ALN
ASSESSMENT LEARNING NETWORK

LEARNING POINT

Proficiency and Growth: What's the difference?

When communicating about what students know and are able to do, two views are most widely used: proficiency and growth. While both measures of student achievement can provide useful information, they are very different. They require different interpretations, and they cannot be used interchangeably.

PROFICIENCY is referred to as a "status measure" as it represents the performance of a student or a group of students at a single point in time. The performance is often categorized into one of a handful of performance levels. In Michigan's state assessments use four levels of categorization: 1. Not Proficient, 2. Partially Proficient, 3. Proficient, and 4. Advanced. Student test scores are placed into one of those four categories based on cut scores that are set. What is important to remember is that there is no "correct" number of categories to have and no "correct" cut scores to set. Both determinations involve judgement at some point and are ultimately policy decisions.

GROWTH, on the other hand, attempts to communicate the change in student performance over some period of time. Perhaps the most basic conception of growth is that of changes in a person's physical measurement. As a child grows, we might track their height and/or weight. In this instance, we take a measurement and then subtract the previous measurement, which is put into context with the time period elapsed. Thus we can make statements like, "Mason grew three inches in the last six months."

While on its surface this notion of growth is very simple, there are some very strict requirements that pose problems when we try to follow growth in education. Note that in measuring height, we are measuring the exact same thing at both points in time. Additionally, the unit of measurement, the inch or centimeter, is consistent across the entire range of measurement each time it is used. Both of these qualities relate to the scale of

To learn more

Measuring Student Growth: A Practical Guide to Educator Evaluation
(Wayne RESA, 2016)
https://resources.finalsite.net/images/v1568981330/resanet/lj0iobk3apn8xkzdmrtk/MeasuringStudentGrowth.pdf

A Practitioner's Guide to Growth Models
Castellano, K.E. & Ho, A.D. (CCSSO, 2013)
https://scholar.harvard.edu/files/andrewho/files/a_pracitioners_guide_to_growth_models.pdf

Thinking About Improvement in Student Test Scores
James A. Gullen. (Michigan Assessment Consortium, 2012)
https://bit.ly/3jqzWwO

Growth Models: Issues and Advice from the States: A Guide of the Statewide Longitudinal Data Systems Grant Program
(2012)
http://nces.ed.gov/programs/slds/pdf/guide_growth-model.pdf

measurement. We almost take them for granted in the measurement of physical quantities, but they are quite difficult to achieve when measuring students' learning.

Because of the technical challenges in measuring student growth in student achievement, many ways have been developed to try to quantify and communicate the change in student performance over time. Each of them has benefits and shortcomings, and none of them are as "clean" as the measurement of height described above.

The model where one test score is subtracted from the previous test score to get the growth score is referred to as the "gain score" model. The Measures of Academic Progress (MAP) tests developed by NWEA are examples of tests that support this interpretation of growth. Much technical work went into the scaling of these assessments to support the ability to simply subtract one test score from another to get a gain score. The strict technical requirements for the items that make up this assessment, however, may impact the depth and breadth of the content assessed.

Michigan had previously used a score called "Performance Level Change" in an attempt to communicate growth on state assessments. This score was based on a change in proficiency category (e.g., moving from Partially Proficient to Proficient). Technically, this is an example of the "categorical model" of student growth. One issue with this model was the relative "coarseness" of the categories. In other words, there were

Currently, Michigan employs the "student growth percentile" model of communicating student growth. In this model, a student's test score in the current year (Year 2) is compared to students whose previous test score(s) (in Year 1) were the same. The resultant score is a percentile. We make statements like, "Aden had a student growth percentile of 76," meaning his score this year was higher than the test scores (this year) of 76% of the students who had the same previous scores as he did. Note that this is a norm-referenced look at academic growth in that it doesn't tell us how much Aden grew in relation to any absolute academic standards; it tells us only how his growth compared to other students with a similar test score history. This is very different from measuring height in the earlier example. Typically, physical growth is expressed in absolute terms — "I gained 4 pounds"— and is independent of how anyone else's weight changed.

There are additional models that can be used to capture academic growth. These models rely on complex statistical models that each come with stringent assumptions about the tests and data generated from them. A good introduction to all of these growth models can be found in the book: *A Practitioner's Guide to Growth Models* by Katherine Castellano and Andrew Ho.

Key Terms

(See extended definitions at tinyurl.com/MAC-Literacy)

- **Achievement Level**
- **Criterion-referenced (and interpretation)**
- **Levels of Proficiency**
- **Norm-referenced (and interpretation)**
- **Standards**
- **Validity**

The Michigan Assessment Consortium's Assessment Learning Network ALN, is a professional learning community consisting of members from MI's professional education organizations; the goal of the ALN is to increase the assessment literacy of all of Michigan's professional educators.