

## INTERVIEW WITH THE AUTHOR: DR. CHRYS DOUGHERTY



**USING THE RIGHT DATA TO DETERMINE IF HIGH SCHOOL INTERVENTIONS  
ARE WORKING TO PREPARE STUDENTS FOR COLLEGE AND CAREERS**

National Center for Educational Achievement (NCEA)

May 25, 2010



## **Lisa Nguyen**

Webinar Moderator

National Center for Educational Achievement

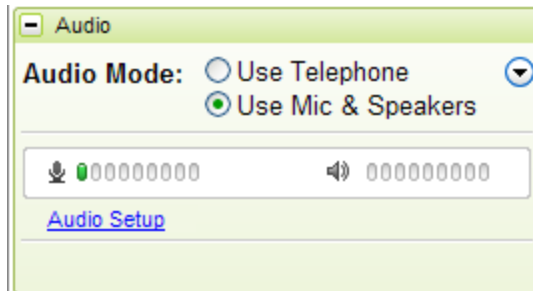
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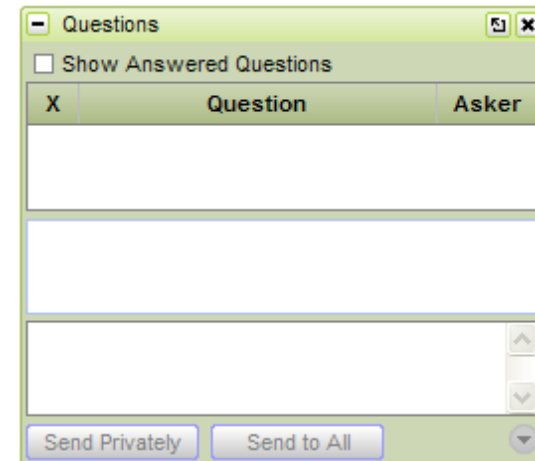
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## Webinar Orientation

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# Who is NCEA?

## College and Career Readiness For All

### Our Mission

The **National Center for Educational Achievement** is a non-profit, ACT organization committed to helping raise the bar on student achievement by providing educators and policymakers with best practice research and data-driven tools to prepare all students for postsecondary success.

# Agenda

1. Intro
2. Why was this paper written?
  - current situation and challenges
3. What types of information do we need?
4. How do we identify if students are poorly prepared?
  - identifying CCR Targets
  - CCR Ramp and achievement levels
5. What data analysis was the study based on?
  - identifying CCR Targets
  - CCR Ramp and achievement levels
  - looking at Grades 8 to 12
3. Interventions Database
3. What's next?
5. Q & A

## Interview with the Author: Dr. Chrys Dougherty



Chrys Dougherty, Ph. D  
Senior Research Scientist  
NCEA



Efrain Mercado  
Director of Outreach  
NCEA

**Why was this paper written?**



## An Extreme Challenge

- Large numbers of students enter high school poorly prepared.
- Getting them to college and career readiness by the end of high school is an extreme challenge.
- We need information on how well interventions work with students: how much catching up occurs for students who are how far behind.

**What types of information do we  
need?**

## Five Types of Information

- Indicators of whether students are college and career ready at the end of high school
- Indicators of whether students in the earlier grades are on track to college and career readiness
- Measures of how far behind students are when they are not on track
- For those who are behind by a given amount – how many catch up, how long does it take, starting in what grade(s), in what schools and districts?
- What types and intensities of interventions are associated with students' ability to catch up, based on how far behind those students are?

**How do we identify if students are  
poorly prepared?**

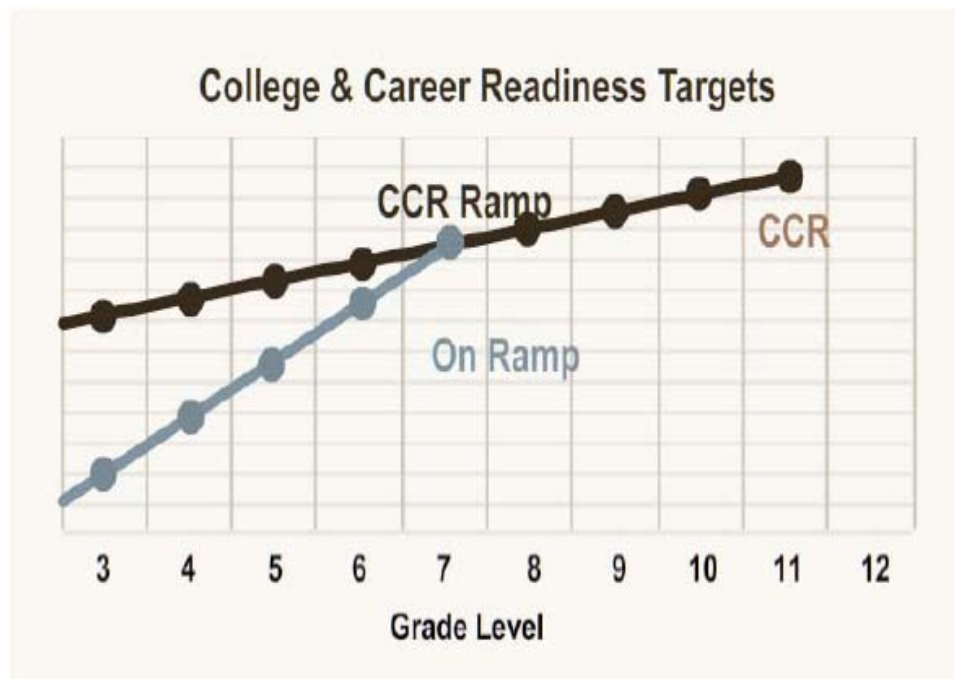
## Identification of College and Career Readiness (CCR) Targets on State Exams

- Identified by NCEA in Texas in 2005 based on the probability that a student would need remediation (using statistics from a 2003 Coordinating Board analysis).
- In Arkansas, used ACT data and ACT's College Readiness Benchmarks.
- Used statistical moderation based on a base year of 2004 (Texas) or 2007 (Arkansas) to map back to earlier grades

## Keeping Students on the Path to College and Career Readiness

NCEA's CCR Ramp is a defined path to get students to college and career readiness.

- Students on the ramp must experience **at least average growth** to stay on the ramp.
- Students below the ramp must achieve **faster than average growth**.



## Grade 8 Achievement Level Relative to CCR

Academic Preparation Group	TAKS Mathematics Test Scale Scores*	Standard Deviations Above (+) or Below (-) the College and Career Readiness Target	Size of Academic Preparation Gap
0	$\geq 777$	$\geq 0$	No gap: adequately prepared
1	732 – 776	-0.5 to < 0	Small to moderate
2	686 – 731	-1.0 to < -0.5	Moderate to large
3	642 – 685	-1.5 to < -1.0	Large
4	$\leq 641$	below -1.5	Very large

\* From 2003-2008, Texas used a different, non-vertical scale for the TAKS test. The bottom scores for each academic preparation group were 2271 for Group 0, 2170 for Group 1, 2069 for Group 2, and 1968 for Group 3. Scores below 1968 would identify a student as being in Group 4. The earlier and later scales can be matched to each other using a concordance table provided by the Texas Education Agency.

**What data analysis was the  
study based on?**



## Following Texas Students from Grade 8 through Grade 11

- 2004 Grade 8 TAKS mathematics matched to 2007 Grade 11 TAKS mathematics.
- Dataset includes mathematics courses completed in Grades 9-11.
- 2003-06 and 2005-08 cohorts also analyzed and yielded similar results.

## Following Arkansas Students from Grade 8 through Grades 11-12

- 2003 Grade 8 EXPLORE mathematics matched to 2006-07 Grades 11-12 ACT mathematics.
- Highest Grade 11 or 12 ACT score used.
- Datasets includes mathematics courses completed or enrolled in by the time the student took the ACT.
- 2004-08 cohort also analyzed and yielded similar results.

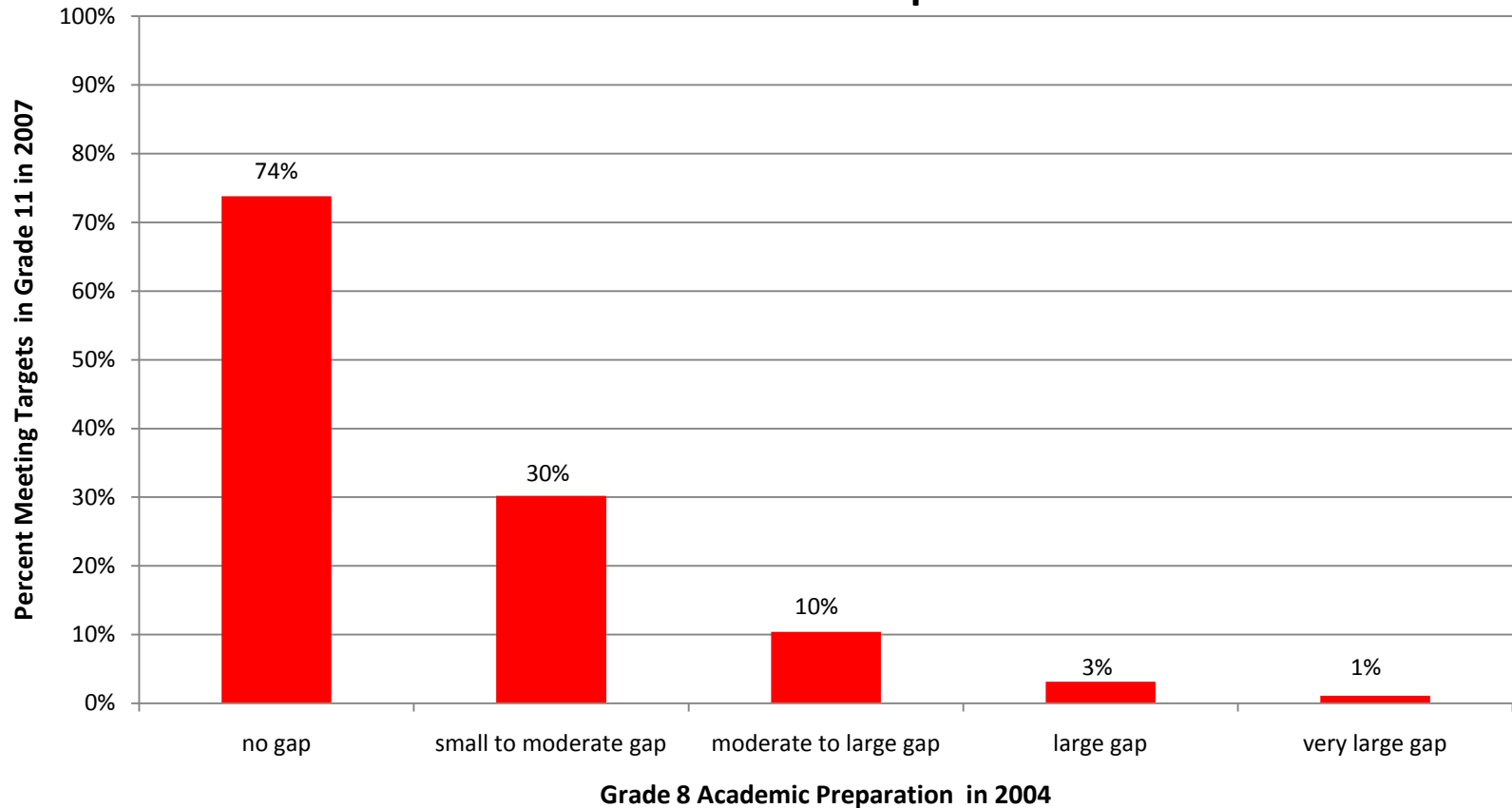
# Why focus on Grade 8 to Grade 12?

The study addresses problems  
faced by high school  
educators today.

**What were the results of the study?**

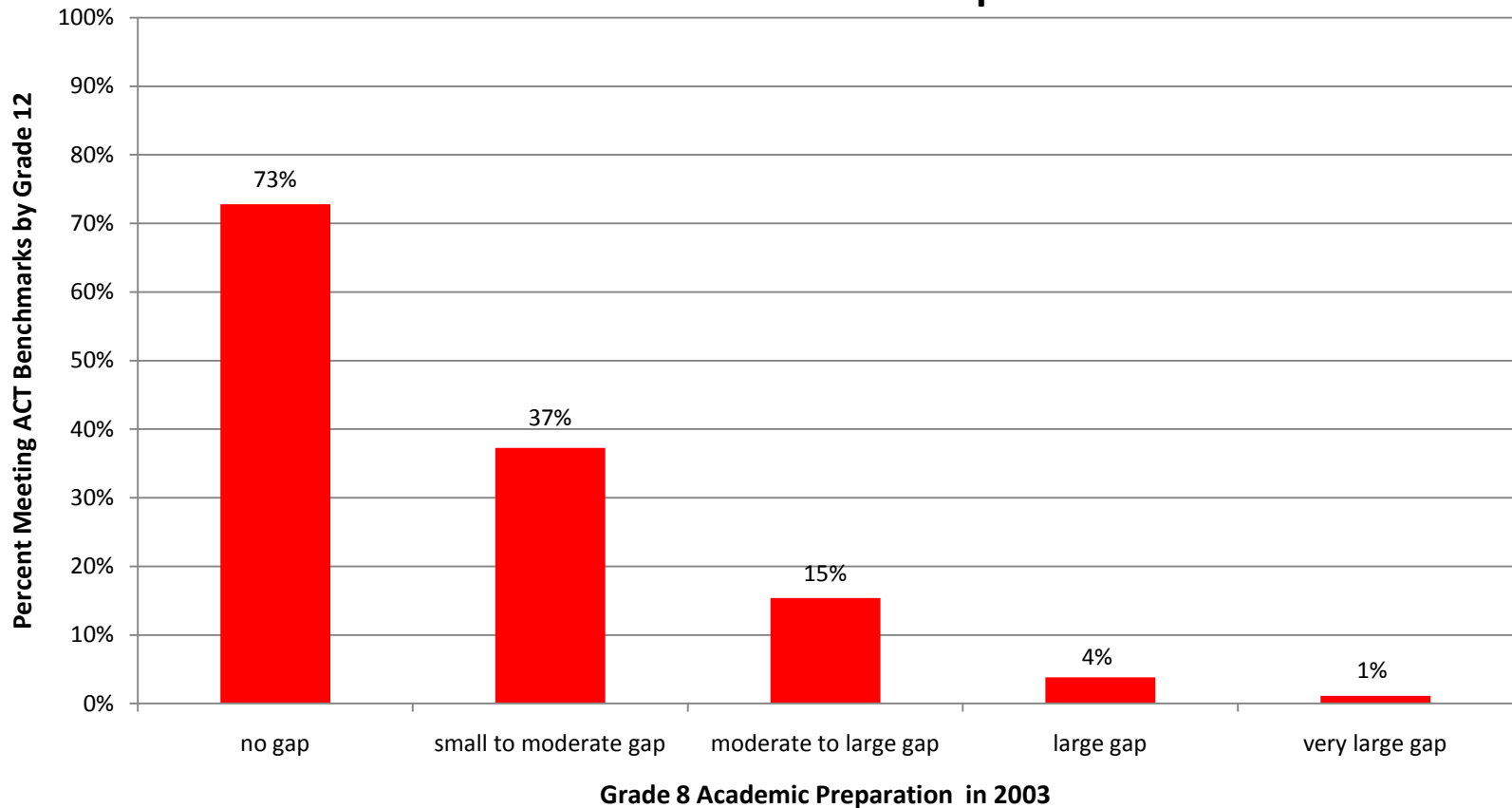
## Results for Texas Cohort

### Students Meeting CCR Targets in Grade 11 Mathematics Based on Grade 8 Academic Preparation



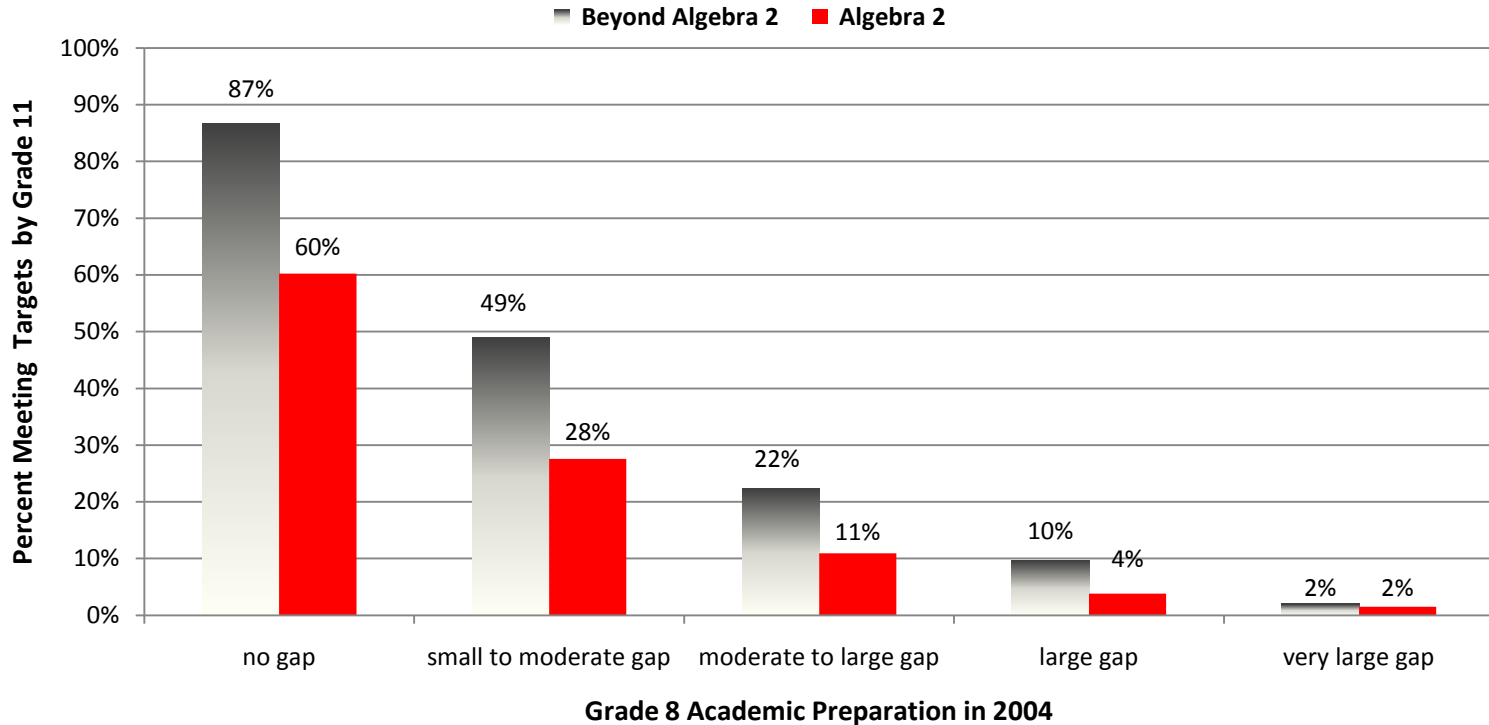
## Results for Arkansas Cohort

### Students Meeting ACT Benchmarks in Grades 11-12 Mathematics Based on Grade 8 Academic Preparation



# Texas Results with Course Completion Taken into Account

## Students Meeting CCR Targets in Grade 11 Mathematics by Grade 8 Academic Preparation Group and High School Courses Completed





# What might an intervention database look like?

## A Student-Level Interventions Database

- Grade 8 status relative to CCR ramp
- High school academic outcomes: state and nationwide tests
- High school courses completed
- Specific high school interventions

**What variables on each  
intervention might be included?**

## Possible Intervention Variables

- Code for the type of intervention
- Codes for the length of the intervention  
(e.g. hours per week, total number of weeks)
- Start and end date of the intervention
- Code for whether the intervention was interrupted
- Student's rate of attendance
- Other variables?

## Example

**Student Information:** Jane Doe

Female

Grade 10

DOB: 02/22/1994

**Intervention Type:** After-school Algebra tutoring

**Number of times per week:** 2

**Total number of hours per week:** 6

**Number of weeks:** 4

**Intervention Start:** 04-26-2010

**Intervention End:** 05-24-2010

**Interruptions:** No

**Attendance Rate:** 90%

**Who might create this database?**

## Possible Organizations/Institutions

- Most likely, a single district or a consortium of districts
- An outside organization or entity may facilitate the creation of the database:
  - state education agency
  - regional education laboratory
  - university
  - independent nonprofit

# What's next?



## Future Research Topics

- District and state actions to develop intervention databases
- Closing academic preparation gaps in earlier grades

# Q & A

X	Question	Asker

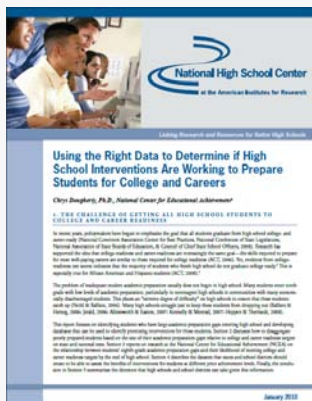
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## USING THE RIGHT DATA TO DETERMINE IF HIGH SCHOOL INTERVENTIONS ARE WORKING TO PREPARE STUDENTS FOR COLLEGE AND CAREERS

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## For Further Reading:



Dougherty, C. (2010). *Using the Right Data to Determine If High School Interventions Are Working to Prepare Students for College and Careers.*

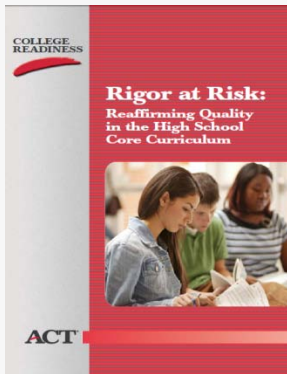
[http://www.betterhighschools.org/docs/NCEA\\_CollegeCareerReadiness.pdf](http://www.betterhighschools.org/docs/NCEA_CollegeCareerReadiness.pdf)



ACT, Inc. (2009). *The path to career success: High school achievement, certainty of career choice, and college readiness make a difference.*

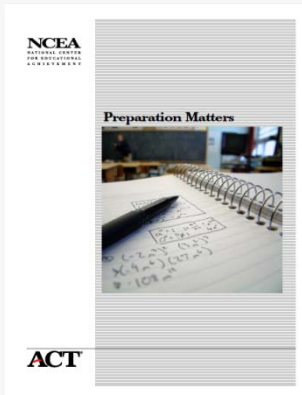
[http://www.nc4ea.org/files/the\\_path\\_to\\_career\\_success-01-01-09.pdf](http://www.nc4ea.org/files/the_path_to_career_success-01-01-09.pdf)

## For Further Reading:



ACT, Inc. (2007). *Rigor at risk: Reaffirming quality in the high school core curriculum.*

[http://www.act.org/research/policymakers/pdf/rigor\\_report.pdf](http://www.act.org/research/policymakers/pdf/rigor_report.pdf)



National Center for Educational Achievement. (2009). *Preparation Matters.*

[http://www.nc4ea.org/files/preparation\\_matters-04-01-09.pdf](http://www.nc4ea.org/files/preparation_matters-04-01-09.pdf)

**Thank you for attending  
our webinar!**

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