Several Questions regarding the proper use of the RCBM and MAZE "Cut Scores for the ISAT" have been raised. There have been many strong emotional points that have been repeatedly brought up, the intent of this document is to address five key points.

1. **Why Did The Cut Scores Change**?
The Cut Scores are empirically derived. They are based on the probability of students meeting standards on ISAT. When sufficient data are available for me to update the cut scores again, I will run the analyses again.

BELOW BASIC DEFINED: The value identified as the maximum for Below basic identifies the point at which a student would have a .5 probability of meeting standards (of course scores lower than this have a lower probability - so that roughly 30% of students with scores below this point meet standards).

PROFICIENT DEFINED: The value identified as the minimum for proficient identifies the point at which a student would have a .8 probability for meeting standards (of course scores greater than this point are associated with a higher probability, so that roughly 90% of scores above this point meet standards).
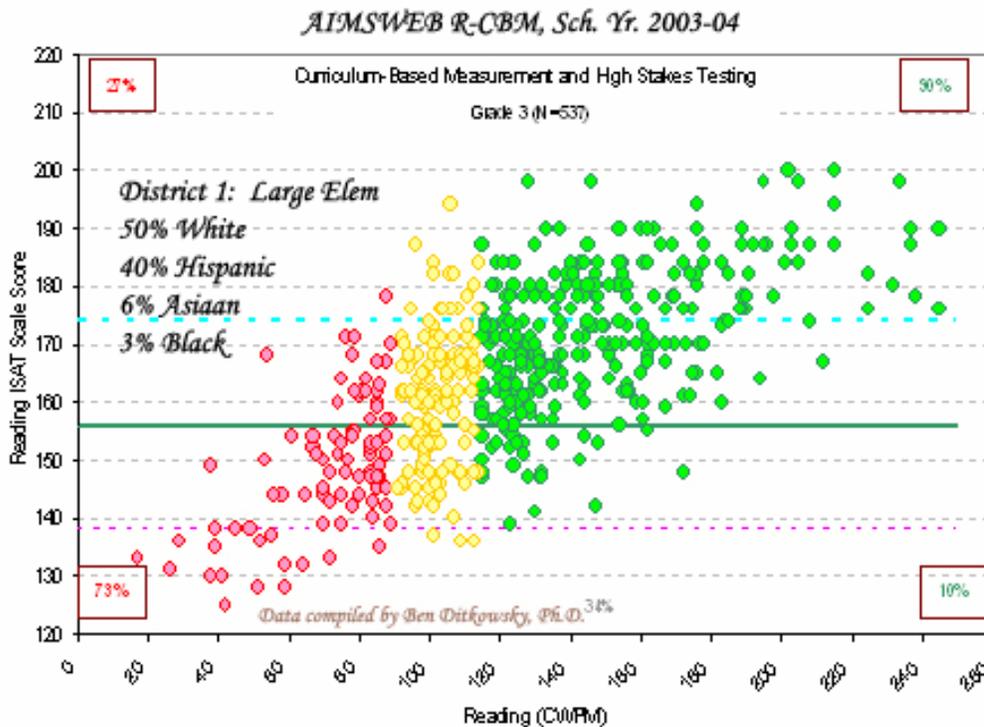
Each year, as I work with different districts I cross-validate (confirm) how well the cut scores are working. When ISAT was taken over by Harcourt Assessment, then Harcourt was bought by Pearson Assessment, and the SAT 10 was added as half of the test, I noticed a distinct change in what I was seeing, (i.e., more students were meeting expectations than expected) especially for older students.

Last year several IASPIRE sites and other districts offered their data to me for the purpose of recalibrating the Cut Scores to the new test (even though it has been in use for a couple of years). With well over 1000 students from urban, suburban and rural districts with both low and high socio-economic status, I was confident that my data were adequately representative of students in Illinois. The linear correlation between ISAT and RCBM was sufficient (better in most cases that what I saw with my original cut scores). *With the exception of the values for Below Basic for 8th grade, the new cut scores are based on the derived probabilities from this study. In 8th grade I did not have a sufficient number of students (i.e., < 1000) to warrant changing the below basic status, however, what I have seen in the past few years indicated to me that previous cut scores were too high for the new test (i.e., the probability was more like .95 than .8)*

I have gotten several requests for a cut scores indicating the probability of exceeding standards. While I did not publish these numbers for Fall and Winter, they are listed as Spring Confidently proficient. Roughly 70 to 80% of students who exceed this score exceed standards.
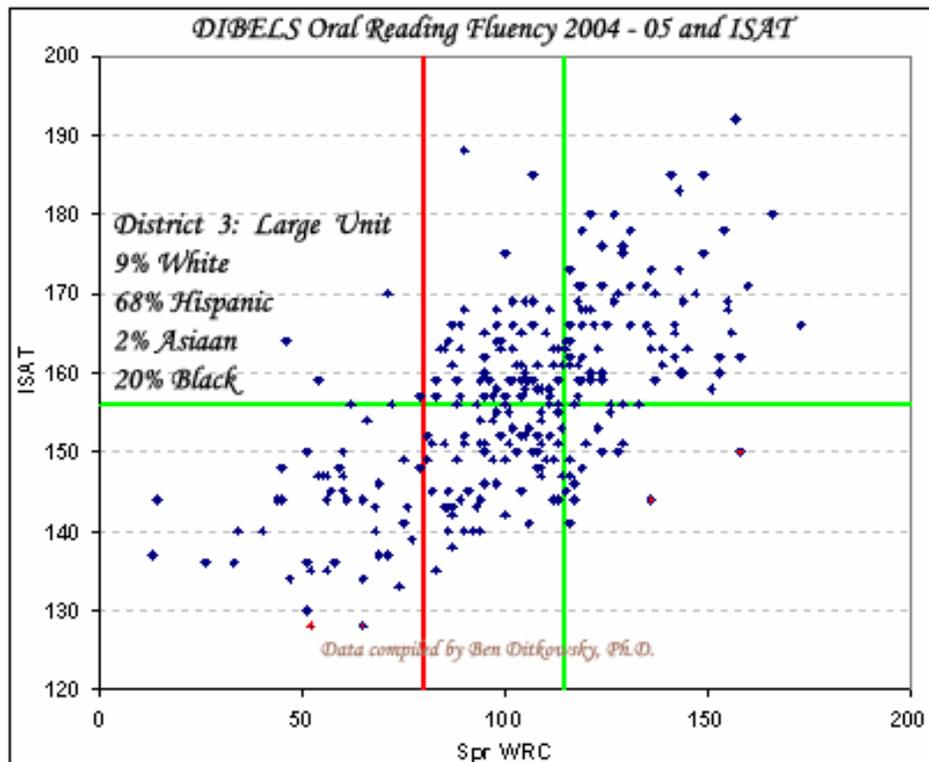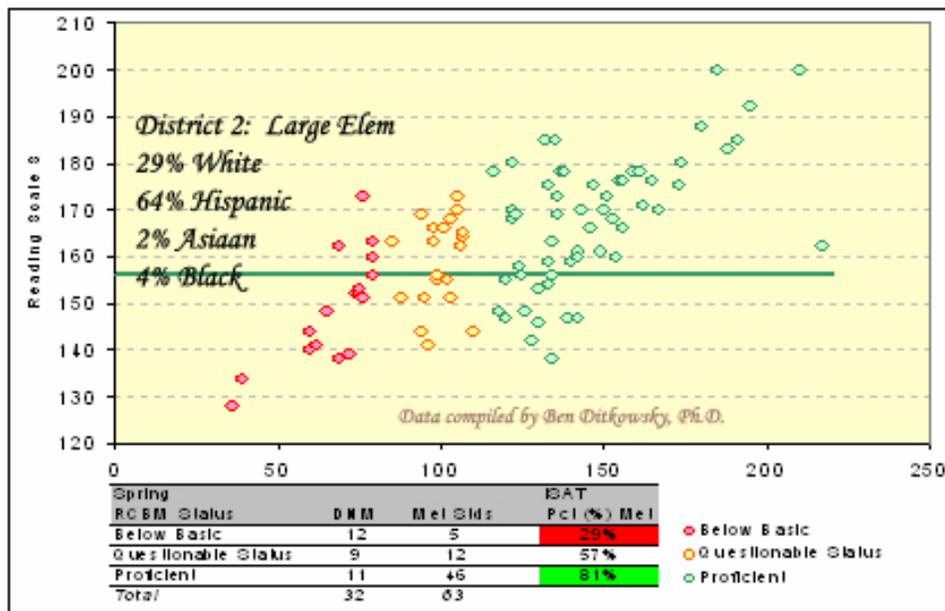
2. **For Those Who Are Not Actually Analyzing And Examining Data, It May Not Feel Like Rcbm Could Work The Way That It Does** . While I can appreciate the "feeling" that what RCBM measures is "...Or is it to read a certain number of words per minute?", research both published and unpublished has repeatedly verified that RCBM does in fact measure basic skills in reading or general reading skill.
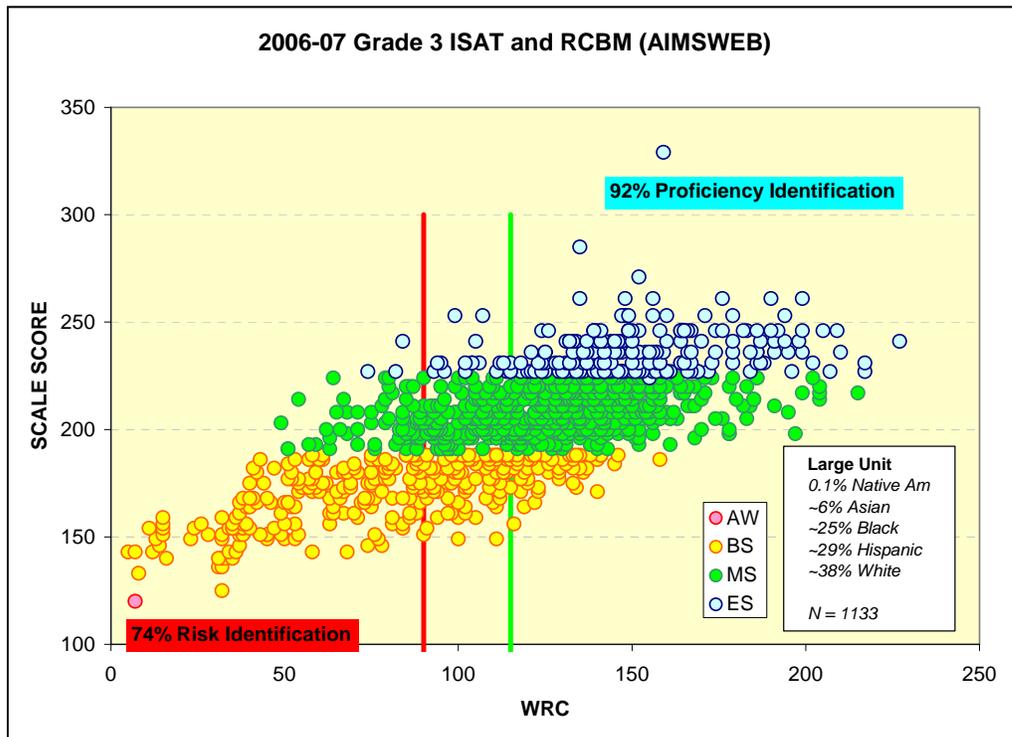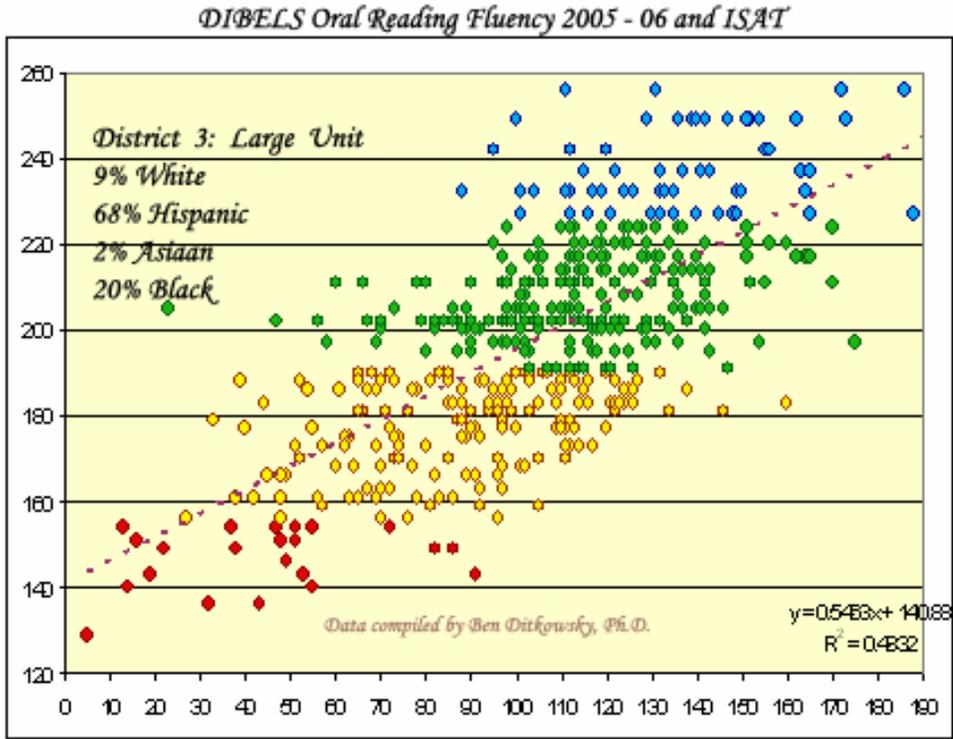
Below are 6 scatter-plots drawn from 4 different districts comparing ISAT with either R-CBM or DIBELS at 3rd grade, for each of the school years 2003-04, 2004-05, 2005-06 and 2006-07. The consistency in prediction rates is striking, especially when we consider all of the possible sources of variation from having different teachers with different levels of expertise testing students with both AIMSWEB and DIBELS measures for both the original ISAT and the Harcourt Assessment revised ISAT.
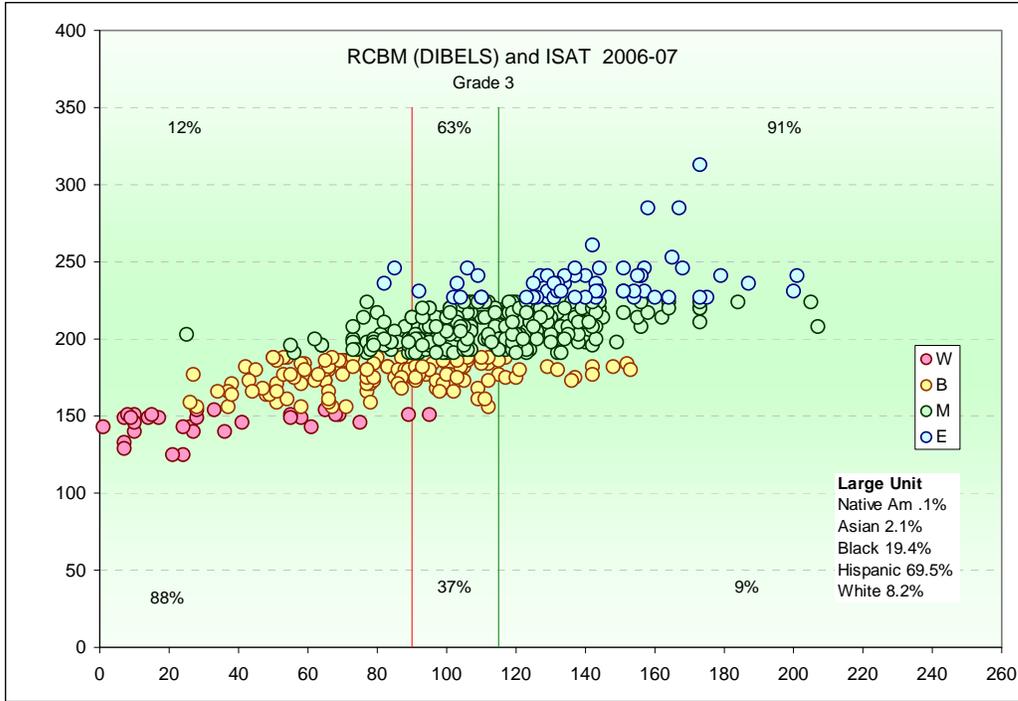
AIMSWEB R-CBM, Sch. Yr. 2004-05

District 2: Large Elem
29% White
64% Hispanic
2% Asiaan
4% Black

Data compiled by Ben Ditkowsky, Ph.D.

Spring RCBM Status	DNM	Met Stds	ISAT Pct (%) Met
Below Basic	12	5	29%
Questionable Status	9	12	57%
Proficient	11	46	81%
Total	32	63	

- Below Basic
- Questionable Status
- Proficient

DIBELS Oral Reading Fluency 2004 - 05 and ISAT

District 3: Large Unit
9% White
68% Hispanic
2% Asiaan
20% Black

Data compiled by Ben Ditkowsky, Ph.D.

Spr WRC

DIBELS Oral Reading Fluency 2005 - 06 and ISAT

District 3: Large Unit
9% White
68% Hispanic
2% Asiaan
20% Black

Data compiled by Ben Ditkowsky, Ph.D.

$y = 0.5453x + 140.88$
$R^2 = 0.4832$

2006-07 Grade 3 ISAT and RCBM (AIMSWEB)

92% Proficiency Identification

74% Risk Identification

Large Unit
0.1% Native Am
~6% Asian
~25% Black
~29% Hispanic
~38% White

N = 1133

AW
BS
MS
ES

SCALE SCORE

WRC

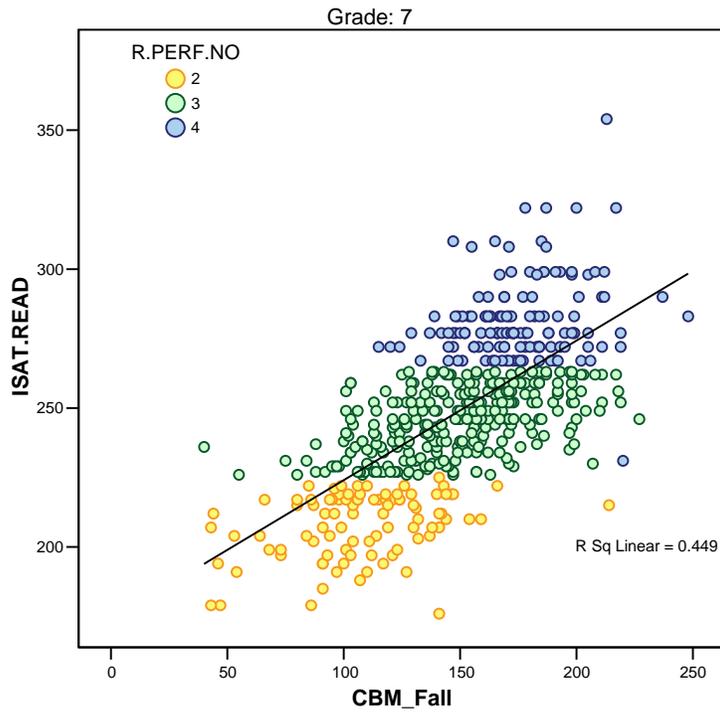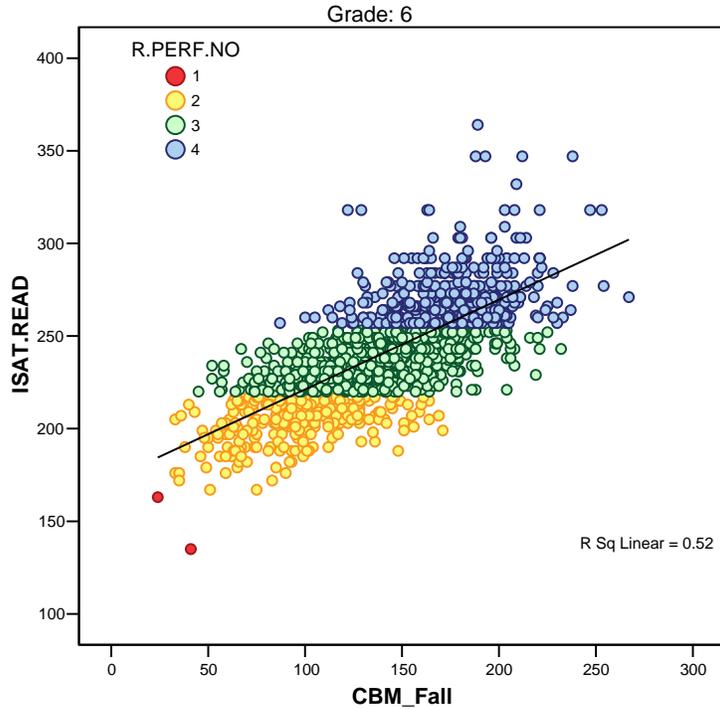RCBM (DIBELS) and ISAT 2006-07
Grade 3

The charts that are below represent data from the 2008-09 revised Cut Scores. The R-square Linear refers to the proportion of variance on ISAT that is predicted by a one minute sample of reading (i.e., R-CBM) given six to seven months prior to the administration of ISAT.
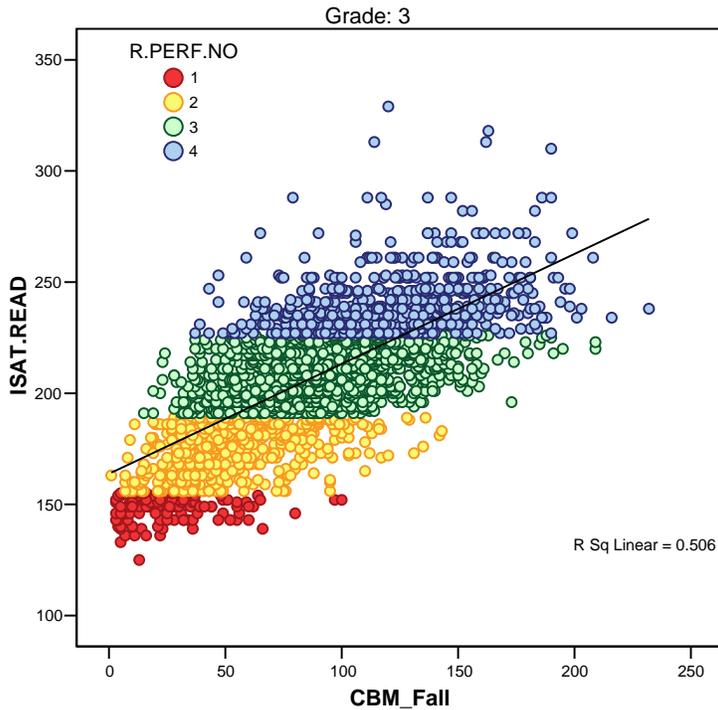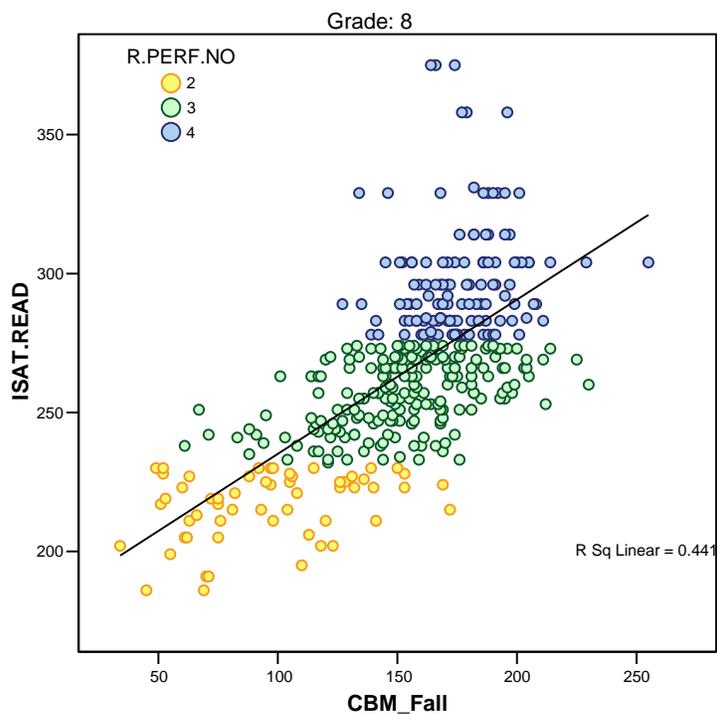

Grade: 3

R Sq Linear = 0.506

Grade: 4

Grade: 5

Grade: 6

R.PERF.NO
- 1
- 2
- 3
- 4

R Sq Linear = 0.52

Grade: 7

R.PERF.NO
- 2
- 3
- 4

R Sq Linear = 0.449

Grade: 8
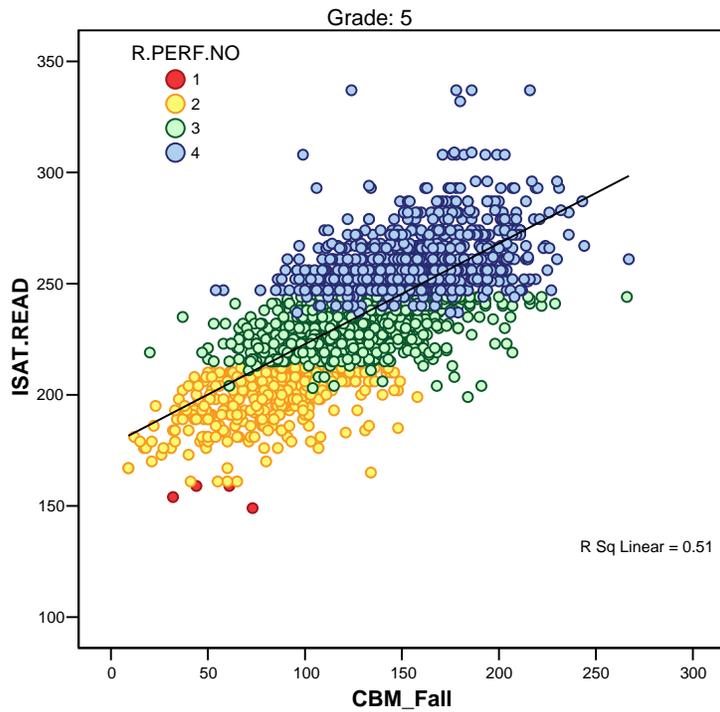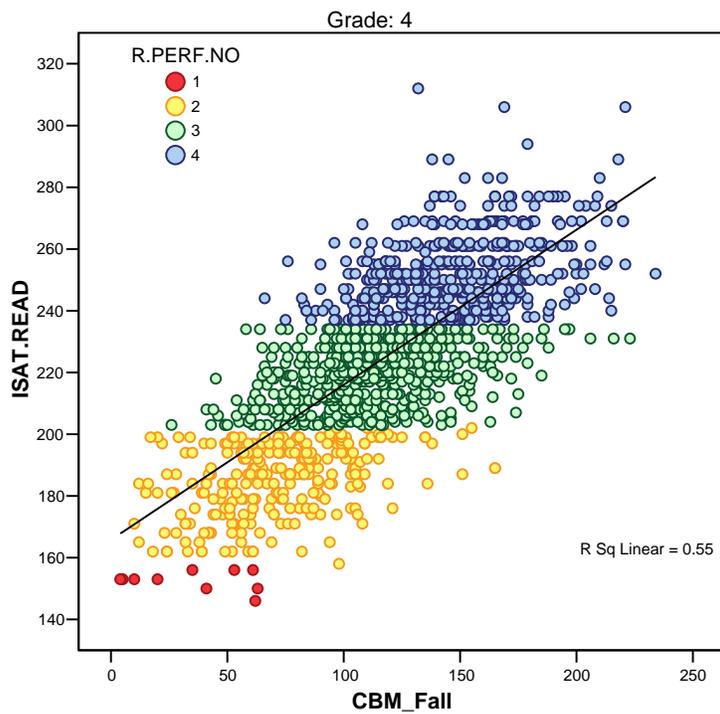
3. **People Are Confused About What The Cut Scores Do And Do Not Tell Us About Students**.

There are some people who are confused about the Cut Scores that predict ISAT. The Cut scores are posted on measuredeffects.com along with an explanation of how they were computed, as well as what they mean. First, neither RCBM nor ISAT are perfect measures of reading. With that said, most students who have RCBM scores indicative of "Below Basic," **have not mastered basic skills expected for that grade level and as such do not meet standards on the state test.** *So a 3rd grade student who reads fewer than 90 correct words per minute in Spring is not likely to have mastered basic skills and is not likely to meet standards on ISAT*. This relation is not perfect (Concurrent and predictive validity coefficients tend to range between .5 and .7 - though some are higher). Depending on several factors the prediction works for somewhere in the neighborhood of 70 to 80%. Even in districts where most students do meet standards, most of the students with scores below 90 (in spring and below 60 in fall) do not meet standards. **But some will meet standards**! R – CBM does a great job of predicting outcomes for students,

*but certainly a one minute sample of behavior (or even a three minute sample) is not a perfect indicator of literacy or outcomes on high stakes tests***.**

To maximize accuracy, we have to admit that to predict status for some children we require more than a one minute, or the median of 3 minutes of a sample of behavior.

- Alternatively, <u>**most students who do reach a level indicative of "proficiency" have mastered basic skills for that grade level and do meet standards.**</u> So a 3rd grade student who reads more than 115 correct words per minute is likely to have mastered basic skills and is likely to meet standards. Again, this relation is also not perfect, depending on several factors it works for somewhere in the neighborhood of 85 to 95%. In districts where most students do not meet standards, most of the students with scores above 115 in spring and above 80 in fall do not standards. **But some won't meet standards**.

- There are some students for whom R - CBM does not provide us with a sufficient amount of information for us to make a confident prediction about their skill. These students have scores that are above the cut for "Below Basic" and below the cut for "Proficient." Data indicate that somewhere in the neighborhood of 40 to 60% of these students DO meet standards. For the past several years I have been looking for something else that could better explain this relation. I have seen some promising results for both MAZE and Vocabulary Matching as additional instruments to improve predictions. In any case, for these students the best bet is to watch them carefully and monitor progress with CBM as well as mastery of content taught.

4. **How Confident Can We Be In The Cut Scores?**

Analyses of the Cut Scores indicates that they are robust, within a few words. Specifically, when Cut Scores were bootstrapped (without replacement) empirical 95% confidence intervals were derived by examining sample cut scores from repeated logistic regressions. In one example, the Below Basic Cut Score for fall of grade 3 varied from about 51 Words Read Correctly to 54 Words Read Correctly, with a median of 53 WRC. The Proficient Cut Score varied from about 76 Words Read Correctly to 80 Words Read Correctly, with a median of 77 WRC. In short, the Cut Scores appear to be robust. The figure below presents probability curves for the example presented above.
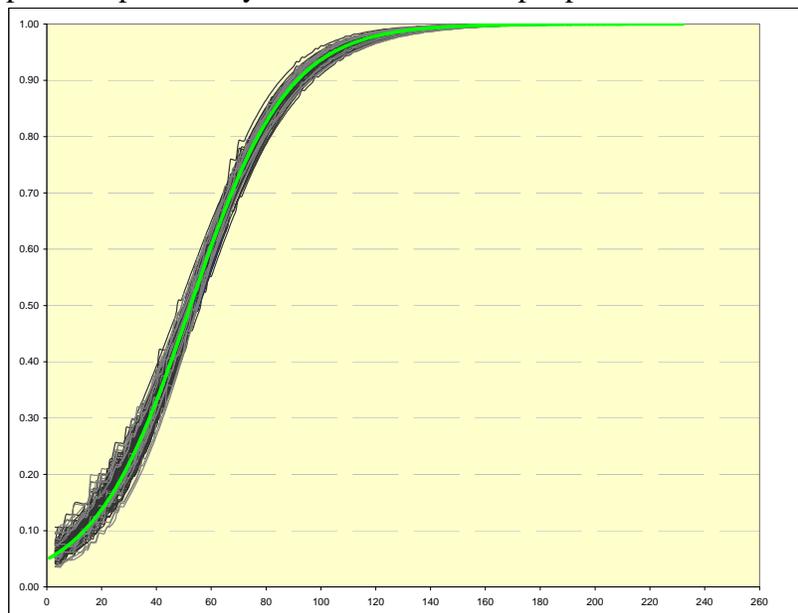
5. **So How Well Does RCBM predict ISAT?** RCBM and ISAT are not perfectly correlated, nor should we expect them to be. RCBM is a one minute sample of oral reading; ISAT is comprised of three 45 minute sessions. It is true that there are other reading tests that correlate as well and even slightly better than RCBM does with ISAT. We know from psychometric tradition that all other things being equal longer tests are more reliable than shorter ones. To my knowledge there is no assessment of Reading that gives as much information about a reader in the same amount of time. RCBM explains between 49 and 55% of the variance in scores on ISAT. In the Table below are presented the predictive and concurrent validity coefficients for RCBM and ISAT. Theses indices are considered moderate to strong depending on how we define our terms.

Grade		**Predictive and Concurrent Validity**		
		Fall	**Winter**	**Spring**
3	**r**	**.71**	**.74**	**.74**
	N	*2557*	*2601*	*2605*
4	**r**	**.74**	**.73**	**.72**
	N	*1320*	*1335*	*1333*
5	**r**	**.71**	**.73**	**.72**
	N	*1811*	*1620*	*1659*
6	**r**	**.72**	**.74**	**.70**
	N	*1364*	*1370*	*1319*

6. **Rcbm Is A Measure Of Basic Skill Related To General Reading Outcomes**. Given the repeated findings of researchers and practitioners alike, it is interesting to read that "If the district's goal is to raise the % of students passing ISAT, then they may not need to pay as much attention to ORF." I have two comments about this statement 1. ISAT is not a pass/fail test. 2. This statement is backward, and contrary to the empirical evidence. Again R-CBM is a measure of basic skills with regards to generalized reading. RCBM is not a teaching tool, rather it is an assessment tool. Using data from a district in which most students met standards, I ran a factor analysis with ISAT, MAZE, a basal publishers built in pretest and RCBM for fifth grade students (ISAT for grade 4). Factor loadings were very high, but most interesting was that RCBM had the highest factor loading. This means that RCBM is more related to each of the other measures of reading than any of the others were related to each other.

7. **Rcbm Is Not Intended To Tell You Everything About A Child's Reading**. It is an indicator of academic well being. Just like blood pressure does not tell you everything about your health. We know from repeated samples of data that by measuring the number of correct words per minute in the fall, a 2nd grade student who reads fewer than 10 words per minute, a 3rd grade student who reads 50 CWPM, a 4th grade student who

reads 50 CWPM, a 5th grade student who reads fewer than 80 CWPM, or a student in middle or high school who reads fewer than 100 CWPM in grade level material has not mastered the basic skills expected at that grade level in the same way that we would know that a 25 year old man with a blood pressure reading of 160/100 is at risk for heart attack.

8. We can all agree with the statement "...I do not believe it [RCBM] should be the sole goal of our instructional efforts," however, the results of repeated measurement with RCBM, DO tell us about the effects of our instruction. In fact, we can use repeated measurement data from RCBM to estimate precisely how much of a difference our instruction is making in terms of ISAT scale points. I will gladly share the citation for this once it is published. IN ADDITION, if you really look at your data, one of the other findings that you may notice is that students who enter 3rd grade reading a a rate of better than 80 CWPM are far more likely to exceed standards on the state test (in the spring) than those students who enter 3rd grade reading fewer than 60 words correctly per minute. (estimates appear to range between 6 times and 12 times more likely to exceed standards). On another note, I recently had the pleasure of reading the results section for a dissertation that examined the relation between RCBM and ISAT math - the results were very interesting and supportive of RCBM.