

SAS® EVAAS®

CPP ANALYSIS

Kutztown University of Pennsylvania

Value-Added Data for Pennsylvania Teacher Certification Preparation Programs

Since 2006, Pennsylvania educators and administrators have received measures of academic growth based on state-assessed content areas. Available through the Pennsylvania Value-Added Assessment System (PVAAS), these measures focus on the *change in achievement* from one year to the next for a group of students linked to a specific district, school or teacher, and they provide valuable feedback on student learning, curriculum, assessment, and instruction. Teacher-specific growth measures are available for PSSA mathematics and English language arts (ELA) in grades 4-8, PSSA science in grades 4 and 8, and the Keystone content areas of Algebra I, Biology, and Literature. These measures use student-teacher linkages verified by teachers and their administrators.

Through a collaboration between the Pennsylvania Department of Education and PVAAS-provider EVAAS, certification preparation programs (CPPs) across the commonwealth can review aggregated teacher-specific growth measures based on their programs' recent completers. *Your institution's information starts on page 3.*

Data and Methodology

What data is used for the CPP analysis? This analysis uses teacher-specific growth measures from the 2017-18 school year. The teacher-specific growth measures are based on value-added models that accommodate intricate student and teacher data. In general, the average change in achievement for a group of students provides the *growth measure*, and this is reported alongside its *standard error*, which indicates statistical certainty. Dividing the growth measure by its standard error provides the *teacher-specific growth index*, which is compared to the *Standard for Pennsylvania Academic Growth*. This standard is the observed average growth statewide for the students taking a state assessment in the current subject/grade/year (for PSSA) or subject/year (for Keystones). The teacher-specific growth index provides a consistent interpretation across different types of assessments and scaling units because it is based on statistical evidence rather than the size of the growth measure. More information about PVAAS and teacher-specific growth reporting is available at <https://pvaas.sas.com>.

Which teachers are included in the CPP analysis? This analysis uses teacher-specific growth indices for teachers in the Teacher Identification Management System (TIMS) who:

- Are CPP completers who completed their degrees within the last five years (2014, 2015, 2016, 2017, or 2018), and
- Have one to three years of experience (in other words, began teaching in 2016, 2017, or 2018).

Teachers who did not receive PVAAS teacher-specific growth measures in the 2017-18 school year are not included in this analysis. With these conditions, the CPP analysis includes 2,338 teacher-specific growth indices for individual subjects/grades/years (for PSSA) or subjects/years (for Keystones). This represents 1,557 individual teachers, as teachers receive more than one value-added measure if they taught more than one assessed area (such as mathematics and ELA in grade 5) or if they taught in more than one district in the school year.

What comparisons are available? The CPP analysis provides two types of comparisons: average growth data for recent completers of *your institution* as well as average growth data for recent completers across *all Pennsylvania institutions*. In each comparison, the applicable teacher-specific growth data is compared to the Standard for Pennsylvania Academic Growth.

What results are available for each comparison? The CPP analysis provides two sets of growth data: one that *is not* adjusted for classroom poverty level (defined as the percentage of students who are linked to a specific teacher and are considered economically disadvantaged) and one that *is* adjusted for classroom poverty level. While educators and administrators currently receive only the *unadjusted* growth data in PVAAS, the CPP analysis provides both. The adjusted growth data controls for systematic differences among CPPs in terms of the types of schools their completers tend to teach in. The adjusted growth indices are compared to the Standard for Pennsylvania Academic Growth.

Results

What tables are available? The tables below provide aggregated teacher-specific growth information for recent completers. As a reference, the first table shows recent completers across all institutions in Pennsylvania, including all certification areas. The second table shows recent completers of your institution, including all certification areas. Additional tables show recent completers of your institution by certification area if sufficient data is available.

What information is in the tables? The first row of each table provides the number of teacher-specific growth indices included in the analysis for each assessed area. For example, in the first table, 183 teacher-specific growth indices in Algebra I were linked to recent completers across all institutions, 113 teacher-specific growth indices in Biology were linked to recent completers across all institutions, and so on.

The next two rows provide the average of the completers' teacher-specific growth indices in each assessed area. One row is not adjusted for classroom poverty level, and the other is.

To be included in the growth data, an institution must have at least five teacher-specific growth indices in the assessed area. If that number is not met, the cell has a hyphen (-) to indicate insufficient data.

How can this information be interpreted? A positive value for growth (unadjusted for poverty or adjusted for poverty) suggests that, on average, recent completers in the assessed area have a higher teacher-specific growth index than the Standard for Pennsylvania Academic Growth, which is zero. A negative value for growth (unadjusted for poverty or adjusted for poverty) suggests that, on average, recent completers in the assessed area have a lower teacher-specific growth index than the Standard for Pennsylvania Academic Growth.

What is the statistical significance of this information? Asterisks indicate whether the average growth index is considered statistically significant in terms of being above or below the Standard for Pennsylvania Academic Growth. This designation depends on the magnitude of the average growth index as well as on the number of recent completers included in that average and the variability of individual teacher-specific growth indices within the average.

In all the tables, statistical significance of the p-values is indicated by * for $p < 0.10$, ** for $p < 0.05$, and *** for $p < .001$.

Growth across institutions by content area for all certification areas

| | Algebra I | Biology | ELA 4–8 | Literature | Math 4–8 | Science 4 and 8 |
|-------------------------------|-----------|---------|----------|------------|----------|-----------------|
| Number of Growth Measures | 183 | 113 | 834 | 117 | 777 | 314 |
| Growth Unadjusted for Poverty | -0.03 | -0.08 | -0.15** | -0.24 | -0.34*** | -0.39*** |
| Growth Adjusted for Poverty | 0 | -0.21 | -0.16*** | -0.26 | -0.33*** | -0.28** |

The following tables provide information based on recent completers of *your institution only*.

Growth at your institution by content area for all certification areas

| | Algebra I | Biology | ELA 4–8 | Literature | Math 4–8 | Science 4 & 8 |
|-------------------------------|-----------|---------|---------|------------|----------|---------------|
| Number of Growth Measures | 5 | 6 | 42 | - | 31 | 13 |
| Growth Unadjusted for Poverty | -0.27 | 1 | -0.67** | - | -0.88** | -0.57* |
| Growth Adjusted for Poverty | 0.62 | 0.15 | -0.67** | - | -0.85** | -0.43 |

Growth at your institution by content area for Biology 7–12

| | Algebra I | Biology | ELA 4–8 | Literature | Math 4–8 | Science 4 & 8 |
|-------------------------------|-----------|---------|---------|------------|----------|---------------|
| Number of Growth Measures | - | - | - | - | - | - |
| Growth Unadjusted for Poverty | - | - | - | - | - | - |
| Growth Adjusted for Poverty | - | - | - | - | - | - |

Growth at your institution by content area for Communications 7–12

| | Algebra I | Biology | ELA 4–8 | Literature | Math 4–8 | Science 4 & 8 |
|-------------------------------|-----------|---------|---------|------------|----------|---------------|
| Number of Growth Measures | - | - | - | - | - | - |
| Growth Unadjusted for Poverty | - | - | - | - | - | - |
| Growth Adjusted for Poverty | - | - | - | - | - | - |

Growth at your institution by content area for Early Childhood N–3

| | Algebra I | Biology | ELA 4–8 | Literature | Math 4–8 | Science 4 & 8 |
|-------------------------------|-----------|---------|---------|------------|----------|---------------|
| Number of Growth Measures | - | - | - | - | - | - |
| Growth Unadjusted for Poverty | - | - | - | - | - | - |
| Growth Adjusted for Poverty | - | - | - | - | - | - |

Growth at your institution by content area for Elementary K–6

| | Algebra I | Biology | ELA 4–8 | Literature | Math 4–8 | Science 4 & 8 |
|-------------------------------|-----------|---------|---------|------------|----------|---------------|
| Number of Growth Measures | - | - | - | - | - | - |
| Growth Unadjusted for Poverty | - | - | - | - | - | - |
| Growth Adjusted for Poverty | - | - | - | - | - | - |

Growth at your institution by content area for grades 4–8 (all subjects 4–6, ELA/Reading 7–8)

| | Algebra I | Biology | ELA 4–8 | Literature | Math 4–8 | Science 4 & 8 |
|-------------------------------|-----------|---------|---------|------------|----------|---------------|
| Number of Growth Measures | - | - | 7 | - | 11 | - |
| Growth Unadjusted for Poverty | - | - | -0.1 | - | -1 | - |
| Growth Adjusted for Poverty | - | - | -0.1 | - | -1.01* | - |

Growth at your institution by content area for English 7–12

| | Algebra I | Biology | ELA 4–8 | Literature | Math 4–8 | Science 4 & 8 |
|-------------------------------|-----------|---------|---------|------------|----------|---------------|
| Number of Growth Measures | - | - | 11 | - | - | - |
| Growth Unadjusted for Poverty | - | - | -1.52** | - | - | - |
| Growth Adjusted for Poverty | - | - | -1.56** | - | - | - |

Growth at your institution by content area for grades 4–8 (all subjects 4–6, math 7–8)

| | Algebra I | Biology | ELA 4–8 | Literature | Math 4–8 | Science 4 & 8 |
|-------------------------------|-----------|---------|---------|------------|----------|---------------|
| Number of Growth Measures | - | - | 8 | - | 13 | - |
| Growth Unadjusted for Poverty | - | - | -0.34 | - | -1.67* | - |
| Growth Adjusted for Poverty | - | - | -0.32 | - | -1.65** | - |

Growth at your institution by content area for Mathematics 7–12

| | Algebra I | Biology | ELA 4–8 | Literature | Math 4–8 | Science 4 & 8 |
|-------------------------------|-----------|---------|---------|------------|----------|---------------|
| Number of Growth Measures | 5 | - | - | - | - | - |
| Growth Unadjusted for Poverty | -0.27 | - | - | - | - | - |
| Growth Adjusted for Poverty | 0.62 | - | - | - | - | - |

Growth at your institution by content area for PK–4

| | Algebra I | Biology | ELA 4–8 | Literature | Math 4–8 | Science 4 & 8 |
|-------------------------------|-----------|---------|---------|------------|----------|---------------|
| Number of Growth Measures | - | - | 18 | - | 13 | 7 |
| Growth Unadjusted for Poverty | - | - | -0.37 | - | -0.29 | -0.18 |
| Growth Adjusted for Poverty | - | - | -0.36 | - | -0.23 | -0.15 |

Growth at your institution by content area for Social Studies 7–12

| | Algebra I | Biology | ELA 4–8 | Literature | Math 4–8 | Science 4 & 8 |
|-------------------------------|-----------|---------|---------|------------|----------|---------------|
| Number of Growth Measures | - | - | - | - | - | - |
| Growth Unadjusted for Poverty | - | - | - | - | - | - |
| Growth Adjusted for Poverty | - | - | - | - | - | - |