

Sinclair Mathnet

April 2001

Volume 7, Issue 5

FROM THE CHAIR



Approximately 3000 students enroll in mathematics courses each quarter of the academic year, about half that during the summer. Each quarter, on average, about 16 of them bring complaints to me about their instructor. Last year this amounted to one complaint for every 139 students. Some of the complaints are quite legitimate. Others have no merit. Most are somewhere in between. And I presume that each complaint represents the experience or feelings of a number of other students who did not take the trouble to come and see me. In any case, I am sure that, as is usually true, there is room for us to improve. I thought that some information about the complaints I hear would be useful in that regard or, if not useful, at least interesting!

For this article I reviewed the complaints I received from Fall 1999 through Summer 2000. Seventy-one students complained. Forty-eight complained about part time instructors and 23 about full time instructors. Many of them had more than one thing to complain about so I was able to identify 100 occurrences of various complaints. They ranged from such thought provoking and disturbing concerns as “the instructor allowed the use of a graphing calculator on a test over polar coordinates which seemed to defeat the purpose of studying the chapter” and “the instructor did not give the departmental part of the Math 102 final” to *really horrible* offenses like “the instructor gives timed exams” and “the instructor gives me a headache when he lectures”. The most frequent complaint was to the effect that the instructor doesn’t explain things well. There were 25 occurrences of this complaint. The second most popular complaint, not surprisingly, had to do with grading disagreements. This came up 9 times. A close third were complaints about instructors exhibiting inappropriate or rude behavior and/or comments. There were 8 of these. On 5 occasions I heard about students having difficulty reaching an instructor or getting them to give the student a decision about something and on 5 other occasions students told me about having difficulty understanding an instructor’s pronunciation or language.

In addition to this I heard about instructors who don’t care, are boring, don’t go over homework, just work examples that are already in the book, are uncooperative about answering questions, embarrass students in class, give tests that are too long or harder than the homework, dress inappropriately, don’t give a diagnostic test, won’t allow make up work, make too many mistakes, won’t accept an alternate method of solution, give too much theory, treat new material as review, test over material not covered, neglect to place tests in the testing center, give assignments that are too long, insinuate that students are cheating and try to send students back to a lower class.

The most popular courses for complaints were Math 101 (17 students) and Math 102 (16 students). There were no complaints from students in Math 109, 110, 151, 133, 202, 204 or 215. Of course this information doesn’t mean much since the enrollments are so different in these courses. Normalizing the data for enrollment we find that the most popular course for complaints was Math 121 with 4.79 students complaining per 100 students. In second place was Math 216 with 1.57 complaints per 100 students. But this may not mean much either since these courses have small enrollments. If we look at only the 10 courses with enrollment samples of at least 200 students then the most complained about courses are Math 218 with 1.32 complaints per 100 students and Math 102 with 0.94 complaints per 100 students. The least complained about among these 10 are Math 131 with .25 complaints per 100 students and Math 106 with 0.34 complaints per 100 students.

I try to identify each complaint as being either subjective or objective. A student’s subjective opinion about how well an instructor does something may be the isolated view of that student and is often more the result of the student’s deficiencies than the instructor’s. I don’t get too concerned about these kinds of complaints until I hear them repeatedly about the same instructor. On the other hand, a specific objective claim by a student that an instructor did something that he or she is clearly not supposed to do or didn’t do something that they are supposed to do calls, I believe, for a more immediate and decisive response. *(Continued on Page 3.)*



How to Deal with Difficult / Different Students

Consider situations such these (actually encountered by some of your Sinclair colleagues):

- Many students in my class are passive about their learning. They rarely attend class, never ask questions, and do poorly on tests. They seem indifferent to offers of my assistance....
- M. is a student who is registered with Sinclair's disabilities service. When she comes to class she is never prepared and weekly reminds the class of her disability, then apologizes for taking time away from class. She absorbs so much of the class time....
- S.'s work was very sloppy and incoherent. Every time I handed back any graded assignment, he would argue for more points. One afternoon when I was alone in my office, he came and started waving his fists and arms at me....

The above scenarios and more were role-played and brainstormed at the very interesting "Dealing with Difficult/Different Students" workshop I attended during our Spring Institute 2001 over spring break, facilitated by Dona Fletcher and Kathy Rowell.

After we had all introduced ourselves at the start of the workshop (and I had taken note that there were interested participants from all over campus), we discussed just what might be meant by the "difficult/different" student. As you can imagine, there were many answers to the question; the above scenarios describe just a sampling. We also talked about how to have students generate class norms and ground rules, how to stay aware of and be effective with the many different types of diversity in today's classroom, how to appropriately accommodate students with disabilities, and how to better motivate students in general. I have some written materials given to me at the workshop if you would like to know more. We received a list of promising references for yet more ideas. A "panel of experts" (who first made sure we realized that they did not know all the answers either) composed of people from various student service offices, experienced instructors, and campus police also gave us further insight.

After a break, we returned and formed groups, each with the task of role-playing one of the scenarios. (These scenarios were actual situations previously encountered and submitted for discussion by us, the workshop participants.) We were all interested in the scenarios, and we all contributed to the discussion. Some ideas I came away with were:

- To keep students from being passive, consider meeting with each student individually, close to the quarter's start, and discuss their hopes for the course and what you might do to help them but also what they need to do. Hand out a "work ethic" sheet at the quarter's start.
- An instructor with a disabled student needs to determine and possibly clarify with the student those behaviors due to the disability and those not due to the disability. Talking with the student's counselor can often help.
- Any time an instructor is confronted by an upset student, the instructor needs to handle the anger first before academic issues. If any danger is sensed, a call to campus police is definitely appropriate.

I left the workshop with my thinking stimulated and definitely felt the time well spent. I hope similar workshops are offered in the future and wouldn't mind attending one again.

Kay Cornelius ■



Marie Stroh facilitated three Math Success "Secret Weapon" Workshops earlier this month. She has been serving as the Mathematics Department Retention Specialist since Fall Quarter.



(Continued from Page 1.)

Here it is necessary to try to determine if there is any truth to the claim and, if so, get the situation corrected if possible. These are often difficult situations because there are usually two sides to the story and they rarely sound the same. Typically I feel the instructor is entitled to the benefit of the doubt in these situations. Frequently, the student has given me a seriously flawed description of what occurred. Often enough, however, upon conversation with the instructor, he or she acknowledges that they should have acted differently and offers to make a correction. Invariably I have found instructors to be very cooperative about resolving these situations.

Having said all this, however, I should add that it is surprising to me how often what is most needed and can be extremely effective is for me to simply be a patient listener to the student and to offer suggestions of how they might improve the situation through some simple actions of their own. Students are usually very open to this. On the instructors' part I will leave you with two ideas that come to mind that I think might be helpful in reducing student complaints. First is to be meticulously well prepared for class. This will increase the likelihood of students understanding your presentation. Second is to maintain sufficient order and decorum in your classroom so that inappropriate student behavior doesn't frazzle your nerves to the point where you do or say something that students take as offensive or rude. I've seen this happen many times.

In any case, considering the challenges our students face, such as under-preparedness, long time lapses between a course and its prerequisite, work and personal commitments and the rigors of studying mathematics, I think it speaks well for our department that out of the thousands of students we teach only 16 of them find reason to complain each quarter.

Al Giambrone ■

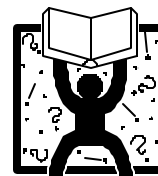
Spring Quarter Department Colloquium

We would like to encourage all faculty members to attend the Department Colloquium (see announcement on this page). The winners of the 2000 – 2001 AMATYC Student Math Competition will be recognized, including the Spring Quarter and cumulative winners. In addition, the Part-time Faculty Member of the Year Award will be given. Come and see who has been selected to receive this award and to share in this special recognition. Hope you can attend and support these Department initiatives.

REMINDERS From the Chair

- Be well prepared for class.
- Maintain appropriate order and decorum in your classroom.
- Remind your MAT 102 students to attend the Catch-up Section that meets 1:00 – 2:45 on Wednesdays and Thursdays in Room 10-313. Flyers giving the topics covered during each session may be obtained in the Help Room (MAT 102 instructors should have received flyers to distribute to their students).
- Normally students should not be permitted to do any work after the quarter has ended unless they qualified for an incomplete grade.
- Please do not permit students to sit in on your class who are not registered.

DEPARTMENT COLLOQUIUM



We will have a Department Colloquium on Friday, April 27, 2001 at 2:30 p.m. in Room 1001. All members of our full- and part-time faculty are welcome, as well as students who are interested in mathematics.

Dr. Richard Oberman,
Retired Vice-Principal
Tresham Institute
Kettering, England
"Education in England"

Refreshments will be served.



Test Your Skills

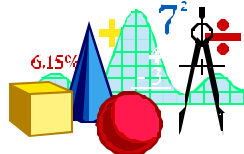
We hope you have time to try these problems and to offer your solutions to either Lyn Keeler or David Stott.

Find the sum of the series.

1. sum_{n=1}^{\infty} ne^{-n} ; sum_{n=1}^{\infty} n^2 e^{-n}

2. sum_{n=2}^{\infty} ln(1 - 1/n^2)

3. sum_{n=1}^{\infty} (-1)^{n+1} 1/n^2



Infinite Series

Generally when teaching infinite series in Calculus III, emphasis is placed on using appropriate tests to determine the convergence or divergence of series. Indeed, these tests are very important in confirming the existence of a sum, or the nonexistence of a sum, for a great number of important and well-known series. Furthermore, if the conditions are right, the sum of a convergent series can be approximated to a desired degree of accuracy, as long as a certain, calculated number of terms are summed up. In even a few cases, students learn a formula or technique to find the exact sum of a convergent series, such as a convergent geometric series or a telescoping series. It is this last situation in which I became more interested this quarter as I played around with Derive 5 on my computer with a variety of series, series for which we normally just ask our students to determine convergence or divergence. To my surprise, I obtained sums on some series. My interest was then in finding these sums by hand. A few of these series are given in the Test Your Skills section. Al shared some useful techniques in his article in the March 2000 issue of Mathnet. These techniques work well on series of the form

sum_{n=1}^{\infty} n^k r^n, where k is a positive integer and |r| < 1.

Derive 5 did have some limitations, however, and could not give every sum for which one could find the sum analytically, like the sum of the second to last series given. Nevertheless, here is a good case where the technology at hand prompted further exploration and discovery. David Stott ■

Just Thinking

Is it good if a vacuum really sucks?

Why is the third hand on the watch called the second hand?

If a word were misspelled in the dictionary, how would we ever know?

If Webster wrote the first dictionary, where did he find the words?

Why do we say something is out of whack? What is a whack?

Why do "slow down" and "slow up" mean the same thing?



Harvey's Joke Corner

Q. You need at least how many degrees to be a math counselor? A. 98.6°

After a 10-point deduction for a late test, the surprised student was "nonplussed."

At WPAFB the first Monday of April is a holiday – all personnel just finished a 31-day March.

One instructor reports that he keeps his students spellbound during his lecture on the Cartesian coordinate system: x-rated with graphic illustrations.

Q. What people are least likely to put on extra weight? A. Butchers.

The ones in binary digits are reported to have a policy of "zero tolerance."



These binary digits enjoy making "pie" together: 11.001001000011111101...