Math My Way:
A unique approach to teaching pre-algebra.

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What led to MMW?

- An increase in basic skills students
- A decrease in preparation levels
- Our frustration with success rates
- Foothill Campus Research
Success Rates & Prior Course Grade

- Intro. Algebra
- Inter. Algebra
- College Level Course

- A in prior course
- B in prior course
- C in prior course
- no prior course - 1st attempt
What were we trying to fix?

- Pacing
- Mastery
- Success rates
- Persistence through the sequence.
Math My Way
Program Overview
(program started Fall ‘06)
What do the students learn?

• Whole numbers
• Fractions
• Decimals
• Real Numbers
• Equations and Expression I

• Equations and Expressions II
• Ratio and Proportion
• Percentages
• Basic Geometry
What happens in the classroom?

- Mini-lectures (10 -20 minutes)
- Computer Drills (using ALEKS*)
- Textbook Assignments
- Review Worksheets
- Students work alone and in groups
- Math Games
- Study Skills building activities

*Software coupled with a custom McGraw-Hill text
How do the students gain mastery?

• All written work must be satisfactorily completed
  – 100% complete
  – 100% correct
  – Correct use of mathematical notation
• All computer drills must be completed
• All module work is completed before taking an exam
• 87% is required to pass exams
What makes it a program and not a regular course?

• 150 students shared by 5 instructors.
• Students are reassigned every 2-3 weeks
• Students don’t restart each quarter
• Faculty members meet weekly
• Faculty members share grading
• Faculty members share outside responsibilities
Preliminary Results
What have we learned about the students?

- Most students can master Arithmetic Concepts
- Students are content to move slowly
- Many students’ lack of self-awareness impedes their progress
- Many students need to develop basic life skills
- Accuracy is very difficult to learn
Persistence* through the Math Sequence by Preparation

*Percentage of students completing Pre-Algebra who enroll in subsequent courses.

- Traditional Pre-Algebra (n=373)
- Math My Way (n=204)
- Math My Way ≤ 3 quarters (n=163)
Success rates and A/B grades
Success rates and A/B grades

Inter. Algebra

College Level

Success (Trad.)
Success (MMW)
Success (MMW≤3)
A/B Grades (Trad.)
A/B Grades (MMW)
A/B Grades (MMW≤3)
Next Steps
Improving MathMyWay

• Organize existing open source materials to provide alternate explanations
• Develop customized video lectures and animations to address topics specific to our curriculum
• Develop a MMW “portal” which will help students efficiently navigate the modules

Mathematics
How does MMW influence the entire PSME division?

- Continue research driven updates
- Continue relationship with Mountain View - Whisman middle schools.
- Carnegie STAT-way project
- Use lessons learned to improve STEM college level course completion
- More team projects overall
Why is this so important?

• STEM
• Good at math = good at stem!
Thank You!
Success rates and A grades

- Pre-Algebra:
  - Success (Trad.): [Graph Value]
  - Success (MMW): [Graph Value]
  - Success (MMW ≤ 3): [Graph Value]
  - A Grades (Trad.): [Graph Value]
  - A Grades (MMW): [Graph Value]
  - A Grade (MMW ≤ 3): [Graph Value]

- Intro. Algebra:
  - Success (Trad.): [Graph Value]
  - Success (MMW): [Graph Value]
  - Success (MMW ≤ 3): [Graph Value]
  - A Grades (Trad.): [Graph Value]
  - A Grades (MMW): [Graph Value]
  - A Grade (MMW ≤ 3): [Graph Value]
Success rates and A grades

- Success (Trad.)
- Success (MMW)
- Success (MMW≤3)
- A Grades (Trad.)
- A Grades (MMW)
- A Grades (MMW≤3)

Inter. Algebra  College Level