



Sinclair Mathnet

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FROM THE CHAIR



In the last *Mathnet* I attempted to catalog some of the many initiatives the Department of Mathematics has undertaken to help struggling students be more successful. In this article I would like to report on some of the outcomes that have resulted in the past two years. In order to level out the effect of annual fluctuations somewhat, I have compared the last two biennia. In the following, Biennium One (B I) will refer to the average of the 2000/2001 and 2001/2002 school years and Biennium Two (B II) will refer to the average of the 2002/2003 and 2003/2004 school years. I have restricted my investigation to our three mainline, highest enrollment courses, Math 101, 102 and 116. These are also the courses in which most of our efforts have been focused. The parameters I have looked at are the following:

Starting with Math 101 we find that the Success Rate has gone from 43.2% in B I to 46.9% in B II. And the Pass Rate has gone from 54.5% to 57.5%. These are nice improvements. But these numbers are still discouragingly low. The Modified Success Rate, however, has gone from 55.2% to 60.3% and the Modified Pass Rate has gone from 70.5% to 73.9%. These are not only good improvements, but the magnitude of these numbers is much more palatable. The higher magnitude of these numbers is attributable to the fact that they do not include W grades and the Withdrawal Rate is very high. But the Withdrawal Rate is a parameter over which our initiatives are not likely to have much influence because it probably represents mostly students who should not have been in the class to begin with. Reducing the Withdrawal Rate will require more cooperation from the college in areas such as instituting a two-year limit on prerequisites and placement scores and purging students who enrolled without satisfying the prerequisite. Since we have not been able to institute these and other policies, only a little progress has been made in the Withdrawal Rate as it has reduced only from 22.7% in B I to 22.1% in B II.

$$\begin{aligned} \text{Success Rate (SR)} &= \frac{A + B + C}{T} \\ \text{Modified Success Rate (MSR)} &= \frac{A + B + C}{T - W} \\ \text{Withdrawal Rate (WR)} &= \frac{W}{T} \\ \text{Average Grade Point Average (GPA)} &= \frac{4A + 3B + 2C + D}{T - W} \\ \text{Pass Rate (PR)} &= \frac{A + B + C + D}{T} \\ \text{Modified Pass Rate (MPR)} &= \frac{A + B + C + D}{T - W} \\ \text{Performance Average (PA)} &= \frac{5A + 4B + 3C + 2D + W}{T} \\ \text{Departmental Final Exam Average (FE)} & \end{aligned}$$

where A = the number of A's, B = the number of B's, C = the number of C's, D = the number of D's, F = the number of F's, W = the number of W's and T = A+B+C+D+F+W.

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Faculty Feature – Barb Carruth

After 37 years of teaching, Barb Carruth will retire at the end of the Spring Quarter. Her career in education began in the Dayton Public Schools where she taught for two years before choosing to be at home with her two sons. Barb continued to teach, on a part-time basis, while her boys were babies. She was an in-home instructor of children who were too ill to attend school. She continued home instruction after her daughter was born, and started teaching part-time at Sinclair in 1978. Barb truly worked her way up through the ranks at Sinclair, being hired as a full-time adjunct in 1982, and to a tenure-track position in 1985. Barb leaves Sinclair College with many fond memories, including: “many supportive, dedicated, and capable co-workers, especially those in the Math Department,” and also, “some very special students whose respect and gratitude made coming to work worthwhile.”



Barb also lists among favorite memories being part of the Innovation of the Year Team in 2002, and working with Teachers Teaching with Technology instructors and many area high school teachers at summer workshops.

While at Sinclair, Barb had many opportunities to attend conference trips, and she shares some amusing, and happy stories. She remembers “an NCTM conference in San Francisco, where I experienced what it is like to ride with John Pfetzing when he drives a race car. We happened to be on the freeway at the time.” She also fondly recalls “the AMATYC conference in Baltimore with Frank Hammons and Grace DeVelbiss where missed air connections, a ‘limo’ that was a beat up old van

with no shock absorbers that took us from Philadelphia to Baltimore, and lost luggage made for a very interesting trip.” Not all of her trips were nearly as stressful, including a League for Innovation conference in Long Beach, California. Barb unexpectedly ran into two former college roommates, and Carol Murphy, a former SCC Math Department faculty member.

Barb has many plans to fill her time after she retires. She and her husband Jim have six grandchildren who all live in the area, and she intends to spend a big part of her time with them. She adds, “I am hoping my first visit to Disneyworld someday will be with grandchildren to enjoy it through their eyes.” She hopes to “finally” learn to play the piano, and to travel. Barb will go to New York City this summer with family to see Broadway shows (her favorite form of entertainment). Barb sings with a choir, and they will go on a tour of Europe in the spring of 2006 to include performances at churches in Salzburg, Munich, and Vienna. “Oh, and I do plan to do supplemental retirement teaching as well.”

The Math Department wishes Barb and her family many many happy years of retirement!



Susan Harris ■



The GPA and the Final Exam Average (parameters that depend only on students who remain in the course and are therefore affected by our initiatives) show that our initiatives are helping as they have gone from 1.71 to 1.85, and 66.18% to 66.62% respectively. Happily the Performance Average, a parameter that measures all grade improvements as well as being sensitive to changes in the number of W's, has gone from 2.10 to 2.23. Another bright spot is that the Fall 2004 Final Exam Average was the highest it has been in a Fall Quarter since 1993, as was the Winter Quarter Final Exam Average, at 68.45 and 68.96 respectively.

Math 101		
Parameter	Biennium One	Biennium Two
SR	43.2	46.9
MSR	55.2	60.3
WR	22.7	22.1
GPA	1.71	1.85
PR	54.5	57.5
MPR	70.5	73.9
PA	2.10	2.23
FE	66.18	66.62

In Math 102 we find only modest improvement with the Success Rate going from 43.8% to 44.4% and the Pass Rate from 56.2% to 56.3%. Interestingly, however, the Modified Success Rate and the Modified Pass Rate did not show improvement at all going from 58.4% to 58.4% and 74.9% to 73.9% respectively. This is explained by a substantive improvement in the Withdrawal Rate in 102 going from 25.0% to 23.8%. Here it is important to keep in mind that in Math 102 we have a special initiative designed to reduce the number of students that do not belong in the course at the outset - the pre-quarter phone calls. This seems to be

helping. With more support for this kind of an initiative perhaps we could reduce the number of W's even more, not just in Math 102.

Looking at the parameters that are independent of the number of W's, we have bad news and good news. The GPA has remained at 1.75, but the Final Exam Average has gone from 63.36% to 64.02%. Unfortunately the Performance Average has remained at 2.13. The Final Exam Average results for Math 102 so far this year are very encouraging, as they were in Math 101, with the Fall Quarter average being the highest in a fall quarter since 2002 at 64.85 and the Winter Quarter average, at 65.36, being the highest ever in a Winter Quarter since the inception of the program in 1997.

Math 102		
Parameter	Biennium One	Biennium Two
SR	43.8	44.4
MSR	58.4	58.4
WR	25.0	23.8
GPA	1.75	1.75
PR	56.2	56.3
MPR	74.9	73.9
PA	2.13	2.13
FE	63.36	64.02

The Math 116 news is all good. The Success Rate has gone from 51.4% to 56.4% and the Pass Rate from 59.8% to 64.8%. The Modified Success Rate and Modified Pass Rate have also improved, going from 68.4% to 72.4% and from 78.8% to 83.2% respectively. We have also seen improvement in the Withdrawal Rate going from 24.2% down to 22.2%. Perhaps this is due to students coming out of Math 101 and 102 better prepared. (Continued on page 4)



The GPA for Math 116 has gone from 2.02 to 2.16 and the Performance Average from 2.37 to 2.55. While we do not have a comprehensive departmental final exam in Math 116, we do give an assessment test every Fall Quarter, which tests students over the entire three-course sequence. This has gone from a raw score average of 11.62 in B I to 12.15 in B II.

Math 116

Parameter	Biennium One	Biennium Two
SR	51.4	56.4
MSR	68.4	72.4
WR	24.2	22.2
GPA	2.02	2.16
PR	59.8	64.8
MPR	78.8	83.2
PA	2.37	2.55
Assessment Test	11.62	12.15

Whether you are working on the Retention Program (tutoring students, making phone calls or giving workshops or review sessions), or cooperating with the Retention Program (referring students for tutoring or encouraging them to attend review sessions and workshops), or working in the Math Help Room, or encouraging students to use the Math Help Room or Math Lab, or developing or utilizing computerized practice exams, or developing new delivery strategies such as the Emerging Scholars sections, or developing general review sheets, or just working harder to do a better job in the classroom, I think you can take the foregoing information as confirmation of the fact that all of the hard work you are doing is helping students. We will continue with these efforts and more, while also continuing to enlist college support for such things as time limits on prerequisites

and purging of students without the proper prerequisite, and we will continue to watch the numbers for additional progress.

Al Giambrone ■

Reminders

- Please do not neglect to meet your classes on time and keep them for the full class period.
- Advising students to drop back to a lower level class is a delicate matter. It must be done firmly and without hesitation, but gently and professionally. Students should come away understanding the need to switch, but without feeling the instructor is just trying to get rid of them or feeling their ability or intelligence has been insulted.
- An incomplete grade (I) may be given only to a student who is doing passing work. The decision to assign an incomplete grade should be made only at the very end of the quarter and the remaining work should normally not comprise more than one or two tests or assignments. See section 4.2 in our handbook.
- Except for an I grade revision, a grade change is generally not appropriate for a student who submits work after the end of the quarter. See section 4.2 in our handbook.

Harvey's Joke Corner

We go to great lengths to reduce our widths.



Q. If you see a toy Dalmatian on display in a store window, how many more are in stock?
A. 100.

Q. What happened when the price of duck feathers increased?
A. Down went up.

Definition of a square: A circle trying to go straight.