Tips and Tricks for a Successful Pathways implementation

AMATYC 2014

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Introductions

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Both teach developmental and college level math

Common philosophies:
• Content should be deep conceptually and procedurally.
• Math is more than symbolic manipulation.
Developmental Pathways ...

- include Math Literacy for College Students, Quantway, Statway, and the New Mathways Project.

- create alternative routes to or through college-level math courses, especially non-STEM courses.

- **look forward to college needs instead of backward to high school deficiencies.**

- emphasize critical thinking and problem solving.

- use authentic problems and contextualized learning.
Students who can:

- Read and think critically
- Apply numeracy
- Use algebra
- Understand functions
- Use technology
- Solve problems with words
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History

2009-10

Carnegie Foundation, UT Dana Center, & AMATYC’s New Life create pathways. Different approaches are used regarding algebra and outcome courses.

2011-13

First pilots of pathways courses begin nationally, including RVC & DMACC. Interest in pathways grows at the national level.

2013-14

Policies change in several states regarding intermediate algebra. Pathways begin to scale.
At the national level

Why pathways

Where the pilots are

What policies are changing

Who is conducting research
Five years ago pathways courses were revolutionary.

Now they are the new normal.
Des Moines Area Community College
Pilot and Implementation

• Designed competencies with the end in mind as a team
• Created a new course called College Prep Math (MAT 064)
• Went through the curriculum commission
• Looked for a curriculum with national pathways approach
• Deep conceptual and procedural
• Piloted on multiple campuses Fall 2012 through Summer 2013
• Began to scale Fall 2013
Des Moines Area Community College Design Team

- Created a team with both full time and adjunct professors
- Paid adjuncts for their time
- Created a Google Community (now using Blackboard)
- Shared resources and collaborated often through email and online
Blackboard Community

AMATYC Developmental Math Webinar this Thursday, October 30
Posted on: Monday, October 27, 2014 2:00:00 AM CDT

I am going to register for this webinar and hopefully have access to the recording. Contact me if you have interest in view this.

Dan Petrak (dgpetrak@dmacc.edu)

Registration for the following webinar is now open for AMATYC members:

Title: Improving Math Redesigns with Instructional Strategies and Supplemental Support

Speakers: Paul Nolting

Sponsoring Committee: Developmental Mathematics Committee (DMC)

Date: Tuesday: Thursday, October 30, 2014

Time: 10:00am EDT / 9:00am CDT / 8:00am MDT / 7:00am PDT
Blackboard Community uses

- Content and assessment repository
- Sample Syllabi
- Asynchronous Discussions
## Forum: MAT 064 Discussion

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Math 064 Curriculum Map


Course ID for Spring 2014 is petrak60458

Week 1:
Ways to break the ice in my class. Dan likes to have the students associate a snack food with their first name. Example, Dan - Doritos Then each student needs to memorize everyone else’s name and snack food.

1.1
1.2 Here are some sample questions Dan asks for his syllabus quiz...How are you evaluated in this course? What are the parts to the Daily 5? When are my office hours? Where do you complete homework? What are some options you have if you need help? Who do you contact if you have special needs? Are tests online, paper and pencil or both? Name several things you can control to assist in your learning. Name some things that are out of your control. Who is ultimately responsible for your learning?

1.3
1.4 found link to preschool game Bert’s Bottlecaps for Venn diagrams
http://www.sesamestreet.org/games#media/game_9bb48196-14e4-11dd-83fd-1ff2199def8e
1.5 (1/2 + ¼) Draw a picture as well (Dan)

Dan-I was able to do sections 1.1 to 1.5, but it took me 5 class hours (Thurs, Mon, Tues, Wed, Thurs)
Kim- Used “jigsawing” for groups for FP 1. Put folks in home group by card suits. We brainstormed things (vocabulary) we need to know. Assigned expert groups (by card #) to look up ⅓ of the terms. Will meet in expert groups next time we visit the FP to share research, then send them back to home group to share.
Obstacles

Sage on the stage vs. guide on the side
   Not giving answers

Different approach to math class
   Culture of students that think math is done fast and that math is algebra

It takes time to get buy-in from everyone
   Many faculty did not learn nor were trained in teaching math this way
   Fear of something new
   Fear of reduced standards
This approach and these courses are not for everyone.

That’s ok.
Classroom Tips - Groups

Form groups for each unit to build a sense of community.

Consider group quizzes/tests for part of assessment time - helpful with very challenging problems.

Have class determine fair consequences for class members who don’t pull their weight.
Classroom Tips - Contextual Problems

No one context appeals to everyone.

It’s ok to have to look up information specific to a context.

Answer questions with questions.

Don’t rescue students but watch for students getting overwhelmed.
Example: Problem solving in context

A doctor orders 200 mg of an antibiotic for an infant who weighs 15.4 lb. It should be taken every 8 hours. The medication label shows that 75–150 mg/kg per day is the appropriate dosage range.

Determine if the dosage ordered is within the desired range.
Before you implement a pilot...

1. Communicate with your team (including administrators and adjuncts) so that everyone knows the pilot is happening.


3. Plan for a bridge to STEM course for students who change their mind - will affect content you include in the pathways course.

4. Plan for data collection and studies.

5. Empower adjuncts to be mentors.
Before you implement a pilot...


7. Consider classroom setup and class size.

8. Consider observing another instructor's class and allow them to observe your class.

9. Plan for debriefing time amongst all the pathways instructors (face-to-face or online). This allows you to solve problems as they arise.

10. Consider using common assessments. You can share the workload as well as see course-level issues.
A final, important note

Be prepared to tweak the course, its policies, and perhaps even the content.

It will take some time to get the course where you want it to be.
Questions
For more information

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