

Great Ideas in Mathematics Placement and Assessment

Shakir Manshad

Math and Physical Sciences Department, DACC

Mary Beth Worley

Institutional Effectiveness & Planning Office, DACC

Rene Sierra

Math and Physical Sciences Department, DACC

Robert N. Baker

Mathematics Department, NMSU – Grants

Victoria Gonzalez

English and Communications Department, DACC

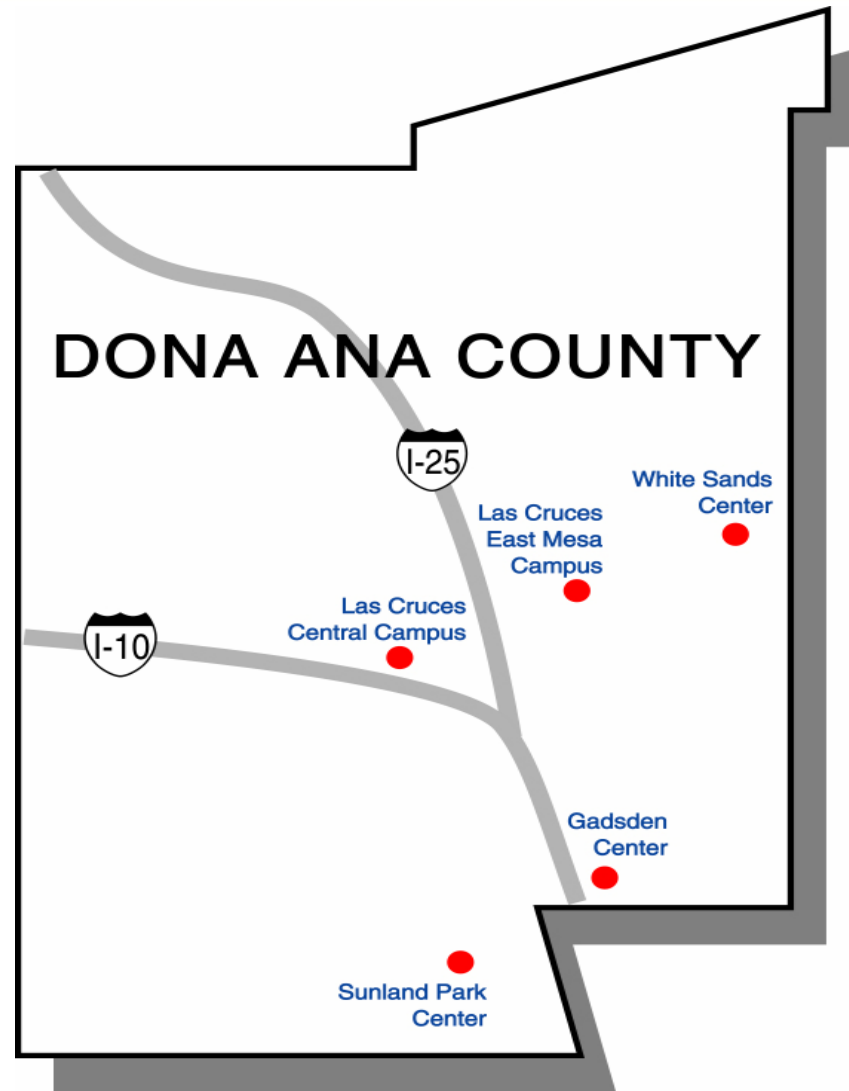
Vicki Aldrich

Math and Physical Sciences Department, DACC

NMHEAR Conference ❖ Albuquerque, NM ❖ February, 2007

Presentation Outline

- DACC Overview
 - Demographics
 - Retention
 - Placement
 - Achieving the Dream Focus Group
- Fast Track Workshop Summer 06
- Fast Track Course Spring 07
- DACC – MAC Initiative
- Discussion



Overall Credit Enrollment

	Fall 2000	Fall 2006	Percent Increase
FTE	2,397	4,005	67%
Seatcount	11,178	18,768	68%
Headcount	4,881	7,184	47%

Overall Credit Enrollment

Fall 2006

Female 57%

Hispanic 61%

Average Age 26.0

Math Placement

High School GPA

ACTM	SAT	[0, 2.5)	[2.5, 2.75)	[2.75, 3)	[3, 3.25)	[3.25, 3.5)	[3.5, 3.75)	[3.75, 4)	≥ 4
<14									
14									
15									
16	380								
17	410								
18	420								
19	430								
20	460								
21	480								
22	500								
23	520								
24									
25	530								
26	550								
27	560								
28	600								
29	630								
≥ 30	650								

- 0 CCDM 103N
- 1 CCDM 114N
- 2 Math 111, Math 120, Math 210G
- 3 Math 121G, Stat 251, Stat 271
- 4 Math 190, Math 142G, Math 230, Math 275G, Math 278, Math 279

CCDM100 – Fall 2005

- ACT Placement
 - 90% did not have an ACT score
 - 9% placed into CCDM103
 - 1% placed into CCDM114
- COMPASS
 - 23% did not have a COMPASS score
 - 76% placed into CCDM103
 - 1% placed into CCDM114

CCDM103 – Fall 2005

- ACT Placement
 - 48% did not have an ACT score
 - 50% placed into CCDM103
 - 1.7% placed into CCDM114
 - 0.4% placed into MATH115
- COMPASS
 - 51% did not have a COMPASS score
 - 48% placed into CCDM103
 - 1% placed into CCDM114

CCDM114 – Fall 2005

- ACT Placement
 - 28% did not have an ACT score
 - 14% placed into CCDM103
 - 50% placed into CCDM114
 - 8% placed into MATH115
- COMPASS
 - 69% did not have a COMPASS score
 - 22% placed into CCDM103
 - 9% placed into CCDM114
 - 0.1% placed into MATH115

MATH115 – Fall 2005

- ACT Placement
 - 35% did not have an ACT score
 - 22% placed into CCDM103
 - 19% placed into CCDM114
 - 25% placed into MATH115
- COMPASS
 - 69% did not have a COMPASS score
 - 22% placed into CCDM103
 - 8% placed into CCDM114
 - 1% placed into MATH115

Math Students Served

On average, 82% of new students at DACC take at least one Developmental Math course sometime during their instruction at DACC.

DACC Longitudinal Retention Model

Focus on Retention

Results of DACC's retention study indicate that of our DA first-time freshmen:

- Roughly 24% will not return after one semester;
- Up to 40% will not return after two semesters;
- This means that over 60% will not return after two semesters.

Focus on Retention

Fall to Spring Math Retention:

- 43% of DA new students take CCDM103 their first semester
- Overall pass rate of 62%
 - Pass rate of “Retained” students: 71%
 - Pass rate of “Not Retained” students: 22%.

Focus on Retention

Fall to Spring Math Retention:

- 16% of DA new students take CCDM114 their first semester
- Overall pass rate of 52 %
 - Pass rate of “Retained” students: 59%
 - Pass rate of “Not Retained” students: 17%

Focus on Retention

Of the 6,235 new DA students:

- 66% took Dev. Math their first semester;
- 40% of those students did not pass;
- 65% of students that didn't pass did not come back;
- 26% of those who took CCDM
 - Did not pass their class AND
 - Did not return the next semester.

Achieving the Dream Focus Group

Developmental Math AtD Focus Group

Purpose:

- *To understand why students chose to attend DACC*
- *To understand what causes or might cause students to leave DACC*
- *To understand how involved students are in their own learning*
- *To understand the role of relationships in student persistence and success*
- *To understand what DACC does well to help students stay in school and achieve their goals*
- *To understand what DACC needs to improve to help students stay in school and reach their educational goals*

Developmental Math AtD Focus Group

Approach:

- *Conducted two focus group sessions with Developmental Math Students at Sunland Park Center and Gadsden Center*
- *Invited 16 randomly selected students to participate*
- *Each session was scheduled for 75 minutes*
- *Recorded and transcribed responses from each session*

Developmental Math AtD Focus Group

Initial Results:

- *12 of the 16 invitees participated*
- *50% female*
- *100% Hispanic*
- *67% between the ages of 18 and 24*
- *42% earned at least a HS diploma and 33% at least a GED*
- *58% full-time students*
- *50% enrolled immediately after high school*

Developmental Math AtD Focus Group

Results:

- *Mom's highest level of education:*
 - 33% have 8th grade education
 - 42% have HS diploma or GED
- *Dad's highest level of education:*
 - 17% have 8th grade education or some HS
 - 33% have HS diploma or GED
- *67% received grants/scholarships*
- *25% received loans*

Developmental Math AtD Focus Group

Educational Goals:

- *All of the students hoped to earn at least an Associates degree*
- *Family support is necessary in achieving this goal*
 - *Child care*
 - *Transportation*
 - *Financial Support*
 - *Encouragement*
- *Believe that a better education will lead to better careers and better income*
- *Finds DACC is supportive in achieving their educational goals*

Developmental Math AtD Focus Group

Support from Family/Friends/Employer:

- *Most of the students are encouraged by their parents to earn their degree*
- *Of those students who are employed found their employer to be generally supportive, but often had to ask for time off to take care of school business*

Developmental Math AtD Focus Group

DACC's Strengths:

- *Tuition is affordable*
- *Student Services staff at each center are very supportive*
- *Close to home*
- *Small classes*
- *Access to tutors*
- *Comfortable environment*

Developmental Math AtD Focus Group

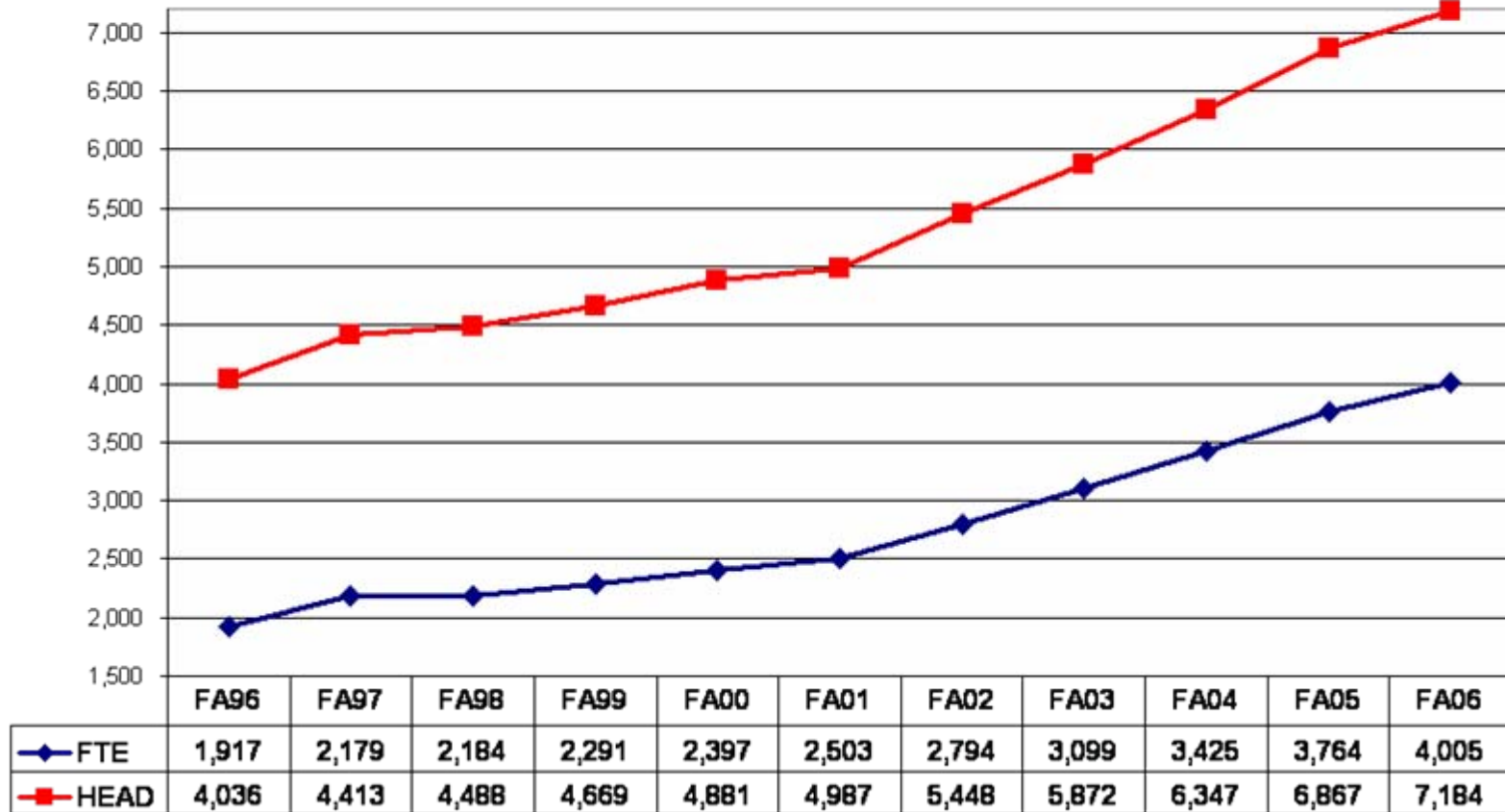
DACC's Weaknesses:

- *Student Services available at the centers are not adequate*
- *Student Services office closes at 5:00 p.m.*
- *Must drive to Las Cruces for Financial Aid Assistance*
- *Academic advising is very limited*
 - *Many students self-advised*
 - *Rely on Student Services Coordinator for academic advising*
- *Would like more full-time instructors*
 - *Many students reported they have had part-time instructors who would cancel class with out notice several times during a semester*
- *Library Services are in adequate*
 - *Limited resources at Gadsden Center*
 - *No library at Sunland Park Center*

Fast Track Review Course At DACC

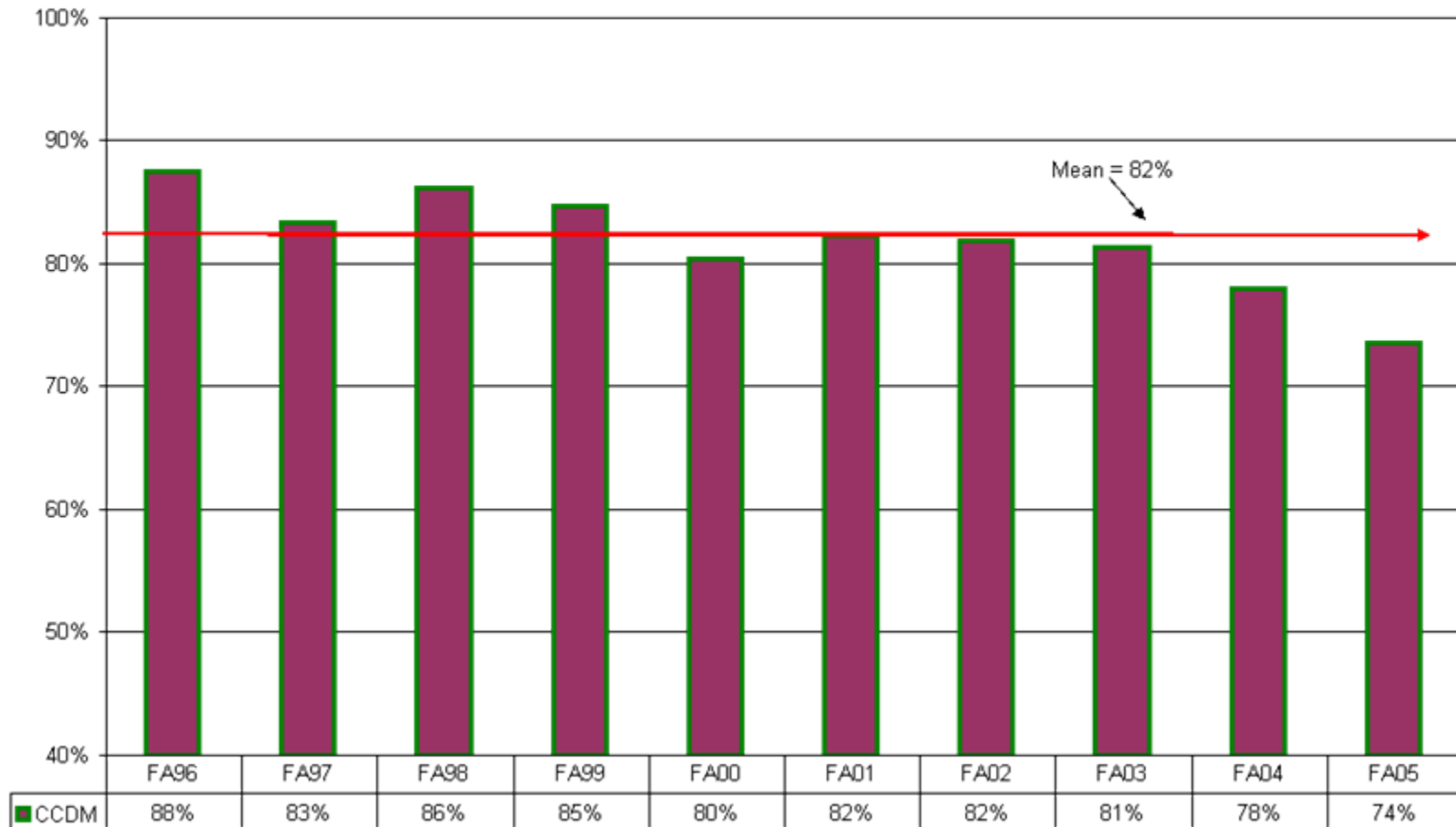
Overall Credit Enrollment

DACC Fall Final Enrollment (1996 - 2006) 10 Years of Growth



Math Students Served

Percent of Fall New Students Taking Developmental Math at DABCC



Fast Track Review Course at DACC

Description:

An intensive and rigorous 1-week review course prepares students to exempt out of Prealgebra (CCDM 103N) and enter directly into Beginning Algebra (CCDM 114N).

Target Population:

- Doña Ana County graduating high school seniors;
- have placed into CCDM 103N;
- Have a history of success in high school math;
- Have passed:
 - Algebra I with an A or B, or
 - Geometry or Algebra II with a C or better.

Funded by the Lumina Foundation's

Achieving the Dream: Community Colleges Count Initiative

Summer 2006 Fast Track Workshop

- Developed a 40 page lecture note to cover some basic ideas in Prep-Algebra such as: Decimal Notation, Real Numbers, Exponential Notation, Order of Operation, Introduction to Fraction, Solving Equations, Ratio, Proportions, Percent, Perimeter, and Area.
- Created a 26 page tutorial collection for the TI-83 Graphing Calculator.

Daily schedule

- Real life application and mathematical models.
- Algebraic approach solution
- Graphical approach using TI-83 Graphing Calculator
- EducoSoft; it's a multimedia electronic lecture and tutorial for students using multi-media technologies. The software is capable of showing step-by-step procedures with extensive pedagogically sound animation.

Fall 2006 Fast Track Analysis

Enrolled in CCDM114N

Invited and Attended Workshop

N=12

Passed: 92%

Sem. GPA: 3.13

Returned in Spring: 100%

Enrolled in Higher Math: 58%

Invited and Did Not Attend Workshop

N=1

Passed: 100%

Sem. GPA: 2.92

Returned in Spring: 100%

Enrolled in Higher Math: 100%

Not Invited to Attend Workshop

N=802

Passed: 63%^S

Sem. GPA: 2.24

Returned in Spring: 82%

Enrolled in Higher Math: 33%

Fall 2006 Fast Track Analysis

Enrolled in CCDM103N

Invited Students Who Attended Workshop

N=3

Passed 100%

Sem. GPA: 3.43

Returned in Spring: 67%

Enrolled in Higher Math: 67%

Invited and Did Not Attend Workshop

N=17

Passed: 76%

Sem. GPA: 2.67

Returned in Spring: 88%

Enrolled in Higher Math: 71%

Not Invited to Attend Workshop

N=669

Passed: 61%

Sem. GPA: 2.11

Returned in Spring: 77%

Enrolled in Higher Math: 56%

Fall 2006 Fast Track Analysis

Enrolled in CCDM112N

Invited Students Who Attended Workshop

N=1

Passed: 100%

Sem. GPA: 2.73

Returned in Spring: 100%

Enrolled in Higher Math: 100%

Invited and Did Not Attend Workshop

N=0

Not Invited to Attend Workshop

N=131

Passed: 65%

Sem. GPA: 2.14

Returned in Spring: 78%

Enrolled in Higher Math: 56%

Fast Track Review Course

Statistics from Montgomery College:

- Between fall 2000 and summer 2006, 585 students with a placement score have completed the fast track program and were retested;
- 65.1% of those were placed one or two levels higher than previously determined.

Fast Track Review Course

Statistics continued...

- 63% of the students who come from Fast Track earned a C or better in elementary algebra, compared to 44% of non-Fast Track students.
- A higher percentage of A/B grades was earned by those coming from Fast Track than by those who did not come from Fast Track.

Spring 07 Review Course

- 36 Student Participated
- Lecture note
- Testing
- Data Analysis

Spring 2007 Gadsden High School Focus Group

Results:

- *Mom's highest level of education:*
 - 28% have 8th grade education
 - 14% have HS diploma or GED
 - 5.7% have College degree
- *Dad's highest level of education:*
 - 8.5% have 8th grade education or some HS
 - 29% have HS diploma or GED
 - 14% have College degree

Spring 2007 Gadsden High School Focus Group

Educational Goals:

- *All of the students hoped to earn at least an Associates degree*
- *Believe that a better education will lead to better careers and better income*
- *Finds DACC is supportive in achieving their educational goals*

Interested of study (Major)

Major	Number of Students
Undecided	3
Medical	7
Education	6
Nursing	8
Psychology	3
Music	1
Creative media	1
Biology	1
News Reporter	1
Graphic design	1
Computers	1

First member in your family to attend college?

Member in your family	Number of Students
First	11
Second	7
Third	2
Fourth	1
Fifth	1

Posed Questions

- Why do students neglect to review before taking the mathematics placement test?
- Why do so many students place into Preparatory mathematics courses?
- What other measures of student preparedness for mathematics courses?
- Should mathematics placement be mandatory?
- Recommendations to the mathematics placement process

DISCUSSION

Sources

CCSSE Community College Survey of Student Engagement (2006) Conducting Focus Groups to Help Improve Retention and Student Success. Retrieved October 10, 2006, from <http://www.ccsse.org/retention/toolkit.cfm>

Coe, W. (2006). Improving Placement and Retention Rates with the Use of Mathematics Review Courses (pp. 55-62). National Association for Developmental Education. Retrieved February 19, 2007, from <http://www.nade.net/documents/Digest/NadeDigestFall06.pdf>

DACC Office of Institutional Effectiveness and Planning

NMSU VISTAS Student Record System and SCT Banner System

PowerPoint Available at:

<http://dabcc.nmsu.edu/info/insteffect/Reports/ReportList.htm>