



APPENDIX A

SGP MODEL FIT PLOTS

GEORGIA STUDENT
GROWTH MODEL
FOR ENGLISH
LANGUAGE
PROFICIENCY

TABLES AND FIGURES

Figure1: Model goodness of fit plots for grades 1 - 4.....A-2
Figure2: Model goodness of fit plots for grades 5 - 8.....A-3
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GOODNESS OF FIT PLOTS

A goodness of fit plot is produced for each unique Georgia WIDA ACCESS for ELLs analysis run in 2022. All fit plots will contain at least two, and up to four, panels that depict the distribution of the Student Growth Percentiles (SGPs) calculated in that analysis relative to the students' prior or current achievement (i.e. the test scores used as the independent and dependent variables in the model).

The top panel is a mosaic plot that shows the percentage of students that fall into each prior proficiency level, and the location of the 10th through 90th deciles of the SGP distribution represented by white lines (with the median/50th percentile line highlighted). Ideally the median SGP will be at or near 50 for all prior achievement level groups. This panel is excluded when students' prior achievement level data is unavailable.

The "Ceiling/Floor Effects Test" panel helps identify problems in SGP estimation at the Highest and Lowest Obtainable/Observed Scale Scores (HOSS and LOSS). The table of values shows whether the current year scores at both extremes yield expected SGP values. The expectation is that the majority of SGPs for students scoring at or near the LOSS will be low (preferably less than 5 and not higher than 20), and that SGPs for students scoring at or near the HOSS will be high (preferably higher than 95 and not less than 80). Because few students may score *exactly* at the HOSS/LOSS, the top/bottom 50 students are selected and any student scoring within their range of scores are selected for inclusion in these tables. Consequently, there may be a range of scores at the HOSS/LOSS rather than a single score, and there may be more than 50 students included in the HOSS/LOSS row if the 50 students at the extremes only contain the single HOSS/LOSS score.

The "Student Growth Percentile Range" panel at bottom left shows the empirical distribution of SGPs given prior scale score deciles in the form of a 10 by 10 cell grid. Percentages of student growth percentiles between the 10th, 20th, 30th, 40th, 50th, 60th, 70th, 80th, and 90th percentiles were calculated based upon the empirical decile of the cohort's prior year scaled score distribution¹. Deviations from perfect fit are indicated by red and blue shading: the further above 10 the darker the red, and the further below 10 the darker the blue.

The bottom right panel of each plot is a Q-Q plot which compares the observed distribution of SGPs with the theoretical (uniform) distribution. An ideal plot here will show black step function lines that do not deviate from the ideal, red line which traces the 45 degree angle of perfect fit.

The following section provides the fit plots for the WIDA ACCESS for ELLs Overall Composite SGP analyses.

¹ The total students in each analysis varies depending on grade and subject, and prior score deciles are based only on scores for students used in the SGP calculations.

WIDA ACCESS FOR ELLS OVERALL COMPOSITE

Figure 1: Model goodness of fit plots for grades 1 - 4

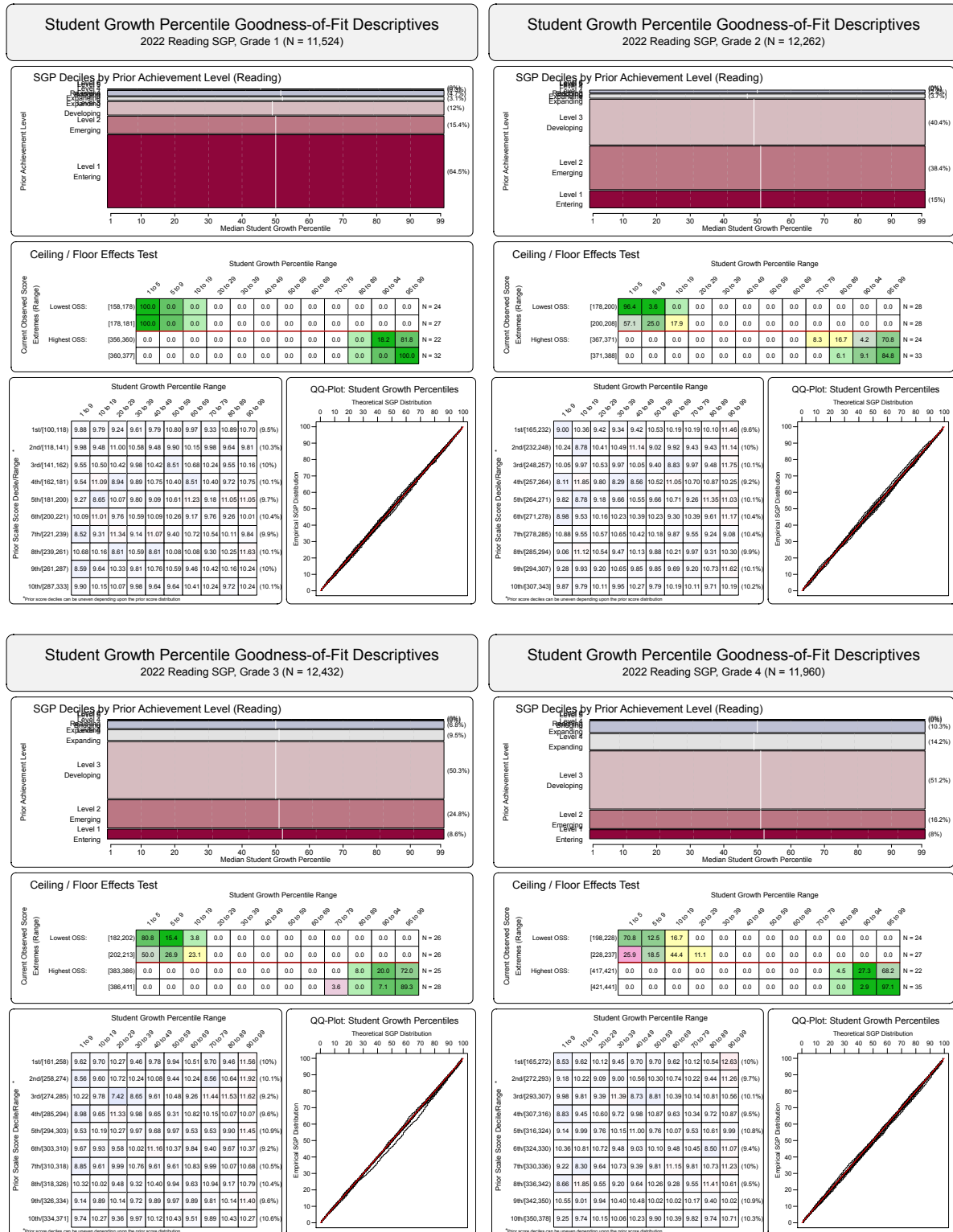


Figure2: Model goodness of fit plots for grades 5 - 8

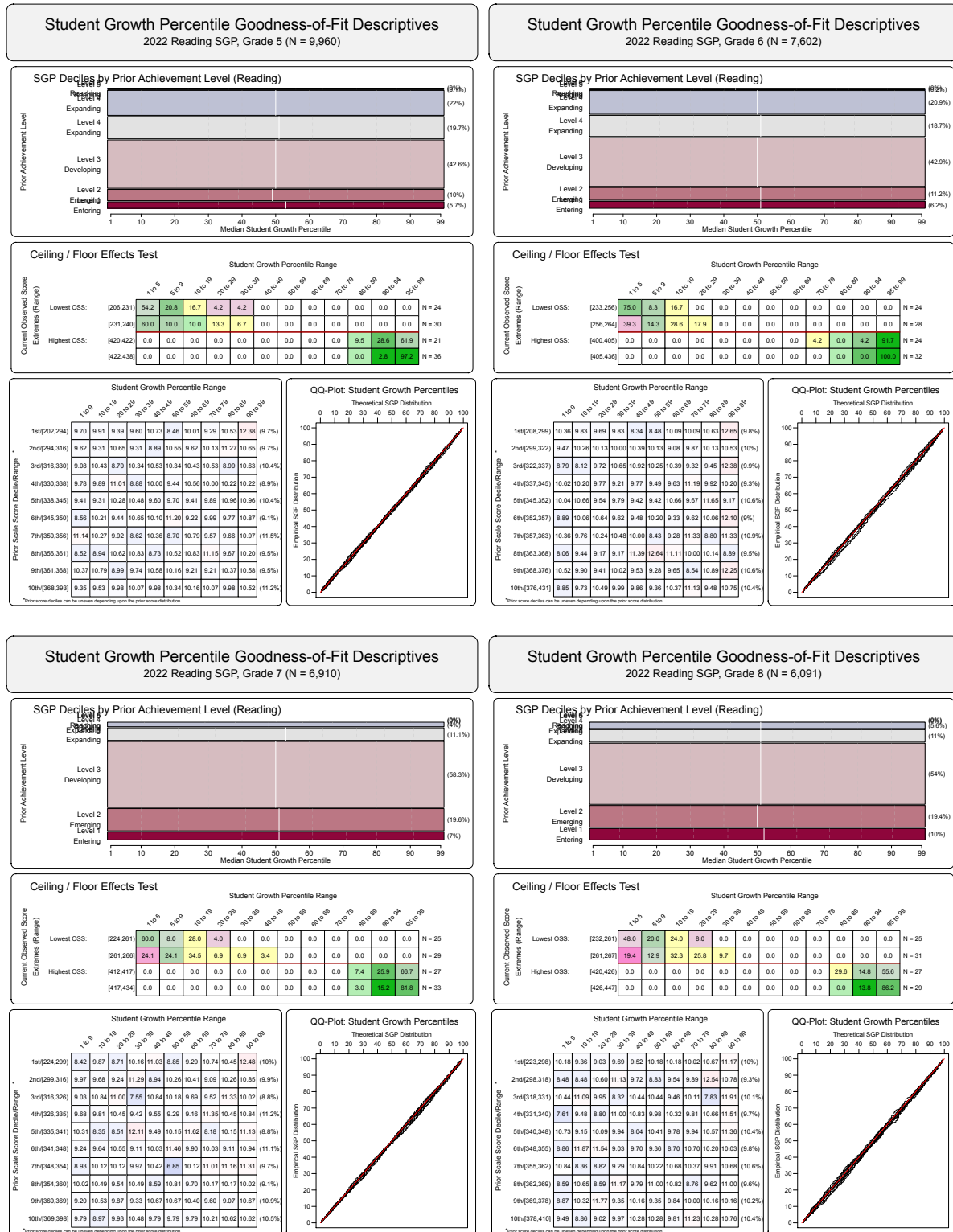


Figure3: Model goodness of fit plots for grades 9 - 12

