**Summary:**I infused two sections of First Year Seminar (FYS 11) with QR, one in Fall 2017 and one in Spring 2018. Both were ESL sections (all of the students were concurrently enrolled in an ESL class), and all of the students were in their first semester at Bronx Community College. Students completed both a pre- and a post-test, which consisted of 7 attitudinal questions, 1 multiple choice question about a pie graph, 5 true/false questions about a related table, and one word question (worth up to 2 points) based on the graph and table.

The fall section was a small class, with only 10 students, 9 of whom completed both the pre- and post-test. The spring class was larger, with 22 students, 18 of whom completed both the pre- and post-test.

I discovered a problem with the first true/false question on the pre-test, and so eliminated it. There were also problems with the entire results of the fall semester. The post-test was rushed, and students didn’t really understand the purpose of either the quantitative reasoning parts of the class. The average result on the pre-test was .37 and the average on the post-test went down, to .29. Among the students in the fall semester class, the pre- to post-test scores increased in only 3 out of nine cases. I will leave aside the fall semester results on the spring semester results from here on out.

In the spring semester, the average on the pre-test was .27, while the average on the post-test went up to .38. Twelve of the 18 students showed improvement from the pre- to the post-test.

The attitudinal part of the pre- and post-test consisted of 7 questions with a 5 point Likert-type scale (1=strongly disagree, 3=neutral, 5=strongly agree, with an additional possible response of “Don’t Know or Not Applicable”).

In the fall semester, 3 out of 9 students answered 5 to everything; I will continue to not include the fall data.

Here are the average responses for each questions for the spring semester:

|  |  |  |
| --- | --- | --- |
|   | Pre-test | Post-test |
| I enjoy quantitative reasoning. | 4.3 | 4.6 |
| I am good at quantitative reasoning. | 3.8 | 4.1 |
| I prefer classes that do not have any quantitative elements. | 2.6 | 2.5 |
| Quantitative reasoning is important to my career goals. | 4.8 | 4.6 |
| Quantitative skills help me make intelligent decisions about my life. | 4.4 | 4.1 |
| I am nervous about learning quantitative skills. | 3.1 | 2.7 |
| Strong quantitative skills help students to do well in other classes. | 4.5 | 4.7 |

With the help of the BCC Office of Institutional Research, all will examine all of these results in more detail.

**Self-Critique:**While I thought about ways to make the instructional materials for the QR infusion somewhat more accessible to ESL students, I did not make changes to the pre- and post-test material, and that was a mistake. Some of the problems that students had seemed to be language problems: problems with vocabulary or sentence structure. The question which I eliminated I found to be confusing even to native speakers (including me), which is why I eliminated it.

I also found that in Fall 2017, the first semester in which I incorporated the QR material, I was not fully comfortable with the material, and I did not explain clearly to the students why learning quantitative skills was important and useful. This (and the fact that students had to rush through the post-test in the fall because of poor timing on my part) explains why I think the results from the fall semester are invalid. But by the spring semester I felt more comfortable with the material and thus explained it better. I think that this is an area in which I will continue to improve, which will make this instructional material more valuable.

Even once I became comfortable with the material, I think that the pre- and post-tests were not very good measures of what the students learned. I think that students did learn quite a bit about interpreting pie charts, and learned some things about interpreting tables. However, I think they learned very little about how to talk about the data represented in tables and pie charts. In their group presentations at the end of the semester, students who attempted to talk about such data often just read off the numbers, without distinguishing the importance of different pieces of data (for example, in a pie chart representing percentages of speaker of different languages in a community, they read all of the numbers, even when the percentage of speakers was, for example, .02%. I’m not sure that students at this level have the language skills to make an argument using this kind of data. That sort of training might work better at the ENG 110/111 (freshman composition) level. And I think that I should change the pre- and post-tests to focus more on the types of things that I have students practice more in class.

**Infusing QR/QL:**I was nervous about incorporating QR/QL materials in the fall semester, but by the spring semester I enjoyed it, and at that point students got more out of it. I won’t be teaching FYS this fall, but I will definitely continue to work on incorporating QR/QL in my FYS class next spring and going forward. I may also try to incorporate some QR/QL in my ESL 01 class in the fall, but that will be a real challenge in terms of adapting the language of the instructional materials and the pre- and post-tests for beginning English language learners.

[I've based my response on the format the Sarah used, which I found very helpful in thinking about the questions asked]