

**2013 National Conference on Students in Transition**

**Supporting the Transition of  
Academically Underprepared  
Students in  
Mathematics and English**

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# Goals for This Session

- **To provide** background information on MTSU's redesign of developmental education courses into General Education and Electives Courses
- **To provide** assessment data of that redesign from Fall 2006 to Spring 2012 (positive and less than positive results)
- **To provide** an opportunity for you to ask questions and discuss issues of redesign

# Middle Tennessee State University

- **Public 4-yr institution in TBR system, 35 miles southeast of Nashville**
- **Largest **undergraduate** population in TN. Total headcount > 25,000**
- **35-40% of 1<sup>st</sup>-time freshmen require 1 or more courses of additional preparation or support**

# Middle Tennessee State University

- Our redesigned courses are designated **"K"** (last letter in Banner) and **"prescribed."**
- 31% of students in prescribed courses are non-traditional.
- At graduation, 42% have completed at least one prescribed course.

# Tennessee Board of Regents 6 Univ.; 13 C.C.; 26 Tech Schools

## Historical Progression Impacting DE

- TBR *2001 -Defining Our Future*
- TBR *Setting New Directions: A 2005 -2010 Strategic Plan*
- *2010 Complete College Act of Tennessee*

# MTSU Redesign

- MTSU's redesign of R/D courses into college level courses was completed in 2006, and we now have several semesters of results included in this report.

# **Former Developmental Writing Structure**

**Placement: ACT English Score below 19 and holistically scored placement essay**

**Developmental Writing course: 3 hours institutional credit**

**Next Course in Sequence: English 1010, Expository Writing (Gen Ed composition)**

# **Developmental Writing Redesign: Two Models**

(Initial Implementation 2006-07)

- **Stretch model:**  
**Two-semester sequence of Gen Ed composition instruction**
- **Accelerated Studio model:**  
**Students can earn Gen Ed credit in one semester**



# MTSU's Stretch Model

- **MTSU's Stretch Program borrows from Arizona State's model:**  
[http://english.clas.asu.edu/Stretch\\_Program](http://english.clas.asu.edu/Stretch_Program)
- **Gen Ed composition curriculum (ENGL 1010) is expanded and extended over two semesters**
- **Students work with same instructor and classmates for two semesters**

# **MTSU's Stretch Program: Two Courses**

- **Introduction to University Writing, ENGL 1009K**  
Satisfies prescribed course requirement  
College-level course (3 hrs elective credit)  
Higher level curriculum moves at slower pace  
Emphasis on process and revision
- **Expository Writing, ENGL 1010K**  
Fulfills general education requirement (3 hrs credit)  
Curriculum identical to "regular" ENGL 1010

# Student Pass Rates

**ENGL 1009 course vs.  
Developmental Writing course**

<b>Course</b>	<b>Passing (A - C)</b>	<b>Not Passing (N,F,W,I)</b>
<b>ENGL 1009</b> 2006-2012	<b>74%</b>	<b>26%</b>
<b>Developmental Writing</b> 2004-2006	<b>74%</b>	<b>26%</b>

# Course Retention Rates

**ENGL 1009 course vs.  
Developmental Writing course**

<b>Course</b>	<b>Retention Rate</b>
<b>ENGL 1009</b> 2006-2012	<b>82%</b>
<b>Developmental Writing</b> 2004-2006	<b>82%</b>

# Student Pass Rates

**ENGL 1010K (Stretch sections) vs.  
Non-Stretch (“regular” sections) of ENGL 1010**

Data for 2006-2012	Passing (A-C)	Not Passing (N,F,W,I)
<b>ENGL 1010K (Stretch)</b>	<b>78.7%</b>	<b>21.3%</b>
<b>ENGL 1010 (non-Stretch)</b>	<b>75.9%</b>	<b>24.1%</b>

Note: z-test for two proportions indicates the pass rates for these two groups are significantly different at 95% confidence level ( $z = 3.499$ ).

# Student Pass Rates in Subsequent English Course (ENGL 1020)

<b>ENGL 1020 (2006-2012)</b>	<b>Passing (A-C)</b>	<b>Not Passing (N,F,W,I)</b>
<b>Non-Stretch students</b>	<b>76.6%</b>	<b>23.4%</b>
<b>Former Stretch students</b>	<b>74.1%</b>	<b>25.9%</b>

Note: z-test for two proportions indicates that pass rates for these groups are significantly different at 95% confidence level ( $z = -2.5638$ ).

# Survey Data: Stretch Program Students

Having the same instructor and classmates for both ENGL 1009 & 1010 has been an overall positive experience:

**Agree: 88%**

**Disagree: 4%**

**Not Applicable: 8%**

Having the same instructor and classmates for both courses has helped me become a better writer:

**Agree: 85%**

**Disagree: 7%**

**Not Applicable: 8%**

I would describe my class as a “writing community”:

**Agree: 92%**

**Disagree: 7%**

**Not Applicable: 1%**

# Stretch Model: Advantages

- Remedial/developmental stigma reduced
- Students earn college credit in both semesters
- More time to identify and address individual writing strengths and weaknesses
- Consistency and familiarity of a “writing community”



# Stretch Model: Disadvantages

- Elective (not Gen Ed credit) for ENGL 1009
- Scheduling
- Curriculum fatigue
- “Junior High Syndrome”: too much familiarity

# Accelerated Studio Model

- **Special sections for higher level students (approximately 15% of Stretch students)**
- **Students can earn Gen Ed credit for ENGL 1010 in one semester instead of two**
- **Classroom instruction: 3 hours/week**
- **Studio (small group) meetings: 1 hour/week**

# Accelerated Studio Model: Advantages

- **77% of Studio students earn credit for ENGL 1010 in one semester instead of two**
- **Former students pass ENGL 1020 (next course in sequence) at high rates**
- **Course provides needed support for highly motivated adult learners**

# Accelerated Studio Model: Disadvantages

- Instructional challenges
- Increased administrative paperwork
- Cost of Studio facilitators
- Scheduling of small group sessions
- Possible stigma for students who do not earn Gen Ed credit

# Former Developmental Math Structure

<b>ACT Math</b>	<b>Course</b>	<b>Credit Hours</b>	<b>Contact Hours</b>	<b>Next Course</b>
<b>15-16</b>	<b>DSPM 0800 (Elementary Algebra)</b>	<b>3 (Institutional Credit)</b>	<b>3</b>	<b>DSPM 0850 (Intermediate Algebra)</b>
<b>17-18</b>	<b>DSPM 0850 (Intermediate Algebra)</b>	<b>3 (Institutional Credit)</b>	<b>3</b>	<b>MATH 1010 (Math for General Studies) or MATH 1710 (College Algebra)</b>

# Math Redesign Structure

ACT (Math)	Course	Credit Hours	Contact Hours	Next Course
15-16	Math 1000K (Essentials of Mathematics)	3 (Elect. Credit)	5 (3 class/ 2 lab*)	MATH 1010K (Math for Gen. Studies); MATH 1530K (Applied Statistics); or MATH 1710K (College Algebra)
17-18	MATH 1010K (Math for Gen. Studies); MATH 1530K (Applied Statistics); or MATH 1710K (College Algebra)	3 (Gen. Ed. Credit)	5	N/A

# **MATH 1000-K**

## **Essentials of Mathematics**

- **An introduction to learning mathematics**
- **Incorporates strategies for learning mathematics, problem solving, and improving critical thinking and technology skills**
- **Encourages independent learning**
- **Provides a strong foundation for success in higher-level mathematics courses**
- **3 hours of elective credit; 5 contact hours (3 classroom/ 2 lab\*)**

# **MATH 1010-K**

## **Mathematics for General Studies**

- **Special sections of an existing general education mathematics course**
- **Curriculum identical to “regular” MATH 1010 with the addition of foundational materials as appropriate**
- **3 credit hours; 5 contact hours**



# **MATH 1710-K**

## **College Algebra**

- **Special sections of an existing college algebra course (general education credit)**
- **Curriculum identical to “regular” MATH 1710 with the addition of foundational materials as appropriate**
- **3 credit hours; 5 contact hours**

# Research Purpose

To examine the results of the redesign initiative for two prescribed general education mathematics courses:

**MATH 1010-K and MATH 1710-K**

# Student Success Rates

<b>DSPM 0850</b>	<b>A to C</b>	<b>D,W,I, or F</b>
<b>2003-2006</b>	<b>65.1%</b>	<b>34.9%</b>
<b>MATH 1010-K</b>		
<b>2006-2012</b>	<b>65.7%</b>	<b>34.3%</b>
<b>MATH 1710-K</b>		
<b>2006-2012</b>	<b>63.0%</b>	<b>37.0%</b>
<b>MATH 1010-K/1710-K combined</b>	<b>63.9%</b>	<b>36.1%</b>

# Student Success Rates

## DSPM 0850 Course vs. K Sections

- **3-year average for DSPM 0850: 65.1%**
- **Combined MATH 1010-K/1710-K: 63.9%**
- **Two-proportion z-test indicates the pass rates for these two groups are not significantly different at 95% confidence level ( $z=1.582$ ;  $p=.1141$ ).**

# A-C Student Success Rates 2006-2012

	A to C	D,W,I, or F
<b>MATH 1010-K</b>	<b>65.7%</b>	<b>34.3%</b>
<b>MATH 1010 (Non-K)</b>	<b>70.1%</b>	<b>29.9%</b>
<b>MATH 1710-K</b>	<b>63.0%</b>	<b>37.0%</b>
<b>MATH 1710 (Non-K)</b>	<b>70.2%</b>	<b>29.8%</b>
<b>MATH 1010-K/1710-K combined</b>	<b>63.9%</b>	<b>36.1%</b>
<b>MATH 1010/1710 (Non-K) combined</b>	<b>70.2%</b>	<b>29.8%</b>

# A-C Student Success Rates

## K sections vs. Non-K sections

- Both K and non-K sections satisfy the general education mathematics requirement
- MATH 1010K: 65.7%
- MATH 1010 (Non-K): 70.1%
- Two-proportion z-test indicates the pass rates for these two groups are significantly different at 95% confidence level ( $z=-4.346$ ;  $p=0$ ).

# A-C Student Success Rates K sections vs. Non-K sections

- MATH 1710K : 63.0%
- MATH 1710 (non-K sections): 70.2%
- Two-proportion z-test indicates the pass rates for these two groups are significantly different at 95% confidence level ( $z=-10.693$ ;  $p=0$ ).

Combined success rates of K and non-K sections of these two courses were investigated:

- Two-proportion z-test indicates the A-C rates for these two groups are significantly different at 95% confidence level ( $z=-11.274$ ;  $p=0$ )

# Former DSP Students in Regular MATH 1010 and MATH 1710 prior to 2006 Compared to K Courses

	A to C	D,W,I, or F
<b>MATH 1010</b>	<b>57%</b>	<b>43.0%</b>
<b>MATH 1710</b>	<b>56.6%</b>	<b>43.4%</b>

	A to C	D,W,I, or F
<b>MATH 1010K 06-09</b>	<b>65.7%</b>	<b>34.3%</b>
<b>MATH 1710K 06-09</b>	<b>63.0%</b>	<b>37.0%</b>



# MATH 1710 General Education Learning Outcome Assessment Spring 2008 and Spring 2009

<b>MATH 1710-K</b>	<b>57.7%</b>
<b>MATH 1710 (Non-K)</b>	<b>64.9%</b>

**Two-proportion z-test indicates the pass rates for these two groups have a significant difference at 95% confidence level ( $z=9.2$ ).**

**Note: Students in MATH 1710K are allowed to withdraw only under extenuating circumstances. Results included students who may have chosen to withdraw given the option to do so. Spring 2008,**

**2.4% of K course students withdrew;**

**6.7% of Non-K students withdrew.**

# Advantages of Redesign

- Reduces time/cost for completion
- General Ed credit provided
- Reduced stigma
- Students complete general education mathematics requirements early thus increasing likelihood of earning bachelor's degree (Adelman, 2006)

Adelman, C. (2006). *The toolbox revisited: Paths to degree completion from high school through college*. Washington, DC: U.S. Department of Education.

# Disadvantages of Redesign

- **Additional contact hours**
- **Scheduling**
- **Extra staffing**
- **More coordination required**

# THANK YOU!

- Questions?
- Discussion?

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