

MATH SPIN News

Newsletter of the NADE Math Spin

Fall 2001

Your input is needed ☞ NADE 2002 PANEL DISCUSSION

At our annual meeting in March, the SPIN voted to sponsor a panel discussion at the upcoming NADE 2002 conference. In June, I submitted a proposal requesting a one-hour time slot for the discussion and am currently waiting to hear if it will be accepted or not. Two stipulations of the proposal were that the SPIN would conduct a survey to determine the topic(s) of the discussion and that we would choose the panel members by nomination from within the membership. Below is a short survey through which I am seeking your input on this. *If there are topics of particular interest to you, please respond.* Decisions will be made on the basis of the responses I receive from you.

Tom Armington, Chair

NADE 2002 PANEL DISCUSSION SURVEY

1) Are any of the following topics of interest to you?

- a) Placement policies
- b) Teaching distance courses
- c) Preparing adjunct faculty
- d) Tracking students
- e) Using computers in teaching
- f) Serving students with disabilities
- g) Assessment techniques
- h) Course linkage

2) What other topics are of interest to you?

3) How much of the hour-long session should be designated for “open” discussion?

4) Nomination for panelist(s): _____
(Self-nominations are welcome)

5) Other suggestions: _____

Please send responses to: tmarmington@juno.com

Best Practices in Developmental Mathematics

About three years ago, the SPIN received a contribution of \$543.92 (the remainder of a grant) from Deann Christianson of the University of the Pacific. Several times we have discussed how to use the money without reaching a conclusion. The NADE leadership recently indicated that this money needs to be spent.

In the Spring 2000 issue of the SPIN newsletter, a proposal was made to produce a booklet entitled "Best Practices in Developmental Mathematics Education." It was hoped that the booklet would discuss successful practices in teaching lecture, lab, and hybrid classes, as well as placement issues. Unfortunately, due to lack of response to our requests for contributions, the proposal was never carried out.

The benefit of producing a booklet of this sort would be considerable, especially for new professionals in the field. As most of us are aware, teaching developmental mathematics differs substantially from simply teaching mathematics. Developmental instruction addresses not only the remediation of subject-specific deficiencies, but motivational and academic skill needs as well. In this respect, there is clearly a need for more information to assist new professionals in making the adjustment to teaching mathematics in the developmental environment.

Consequently, the SPIN is planning to spend the special project funds mentioned above in producing a booklet on "best practices." At present, it is envisioned that the booklet will be divided into sections dealing with the following topics: 1) an overview of issues in developmental mathematics, 2) placement practices, 3) teaching methodologies, and 4) assessment techniques. These sections will be subdivided or additional sections added as needed.

If you are interested in contributing to this effort, please contact Tom Armington at the address listed below. Submissions will also be accepted at the annual meeting in March 2002.

Shared Loss

The events of September 11 have weighed heavily upon many of us teaching in the New York metropolitan area. Our lives have been profoundly affected by knowing students or colleagues who lost loved ones in this tragedy. To those who have been directly affected, I wish to say that we share in your loss.

NADE 2002 Roommate Service

Following the NADE 2001 conference in Louisville, a request was made for the SPIN to organize a listing or service to assist members in contacting other SPIN members who might be interested in sharing accommodations at NADE conferences. Interested SPIN members are invited to post that information on the listserv.

Website/Listserv activities

If you haven't already done so, we encourage you to visit our website, which is located at:
www.etsu.edu/devstudy/spin/

Members are also invited to join the listserv. To join, send a blank e-mail message to:
mathspin-subscribe@yahoogroups.com

Newsletter items

The newsletter welcomes submissions of any kind that members feel are appropriate including announcements, teaching tips, comments, articles, etc. Materials should be sent to:

Thomas Armington
P. O. Box 199
Metuchen, NJ 08840
(201) 559-6169
tmarmington@juno.com

Collaborative study produces thought-provoking observations

At the NADE 2001 conference in March, Dr. Pansy Waycaster of Southwest Virginia Community College discussed the results of a collaborative study of five colleges in the Virginia Community College System (VCCS). The study is noteworthy in that it involves the sharing of information, data, and ideas across colleges in an effort to identify factors that lead to student success in developmental mathematics. The study was initiated in response to a report by the Institute for Higher Education Policy suggesting that colleges are failing to conduct systematic evaluations of their remedial programs and that states lack exit standards for remedial coursework. A charge by the Chancellor of the VCCS to develop common criteria for student placement, course exit criteria, and the evaluation of developmental programs was also instrumental in shaping the study.

The study involved the visitation of fifteen developmental math classes from the five colleges, at least three times each, over the course of the Spring 2000 semester. Data was collected on class size, credit hours, attendance, gender, class participation, methods of instruction, success criteria and success rates, and retention and graduation rates. Students who had completed developmental math courses were also tracked over a seven year period.

Following collection, the data was compared in an attempt to identify common factors across the colleges that appeared to influence student success in developmental mathematics. The first category of comparison involved course logistics including class size, credit hours, and teaching methodologies. All but two of the courses were five credits, however, the number of class meetings varied from two to five per week. With one exception, class size ranged from 12-24 students. Instructional methodologies included lecture/lab and individualized (Computer Assisted Instruction) formats with variations between classes including the use of tutor assistants at one college. Two patterns appeared noteworthy in this category. First, regardless of logistical considerations, attendance tended to diminish toward the end of the semester reaching single digits in some cases. Second, in longer classes which incorporated a break, some students did not return following the break.

A second category examined gender dynamics as they pertain to student participation. Data in this category indicated that, with some exceptions, student involvement in asking and answering questions tended to reflect the makeup of the class. Female students participated to a greater extent in predominantly female classes, and males participated more in predominantly male classes. The question of how *teacher* gender might affect this dynamic was raised, but not closely examined.

A third category focused on student success rates over a seven year period. This data included success rates in the developmental courses themselves, as well as in subsequent college-level courses taken by students after completing developmental coursework. Passing rates in the *developmental* classes themselves ranged from 29% to 64% and varied greatly between courses and colleges, providing few conclusive insights. However, the data on success rates of students in *college-level* courses following completion of developmental coursework reflected a number of thought provoking observations. First, the success rates of developmental students in certain college-level courses were substantially higher than those of their nondevelopmental counterparts, suggesting that the linkage and sequencing between some

developmental and college-level courses is functioning well. Second, inadequate success levels (below 50%) in other college-level courses suggested a need to reexamine content coverage, passing criteria, and prerequisite requirements for both the developmental and subsequent, college-level courses in those sequences. Third, the success rates of students given the option of enrolling in some college-level courses after completing either *one* or *two* prerequisite developmental courses were mixed. In the sequence leading to Precalculus, the need for *two* prerequisite courses was evident from the data. Passing rates for students completing two prerequisite courses were satisfactory while rates for those completing only one prerequisite were not. However, in other college-level courses, success rate comparisons of students who completed one prerequisite course as opposed to two were less conclusive, raising questions as to the expediency of requiring two levels of prerequisite coursework.

A final category compared retention and graduation rates of developmental and nondevelopmental students over a three-year period. Data in this category appeared very conclusive, indicating that retention rates for developmental math students were almost 19 percentage points higher than for nondevelopmental students. The data also showed that over 40% of all graduates from these five colleges had taken developmental coursework. According to Dr. Waycaster, "Developmental faculty would argue that the extra attention -- in counseling, advising, teaching, and monitoring progress -- as well as smaller classes contribute greatly to this higher level of retention for developmental mathematics students." The data would seem to support their argument.

Beyond the individual insights gained from this study, at least three facets of the project have broad importance to the larger developmental math community. First, the study involves the exchange of data, information, and perspectives between colleges in an effort to collectively discover and share strategies for effectively teaching developmental math. Second, it represents an effort to bring uniformity to the process of placing students into the college math curriculum and of assuring that their progress through it reflects the achievement of uniform standards at each level. Third, it examines the effectiveness of developmental programs by tracking student success in subsequent, college level courses. These are broad objectives which should be pursued at all institutions offering developmental math programs.

(Pansy Waycaster can be contacted at pansy.waycaster@sw.vccs.edu)