

# Above Grade Level Testing: Benefits for Independent Schools ISACS, 2010

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# High Average Levels of Achievement

- Pleasantdale School is located in a relatively affluent suburb of Chicago. It has selective admissions and attracts families who are very concerned about their children's education. As a result the average level of achievement among students is high. However, teachers feel that there are large individual differences between students within their classes and would like to know more about their students so as to differentiate their instruction. When they look at students' test scores, many students have similar scores and they feel they do not have enough information to help them discern differences in learning rate or ability that might be used as a basis for differentiation.

# Documenting Growth

The principal at a selective school is contemplating how to measure and document the yearly academic progress of her students. She wants to know if students' scores in the subjects of mathematics and reading are improving and how much growth students are making each year. However, she is frustrated by the fact that there appears to be little change in her best students' test scores on a standardized, grade-level achievement test from the beginning of the year to the end and even downward trends in some cases.

# Creating Special Advanced Programs

- Maple school has a reputation as an academically rigorous school. However, the headmaster wants to remain competitive with the local public school that has developed a strong and unique gifted program that is attracting a lot of families. He is thinking of adding some accelerated/advanced programming, e.g. accelerated mathematics program or language arts program to continue to attract families and remain competitive. He is looking for a way to discern which of his students are best placed in the accelerated programs.

# Better Benchmarking

- The teachers of Oak School (K-8) feel that they do a great job of preparing their students to enter and succeed in high school. They want to give their students every advantage when it comes to the future, specifically ensuring placement at top colleges, which is also a concern of many parents. They would like to have a better measure to benchmark where students are at in their progress towards college.

# Giving Bright Students More Services

Livingston Academy has a reputation for providing both a rigorous academic program and comprehensive counseling to their students and families. But, they are also looking for low cost and efficient ways to give parents more information on programs and opportunities beyond their own school. The staff feels daunted by the prospect of finding out about programs and passing the information on to parents.

# What is Above-Level Testing?

- Above-level testing is the process of administering a test to a child who is younger or in a lower grade than the test was intended for
- Also referred to as above-grade level testing or out-of-level testing or off-level testing
- Underlying principle is matching the test to the capabilities and achievement level of the students

# Why Above-Level Testing?

- Grade-level tests are designed to measure the abilities of as many students as possible in an efficient manner
- Grade-level test items are aimed at children who are of average ability
- Grade level tests measure students at the extremes of the distribution poorly—i.e. very low and very high children

# Grade-level Tests and Gifted Students

- Grade-level tests have low test ceilings caused by too few difficult items
- Bright students have above-grade level knowledge and achievement that cannot be assessed adequately with grade-level tests
- Grade-level tests result in poor variability among bright student's scores—a restricted range
- Grade-level tests result in poor reliability of test scores due to regression towards the mean

# Low Ceilings

- A ceiling of a test is when getting any more questions right does not change your score
- Tests with low ceilings give us an imprecise estimate of a child's knowledge or ability
- It is like not having a tall enough ladder to get to the roof of a house.

# Measuring Growth

- The low ceiling of grade-level tests makes it difficult to assess growth
- Students may actually grow in their knowledge, but their test scores may not go up and may even go down

# Reduced Variability and Low Discrimination on Grade-Level Tests

- Grade-Level tests make everyone look the same when they are not
- e.g. two 4<sup>th</sup> grade students score at the 95<sup>th</sup> percentile on mathematics on a grade level test. Only one of them is already doing algebra, but to the teacher and others the two students “look the same” with respect to their ability or readiness to do higher level math.

# Reduced Variability and Low Discrimination cont'd

- With little variability in students' scores, you cannot tell who might need a different kind of curriculum
- e.g. who is eligible for a more accelerated curriculum and needs grade acceleration or subject acceleration, further enrichment, independent study

# Advantages of Above-Level Testing

- To gather more detail regarding students abilities, achievement and readiness... detail that is needed for program planning, grouping, selection of curriculum....
- *To assess learning within an advanced or accelerated program or curriculum*
- To provide better benchmarking in a high achieving group or in a selective program or school

# Examples of Above-Level Testing

- Using the **Explore test**, designed for 8th graders, with 3rd through 6th graders
- Using the **ACT or SAT**, designed for 11th graders, with 7th and 8th graders
- Using **higher levels of norm-referenced achievement tests** with younger students

# An Analogy

- --I want to measure everyone's height in the room, but I only have a stick that is 3 feet long.
- --All I can say about every person's height is that it is 3 feet with my measuring instrument.
- --I order pants for each person on the basis of my measurement of their height.
- --For most people, the pants will not fit.

# A Comparison

A new student comes to work with a piano teacher. The teacher gives the student increasingly more difficult pieces to play to determine his/her skill level and degree of developed talent. On the basis of this assessment process, the teacher determines where to start instruction. This assessment is individualized and continues until the student tops out-- e.g. cannot play the piece.

# A Real Example

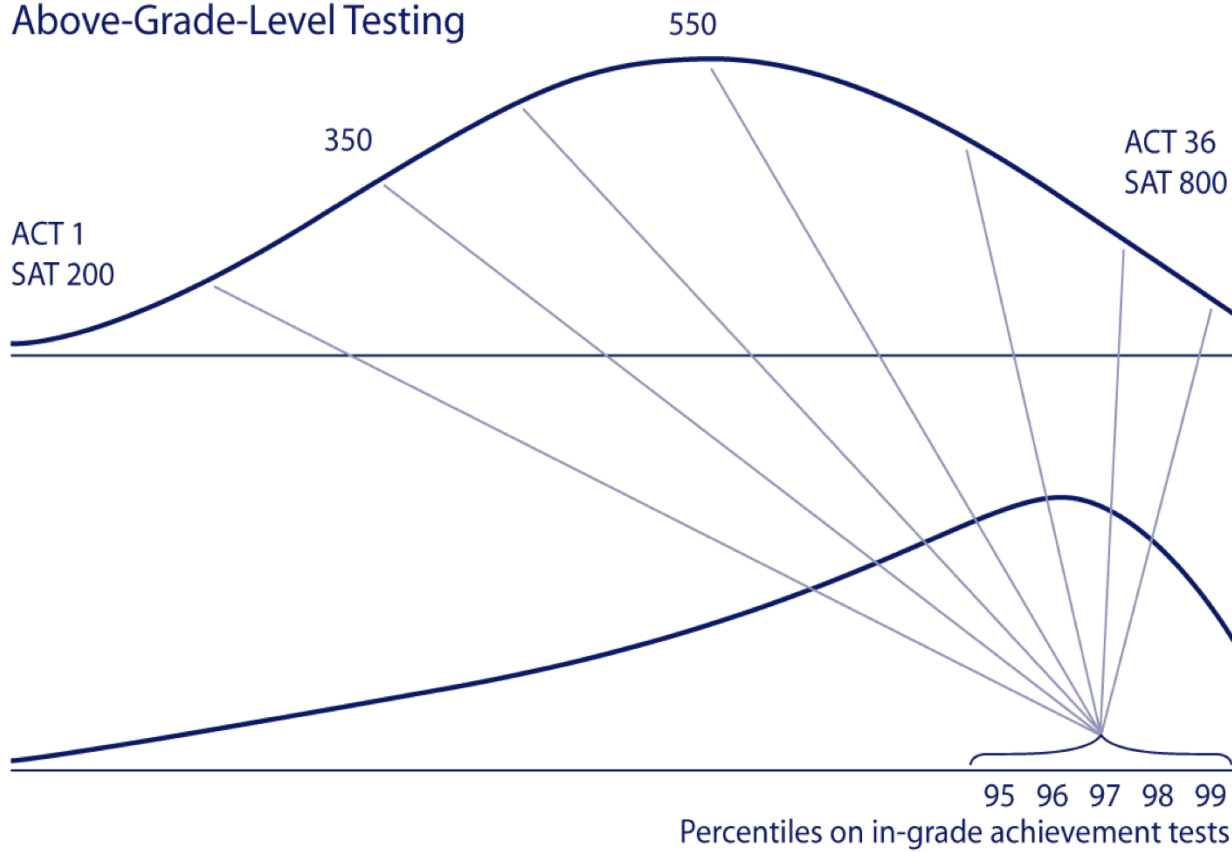
## Northwestern University Midwest Academic Talent Search (NUMATS)

- Talent search testing—over 150,000 students participate annually across the U.S.
- Involves identifying students who score at the 90th percentile or above on in-grade tests
- Students take above-grade level tests, Explore (3rd-6th grade) or ACT (7<sup>th</sup>-9<sup>th</sup> grade) or SAT (7th-9th grade)

# Talent Search is Nationwide

- NUMATS, Center for Talent Development at Northwestern University—covers Midwest
- Talent Identification Program (TIP) at Duke University—cover south east
- Center for Talented Youth (CTY) at Johns Hopkins University, covers northeast and west coast
- Rocky Mountain Talent Search, Center for Bright Kids, Denver, CO, covers Rocky Mountain states

# Above-Grade-Level Testing

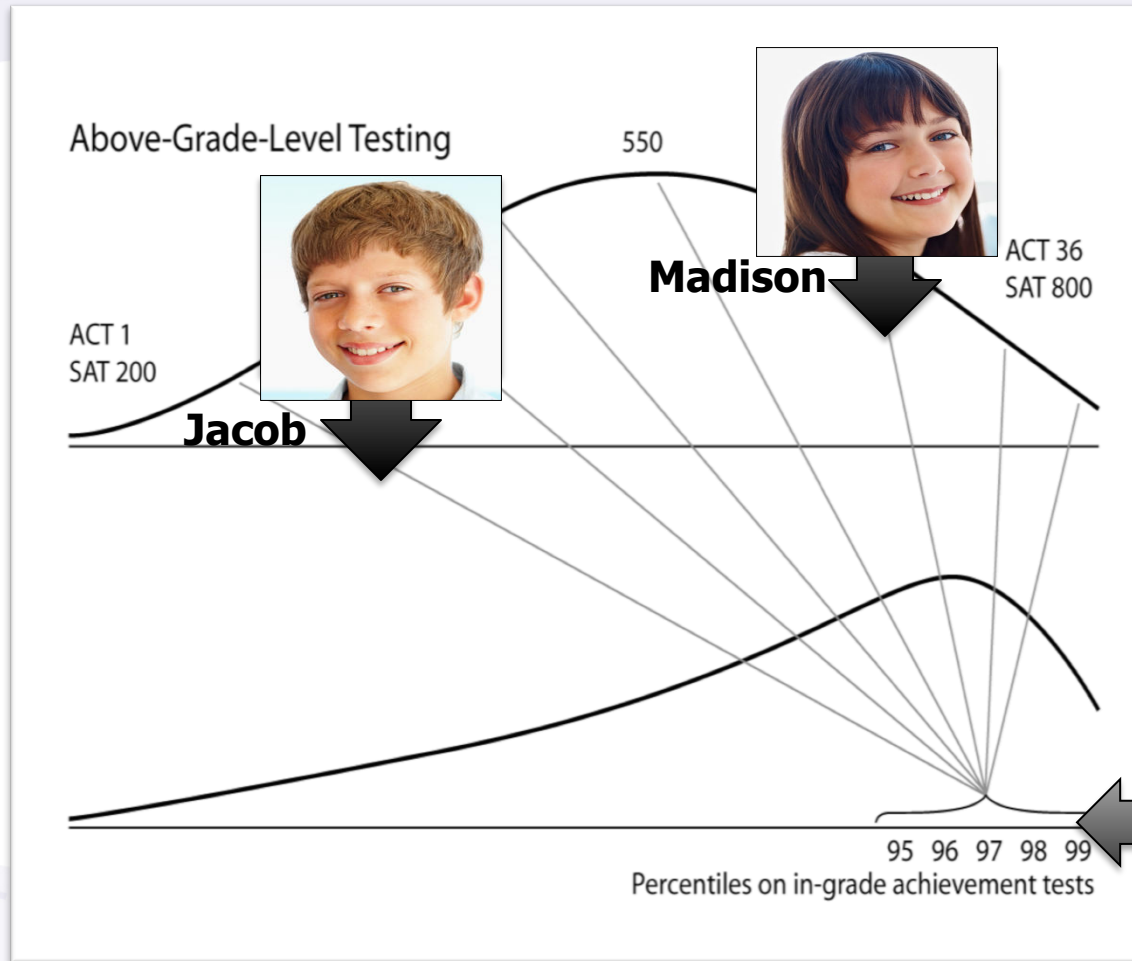


# On Grade Level Testing Comparison

Name	On Grade Level Test Score
Madison	99 <sup>th</sup> percentile
Jacob	99 <sup>th</sup> percentile



# Above Grade-Level Testing



# Above Level Grade Level Testing Comparison

Name	Above Grade Level Test Score
Madison	96 <sup>th</sup> percentile
Jacob	20 <sup>th</sup> percentile



# How Do Students Score on these Tests?

- The average scores of NUMATS participants exceed those of 8<sup>th</sup> graders on the Explore subtests
- The average scores of NUMATS participants equal those of college bound seniors on the ACT
- The average scores of NUMATS participants are slightly below those of college bound seniors on the SAT.

# Percent of Younger Students Scoring above Mean for Older Students: Reading/Verbal 2009-2010

	<b>Explore –</b> % Above Eighth Graders (M=13.8)	<b>ACT –</b> % Above College Bound (M= 21.4)	<b>SAT –</b> % Above College Bound (M=501)
Grade 3	21 %		
Grade 4	40 %		
Grade 5	64 %		
Grade 6	73 %	21 %	14 %
Grade 7		33 %	23 %
Grade 8		51 %	44 %

## Percent of Younger Students Scoring Above the Mean for Older Students in Mathematics 2009-2010

	<b>Explore –</b> % Above Eight Graders (M=15.1)	<b>ACT –</b> % Above College Bound (M=21)	<b>SAT –</b> % Above College Bound (M=515)
Grade 3	9%		
Grade 4	24 %		
Grade 5	52 %		
Grade 6	76 %	9 %	13 %
Grade 7		19 %	23 %
Grade 8		41 %	41 %

# Percent of Younger Students Scoring Above the Mean for Older Students in Science 2009-2010

	<b>Explore – % Above Eighth Graders (M=15.9)</b>	<b>ACT – % Above College Bound (M=20.9)</b>
3 <sup>rd</sup> grade	20%	
4 <sup>th</sup> grade	44%	
5 <sup>th</sup> grade	69%	
6 <sup>th</sup> grade	82%	14%
7 <sup>th</sup> grade		25%
8 <sup>th</sup> grade		44%

# Percent of Younger Students Scoring Above the Mean for Older Students in English 2009-2010

	<b>Explore – % Above Eighth Graders (M=14.2)</b>	<b>ACT – % Above College Bound (M=20.6)</b>
3 <sup>rd</sup> graders	25%	
4 <sup>th</sup> graders	48%	
5 <sup>th</sup> graders	71%	
6 <sup>th</sup> graders	81%	18%
7 <sup>th</sup> graders		28%
8 <sup>th</sup> graders		46%

Category 1	Category 2	Category 3
<p>230-470 on SAT-CR  200-510 on SAT-M  0-21 on ACT-Eng or ACT-Read  0-17 on ACT-Math</p>	<p>480-580 on SAT-CR  520-600 on SAT-M  22-27 on ACT-Eng or ACT-Read  18-23 on ACT-Math</p>	<p>580+ on SAT-CR  600+ on SAT-M  28+ on ACT-Eng or ACT-Read  24+ on ACT-Math</p>
<p>Early access to advanced coursework- 1 year above grade level</p>	<p>Early access to advanced coursework—1 to 2 years above grade level,</p>	<p>Early access to advanced coursework—grade acceleration, subject acceleration by several years, individualized program of study may be necessary</p>
<p>Supplemental coursework via enrichment in-school, afterschool or outside of school</p>	<p>Fast-paced classes in area of strength using curriculum compacting-- in school or outside-of-school</p>	<p>Fast-paced classes in school or outside-of-school</p>
<p>AP, dual enrollment</p>	<p>Early access to AP and dual enrollment</p>	<p>Early access to AP and dual enrollment</p>
	<p>Early career exploration and guidance</p>	<p>Early career exploration and guidance</p>

	<b>250-470 on SAT-V 200-510 on SAT-M 0-21 on ACT-Eng or ACT-Read 0-17 on ACT-Math</b>	<b>480-580 on SAT-V 520-600 on SAT-M 22-27 on Act-Eng or ACT-Read 18-23 on ACT-Math</b>	<b>580 + on SAT-V 600 + on RSAT-M 28+ on ACT Eng or ACT-Read 24+ on ACT-Math</b>
<b>Options for acceleration</b>	Homogeneous grouping for acceleration at <u>one year</u> above grade level in area of strength	Homogeneous grouping for accelerated, fast-paced, or telescoped classes <b>at least one year</b> above grade level	Special gifted school placement
		Grade placement in area of strength <u>1 to 2 years</u> above grade level and early access to higher levels of schooling (e.g. attending high school for math instruction)	Grade placement in area of strength <u>3 to 4 years</u> above grade level
	Differentiation of assignments, homework, and projects in area of strength	In-class clustering for acceleration in area of strength	Individualized program of study in area of strength, including independent studies, mentorships, etc.
<b>Options for in-school enrichment</b>	Resource room or pull-out program for enrichment or project work, at least 5 hours per week	Resource room or pull-out program for independent study or project work, at least 5 hours per week	
	In-class clustering for enrichment in area of strength		
<b>Options for access to advanced or college-level work</b>	Access to AP in grades 11 and 12	Access to AP in grade 10	Access to AP in grade 9
	International Baccalaureate program	International Baccalaureate program	Early entrance into college
		Dual enrollment (for college courses) in 11 <sup>th</sup> and 12 <sup>th</sup> grades	Dual enrollment (for college courses) beginning in 9 <sup>th</sup> or 10 <sup>th</sup> grades
<b>Options for extra-curriculars</b>	Extra-curricular activities (contests, internships, study abroad, summer programs, etc.) in area of strength		

## With above grade level tests you can:

- Decide which students need an accelerated or advanced placement
- Arrange students into groups that are more homogeneous for instruction thus facilitating differentiated instruction
- Create unique programs for bright students that will highlight the advantages of your school
- Have better information on which to tailor instruction, decide on placements of or create programs

## With above-grade-level tests such as Explore, ACT and SAT, you can:

- Get information about how your students are doing in terms of their preparation for high school and college study
- Give students the opportunity to practice on high stakes tests under low risk conditions

# Evidence of Efficacy of Talent Search Model

Over 400 published studies on talent search model or talent search students

Research demonstrates

---validity of SAT/ACT scores for entrance into fast-paced and accelerated courses or programs

e.g. selecting students in middle school who are ready to do algebra early or who can complete two years of math in one academic year

--predictive validity of SAT/ACT scores for future educational achievement, career choice and career success

e.g. students with different patterns of SAT scores (high math than verbal) choose different college majors and careers

e.g. SAT-M scores from middle school predict career success in adulthood such as publications and patents

# General Findings for Talent Search Academic Programs

- experiencing **greater academic challenge** (Enerson, 1993; Mills, Ablard & Lynch, 1992)
- taking **more rigorous course of study** with more advanced courses subsequently (Barnett & Durden, 1993).
- higher **educational aspirations** (Olszewski-Kubilius & Grant, 1996)
- greater participation in math-related **extracurricular activities** (Olszewski-Kubilius & Grant, 1996)
- increased **use of accelerative options** in high school (Barnett & Durden, 1993; Olszewski-Kubilius & Grant, 1996)
- greater likelihood of getting a **National Merit Letter of Commendation** (Olszewski-Kubilius & Grant, 1996)
- more likely to pursue professional **degree and careers in math** (Olszewski-Kubilius & Grant, 1996)
- selection of **more academically selective institutions** of higher education (Swiatek & Benbow, 1991)

# Benefits of Participation in NUMATS

- gives students and families access to outside of school programs—summer, distance learning, weekend programs to supplement in-school programming
- gives students practice on high stakes tests under low risk conditions
- gives school officials better information on which to base decisions about students such as placement within subject areas, make decisions about acceleration or placement in special programs
- gives schools better information on which to craft programs, group students for instruction
- helps schools provide more services for their bright students

# Critique of Off-Level Testing

## Advantages

- gives more precise information about students abilities
- efficient, economical
- gives practice on high-stakes tests in low-risk conditions

## Disadvantages

- "low" scores can be difficult for parents and teachers to accept/understand
- may provoke anxiety because tests are off-level and difficult

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