

Report to CAMTE from a
community college math faculty
member

I. (Why me?)

II. Beyond Crossroads

III. CSU-CCC MOU

I. (Why me?)

- Chair, MAA Committee on Technologies in Mathematics Education
- Associate editor, *Journal of Online Mathematics and its Applications*
- Consultant, Project NExT and Project ACCESS
- Writing team member, UCLA's Math Content Program for Teachers
- Past committee member in CSUN's Teachers for a New Era initiative
- Implementation coordinator, *Beyond Crossroads*

Beyond Crossroads

*Implementing
Mathematics Standards
in the
First Two Years of College*



Why Revisit the 1995 Crossroads?

- Recent Research and Advances in the Theory of Teaching and Learning of Mathematics Have Occurred
- New Technologies Are Changing How and What We Teach
 - Calculators
 - Computers
 - Distance Learning
- New Challenges Abound and Other Challenges Remain
 - Reform Efforts
 - Equity
 - Gender
 - Under-Represented Groups
 - Professional Development
 - Increasing Use Of Adjunct Faculty
 - Connections To Other Disciplines and Institutions
 - Dual Enrollment
 - Affect Management
- New Emphases Are Emerging
 - Quantitative Literacy
 - Teacher Preparation
 - Assessment
 - Learning And Teaching Styles
 - Classroom Research



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: Rationale

- In 2002-2003, 53% of all US undergraduate students were enrolled in 2-year colleges. One third of 2-year college students were minority (black, native American, Asian/Pacific Islander, Hispanic).
- In 2005, 2-year colleges served 10.1 million students, 6.6 million in credit classes.



Beyond Crossroads: Rationale

In 2004, CSUN found that 51% of their students in the "math for teachers" course had begun at two-year schools. Of these students...

- 56% took intermediate algebra.
- 52% took beginning algebra.
- 43% took pre-algebra.
- 32% took arithmetic.



Beyond Crossroads: Basic Guiding Principles

- Assessment 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 a classroom environment that facilitates active student involvement in 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 of *Beyond Crossroads*

A six-step implementation cycle is presented in this new document as a model for making change and improvements in a component of mathematics education.

In an effort to facilitate the sometimes overwhelming process of change, it provides a step-by-step process for continuous improvement.



The Implementation Cycle of *Beyond Crossroads*

Figure 1 The Implementation Cycle of *Beyond Crossroads*



The Implementation Standards Chapters 4-8

- Student Learning and the Learning Environment
- Assessment of Student Learning
- Curriculum and Program Development
- Instruction
- Professionalism



Each chapter

- Starts with the Implementation Standard
- Includes Implementation Recommendations
- May include student expectations
- Includes faculty, departmental, institutional actions to support each recommendation
- Includes rationale, tables and charts in support of the material



Ch 4 - Student Learning and the Learning Environment

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

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

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

Implementation Standard

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



Ch 8 - Professionalism

Implementation Standard

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



Ch 9 - Involvement of Stakeholders

Provides insight into identifying stakeholders, the importance of their involvement, 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.



Ch 9 - Involvement of Stakeholders

Figure 4 Collaborating with Stakeholders



Ch 10 - Moving from Vision to Reality

From the 1995 Crossroads document



We believe this standards-based reform effort will provide all students with a more engaging and valuable learning experience. Our students deserve no less; our nation requires no less; and we must demand no less of ourselves.



For additional information...

- The printed document
- The AMATYC web site, www.bc.amatyc.org
- Electronic resources - a work in progress
 - Quantitative Literacy
 - Assessment
 - The Outreach Kit
 - *Beyond Crossroads Live!*



III. The CSU-CCC MOU

19 October 2006

"CSU and CCC will collaborate in publicizing the significant need for mathematics and science teachers in California and the opportunity to complete an articulated program of preparation that begins with lower-division preparation at the community college and is completed at the CSU..."

Where we are:

- CSU math chairs created lists of courses that would articulate with CCCs in the Lower Division Transfer Patterns (LDTP) relevant for teaching.
- Pierce College has historically had strong connections with CSUN.
- Pierce Educators Prep Program (PEPP) already aligned much of the teacher prep curriculum between Pierce and CSUN.

BUT...

- PEPP, which had more than 500 prospective teachers at Pierce, was terminated when faculty member Larry Andre's grant funds ended.
- Only adjunct Pierce math faculty teach the "math for teachers" course.
- No one at Pierce outside the math department has even heard about the MOU.

Where we are (cont'd)

- Our VP of academic affairs has not answered my email questions about the MOU, and it appears that no one else knows if anything is being done to promote the MOU.
- No Pierce faculty or administrator currently has any responsibility to encourage, recruit, organize, or otherwise aid prospective teachers.
- The CCC Teacher Preparation Pipeline RFA was rescinded.

Where we are (cont'd)

Pierce may be atypical for a CCC!

Final thoughts

Community colleges already play a significant role in the preparation of teachers, but this fact is evidently unappreciated even by many of the community colleges themselves.

Changing the culture of students, faculty, and administration at two-year colleges to see the two-year schools as players in teacher prep may require more effort than can be generated by a handful of two-year college faculty.

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For *Beyond Crossroads*:
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