

Requiring Independent Learners to Collaborate: Redesign of an Online Course

Catherine Collier
University of Rochester

Frances K. Morse
Redwood City, CA

Abstract

“Technology in the Language Arts Curriculum” is an elective course that falls midway through the eleven-course sequence for the Masters of Education in Technology in Education at Lesley University. When the course was prepared for online delivery it incorporated a major collaborative writing assignment that featured the use of networking and peer feedback in the writing process. Data collected during the first two sections of the course indicated serious problems with the collaborative writing assignment. The problems experienced by students and instructors were similar to those reported in the emerging literature about online teaching and learning. The course was redesigned to adjust for these problems. Data was collected for three additional sections, and the lessons learned will be useful to other online course designers and instructors. We point out faulty assumptions in the course design regarding student preparedness, and we recommend that, early in the course, instructors teach and test for mastery of technical and other skills normally assumed in graduate students. We emphasize the need for instructor-to-student and student-to-student trust prior to major collaborative assignments. We propose a thoughtful approach to options and accountability for collaborative assignments.

This paper reports a study focused on the redesign of an online course to achieve its major learning objectives with all participating students. The instructors collected data for five consecutive sections of the course and redesigned the course after the second section to adjust for problems. The improvements measured in the last three sections of the course (following redesign) indicated greater student and instructor satisfaction, as well as improved quality of student work. The lessons learned through the study and redesign process will be useful to other online course designers and instructors.

The paper calls into question the assumptions that underlay the course design; emphasizes the need for instructor-to-student and student-to-student trust prior to major collaborative assignments; and recommends that online instructors teach and test for mastery of technical and other skills normally assumed in graduate students. Finally, the paper introduces a thoughtful approach to accountability for online collaborative assignments that the instructors have found to work effectively, especially with those online students who are independent learners.

Background

“Technology in the Language Arts Curriculum” is an elective course that falls midway through the eleven-course sequence for the Masters of Education in Technology in Education at

Lesley University. Before being offered online for the first time in the summer of 1998, the traditional face-to-face course was significantly revised for online delivery to take advantage of the power of online technology for collaborative writing. The new course highlighted the use of networking and peer feedback in the writing process. A major assignment in the course was the “collaborative mini-research paper.” In this assignment, pairs of students were asked to select a topic, read widely on the topic, generate a guiding question, and jointly write a 5-7 page paper that explored their question. The paper was to be seamless and well-developed, which required a good outline and ongoing peer feedback and revision.

A number of educators and researchers influenced the design of the collaborative assignment and the design of the course. Since one major goal of the course was to prepare graduate students to use technology in their K-12 language arts activities, the writing process approach of Nancy Atwell (1998) was particularly interesting, as was Kuhlthau’s (1993) approach to the research process. Edgar and Wood’s (1996) experience informed the approach to online collaborative writing. Judith Harris’s (1997) extensive discussion of online collaborative project design was considered. The emphasis of Bourne, McMaster, Rieger, and Campbell (1997), on the importance of detailed materials and clear expectations in online course design was taken seriously. Finally, Brumberger’s (1999) observations that the high cost of collaborative writing projects in a course is manageable with good planning and close monitoring, underscored the instructors’ intention to collect data from a number of sources and to be open to redesign.

In spite of the careful design, data collected during the first two sections of the course indicated serious problems with the collaborative mini-research paper, which required redesign of the course. In each of the first two sections (Spring and Summer 1998), several students who did well with other activities and assignments failed the collaborative paper assignment. Also, several students who did well on the assignment were found to be deficient in important skill areas. The instructors used data collected from multiple sources to assess the areas of difficulty. Data sources included pre- and post-assignment questionnaires, rubric scores for the papers, reflection papers, and e-mail between students and instructors.

Several factors stood out: many students had never done a collaborative paper or project of any kind before the course; several students admitted they were writing their first paper in many, perhaps twenty, years; many students were using a grammar checker for the first time, and several admitted never having used a spell checker; many students disliked working with a partner on a major assignment; while the technical problems of online collaboration was not a barrier to success, students’ ability to collaborate seemed to be a key factor in success; finally, students who experienced the most difficulty with the assignment were reluctant to ask for help from the instructor until it was too late (Collier & Morse, 1999).

The problems experienced by the students and by the instructors were similar to ones reported in the emerging literature about online teacher and learning. Shaw and Pieter (2000), for example, caution online instructors not to make assumptions about student readiness; instead, instructors should require exercises that demonstrate component skills, leading up to major or complex assignments. Winograd and Milton (2000) stress the importance of establishing trust among all participants when engaging in online, technology-supported peer review. Almeda and Rose (2000), who teach writing in 18 different online courses, report that student reliance on the instructor is more intense in online courses than in face-to-face teaching. These considerations—teaching and testing for readiness, establishing trust, and allowing for increased interaction with the instructor—needed to be embedded in the course design.

Just as important was the need to take into account feedback from the students who disliked the collaborative nature of the assignment. As reported by Collier and Morse (1999), many of the students taking the online program regard themselves as independent learners and would prefer to work individually. However, as Cadeiro-Kaplan (1999) points out, in constructivist classrooms it is the teacher who determines learning objectives and outcomes, not the student. To resolve this tension, the instructors felt compelled to examine the collaborative assignment to determine which objectives could only be achieved through collaboration and which could be accomplished as well individually. The success of the resulting redesign will be of interest to online instructors who incorporate collaborative activities as a major component of their courses.

Modifications to the Course

Taking into account the tensions, problems, and possible solutions offered by the online literature, the instructors revised the course to address deficiencies in student skills, to build trust among participants, and to support students in their collaboration. Additionally, the instructors made changes to the collaborative mini-research paper assignment that they expected would focus students on those aspects of collaboration that were essential to the purpose of the assignment. Specifically, the assignment was moved to the last half of the course, enhanced with more instruction concerning peer feedback, and revised to include options for individual work. The sequence of tasks leading up to the paper was reordered to include trust-building activities and a new assignment that addressed skill deficiencies.

The instructors continued to collect data for the next three sections of the course. Data indicated that the modifications resulted in higher-quality papers, greater student satisfaction, and greater instructor satisfaction. Students perceived an improvement in their papers compared to other papers they had written, saw value in the collaborative process, and saw value in the collaborative mini-research assignment, often strongly positive. To the instructors' satisfaction, many students expressed enthusiasm for collaboration in the writing process and indicated a desire to use similar techniques in their K-12 classrooms.

Change in the Nature and Sequence of Course Activities

The collaborative paper assignment was moved to the last half of the course in order to teach editing skills, build trust among the students, and allow students to evaluate their peers as possible partners for the major assignment.

Since the first two sections of the course had dispelled any myths about the readiness of students to write graduate-level papers, the instructors determined that several basic skills and strategies for editing a paper needed to be taught and assessed. A new assignment (the "Wade Boggs" assignment contributed by Lesley adjunct Joan Hamilton) required students to use their spell checker and grammar checker and to apply their own knowledge of mechanics to revise a letter written by an impassioned teenage writer with extremely poor writing skills. Students were also asked to devise an all-inclusive strategy that this young writer could use to improve the quality of his writing. This assignment was carefully assessed, with feedback to individual students concerning techniques for insuring correctness, readability, and style. The feedback emphasized the importance of peer review as a writing strategy. This new assignment was part of the groundwork for the collaborative mini-research paper.

The collaborative paper was moved four weeks later than its original placement in the course, since the students needed more time to develop trust with the instructor, trust among themselves, and enough knowledge of their peers to select a good partner for their collaborative paper. With the major collaborative paper later in the course, students were first required to work collaboratively with five other students on a variety of assignments. The partners for these early assignments were chosen by the instructor. Students were encouraged to assess their new partners as possible collaborators for the upcoming major assignment. The later placement also gave time for the instructors to study and address each student's collaborative performance, writing ability, and level of anxiety around writing assignments and collaborative activities.

Change in the Collaborative Requirements

The collaborative mini-research paper remained a collaborative assignment, with an important difference. Because many students had expressed reluctance to tie their grade to another student's and because at least one student each semester had been severely hampered in the assignment because of poor performance by a partner (Collier & Morse, 1999), the instructors reexamined the components of the assignment to determine which must be done collaboratively and which could be done independently without compromising the objectives of the assignment.

The instructors restructured the assignment. An option was offered: the paper could be an individual or a joint product. However, all students—whether doing an individual or a joint paper-- were required to declare a partner and to engage with that partner in peer review activities that were graded. The peer review addressed three aspects of their partner's work:

- the outline
- an early draft of the paper, for content
- a later draft of the paper, for style and mechanics.

Students were required to submit their outlines to the instructors by a reasonable date, and they received instructor feedback on the scope and structure of the proposed paper. Students were also required to submit evidence of peer review to the instructors by target dates. The peer-review steps were not only required but graded. While only a few points were allotted to these steps, cumulatively the points could make a difference between a final grade of A or A- for the course.

The redesigned course was offered three more times with data collection occurring in Summer and Fall 1999 and Summer 2000. During the three semesters only one student (of 45) missed a single step of peer review; this compares with virtually no peer review during the first two sections of the course. This is only one aspect of improvement that resulted from the course redesign.

Resulting Improvements

An examination of the pre- and post-assignment questionnaires, the students' reflections, and the rubric scores for the collaborative papers shows improvement in three important areas: quality of the student papers, level of student satisfaction, and instructor satisfaction. Data indicates that the following measures contributed to the improvements:

- moving the assignment to the latter half of the course to establish an environment of trust and responsiveness prior to the assignment

- actively teaching tools and techniques for correctness and style
- allowing the option of individual or joint papers
- grading the peer review steps

Improvement in Quality of Papers

Of the 28 papers submitted by 43 students in the last three sections of the course, only two papers received less than B+ quality. Both low-scoring papers were joint products.

In the first case, the two students got off to a late start; during their startup period, the students were encouraged to work on individual papers, since their schedules were very heavy and their ideas for topics did not mesh. However, they felt that a joint paper would be less work. They failed to bring their ideas together. The writing style of their final paper was dense and at times unreadable, suggesting that they had not allowed time for revision. The grade for the paper was 15 out of a possible 20 (comparable to B-). The students' reflections indicated that both took responsibility for the relatively low grade. Both reported that they would do the paper individually another time.

In the second case, the students developed a joint outline and did minimal research on their topic. They reported that technical difficulties cut into their deadlines. Rather than request an extension and refine the paper, they jointly decided to hand in a relatively weak paper (16 out of 20 points). Their reflections indicated that both were satisfied with their research in terms of applicability to their classrooms. Both students reported they had learned new lessons in collaboration and planned to use such techniques as peer review in a responsible way with their students. In short, the students were satisfied with a B quality paper and learned the techniques set forth in the assignment. One of the partners reported that she would write an individual paper another time; the other praised her partner's cooperation but reported that she would write a joint paper with a different partner another time.

All other papers in the last three sections of the course were B+ quality or higher. Four of the student papers earned 18 of 20 points; nine earned 19; and 13 earned the full 20 points. These scores were evenly divided between papers that were written individually and those that were joint efforts.

Improvement in Student Satisfaction

Questionnaires administered to students before and after the collaborative assignment asked for self-assessment with regard to such factors as skills development and quality of the paper relative to others they had written. Students were also asked how they felt about the assignment and if they would do a joint or individual paper another time.

One-fourth of the students in the last three sections of the course reported an increase of one or two levels (e.g., from "poor" to "good") in their ability to write a graduate-quality paper. Students were asked to rate their papers relative to other papers they had written with regard to content, mechanics, and style. For all three categories, the proportion of students in the last three sections of the course reporting "higher" quality increased and the proportion reporting "lower" quality decreased, compared to responses in the first two sections of the course.

Figure 1 indicates that students in the first two sections of the course were more inclined to rate mechanics lower for the collaborative paper relative to other papers they had written.

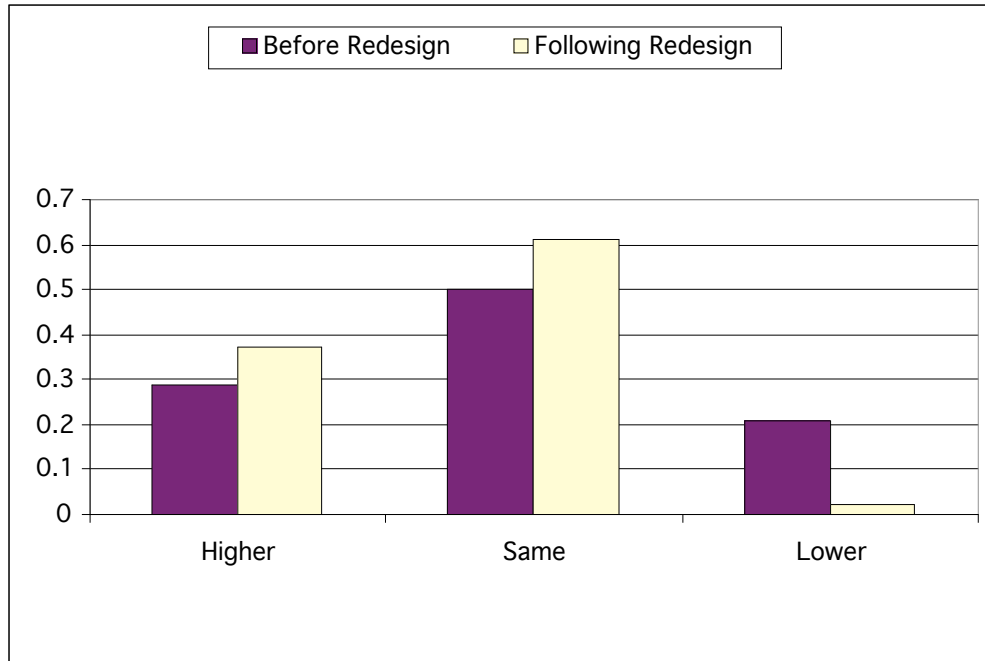


Figure 1. Student perception of mechanics quality.

Figure 2 indicates that four times the number of students in the last three sections of the course (compared to the first two sections of the course) reported better style relative to other papers they had written.

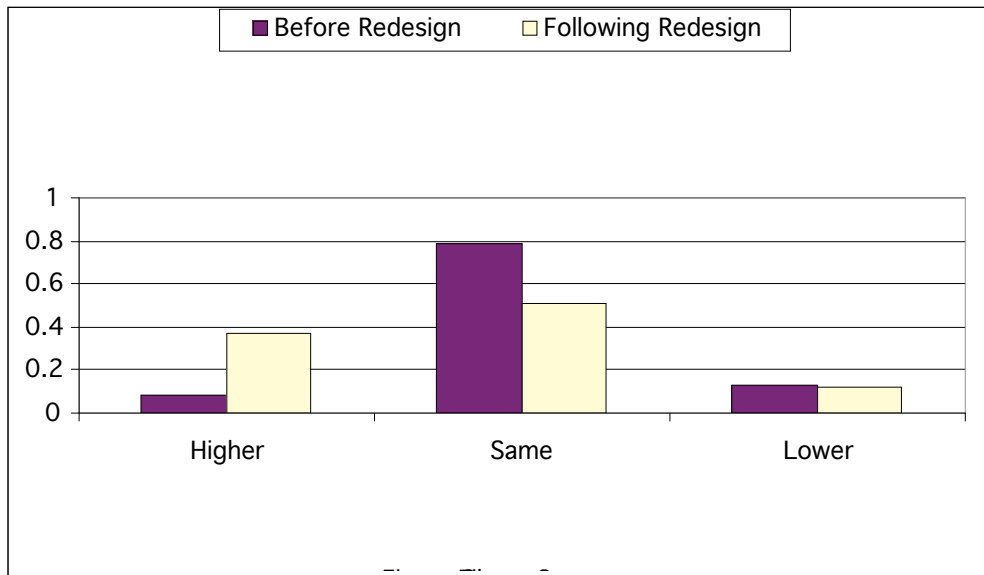


Figure 2. Student perception of style quality

Students in all sections of the course were asked for their overall view of the assignment. On a scale of 1 to 5, with 1 indicating “Strongly Negative” feelings and 5 indicating “Strongly Positive” feelings. Students in the last three sections of the course reported greater satisfaction overall (average 4.0 versus 3.3). In the last three sections of the course, only one student reported negative feelings. About half reported Mixed Feelings, and more than half reported Strongly Positive feelings.

Improvement in Instructor Satisfaction

From the instructors’ point of view, student performance was much improved in the last three sections of the course, following the course redesign discussed above. Students worked collaboratively, produced high-quality papers (sometimes well beyond the requirements), and expressed interest in using collaborative writing techniques in their K-12 classrooms.

The instructors debated at length about making some aspects of the collaborative assignment individual rather than joint. There was concern that students would not collaborate at all if they were writing individual papers, thus missing the collaborative experience. The instructors decided to create an option: partners could produce one joint paper or two individual papers. However, the partners must engage in at least two rounds of peer feedback, which the instructors considered an essential aspect of the collaborative writing experience.

The overall quality of papers neither declined nor improved when students had the option to produce individual rather than joint papers. However, some students who opted to produce an individual paper did far more research than required and produced fine papers, some of them considerably longer than required. This would suggest that independent learners had free rein to pursue their interests in depth, and yet the evidence shows that they and their partners participated in and valued peer feedback. All but one student in the last three sections of the course engaged in peer review and feedback. Assigning a grade to the task is thought to be the primary reason for the increase.

Beyond the data collected in the pre-assignment and post-assignment questionnaires and the rubric scores of student papers, instructors looked to the student reflections for indications of how well students internalized the experience. “Student reflections” here refers to a brief (two-page) reflective piece prepared by each student and submitted only to the instructors, in which students discussed how the collaborative process went for them, what they learned about themselves as writers, and what they learned that they could take into their K-12 classrooms. In the first two sections of the course, students did not mention peer review, and the data in the questionnaires bore out the suspicion that students were simply not engaging in peer review. However, the students in the last three sections of the course clearly engaged in peer review and often mentioned it in their reflections. Some of the comments follow:

- “With a supportive partner, you can receive insight into your paper. My paper was more polished thanks to [my partner].”
- “I have learned the importance of collaboration and its effectiveness in many areas. It gave me insight [concerning] how to stray from more traditional teaching to a more constructivist approach dependent on others’ thoughts and input.”
- “It was interesting to see my partners’ insights... I will use peer editing consistently and teach my students how to utilize tools of editing and writing.”
- “This collaborative experience has reinforced for me the need to provide more opportunities for partner writing in my own classroom and the need for daily,

continuous practice. Many kids I teach have the potential to write well but lack the confidence to do so. Collaborative projects such as these will enable them to grow and mature with their writing in a positive way.”

Allowing students the option of producing individual papers while requiring them to collaborate on peer review and feedback did not compromise the quality of their work, and it appears to have heightened students’ awareness of the value of collaborative writing and peer feedback in the writing process. That was an important goal of the course that was not met in the first two sections of the course.

Conclusions

The experience with the “Technology in the Language Arts Curriculum” before and after course redesign bears out the findings of Shaw and Pieter (2000) with regard to teaching and testing for readiness; Winograd and Milton (2000) with regard to the establishment of trust before undertaking major collaboration; and Almeda and Rose (2000) with regard to the increased need for instructor involvement in online writing courses. The experience also echoes Wegerif’s (1998) recommendation that exercises be staged from structured skill-building early in the course to less structured, complex exercises (such as the major collaborative paper) later in the course.

Beyond these observations, the instructors have found merit in examining the components and goals of a major collaborative assignment and restructuring the assignment to take into account that some (in our case many) online students strongly prefer to work independently. This does not mean eliminating or compromising collaborative assignments. Rather, it means looking for components that must be done collaboratively else the goals be sacrificed, and those which could be done individually or jointly without sacrificing the goals of the learning experience. Creating options for joint versus individual component pieces allows independent learners some flexibility to work on their own, if they choose. At the same time, providing adequate instruction and incentives (such as grading) around the required collaborative aspects of the assignment enforces the collaboration and emphasizes its importance.

The instructors are continuing the study of the course to gain more insight into editing techniques employed by online students in collaborative writing and to learn more about students’ choice of partners and students’ experience with online collaboration.

Acknowledgements

The authors gratefully acknowledge Joan Hamilton, Adjunct Instructor, Lesley University for her contributions to the ECOMP 5004 course.

References

- Almeda, M. B. & Rose, K. (2000). Instructor satisfaction in University of California Extension’s on-line writing curriculum. *Journal of the Asynchronous Learning Network*, 4 (3). Retrieved July 16, 2002, from http://www.aln.org/alnweb/journal/Vol4_issue3/fs/almeda/fs-almeda.htm
- Atwell, N. (1998). *In the middle: New understandings about writing, reading, and learning*. Portsmouth, NH: Heinemann.

- Bourne, J. R., McMaster, E., Rieger, J., & Campbell, O. (1997). Paradigms for on-line learning: A case study in the design and implementation of an asynchronous learning networks (ALN) course. *Journal of the Asynchronous Learning Network*, 1(2). Retrieved July 16, 2002, from <http://www.aln.org/alnweb/journal/issue2/assee.htm>
- Brumberger, E. R. (1999). Collaborative projects in a technical writing class: A cost/benefit analysis. *Teaching English in the Two-Year College*, 27(2), 194-202.
- Cadeiro-Kaplan, K. (1999). Integrating technology: Issues for traditional and constructivist pedagogies. *Journal of Computing in Teacher Education*, 15(2), 14-18.
- Collier, C. & Morse, F. (1999). The internet ate my homework: Experiences with online collaborative writing. *Syllabus99 Conference Proceedings*. Retrieved July 23, 2002, from http://www.syllabus.com/syll99_proceedings/THEIN.HTM
- Edgar, C. & Woods, S. N. (1996). *The nearness of you: Students and teachers writing online*. New York: Teachers and Writers Collaborative.
- Harris, J. B. (1997). *Virtual architecture: Designing and directing curriculum based telecomputing*. Eugene, OR: International Society for Technology in Education.
- Kuhlthau, C. C. (1993). Implementing a process approach to information skills: A study identifying indicators of success in library media programs. *SLMQ* 22(1), 11-18.
- Shaw, G. P., & Pieter, W. (2000). The use of asynchronous learning networks in nutrition education: Student attitude, experiences and performance. *Journal of the Asynchronous Learning Network*, 4(1), 40-51.
- Wegerif, R. (1998). The social dimension of asynchronous learning networks. *Journal of the Asynchronous Learning Network*, 2(1), 34-49.
- Winograd, D. & Milton, K. (2000, February). *Writing in the ether: A collaborative approach to academic research*. Paper presented at the Association for Educational Communications and Technology (AECT) International Convention, 22nd, Long Beach, CA. (ERIC Document Reproduction Service No. ED440618)