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Achievement AND Growth
Achievement and growth are complementary but different types of academic measures.

### Achievement
1. Result of an academic experience
2. Measures students’ performance at a single point in time
3. Often affected by factors outside the school and highly correlated with students’ demographics, such as socioeconomic status
4. Compares students’ performance to a standard
5. Critical to students’ post-secondary opportunities

### Growth
1. Measures students’ academic growth across time (i.e., across years)
2. Typically, little to no correlation with students’ demographic background, when students’ prior achievement is adequately accounted for
3. Dependent upon what happens as a result of schooling
4. Compares students’ performance to their own prior performance
5. Underlying concept of value-added analysis and reporting
6. Critical to ensuring students’ future academic success

By measuring students’ academic achievement AND growth, LEAs/districts and schools have a more comprehensive picture of their own effectiveness in raising student achievement.

**What is Value-Added or Growth?**
Value-added is a statistical analysis used to measure the academic growth for a district’s, school’s, or teacher’s groups of students from year to year. Conceptually and as a simple explanation, a value-added “score” is calculated in the following manner:

\[
\text{Growth} = \text{Current Achievement (current results)} \text{ compared to Prior Achievement (all prior results), with achievement being measured by an appropriate test, such as Pennsylvania’s state assessments}
\]

Note that simpler approaches to value-added analysis (such as, comparing two scores) yield results that are confounded by measurement error and several other issues of concern and quality. The methodology used in Pennsylvania for value-added assessment is based on the SAS® EVAAS® methodology, which has been nationally peer-reviewed and published since 1997. Pennsylvania’s use of EVAAS is called the Pennsylvania Value-Added Assessment System (PVAAS).

**The Benefits of Value-Added**
Value-added offers an objective, more accurate way to measure the academic growth of groups of students and the influence LEAs/districts, schools, and teachers have on students’ educational experiences. With this information, educators are better able to:

1. Monitor the growth of all groups of students from low-achieving to high-achieving, thus ensuring growth opportunities for all students
2. Measure the impact of educational practices, classroom curricula, instructional methods, and professional development on student achievement

3. Make informed, data-driven decisions about where to focus resources to help students make greater growth and perform at higher levels

4. Modify and differentiate instruction to address the needs of all students

5. Align professional learning efforts in the areas of greatest need

6. Network with other LEAs/districts and schools that may be yielding different and higher growth results

7. Identify best practices and implement programs that best meet students’ needs

More Information

For additional information on PVAAS, please visit the resources on the PVAAS login page.
Value-Added Reporting

PVAAS value-added reporting provides districts/LEAs, schools, and educators with information to assist them in assessing the academic growth of groups of students they serve. At a glance, this report indicates if the group of students (at the LEA/district, school, or teacher level) gained, maintained, or fell behind in Math and ELA, grades 4-8; Science, grades 4 and 8; and the Keystone content areas of Algebra I, Literature, and Biology.

These reports can be used to:

1. Discuss whether the curriculum, instructional strategies, and assessments are aligned and meet the needs of students at the district/LEA, school, and teacher levels;
2. Capitalize on effective instructional practices;
3. Set academic goals for a LEA/district, school, and/or teacher, and monitor effectiveness of action plans;
4. Provide opportunities for professional reflection and dialogue;
5. Develop professional growth plans; and
6. Target and differentiate individualized professional learning opportunities.

As a general guideline, PVAAS reports can be interpreted using the colors provided. On average, did the students gain, maintain, or fall behind regarding their achievement?

![Color Key Diagram]

*Some evidence
**Significant evidence
Value-Added Summary: District Report

The District Value-Added Summary displays color-coded growth measures for the selected assessment for all schools in the LEA/district whose data the user is authorized to view. This report contains information on how effectively each school in the LEA/district has supported students to at least meet the standard for PA Academic Growth.

<table>
<thead>
<tr>
<th>School Name</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
<th>8th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avon Upper Elementary School</td>
<td>-1.1</td>
<td>-3.9</td>
<td>-2.2</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bear Middle School</td>
<td>-2.0</td>
<td>-1.4</td>
<td>-3.9</td>
<td>-7.0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Brookview Upper Elementary School</td>
<td>-3.6</td>
<td>-3.6</td>
<td>-4.1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Castle Upper Elementary School</td>
<td>-2.0</td>
<td>-2.5</td>
<td>-2.5</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Chestnut Middle School</td>
<td>-5.0</td>
<td>-8.5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Elks Middle School</td>
<td>-7.5</td>
<td>-8.0</td>
<td>6.4</td>
<td>3.4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Downtown Elementary School</td>
<td>-6.0</td>
<td>-6.0</td>
<td>-6.0</td>
<td>3.0</td>
<td>-2.2</td>
<td>-</td>
</tr>
<tr>
<td>Eastwood Elementary School</td>
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<td>-7.0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Elks Elementary School</td>
<td>-8.0</td>
<td>-8.0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wildwood Upper Elementary School</td>
<td>-7.0</td>
<td>-7.0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Finn Elementary School</td>
<td>-7.0</td>
<td>-7.0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Questions to ask as you examine the report include:

1. In which grade levels across schools are students making academic growth in a subject area? Is there room for improvement in a subject area?

2. Which schools within the LEA/district can serve as a support for those schools that are struggling? Is the pattern of growth at the same grade level and subject consistent from school to school? Or, does growth differ from school to school within the same grade level and subject?
Value-Added: District/School Report

District and school value-added reports provide reliable measures of the average academic growth the LEA’s, district’s, or school’s students made in each state tested grade and subject. The Growth Measures indicate how successful the LEA, district, or school was in supporting students to meet the standard for PA Academic Growth.

<table>
<thead>
<tr>
<th>Grade</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017 Growth Measure</td>
<td>5.9</td>
<td>1.2</td>
<td>-5.9</td>
</tr>
<tr>
<td>Standard Error</td>
<td>0.7</td>
<td>0.6</td>
<td>0.9</td>
</tr>
<tr>
<td>2018 Growth Measure</td>
<td>1.5</td>
<td>8.7</td>
<td>-0.7</td>
</tr>
<tr>
<td>Standard Error</td>
<td>1.3</td>
<td>0.7</td>
<td>0.6</td>
</tr>
<tr>
<td>2019 Growth Measure</td>
<td>-1.3</td>
<td>0.8</td>
<td>-0.2</td>
</tr>
<tr>
<td>Standard Error</td>
<td>1.2</td>
<td>0.9</td>
<td>0.8</td>
</tr>
<tr>
<td>3-Yr. Avg Growth Measure</td>
<td>2.2</td>
<td>3.5</td>
<td>-2.2</td>
</tr>
<tr>
<td>Standard Error</td>
<td>0.6</td>
<td>0.4</td>
<td>0.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>State NCE Average</td>
<td>50.0</td>
<td>50.0</td>
<td>50.0</td>
</tr>
<tr>
<td>2016 Avg Achievement</td>
<td>55.1</td>
<td>43.6</td>
<td>46.6</td>
</tr>
<tr>
<td>2017 Avg Achievement</td>
<td>40.9</td>
<td>50.3</td>
<td>38.3</td>
</tr>
<tr>
<td>2018 Avg Achievement</td>
<td>33.0</td>
<td>49.1</td>
<td>55.3</td>
</tr>
<tr>
<td>2019 Avg Achievement</td>
<td>48.4</td>
<td>33.7</td>
<td>49.0</td>
</tr>
</tbody>
</table>

Questions to ask as you examine the report include:

1. In which grade levels in the selected subject area are students making academic growth?
2. In which grade levels in the selected subject area is there room for improvement?
3. In which grade levels are students making academic growth across subject areas?
4. In which grade levels is there room for improvement when examining growth across subject areas?
5. Is growth consistent across grade levels?
6. When looking across years, do you see trends where growth is increasing or decreasing in a specific grade?
Value-Added: Growth of Student Groups

The school level Growth of Student Groups report provides reliable measures of the average academic growth school’s subgroups of students made in each state tested grade and subject. The Growth Measures indicate how successful the school was in supporting student subgroups to meet the standard for PA Academic Growth. Student groups viewable for reporting include racial/ethnicity groups, Economically Disadvantaged, English Learners, Historically Underperforming, students with IEPs, students with GIEPs, and lowest performing 33% of students.

Questions to ask as you examine the report include:

1. Is growth consistent across student groups?
2. In which student groups in the selected subject area are students making academic growth?
3. In which student groups in the selected subject area is there room for improvement?
4. In which grade levels are student groups making academic growth?
5. In which grade levels is there room for improvement when examining growth across student groups?
Value-Added Summary: Teacher Specific Report

A teacher’s value-added summary report displays the growth of his or her group(s) of students across all state assessed subjects/grades, and Keystone content areas for which the teacher had instructional responsibility for the most current school year.

Questions to ask as you examine the report include:
(It is important to note that these questions focus on reports with more than one grade, subject, and course.)

1. Is there a consistent pattern of growth across the various grades, subjects, and courses? Or, is there an inconsistent pattern of growth across the various grades, subjects, and courses?
2. Are there specific grades, subjects, and courses where you are seeing positive growth? What instructional practices might be contributing to this growth?
3. Are there specific grades, subjects, and courses where we are not seeing positive growth? Are there instructional changes that could be made to increase academic growth in this grade, subject, or course?
Value-Added: Teacher Specific Report

A teacher’s value-added report displays the growth of his or her group of students in a state assessed subject, grade or Keystone content area.

Questions to ask as you examine the report include:

1. What do the colors indicate? Did students gain, maintain, or fall behind in their achievement?
2. Are these results consistent with other assessment results for the group of students in this tested area?
3. How does the academic growth for these students compare to the academic growth for the whole grade and subject?
4. Are there any concerns with this group of students?
5. Are there any areas of strength with this group?
Value-Added: Teacher Summary Report for Administrators

District and school administrators can get an overview of all PVAAS teacher specific reporting for their respective school or district. This report provides a summary (by subject and grade, or course) of the value-added results of their teachers compared to the overall LEA/district, as well as the entire state.

![Table of Value-Added Results]

<table>
<thead>
<tr>
<th>Color</th>
<th>School</th>
<th>District</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dark Blue</td>
<td>3</td>
<td>10</td>
<td>920</td>
</tr>
<tr>
<td>Light Blue</td>
<td>2</td>
<td>9</td>
<td>1382</td>
</tr>
<tr>
<td>Green</td>
<td>2</td>
<td>16</td>
<td>3920</td>
</tr>
<tr>
<td>Yellow</td>
<td>0</td>
<td>8</td>
<td>1130</td>
</tr>
<tr>
<td>Red</td>
<td>2</td>
<td>17</td>
<td>698</td>
</tr>
</tbody>
</table>
Diagnostic Reporting

PVAAS diagnostic reporting allows LEAs/districts, schools, and teachers to view academic growth disaggregated by students’ with varying achievement. This report can be viewed for an entire grade level or Keystone content area, or for different demographic subgroups within a specified grade and subject, or Keystone content area.

This report can be used to:

1. Diagnostically assess the academic growth of students with varying achievement;
2. Collaborate with other teachers of these students to address the instructional needs of the student group and capitalize on effective instructional practices;
3. Discuss the implications for teaching, leadership, the school’s infrastructure, and continuous learning; and
4. Discuss the influence these patterns have on student achievement as students move through grade levels or courses in an LEA/district or school.

Diagnostic: District/School Report

The District and School Quintile Diagnostic Report allows educators to view the academic growth of groups of students disaggregated by students’ prior or predicted achievement relative to other students in Pennsylvania.

Questions to ask as you examine the growth patterns in the report include:

1. Which growth patterns are consistently found in a grade level, subject, or Keystone content area?
2. Which growth patterns are consistently found across grade levels or Keystone content areas?
3. Are the same patterns found when viewing the data for various demographic subgroups of students?
Diagnostic: Teacher Specific Report

The diagnostic report at the teacher level provides teachers with information to assess the academic growth of groups of students with varying achievement to which they provide instruction. This report is intended to be used diagnostically to assess the academic growth of students at various achievement levels so that teachers can work collaboratively to address the varying academic needs of the students.

Questions to ask as you examine the growth patterns in the report include:

1. Are these results consistent with other assessment results for these students?
2. How does the pattern of academic growth for these students compare to the pattern of academic growth for the entire tested grade and subject, or course?
3. Are there any concerns with any of the groups of students at the various achievement levels?
4. Are there any areas of strength with any of the groups of students at the various achievement levels?
Consolidated, System-Wide Reporting

There are several reports and features in PVAAS that allow users to look across various types of achievement and growth reporting, and also compare those results to other LEAs/districts and schools to which they have access. These include the District/School Launchpad, District/School Search, and Scatterplots. More detail about each of these reports is provided below.

These reports can be used to:

1. Better focus improvement efforts to increase students’ academic achievement and progress; and
2. Identify system-wide patterns in students’ academic growth that may not be obvious when viewing value-added or diagnostic reports alone, or for a single subject or grade.

System-Wide: Launchpad

The Launchpad is a consolidated report providing educators with a combined view of value-added and quintile diagnostic reporting. It is available at both the district and school levels. This report allows educators to view patterns and trends across grade levels, subjects, and Keystone content areas, and is designed to assist in the data analysis process for school and LEA/district level planning.

Questions to ask as you examine the growth patterns in the report include:

1. In which grade levels are students making academic growth across subject areas?
2. In which grade levels is there room for improvement when examining growth across subject areas?
3. Is growth consistent across grade levels and subject areas?
4. Which patterns are consistently found across grade levels and subject areas?
Web-based Scatterplots

The Scatterplot report visually displays the growth and achievement of groups of students in Pennsylvania’s public LEAs/districts and schools. This report is useful in assisting educators to obtain a better picture of student performance by providing information on both achievement (where students are) and growth (how students are progressing). SAS® EVAAS® analyses typically show little to no relationship between students’ growth and their achievement. Therefore, LEAs/districts and schools with high, average, or low percentages of high-achieving students are all equally likely to make good growth. Likewise, LEAs/districts and schools with high, average, or low percentages of low-achieving students are also all equally likely to make good growth.

What do you need to know about this report?
When viewing the default scatterplot axes for Achievement versus the PVAAS Average Growth Index, this is how you would interpret the scatterplot:

1. If an LEA/district’s or school’s dot is in the first quadrant, this indicates that the tested students in the LEA/district or school have made adequate achievement and positive growth. The farther the dot is away from the intersection of the boundaries, the higher the achievement and the greater the evidence of growth. Some apply the term “Excelling” to LEAs/districts and schools in this quadrant.

2. If an LEA/district’s or school’s dot is in the second quadrant, this indicates that the tested students in the LEA/district or school made adequate achievement but negative growth. Negative growth should be of concern since continued adequate achievement may be in jeopardy. Some apply the term “Slipping” to LEAs/districts and schools in this quadrant.
3. If an LEA/district’s or school’s dot is in the third quadrant, this indicates that the tested students in the LEA/district or school made below adequate achievement and negative growth. This situation suggests that substantial investigation and remediation is necessary since the students are not achieving and are headed in the wrong direction. Some apply the term “Underperforming” to LEAs/districts and schools in this quadrant.

4. If an LEA/district’s or school’s dot is in the fourth quadrant, this indicates the tested students in the LEA/district or school did not make adequate achievement; however, growth is positive. This situation may indicate that interventions implemented are producing positive results. Some apply the term “Improving” to LEAs/districts and schools in this quadrant.

**This report can be used to:**

1. Investigate implications on both achievement and growth based upon decisions made about curriculum, instruction, and assessment; and
2. Examine the relationship between achievement and growth; achievement and certain student demographics; and growth and certain student demographics.
Student Projection Reporting

PVAAS projection reporting provides educators with information regarding the possible future academic achievement, or performance, of an individual student on a future assessment. Projection reporting enables educators to assess the likelihood that students will reach a particular academic performance level on a future state assessment (PSSA or Keystone), or reach a particular benchmark on college readiness exams, such as Advanced Placement (AP), PSAT, SAT, and ACT.

Projections: Student Report (PSSA, Keystones, AP, PSAT, ACT, or SAT)

The Student Projection Report is a report that allows educators to view the possible future academic performance of an individual student on a future state assessment or college/career readiness exam.

This report can be used to:
1. Assess whether a student may need intervention;
2. Assess whether a student may benefit from enrichment;
3. Deepen discussion during student and teacher goal-setting;
4. Inform conversations for students about future course selections and college and career planning; and
5. Planning for differentiated instruction in the classroom.
Projections: Child Success Summary

The Child Success Summary is a report that allows educators to view an individual student's state testing history, projections to upcoming state assessments, and if desired, projections to upcoming Advanced Placement (AP) exams – all on one report. A Child Success Summary Companion document is available to support the understanding and use of this report.

This report can be used to:

1. Assess whether a student may need intervention or benefit from enrichment opportunities;
2. Deepen discussion during student, parent, and teacher meetings;
3. Inform conversations for students about future course selections and college and career planning; and
4. Planning for differentiated instruction in the classroom.
Projections: District/School Summary

The District/School Projection Summary reports provide educators with a visual display of how groups of students are projected to achieve and perform on a future state assessment (PSSA or Keystone) or a future college and career readiness exam (Advanced Placement, PSAT, SAT, and ACT) based on their prior testing history on state assessments.

This report can be used to:

1. Assess changes needed to the master course schedule;
2. Allocate staffing needs in various subjects or courses;
3. Allocate resources for sustained interventions, supports, and enrichment opportunities for students;
4. Make course placement decisions, including selecting students for more rigorous course sequences as applicable;
5. Plan comprehensive school improvement programs;
6. Help teachers with instructional planning; and
7. Encourage students to consider participation in college and career ready assessments.
Custom Student Report

The Custom Student Report allows educators to create and save lists of students’ projections to future assessments for future reference. The data in these reports can help teachers, administrators, and other staff make better informed decisions for students. Similar lists of students exist in the District/School Projection Summary reports. However, the Custom Student Reports offer greater flexibility in creating custom lists of students.

This report can be used to:

1. Identify students who need a sustained academic intervention;
2. Identify students who could benefit from enrichment opportunities;
3. Select students for a more rigorous course sequence;
4. Encourage students to consider participating in college and career ready assessments;
5. Plan for differentiated instruction and interventions; and
6. Provide teachers with a convenient way to view projections for their current students.