



November 2012

AMERICAN MATHEMATICAL ASSOCIATION OF TWO-YEAR COLLEGES
OPENING DOORS THROUGH MATHEMATICS

THE DEVELOPMENTAL MATHEMATICS COMMITTEE OF AMATYC

The views expressed do not necessarily reflect the views of AMATYC.

INSIDE THIS ISSUE :

Chair's Report	1
New Life Subcommittee News	3
Math Literacy: Building a New Path- way for Non-STEM Majors	4
Interesting Apps	6
Parkland College's Developmental Mathematics Redesign	7
What about College Algebra and Statistics at the University-Level?	9
DM Mission Statement	11

Newsletter Editor:
Jessica Craig
Jessica.Craig@gpc.edu

If you are interested in **presenting at the AMATYC Anaheim Conference**, information about proposal submissions are available at the following link.
(Proposals are due by February 1, 2013.)

<http://www.amatyc.org/Events/>

DMC CHAIR'S REPORT BY LINDA ZIENTEK



Members of the DMC were active at the AMATYC Conference in Jacksonville. The continuing interest in developmental mathematics is reflected by the large number of sessions on developmental mathematics and the increase in DMC membership. There are now 201 DMC members. Please encourage your colleagues to become a member of AMATYC and the AMATYC DMC.

AMATYC Conferences

In Jacksonville, there were a number of excellent sessions devoted to developmental education. In the DMC sponsored theme session entitled "Evidence-based Developmental Math Redesigns", seven presenters provided information on course redesigns. The authors' contact information and presentation abstracts are available on the DMC website at the following link <https://sites.google.com/site/amatycdmc/home/amatyc-dmc-themed-session>.

During the DMC meeting at the 2012 conference, members discussed relevant DMC topics, which included the intermediate algebra and teaching position statements. Next year, the DMC will *not* sponsor a

Developmental Mathematics." At the next DMC meeting, we will be recruiting presenters for a 2014 themed session.

Venues For Communication

One reason for joining the DMC is to share information with and learn information from your colleagues about developmental mathematics. There are several venues that DMC members can use to communicate with their colleagues, which include this newsletter, [Google Groups](#) and the [DMC Website](#).

Members of the DMC can send a message to the membership through Google Groups. In addition, we have the DMC website. The website is intended to be a living and evolving website. If you have information that you believe will be of interest to the membership, please send the information to Linda Zientek (lrzientek@shsu.edu), and I will include the information on the website. Two other venues for communicating with colleagues are the **DMC meeting** at the annual conference and the **newsletter**, which is sent twice a year. Please consider providing submissions to the newsletter.

(Continued on page 2)

CHAIR'S REPORT (CONTINUED)**BY LINDA ZIENTEK****Webinars**

Last year, the DMC sponsored two webinars. If you have suggestions for future webinars or are interested in presenting a webinar, please send an email to the DMC chair or your regional representative. We would like to sponsor at least two webinars per year.

Position Statements

Two position statements were under consideration by the DMC at the DMC meeting in Jacksonville, Florida. The committee decided on minor revisions of the [Teacher Qualifications for Developmental Mathematics](#) position statement. A subcommittee is working on a new name to better reflect the content of the position statement. The position statement is available at the following link.

<http://www.amatyc.org/documents/Guidelines-Position/other-statements.htm>

In addition to the Teacher Qualification position statement, the DMC approved the intermediate algebra position statement contingent on a subcommittee structuring the statement in the format of previously approved AMATYC position statements. Several changes were made to the draft that was circulated prior to the meeting. The final paragraph was deleted and the position statement was retitled. **“The Appropriate Use Of Intermediate Algebra As a Prerequisites Course.”**

Final approval of the intermediate algebra position statement will be a two-year journey. The position statement will be sent to the AMATYC board for initial approval and then an input hearing will be held at the Anaheim Conference 2013. After professional editing and final board approval, a final hearing will be held at the Nashville Conference 2014 prior to being sent to the Delegate Assembly for approval in 2014.

Linda Zientek (lrzientek@shsu.edu)

AMATYC Webinar Series

Check out the DMC's wonderful Webinars as well as other AMATYC webinars at <http://www.amatyc.org/publications/webinars/index.html>

DMC's webinars:

Issues in Implementing Reform in Developmental and Gateway Mathematics by Uri Treisman and Jack Rotman

New Pathways for Developmental Math: A Look into Mathematical Literacy for College Students by Kathy Almy

Do you have a suggestion for a future Webinar? If so, email Linda Zientek at lrzientek@shsu.edu

NEW LIFE SUBCOMMITTEE NEWS

BY JACK ROTMAN

This article will provide a brief update on the activities of the New Life Subcommittee of the DMC. Feel free to contact me (rotmanj@lcc.edu) with any questions you might have.

Teams in the New Life Subcommittee

Work teams were re-formed this year, as the efforts evolved. We currently have three teams:

Resources and Curriculum
Professional Development

Technology and Communication

Through our online community DM-LIVE (<http://dm-live.wikispaces.com>) an invitation was issued for people to help in these areas; a total of 16 people are currently on one or more teams. Recent activities include the Resources team helping prepare materials for the New Life Course workshop at the 2012 AMATYC conference, and the Technology team making improvements to the pages at the wiki (dm-live). In addition, some members of the Professional Development team helped me at the New Life Course workshop. If you'd like to be involved in one of the teams, send me an email.

Recent Updates to the New Life Model

The earlier work (2010 and 2011) focused on the first course in our model ("MLCS", Mathematical Literacy). The second course was called Transitions (short for "Transitions to College Mathematics"), though few people could get a sense of what that course was about. Therefore, two changes were recently made. First, the second course is now called "Algebraic Literacy" (based on our discussion at dm-live); this name seems to work much better, based on our experience at the New Life Course workshop (AMATYC 2012). Second, the visual image for the New Life model has been updated to provide better information about the role of this course; you can see the updated visual at

<http://dm-live.wikispaces.com/Vision>

Information on New Life – for you, for sharing

We have posted the learning outcomes for each course (MLCS, Algebraic Literacy) in an easy to access form at the wiki (<http://dm-live.wikispaces.com/AMATYC+2012>). These documents provide the same outcomes that were posted previously. Also, that web page has a copy of the "Bringing New Life" presentation used at the AMATYC conference in Jacksonville.

Feel free to share this web page link with others; anybody can view documents on our wiki!

Brief Report on Pilots, and the State of the Profession

The most common question I am asked is "who is doing this?". Unfortunately, I am not normally informed when faculty begin a pilot of one of the courses. Our profession would benefit from sharing this information; if you are involved in piloting one or more New Life courses, you can either send me an email or post the information on the wiki (on 'implementers central').

I am aware of MLCS pilot courses in Massachusetts, Michigan, Illinois, New York, and Texas. For Algebraic Literacy (formerly, Transitions), I know of a pilot in Texas.

It's easy to say that "interest is growing". More important than interest, I see growing enthusiasm for doing courses like those in the New Life model. This interest and enthusiasm is reaching the ears of publishers, who are working on textbook projects BEFORE there is a need in the market. Veterans in our profession will realize how unusual this is; normally, publishers respond after the market changes. I am

very pleased that faculty enthusiasm and publisher efforts are working together.

AMATYC 2013 – Consider a Presentation

Especially if you are doing something "New Life," I encourage you to consider submitting a proposal for the next AMATYC conference; see <http://www.amatyc.org/Events/conferences/2013Anaheim/>. At this year's conference, we had 5 sessions about New Life; I know that every one of the sessions done by a practitioner (doing a New Life course) was well received. Our colleagues are eager to learn more about our work and hear about how it actually works with students.

DM-LIVE – our On Line Community

The wiki dm-live.wikispaces.com remains very active; so far in 2012, the wiki has had over 3200 visits; the most popular pages include the Vision of New Life, Mathematical Literacy for College Students, Algebraic Literacy, Quantway & Mathways, and AMATYC 2012. Among other purposes, we used the wiki to communicate and plan for the 2012 AMATYC conference and to share documents with people attending some New Life sessions at that conference. Remember that this wiki is used for both our subcommittee work and to share information in the profession in general. All documents on the wiki are open to the public.

Liaison with Carnegie Pathways

Starting two years ago (August 2010), AMATYC has had two liaisons to the Carnegie Foundation for the Advancement of Teaching "Pathways" work (Statway™ and Quantway™); Julie

NEW LIFE SUBCOMMITTEE NEWS (CONTINUED)

BY JACK ROTMAN

Phelps (Valencia College, FL) and I have been involved with several aspects of their work. One or both of us have attended every 'Institute' held for the Pathways "Networked Improvement Communities," and both of us have been involved with some content review in the Pathways. A major area of our work has been communication within AMATYC and the profession at large

These liaison roles ended in August 2012. At this point, AMATYC will not

have official liaisons for any work in developmental mathematics. Since the New Life project is separate, the New Life work will continue ... and this will involve communication and coordination with others involved with related work (which would include the Carnegie Foundation, as well as the Dana Center at the University of Texas – Austin, and others.). I support all three primary efforts to reform developmental mathematics: AMATYC New Life, Dana Center New Mathways, and Carnegie Foundation Pathways.

Interested?

If you are interested in being involved with the New Life work, please let me know (rotmanj@lcc.edu). There is room for everybody at this 'table,' and everybody's talents can be used to help our work together.

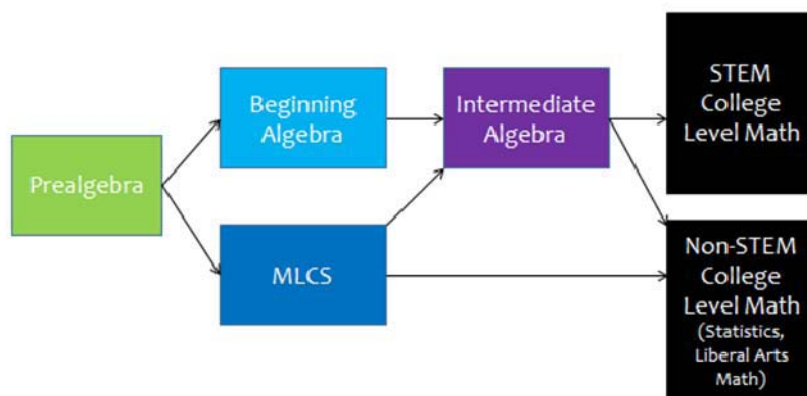
Thanks for your work, and the support this Project has received! *Jack*

MATH LITERACY: BUILDING A NEW PATHWAY FOR NON-STEM MAJORS

BY KATHLEEN ALMY

In 2009, AMATYC's New Life for Developmental Math initiative began its work to provide new ways through developmental math. Since then, much work has been done on pathways courses throughout the country. The Carnegie Foundation, the Dana Center at the University of Texas-Austin, and faculty around the country have been working for the last three years to create new courses designed with their outcome courses in mind as opposed to repeating high school math differently. I've been working as a part of the New Life initiative since 2009, including helping craft the course outlines for Mathematical Literacy for College Students (MLCS) and Quantway.

We began piloting MLCS in fall 2011 at Rock Valley College. Getting to that point required designing a course that would be acceptable to the standards of Illinois, would align with multiple courses at our college, and would embody the goals that New Life had set forth. The primary goal was to help students at the beginning algebra level reach the mathematical maturity necessary to be successful in liberal arts math or statistics. The course focuses on numeracy, proportional reasoning, algebraic reasoning, and functions while regularly integrating student success, mathematical success, geometry, and statistics. This diagram shows how we use the course to form two pathways through developmental math:



**MATH LITERACY: BUILDING A NEW PATHWAY FOR NON-STEM MAJORS
(CONTINUED)****BY KATHLEEN ALMY**

Since our state requires intermediate algebra prior to any college level course, it was important to build the course in a way that would allow it to be piloted. This included making the course fairly large, 6 credits in our state, and including all the key ideas from intermediate algebra but done differently. For example, students study radical, rational, quadratic, and exponential functions in the MLCS course. But they don't focus on the symbolic manipulation of these functions. Instead they focus on modeling, concepts, graphs, and using the functions. This makes for a rigorous course, which was very important to us. Students will be in a college level math class upon successful completion of MLCS; they must be ready for those level of expectations, both mathematically and otherwise.

Many states do not have the intermediate algebra requirement and can thus pare down the course to 4 credits, covering only the topics they need. The beauty of MLCS is that it is not about a single set of skills. It has the holistic goal of mathematical maturity. Many schools are already piloting or developing pilots of this course. They can tailor the course objectives to meet their particular school and state standards.

The course embodies the principles of the Common Core and aligns with it as well. Because of that, high school faculty are looking at developing MLCS as a fourth year course for seniors who would typically elect to skip math. Taking a fourth year of high school math may keep students in a mathematical mindset, possibly decreasing their chances of placing into developmental math.

To build the course and materials in a way that would address the goals set forth, I have been working with a colleague, Heather Foes, since 2010. We have since taught the course several times, written all the content to support it including instructor tools, observed each other's classes, developed a wide variety of assessments, and integrated the course into our department's course offerings. Doing so involved introducing the course to math faculty, academic advisors, and faculty in other disciplines that use developmental math as prerequisites. We found that faculty in other disciplines were especially excited about this course, much more so than beginning or intermediate algebra, because it would work on applying skills in contexts that students will see in other courses. These contexts include nursing, biology, chemistry, business, and more.

We wanted to create a course that anyone could teach, full-time or part-time faculty, experienced or novice. The materials we wrote include online homework and will be published in 2013. The reason we wrote was two-fold. One, a traditional textbook would not address the goals of the course. And two, initiatives will not scale without a means for faculty to teach them. If every school has to write materials from scratch, it will be very difficult for an idea to take flight. We hoped that we could help other faculty who want to teach the course, but don't have the time to create all the materials necessary to do so.

In terms of the classroom experience, there are few courses that I can compare it to. It is active and engaging for students. They work in groups to solve problems and talk about mathematics, not just algebra, in every lesson. Direct instruction is included in every lesson, but [it](#) is balanced with group work. The content is built using interesting and realistic contexts and is not developed linearly. Students see ideas from algebra, numbers, proportionality, and functions in every unit. They work on small and large problems, not just exercises, as well as open-ended problems that take a few weeks to solve. They are not just repeating high school math, but instead working on problems that, as adults, they are facing or will face in their lives and/or careers. In short, it has been incredibly re-energizing to teach.

Here are some quotes from students in the course:

"This class is more realistic than an algebra class, but it also takes a lot more time. It requires you to work hard on every problem so that you're capable of solving the problem again in a different situation."

"I have learned that communication is very important. With groups, I find it very helpful to process and understand things better which makes me more confident when it comes time for homework."

"I can do math! And I actually enjoy it! Instead of dreading it, I look forward to it. This class has changed my view on math and built my confidence."

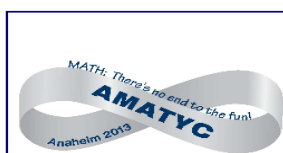
MATH LITERACY: BUILDING A NEW PATHWAY FOR NON-STEM MAJORS (CONTINUED)

BY KATHLEEN ALMY

Students work on higher order thinking skills continually. Instead of “word problems,” the problems are couched in words, just as they appear in real life. Students must read, write, communicate, and think critically in every lesson. Although many algebraic skills are developed in the course, assessments include more than skills. Students must apply skills to new situations regularly and show that they understand the concepts. We emphasize the idea of “levels of understanding,” that skill-based knowledge is only the first step to learning. Students are pushed to dig deeper in concepts, making sense of the “why’s” as much as the “how’s.”

It is an exciting time to be in developmental mathematics. Change is upon us. In the past year, I have traveled around the country talking about the course and training faculty as they begin pilots. Many faculty are searching for new ways to transform developmental math in other ways than just modularizing or accelerating algebra. MLCS is an excellent way to move beyond algebra alone and diversify offerings, helping students prepare for their outcome courses and build college readiness at the same time.

If you have questions or would like to learn more the course, materials, piloting, or articulation, please visit my blog, <http://almydoesmath.blogspot.com> or email me at kathleenalmy@gmail.com.



39th AMATYC Annual Conference

Anaheim, California

October 31 - November 3, 2013

Conference Theme: *Math: There's no end to the fun!*

INTERESTING APPS

SUPPLIED BY ED LAUGHBAUM

Developmental Algebra Apps

Available from the App Store are 80 lessons on core developmental algebra concepts and procedural skills. They are available as 9 apps formatted for the iPad, (and soon the iPhone, Android, Kindle, and Nook). Five of the apps teach algebra through questioning with multiple-choice questions that include immediate positive feedback. The other four apps teach through fill-in questions with immediate feedback. Want to find out more about these apps? Just do a search on “Laughbaum” from within iTunes, or search the AppStore on your iPad.

The algebra teaching apps are:

- Foundations of Algebra (ExplorBasicA)
- Behaviors of the Core Functions of Algebra (ExplorFunctA)
- Solving Equations Containing the Core Functions of Algebra (ExplorEquatn)
- Review of the Core Functions of Algebra (ExplorFunctB)
- Symbol Manipulations in Algebra (ExplorSymbol)

Available in late December:

- Explore Linear Functions (ExplorLinear)
- Explore Quadratic Functions (ExplorQuadrte)
- Explore Exponential Functions (ExplorExpont)
- Explore Solving Equations through Functions (ExplorEqnFnc)

Ed Laughbaum ed@redbankpublishing.com



Red Bank Publishing
www.redbankpublishing.com

PARKLAND COLLEGE'S DEVELOPMENTAL MATHEMATICS REDESIGN

BY ERIN WILDING-MARTIN

In the fall of 2013, Parkland College will roll out a redesigned developmental mathematics program. The new design will include two tracks, one for students headed to a college-level general education mathematics course, and another track for students who will need college algebra and calculus. Our plan was inspired by the New Life Project's Mathematical Literacy for College Students (MLCS) course, but is different in key respects due to the way this type of course has been approached in Illinois by community college faculty and by our state organization, the Illinois Mathematics Association of Community Colleges (IMACC). Overall, our hope is that by offering more specialized tracks, we can provide a more appropriate developmental mathematics experience for all of our students.

Investigating the Issues

The project began as an exploration of low success rates in our College Algebra and Precalculus courses. A committee was formed, and we identified our main concerns pertaining to student success in these courses: weak prerequisite skills, difficulty adapting to the pace, and a failure to engage in quality study activities outside of class. While some of these issues can be addressed in the courses themselves, we also wanted to look at ways to better prepare students through our developmental prerequisite courses.

Parkland currently has a fairly traditional sequence of developmental algebra courses: Pre-Algebra, Beginning Algebra, and Intermediate Algebra. Successful completion of Intermediate Algebra makes a student eligible for their first transferable college-level mathematics course, whether it be a general education course (Introductory Statistics or General Education Mathematics) or College Algebra/Precalculus (our Precalculus course covers College Algebra and Trigonometry in one semester). We brainstormed about changes we could make to Intermediate Algebra that would better prepare students for College Algebra. We considered the addition of a unit on exponentials and logarithms, a faster pace, increased rigor in terms of by-hand algebraic skills, more attention to mathematical concept development, to name a few. But with these ideas came concerns that we would be tailoring Intermediate Algebra to the needs of calculus-bound students, which would make it an inappropriate requirement for students headed to general education mathematics courses.

Around this same time, the idea of a two-track developmental curriculum was getting more attention in our state organization, IMACC. Kathy Almy, who also has been heavily involved in the AMATYC DMC New Life project, presented at Parkland on her new Mathematical Literacy for College Students (MLCS) course at Rock Valley College. This seemed like a promising solution: adjust Intermediate Algebra to prepare students for College Algebra and Calculus, while providing a separate track to prepare students for general education mathematics courses. And so a plan was born, and we split into two committees, one to focus on each track.

College Algebra Track

One committee focused on redesigning the existing developmental algebra sequence to better prepare students for College Algebra. Sometimes this track is referred to as the STEM track. Our department instead used the phrase College Algebra Bound (CAB) to include non-STEM majors, such as Business, that require courses beyond College Algebra. The CAB track has been redesigned in two ways. First, Intermediate Algebra was changed in many of the ways we had brainstormed. A unit was added on exponentials and logarithms, which will increase the algebraic rigor and also increase the pace of the course. With a more targeted audience, it also is hoped that we will be able to cover all topics in a more in-depth way, specifically tailored toward the needs of these students. Second, we changed the way in which we will offer both Beginning and Intermediate Algebra. Inspired by Rock Valley and several other institutions, we have split both into half-courses, each with their own course numbers. Each half-course will be offered every half-semester, allowing a student who is failing in the first half to start over at midterm. Or, if

PARKLAND COLLEGE'S DEVELOPMENTAL MATHEMATICS REDESIGN (CONTINUED)
BY ERIN WILDING-MARTIN

a student only fails the second half, they only need to repeat that half. The hope is that letting students repeat only the half they need will ultimately reduce the time it takes for them to complete the developmental algebra sequence.

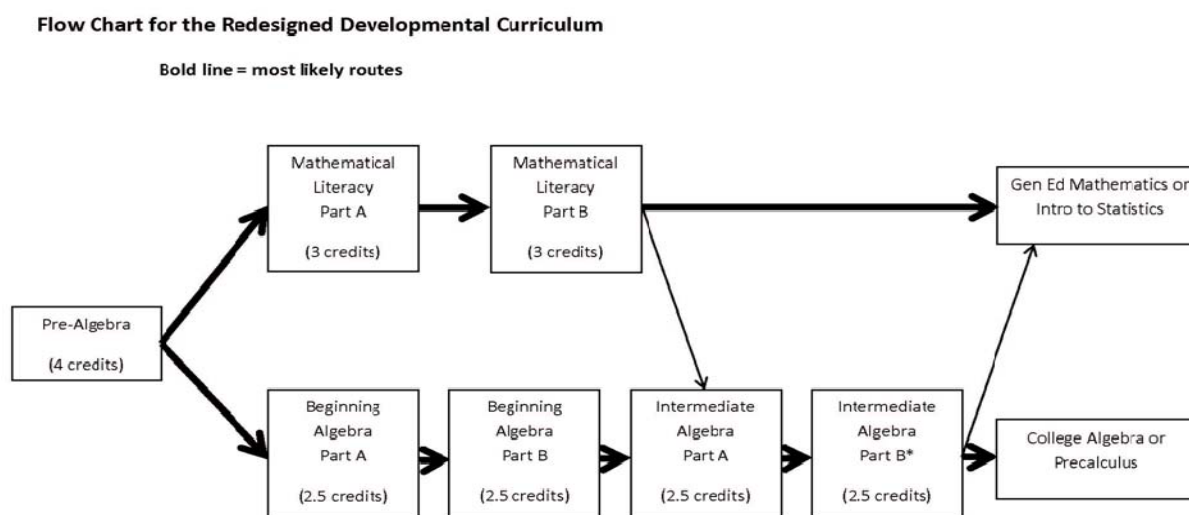
General Education Track

The other committee designed a new track from the ground up for students headed to general education mathematics courses. We looked at Rock Valley's MLCS course very closely, and Kathy Almy was more than happy to provide helpful resources. There is also a movement within IMACC to standardize such a course within Illinois, calling it General Education Preparatory Mathematics (GEPM). The proposed content outline from IMACC, which gives GEPM a Beginning Algebra prerequisite and takes topics from algebra, geometry, and statistics, guided our efforts. Following the Rock Valley model, we created a combined 6-credit course called Mathematical Literacy that begins at the level of Beginning Algebra (with a Pre-Algebra prerequisite) and includes the content outlined for GEPM. Similar to the CAB track, this will be offered as two 3-credit half-courses. This class is meant to look very different from an algebra course, and it will prepare students for a college-level general education course in one semester. This replaces the traditional sequence of Beginning Algebra, Intermediate Algebra, and Geometry. For students who would have needed all three courses, Mathematical Literacy saves them two semesters, plus it exposes them to content and ways of thinking about math that are more relevant to their educational goals.

The material in Mathematical Literacy is presented in a very different way from traditional courses. The focus is on numeracy, proportional and algebraic reasoning, functions, and modeling. This means that the algebra, geometry, and statistics are intertwined as students are asked to look at real-life data and situations, describe patterns, create models, and solve problems. Instead of a traditional lecture format, students work both in small groups and as a class to explore patterns, make conjectures, and discuss why their ideas will or won't work. My colleague, Brian Mercer, is teaching a pilot section and developing course materials this semester. He reports that student conjectures and observations have generated some of the best mathematical conversations he has ever had with his classes. Our hope is that this course will provide an alternate, equally rigorous, and more relevant route for students who do not need the emphasis on algebraic by-hand skills in the traditional algebra sequence. Instead, they will engage in activities that prepare them for general education mathematics courses, and to be informed, thoughtful citizens.

(Continued on page 9.)

Figure 1. New developmental mathematics flow chart for Parkland College.



*Students in the traditional algebra sequence might also need Geometry (4 credits) before taking a college-level mathematics course

PARKLAND COLLEGE'S DEVELOPMENTAL MATHEMATICS REDESIGN (CONTINUED)
BY ERIN WILDING-MARTIN

Now What?

This semester, Brian Mercer is teaching a pilot section of Mathematical Literacy and developing materials for the course. Next semester, he and I will each teach a section and continue to revise lesson plans and materials. We go full-scale for Fall 2013, offering several sections of Mathematical Literacy and implementing the 8-week half-courses for that and the traditional algebra sequence.

Expanding the new Mathematical Literacy course offers some challenges. The non-traditional approach to the content and the group-oriented pedagogy will make it necessary to train instructors and offer ongoing support. This should be a fun process, but it will require some adjustment. We hope to have a course coordinator who can help with these efforts. There are also scheduling issues to sort out. The main format for the course will be 2-hour classes, 3 days a week. However, that may not be the most convenient format for night students. This may also be a difficult course to offer online, so we will need to explore ways in which technology can help us implement the group-oriented pedagogy.

We will be assessing our redesign in many ways, measuring student success in both these and their college-level courses later, and looking at qualitative outcomes such as student attitudes and reasoning skills. We will also work with other units on campus, such as Advising and Financial Aid, to address any unanticipated issues that may arise. The Mathematics Department will continue to assess and revise, and will try to stay flexible so we can address the challenges of implementing such an ambitious redesign.

Erin Wilding-Martin (emartin@parkland.edu)

WHAT ABOUT COLLEGE ALGEBRA AND STATISTICS AT THE UNIVERSITY-LEVEL?
BY THERSA (TERRI) WESTBROOK, PH.D.

The acceleration of mathematics courses is growing in popularity at two-year colleges, but what other alternatives exist in the first two years at a university? At many universities some developmental mathematics students need to fulfill their developmental mathematics requirements, satisfy a general education mathematics credit, plus take a statistics class in their field of study. For their general education mathematics credit, these students have a choice of taking college algebra or a contemporary mathematics course. College algebra is an at-risk course because it has a DFW rate of 40%-60% (Adelman, 2004; Small, 2010). A contemporary mathematics class could be taken, but does this course contain enough mathematical rigor to prepare the student for the subsequent statistics class?

A pilot study at Texas State University-San Marcos was conducted to evaluate the effectiveness of a college algebra class where statistics was integrated into its curriculum, denoted the CA/S course. The integration occurred through an author-developed curriculum that utilized an experiential concrete-representational-abstract (E-CRA) instructional method, a derivative of the Kolb experiential learning model and the concrete-representational-abstract (CRA) instructional method developed by Kolb, 1984 and Witzel, 2005. When learning algebra and statistics topics, students used their own data or real-world data to reflect on different representations of the data, learn about functions that explained the data from an abstract perspective, utilize modeling to further understand the data, and use the model to make predictions. The variables used to analyze for the students in the CA/S course were attitudes towards statistics, statistics self-efficacy, mathematics anxiety, algebra skills, statistical numeracy and reasoning skills, and persistence. From the beginning to the end of the semester, students in CA/S course ($n=19$) showed significantly improved statistics self-efficacy, ($p=.002$), and marginally enhanced statistical numeracy and reasoning skills, ($p=.053$). When controlling for whether a student previously took developmental mathematics, students in CA/S reported marginally stronger statistical self-efficacy ($p=.053$) than students in a comparable group who did not take the CA/S course. At the end of the study, CA/S students possessed two statistical numeracy and reasoning skills that were statistically significantly stronger than the students in the comparable group ($p=.032$, $p=.006$). No statistical significance was found for the other research variables.

WHAT ABOUT COLLEGE ALGEBRA AND STATISTICS AT THE UNIVERSITY-LEVEL? (CONTINUED)

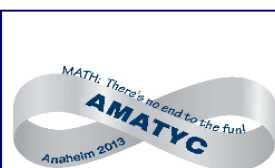
BY THERSA (TERRI) WESTBROOK, PH.D.

Utilizing the E-CRA instructional method yielded positive outcomes related to the affective domain of the CA/S students. Students' self-efficacy became significantly stronger, possibly contributing to the improvement of their abilities to perform statistical numeracy and reasoning skills.

The CA/S course is a part of the FOCUS: Fundamentals of Conceptual Understanding and Success program created at Texas State to cultivate innovative initiatives for developmental education. Currently more research is being conducted regarding the effectiveness of this CA/S curriculum and the E-CRA instructional method. For more information about this pilot study, contact Terri Westbrook at twestbrook@txstate.edu.

References

- Adelman, C. (2004). *Principal indicators of student academic histories in postsecondary education, 1972-2000*. Washington, DC: U.S. Department of Education, Institute of Education Sciences.
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Upper Saddle River, NJ: Prentice Hall.
- Small, D. (2010). *An urgent call to improve traditional college algebra programs*. Washington, DC: Mathematical Association of America. Retrieved from http://www.maa.org/t_and_l/urgent_call.html
- Witzel, B. (2005). Using CRA to teach algebra to students with math difficulties in inclusive settings. *Learning Disabilities: A Contemporary Journal*, 3, 49–60.



39th AMATYC Annual Conference Anaheim, California October 31 - November 3, 2013

Conference Theme: ***Math: There's no end to the fun!***

If you are interested in **presenting at the AMATYC Anaheim Conference**, information about proposal submissions are available at the following link. (Proposals are due by February 1, 2013.)

<http://www.amatyc.org/Events/conferences/2013Anaheim/presenters/index.html>



**Opening Doors
Through Mathematics**

Check AMATYC's webpage: www.amatyc.org

**DMC
OFFICERS**

DMC Chair
Linda Zientek
lrzientek@shsu.edu

Liaison to AMATYC
Executive Board
Margie Hobbs

DMC Webmaster
Chad T. Lower

The Developmental Mathematics Mission Statement

Developmental mathematics programs exist in order to prepare students for collegiate mathematics courses, for other courses requiring a mathematical foundation, and for general academic success based partially on quantitative literacy. These developmental mathematics programs will allow flexibility for students and enable students to consider additional and higher academic goals.

Check out the Developmental Mathematics Committee Website!

<https://sites.google.com/site/amatycdmc/>

DMC REGIONAL REPRESENTATIVES

Northeast	Geoff Akst	West	Eric Matsouka
Mid-Atlantic	Roxann King	Northwest	Carren Walker
Southwest	Mel Griffin		
Central	Loye Henrikson	At Large	Kathleen Almy
Midwest	Vasu Iyengar	At Large	Jack Rotman
South East	Richard Leedy	At Large	Sharon Sledge

DMC MEMBERSHIP FORM

If you know of anybody who might be interested in joining our committee (and if they belong to AMATYC), they can go to our web page to complete a membership form at

<http://www.devmath.amatyc.org/join.htm>