Parkland College Developmental Math Redesign

What Have We Learned?

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Course Sequence

Pre-Algebra

Beginning Algebra

Math Literacy

Intro to Statistics or Gen Ed Math

Intermediate Algebra

College Algebra or Pre-Calculus
Topics chosen to prepare students for General Education Mathematics and Statistics, and Life

- Numeracy, functions, data analysis
- Reading, writing, technology

Group-based problem-solving pedagogy
PRODUCTIVE STRUGGLE

- Real problems don’t follow cookie-cutter patterns; they take work
- Take responsibility
- Persistence will pay off
A Traditional Classroom
A MATH LIT CLASSROOM
OUR EXPERIENCE

- Has changed our whole philosophy about teaching
- Most fun we’ve had since we started teaching
- Get to know students much better
- We can’t go back
So Where Are We Now?

- Used to have 20+ Sections of Beginning and Intermediate Algebra
- Now have 12-15 Sections of Math Literacy and 5-7 Sections of Beginning and Intermediate Algebra
- Students generally like new class
- Happier intermediate algebra instructors 😊
- More students to and through Intro to Statistics and General Education Math
The Data so Far: Fall 2013-Spring 2014

- Success rates (completed Math Lit, C or better)
  - 52% successfully completed Math Literacy
  - Compared to historical average in traditional track of approximately 50% in Beg Alg and 50% in Int Alg

- Success in subsequent courses
  - Students completing Math Literacy in Fall 2013 had 57% success in Intro to Statistics and General Education Math on first attempt
STUDENT FEEDBACK (SURVEY OF 127 STUDENTS)

- Overall opinions of the course
  - 52 liked it better than other math courses
  - 38 thought it was worse than other math courses
  - 37 were neutral or had a mixed review

- Content
  - Most found at least some of the content to be relevant
  - Some even listed specific topics such as compound interest
STUDENT FEEDBACK
(SURVEY OF 127 STUDENTS)

- Group work – students were split
  - Many loved working in groups instead of lecture
    - “Working in groups was informative—gave more information than I would have expected.”
    - “Much better [than other math classes]. Less intimidating. Much more relaxed and more comfortable.”
    - “More teacher/student interaction as opposed to a 2-hour lecture.”
  - Many hated the groups
    - Prefer lecture
    - Feel that “the teacher doesn’t teach,” and you have to “teach yourself”
INSTRUCTOR FEEDBACK
(SURVEY OF 10 INSTRUCTORS)

- Most (8) said they definitely enjoyed teaching the class; All said they would request it again
  - Fun, closer interaction with students
  - “The interaction with the students is exhausting and exciting at the same time.”

- Challenges
  - Group dynamics, facilitating good group work
  - Explaining the reason for discovery learning
  - Making sure group work doesn’t “pad” the grade
  - Technology skills
PLANS FOR IMPROVEMENT

STUDENTS

- Student expectations and buy-in
  - Better explain the course philosophy
  - Work on developing “grit”

- Technology skills
  - Work with students on technology skills in class

- Group dynamics
  - Get ideas for better group facilitation like assigning roles

- Individual accountability
  - Individual homework quizzes
PLANS FOR IMPROVEMENT

INSTRUCTORS

- Technology skills
  - Require instructors to have some tech comfort
  - Work with instructors on skills specific to the course

- Pedagogy buy-in and comfort
  - More informal classroom visits, conversations, and support
    - Philosophy and rationale for the pedagogy
    - Importance of setting the right tone and “selling” the course
    - Managing group dynamics
    - Balance between giving students room to think and providing help
Course Sequence for Fall 2015: A Sneak Peek

Pre-Algebra

Math Literacy

Intermediate Algebra

Intro to Statistics or Gen Ed Math

College Algebra or Pre-Calculus
New Vision of Mathematics Pathways: Fewer non-credit math courses for most students
from the New Life Project

Algebraic Literacy (AL)
Bridge to Some College Mathematics

Students can place directly into Algebraic Literacy

Mathematical Literacy for College Students (MLCS)

Numerical Sense (few start here)

College Algebra and Pre-Calculus
Reform College Algebra (gen ed)

STEM: Calculus-based courses
STEM: Non-Calculus-based courses

Math for Elementary Education Teachers

Liberal Arts and Finite Mathematics

Quantitative Reasoning

College-level Intro Statistics

Business Math & Occupational Math

Basic Science and Technology Courses

New Life Project, AMATYC Developmental Mathematics Committee
(Does not reflect official AMATYC positions or actions)

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