AMATYC

The American Mathematical Association of Two Year Colleges

Presents…

Beyond Crossroads

Implementing
Mathematics Standards
in the
First Two Years of College

Why revisit the 1995 *Crossroads*?

- Recent research
- New technologies
- New challenges
- New emphases

and…

…a cry from faculty to help them IMPLEMENT those standards!

Beyond Crossroads includes:

- Rationale and process for embracing change in mathematics programs of two-year colleges
- Basic principles
- Five implementation standards
- Involvement of stakeholders
- From vision to reality

Beyond Crossroads: Basic Guiding Principles

- Assessing with the goal of improving student learning and instruction
- Broadening of students' options in educational and career choices
- Providing equity and access to high quality mathematics instruction for all students

Basic Principles (cont'd)

- Including innovation in the teaching of mathematics as a component of programs
- Providing an active classroom environment that facilitates inquiry-based learning
- Weaving quantitative literacy throughout all courses and programs

Basic Principles (cont'd)

- Demonstrating relevance in the mathematics that students study
- Employing research-guided instructional practices
- Including technology as a feature of mathematics teaching and learning

The Implementation Cycle

Beyond Crossroads includes a six-step cycle that serves as a template for changing or improving any component of a mathematics program. The cycle provides a process that facilitates continuous improvement.

The Implementation Cycle of *Beyond Crossroads*

1. DEFINE / REFINE goals and objectives of the activity or process to be improved with input from all stakeholders

2. DESIGN materials needed to implement the activity and develop the tools to measure their effectiveness

3. IMPLEMENT the activity or process and use assessment tools to collect data

4. ANALYZE and evaluate the collected data

5. IDENTIFY gaps between desired and actual results and determine what changes are needed

6. DOCUMENT results and use results to outline any needed changes

Within each chapter you will find:

- An Implementation Standard
- Recommendations for implementation
- Actions by faculty, departments, or institutions to support the recommendations
- Expectations of students, as applicable
- Supporting documentation

Ch. 4 Student Learning and the Learning Environment

Chapter 4 provides insight into factors that influence learning. It provides guidelines for maximizing the mathematics learning experience.

Ch. 4 Implementation Standard

Mathematics faculty and their institutions will create an environment that optimizes the learning of mathematics for all students.

Ch. 5 Assessment of Student Learning

Chapter 5 provides guidelines for assessment at the classroom, course, and program levels.

Ch. 5 Implementation Standard

Mathematics faculty will use results from the ongoing assessment of student learning of mathematics to improve curriculum, materials, and teaching methods.

Ch. 6 Curriculum and Program Development

Chapter 6 provides a description of various programs, as well as a list of expectations both for faculty and for students that can improve student learning in each program.

Ch. 6 Implementation Standard

Mathematics departments will develop, implement, assess, and revise courses, course sequences, and programs to help students attain a higher level of quantitative literacy and achieve their academic and career goals.

Ch. 7 Instruction

Chapter 7 provides descriptions of teaching and of learning styles, and strategies that can improve student learning in a variety of teaching and learning environments.

Ch. 7 Implementation Standard

Mathematics faculty will use a variety of teaching strategies that reflect the results of research to enhance student learning.

Ch. 8 Professionalism

Chapter 8 provides guidance to mathematics faculty at two year colleges and to institutions regarding expectations of the profession.

Ch. 8 Implementation Standard

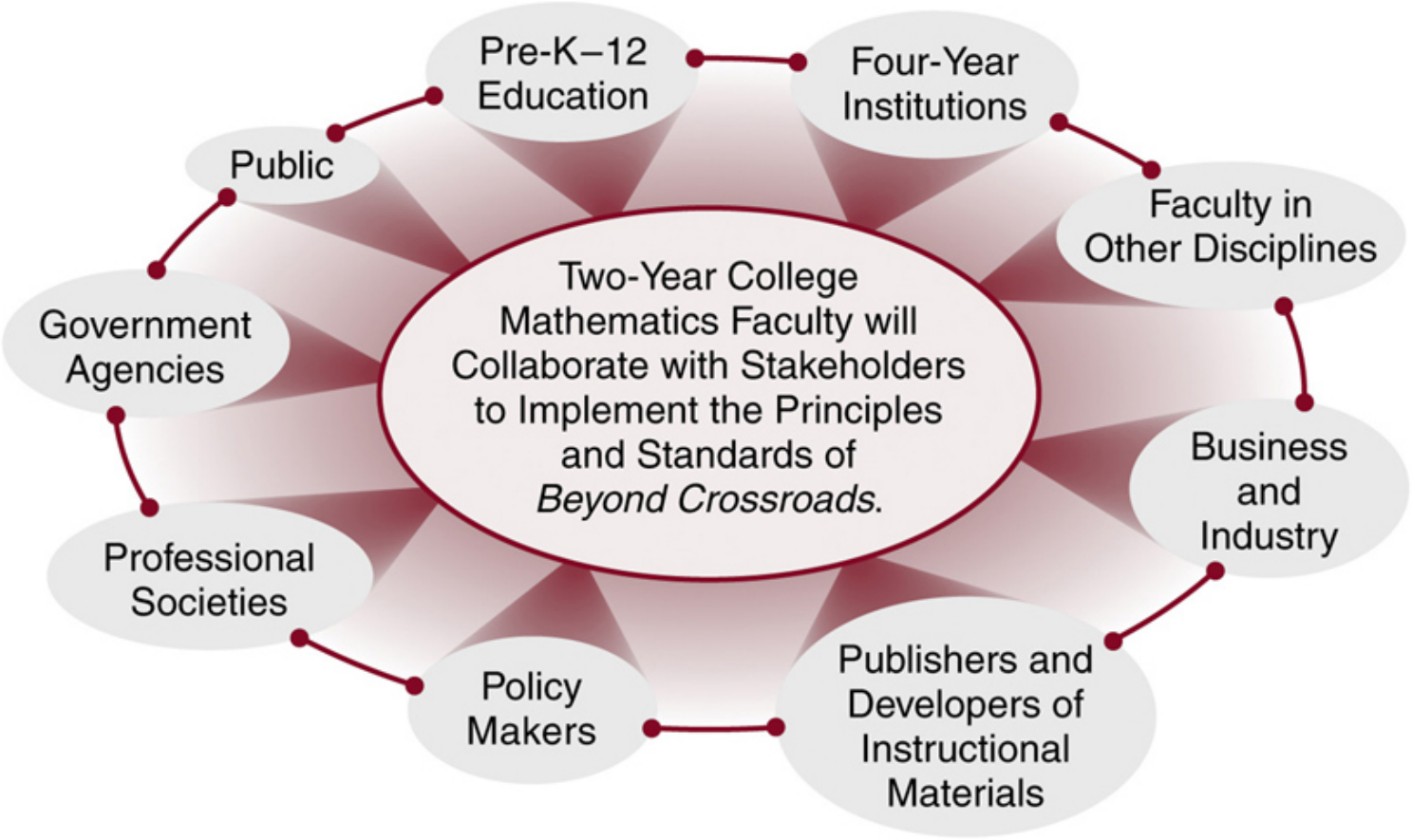
Institutions will hire qualified mathematics faculty, and these faculty will engage in ongoing professional development and service.

Beyond CROSSROADS

Ch. 9 Involvement of Stakeholders

Chapter 9 provides insight into identifying stakeholders, and ideas on how to include them in the planning and revision of programs and educational facilities for the benefit of students and the community.

Figure 4 Collaborating with Stakeholders



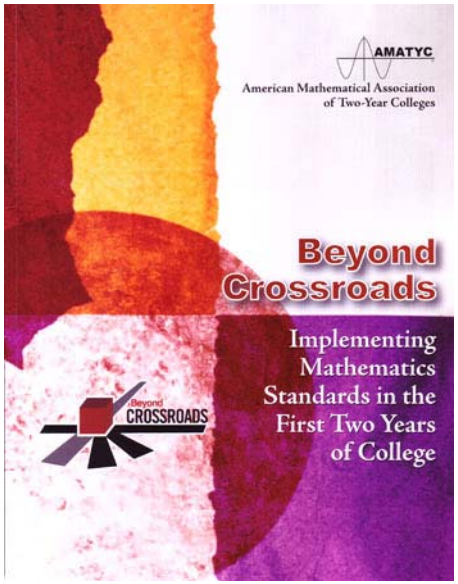
Beyond CROSSROADS

Ch. 10 Moving from Vision to Reality

In moving from vision to reality, each faculty member is an informed professional who embraces change, explores, experiments, and makes improvements in the classroom as a natural state. All students achieve improved quantitative literacy and workplace skills and maximize their success in mathematics in the first two years of college.

For additional information…

- The printed document
- The AMATYC web site, amatyc.org
- The electronic resources
  - Quantitative Literacy
  - Assessment
  - Outreach Kit
  - *Beyond Crossroads* Live



Beyond CROSSROADS