



Fall 1998 Math SPIN Newsletter

Dear Math Spin members:

We are already halfway through the fall semester - - Where does the time go? I have received several articles, questions and overviews from members - THANK YOU SO MUCH! If you haven't seen yours yet - "What are you waiting for!" Please send me something today and I will include it in the spring letter. **Save the date, February 17-21, for the Detroit NADE Conference.**

Reminder:

For the Detroit SPIN meeting, each member is asked to bring a gimmick or idea used in your math classes that makes Mathematics easier to learn. Start thinking!

Please let me know if you have any suggestions for our SPIN group or articles for the newsletter.

Sincerely,

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Check out the conference web site <http://www.umkc.edu/cad/nade/conferenc/detroit.htm>

Spin Newsletter

Overviews

In the May 1998 newsletter, I requested that each SPIN member send me a brief overview of their developmental math program including:

- The number of courses
- The type of instruction used
- The class size
- Placement test
- Skills labs
- Tutoring available
- Technology used
- Exit criteria

I promised to include several in the next newsletter. I have received several and am including some. Please feel free to send me yours and it will be in the Spring Newsletter!

The following overview is from Shevawn Eaton, Northern Illinois University

Here at Northern Illinois University, we only have developmental coursework for specially admitted students. There are 500 of them admitted each year through a program called CHANCE. Traditionally, admitted students who place below college algebra must go to a community college to get up to speed.

I work with ACCESS, the academic side of the CHANCE program, and math had been such a big problem for so long, it has become my primary interest over time.

We have basically two developmental courses, MATH 108 and MATH 109. They are configured into two sequences, however. MATH 108 and MATH 109 as a Fall/Spring combination serve as a two-semester sequence, Intermediate Algebra course. Neither course is offered for credit towards graduation, but the grades remain in the students' GPA. The sequence is designed to prepare students to go into College Algebra or Finite, but we strongly recommend College Algebra as the next step.

The second developmental sequence is MATH 109 and MATH 110, which is a sequence designed to meet the requirement for College Algebra (MATH 110 is the university number for the traditional College Algebra Course which does count towards graduation). MATH 109 is taken in the Fall and MATH 110 is taken in the Spring. The MATH 110 course number means different things in different contexts.

All three of these courses, including 110, as part of the SEQUENCES, are capped at 22. They are taught by professional instructors and T.A.'s out of the math department. These courses also have a Supplemental Instruction (SI) session built into them. The classes meet four days a week, and the SI Leader meets with the students at the usual classtime without the instructor present on the fifth day - - usually the day before the weekly quiz. The SI Leader works on basic skills, promotes collaborative solutions to problems that arise over the course of the week, and assist the students with review sessions and other aids. The SI Leader also holds office hours in our tutoring lab during other times so those students can gain one-on-one assistance.

We have a third developmental placement for the special admits, a one-semester College Algebra course (MATH 110), which has a smaller cap (30) than the traditional MATH 110 (150). There is no regular SI support for this course, unless I get a budgetary fluke, but we always have tutors on stand-by in our walk-in lab, because 110, in general, is a pretty high risk course. The placement test is an in-house test written by the math faculty. There are three components, Arithmetic, Algebra, and Advanced Skills. Students are placed based on a number of criteria including this test, high school math background and grades and the ACT math score.

The course grade is based on three exams and final and weekly quizzes in all three courses.

Overview from Jo F. Warner, Michigan

- We teach two major courses. Each of those were divided into two half courses. Therefore, we have a total of six differ
- Different teachers use different types of instruction from collaborative to lecture.
- Class size is limited to 25 students.
- We use the CPT accuplacer test. (It works)
- We have a tutoring center where students can go for extra help. _No skill lab, if that is considered as a separate entity.
- Technology: We strongly recommend a TI-82 or TI-83 for our classes.
- Students must earn a C or better to successfully complete any developmental math class and continue to the next level.

Overview from Joan Finney, Dyersburg State Tennessee.

No. of courses - 3: Basic Math, 3 hrs. credit Basic Algebra, 4 hrs. credit Intermediate Algebra, 3 hrs. credit

Type of instruction: Still heavily rely on lecture, however, two teachers work in basic algebra using Algebra Tiles, collaborative learning groups, some lecture

Class size: We cap our developmental classes at 25.

Placement Test: If students score 18 or below on ACT math, they are required to take the AAPP (Academic Assessment Placement Program, published by ETS) placement test - on the first day of class, we also allow them to retest with our own departmental test. It is possible for a student to test out to the next higher course.

Skill Labs/Tutoring Available:

We offer our students tutoring through a Trio tutoring program, and we also have a campus wide drop-in program (which, by the way, I coordinate). Both programs use peer tutors, plus computer tutors are also available through the drop-in program.

Technology Used: Guess I just answered that one.

Exit Criteria: None, other than passing each course.

Overview from Diane Vukovich, University of Akron

1. Two levels of Basic Mathematics are offered. Basic Mathematics I is an intensive review of general math and an introduction to integers. Basic Mathematics II is a brief review of general math and intensive instruction in elementary algebra. Each course is 4 load hours. The courses count for financial aid purposes but not for credit toward graduation. Students receive letter grades, but the grades do not count in the official GPA. During a typical fall semester, we run 15-20 day sections and 3-5 evening sections of Basic Mathematics I; 30-35 day sections and 3-5 evening sections of Basic Mathematics II. During a typical spring semester, we run 13-15 day sections and 3-5 evening sections of Basic Mathematics I; 20-25 day sections and 3-5 evening sections of Basic Mathematics II. In the summer, we run 1-2 day sections and 1 evening section of Basic Mathematics I; 1-2 day sections and 1 evening section of Basic Mathematics II. We have one 8-week summer session. Sometimes one section of Basic Mathematics II runs for a five-week session.
2. Classroom instruction includes lecture and group work. Emphasis is also placed on developing learning strategies and controlling anxieties. Math journals are an integral part of the course.
3. Class size is limited to 22 for Basic Mathematics I and 25 for Basic Mathematics II.
4. In-house, multiple choice, non-calculator, placement test is used. Currently a switch to COMPASS is being investigated. A pilot study will be run this fall (1998).
5. Math Lab is available day and evening. It is staffed by both part-time faculty and peer tutors. The Lab works with students in Basic Mathematics I, Basic Mathematics II, entry-level 2-year college math courses, and Preparatory Math (a 3 hour elective offered through the Math Department. It is a step above our Basic Mathematics II and a step below College Algebra, the required course for most non-science majors.

6. Peer tutoring is available through our tutorial program for College Algebra and beyond.
7. We encourage the use of the calculator for decimals and percents in Basic Mathematics I. We use the TI-82 overhead unit for some instruction in Basic Mathematics II but do not allow the use of the calculator in the course. As the calculator is incorporated more into the Mathematics Dept. courses, we will do more with it in our courses. Several quizzes are taken on the computer to prepare students for Preparatory Math where all tests are taken on the computer. We also do a study skills survey on the computer in both I and II.
8. A grade of C is higher (73%) is required to move from Basic Mathematics I to II or from Basic Mathematics II to Preparatory Math or any 2-year college math course.

Report from Math Developmental Education Conference last June in Kansas City, MO

At the 1997 Atlanta SPIN meeting, it was decided to give any money left in our budget to a member or members, who were interested in attending the Math Developmental Education Conference.

Gideon Weinstein attended and has written the following report.

"New Conference for Developmental Mathematics Educators a Success" by Gideon Weinstein, American University, gideon@american.edu

This review was made possible by a travel grant from the NADE Math SPIN. Many thanks to the members and officers of the Math SPIN for the opportunity.

The 1998 Developmental Mathematics Teaching and Learning Conference was such a success that I will begin my review by advertising the 1999 conference. Next year, the conference will meet in St. Louis from Noon Tuesday, June 1, to Noon Saturday, June 5. Lillian Seese, of St. Louis Community College, Meramec, is the conference chair, and the registration forms and calls for proposals will be distributed by mail and at the MRADE, MCLCA, AMATYC and NADE meetings. You can contact Lillian at lseese@mcmail.sticc.cc.mo.us or 314-984-7773. Carol Atnip, of the University of Louisville, was the 1998 conference chair and was assisted by conference organizers Steve Coble of Tennessee Tech and Victoria "Y" Wacek of Missouri Western State College. The conference provided faculty development through strengthening educational research commitments and sharing pedagogic changes in curriculum design and implementation. The conference was also a forum for networking and building teams among developmental mathematics educators. Along with the other sixty participants, I attended hands-on workshops, listened to invited addresses, and chose from concurrent sessions, yet there was still time for lively discussion and fruitful conversation during the catered lunches and intercession snack breaks. We continued to share our professional and personal stories during spontaneous dinner parties on the town and at informal gatherings after hours in the dormitory where we all stayed. The community atmosphere that arose during the conference was marvelous.

We began as "intimate strangers" say intimate, because even before we met each other at the conference, we were bound together by our shared dedication to teaching developmental mathematics - and we ended as friends and supporters. We convened, not just as developmental educators (as we might at NADE) or as mathematics educators (as we might at AMATYC), but as developmental mathematics educators, to celebrate our common experiences and unique challenges. Some of these experiences and challenges, as documented in conference presentation abstracts, will soon be available on the Web [<http://www.perest.com/newslinks.html>], supplemented by notes taken at the sessions and electronic copies of selected handouts (a hypertext version of this newsletter with activated links is also available at that site). I will not comprehensively review these sessions because of their availability, but will instead touch on selected portions, organizing my comments along the themes of the conference: innovative classroom practice, technology in teaching, Process Education, textbook publishing, and educational research.

Innovative Classroom Practices

Bill Thomas, University of Toledo Community and Technical College; let us know what the AMATYC Standards say about changing our classroom practices in developmental mathematics courses (the Standards are online at <http://www.richland.cc.il.us/imacc/standards/>). Many of you have probably heard Bill speak for the Standards, since he is often on the road advocating their adoption, but at this conference, his presentation included inspirational singing. It was quite an experience! Virginia Asadoorian, from Quinsigamond Community College (and the Houghton-Mifflin Faculty Development Seminars) gave a session on creating a positive learning environment, which highlighted humor and motivation techniques in the classroom. Since she and Bill are close friends, she shared a song with us as well. Other presentations on classroom innovation covered hands-on activities, alternative assessment, using writing to learn mathematics, teaching the learning disabled, reducing math anxiety, and using Supplemental Instruction and study skills courses to improve student achievement.

Technology in Teaching

Wade Ellis, Jr., West Valley College, gave a luncheon address on technology issues in developmental mathematics, leading us on a whirlwind tour through the ways people have used technology to create learning environments and to do mathematics. Other sessions gave us some time to see some calculator activities and computer use in developmental mathematics. There were opportunities to observe and explore quite a few software packages, such as Academic Systems' Interactive Mathematics [<http://www.academic.com/>], Interactive Modular Algebra [<http://comp.uark.edu/wmackey/>], AMATH [<http://www.amath.com/>], and Adventures in Algebra and Introductory Algebra [<http://www.quantssystem.com/index.htm>].

Process Education

Process Education is an educational philosophy that embraces active and collaborative discovery learning strategies and emphasizes critical thinking, problem solving, communication, and self-assessment. Pacific Crest [<http://www.perest.com/>] developed and articulated Process Education and publishes and consults in support of it. Dan Apple, the company president, provided twelve hours of faculty development broken into eight stand-alone sessions at the conference. I found attending his sessions to be both exhausting and exhilarating, because he energetically, though sympathetically, challenged us to develop (and facilitated discussion of) new ways to help our students learn.

Textbook Publishing

Four panelists gave us different perspectives on publishing in developmental mathematics. Martha Wood told us of her experiences taking in-house self-published stuff to a publishing rep and eventually winding up working on the fifth edition of a successful textbook. She informed us that seeing a textbook to market is often a two-and-a-half year process, so that we would need patience and perseverance. Bill Thomas lamented the rarity of books written in the spirit of the reforms encouraged by the AMATYC Standards. He worried that companies would be reluctant to publish reform textbooks because they are not yet proven moneymakers. On the other hand, he noted that the usual three-year publishing time lag since the 1995 release of the Standards leads us to hold our expectations for reformed textbooks in check for a little while longer. Doug Shepelak, of Academic Systems, which produces the Interactive Mathematics multimedia software on CD-ROM, asked us to broaden our conception of "publishing textbooks" to include his product. He noted that the product is designed to replace the textbook, but not the teacher, so it plays a similar role. He also noted that his company solicits comments from faculty to improve the product every six months, beating the three-year process for paper publishing revisions. Dan Apple reminded us those textbooks, whether paper or multimedia, generally package content, while the real challenge in education is the process, which can be addressed through careful curriculum design. Empowering the learner should be the goal, which, no matter what textbook is used, is a heavily human-facilitated activity.

Educational Research

I was one of three panelists presented differing views on how to conduct research on developmental mathematics education and what the research should be used for. Pat Cerrito, a statistician at the University of Louisville and statistical consultant, talked about the use of quantitative and statistical methods to measure student characteristics and achievements. At a later session, she presented a statistical analysis of the effects of changes that had been made in her department's algebra courses. I am a mathematics educator at American University, and I argued that using interviews, observations and other so-called qualitative methods was a much more effective way to explore ways of teaching and explain students' ways of thinking. In a follow-up session, I presented the development and use of my own qualitative educational research and gave the participants an opportunity to briefly get a feel for what doing that kind of research is like. Jan Scott, a professor at DeKalb College, presented a moderate view to the audience, pointing out the pragmatic benefits of using both kinds of methods to support and confirm each other, thus producing more thorough and believable results. Later, she gave a short talk going into more detail about research design and implementation for investigating developmental mathematics education.

Please send me your responses for the following questions:

Questions for Discussion

How does your school (two-year and four year) deal with funding developmental math classes (Below college algebra)?

What kinds of enrollments (% of freshmen class) are in developmental math classes?

Questions asked in May 1998 Newsletter

- Do you think we should allow students to use graphing calculators in elementary algebra?
- Where does your state stand when it comes to state mandate assessment?
- Is there a need for a Ph.D.? Program in Developmental Education?
- How do you handle students who continue to talk while you are lecturing even though you have spoken to them numerous times?
- How do you balance collaborative projects with the non-traditional methods and still cover all the material the students need to progress to the next course?
- What are you doing to reform your Algebra from the traditional methods?
- What are some really good pre-algebra books for 1,2 or 3 credit courses?

Please send any responses to me.

Joanne Methven

REMEMBER TO ATTEND NADE 1999!