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Using Information Literacy to Cultivate Scientific Literacy in Communication Research

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Spring 2016

Incorporating the standards and principles of information literacy in Communication Research (COMM490) this semester enabled students to have a richer understanding of the nature of knowledge and ability to construct more scientifically-sound research projects, leading to a better scientific literacy for the students. Communication Research is a required course for all our majors. It was designed to be a capstone course in our program.

I had taught this course previously at another institution, but it was my first time teaching this course at Fayetteville State University. With the knowledge that not all our students go on to graduate school, one of my main goals of this course was to make the course useful for all students in their future lives and careers. The two best ways to make this course universally useful was to, first, increase their scientific literacy, so students could understand the basic science they would need to interact with medical professionals and understand science presented in the news on which we may base public policy. The second way was to learn how to gather and evaluate information, which is a basic definition of information literacy, as well as skills needed in any profession.

In December 2016, I attended the information literacy workshop and made the following changes to the course previously designed:

- Added the ACRL standards to the syllabus and explained the standards on the first day of the course
- Further stratified the large research project
- Integrated the ACRL standards into all aspects of the assignment, but particularly the research proposal.
- Arranged a library instruction session for the class

The largest project of the semester and the point of the class is for each student to create a “conference-ready” communication research paper by the end of the semester. In previous iterations of this course, I always stratified this assignments. But this semester I added steps, including a research topic before submitting formal research questions and an annotated bibliography after the research proposal that only allowed scholarly sources. I also altered the point values to give greater weight to these intermediate steps over the final product in order to emphasize the process over the final paper. I also added a “warm-up” assignment in which students dissected and critiqued a journal article.

The largest intermediate step, and the step that I emphasized and revised for this program, is a research proposal. The proposal required students to justify their rationale for their research project through the literature, do a brief introductory literature review, and outline a realistic plan for research. I had assigned this as a step in previous semesters, but I revised the assignment to

emphasize information literacy standards and principles and elaborated more on the expectations and goals of the assignment. Before this assignment, I spent one class going through literature search, assessment, and reading basics. At the beginning of this class was also where I administered the pre-test. The class then had a library information session with Diana Amerson.

With these additions, the quality of research proposals I received this semester were much improved from research proposals from previous versions of this course. Additionally, the research proposal format enabled a small percentage of the class to easily turn the proposals into Institutional Review Board protocols for human subjects research, enabling students to do more ambitious research projects.

The additional assignments after the proposal further aided students in learning the principles of finding, evaluating and using information in their research projects. Students who completed these assignments even remarked to me throughout the semester how the intermediate made the daunting task of completing a large research paper easier for them. The eventual research papers were also improved from previous times I've taught this class, with the average score being a low B rather than the low C of previous semesters.

The post-test was administered after the last intermediate assignment and prior to turning in the final paper. Of my 35 students, 24 completed both tests in their entirety (1 student stopped coming in February; 8 students completed either the pre- or post-test, but were absent for the other; and 2 students completed both tests, but missed a page on one or the other test). All but one of the students in the class were communication majors and mostly seniors with a handful of juniors.

The results were interesting, but do not indicate an overwhelming improvement. On the test questions there was an improvement overall of the average from 73.7 to a 74.8 percent correct (see Appendix 1). But in looking at the frequencies of scores you can see the majority improved their understanding with a handful of students doing the same or worse (see Appendix 2). Most questions showed either an improvement in the number of students getting it correct or the same, with a handful of questions where performance actually decreased (see Appendix 3). The questions that showed a decrease in performance were questions 4, 11, 12, 14, 16 and 20. Many of these questions had to do with evaluation of web sites, which I did not emphasize in class because we were primarily working with scholarly journal articles. Another reason for a possible decrease on some of these items could be because of phrasing. At least one student had difficulty with the word "brevity" in question 16 and while I explained narrowing searches through Boolean operators, we did not discuss it using those terms.

Another possible factor for these results is the fact that these students were juniors and seniors. The scores at the pre-test were slightly higher than expected possibly indicating previous experience with information-gathering for scholarly papers and information literacy standards. This was also reflected in the pre- and post-test data about students' comfortability with ACRL standards. The data indicates that most students perceived themselves to be comfortable with these standards with means above 3 (for analysis, 1 = not confident, 2 = not very confident, 3 = confident, and 4 = very confident) (see Appendix 4). For most of the standards, comfortability

went up marginally (see Appendix 5). However, for standard 3 (“evaluate information and its sources critically and incorporate selected information into one’s knowledge base”) and 4 (“use information effectively to accomplish a specific purpose”) the means decreased, indicating less confidence in students’ ability to fulfill those standards. I do not take this to mean that students can no longer perform these standards, though. I think the decrease indicates, instead, that students had overestimated their abilities to do so in the pre-test and through the assignments learned that these types of abilities required more work and understanding than they had previously expected. If true, the decrease would actually indicate a complicating of students’ understanding of knowledge and knowledge-gathering, which was the goal of the course.

But the most optimistic part of the data from the pre- and post-test was the last question, which asked students to list “the top five places I go to for articles and other information resources in my major.” For this data, I just looked at what students included more quality resources in their post-test. The majority of the students included more quality resources, including specific databases (see Appendix 6). This finding indicates that students gained a greater understanding of information-gathering and what constitutes quality information through this course.

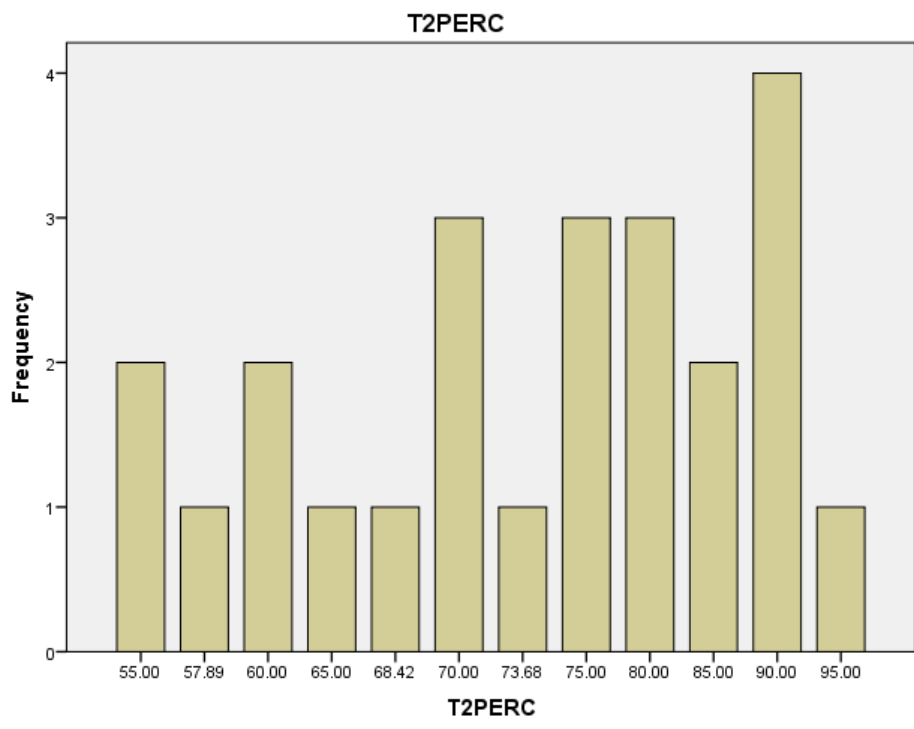
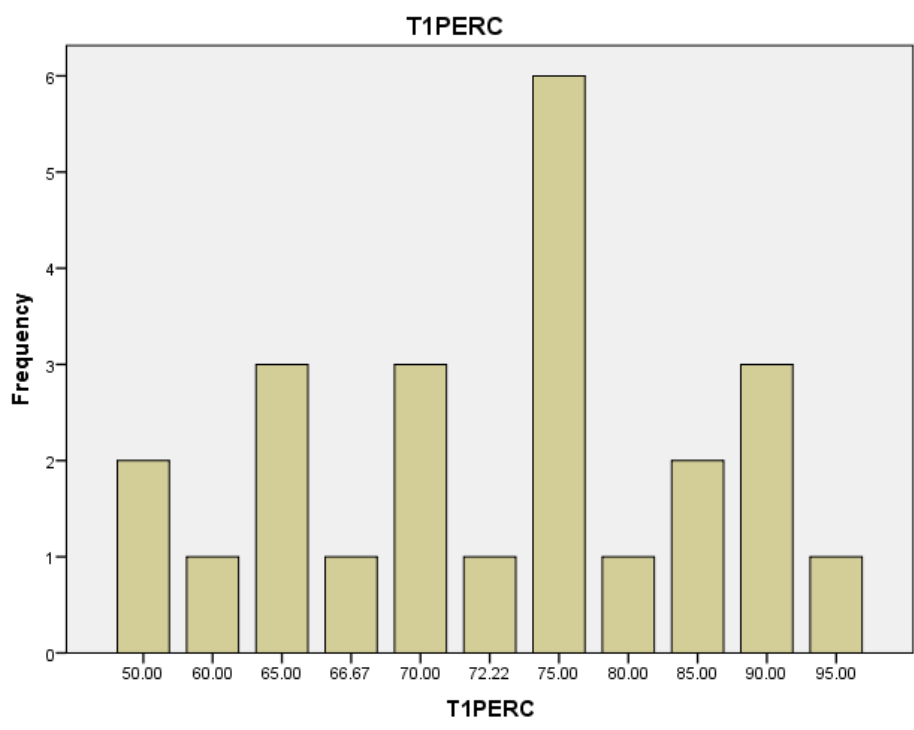
As mentioned previously, however, the real evidence of the value of the program for the students was in the improvement in their work throughout the semester. The use and integration of ACRL standards and principles into the course material and assignments aided the students’ understanding and application of scientific literacy, and it is to be hoped will help them in their eventual lives and careers. I have plans of integrating these principles into future classes, particularly journalism classes. Throughout the workshop and semester, I was brainstorming new assignments for journalism courses using information literacy for example evaluating news sources and social media sources. These standards and principles clearly helped my Communication Research students and would definitely aid others.

Appendices

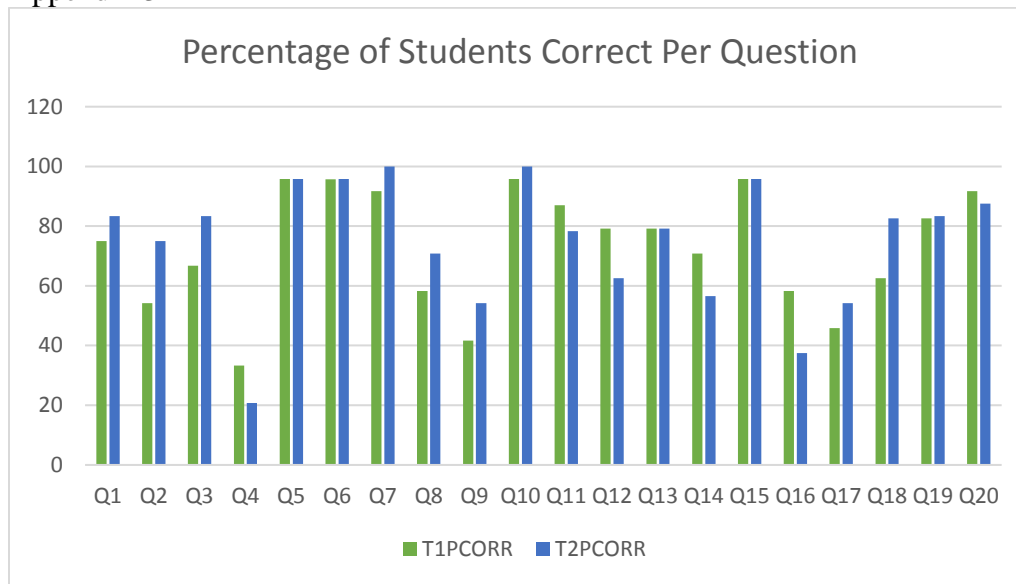
Appendix 1

		T1PERC	T2PERC
N	Valid	24	24
	Missing	0	0
Mean		73.7038	74.7913
Median		75.0000	75.0000
Mode		75.00	90.00
Std. Deviation		11.77099	12.04474
Variance		138.556	145.076
Range		45.00	40.00

Appendix 2



Appendix 3



Appendix 4

		T1ACRL1	T1ACRL2	T1ACRL3	T1ACRL4	T1ACRL5
N	Valid	23	22	23	23	23
	Missing	1	2	1	1	1
Mean		3.2174	3.2273	3.3043	3.4348	3.3043
Median		3.0000	3.0000	3.0000	3.0000	3.0000
Mode		3.00	3.00	3.00	3.00	3.00
Std. Deviation		.59974	.61193	.47047	.50687	.55880
Variance		.360	.374	.221	.257	.312
Range		2.00	2.00	1.00	1.00	2.00

Appendix 5

		T2ACRL1	T2ACRL2	T2ACRL3	T2ACRL4	T2ACRL5
N	Valid	23	23	23	23	23
	Missing	1	1	1	1	1
Mean		3.3913	3.3913	3.1739	3.3913	3.3478
Median		3.0000	3.0000	3.0000	3.0000	3.0000
Mode		3.00	3.00	3.00	3.00	3.00
Std. Deviation		.49901	.58303	.65033	.49901	.57277
Variance		.249	.340	.423	.249	.328
Range		1.00	2.00	2.00	1.00	2.00

Appendix 6

