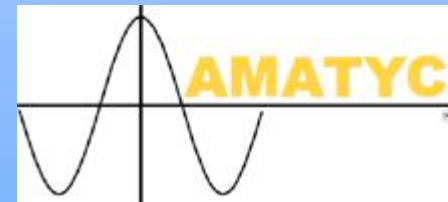


*The Impact of the
Mathematics Across the Community College (MAC³)
Project
on Students' Learning and Attitudes about Mathematics.*

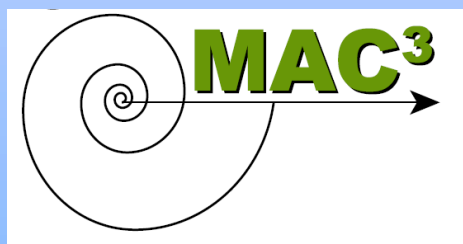
Deann Leoni

Edmonds Community College

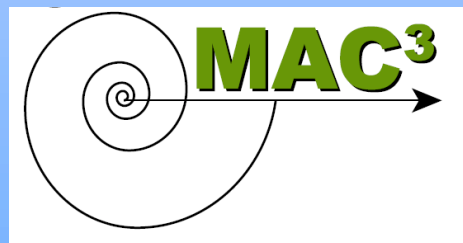
dleoni@edcc.edu



MAC³ supports faculty of all disciplines in creating curriculum that enhances the mathematical or quantitative literacy dimensions in their courses.



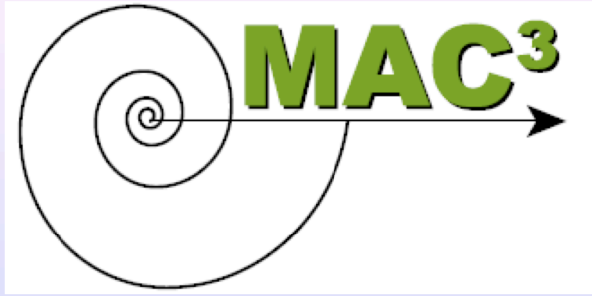
As a result, community college students throughout the nation will be offered opportunities to deepen and reinforce the mathematics they have learned in their math classes, apply it in context, and understand its greater importance and application in their lives.



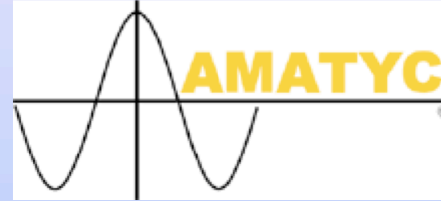
Disciplines

Accounting
Anthropology
Art
Art History
Biology
Business
Career & Technical
Campus-Wide Initiatives
Chemistry
Computer Information Systems
Computer Science
Economics
Education
English
Environmental Science
Ethnic Studies
Ethnomathematics
Geology

Health
Health & Human Services
History
Humanities
Labor Studies
Mathematics
Nursing
Physics
Policy Studies
Political Science
Psychology
Reading
Sociology
Spanish
Speech
Special Education
Statistics and Data Analysis
Study Skills
Urban Planning



- AMATYC is the lead institution.
 - Edmonds CC
 - Seattle Central CC
 - Miami Dade College
- DE supported our first year.
- NSF will support all four years.



MAC³ EVALUATION

MAC³ GOAL: “...make quantitative literacy a more welcome and indispensable part of the two-year college curriculum... through a nationwide faculty development project coordinated by AMATYC.”

MAC³ Evaluator: Dr. Jane Korey
Dartmouth College (Retired)

MAC³ Evaluation Process offers 3 measurement points:

Institute experience

Faculty implementation

Student results

STUDENT RESULTS

Evaluation Goal: To understand the impact on student learning of different teaching strategies and circumstances and to give faculty participants feedback about their courses.

Instrument:

Pre-post student mathematics attitude and learning survey.

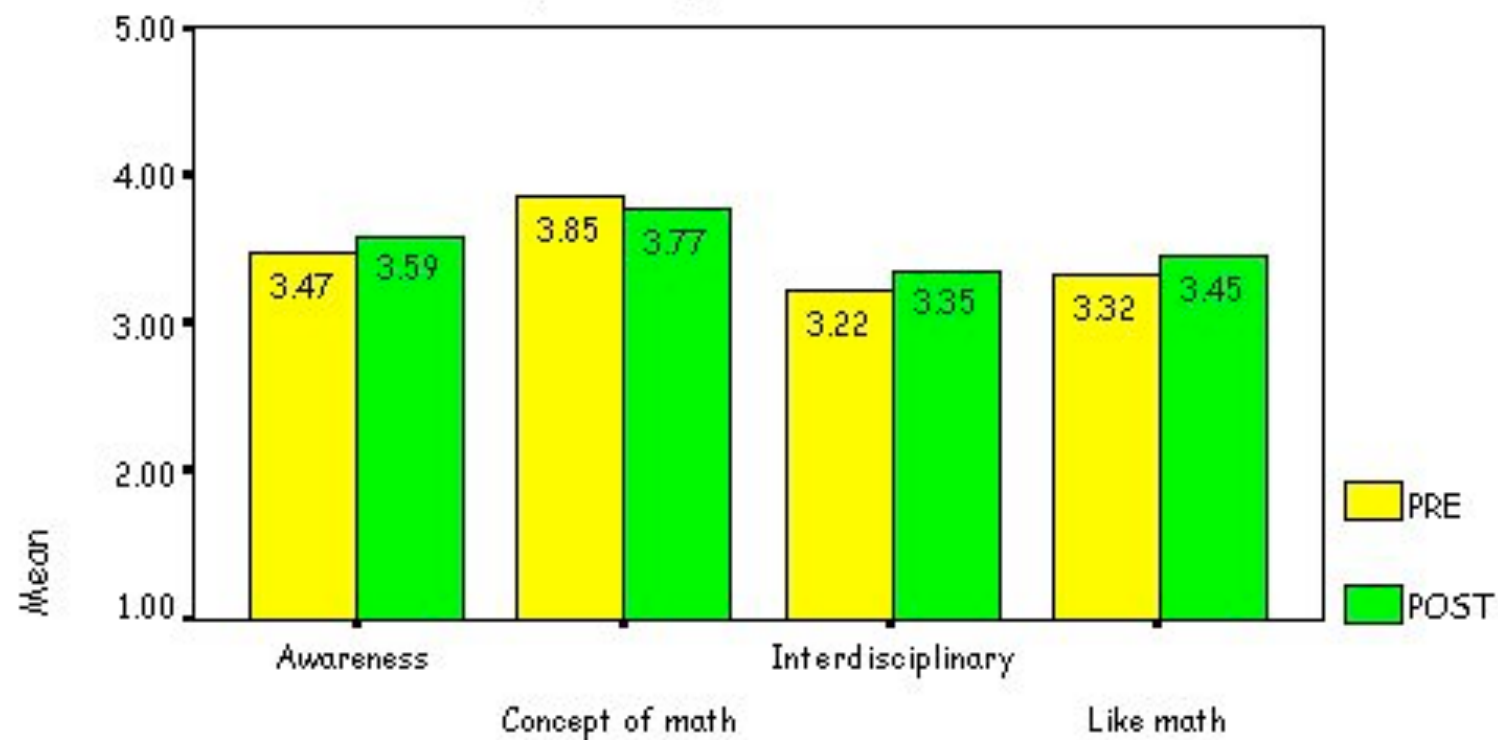
(Survey developed by the MAC³ Steering Committee and adapted to each individual course) .

STUDENT SURVEY RESULTS

- Excellent participation by faculty:
 - 32 MAC³ courses have completed pre- and post-surveys
- 521 matched pre-post student surveys
- Solid student results
 - Significant gains in 3 of 4 main areas
 - Solid learning and skills improvement

CHANGE IN STUDENTS' MATH ATTITUDES

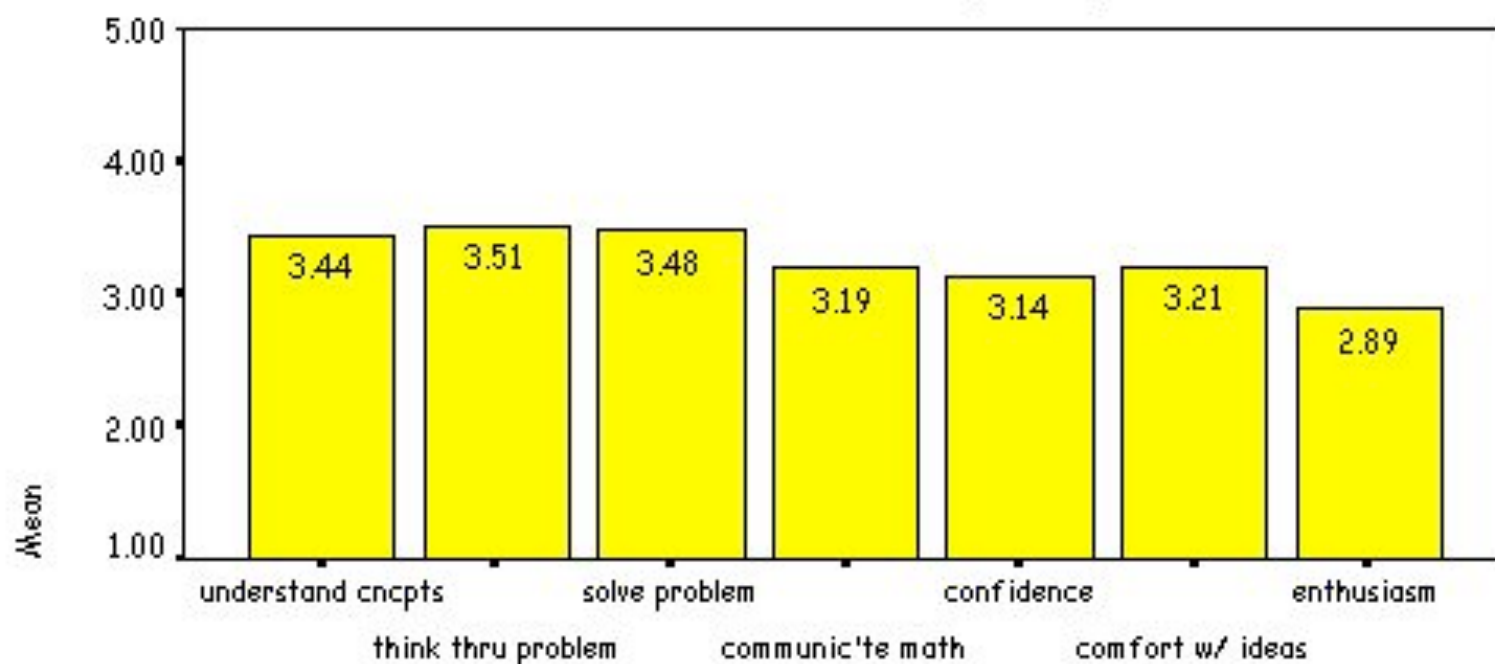
Pre-post change in construct means



Based on 521 matched pre-post surveys from 32 MAC3 courses

GAINS IN MATH SKILLS

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



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

Based on post surveys from 521 students in 32 MAC3 courses.

INDICATORS OF SUCCESS

- Students in most courses showed attitude and skills improvement
- No difference between the most and least successful courses in gender, subject or course format
- The most successful courses
 - Were smaller
 - Were more diverse
 - Had students who had lower pre-survey scores for “awareness,” “concept” and “interdisciplinary.”

CONTENT LEARNING ITEMS: MATH AND ECONOMICS

As a result of your work in this class.
How well do you think you now
understand each of the following?

1. Percentages
2. Slope
3. The relationship of price and total revenue
4. The relationship of marginal revenue and price
5. Elasticity of demand
6. How to create graphs from data

CONTENT LEARNING ITEMS: MATH AND ART

As a result of your work in this class.
How well do you think you now
understand each of the following?

1. How to analyze art in terms of color theory
2. How to provide productive feedback about art
3. The geometric concepts of reflection, rotation and translation
4. Tessellations

CONTENT LEARNING ITEMS: MATH AND WORKFORCE TRAINING

As a result of your work in this class.
How well do you think you now
understand each of the following?

1. The impact of compound interest on total savings
2. How to calculate the best promotional option when buying a car
3. The ultimate cost of your credit card purchase
4. How to calculate percentages in my head

Where we are now

- Year 3 of the 4-year National Dissemination Grant
 - Still gathering data to analyze
- Institutes and Traveling Workshops continuing under AMATYC

For more information...

- See www.mac3.amatyc.org
- Contact me: Deann Leoni
dleoni@edcc.edu
425-640-1184

Thank you!