MAC\textsuperscript{3} Sharing Session:

What Did Jane Find?

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MAC³ EVALUATION

MAC³ Evaluator: Dr. Jane Korey
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MAC³ Evaluation Process offers 3 measurement points:
- Institute experience
- Faculty implementation
- Student results
Run the Numbers...

Since 2005:
- 160 Faculty
- 59 Interdisciplinary Teams
- 36 Colleges
- 19 States
STUDENT RESULTS

Evaluation Goal: To understand the impact on student learning of different teaching strategies and curricula, to give faculty participants feedback about their courses, and to learn factors for increased student success.

Instrument:
- 21-statement pre-post student mathematics attitude and learning survey.
- Post-survey self-assessing skills gains
STUDENT SURVEY RESULTS

- Excellent participation by faculty:
  - 57 MAC³ courses have completed pre- and post-surveys

- 850 matched pre-post student surveys

- Demographic summary:
  - 37% male; 63% female
  - Ages from 18-58 years; 67% were 18-22 years
  - Ethnicity: 62% Caucasian; 17% Latino/Hispanic
    7% Asian; 8% Black; 2% Native American; 4% other
STUDENT SURVEY RESULTS

- 4 constructs were extracted from the 21 statements
  - Combined questions sharing underlying themes as evidenced by strong correlation of responses (>.7)

- All statements scored so the “desired” response is “5” and “undesired” response is “1”
  - Higher values indicate a more desirable outcome

- Solid student results
  - Significant gains in 3 of 4 main areas
  - Solid learning and skills improvement
CHANGE IN STUDENTS' MATH ATTITUDES

Pre-post change in construct means

Based on matched pre-post surveys from 850 MAC3 students.
GAINS IN MATH SKILLS

Extent to which students said they made gains in...

- Understand concepts: 3.39
- Solve problem: 3.52
- Think through problem: 3.46
- Communicate math: 3.13
- Confidence: 3.07
- Comfort w/ ideas: 3.23
- Enthusiasm: 2.77

Scale: 1 = "not at all," 5 = "a great deal."

Based on post-surveys from 796 MAC3 students.
Gains in Content Learning

- Each collaborative team identifies 3-6 main concepts
- Students self-assess on a scale of 1 (“not at all”) to 5 (“a great deal”)
- Overall, the content gain score is a 3.7
INDICATORS OF SUCCESS

- Students in most courses showed attitude and skills improvement
- No difference between the most and least successful courses in gender, age, subject integrated, collaborative style, or course format
- The most successful courses
  - Were smaller
  - Were more diverse
  - Were in the context of math course (either a learning community or was a math course infused with another subject)
  - Combined math with science or humanities
Summary Statement

“After a MAC³ course, students showed increased interest and confidence in math, a greater awareness of its role in their lives, and a greater appreciation for the interdisciplinary learning environment. All of these attitude changes increase the likelihood that these students will continue to learn math in new and different situations.”
More to come…

- More interviews with faculty after implementation
- Assessment of Traveling Workshops
For more information…

- See [www.mac3.amatyc.org](http://www.mac3.amatyc.org)

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