

Screening for Persistently Low Achieving Students in Reading and Mathematics

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Outline

- The Alternate Assessment Based on Modified Academic Achievement Standards (AA-MAS) policy
- Computer-based screening for eligible students
- Evaluation of a new system

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Alternate Assessment based on Modified Academic Achievement Standards (AA-MAS)

(DOE Regs. 34 C.F.R. Part 200 Title 1 & NCLB)

- Designed to provide districts and states more flexibility in measuring student proficiency
- A third option, along with the general assessment and the alternates assessment based on alternate achievement standards

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Some Guiding Documents

- **Federal Register (April 9, 2007)**
<http://www.ed.gov/legislation/FedRegister/finrule/2007-2/040907a.html>
- **Modified Academic Achievement Standards: Non-regulatory Guidance Draft (April 2007)**
<http://www.ed.gov/policy/elsec/guid/altguidance.pdf>
- **What Parents and Students Need to Know**
<http://www.ed.gov/parents/needs/speced/twopercent.pdf>

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Prevalent Themes in the Regulations

- Stresses modification of achievement standards (i.e., "less difficult")
- Modification of items and/or methods of accessing content (i.e., "easier items")
- Retesting and using best result
- Small group of students with IEPs (i.e., 2%)
- No out-of-level testing

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Who Qualifies to Participate in an AA-MAS?

- Students with disabilities who can make significant progress, but have not reached grade-level achievement standards even after exposure to quality instruction and have a reliable record of below level performance on achievement tests even with appropriate accommodations. These students learn at a slower rate and are considered to have persistent academic difficulties.
- It is estimated that in many states **40% to 50%** of students with disabilities in grades 3-8 + 10 may meet this general description.
- 2% of the total student population in a state may be counted as Proficient on an AA-MAS for AYP purposes; More than 2% of students can be counted as Proficient if **less than 1%** of students taking the alternate assessment of alternate achievement standards are determined Proficient.

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Three Criteria for the AA-MAS Eligible group

200.1(e)(2) In the guidelines that a State establishes under paragraph (f)(1) of this section, criteria must include, but are not limited to, each of the following:

The student:

1. Has an IEP with goals based on academic content standards for the grade enrolled.

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The student...

2. Has a disability precluding the student from achieving grade-level proficiency, as demonstrated by the student's performance on the state assessment or another assessment that documents academic achievement.
3. Progress to date (a) in response to appropriate instruction, is addressing the student's individual needs and (b) based on multiple measurements is such that, even if significant growth occurs, the student will not achieve grade-level proficiency within the year covered by the student's IEP.

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The Problem and a Proposed Solution

- We need an assessment that can "validly document academic achievement" and...
- ...multiple measurements showing the student is not likely to achieve grade level proficiency within the year.
- Computer-Based Alternate Assessment Screening System (formerly FAST-AAPS)

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The C-BAASS
Computer-Based Alternate Assessment
Screening System

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Test Items from 4 Content Strands

- ❖ Reading
 - Comprehension
 - Vocabulary
- ❖ Mathematics
 - Numbers & Operations
 - Data Analysis & Probability

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Computer-Based Reading Multiple-Choice Item (Provided by Discovery Education Assessment)

Read the following passage and then answer questions 3 and 4.
Ready for Take Off



As I tightened my seat belt and prepared for take off, I could feel my heart pounding. Not only was it my first time flying, but I was also alone on the first leg of the journey. I was meeting Uncle Jeff in Baltimore to fly on to Boston, but the two-hour flight ahead of me felt like it would take an eternity. After the flight attendant went through the steps to take in case of an emergency, I calmed my brain to see if I had forgotten anything from home. I was pretty sure that I had not, so I settled back into my seat and tried to relax.

My heart rate and breathing rapidly increased as we lifted off the ground. I grabbed the armrests and closed my eyes. I calmed down as the passengers on the cabin stabilized and my ears began to pop. I got out my CDs and crossword puzzle book in an attempt to forget where I was.

Just when I finished my third puzzle and changed CDs, the pilot's voice echoed over the speakers, informing passengers that we were beginning our initial descent. I had it already been two hours? Was that obvious to the crew? I discovered by looking at my watch that we had made good time and would arrive in Baltimore almost thirty minutes early.

The landing was a little bumpy but not the horrific experience I had expected. After exiting the plane, I realized how much I had dramatized such a simple experience. To my astonishment, Uncle Jeff was already waiting for me in the terminal. He had gotten there early, anticipating my arrival. When he asked how the flight had gone, what came out of my mouth next surprised even me. "Piece of cake," I replied.

3. Based on this passage, we could predict that the narrator
- will have less fear of flying
 - will never fly again
 - will always fly with friends
 - will never fly without puzzle books

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Computer-Based Mathematics Multiple-Choice Item (Provided by Discovery Education Assessment)

3. A car dealer sold 360 cars last month. The graph shows the percentage of white, black, red, and yellow cars sold.

Color of Cars Sold

Color	Percentage
white	47%
black	32%
red	10%
yellow	11%

About how many were black?

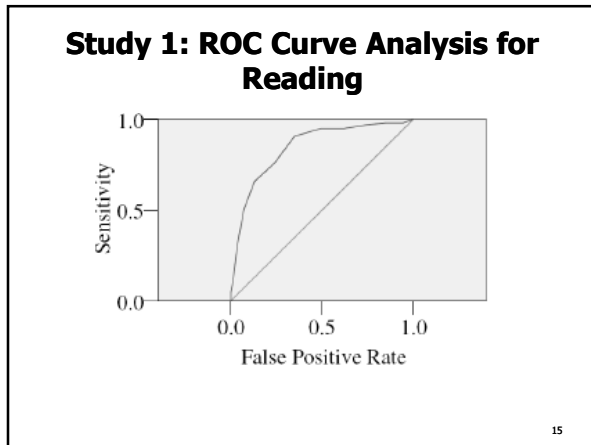
A. 190
 B. 120
 C. 85
 D. 20

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Method

	Study 1	Study 2
Sample	$n = 463$	$n = 164$
Type of Validity	Concurrent	Predictive
Criterion Measure	Indiana Statewide Testing	Idaho Standards Achievement
Analysis	ROC Curve Analysis	Conditional Probability

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Sensitivity vs. False Positive Rate at Various Cut Scores

Cutoff Score	Reading	
	Sensitivity	False Positive Rate
.50	.979	.946
1.50	.979	.919
2.50	.979	.852
3.50	.969	.744
4.50	.948	.619
5.50	.948	.493
6.50	.907	.350
7.50	.756	.238
8.50	.658	.130
9.50	.503	.072
10.50	.306	.036
11.50	.119	.013
12.50	.047	.000

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Conditional Probability Framework

	Early Learning Problem	No Early Learning Problem
Identified by Screening System	A	B
Not identified by Screening System	C	D

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Conditional Probability Indices

Index	Formula
Sensitivity	$A / (A + C)$
Specificity	$D / (B + D)$
Positive Predictive Value	$A / (A + B)$
Negative Predictive Value	$D / (C + D)$
False Negative Rate	$C / (A + C)$
False Positive Rate	$B / (B + D)$
Hit Rate	$(A + D) / (A + B + C + D)$
Base Rate	$(A + C) / (A + B + C + D)$

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**Study 2: C-BAASS Reading
Conditional Probability Framework**

	Below Proficient (n = 73)	Proficient (n = 85)
Identified by C-BAASS (n = 71)	A	B
Not identified by C-BAASS (n = 87)	C	D

**Study 2: C-BAASS Reading
Conditional Probability Framework**

	Below Proficient (n = 73)	Proficient (n = 85)
Identified by C-BAASS (n = 71)	57	14
Not identified by C-BAASS (n = 87)	16	71

**C-BAASS Reading
Conditional Probability Indices**

Index	Formula	Solution
Sensitivity	$57 / (57 + 16)$.78
Specificity	$71 / (14 + 71)$.84
Positive Predictive Value	$57 / (57 + 14)$.80
Negative Predictive Value	$71 / (16 + 71)$.82
False Negative Rate	$16 / (57 + 16)$.22
False Positive Rate	$14 / (14 + 71)$.17
Hit Rate	$(57 + 71) / (57 + 14 + 16 + 71)$.81
Base Rate	$(57 + 16) / (57 + 14 + 16 + 71)$.46

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C-BAASS among Screening Systems

Screening System (Source)	Sample	Sensitivity	Specificity	PPV
C-BAASS Reading	n = 158	.78	.84	.80
C-BASS Mathematics	n = 161	.77	.85	.88
(Carran & Scott, 1992)	8 studies	.58	.91	.65
(Gredler, 1997)	12 studies	.77	.81	.55

- Conclusions**
- The AA-MAS policy allows a small group of students to better show what they know on proficiency tests.
 - Computer-based screening can be used to identify students appropriate for these tests.
 - Conditional probability is the best way to evaluate the predictive validity of such a screening system.
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Thank you!

■ Any questions? Please email:

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