

National Symposium of 21st Century Community Colleges

Strengthening Workforce Development in India for the Global Economy



Under Prepared students: Developmental Math using Tecnnology
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The Challenge

- On a national level, the percentage of community college students who need developmental mathematics, reading, and writing courses is approximately 50%.
- The percentage of students needing remediation in mathematics is generally higher than those needing remediation in reading and writing English. For example, in Maryland, 35% of students need remediation in reading and writing, and 65% need remediation in mathematics.

ACADEMICALLY VULNERABLE

- They are first generation college students
- They have no family guidance to help them navigate the academic world
- They have job responsibilities
- They have family responsibilities (16% are single parents)
- They are distracted by transportation difficulties
- They are from underrepresented minorities
- They have financial limitations—cannot afford books
- They have poor high school academic preparation

AMERICAN DREAM

- Open Door Policy
 - Everyone will be educated
- Montgomery College
 - “All who are high school graduates, or the equivalent, and who can benefit from the programs and services of the College, shall qualify for Admission.”
- Diverse Population
 - “Students enrolled from every continent and from more than 170 countries from around the globe.”

ASSESSMENT

- National Assessment Instruments
 - ACCUPLACER (62% of community colleges)
 - COMPASS (46% of community colleges)
 - Other diagnostic instruments
 - Writing samples
 - Affective questions
 - High school transcript

CHARACTERISTICS OF DEVELOPMENTAL COURSES

- Class Size
 - 20 student for English and 24 for mathematics
- Institutional Credit
 - Not transferable credit
- Course Repeats
 - Limited number
- Con-Current Enrollment
 - For example, English with Math



DEVELOPMENTAL WRITING

- Progression to College Level
 - 2 levels.
 - Writing 1 leads to Writing 2
 - Writing 2 leads to college-level writing
- Course Content
 - Paragraphs to multi-paragraph essays
 - Thesis Statement
 - Development of Ideas
 - Grammar and Sentence Structure
- Course Outcomes
 - To write fully developed paragraphs and essays
 - To use and recognize thesis statement
 - To write grammatically correct sentences



DEVELOPMENTAL READING

- Progression to College Level
 - Reading 1 leads to Reading 2
 - Reading 2 leads to college-level writing
- Course Content
 - Identifying vocabulary in context
 - Reading paragraphs and essays to find main idea
 - Reading essays that follow different types of development
 - Reading for understanding of the author's point of view, purpose, and audience
- Course Outcomes
 - To recognize and understand the main idea
 - To apply critical reading/thinking skills
 - To evaluate arguments



Student Response to Developmental Reading



DEVELOPMENTAL MATH

- Progression to College Level
 - 3 levels of developmental math.
- Course Content
 - Working with Integers, Decimals and Fractions
 - Solving a System of Equations
 - Use of Exponents and Log Functions
 - Modeling Real World situations
- Course Outcomes
 - To solve and graph equations
 - To simplify complex expressions
 - To effectively use technology to solve problems



FACILITIES FOR DEVELOPMENTAL COURSES



- Computer Classrooms



- Learning Centers

INNOVATIVE MODELS

- Developmental Learning Community
 - Reading level 1 and Writing level 1
- Contextualized Learning Community
 - Writing level 1 with Biology 101
- On-line Developmental Courses
 - Math level 1
- Hybrid Developmental Courses
 - Writing level 2



INTERVENTION STRATEGIES

- No Single Strategy Works
 - Providing a Graduation/Goal Plan
 - Providing Learning Communities
 - Accelerated Course Work
 - Flexible Scheduling
 - Student Success Courses
 - Providing Mentors
 - Personal and Intense Advising and Counseling
 - Academic Alerts and Reduction of Hassles



CASE STUDY

Mathematics Reform using Technology



CASE STUDY

- Assessment & Placement
- Number of Students Affected
- Success
- Self-pacing
- Methodology
- Mastery Learning
- Early Alert
- Community

Student Responses





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