

# Success by Design

A Developmental Math Redesign That Works!

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# Do you have any courses like this?

- Fast paced content
- Misplaced students
- High number of adjunct instructors
- Poor pass rates

# Developmental Program Before

- Less than half of students passed developmental math classes
- Inconsistency amongst sections in terms of grading and content taught
- Poor attendance and rates of homework completion
- Many students never made it to college level courses
- Frustrated students and faculty

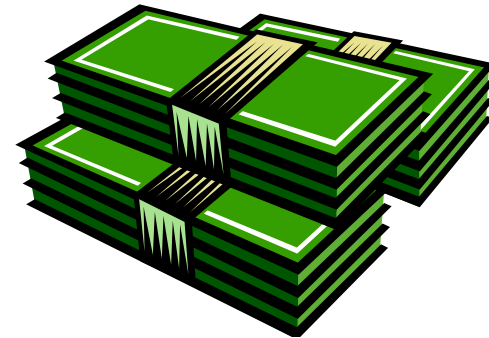
How do you  
solve a problem  
this large?

# First steps

1. Find a faculty advocate and form a task force of faculty, administrators, and student service personnel.
2. Get current pass rates and other program statistics to use as a baseline.
3. Read research on developmental students and math redesigns.

# What about money?

- Grant money helps but also slows momentum and restricts process
- Release time for one faculty member is a minimal cost often supported by administrators



# Next up...tough questions

1. Who is in your class?
2. How do students get their course information?
3. Does your course serve your students?
4. What is going on in the classroom?
5. How do students get help?
6. How is your program organized & maintained?

# Placement: Accurate & Flexible

Mandatory testing & placement

Validated cut scores & routing methods

Sound options for bypassing courses when merited – refreshers, retests

Who is in your class?

# Advising: Accurate & Timely

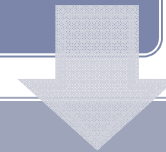
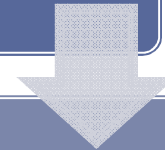
How do students get their course information?

Educate advisors

In-course, website, and orientation information

Letters to students in special formats (CA & online)

Assess registration system



# Courses: Varied & Appropriate

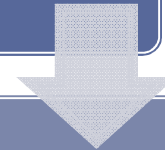
Faster and slower  
course options

Less content taught deeply –  
focus on understanding

Pacing built for the  
developmental learner

Quality, varied assessments

Does your  
course serve  
your  
students?



# Modular Algebra

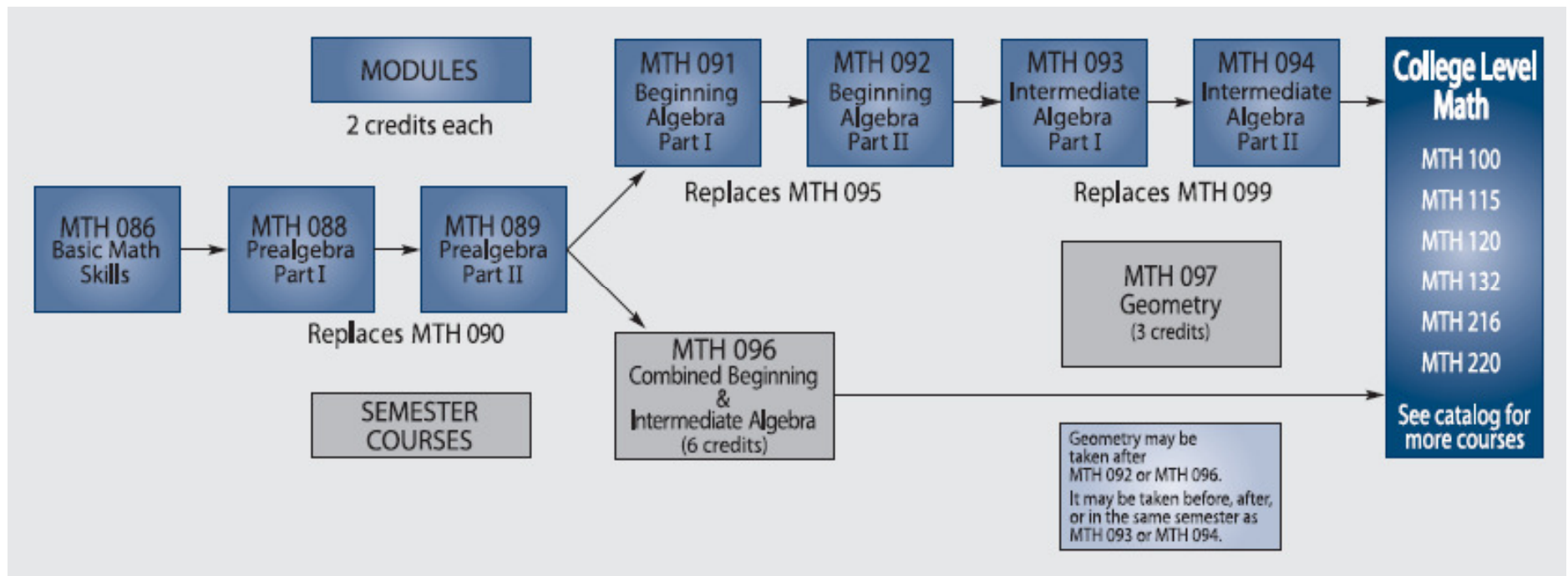
Cut semester courses into part 1 & part 2

- Motivates students to keep going
- Renews their focus at mid-semester
- Reduces time to college level courses
- Students repeat modules immediately & only parts needed

Gradual development of content & slower pace

- Little overlap between modules
- Review done in online homework system
- Increases time on each topic to encourage mastery

# Course Sequence



# Reducing overlap without modules

Since modules can be logistically challenging, consider these options before trying them:

- Cut out the overlap in courses to get more time
  - Review assignment to start course
  - Spiral review throughout course
  - For intermediate algebra, use “just-in-time” review
- Use combined books
  - Saves students money (book & access code)
  - Provides review reference

# Accelerated options

- Geometry options
  - Waiver based on HS performance
  - Competency test
- 1 semester beginning & intermediate algebra
  - 6 credits (3 days a week)
  - Higher placement required
  - Popular and successful

# Instruction: Quality & Consistent

What is  
going on  
in the  
classroom?

Standardized policies, pacing, grading,  
homework, final exam



Regular review – spiral learning



Teach study & technology skills



Consistent use of online homework  
system



Multiple course delivery options (online,  
face to face, computer assisted)

# Structure & Flexibility

- Policies & online homework create structure
  - Master courses contain HW, gradebook, reviews
- Flexible options for different learning needs
  - Face to face
    - Use online homework
  - Computer assisted
    - 100 minute period = 70 min instruction + 30 min on computers with instructor to answer questions
    - Helps students maintain focus in long class periods
  - Fully online
    - Take tests proctored on campus

# Support: Varied & Timely

How do  
students  
get help?

Office hours for all faculty



Math lab with computers and  
texts



Peer and faculty tutoring



Online homework system

# Why use online homework?

- Features for instructors
  - Gradebook
  - Communication
  - Improved class time
    - Minimum of 3 deadlines per week
    - Students come to class having practiced HW & with questions
- Features for students
  - Immediate feedback
  - Guided practice with prompts
  - Videos & mini-lectures
  - Individualized review

# Program: Organized & Centralized

How is your course or program organized & maintained?



What happens if  
you do all this?

# A System for Success



Quality • Consistency • Flexibility • Affordability

# Promising Results

- Pass rates before redesign
  - 48% for algebra classes
  - 58% for geometry
- Pass rates since redesign
  - 65% for modules
    - 55-70% for Part 1 modules
    - 60-80% for Part 2 modules
  - 70% for combined algebra
  - 68% for geometry (prior to redesign)
- Final exams mirror pass rate results
- Student complaints are minimal

Passing = A, B, or C

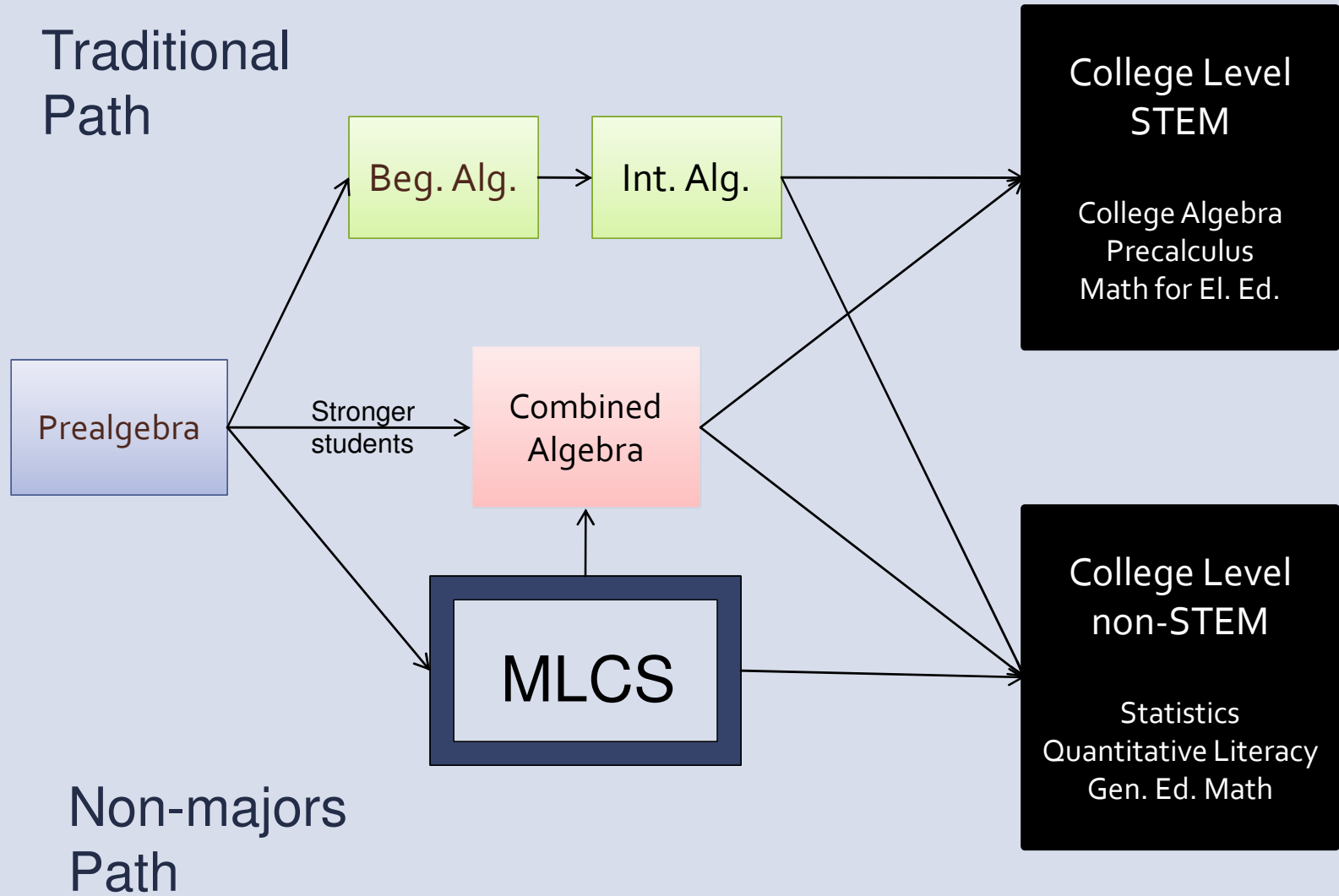
# Lessons Learned

1. One size does not fit all.
2. Mandatory changes  
Small changes in a few sections produce small results.
2. Comprehensive  
One large change will **not** be enough to produce a large effect.
3. Research  
Learn from mistakes of others.
4. Assessment and data are necessary throughout the process.
5. Provide support, training, and communicate often in multiple ways.
6. How is as important as what.
7. Commitment matters more than funding.
8. Work with what you've got.  
People and resources

# Next steps...New Life

- Brings critical thinking through contexts to developmental students
- Fall 2011 – pilot 2 sections of MLCS  
(Mathematical Literacy for College Students)
- Materials being written now
- Provides a shorter path for AA majors

# Bringing New Life to Developmental Mathematics



Questions?

# Contact information

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- RVC: [www.rockvalleycollege.edu/math](http://www.rockvalleycollege.edu/math)

- Blog: <http://almydoesmath.blogspot.com>

- Contains program manual and many other documents