



STATE OF MICHIGAN
DEPARTMENT OF EDUCATION
LANSING



JENNIFER M. GRANHOLM
GOVERNOR

MICHAEL P. FLANAGAN
SUPERINTENDENT OF
PUBLIC INSTRUCTION

TO: State Board of Education

FROM: Mike Flanagan

DATE: May 28, 2007

SUBJECT: **APPROVAL OF THE PROPOSED PERFORMANCE LEVEL CHANGE
DESIGNATIONS FOR GRADE 3-8 MEAP AND MI-ACCESS FUNCTIONAL
INDEPENDENCE ASSESSMENTS**

The purpose of this State Board of Education memorandum is to present the tentative student-level **performance level change** designations that staff are recommending for the MEAP Mathematics and English Language Arts and the corresponding MI-Access Functional Independence alternate assessments. This item is a follow-up to the memoranda previously presented to the State Board of Education concerning the measurement of student progress across years in a value-added fashion. Please note that the *performance level change designations* do not replace the academic achievement standards already approved by the State Board of Education. They supply additional information about changes in student performance from one year to the next.

BACKGROUND

There were five primary goals for the activity. They were

1. Implement a maximally valid system for evaluating individual students' change in performance level in the content areas of Mathematics and ELA from one year to the next that does not make the problematic assumptions of other existing progress-based value-added models.
2. Implement a system that is capable of capturing significant changes in student performance level while at the same time minimizing the effect of measurement error on the evaluation of student change in performance level.
3. Implement a system that sets rigorous expectations for changes in student performance level that can be met and that, if met, should ultimately result in students reaching proficiency and moving beyond proficiency.
4. Integrate MEAP and MI-Access scores into a single system.
5. Maximize the transparency of the progress-based value-added model to educators and citizens by eliminating all unnecessary complexity.

Attachment A details the desired characteristics of the model that led to these goals and how the goals were to be achieved.

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608 WEST ALLEGAN STREET • P.O. BOX 30008 • LANSING, MICHIGAN 48909
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ACTIVITIES

The procedures used were adapted from previous work by Rich Hill (from the National Center for the Improvement of Educational Assessment) and Damian Betebenner (from the College of Education at Boston College). The procedures used are described in detail in attachment B. The activities involved in developing the recommendations are detailed below:

1. The Office of Educational Assessment and Accountability's (OEAA) Technical Advisory Committee (TAC), which is comprised of nationally-recognized measurement and statistics experts, reviewed the procedures to be used on March 27, 2007.
2. The activity in which the recommendations were made took place on March 28-29, 2007.
3. OEAA/MDE staff reviewed the results.
4. The results were presented for review by the OEAA Advisory Committee on May 2, 2007.
5. The TAC reviewed the final results on May 4, 2007.
6. The proposed recommendations were presented to the State Board of Education at the May State Board of Education meeting.
7. The proposed recommendations were reviewed by the OEAA Advisory Committee and discussed in presentations to local educators.

SUMMARY OF ACTIVITIES

The activities were carried out and the panelists created a set of recommended tables. OEAA staff reviewed those tables, identified some issues with those tables, and presented a modified version of those tables to the OEAA Advisory Committee (a policy advisory board) for discussion and recommendation. Based on the discussion and recommendations, OEAA created new tables and presented those tables for discussion at the May State Board of Education (SBE) meeting.

The OEAA Advisory Committee and additional local educators have had further opportunity to review the tables presented at the May SBE meeting. The review of the recommended tables has been clearly positive.

RECOMMENDATIONS

The Advisory Committee's recommendations have been implemented in revised tables. These revised tables are presented in Figures 1 and 2 for MEAP and MI-Access. These **revised** recommended tables evaluate the amount of progress made by individual students. These **revised** tables are intended to be used in the following manner:

1. For reporting individual students' change in performance relative to grade-level expectations to students, parents/guardians, and educators.
2. For reporting aggregate progress of students at the school, district, ISD, and State levels, when there are sufficient numbers of students.
3. For incorporation into EducationYES! based upon a yet-to-be-carried-out school-level standard setting.

NEXT STEPS

Following State Board of Education approval, the next step will be to incorporate the individual student performance level change data into the state and federal school accountability systems (purpose 3). Staff plans to return to the State Board of Education

with a comprehensive proposal for the use of performance level change information in the system of state school accreditation. The system will incorporate change in students' performance level, as promised in the EducationYES! policy approved by the Board in 2002. It is anticipated that the revised state school accreditation policy will be ready for use in the 2007-08 school year.

Figure 1. Revised MEAP Performance Level Change Table

Grade X MEAP Achievement		Grade X+1 MEAP Achievement											
		Not Proficient			Partially Proficient			Proficient			Advanced		
		Low	Mid	High	Low	Mid	High	Low	Mid	High	Low	Mid	High
Not Proficient	Low	N	I	I	SI	SI	SI	SI	SI	SI	SI	SI	SI
	Mid	D	N	I	I	SI	SI	SI	SI	SI	SI	SI	SI
	High	D	D	N	I	I	SI	SI	SI	SI	SI	SI	SI
Partially Proficient	Low	SD	D	D	N	I	I	SI	SI	SI	SI	SI	SI
	Mid	SD	SD	D	D	N	I	I	SI	SI	SI	SI	SI
	High	SD	SD	SD	D	D	N	I	I	SI	SI	SI	SI
Proficient	Low	SD	SD	SD	SD	D	D	N	I	I	SI	SI	SI
	Mid	SD	SD	SD	SD	SD	D	D	N	I	I	SI	SI
	High	SD	SD	SD	SD	SD	SD	D	D	N	I	I	SI
Advanced	Low	SD	SD	SD	SD	SD	SD	SD	D	D	N	I	I
	Mid	SD	SD	SD	SD	SD	SD	SD	SD	D	D	N	I
	High	SD	SD	SD	SD	SD	SD	SD	SD	SD	D	D	N

NOTE: SD = Significant Decline, D = Decline, N = No Change, I = Improvement, SI = Significant Improvement

Figure 2. Revised MI-Access Functional Independence Performance Level Change Table

Grade X MI-Access FI Achievement		Grade X+1 MI-Access FI Achievement								
		Emerging			Attained		Surpassed			
		Low	Mid	High	Low	High	Low	Mid	High	
Emerging	Low	N	I	I	SI	SI	SI	SI	SI	
	Mid	D	N	I	I	SI	SI	SI	SI	
	High	D	D	N	I	I	SI	SI	SI	
Attained	Low	SD	D	D	N	I	I	SI	SI	
	High	SD	SD	D	D	N	I	I	SI	
Surpassed	Low	SD	SD	SD	D	D	N	I	I	
	Mid	SD	SD	SD	SD	D	D	N	I	
	High	SD	SD	SD	SD	SD	D	D	N	

NOTE: SD = Significant Decline, D = Decline, N = No Change, I = Improvement, SI = Significant Improvement

It is recommended that the State Board of Education approve the proposed performance level change designations and to use these designations in reporting the MEAP and MI-Access Functional Independence results beginning with the 2007-2008 school year, as shown in figures 1 and 2 of the Superintendent's memorandum dated May 28, 2007.

Desired Characteristics of the Progress-Based Value-Added Model

This attachment describes the desired characteristics of the model, and indicates how the chosen model fulfills those desired characteristics. The desired characteristics are taken from Rigney & Martineau (2006):

1. Consistency with policy goals of proficiency for all students, while:
 - a. Holding high expectations for all students regardless of current achievement
 - b. Balancing fairness toward students with fairness toward educators by setting targets based upon observable transitions
2. Freely available for scientific scrutiny to enhance and validate the model
3. Maximal transparency *and* validity
4. Based on alignment to content standard and performance standards
5. Integrate MEAP and MI-Access Functional Independence results into a single system
6. Adaptable for monitoring the progress of different groups of children (e.g. students with disabilities and English language learners)
7. Appropriate statistical model for the MEAP and MI-Access scales

Each of these desired characteristics is explained individually below:

1. **Consistency with policy goals of proficiency for all students, while:**
 - a. **Holding high expectations for all students regardless of current achievement**
 - b. **Balancing fairness toward students with fairness toward educators by setting targets based upon observable transitions**

One of the reasons for implementing a progress-based value-added model is to ameliorate some of the adverse effects of status models.

Status models are seen as focusing solely on equity toward students—that is that no student is expected to perform lower than any other student simply because of their ethnicity, family income, or other demographic characteristics. Status models (such as the No Child Left Behind—NCLB—model for adequate yearly progress) provide exactly the same expectations for all students.

Status models are also seen as being unfair toward educators because all students (and therefore educators) are held to the same achievement standard. This means that educators are held to different standards for fostering student learning depending upon the incoming achievement level of the students they teach, which is often strongly related to demographics.

Value-added models are seen as more fair toward educators in that all educators are held to exactly the same standard for fostering student learning. One of the mantras of value-added modeling is “one year of growth for one year of instruction.”

The problem is that with value-added models, if all students are held to the same progress standards, existing achievement gaps may remain unabated. This is not fair toward students in that students belonging to historically lower achieving groups will be expected to remain lower achieving.

One of the desired characteristics of the model is to balance fairness toward educators with fairness toward students.

The approach that this model takes to that dilemma is to set rigorous standards for student progress, particularly those who are not yet proficient, but to set those progress standards in a reasonable way such that the progress targets can be attained. This means that the targets for progress may not take students all the way to proficient in one year, but that rigorous targets are set to move students toward proficiency, beyond proficiency, or to maintaining proficiency.

2. Freely available for scientific scrutiny to enhance and validate the model

There are some value added models with components that are proprietary and cannot be validated even by qualified statisticians. Michigan has chosen to use only methods that reside in the public domain for this model.

3. Maximal transparency and validity

Most value added models are highly complicated statistical models understood only by a few. One of the reasons cited for the complexity is maintaining the validity of the system. However, this raises questions about how well the results of the model can be explained and accepted when the evaluation methods are not accessible to those being evaluated.

Michigan's approach to resolving this conflict between validity and transparency is to use a transition table approach (adapted from Hill, 2005 and Betebenner, 2005) that follows children from one portion of an achievement scale in one grade to another portion in another grade. By setting up the model in this way, individual students, teachers, and administrators can replicate the results of the model for themselves if desired.

In addition, Michigan has taken the approach of reporting progress in a manner analogous to the reports of student achievement—providing a progress score and a progress level for each student, and aggregating to the school level in the same manner as for achievement.

4. Based on alignment to content standard and performance standards

Most value added models are norm-referenced, meaning that the results indicate which schools are above or below average in terms of the progress their students make. While normative interpretations can be useful, they do not tell whether students in any given school made enough progress to ultimately achieve proficiency, move beyond proficiency, or maintain proficiency.

Michigan's approach to this problem was to explicitly set standards for student progress, evaluating the different types of progress individual students can make toward proficiency, beyond proficiency, and in maintaining proficiency.

Again, note that the already-approved academic achievement standards are not to be replaced by the progress standards. The progress standards provide information about how students are progressing across grades in relation to the academic achievement standards.

5. Integrate MEAP and MI-Access Functional Independence results into a single system

Most value added models assume that all students' scores are on the same scale, making it impossible to integrate regular and alternate assessments into the same system.

The system created by Michigan resolves this issue by rating student progress on both the MEAP and MI-Access into the same categories by including cross-assessment discussions in the standard setting activity to identify, discuss, and validate any differences across assessments.

6. Adaptable for monitoring the progress of different groups of children (e.g. SWD and ELL)

Most value added models have this capacity, and Michigan felt it was important to maintain that capacity by creating a model whose outcomes could become the focus of statistical models identifying the relationships between demographic groups and the progress they made.

7. Appropriate statistical model for the MEAP and MI-Access scales

Almost all value added models assume that the achievement scales they analyze have highly unrealistic psychometric properties, namely that the scales are interval-level scales, linear, and measure only one type of achievement from the bottom of the lowest grade to the top of the highest grade (see Martineau, 2006; Martineau, Subedi, et al., 2007; Reckase, 2004; Schmidt et al., 2005, for explanations of why this is highly problematic).

Michigan has determined to resolve this technical psychometric issue by treating the scales as ordinal, non-linear, and measuring several different types of achievement, depending upon what is being taught in each grade. A detailed description of how this was accomplished is given by Martineau, Paek, et al. (2007) and Martineau (2007).

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