teach writing at minimal expense to huge numbers of students. I will not claim even in this panel on "multi-model efficiency" that iWRITE is a magic bullet or a shortcut for the instructional situations it addresses. The efficiency it yields is a matter of longterm investment in course design and resources rather than of immediate payback. I hope to show that iWRITE has been valuable in part because it leads course instructors and writing instructors to think more deeply about principles and practical ways for integrating the learning and

teaching of writing within courses in the disciplines. I see iWRITE as a case study for the difficult but rewarding enterprise that the American Boyer Commission [10] challenged all research universities to undertake.

My analysis is based on my experience across the University of Toronto and my observation of courses in other universities that have adopted iWRITE. This paper will include accounts of resistance, discouragement, and conflict within teaching teams. I will tell stories out of school about iWRITE's role in uncovering flaws in course design and delivery—and sometimes in helping solve them. Many of these challenges and conflicts come from tensions within the instructional enterprise itself, exposing issues that might otherwise have been left unexamined. I will cite real people and real situations rather than merely outlining intentions and hopes, but will use names only where I have sought and been given explicit permission to do so.

2 Reflection and Reconfiguration

The core narrative about iWRITE is brief: setting up course sites makes instructors think about what they are asking students to do, and thus enriches their awareness of course content and teaching methods. One of the early adopters, John Browne, told me exactly that story. He noted that although he had to take six weeks rather than the one or two he had budgeted to set up iWRITE, he gained new awareness by doing so:

I had to ask myself many questions before I could even begin the task. What really were the goals of the course? How were the goals reflected in the assignments? Were the grading criteria for the assignments consistent with the course goals and with the best practice in the field? How could the Prompters model best practice for novices? What, in fact, *were* the best practices?" (J. Browne, personal communication, January 2006)

Browne noted a specific instance of this rethinking. In setting up a Prompter exercise, he needed to think through a textual feature he had taken for granted, the use of a thesis statement to frame literary essays. As he started creating the Prompter instructions, conferring with me and other colleagues, he found that he wanted to focus on the process as much as the result. His real teaching goal, he realized, was to show that scholarship proceeds by questioning what is already known, developing tentative answers, and proceeding to test those answers by yet further questioning. His Prompter now shows students how to frame focus questions as starting points, then develop them by inquiry and analysis. When Browne looked again at the samples he had chosen, he revised his comments on one unsatisfactory paper to clarify that its problems came from a thesis too neatly stated and too easily supported rather than being examined and tested. The material on his site now reflects a richer and more complex teaching method and a more grounded view of writing as a tool for thinking.

3 Teamwork: Insider and Outsider Contributions

Most iWRITE sites are created for large courses staffed by a lead faculty member and a squadron of teaching assistants (TAs) who mark student work. Ironically, this

arrangement requires the least experienced members of the team to perform a task that has been recognized as among the most challenging in writing instruction [11]. It makes iWRITE valuable as guidance to the changing cohorts of inexperienced TAs as well as to students. Sometimes, in fact, it is TAs or junior faculty who can best define the issues for both audiences.

The first iWRITE sites were team efforts between me and junior instructors in Sociology and Biology who had been delegated to create site content. Each was fully able to identify the good and problematic elements in the sample student texts, but found it hard to explain *why* specific details were suitable or unsuitable, or *why* something was a fine introduction or a good sentence. My role as the writing instructor was to keep asking that question and sometimes to hazard a guess—if only to be corrected—about what exactly was wrong with the word or good about the introduction, why that particular aspect of the piece was worth commenting on, how a student could approach the challenge differently. In the end, some explanations referred to the conventions of genre or discourse, but most touched on the nature of evidence and reasoning in the two disciplines.

I suspect that by the end of that summer the Sociology TA considered my questions something of a nuisance, but he said he was pleased to have learned to be explicit and constructive as a grader. He also told me that he had internalized my type of question in writing his own dissertation. The Biology instructor was already noted for her ability to explain the technicalities of her subject, and she was open to developing the same abilities for explaining writing. As she worked her way through the technical papers chosen for the site, her explanatory comments on flaws of style and reasoning became exquisitely detailed. Facing the need to construct iWRITE comments had brought her to examine her own learning patterns as a student and novice researcher so that she could hear the potential student user asking "What else can I do, then?" Her later work on an iWRITE site for a more advanced course shows the same type of empathy: the comments are now more concise and nuanced, setting the standards higher but still making the advice attainable. It is no surprise to know that this same contributor now runs a private business as an editor of scientific writing.

4 Team Tensions

Issues of collaboration and integration are harder to solve when teaching is done by a team. In theory and sometimes in practice, the discussion and clarification of expectations among team members—whether co-teaching the same section or each teaching different sections—can help improve the focus and consistency of the course. Barbara Rose will outline the process she went through in setting up a major iWRITE site for a multiple-section course, where she managed to obtain consensus about the choice of papers, their grades, the reasons for the grades, and the direction for helpful advice. She may also describe the continuing challenge of maintaining this agreement and of adapting the site to respond to changing views.

In a number of cases, however, I have seen noble aims come to grief because of the inability of instructors to agree on which papers deserve which grades, even before getting to discussions of the reasons why. I have been told of several course meetings

where faculty members taking the lead on an iWRITE project were left feeling shaken at the acrimony of discussion, with colleagues accusing each other of subverting university standards or even undermining the integrity of the discipline because of the way they assessed papers by each other's students. They probably did not thank iWRITE for exposing these disagreements so publicly. But it is worth remembering that students have to move among classes taught by such instructors and face the same discrepancies among their expectations.

One site has taken shape after two years of intense discussion among course instructors in a small department. They initially thought it would be easy to show students what a good essay was in their discipline. In trying to select papers for display, however, they discovered they could not readily explain that point even to each other. They persisted in trying, however, and eventually reached a working agreement on appropriate samples and types of grades and comments. Their site is now available to students in all first-year courses in the department. It contains a rich variety of assignments and a range of comments. Most comments are described as being by "course instructors," but a number are designated as being by "Instructor A" or "Instructor B." Students will see a core consensus, but also become aware that there are different approaches in the department.

Maintaining course sites also requires ongoing consensus and commitment from all the instructors involved. Another story unfolded this year, when one instructor in a multi-section course broke ranks to create a new iWRITE site for her section, working first with a student assistant and then a writing instructor. The pervading issue here seems to be the need for understanding of collaborative roles in such an enterprise. "Whose course is this anyway?" was the recurring question.

The process for the original site had already raised issues about collaborative roles. A writing instructor had realized the potential of iWRITE for her group workshops on exam preparation for a large first-year course where students wrote essay answers worth 30% of the grade in two course exams, but did no writing otherwise. The lead course instructor agreed with the idea, supplied samples, and explained the application of the course grading criteria, but left the writing instructor to write the comments and create a Prompter in which students could draft answers for the workshops. Initial results were encouraging. Students used the site heavily and praised its usefulness, attendance at the workshops increased, and the instructor kept using essay questions. After three years, however, the sample sets on iWRITE were outdated and new ones were not forthcoming.

Enter a new course instructor with a strong commitment to helping students succeed in this high-stakes but low-instruction writing. Julia Richardson wanted to offer her students believable examples of real work done in real conditions, and hoped that a renewed site would encourage them to try a variety of approaches rather than a cookie-cutter formula (Richardson, personal communication, November 2006). She collected over 100 sample pieces, hired a student assistant to help select from them, and enlisted the same writing instructor to mount the material once it was prepared.

Richardson could not change the types of writing tasks in this multi-section course. She could, however, draw on her experience with students and on her knowledge of the qualities that constituted good and poor work in her discipline to overcome the first problem, a false start because the student assistant did not have this experience. He took the collection of pieces and tried to quilt together sections from different

answers to create samples where every part received a clear A, B, or C. Richardson knew that the path to real answers was often bumpier than that. Answers could be excellent in one aspect but poor in others, sometimes from weaknesses in knowledge, but sometimes from misjudgements about timing or proportion. She saw, for instance, that the strikingly good A answer covering five handwritten pages in the exam booklet had cost the author so much time that she was barely able to finish the rest of the exam. It was also useful for students to know that some B answers could have been As if they had included a clear diagram or mentioned an opposing viewpoint, and to see that some A answers still included occasional flaws in language.

Even more of a problem was the tension that arose between Richardson and the writing instructor over how much weight to give to qualities of writing compared to qualities of reasoning. For this site, Richardson drafted the comments herself and asked the writing instructor to look them over and link them to the samples. In pasting text from Word into input boxes, the writing instructor started to feel as if her pedagogical insights were being ignored and that she was being used as a technical assistant. To her mind, some of the answers receiving marks as high as 18 out of 20 were confused and unclear. She was also perturbed that papers presenting clear arguments did not always receive due recognition. For a few days the completion of the site seemed to be in question. Eventually Richardson offered the writing instructor a chance to speak to the class about writing issues, and after a well-received presentation, both realized that their perspectives were not so far apart after all. The comments eventually linked to the sample papers focussed mainly on content issues, but also noted strengths and weaknesses in style and structure that decreased the answers' effectiveness. They pointed out, for instance, that the long A answer not only covered more material than necessary, but was also wordy and overly fancy in phrasing. The excellent argument that received only a B digressed at one point and misunderstood an aspect of the topic. Eventually, both instructors also agreed that the slang and language errors that bothered them were not as important in an exam answer as they would be in a formal paper—but could still be noted in the comments as a concern in academic writing. The writing instructor now has free rein to insert more such comments on papers on the new site. Moreover, her perspective has taken a place among the course topics, and her practice workshops are drawing record crowds of students wanting to hear how developing writing skills can help them demonstrate their knowledge of course material.

5 Making Problems Transparent

One more example will suggest the positive outcomes of such negotiations between writing and disciplinary knowledge—negotiations that become public because of the online distribution of this type of instruction. Even students can have an effect on the design of a resource such as iWRITE, as long as instructors are willing to observe and listen to them. A new first-year Engineering Design course for the cohort of 1100 entering students is a flagship for integration of disciplinary and writing instruction at the University of Toronto—and a huge challenge to teach. This required two-term course has absorbed several courses on Engineering ethics and professional practice, and has replaced a suite of courses that included ESL instruction and technical

writing. Now the course is co-taught by writing instructors appointed to Engineering and other faculty members from a range of Engineering specialties. The course focusses on the process and methods of Engineering projects, including team work, record-keeping, and communicating with members of the public as well as technical experts. Students eventually implement an actual design project with clients from community and non-profit organizations. They thus need to learn the conventions of several types of communication, and they need to manage the processes of iterative document cycling among members of their work teams for peer review as well as grading by various types of instructors. The 50-some instructors who coach students through the various stages of their work also stand to benefit from explicit guidance on what is considered acceptable work in the course.

iWRITE was an obvious choice to support this enterprise. The lead instructor, a research professor in Mechanical Engineering, collected student samples from the initial trial run of the course and enlisted a writing instructor to work with her on appropriate comments. In all, they chose and annotated 35 samples for the 15 different components of the project documentation. As the course unrolled during its first full-scale implementation, the lead instructor created 22 Prompters to take students through the steps of analysis and drafting needed for the various phases of the design project.

As might be expected from such a large enterprise, challenges arose in implementing this course. Students certainly noticed problems and pointed them out—by being restless during lectures, complaining about grades, and making some negative remarks about the course in their opinion surveys at the end of the year. It was also troubling that although nearly 100% of students looked at the samples and comments on iWRITE, only a minority used the Prompters. Mid-year and final surveys given by the course instructors and responses to iWRITE's built-in questionnaire helped define the nature of their concerns, which mainly concerned inconsistencies between Prompter instructions and the grades they had received. Students' abilities to express themselves strongly were quite evident in their angry and often sarcastic responses, well backed up by concrete examples. They needed to be taken into account in the ongoing development of this new course.

Having helped reveal underlying problems with the course, iWRITE has helped address them. Introductory screens, internal comments, and Prompter instructions now all emphasize that the goal of the course is application of Engineering reasoning and the rhetorical principles of audience analysis; they are not simply templates for written products. The Prompters have also been recast to make more explicit their applicability at different stages of the course, reflecting the increasingly complex material and increasingly professional roles students have to play in the second-term design-project iterations. And they have been thoroughly checked for consistency.

I found myself volunteering to take on this work of revision for the second year of the course, and I thus ended up reading through course material, cornering instructors at social occasions, and dropping into lectures. I followed up by sending revised Prompters to these contacts for their information and comment. In all this work, I found I had much to learn myself about collaborative writing and iterative revision. I have now accepted the use of "shall" where I would have insisted on "will" or even "would" (because "shall" expresses a legal constraint or promise), and have seen the need to eliminate such standard academic hedges as "usually" and "perhaps" (because

they are imprecise). I have now also accommodated my advice on revision to the Engineering practice of retaining pre-set section headings and then adding and changing material and style within them rather than reorganizing freely.

I am still in the middle of this process, and can report that it is stimulating, frustrating, and productive in about equal measures. Students are using iWRITE as heavily as last year and, as they move into individual work on the second of their three project iterations, are also starting to turn to the Prompters for guidance.

6 Resistance and Adaptation

Although iWRITE is a success in terms of numbers using it (over 10,000 at this 72,000-student university) and the enthusiasm of students who have access to it, I still meet much faculty resistance to adopting it for their own courses. The fear of student copying, or of undue imitation, remains a strong deterrent to many who hear about iWRITE from their colleagues or at my faculty workshops. To deflect it, I like to volunteer that I know of only two cases where students got into trouble by misusing iWRITE material. In one very large first-year course, a student handed in as his own work the exact same text as one of the iWRITE samples and was immediately charged with plagiarism. His excuse was that he couldn't do the assigned work, so he chose a D paper because he knew that was all he was worth. In the other case, a student copied an iWRITE sample into her own word-processing file and then changed nearly every word to fit her topic. But she forgot to change the title, and the TA grader then noted how close her work was to the structure and reasoning of the sample. This student was given another chance to write the piece for herself, and was urged to use the Prompters to help formulate her own thinking on the topic.

It is the online presentation of the sample material that makes those kinds of copying possible, but the internal conditions in the course—both the material conditions of huge classes and lack of student contact, and the nature of assignment design—that make them attractive to at least a few students. If instructors have been inclined to recycle a few standard assignment topics, that practice will be made impossible by iWRITE. My most unsettling experience with iWRITE came when a large first-year science course developed an elaborate site to show a sequence of increasingly complex set of lab reports, but then was unable to change the lab topics by the next year, as intended. Students found it hard to come up with different words for their lab reports than the ones on the site, and TAs were faced with the additional burden of trying to assess adequate degrees of paraphrasing. This site was withdrawn from student use after the first year, but can be made available again once the lab topics are changed. Meanwhile, the current group of TAs has requested access so they can see examples of "benchmark" papers and of good commenting practices. They are much happier this year, though their students are still not fully served.

Other practical difficulties remain with the TA role in courses that use iWRITE. In both the cases just mentioned, the TAs in the course knew the iWRITE samples well enough to catch the problems immediately. There may well be instances where graders are not familiar with the iWRITE material, perhaps after a few years of use when the resource has started to be taken for granted, and when old assignment topics may have crept in again. The same situation could arise with new instructors in

multiple-section courses—few of whom will have the energy of Julia Richardson to create their own new sites. TAs and new course instructors also need to read through and master the material on the course site. Here the increase in preparation time is recouped by a decrease in student complaints and by the usefulness of iWRITE as a stock of "teachable moments" for use in advising both TAs and students.

Evidence is also available to defuse instructors' misgivings that students may limit their efforts to imitating approved structures or methods of reasoning. Monitoring of student work in several courses has shown increases in synthesizing of information and more attempts at critical thinking—imitation of higher-level elements rather than duplication of superficial aspects. Students' comments about their experiences of iWRITE [12] show an acute awareness of their liminal situation: they appreciate the chance to look into the world of the successful students who wrote the A and B papers on the site, and then into the dark teacher's room where the instructors write their comments. The most common response to our online questionnaires is that students no longer feel "clueless," as one of them put it. They realize that there are ways of solving the problems posed by course assignments, and that success is within reach. The next most common response is that they realize they should aim higher than they had thought. As one student told us, "I see that I can write a C paper now and might be able to write a B paper, so I should aim at an A paper."

In spite of the satisfaction of hearing such remarks about positive inspiration, I have also had to recognize that samples are equally valuable when they warn against problems and are used for direct instruction. Indeed, iWRITE always positions instructors as the assigners of grades, and it uses their voices as the creators of those guiding comments and the Prompter instructions. It is only fair, after all, to help students avoid injuring themselves on the machinery of their disciplinary apprenticeship. Pointing out flaws in structure and reasoning even in good papers is one way to reassure students that perfection is not expected—especially when the flawed papers and the negative analysis has no personal bearing on the student using the iWRITE site. A number of sites have created special sections to show rewritten sentences or passages as a way of teaching style and coherence in their disciplines. Others comment on how a B paper could have been an A with specific types of revision. In courses where conventions of disciplinary writing are entirely new to students, comments on a C paper can demonstrate the effect of sincere misunderstandings of the task. Comments on surface details of format, including referencing systems, have their own use too—in fact are one way to avoid harping on such matters in class or in repeated marginal notes on students' actual texts. The comments on the iWRITE samples are also useful as models to TAs and writing-centre instructors who are themselves novices in knowing and explaining why some strategies are not valued in particular disciplines.

One final set of evidence leaves me encouraged that even those who do not use iWRITE themselves have gained something from knowing about it. For every course that adopts iWRITE and pulls together the resources to set up its own site, I hear of at least two others that begin to show and discuss student samples in class. The use of grading criteria is already common because of rules for accountability, but I also hear from many people who have expressed interest but not adopted iWRITE that they are starting to make those criteria statements a focus of class discussion and practice exercises. The next stage is often a revision of the statements to make them clearer

and more precise. And a few instructors have come back to say that these teaching strategies were so useful that they were now ready after all to set up an iWRITE site.

7 Conclusion

I sometimes have the heretical thought that iWRITE could be replaced by the Insert Comment function in Word or the Commenting Tool in Adobe Acrobat, backed up by excellent classroom instruction and generous office hours—if instructors only had the time and inclination to interact personally with all their students. But that "if" condition cannot be taken for granted at my university or most others. Thus the advantages to students of all-hours access to the resource make the work of constructing a site worthwhile in practical terms. Nearly all instructors who have created iWRITE sites for their courses have continued to update their sites and use them year after year. The hard work of reconceptualizing approaches and rethinking specific strategies has gained them considerable payback in terms of pedagogical efficiency and effectiveness, and I believe has also made the effort worthwhile in terms of their self-knowledge and satisfaction with their work. Sharing in that hard work has certainly enriched my teaching experience and the ways that I have been able to help integrate writing into disciplinary courses.

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