Math SPIN News

Newsletter of the NADE Math SPIN

http://www.nademathspin.org February, 2007

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From the Chair — Daryl Stephens

Brain research seems to be a popular topic among developmental educators. There have been several presentations about it at the last several years' NADE conferences. There will be a pre-conference institute about it in Nashville this year. In our last issue we had an article on brain research by Roberta Lacefield. To continue the theme, we have an article in this issue by Ed Laughbaum on the implications of brain research on teaching developmental math.

If you get to come to NADE, remember our annual Math SPIN meeting. It will be held Thursday, March 22, at either 11:45 or 12:15. Check your printed schedule for the exact time and location; that information was not available to us at press time. We will be electing new officers, setting goals for the next year, and getting acquainted (or re-acquainted) with each other. Because we are holding our conference in the Volunteer State, I hope several people will step up and volunteer to be part of the SPIN leadership team for the next year!

Daryl Stephens
Math SPIN chair
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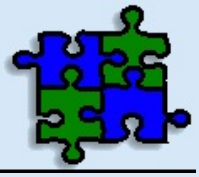
From the Co-Chair — Susan McClory

Greetings Math SPINners!

I am looking forward to seeing many of you in Nashville. We should have a good group of talks to attend plus our world famous Math SPIN meeting! Be there or B^2.

If you are making a presentation at NADE, please email me with the title and the time. I would like to get this information out to the SPIN members before the conference to help them do some advance planning. If you'd like to write a little something promoting your talk, I can include that too. For those who aren't able to join us, it would be nice if you would be willing to share your presentation materials with them. If you will, could you also include a way for them to contact you to get it?

That's all for now, so keep up the good work and I'll see in Nashville.



NADE 2007 Conference "Developmental Education: Piecing It Together"

March 21-24, 2007, Nashville, TN

Gaylord Opryland Resort & Convention Center

http://www.nade2007.net

This year's conference will feature some new ideas. Among them will be two Thursday evening sessions.

Math SPIN Web Site

Check out your Math SPIN web site at http://www.nademathspin.org. There you will find archived versions of old newsletters dating back to the early 1990s, links to many places on the web related to teaching developmental math, and more. Some dead links were removed in September.

Math SPIN Annual Meeting

Thursday, March 22

11:45 or 12:15 (check your printed schedule for time and place)

Reminder

Due to the high cost of postage, the Math SPIN newsletter is not printed and mailed out. It is posted on the Math SPIN web page. An e-mail is sent out to let folks know when a new newsletter is posted. If you want to continue to receive notifications about the newsletter, you need to keep your contact information current with the NADE office. Send changes of contact information to the NADE office, e-mail office@nade.net, phone 877-233-9455, fax 567-202-4385, or write to 2447 Tiffin Avenue #207, Findlay, OH 45840. (Note the new phone and fax numbers!)

Yahoo! Group

Remember that we have an e-mail discussion group through Yahoo that is available to all developmental math faculty. To view the archives of all messages posted from the beginning, first get a free Yahoo account at http://www.yahoo.com if you don't already have one. Then sign in and visit this page: http://groups.yahoo.com/group/mathspin/.

To subscribe, send an otherwise blank e-mail to mathspin-subscribe@yahoogroups.com

To unsubscribe, send an e-mail to mathspin-unsubscribe@yahoogroups.com

To post a message, send an e-mail to mathspin@yahoogroups.com.

The Yahoo group site also allows us to post pictures, files, links, and surveys. Maybe we should take advantage of these. There is also an electronic calendar which we can use to post events of interest to the membership, such as conferences and workshops.

If you aren't on the list, please join us. It's free and will help you get more out of the experience of being a Math SPIN member.

Feature Articles

Developmental Math Labs

Several colleges have started specialized developmental math labs which are separate from the regular math tutoring labs. The following articles describe two of them. Feel free to share your experiences with them in future newsletters!

Felician College

by Jacqueline Bakal

Felician College is a small, 4-year Franciscan Liberal Arts College in Lodi, NJ. As Developmental Math Coordinator and a member of the Task Force on Developmental Studies, I am very anxious to have a full-time Developmental Math Lab to help our students who constantly struggle in their classes.

We finally received approval for a part-time lab starting in September, 2006. I spend 14 hours per week there, plus I have two Adjuncts, one full-time professor, and one student helping me. I am proud to say that during the first month of school we are already a success! Every week the number of students attending grows and we have many repeat customers. The professors who teach the developmental classes have started a policy that states that you may take a re-test on any test or quiz provided you spend at least one hour being tutored in the Developmental Math Lab.

On Friday a young man came in and thanked me for helping me because he was able to raise his quiz grade to a 90% after being tutored! And isn't this what it all about? Seeing that "AHA!" moment when a student finally understands?"

(Editor's note: This article was originally intended for the November 2006 newsletter, but inadvertently got omitted.)

East Tennessee State University

by Daryl Stephens

East Tennessee State University is a regional university of about 12,600 students located in Johnson City in the far northeast corner of the state. In the last few years our sister universities in the Tennessee Board of Regents System have made some drastic changes to their developmental studies programs as a result of rules changes favoring developmental courses being housed mostly in community colleges. One university changed their courses to a 100% computer lab-based program (much to the chagrin of faculty members – and of students, who now have much higher failure rates!). Fortunately, the administration at ETSU has been more supportive of developmental studies. The assistant vice provost for student retention (a former developmental studies advisor) and the vice provost for admissions decided that one key to student retention was increasing the passing rate of students in developmental math classes. They were able to obtain funding for five academic performance scholarships for undergraduate students majoring in math or science and for one graduate assistant in the Master of Arts in Teaching program. The undergraduates are required to work 75 hours a semester, and the graduate student works 20 hours a week in the lab. (We are fortunate this year to have a graduate assistant who previously worked for a prominent national private tutoring company.) I was designated as the supervisor for the program.

The undergraduates are enrolled in a one semester hour course each semester called Seminar in Math and Science. The course is an odd hybrid of tutor training and hearing from guest lecturers about research and careers in math and science. Part of the training involves giving the tutors a crash review of the content being currently covered in our elementary and intermediate algebra classes. Common mistakes students make are discussed, and we brainstorm ways to help students overcome those misconceptions. Some instructors are also using Course Compass/My Math Lab with the textbook, and once we finally got the plug-ins installed into the lab computers, the tutors learned how to use that software so they could help students who came in with questions about it as well.

The tutoring lab is housed in a laptop computer lab in one of the campus residence halls. Some students, especially those who live in that residence hall, come by the lab to work on their homework so they can ask for assistance if they need any. Attendance wasn't as high as we would like in the inaugural semester (Fall, 2006). There were only 72 recorded visits representing 13 different students. However, the tutors reported that several people neglected to sign in, so the actual attendance was probably higher. We hope that with more publicity the attendance will be higher, and we will see more successful students in our program. One possible problem is that the lab is on the opposite end of campus from the building in which the developmental courses are taught.

Life should get interesting in the future, as we are considering a drastic reconceptualization of the developmental math sequence. That will have to be a topic for another article, though, as we are still in the thought process stage and these changes will need approval from above. ■

Tennessee Board of Regents System Looking at DSP Restructuring

Daryl Stephens, East Tennessee State University

The Tennessee Board of Regents System (TBR), which includes all public community colleges and the six universities not in the University of Tennessee System, has been awarded a FIPSE grant to envision new ways to get students through the developmental studies program (DSP). A group of faculty and administrators met together on February 16 to hear more about the proposal. The system will work with the National Center for Academic Transformation to design new approaches. These might include things like hybrid courses, modular courses, computer aided instruction, and other modes of "flexible delivery." It might even mean replacing classroom instruction altogether with computer labs and undergraduate tutors. The ultimate goal is to get students through their DSP requirements faster and more cheaply. Campuses are currently looking at possibilities for redesign and will meet later in spring to submit their proposals. ■

Net Goodies

In this column we spotlight some web sites of interest to developmental math faculty. Feel free to pass along your suggestions for future issues.

You may be interested in freeware called GeoGebra which blends a dynamic graphing system with aspects of a computer algebra system.

You can create the same dynamic objects with point, line, circles, etc., as in GeoSketchpad or Cabri, and the program automatically generates corresponding equations (which naturally change as you drag points or other objects). Or you can manipulate the equations or coordinates directly and see the results on the graph. The "algebra" and the "geometry" are simultaneously visible in adjacent windows.

There is an introductory article about the product at http://www.geogebra.org/publications/200702_joma_geogebra/ (I have nothing to do with the product other than having had the opportunity to read the article.)

I should also mention the free software called Geometry Explorer (http://homepages.gac.edu/~hvidsten/gex/index.html) written by Mike Hvidsten at Gustavus Adolphus College. Geometry Explorer allows the instructor to put a completely interactive geometry page up on the Web—all of the dynamic geometry tools can be made available to the student, or the instructor can pick and choose. Not only can the student see some clever construction created by a teacher, the student can create his/her own constructions with tools familiar to GeoSketchpad users, and more.

And another extraordinary feature is that Mike allows you to work in non-Euclidean geometries!

Bruce Yoshiwara,
Los Angeles Pierce College

Professional Development Opportunities

AMATYC Annual Conference "Building a Better Tomorrow"
November 1-4, 2007, Minneapolis, MN
http://www.amatyc.org/Events/conferences/2007/index.html

8th International Conference on Technology in Mathematics Teaching, July 1-4, 2007
University of Hradec Králové, Czech Republic
https://www.ictmt8.org/ictmt8/

National Council of Teachers of Mathematics
March 21-24, 2007, Atlanta, Georgia
http://www.nctm.org/meetings/atlanta/
(Yes, this is the same time as NADE.)

College Reading and Learning Association
October 22- 25, 2008, Crowne Plaza, Cleveland, Ohio
http://www.crla.net/conference.htm or http://www.pvc.maricopa.edu/~sheets/CRLA2007/

Multiple workshops are offered by **Texas Instruments** (http://education.ti.com/educationportal/sites/US/sectionHome/pd.html) including 18 regional T^3 conferences.

AMATYC Outer Banks Summer Institute
"Developmental/Remedial Algebra Using a Function Approach" (more info elsewhere in the newsletter)
June 17 – 22, 2007, Duck, NC
http://www.amatyc.org/Events/summer-institutes.htm

(More opportunities on page 10)

Connecting Brain Research to the Teaching of Developmental Algebra

Ed Laughbaum
The Ohio State University

Knowing that teaching creates new dendrites on selected neurons in our students is interesting. Further, knowing that a pattern of firing neurons is a necessary, but not a sufficient condition, to bring a memory to consciousness is even more than interesting. It is almost amazing that neuroscientists have discovered that there are different chemicals in the neurons holding a long-term memory vs. the neurons keeping a memory in the short term. It is quite fascinating that the "same" neurons fire in our brain as in the brain of a person we watch, for example, as they raise their arm. It is worth knowing that memories are reconstructed each time we recall them, and as such, are never the same. But how does this help us teach developmental algebra?

Rather than looking at the molecular or cellular level for ideas that will guide teaching, perhaps we should look at cognitive science research on the brain as an organ, which may answer questions like: What external activity causes long-term memory? What develops understanding? Is pattern building better than reasoning when trying to get our students to understand algebra? Will memorizing produce long-term memory? Will practice? How is an emotional connection (meaning) related to memory, attention, and understanding? Do we need to "connect" a mathematical concept/skill to other algebraic concepts; to the real world? Can't we make learning faster? How can we create correct memories of what we teach?

Well, this may sound like Psychology 201, but in fact is based in research from the cognitive and neurosciences. There are eight concepts coming from neural and cognitive science research that are worth interpreting and applying to the teaching of developmental algebra. Below is the list of concepts and a very brief application of each idea. For a fully referenced paper relative to this topic, please go to http://www.math.ohio-state.edu/~elaughba/ and look at the paper.

The literature research shows that:

1. We remember algebra longer and have better recall when associations (connections) are developed. That is, students are more likely to remember the mathematics taught when we capitalize on associations (connections) of the concept being taught to other math concepts and a real-world situation. Brains can only recall a memory (something learned) through a series of associations.
2. Learning is made simpler, faster, and more understandable by using pattern building as a teaching tool. If we use pattern building to reach a generalization about a concept or skill, students "understand" the concept/skill when they recognize the pattern we are building. Brains are constantly looking for patterns which it uses to understand. Neural pattern processing is much more predominate than is reasoning.
3. Students cannot learn if they are not paying attention. The main ingredient for getting attention is novelty – often expressed in the form of motion. The graphing calculator can be used to draw attention to the mathematics through its basic functionalities including,

various app software. Thoughts and memories are often brought to consciousness by what the brain is paying attention to. Procuring the attention is often a matter of interest and brains are attracted to electronic devices.

4. Visualizations used before any symbolic development of a concept greatly increases the likelihood that students will understand and remember the mathematical concept being taught. Visual recognition of a problem or situation is the primary, and most influential, connection to meaning, properties, uses, and skills related to the problem or situation. Our brains process mathematics through the occipital lobe.

5. Considerable brain processing takes place in the unconscious brain, including a learning module. To make this processing possible for educational purposes, the brain must be primed. Why not prime the brain by using pre-learning activities for the algebra that is to be taught at a future date? This will make learning faster.

6. The enriched teaching/learning environment promotes correct memory of math learned. A wide variety of teaching/learning activities and the use of technology provide an enriched environment. During enriched teaching, the brain will grow more dendrites, create more synapses, and can even produce more neurons than when you use a single method/technique. More dendrites and synapses means a better chance at remembering and an increased understanding.

7. Contextual situations provide meaning to the algebra to be learned. Algebra taught without meaning creates memories without meaning that are quickly forgotten. Contextual situations are the first link in a series of connections (associations) that lead to understanding. Attaching meaning allows students to function at a higher cognitive level. Meaning provides an emotional connection to what is learned which helps with recall.

8. Learning must be distributed throughout the course. Each time a topic is revisited, use a different level and a different purpose. Each time a concept is revisited the memory of the concept is enhanced and less likely to be forgotten. Most neuroscientists will suggest practice to improve memory, but it pales in comparison to distributed learning.

To learn more about applying neuroscience research to teaching, learning, understanding, and memory of developmental algebra, you may be interested in attending the American Mathematical Association of Two-Year Colleges' Outer Banks Summer Institute, "Developmental/Remedial Algebra Using a Function Approach," June 17 – 22, 2007 in Duck, NC, see http://www.amatyc.org/Events/summer-institutes.htm. ■

Forum: What Are Some Good Ways of Teaching and Delivering Developmental Math?

The Math SPIN received an inquiry on February 7from the dean of a regional university in the northeast. The math department was looking at recommendations for teaching and delivery of developmental math. This sounded like a good job for the members of the Math SPIN Yahoo group, so the question was forwarded to the membership. Following is a sampling of responses, in approximate chronological order they appeared in the e-mails. As you can see, there is quite a diversity of opinion! We even got some opinions from people involved in developmental math who are not current NADE members (but have been invited to join, of course).

Some of the discussion continued past that, with the authors exchanging views on various point made by other authors. To see the rest of the discussion, join the Yahoo group (if you haven't already) and look at the archives beginning with February 7, 2007. The thread has the subject of "FW: Developmental math question" (with a few having the subject line "Re: Digest Number 282"). Naturally, the opinions expressed here are those of the authors; there is no official Math SPIN position.

Alain Schremmer

It seems to me that there are two assumptions in Dr. Henriques' letter that require examination, namely that there is such a thing as "developmental math" and that the problem is only "the delivery and teaching". I am neither an "expert" nor do I "have any great responses" other than that there is definitely no such thing as "developmental math" and that, whatever the case, that it is absolutely not a matter of "the delivery and teaching." If nothing else, the very prevalence of the situation that Dr. Henriques deplores would seem to bear me out.

During the past several years I have expounded on the matter rather profusely in the *AMATYC Review*. The issue is whether people who have no reason to trust anyone should trust educators who tell them, essentially, "Don't think, just let me show you and now drill and test." An objective look at any of the current "developmental math" texts will show that this is indeed the case whatever we then do in the classroom. Moreover, this is precisely where so-called "math anxiety" finds its source.

The fact is that people can deal with anything that makes sense to them and so, the only thing that can and will work is a very careful, logical construction of mathematics in terms that make sense to the students.

Right now I am developing materials based on this fact that are intended for a three semester sequence starting in arithmetic and ending in differential calculus and the AMATYC Review is in fact serializing a "proto-version" thereof.

When complete, the materials (text cut up in 18 "lessons" per semester, corresponding exercises and multiple-choice homeworks, multiple-choice/open reviews, multiple-choice exams) will eventually be up-loaded on the net under a GNU Free Document License for anyone to download, use as is, or modify.

In the meantime, I would be glad to send a more detailed version of any aspect of the above thesis to anyone interested in discussing them and/or some of the materials that have already been developed.

Ed Laughbaum, Ohio State University

I am not certain any of us are experts, but we likely each have our own ideas on how to make developmental students successful in college level mathematics courses. Right away we have an issue because very few developmental students make it to college level work or graduation. Ohio Board of Regents data shows that only 28% of Ohio students taking a developmental course graduated with a (any) degree in a 6-year period. My guess is that this is similar in many states.

In my opinion (yes, it is just my opinion and of no more value that anyone else's), the problem is traditional textbooks where the "teaching" method is to make a statement of the law, rule, property, etc., followed by 8 examples, followed by a homework assignment of problems like the examples. This problem is further exacerbated by the masses of teachers embracing this approach. This approach does not lend itself to understanding, long-term memory, or correct recall of what we teach.

I buy into the current thinking that everyone can learn algebra. It's just not with the traditional textbooks and methods we use. We have all heard the stories of the developmental student taking the same course over and over and never passing it. We also know that the there are companies who say their computerized system will help. But every college I know who bought into these, drop them within 3 years. Why? It is just the same content taught the same way on a computer.

Well, I have gone on too long, but let me just put in a plug for the AMATYC Outer Banks Summer Institute – http://www.amatyc.org/Events/Sum-Inst/2007AMATYC-OuterBanks.pdf – where we will review the literature on neuro/cognitive science research of the brain with the expectation that it may answer questions like: How can we foster long-term memory? How can we develop understanding? Is pattern-building better than reasoning when trying foster understanding of algebra? Will memorizing produce long-term memory? Will practice? How is an emotional connection (meaning) related to memory, attention, and understanding? Do we need to "connect" a mathematical concept/skill to other algebraic concepts? To the real world? Can't we make learning faster? How can we more likely create correct recall of algebra taught? This may sound like rather high expectations, but research in the cognitive and neurosciences have advanced considerably in the last 15 years, and now is the time to interpret the results and implement what we can to teaching and learning of developmental algebra.

Sure, a biased opinion. :-)

Roberta Brown, Valencia Community College, East Campus

As my other colleagues have mentioned, I by no means consider myself an expert . . . but I did have the urge to throw in my two cents in response to the question :)

There are several places to see what are the latest and greatest methods in use . . . NADE has a list of "Best Practices" on their website, and Achieving the Dream (thru the Lumina Foundation) lists all of the activities that participating colleges are doing to enhance their developmental education programs. Amongst these are things like: Learning Communities, Supplemental Instruction, Culturally Mediated Instruction, Strengths-Based Instruction, and First Year Experiences . .. just to name a few! However, I caution that these are all "treatments" for the challenges that each individual college is facing.

I believe that each college has its own unique version of the same core issues. It is important to determine what are the specific needs and challenges that the students at YOUR university are facing, and then to review the literature and explore what programs others are using to see how they may be "adapted" to fit the needs of your student population.

There is certainly no "one-size fits all" solution to the problems in Developmental Education.

Good luck with your search! And if you are interested in hearing about it, I would be more than happy to share with you some of the things we are trying here at Valencia Community College: data, background, pros, cons, etc.

Roberta Lacefield, Waycross College

I strongly agree with what Alain Schremmer and Ed Laughbaum, both of whom have fought long and passionately to improve math instruction, are saying. However, I don't believe we should throw the baby out with the bathwater, as my wise old grandmother would say.:-)

My view is that the limited time we have in the classroom is best spent on presenting the bigger pictures in mathematics. It should be spent in allowing students to experience mathematics as patterns, language, a body of knowledge, a problem-solving approach, and every other of the myriad of definitions of math. Students should have opportunities to experience mathematics as tables, equations, graphs, and words. They should be DOING math in the classroom--not watching as we pick it about into little bits and pieces. That said, there needs to be an opportunity to practice the skills inherent in the big ideas students are experiencing. That, I believe, is where CAI can be useful.

Ted Panitz, Cape Cod College

Hi from sunny Cape Cod, Massachusetts, where it was 5 degrees last night. Why do we need to pose the question as an either-or situation? Students need a certain amount of drill and repetition in order to help them remember the rules and procedures associated with math, particularly beginning levels of algebra, plus they need to be encouraged to explore math concepts and patterns on a deeper level. A hybrid approach may be just what the doctor calls for.

I use a number of different techniques in my classes including cooperative learning where students work together on drill exercises as well as open ended type questions. They read a little math history together. They discuss their varied approaches to problem solving. Students present their methods on the board and attempt to explain of justify what they did. I also use writing assignments to encourage students to explore math concepts and share their results with their peers, just as mathematicians do. I do this in developmental math courses. Not all the students respond well to being asked to write in a math class or work with their peers, but by using a variety of approaches I find that I can reach some of the students all some of the time and all of the students most of the time.

Donna Martin, Florida Community College at Jacksonville

We have been offering a tutoring class that we modeled off of Glendale Community College. Below is a link to information about the program. It is called the Tutoring Solutions. There is a link to a short video and our web page toward the bottom of the page.
http://www.fccj.edu/campuses/mccs/instruction/liberal_arts/renaissance/index.html

Diane Martling, Harper College

Some of us do not have the choice as to whether we can just use their own materials rather than a commercial textbook. We have a departmental mandate about the textbook we can use. That does not mean we do not use some of our own materials but we need to consider where a student might transfer to or what consecutive course they might take when they finish my course--will that faculty use a textbook? Does a student know how to glean material from a textbook?

I strongly agree with Roberta's viewpoint – a combination of both "big picture," vocabulary and patterns to help solidify the students' thinking, with some of the CAI may help to see where the big idea is used. I also think that students need to be able to think and analyze evaluate problem situations, decide on what, if any, approaches might work, not just repeat what a series of examples show them. Where in the world will the problem be set up for them with the answer always in the back of the book? When are they going to expand and say, what if… Developmental students need this skill as much as a calculus student might, just different types of problems. If we don't model thinking, it will not make any difference what we have them do or not do. That is what made the beginning elementary math more fun because it included lots of different viewpoints and situations. When we had them rotely mimicking what we did, then we started having non-successful students.

I remember that in accounting, you learned the big categories and then did hours of practice so that you understood the big picture of how to apply it later in the "real on-the-job world." Isn't that what we are really looking for in our developmental classrooms? Students do tend to take the same course over and over and for those that actually come to class, they need more realism. I also agree with Ed Laughbaum (and have attended the Duck, NC, workshop/class) that there is usually more than one approach to a problem (traditional, non-traditional and "outside the box" methods) than the skill-and-drill ways to present ideas. The students remember that it was an engaging activity, not just "sage-on-stage" which is what some of the textbooks really present.

I also think we need to look at student accountability-if students rarely attend class, do not at least try to take some notes, do not even try to do homework, do not try to do the CAI, do not take advantage of free tutoring and, then we cannot expect to pass this or any other course. One of our instructors always asks her students who are repeating the course(especially if they are retaking her): "What are you going to do differently this time in taking the class?" She wants the students to know that if he/she does the same thing and the instructor is trying to do some big picture discovery activities, there will not be any difference the second or third time they attempt the course. We can encourage students, answer their questions, and help them understand, but we cannot pour the knowledge into their heads. We cannot think for them, but we can help them learn to think.

Laura Bracken, Lewis-Clark State College

We are focusing on pedagogical strategies that help students succeed. Sometimes these strategies help students deal with math anxiety and that is the key to allowing them to learn. Sometimes these strategies help students understand why rather than just memorize how and that helps them to learn.

What administrators need to remember, however, is that there is a limit to what a teacher can do by changing pedagogy and approach. This is true because of the other issues in the lives of these students.

I see students who must work 40 hours a week to support themselves and their families. Sometimes this happens because of lifestyle choices that we might view as optional (new car or supporting an iPod habit). But more often they are in situations that are past being controlled. They have families. They have child-support to pay. They have credit card balances from the past that aren't going away because they received a Pell Grant to go back to school. They have spouses who do not support them going back to school and still want dinner on the table every night at 5 pm.

I see students who have significant physical and mental health issues. They are on voc-rehab programs. They are often depressed. Some are dealing with the criminal justice system. And, probation officers and court hearings and custody

hearings and doctor's appointments are not scheduled so that students don't miss class.

I see many students who have recently experienced the end of a significant relationship. They are grieving. They are angry. Their kids are driving them nuts because the kids are also grieving and angry. They are frustrated, scared, and they aren't thinking very well. They are very, very tired.

I see many students who have a great deal of difficulty with reading. It is even harder to do math when you can't read.

At my school, the drive is for headcount on the 10th day in the fall semester. That headcount drives our reimbursement from the state. Students are admitted that do not have the academic background to succeed even in developmental courses. Essentially, we have open enrollment. My success rate is determined by the percent of students with a C or better at the end of the semester, based on that 10th day headcount. Withdrawals count as failures. Students who come to class every day and try but just can't do it in the time allotted are failures. Students who get sick for two weeks and never get caught up are failures.

I believe that teaching is always a work in progress. But if I am going to keep doing this "missionary" work for another 15 years, I have to be realistic about what I can accomplish by changing the way I teach. I need to care about my students but also maintain standards of performance that enable these students to succeed in the next class.

And the administrators above me need to understand the magnitude of the task. It would help if deans and VPs would take the time to sit in on a few prealgebra and algebra classes. If they would glance through a stack of the homework they turn in to me to grade. If they would ask for a few representative copies of the tests that we receive so they see how frustrated and confused our students can be. If they knew the reality, not just the description, of what these students must overcome in order to succeed, it might make a difference in how we move forward. Most PhDs have never taught this student population. Our academic dean is a PhD chemist. Our provost is a PhD biologist. In their academic experience, they have most likely never taught someone who was over 18 years old and doesn't understand long division or fraction arithmetic. So, my advice to any administrator who wants to see change: visit some classes, talk and listen to your instructors, put some money in the budget so that even the adjuncts can go to a conference and hear Ed Laughbaum speak, tailor any changes to the needs of your particular student population (and listen to the instructors when they tell you what the population is really like, not your admissions officers), support change even if it causes temporary dips in student evaluation of instructors, put some money into your tutoring center, and make sure that your campus knows just how much you value the work done in developmental courses.

There is a balance in keeping ourselves open to change and beating ourselves up because too many students aren't succeeding. ■

Professional Development Opportunities (continued from p. 4)

MELT (Mathematics Education Leadership Training) Summer Institutes
Appalachian State University, Boone, NC
Advanced Functions and Modeling (18 - 22 June)
Statistics 2 (25 - 29 June)
Technical Mathematics (9 - 13 July)
Discrete Mathematics (16 - 20 July)
These week-long MELT Institutes are open to all high school and two-year college mathematics faculty and to middle school mathematics teachers who have a strong background in mathematics.
http://www.melt.appstate.edu/institutes.html

Ninth Annual TIDE (Technology Institute for Developmental Educators)
June 24-29, 2007
Texas State University, San Marcos
Over 14 workshops to choose from
http://www.ci.txstate.edu/tide/tidehome.htm

2nd National Math Labs Conference "Math Labs: Charting A Course For Student Success"
August 6-7, 2007
Bowling Green State University, Bowling Green, OH
Deadline for proposals Friday, May 18
For details contact Michelle Heckman at mheckma@bgnet.bgsu.edu

Remember to renew your NADE membership, even if you can't come to the Nashville conference!