SEEKING CONVERGENCE

Accelerated Math Pathways and the Common Core

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COMMON CORE STATE STANDARDS

+ K-12 standards adopted in California and other states

+ Intended to represent competencies needed for all entering college students.

+ New assessments (Smarter Balanced) to be based on the standards
WHAT ARE CCSS IN MATH?

+ **Practice Standards** = mathematical thinking

+ **Content Standards** = two primary pathways at middle/high school level:
  - Traditional: Algebra 1 > Geometry > Algebra 2 > 4th year of math
  - Integrated: Math 1 > Math 2 > Math 3 > 4th year of math

+ **Other Options**
  - Acceleration
  - “Plus” standards
The Student Success Task Force recommended it.
The University of California expects alignment with CCSSM for transfer purposes.
The California State University expects alignment with CCSSM for transfer purposes.
Clarity and consistency in college-readiness benchmarks benefits students.
WHERE TO SEEK ALIGNMENT?

+ PRACTICES?
  -- Make sense of problems and persevere in solving
  -- Reason abstractly and quantitatively
  -- Model with mathematics
  -- (Plus five more)

+ CONTENT COVERAGE?
  -- Number and Quantity, Algebra, Functions, Modeling, Geometry, Statistics and Probability
  -- Non-traditional topics: linear, quadratic, exponential functions; statistics and probability; trig ratios and identities; transformational geometry; conic sections; binomial theorem
INNOVATION: Alternative Developmental Math Pathways

+ Why innovate?
  – Math is a barrier for the majority of community college students
  – Most students deemed “unready” in math will never graduate.
  – Placement tests are weak predictors of student performance.
  – Standard math sequence is irrelevant to most students’ aspirations
INNOVATION: Alternative Developmental Math Pathways

+ Math sequences with content designed to prepare students for (and be relevant to) subsequent coursework.

+ Sequences often use acceleration concepts and alternative placement approaches.

+ Community colleges are leading the development, though there are some parallels in K-12 and at four-year universities.

+ Examples include:
  – Statistics pathways
  – Quantitative reasoning pathways
  – Computer science and others
Promising Preliminary Results

- **Carnegie Foundation’s Statway** – 19 colleges, 1500 students, 5 states. More than half of students completed college-level math in their first year of college, versus just 6 percent in the standard pathway.

- **California Acceleration Project** – 23 colleges innovating in math. Students were 4.5 times as likely to complete a transferable math course as students in traditional remedial math courses.
DIVERGENCE

**K12 standards** – greater emphasis on advanced algebra

**Alternative pathways** – specifically focus on quantitative reasoning and/or statistics and de-emphasize algebra content

**UC and CSU admissions requirements** – students must meet Common Core standards for admission as freshmen or transfer students

**Community college regulations** – call for math courses at the level of intermediate algebra as AA requirement, and the Academic Senate promised the Board of Governors to “actively promote and support alternative courses.”
How do we engage in a question about what we want students to know?

Can we do it in a way that pulls through the longest-possible trajectory but also allows people to achieve interim goals or milestones?

Where is a forum in which to discuss these questions?
WHAT NEXT?
QUESTIONS FOR YOU:

+ How engaged are you/your college with Common Core – or working with K-12 districts around math curriculum?

+ Do you/your college anticipate changing your remedial or college-level math courses in response to Common Core?

+ What are the pros and cons of alternative remedial pathways at your college?

+ What challenges or opportunities have arisen around intersegmental alignment and articulation with the alternative or the traditional sequence? How are you responding to them?

+ What advice can you offer others? OR What external (policy and other) support is ideally needed?
CLOSING THOUGHTS

+ Transfer requirements for non-STEM majors may have chilling effect on innovation.

+ More evidence is needed on alternatives, but gathering it requires ensuring a space for innovation.

+ Policies should strike a balance between aspirational standards and student progression.
See prior LearningWorks report:

*Changing Equations: How Community Colleges are Re-Thinking College Readiness in Math*
[www.learningworksca.org/changingequations](http://www.learningworksca.org/changingequations)

Look for forthcoming LearningWorks/PACE series

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