AMATYC Southwest Regional Conference

Course Redesign and Interactive Assessment Using MyMathLab

Presenter: Susan Fife

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Sample MyMathLab Course

- www.coursecompass.com
- Login: swamatyc
- PW: math

The NCAT Model

Redesign approaches to instruction by using technology to increase learning while at the same time decreasing cost

Redesign Characteristics and MyMathLab

1) Rely heavily on readily available interactive software
   - Over one million students have used MyMathLab
   - Pearson Education's MyMathLab accompanies most Prentice Hall and Addison Wesley college math texts

2) Emphasize active learning—greater student engagement with the material and with one another
   - Individualized Learning Plans can be created.
   - Practice until you get it right approach on homework

Redesign Characteristics and MyMathLab

3) Increase on-demand, individualized assistance
   - Just in time feedback is given on homework, quizzes, and tests
   - "Help Me Solve This," "View an Example," Videos, and Animations

4) Automate only those course components that can benefit from automation—e.g., homework, quizzes, exams
   - All of these are available. In fact, in July MyMathLab offers question pooling for quizzes and tests.

Redesign Models

Supplemental – Add to the current structure and/or change the content

Replacement – Blend face-to-face with online activities

Emporium – Move all classes to a lab setting

Fully online – Conduct all (most) learning activities online

Buffet – Mix and match according to student preferences

The Supplemental Model

The supplemental model retains the basic structure of the traditional course and

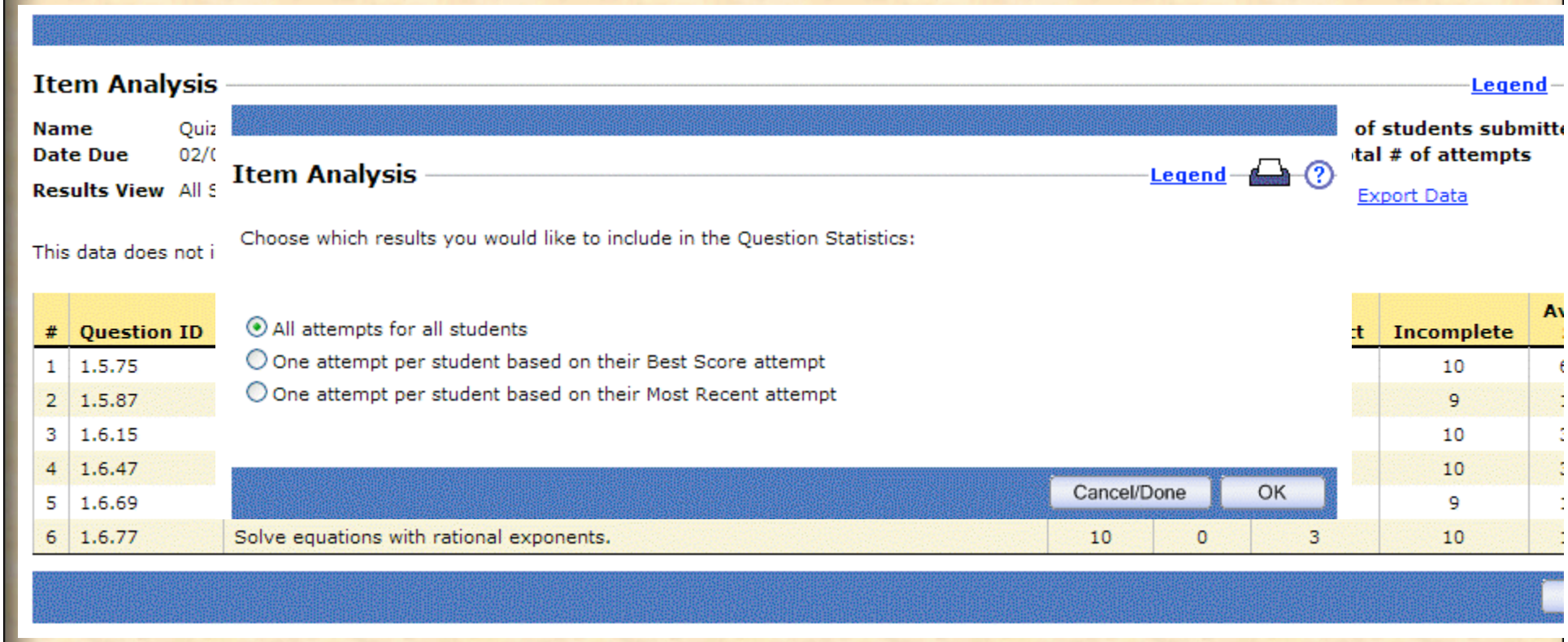
a) supplements lectures and textbooks with technology-based, out-of-class activities, or

b) also changes what goes on in the class by creating an active learning environment within a large lecture hall setting.

Supplemental Model Using MyMathLab

- Students are required to watch the online videos instead of listening to an in-class lecture.
- Students receive credit for completing online mastery quizzes each week and are encouraged to retake each quiz as many times as needed until they attain a perfect score. Only the highest quiz score counts.
- Diagnostic quizzes are used to create individual study plans for each student.
- The instructor reviews student progress before class in order to assess student knowledge. Items missed by most students are covered in the lecture.
- Students work in small groups during class time, completing work sheets.

Class Roster Percent of overall score	Quiz Average -	Quiz 1: Sections 1.5 - 1.6 2.8%	Quiz 2: Sections 2.1 - 2.2 2.8%	Quiz 3: Sections 2.3 - 2.4 2.8%	Quiz 4: Section 3.1 2.8%	Quiz 5: Sections 3.2 - 3.3 2.8%
Class Average	44.3%	61.4% IA	38.6% IA	43.9% IA	37.5% IA	39% IA
Class Median	26.4%	80%	29.7%	6.7%	0%	0%
[redacted]	26.4%	0%*	26.7%*	80%	71.3%	60%
[redacted]	8.3%	0%*	61.2%*	13.3%	0%*	0%*
[redacted]	92.9%	omitted	87.2%*	99%*	100%	92%
[redacted]	99.3%	100%	100%*	100%	omitted	100%
[redacted]	11.1%	100%	0%*	0%*	0%*	0%*
[redacted]	59.7%	68%	0%*	93.3%	100%*	0%*
[redacted]	0%	0%*	0%*	0%*	0%*	0%*
[redacted]	110.1%	200%*	100%	93.3%	97.6%*	98%
[redacted]	35%	100%	90%	90%	0%*	omitted
[redacted]	0%	0%*	0%*	0%*	0%*	0%*
[redacted]	96.9%	64%	omitted	89.2%*	85.7%	82%
[redacted]	54.2%	92%*	72%*	omitted	0%*	78%*
[redacted]	105.1%	92%*	96%*	omitted	92%*	96%*
[redacted]	105.9%	92%*	omitted	96%*	89.2%	78%
[redacted]	6.3%	0%*	50%	0%*	0%*	0%*
[redacted]	0%	0%*	0%*	0%*	0%*	0%*
[redacted]	90.6%	80%*	omitted	96.7%	71.3%	94%
[redacted]	84.5%	84%	84.4%*	96.7%	96.4%	82%


Item Analysis
Legend
Name Quiz
Date Due 02/0
Results View All S
of students submitte
tal # of attempts
Item Analysis
Legend
Export Data
This data does not i
Choose which results you would like to include in the Question Statistics:
All attempts for all students
One attempt per student based on their Best Score attempt
One attempt per student based on their Most Recent attempt
Cancel/Done
OK
Question ID
t Incomplete
1 1.5.75 10
2 1.5.87 9
3 1.6.15 10
4 1.6.47 10
5 1.6.69 9
6 1.6.77 Solve equations with rational exponents. 10 0 3 10

Study Plan

Legend

Click a chapter below to start practicing, or follow these steps to create a personalized study plan.

① Take a sample test or an assigned test or quiz. Then return to this page.

② Practice the topics you need to study ( ).

③ To prove mastery( ), take another sample test or an assigned test or quiz.

Learn more

Show All | Show What I Need to Study

Jump to where I worked last

Book Contents	Correct	Worked	Available Exercises	Time Spent
Ch 1: Equations and Inequalities			9	
1.7 Interest, Mixture, Uniform Motion, and Constant Rate Jobs			9	
Total: All Chapters	0	0	9	

Show results that created this study plan

Replacement Model

The replacement model reduces the number of in-class meetings and

a) replaces some in-class time with out-of-class, online, interactive learning activities, or

b) also makes significant changes in remaining in-class meetings.

Replacement Model Using MyMathLab

- Reduce lectures from 3 to 1 per week and change the other 2 meetings to computer labs where students work individually on computer-based activities. Students are tested on assigned homework and tested for readiness 5 – 7 times per term for 30% of their grade.
- Readiness quizzes motivate students to keep on track and enable faculty to detect areas in which students are not grasping the concepts.
- The 2 hours per week spent in the lab may be spent using individual diagnosed study plans.

The Emporium Model

The emporium model eliminates all class meetings and replaces them with a learning resource center featuring online materials and on-demand personalized assistance, using

a) an open attendance model, or

b) a required attendance model depending on student motivation and experience levels.

Emporium Model Using MyMathLab

- Students may choose when to access course materials, what types of learning materials to use depending on their needs, and how quickly to work through the materials.
- Peer tutors and/or adjunct faculty may man the labs thus resulting in a savings to the college.
- More than one course may be taught in the same lab.
- Open attendance is not recommended.

The Fully Online Model

The fully online model eliminates all in-class meetings and moves all learning experiences online, using Web-based, multi-media resources, commercial software, automatically evaluated assessments with guided feedback and alternative staffing models.

Fully Online Model Using MyMathLab

- Delivers the course content; all assignments are immediately graded.
- Study is self-paced; students can move quickly (or slowly through the material).
- MML tracks students to allow the instructor to see time-on-task and progress.
- Multiple sections may be merged into a single online section organized around modules.
- Students complete a pre- and post-quiz for each module.
- Links to additional readings, audio, and/or video files are provided.

The Buffet Model

The buffet model

a) customizes the learning environment for each student based on background, learning preference, and academic/professional goals and

b) offers students an assortment of individualized paths to reach the same learning outcomes.

Buffet Model Using MyMathLab

- Requires online assessment of student's learning styles and study skills.
- Students are given individualized paths to reach the same learning outcomes.
- Individualized learning contracts give each student a detailed listing, module by module, of what needs to be accomplished, how this relates to the learning objectives, and when each part of the assignment must be completed.
- lectures, individual discovery labs, videos, and individual and group projects.
- An initial orientation provides basic information about course structure.
- Students may choose to work all homework or to take pre- and post-tests.

Advantages of Course Format

- Learner centered
- Software supports multiple learning styles
- Consistent presentation of material
- Individualized tutorial support available

Advantages of Course Format

- Students can work at own pace
- Students can work in lab or at home
- Software provides instant feedback on work
- Homework, quizzes, tests, & exam computer graded
- Software records all student activity

Conclusions

- Based on the experiences of courses that have undergone course redesign, computer-based instruction in precalculus mathematics courses can:
  - Enhance student learning
  - Increase success rates, particularly for underserved students
  - Reduce resource demands

National Center for Academic Transformation

http://www.thencat.org/index.html

- Full project plans
- Progress reports
- Completed course planning tools
- Project contacts

MyMathLab Course Redesign Workshops

Each presentation outlines the following:

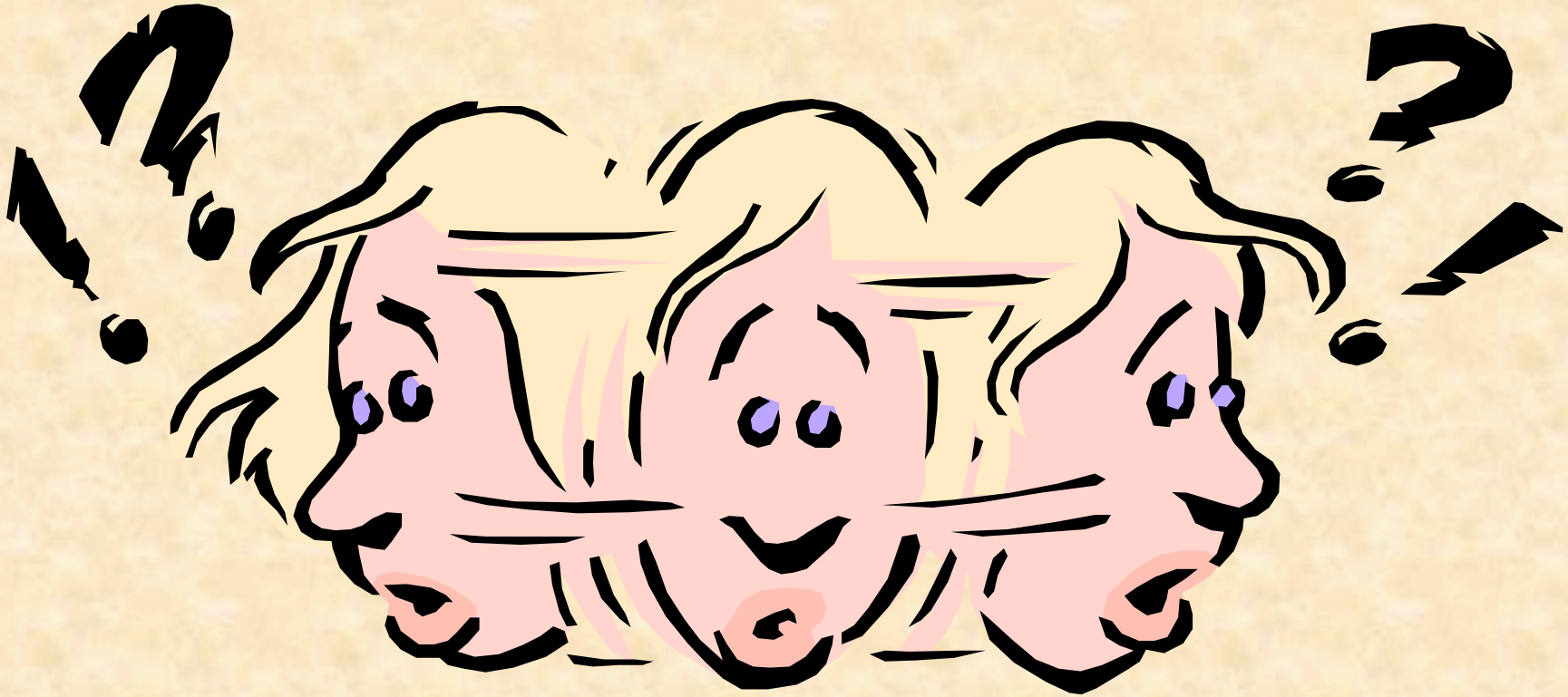
- **problems that the particular department faced before implementing course redesign**
- **steps they took to implement course redesign**
- **the results their students achieved in redesigned courses**

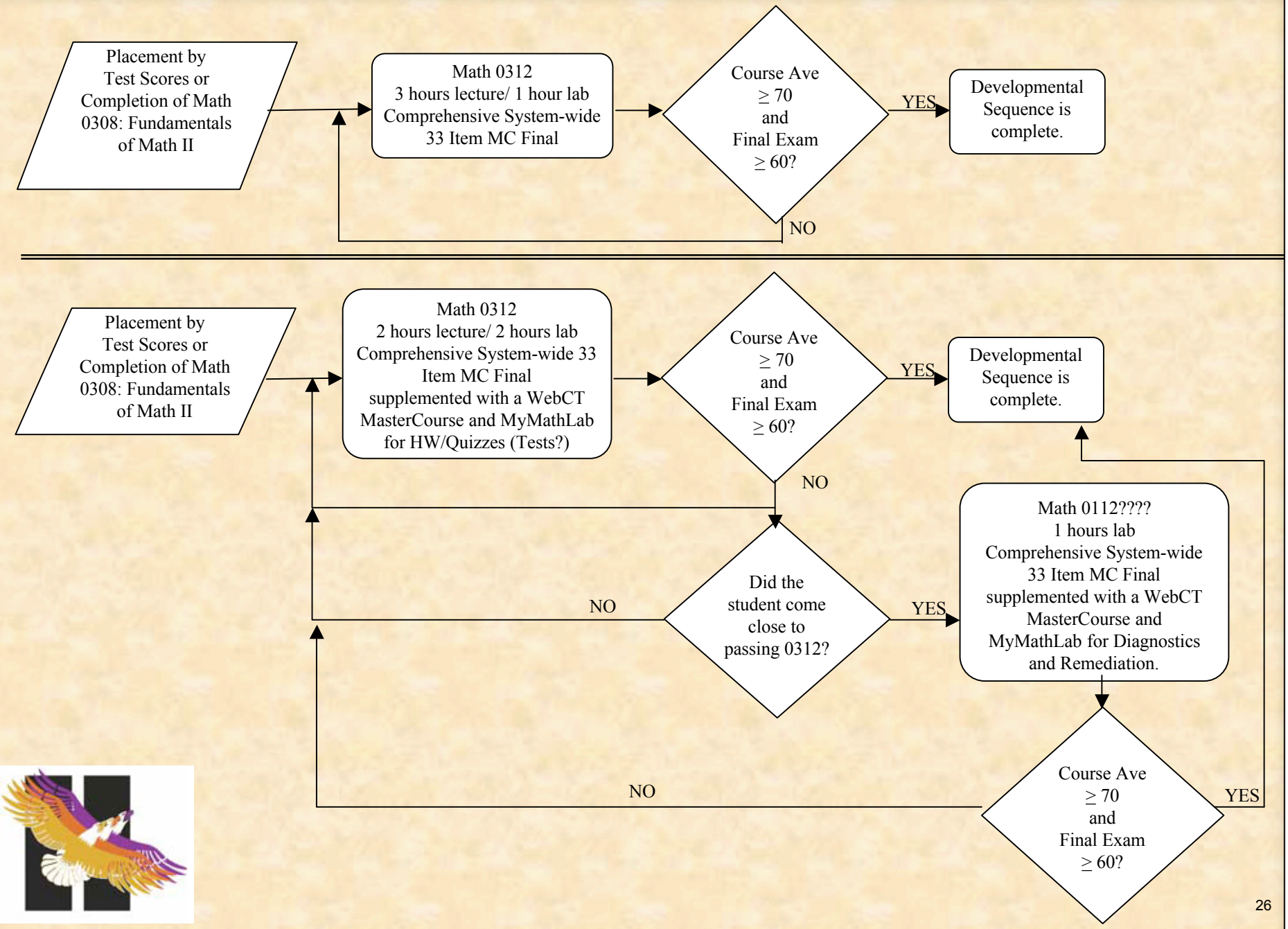
http://www.mymathlab.com/redesign_ppts/redesign_ppts.html

Most of our students are digital natives!

By providing digital students with opportunities to learn in ways that satisfy their needs, they will be more engaged in the learning process and in realizing their potential

Questions?




Placement by Test Scores or Completion of Math 0308: Fundamentals of Math II
Math 0312
3 hours lecture/ 1 hour lab
Comprehensive System-wide 33 Item MC Final
Course Ave ≥ 70 and Final Exam ≥ 60?
YES
Developmental Sequence is complete.
NO
Placement by Test Scores or Completion of Math 0308: Fundamentals of Math II
Math 0312
2 hours lecture/ 2 hours lab
Comprehensive System-wide 33 Item MC Final
supplemented with a WebCT MasterCourse and MyMathLab for HW/Quizzes (Tests?)
Course Ave ≥ 70 and Final Exam ≥ 60?
YES
Developmental Sequence is complete.
NO
Did the student come close to passing 0312?
NO
YES
Math 0112????
1 hours lab
Comprehensive System-wide 33 Item MC Final
supplemented with a WebCT MasterCourse and MyMathLab for Diagnostics and Remediation.
Course Ave ≥ 70 and Final Exam ≥ 60?
NO
YES