Title: Constructing Learning in the Online Environment

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Summary: A librarian scaffolds the assignments in an online research course to improve students' engagement and the quality of their work.

Background

LA&S 292, Research Methods and Information Literacy, is a one-credit course for undergraduates. It focuses on teaching students how to effectively find, evaluate, and utilize resources for their research needs. This course has been taught face-to-face since 2006, but since Spring 2012 I converted it to an online course with the help of a colleague who had taught the in-person iteration. The objectives are based on the Association of College and Research Libraries standards for developing information-literate citizens.

Students who enroll in this class are from all different disciplines and range from freshmen to seniors. They have different levels of experience and knowledge of how to search for and evaluate resources for their information needs. Almost all have been searching Google, or similar sources, for information but have not learned yet how to use search strategies to identify the most relevant resources or how to evaluate and synthesize them. A few of the students have learned to perform very basic research in the KU Catalog and databases. My course is a general one, and students in all disciplines can use the skills they learn in LA&S 292. We also have subject librarians who are subject-area experts and who teach these skills within their discipline.

My learning goals for students in this course are how to:
* Recognize a need for information;
* Identify and find the resources needed to fulfill the information need;
* Evaluate the resources to make sure they are relevant and credible;
* Ethically and responsibly use/synthesize the information.

This skill set is necessary for students because it:
* Teaches them how to seek out information to fill a gap in their knowledge;
* Introduces them to different resources to help them in the quest for knowledge;
* Challenges them to not accept all information as credible and relevant;
* Teaches them to critique information;
* Teaches them to credit the sources utilized.

Each week the instruction and activities in the class build on all these goals, because these are important to students as consumers of information, inside and outside of the classroom, and they are vital for the information-literate citizen.

I decided to scaffold assignments more explicitly so that students could apply skills they acquired to each subsequent assignment, and also so that I could more accurately assess their progress. I wanted students to engage with the skills in the course and I wanted to promote in-

depth understanding, because I knew that if students build on past knowledge and use critical thinking to solve real world problems they are more likely to retain information and to transfer the skills learned from the class to other research assignments.

Implementation

Since this course is online, students do all their work outside of the "classroom." I used the Discussion Board on Blackboard as a means for students to introduce themselves to the class and for Q&A, although they could also email me directly with questions. I used the Group tool on Blackboard to assign students to peer groups and gave them access to file transfer and email features to share rough drafts of their annotated bibliographies.

The first time I used peer review was in the Fall 2012 semester, and I randomly assigned students to groups. In the Spring 2013 iteration I tried to strategically place one "weaker" student with two other stronger students. If students did not respond well in a certain group, I reassigned them. I added group work in order to encourage students to learn from each other and lessen the feeling of isolation felt in the online environment. My aim was to incorporate real life research problems into each week's work to demonstrate the importance of being an information-literate citizen. I think that giving students problems to solve that are relevant to their lives motivates them in their search for information and reinforces the reason why they need to know where to find the information they seek and knowing whether they can trust it or not.

At the beginning of the course I had students pick a research problem they were interested in solving, and I had them create a thesis statement about the problem. Each week they learned how to find different types of sources to solve their problem. They also learned how to evaluate these sources. The final assignment in LA&S 292 is an annotated bibliography, which helps students demonstrate that they have learned how to find and evaluate information needed to solve their research problem. What I envisioned when designing the online course was that I would give students a choice of ill-structured problems or a research question, and they would have to come up with a list of resources that answered the question or supported their argument.

The other assignments I gave were used to scaffold the learning process (i.e., how to use the catalog activity) to help them accomplish the final assignment. Every time I taught a new skill, we applied it to their ongoing annotated bibliography assignment. Instead of going through the research skill, having them take quizzes on it, and having them create their annotated bibliography at the very end of the semester, I wanted them to apply those skills progressively. For example, after learning how to search for journal articles, I wanted students to find two journal articles, cite them, and do the annotations. Then I looked at the entries, gave them feedback, and made adjustments right then, allowing them to apply my suggested revisions to the draft of their annotated bibliography.

Students were also required to watch informational videos that are about specific lessons each week, usually skill based, with some videos explaining concepts. After students reviewed these videos, I had them complete an activity or quiz to reinforce what they had learned. Each week students were required to submit a journal activity (by Sunday at midnight) to explain what they learned that week, how they could apply it to their research in other classes or personal research, and what questions they had about what they learned. I responded to their entries on Monday, or sooner if they posted them before the deadline. I believe the videos (which are very concise) give students just enough information and demonstration to help them engage in the learning activities I assign them.

Student Work

In past iterations of the class, student retention had been a problem as well as student grades. Many did not complete the annotated bibliography. However, since I started scaffolding the work, leading to the annotated bibliography, more students have completed their final assignment and stayed in the class through the end.

Each week students put a piece of their annotated bibliography into their journal. For example, for one week they located articles that related to their research question and included these in their journals; I then gave them feedback on their entries and recommended any changes. At the end of the course, they did peer reviews (they upload a rough draft of their annotated bibliography and their peers looked at it based on the rubric and made suggestions for changes). Then they had an extra credit opportunity by taking their work to the Writing Center. I believe that these interventions (i.e., instructor feedback, peer feedback, Writing Center feedback) have increased the quality of annotated bibliographies and thus the overall class grades, with the exception of the slightly anomalous Spring 2013. (See chart).

Grade Distribution

Legend:
- Spr 2012
- Fall 2012
- Spr 2013
- Fall 2013
- Spring 2014
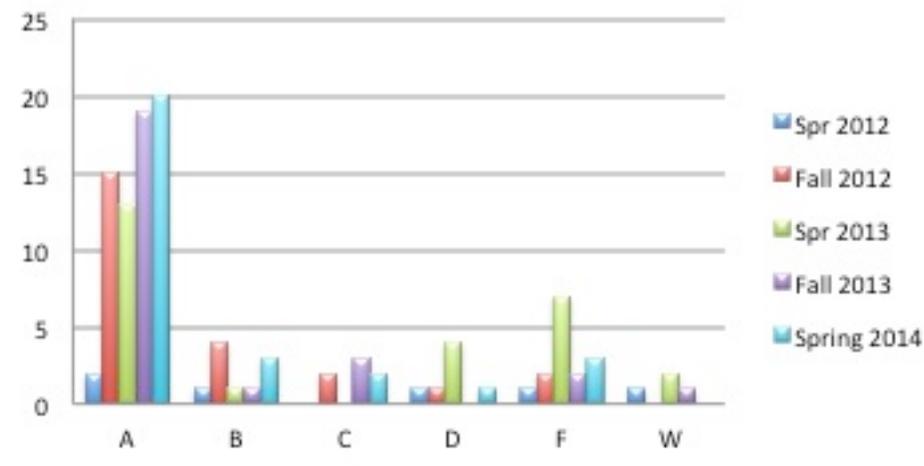
Reflections

Scaffolding the annotated bibliography with smaller assignments made the final project much less intimidating for students. They were able to build and apply what they learned immediately. I received great feedback in students' journals and evaluations about this point. Journals also gave me a different kind of feedback regarding their comprehension: these helped me see when someone was struggling or had questions, and this is especially important in an online class since I can't see their body language like I can in a classroom. Another benefit is that I could give students formative feedback throughout the course and allow them to make changes before the final submission.

The peer review has been a success, because students get feedback on their rough draft from classmates and they observe and learn from the good and bad in each other's bibliographies. Additionally, students have to refresh their understanding of the instructions and the rubric to be able to evaluate somebody else's work; this has the added benefit of reminding them that their own work needs to meet guidelines in the instructions and the rubric. Getting feedback from their peers was also a second filter on their work to help them improve what they were doing.

One of the big pluses in having this class online was the variety of students, some of whom had careers – one was a nursing student who was going to school and also worked third shift nursing, and this was one way that she could manage to take the class. It was beneficial that they had all the information online, and they could visit it as often as they liked. The videos were always available, and they could re-watch them if they didn't understand something.

This class is a perfect preparation for the research needed in other classes. Students learn methods for their different disciplines, but this course is a stepping-stone to other types of research. It's very important that students acquire these skills, and if the online course is well structured and easy for them to navigate, they won't have a reason to get distracted or off course – after all, it is the content that I want them to focus on.