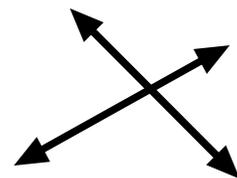


Intersection Points

“where research and practice meet”



The Newsletter of the Research Council on Mathematics Learning

Visit us on the Web at: <http://www.unlv.edu/RCML/>

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Page 1

The Research Council on Mathematics Learning seeks to stimulate, generate, coordinate, and disseminate research efforts designed to understand and/or influence factors that affect mathematics learning.

In This Issue ...

President's Column, pages 1 & 3

Musings, pages 2 & 4

New Members, page 3

Election Results, page 4

Retirement Announcement, page 4

Conference Information, pages 5-6

PRESIDENT'S COLUMN

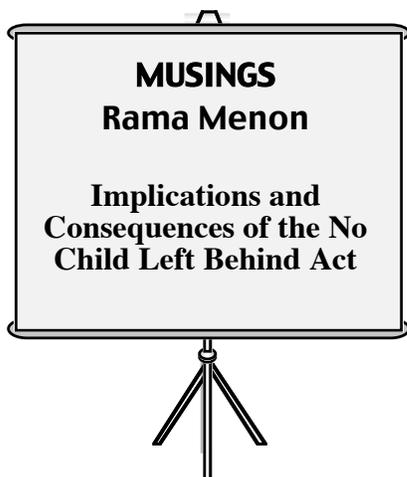
Sheryl Maxwell, President

ON-LINE COURSE QUERY

Well, it's happened once more! Something I flippantly volunteered to assist a colleague with has resulted in hours upon hours of work. Oh the ramifications of a decision! You see, our state has created a Regents On-line Degree Program (RODP) to attract students with diverse schedules. In expanding the RODP offerings, I was asked to design a mathematics methods class for teachers seeking special needs endorsement. My thinking was, "Yes, I'm a specialist in mathematics education. Yes, I have definite ideas relating to the learning of mathematics by special needs students. No, I haven't had much exposure to on-line courses, but need to. This curriculum development component would look good on my vita." Then there was the extra money for the task, while teaching the course would be part of my regular semester load. So, as a result, I have been creating an on-line mathematics methods course complete with a clinical component.

I've learned much, but not exactly in the arena I originally had envisioned. Earlier, I learned to use a form of WebCt when copying documents became problematic. Now, I have become more accustomed to developing a WebCt course. Now, words like *uploading, downloading, importing, discussion*

boards, chat room, and virtual manipulatives are part of my vocabulary. I had heard how one of the benefits to an on-line course was the interaction of the students through discussion areas. Consequently, assignment discussions and activities are the cornerstones of this newly developed course. While I'm still investigating aspects that are serendipitous in this curriculum invention, I have determined several features that continue to be problematic. I will compare this designing phase to creating a regular course with the creating of an on-line course. Generating a course content outline to determine the flow seems natural to me. However, I was puzzled as to how to execute the learning flow in this on-line course. In my *normal* courses, the flow occurs through the interaction of me, the instructor, with the students who are active participants. Although I expect my students to read aspects of the textbook in my *traditionally* taught courses, I rely more heavily on an interactive teaching style with me modeling the *best practices* and bringing in the math content. Through the experience that we as a class have just shared, I create an assignment, often using the lesson plan of the experience as a vehicle for discovery and analysis. Since the shared experience (continued on page 3)



The No Child Left Behind Act (NCLB) is no stranger to math educators. Before taking a look at its implications and consequences, especially to math education, let us take a look at what the policy makers hoped to attain, as a result of the NCLB. The No Child Left Behind Act has laudable intentions:

- 1) Ensure every school going child in the nation performs to acceptable standards.
- 2) Close the gap between advantaged and disadvantaged students.
- 3) Have a teacher qualified to teach the subject in every classroom.
- 4) Hold schools and teachers accountable for students' achievement.

Now, no right-thinking individual would have any disagreement with these avowed intentions. Don't we want every schoolchild to achieve? Do we want children to go through 12 years of school, and graduate without even being able to write grammatically correct sentences, or know their basic facts and simple computations involving fractions, percent, and so on? And, given the disparity in achievement between, say, minorities and the more affluent children, and that America is the land of opportunity, doesn't it make sense to close this gap? Wouldn't having teachers qualified to teach the subject be the ones teaching the subject, rather than just having a teacher teach, according to the vagaries of administrative expediency? Why, too, shouldn't schools be held accountable for their students' achievement? After all, isn't that the charge of the teachers?

Let us now take a look at some of the consequences of implementing the NCLB (given the sometimes

draconian disincentives and sanctions imposed on schools that "fail"). In order to gauge the achievement level of students, a standard has to be set. The standard has then to be assessed, usually through a standardized test or battery of standardized tests. The results of the standardized test are then used as the criteria for evaluating whether the standards have been met, and a numerical score (1 to 10) is assigned to the school, with number 1 being ranked the lowest performing school (at least in California).

What are some ways to ensure all students achieve the set standards?

- (1) Lower the standards to the "lowest common denominator." (Many states have been doing this: even though the written standards may look very rigorous and impressive, the test items themselves may be considered "dumbed down.")
- (2) Enroll only students who have a reasonable chance of meeting the standards. That is, actively discourage the "weaker" students from enrolling in school or from taking the test, thereby further segregating schools. (And even if such active discouragement does not succeed, the students are supposed to be transported to schools having higher scores, thereby creating a logistical nightmare.)
- (3) Teach to the test, and minimize time spent on "non-tested" subjects, such as Physical Education, Music and so on. (This practice is becoming commonplace.)

One direct implication of all these is that good teachers get discouraged from taking jobs in challenging classrooms, classrooms that actually are in dire need of good teachers. Good teachers, you see, generally do NOT teach just to the test, they teach the whole child, they "educate" the child, and they follow good pedagogy. And if they are urged/coerced by administrators that they have to follow a set, structured plan, with every child on the same page at any given time, so as to "cover" the syllabus and standards, sooner or later the good teacher is going to feel the strain of trying to reconcile what he or she believes is good pedagogy, and what he or she is expected to do by the school administrators.

Let me give you an example of how this affects the teaching of math, in particular. I was recently told by (continued on page 4)

‘President’s Message’ continued

portion would be missing in the on-line course, I was forced to rethink my mode of delivery and flow. I decided that the flow could occur through the reading/discussion/activities assignments. But I find the meticulousness of these graded assignments to be oppressive. It seems far too impersonal. I prefer to create an environment conducive to learning where students are face to face with the instructor. When teaching the on-line course, I believe that the structure will hamper the give and take so crucial in assessing the understanding of the process of teaching mathematics using the reform styles. Other components that I judge may be problematic when teaching the on-line course are connected to *listening* and *reflection*. On-line communication differs enormously from spontaneous interaction of students within a classroom setting. As students investigate their own understanding of mathematics in a traditional math methods class, I listen to aspects of their conversations with their peers, later involving many of these responses through the discourse time. D’Ambrosio shares information about three different components of listening: *evaluative listening*, *interpretive listening*, and *hermeneutic listening* (D’Ambrosio, 2004). She argues that “a constructivist teacher is one who uses hermeneutic listening to integrate the multiple voices that emerge during an instructional episode. This teacher understands the need to gain insights into the students’ understanding in order to mold and shape new instructional episodes for a learning space in which students and teachers co-construct knowledge and meaning” (p. 140). All of these listening components seem to be present in a traditionally designed class; however, I am concerned that one or more of these components may be absent in the on-line course. On-line communication is not as spontaneous, but a more filtered exchange of ideas. Additionally, *reflection* events may be compromised. For students, prompting questions can be strategically placed. But, when and how will reflection by the instructor occur? I’m apprehensive that since the curriculum is pre-designed the course cannot be tailor-made for the participants. In essence, co-construction of the course is impossible. Unfortunately, I will not be implementing this course in spring 2005 as I am doing more administrative duties than teaching. I believe that the knowledge I would gain from teaching this course would be

helpful for the restructuring of this same course. If you have had experience with designing and implementing an on-line course I would enjoy continuing this dialogue with you. Contact me at smaxwell@memphis.edu. Have a Happy Holiday Season! I look forward to seeing you in Little Rock, Arkansas in February.

Reference

D’Ambrosio, B. S. (2004). Preparing teachers to teach mathematics within a constructivist framework: The importance of listening to children. In T. Watanabe & D. R. Thompson (Eds.), *The work of mathematics teacher educators: Exchanging ideas for effective practice* (pp.135-150). San Diego, CA: AMTE.

Welcome New Members!

RCML would like to give a warm welcome to the following members who joined the organization in 2004:

Rochelle Beatty, Helen Brandt, Lynn Breyfogle
Andy Carter, Tamara Carter, Sandi Cooper
David Feikes, Vici Flornoy, Roger Kinsey
Karen Kritzer, Angela Krebs, Maciej Kurczab
Belvia Martin, Jean McGehee, Kristine Montis
Selcuk Ozdemir, Joseph Palermo, Betty Senger
Janna Walters, Jeanne Zehr

We hope to see you at conferences and in publications for many years to come! Remember that details about RCML, including membership forms, past issues of this newsletter, etc., can be found at the RCML Web site: www.unlv.edu/RCML.

Election Results

(Bea Babbitt, Nominations Chair)

The elections process has been completed. Congratulations to the following new RCML officers:

Vice President for Publications: Anne Reynolds, Kent State University, Ohio

Secretary: Diana Perdue, Virginia State University

Conference Committee Position 1: Robert Capraro, Texas A & M

Conference Committee Position 2: Jeff Shih, University of Nevada, Las Vegas

We look forward to your service to RCML. Thank you to all those who were willing to run for office. It is an indication of your commitment to RCML. We hope we will be able to tap into your leadership expertise in the future.

Retirement Announced

Congratulations to Melfried and Judy Olson! Mel and Judy are long time members of RCML and have announced their retirements. RCML would like to thank them for their many years of service to the organization and wish them well in their retirements. They know that they are ALWAYS welcome at RCML events in the years to come!

‘Musings,’ continued

a high school principal that he is implementing, schoolwide, the “well-researched” Explicit Direct Instruction (EDI) approach advocated by the DataWorks Educational Research group. According to him, this approach has been shown to give high achievement scores to students taking standardized tests. While this approach is somewhat reminiscent of Madeline Hunter’s approach, this seems much more “scripted.” For example, the teacher must write the math standards that the students are to learn for the day, and the lesson objectives that align with the standards. The students are then given a CFU (Check For Understanding) of the standards and objectives. The main (perhaps, the sole) way of CFU at this point is to first call a student by name, and then ask him/her a question such as, “What is the 1st Standard we are going to learn about today?” Such questions are then repeated so that at least 5 or 6 students have been asked to answer questions on the standards and the objectives. The next step is to “activate prior knowledge” and CFU for understanding of the prior knowledge. Then the teacher “explains” the day’s lesson, “models” his/her thinking, gives guided practice, conducts a “closure,” gives independent practice, and so on. What is emphasized throughout is the CFU through first calling out a student by name, and then giving the question. Indeed, many times, during the CFU, ALL students are supposed to hold up their answer (written on a standard-sized sheet of paper), so that the teacher gets immediate feedback as to how many students had “understood” what was being taught. (Whether the student was just copying the answer on to his/her paper from another student did not seem to be of any concern.)

My concern is that such explicit instruction goes against most constructivist-based math teaching advocated by math educators. Additionally, so much of time is spent on regurgitating standards and objectives, that there is very little time to engage students in productive mathematical thinking. Such teaching, too, does NOT do justice to students of different ability levels in math, and may engender boredom for students, be they bright, or weak, mathematically speaking. I believe the principal is enamored of this approach because it might seem to work to raise test scores, at least in the short term. Indeed, test scores might increase, but at the expense of many students who may be completely turned off education in general, and math in particular. My example is, I am sure, one of many that others can attest to, where doing well on the tests seems to be the only *raison d’être* for schools. If only the policy makers can be made aware of the dire consequences and futility of relying on an absolute score to decide on the fate of schools, teachers, and children!

Research Council on Mathematics Learning Thirty-Second Annual Conference North Little Rock, Arkansas 24-26 February 2005

We have a great program and many activities planned for the annual conference this year. We hope you are as excited about coming and sharing your expertise and perspectives as we are. A brief outline of the program in this issue of *Intersection Points* will give you a glimpse of the exciting opportunities that await you in Arkansas! Also, below are some deadlines and information that will help you prepare for your visit. Additional information is available at the RCML Web site (www.unlv.edu/RCML).

In addition to the intellectual activities of the conference, we have arranged for a tour of the Clinton Library on Saturday. For a guided tour of 15 or more, there is a charge of \$7 for adults and \$5 for seniors (62 or older). To get there, we can take the trolley.

Deadlines:

Registration for the conference: February 11, 2005

Hotel reservations at the conference rates: February 3, 2005

Papers submitted for consideration for an award: January 5, 2005

Web Sites with important information:

Conference Information: belindar@uca.edu

Hotel Web Site: <http://www.wyndham.com/hotels/LITNO/main.wnt>

Hotel accommodations can be made by calling the Wyndham Riverfront in North Little Rock at the toll free number, 1-866-657-4458 or the hotel directly at 501-371-9000. In order to receive the conference rate discount, be sure to indicate you are registering for the RCML conference and register before February 3, 2005.

RCML 2005 Conference Schedule of Events

Thursday, February 24, 2005

Registration	1:00 PM – 5:00 PM
Reception	5:00 PM – 7:00 PM

Birds of a Feather Discussions	7:00 PM – 8:30 PM
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The three Birds-of-a-feather sessions will provide opportunities for newcomers to meet in an open forum with other RCML members, discuss issues of interest, and share research and ideas. In addition, the BOFs should set the tone for on-going conversations along these themes throughout the conference.

CONFERENCE SCHEDULE, continued

Friday, February 25, 2005

Continental Breakfast Dr. Michael Naylor	7:00 AM – 8:00 AM
Session 1	8:00 AM – 9:00 AM
Sessions 2-6	9:10 AM – 9:55 AM
Coffee Break	9:55 AM – 10:10AM
Sessions 7-11	10:10 AM – 10:55 AM
Sessions 12-16	11:05 AM – 11:55 AM
Lunch Business Meeting	Noon – 1:30 PM
Sessions 17-21	1:30 PM – 2:15 PM
Sessions 22-26	2:25 PM – 3:10 PM
Sessions 27-31	3:20 PM – 4:05 PM
Sessions 32-36	4:15 PM – 5:00 PM
Special Session Mix it up---Arkansas, Mathematics, and Quilts by Jaynette Huff	5:00 PM – 5:45 PM
Dinner and Wilson Lecture Ozark Music and Dance by Dr. David Peterson	6:00 PM – 7:30 PM

Saturday, February 26, 2005

Continental Breakfast Dr. Constance Kamii	7:00 AM – 8:30 AM
Sessions 37-41	8:30 AM – 9:15 AM
Sessions 42-46	9:25 AM – 10:05 AM
Sessions 47-51	10:15 AM – 11:00 AM
Sessions 52-56	11:00 AM – 11:45 AM
Lunch	11:45 AM – 12:45 AM

(Tour of the Clinton Library)

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