New Models with Increased Student Success

Redesigning Developmental Education
Scaling Corequisite Remediation

Spanning the Divide

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Remediation

Too many students start college in remediation.

61% in 2-year institution

28% in 4-year, non-flagship institution
African Americans, Hispanics and Pell Students are Over Represented

**2-year Students**

- **Received Pell Grant**: 69%
- **Black, non-Hispanic**: 70%
- **Hispanic**: 63%
- **White, non-Hispanic**: 53%

**4-year Non-Flagship Students**

- **Received Pell Grant**: 37%
- **Black, non-Hispanic**: 44%
- **Hispanic**: 35%
- **White, non-Hispanic**: 23%
Most are in Math – Far Too Many Require Both Math and English

2-year Students

- White, non-Hispanic: 20% Both, 24% Math, 20% English
- Hispanic: 30% Both, 37% Math, 30% English
- Black, non-Hispanic: 40% Both, 50% Math, 40% English
- Received Pell Grant: 32% Both, 40% Math, 32% English
Access to College or Remediation

For too many students, a remedial class is their first and their last college experience.
The System Does Not Work, Particularly for African Americans

Gateway Course Completion in 2 years
2-year college remedial students

- White, non-Hispanic: 23%
- Hispanic: 20%
- Black, non-Hispanic: 11%
- Received Pell Grant: 19%
Of 2-year students enrolled in remediation:

- 11% graduate in 3 years
- 18% transfer to 4-year institution (with or without a degree) in 4 years
Student attrition is at the heart of the matter...
Remediation: The effect of attrition.

Students assigned 3 or more semesters of math remediation.

- Completed 1st semester of remediation.
  - Enrolled and completed
  - Did not complete (Lost)
  - Did not enroll or stopped enrolling

- Completed 2nd semester of remediation.
  - Enrolled and completed
  - Did not complete (Lost)
  - Did not enroll or stopped enrolling

- Completed 3rd semester of remediation.
  - Enrolled and completed
  - Did not complete (Lost)
  - Did not enroll or stopped enrolling

- Passed gateway course.
  - Enrolled and completed
  - Did not complete (Lost)
  - Did not enroll or stopped enrolling

**Know This:** The remediation system is broken. More students quit than fail.

Remediation: The effect of attrition.

Students assigned 3 or more semesters of math remediation.

- Completed 1st semester of remediation.
  - Enrolled and completed
  - Did not complete
  - Did not enroll or stopped enrolling
  - LOST

- Completed 2nd semester of remediation.
  - Enrolled and completed
  - Did not complete
  - Did not enroll or stopped enrolling
  - LOST

- Completed 3rd semester of remediation.
  - Enrolled and completed
  - Did not complete
  - Did not enroll or stopped enrolling
  - LOST

- Passed gateway course.
  - Enrolled and completed
  - Did not complete
  - Did not enroll or stopped enrolling
  - LOST

KNOW THIS The remediation system is broken. More students quit than fail.

Corequesite Support
The Corequisite Strategy

More **time on task** and help for students when they need it (just in time)
One Semester Redesigned Gateway

- **Gateway**
- **Mandatory Tutoring**
  - Paired, proctored labs
- **Extra Time**
  - 45 minutes after class
  - Additional class periods
- **Sequenced**
  - 5-week prep + 10 weeks of gateway content
Traditional Remediation Results

- **Colorado**: English - 31%, Math - 0%
- **Georgia**: English - 20%, Math - 16%
- **Indiana**: English - 29%, Math - 31%
- **Tennessee**: English - 12%, Math - 31%
- **West Virginia**: English - 14%, Math - 37%
One Semester Scaled Results

Traditional Remediation National Avg for Gateway Course Success

Colorado: 64%
Georgia: 71%
Indiana: 55% (English), 64% (Math)
Tennessee: 64% (English), 61% (Math)
West Virginia: 68% (English), 62% (Math)
SUCCESS AT SCALE

Academic Support as a Corequisite

Math Pathways Aligned to Programs of Study

Purpose, Not Placement
Math Pathways
College Algebra’s Only Purpose: Preparation for Calculus
Math Is Aligned with Meta-Majors

Health Sciences
Social Sciences
Liberal Arts
Education
Business

Quantitative Reasoning/Statistics

Degree
4-Year Transfer
Certificate
License

STEM
College Algebra/Precalculus

Degree
4-Year Transfer
Certificate
License
50% of Students Placed In Remediation Could Pass a Gateway Course
End Use of Traditional Placement

Remediation

Gateway

Percent of Students

Student Placement Data

70%

30%
With Corequisite, Most in College-Level

Student Placement Data

- Bridge Program: 10%
- Gateway Course with Corequisite Support: 60%
- Gateway: 30%

Percent of Students
Determining Student Purpose

- Identify Career and Academic Goals
- College Readiness – Academic and College Skills
- Determine a Broad Area of Study or Meta-Major
- Enroll in the Right Gateway Courses
Guiding Objective

Students complete gateway courses and enter programs of study in their first academic year
A Model Pathway

Advise and Assess

Choose Meta-major

Social Sciences

Coreq

Stats

Gateway Math in 1st year

STEM

Coreq

College Algebra

Choose Major

Pre-Major Advising

Humanities

Coreq

QR

Major

Major

Major
Our goals

We are NOT trying to “get students through math” more quickly.
Our goals

We are **NOT** trying to “get students through math” more quickly.

We **ARE** trying to:

1) Increase and accelerate student success in mathematics

**AND**

2) Teach mathematics content and skills that will be of value to students in their lives and careers
Definition of math pathway

...a mathematics course or sequence of courses that students take to meet the requirements of their program of study.

The concept of math pathways applies to pathways for college-ready and underprepared students.
A new vision for the student experience in math...

1. Multiple pathways aligned to specific fields of study

2. Acceleration that allows most students to complete a college-level math course in one year or less

3. Intentional use of strategies to help students develop skills as learners

4. Curriculum design and pedagogy based on proven practice

The New Mathways Project
## Texas Results

For students enrolling in developmental education courses:

<table>
<thead>
<tr>
<th></th>
<th>All FTIC, Community College Students (THECB)</th>
<th>NMP Pathways</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AY 2013</td>
<td>AY 2014</td>
</tr>
<tr>
<td><strong>Developmental Education</strong></td>
<td>24% in one year</td>
<td>64% in one semester</td>
</tr>
<tr>
<td>Completion</td>
<td>n=32,624</td>
<td>n=1,306</td>
</tr>
<tr>
<td><strong>Gateway Course</strong></td>
<td>8% in one year</td>
<td>23% in one year</td>
</tr>
<tr>
<td>Completion</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gateway Course</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completion: Subset of Colleges using Back to Back Math*</td>
<td>n/a</td>
<td>43% in one year</td>
</tr>
</tbody>
</table>

*Back to back math is an evidence-based strategy in which students are encouraged to enroll in a college-level math course in the semester immediately following the completion of their developmental coursework.
Completion of Gateway Math by ACT Sub-score
Community College Pre-requisite Model vs. Co-requisite Pilots

Results of TBR Co-requisite Mathematics Pilot

<table>
<thead>
<tr>
<th>Year</th>
<th>Pre-requisite Model AY 2012-13</th>
<th>No ACT</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>2.7%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>2014</td>
<td>3.8%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>2015</td>
<td>6.8%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>2016</td>
<td>11.5%</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>2017</td>
<td>19.7%</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>2018</td>
<td>25.6%</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>2019</td>
<td>70.7%</td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>2020</td>
<td>78.4%</td>
<td>70%</td>
<td>70%</td>
</tr>
<tr>
<td>Total</td>
<td>64.8%</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>Total</td>
<td>63.3%</td>
<td>90%</td>
<td>90%</td>
</tr>
</tbody>
</table>
In the past, for every 100 students attempting Math remediation...

<table>
<thead>
<tr>
<th>Attempted</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remedial Math</td>
<td>Remedial Math</td>
</tr>
<tr>
<td>100</td>
<td>49</td>
</tr>
<tr>
<td>51 Leave Pipeline</td>
<td></td>
</tr>
</tbody>
</table>

Time lapse: 1 to 3 years

2009 ATD cohort

In Fall 2014 co-req. model expansion, for every 100 students attempting Math remediation...

<table>
<thead>
<tr>
<th>Attempted</th>
<th>Completed</th>
</tr>
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<tbody>
<tr>
<td>Remedial Math</td>
<td>Gateway Math</td>
</tr>
<tr>
<td>100</td>
<td>64</td>
</tr>
<tr>
<td>36 Leave Pipeline</td>
<td></td>
</tr>
</tbody>
</table>

Time lapse: 1 semester

Fall 2014: 691 students enrolled in MATH 080/123.
Spring 2015: 2,019 students enrolled in MATH 080/123.
Contact Information

- Amy Getz (general project issues): getz_a@austin.utexas.edu
- General information about the Dana Center: www.utdanacenter.org
- Higher Education work: www.utdanacenter.org/higher-education/
- To receive monthly updates about the NMP, contact us at: mathways@austin.utexas.edu
Colorado Community College System

35 CAMPUSES BELONGING TO 13 COLLEGES SPANNING COLORADO
Our Recommendations

- Student advising and multiple measures as part of placement
- Multiple delivery strategies are good
- Math
  - Redesigned courses to only cover content necessary for the college level course
  - Multiple pathways available to students based on their career/major interest
- CCR
  - Integrate ENG and REA to create CCR
  - Student opportunity to enter a 100 level class no later than their second term in enrollment
How to make recommendations

- External pressure and support
- Structure that allows some kind of centralized decision making
- Bringing representatives from multiple colleges, multiple disciplines, and functional areas
- Review of literature and multiple best practices
- Opportunities for feedback, particularly from faculty
- Commitment from external sources to change
## Traditional ENG & Redesign CCR comparison

<table>
<thead>
<tr>
<th>ENG AY13</th>
<th>...successfully completed college English (1 year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three levels below</td>
<td>5%</td>
</tr>
<tr>
<td>Two levels below</td>
<td>18%</td>
</tr>
<tr>
<td>One level below</td>
<td>34%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CCR AY15</th>
<th>...successfully completed college English</th>
</tr>
</thead>
<tbody>
<tr>
<td>One level below</td>
<td>30% (Plus extra support)</td>
</tr>
<tr>
<td>One level below</td>
<td>31%</td>
</tr>
<tr>
<td>Co-requisite to College</td>
<td>31%</td>
</tr>
<tr>
<td>Co-requisite to ENG</td>
<td>93%</td>
</tr>
<tr>
<td>Course AY13</td>
<td>...successfully completed college math (1 year)</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Four levels below</td>
<td>3%</td>
</tr>
<tr>
<td>Three levels</td>
<td>9%</td>
</tr>
<tr>
<td>below</td>
<td></td>
</tr>
<tr>
<td>Two levels</td>
<td>17%</td>
</tr>
<tr>
<td>below</td>
<td></td>
</tr>
<tr>
<td>One level</td>
<td>30%</td>
</tr>
<tr>
<td>below</td>
<td></td>
</tr>
</tbody>
</table>
Rutgers external evaluation and SME review

Successful implementation of the redesign depends on continued effort in the following areas:

- Systematic **data collection and analysis** at each college, in the service of ongoing evaluation and improvement
- Sustained attention to **curriculum and instruction** within the newly constructed courses and pathways
- Continued **capacity building** across CCCS, with particular attention to the variation in colleges’ internal capacity to engage in curricular reform and ongoing evaluation
Panel questions

- How do we scale this to improve student success?
- How do you mobilize institutions?
- How do you engage faculty in the planning and implementation?