SLO Assessments for Math 152A and 153 during Fall Semester, 2012

Math 152A SLO’s:

The student will:
1. Solve problems involving the mathematical concepts of function.
2. Demonstrate the ability to graph and algebraically solve systems of linear equations.
3. Show increased skill in setting up and solving word problems.
4. Solve problems involving geometric applications useful for trigonometry.

Math 153 SLO’s:

The student will:
1. Manipulate mathematical expressions, at an intermediate level.
2. Solve mathematical equations, at an intermediate level.
3. Demonstrate the qualitative behavior of graphs, at an intermediate level.
4. Apply mathematical tools and concepts in solving word/situation-based problems, at an intermediate level.
5. Operate a calculator, at an intermediate level.

Most Math SLO’s have changed recently. Those that have not will soon. At the time the data was collected, Math 153’s SLO 4 looked more like Math 152A’s SLO 3, so what is being assessed for both courses is whether the students showed increased skill in setting up and solving word problems.

METHODOLOGY

Students were asked to set up and solve a word problem at the start and end of the semester, and twice in between. It was always a mixture problem (loosely defined to include total-value problems). Both the pre-test and post-test had standard mixture problems of the $ax+by=c$ variety, but not identical problems. The Math Department at one time decided to see if students could set up such problems correctly. That is what is tested here.

RESULTS

At the start of the semester, no one in either class knew how to set up the problem, let alone do it; 35 in Math 152A and 42 in Math 153 could not set up the problem correctly. Of the 27 who took the Math 152A final, 13 had a correct set-up (and 12 went all the way); of the 30 who took the Math 153 final, 14 had a correct set-up (and 10 went all the way).

Using 7.32% as the starting point (the highest I’ve ever had at semester’s start), these results are statistically significant at the .00000000000001 level for each class, i.e., there was
statistically significant improvement for each class. The differences between the two classes, though, are small and not statistically significant.

NEXT STEPS

The data shows the two classes definitely showed improvement. However, about half of the individuals did not (52% in Math 152A and 53% in Math 153), so I will try this one more time.