

Sinclair Mathnet

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FROM THE CHAIR



Historically Sinclair has always been extremely flexible in its operating procedures to make it as easy as possible for students to come here for an education. Students are permitted to register late for classes even until two days after the quarter

begins. Many students are allowed to register late even after late registration has supposedly ended, sometimes one or even two full weeks after classes have begun. Students are allowed to enroll in courses without having satisfied the prerequisite if it is their first quarter here. Beyond that prerequisites are frequently waived for students after their first quarter for reasons that are often less than academically sound. Students are also allowed to register for a course while they are enrolled in the prerequisite. Then if they fail the prerequisite they are allowed to remain in the course without being required to drop back and complete the prerequisite first. We promote

distance learning options for students so they can have the opportunity to learn "any place any time" even though we know that distance students succeed at a lower rate than our other students. We advertise vigorously so that students will know what is available for them here even though we are short on faculty, short on classroom space, short on office space and short on parking.

There are several reasons why it is not surprising that Sinclair does all this. One is that we are genuinely interested in helping people and helping the community and we believe education is one of the most important and effective means of doing this. Another is that nearly half of our financial support comes from state funding, which is determined by enrollment. A third reason is that in the college's Institutional Effectiveness Model, the

first core indicator of effectiveness speaks about access.

But an important question to think about is *access to what?* I think that some people are beginning to notice that, although the first core indicator starts out *access*, it finishes *to success* - *access to success*. The attendance study we did in Math 101 in Fall 2001 showed that students who missed the first half-week of class had only half the success rate in the course as other students. Is giving them access to late registration really giving them access to success? And certainly there is no need to mention to math teachers the disastrous consequences of giving students access to a course for which they do not have the prerequisite. Most of you have not taught distance courses, but those of us who have know full well the difficulty students have accessing success in a course in which the emphasis on their relationship with the

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college, the course and the instructor focuses on distance. (I've often thought that instead of Distance Learning we should provide Proximity Learning. Learning

occurs best when students and teachers come together, not when they remain apart.) While all these things bring many students in the door, all too many of those same students go out empty handed. Our graduation rate hovers around 14%. Many excuses are given for this low number, but it's hard to believe there isn't a great deal of room for improvement.

Well, I don't mean to imply that access to the college is not important, but I'm pleased to think that people may be beginning to notice that the pendulum may have swung too far in the direction of access and needs to swing back a little toward success. For example, in the last two *Mathnets* I've reported on the matter of student success as it relates to class attendance and some of the things people in the college are thinking (*continued on page 6*)



Faculty Feature

Someone familiar has been frequently seen in the Math Lab this quarter. Since Sy Ostransky's retirement from the position of lab coordinator at the end of Winter Quarter, Wendy Cheng has agreed to fill in until a full-time replacement for Sy can be found.

Wendy has been teaching in the Math Department part-time for the last three years, teaching primarily Math 101 and 102. Her previous teaching experiences include a position at Eastern Connecticut University, where she taught just prior to coming to Dayton four years ago.

Wendy moved to the United States from Taiwan in 1985. She has a Masters degree in Actuarial Science from the University of Connecticut. After working seven years as an actuary, Wendy decided to become a full-time mom. She and her husband Peter have two children, a son Benjamin in the third grade, and a daughter Lily in the fifth grade. Both attend Normandy Elementary School in Centerville. Wendy says, "My daughter has been sending me love notes ever since I started working at the Lab. It has been a big change to the family, I used to be home most of the time." Her husband is the audit director at Wright State University.

When asked about teaching or job experiences that she would like to share, Wendy admits, "I still have a lot to learn. Students need to know that we, as instructors, care about them, want to help them out the best we can." She adds, "I also try to be firm with my policies."

Outside of work, Wendy says she enjoys gardening, reading and cooking Chinese food.

Stop by the Math Lab sometime, and say hello to Wendy.

Susan Harris ■



Reminders

- Chapter exams should be one hour in length even in classes that meet for more than one hour. This is to insure that there is adequate time for instruction during the quarter. The tests should be designed so that the typical properly prepared student can complete the exam in one hour.
- Please do not permit students to sit in on your class who are not registered.
- Please do not dismiss class early. If you have completed covering the material use the time to do a few more examples, give a quiz or just let students do homework in class where they can get immediate help from you. There are always students who can use the extra work.



The Attendance Issue

Just what does it take to get people to come to class? This is a question we would really like to answer, and most of us have probably already tried some strategy or other in an attempt to solve the problem of poor attendance.

We've tried rewards...

- Students received a bonus of five percent added to their final average if they missed five or fewer classes in a five-day/week class.
- Students were allowed to drop their lowest test grade if they missed five or fewer classes in a five-day/week class.
- Eight quizzes were given. The lowest grade could be dropped if the student missed fewer than 10% of the class sessions.
- The final exam was optional to students who attended 90% of the class meetings.

We've tried punishments...

- An absence counted as one point, a late arrival as half a point. One percentage point was deducted from the student's final average for each absence and half a percent was lost for each late arrival if the student's point total exceeded 5.
- If the student missed more than three classes (in a five hour class meeting twice a week), he or she was administratively withdrawn from the class.
- A quiz was given at the *start* of every class meeting (latecomers did not get extra time), or a quiz was given at the *end* of every class meeting, or quiz questions were asked *during* the class each day.
- Thinking that a penalty at the end of the quarter was too distant to get students' attention, points for missed classes were taken off of each exam.

And we've tried a mixture of both...

- 25 attendance points counted as 5% of the grade. One day could be missed without penalty, but each day thereafter cost 2 points. (A half period absence cost 1 point.) In addition, two of the ten quizzes given during the quarter could be dropped if the student did not miss more than 5 attendance points.

Some observations:

- Strategies for improving attendance seem to have better results in higher-level classes.
- Point penalties and/or rewards don't seem to have as much effect as we would like them to. Maybe the idea is just too abstract.
- Quizzes do seem to help, but they take up class time that we don't always have to spare. They can also add to the stress that students already suffer when doing math. Some of us have taken to giving short quizzes at the end of the period that are open note and are on that day's material. That reduces the stress, encourages students to take notes, and also encourages them to ask questions in class if they do not understand the material.

Michelle Harris has used a similar strategy. Several times during the class period she posed a simple question or a simple problem based on that day's topic and had the students keep their answers on their "daily sheet." Quiz points constituted 10% of the final grade. She found that students attended class, they came on time, and they stayed for the entire period. They paid attention and asked questions immediately knowing they could be "quizzed" at any moment. It helped keep class time interesting and engaging. (The "daily sheet" was something she could have fun with every day by trying different things.) Students were encouraged to use the sheets for dialogue with the instructor. This allowed the more timid students the opportunity to ask questions on paper.



AND WHAT DO OUR STUDENTS SAY?

- I think it is punishment enough for someone if they have to miss math class. Just missing the class costs you points in your test score or quizzes. There is no reason to penalize that person even more.
 - This is a community college. We are all mostly full-time students, but also most of us have full-time jobs too! Sometimes we have to miss class and just can't help it. It's hard enough to catch up from the day we missed, but then we start losing points too! That's rough! I think if you can make it to class all the time you should be rewarded because that is a great accomplishment!
 - For those that are doing bad in the class and still don't show up, ... they probably don't care about extra points and also wouldn't care about getting punished. They have other issues! They probably don't have any goals and are just frustrated with school, and life in general. They feel like they're here for nothing, so who cares? I used to feel the same way. But now I know what I want and am focused on achieving my goals, which drives me to come to class and eventually get a degree.
 - The punishments suggested should be used in high school, not college!
 - I don't like any of them (the rewards and punishments mentioned), but all of them would work pretty well for me. Rewards and punishments combined is the best idea. ☺
 - The final exam should be optional for students who attended 90% of the class meetings. This would help, but if you're not serious about college this wouldn't make any difference. I still like this idea. Quizzes take too much time away from instruction.
 - I like all of the rewards that have been offered. But it is a student's job to attend class.
 - I think giving out information in class that cannot be read in the book would motivate students to come to class. When they have a test and don't know material covered in class, they will regret it. I also think that you should not be able to make up tests; you have to be hard on students to get results.
 - The objectives that would work the best would be points taken off; being withdrawn from class; final exam is optional; drop lowest test grade.
 - I'm not really sure what would make students come to class more. Personally the rewards are more motivating to me. From what I've seen punishments tend to give students a bad feeling toward the class and/or instructor and are therefore more likely to want to miss classes. I feel like I've missed a lot if I don't make it to a single class so I can't understand why students would miss several classes without a reason.
 - I think people get discouraged with so much to cover in such a short time. That makes them not want to come to class. Last year in the "Clarion" there was some stats that showed that more than 50% of people that take a Math 101-102 class fail or drop it. That should be a warning sign that the classes are too hard. Maybe they should be broken into three parts. I think it would be much easier and way more constructive.
 - I don't believe that there is one punishment that would best fit the situation; however, one should be given if the situation calls for it. I don't believe a person should be given a punishment for missing class for medical reasons if they can be proven. A person missing class just to miss class should not be able to make up any work missed that day. Also attendance should factor in the final grade as so many points.
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- The Reward System – A great concept, but lacks effectiveness. People with the initiative to excel will naturally attend class regularly. A simple case of “The rich getting richer.”

The Punishment System – Negative reinforcement is usually highly ineffective, especially in a situation where one is trying to encourage a particular action.

The 50/50 System – Best of both worlds (theoretically). A built-in bonus for those that choose to be a little more dedicated than the average individual, a penalty for those who just don't care or are not trying anyway, and naturally a 'gray area' for those within the expected 'average' attendance rating.

As Simple as it gets – If one wants a better class attendance they must keep their audience's interest. Regardless of a Bonus or Penalty, without interest, you've lost your audience.

- Coffee in class to keep everyone awake!

INAPPROPRIATE STUDENT BEHAVIOR

Have you ever been teaching a class and a student will say, “Would you go over that again? I wasn't paying attention.” Or have you ever been going over problems on a certain page of your textbook and a few minutes later, a student asks you, “What page are we on?” Or have you ever had a student say, “(Expletive deleted) you're confusing me. That's not the way I learned this before.” Here is another one, “Why are we even doing this? Where does this apply to anything in my life?”

Here is one of my favorite ones. Now it is test day. One of the students looks at the test then walks up to me with the test and says, “Mr. Rose, I'm not ready for this test yet.” I would reply (whispering, so not to disturb everyone else in the class), “You can't look at the test and decide you don't want to take it. This isn't fair to the class, or, actually, to you.” I've noted on a few occasions with this one, the student may become upset and raise his or her voice. I would then have to tell them to leave the room.

I guess we have all heard the psychological term “Attention Deficit Disorder.” Is this just my

imagination, or has this become a chronic symptom in our society? Somehow, I can't find the time, though, to psychoanalyze my students and even if I did, I am not sure if this would cure the disorder.

I've liked old sayings because a lot of them make a whole lot of sense. One, in particular, that might relate here is, “An ounce of prevention is worth a pound of cure.”

On the first day (Introduction day - going over the syllabus, class policies, and procedures), I have found some effectiveness in describing these occurrences to the class, but in a gentle, inoffensive way. I've found saying something like, “Please don't assume that I can read your mind and the minds of all the teachers you have had before me.” This relates to the “You're confusing me” concern. I will tell the students that their mission, in part, is to think about the various ways they have been shown to do problems and pick their favorite way. But, I feel I need to bear in mind here that the way they conceptually learned information before might be relevant to the level that they were at. So I encourage them to please show me, so that we could see whether that technique would apply to the level of the course that they are at now.

I love teaching. I teach classes in prisons, too. My observation has been that occurrences such as the ones that I described in this article do not necessarily occur with more frequency in the state prisons. Of course, I find other, very interesting things happening in the prisons. So here is another old saying: “Variety is the spice of life.” I think we can trust that these old sayings speak the truth.

I've always liked the Golden Rule, as, even under extreme circumstances, it seems to work. People like to be treated with dignity and respect. People usually don't like other people insulting their intelligence. These philosophical ideas have been around a long time and probably for good reason. I find they help in addressing all of these issues, should they occur. One last thing - if a student asks, “Where does this apply to anything in my life,” I feel an appropriateness in the response, “Where doesn't it?”

Doug Rose ■



(Continued from page 1) and talking about in that regard. Also, our new Vice President for Student Services, Hank Dunn, spoke to me eloquently this week about the need for the college to have a greater focus on success and on the enthusiastic effort he is expending to help make this happen. And a fellow faculty member recently e-mailed to say she is serving on a committee that is looking at the possibility of revising the registration schedule so that late registration finishes before classes begin. She wanted to know what I thought. Can you guess what I told her?

Al Giambrone ■

PROBLEM OF THE WEEK WINNER

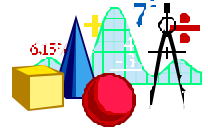


Oliver Newton won the Problem of the Week Contest held this Winter Quarter. He received \$40 and a certificate. Susan Harris initiated the contest and has facilitated it the last two years. Past winners have been Louie Sewell (Sp/00) and Linh Luu (Fa/00) and (Sp/01). The contest is being held this Spring Quarter, and the rules as well as the weekly problems are posted in the entrance to the Math Help Room.



Test Your Skills

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



1. Prove that the greatest common denominator of two consecutive Fibonacci numbers is 1.
2. Prove by induction that if F_k is the k^{th} term of the Fibonacci sequence, then

$$\sum_{k=1}^n F_k = F_{k+2} - 1.$$

In other words, prove that the sum of the first n terms of the Fibonacci Sequence is one less than the $(n + 2)^{\text{nd}}$ term.

3. Find the next number in the sequence:

1, 1, 2, 6, 30, 240, 3130, 65520, ...

Harvey's Joke Corner

Q: What is the most popular sedan in England?
A: The Tudor sedan.

My students thought I was angry when I performed "cross" multiplication in algebra.



Cat and dog conversation:

Lassie: I get 7 birthdays a year, so I'm in "7th heaven."

Garfield: Yes, but I have 9 lives, so I'm living on "cloud nine."

A sure sign of getting old: Even students with 89.9% averages won't say I look 39.

An on-line tutorial on exponential functions has a "natural log-on."

Harvey Chew ■