

Illinois SGP Analyses for 2019

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Background

- 2019 Marked the 5th year of New Meridian (formerly PARCC) test administration allowing student growth calculation using two prior scores.
- The growth model designated to be used for calculation was student growth percentiles (SGP).
- The Center for Assessment was contracted to perform SGP analyses for 2019.
 - Fall 2018 data analysis conducted in February 2019.
 - Spring 2019 data analysis conducted in June - August 2019.

Background

- Analytic assumptions were originally determined in 2016 and have been the same in all following years.
 - SGPs are calculated using theta values at both the consortium and state level.
 - SGP norm groups (grade/content area progressions) with min 1,000 students
 - No progressions with skipped years/grades
 - No course repeat (test retake) norm groups

Background

SGPs are calculated based upon test results for students taking the same tests at the same time.

- Grade level ELA tests simpler to model than test taking patterns associated with Grade level Mathematics combined with Algebra I, II, Geometry, Integrated Math I, II, and III.
- Norm groups were originally proposed in 2016. All potential analyses were attempted, with cohorts with fewer than 1,000 students identified with a note in place of an SGP estimate.

Background

ELA Norm Groups:

- Spring 2017/Spring 2018 to Spring 2019:
 - Grade 3 to 4, 3/4 to 5, 4/5 to 6, 5/6 to 7, 6/7 to 8

Mathematics Norm Groups:

- Spring 2017/Spring 2018 to Spring 2019:
 - Grade 3 to 4, 3/4 to 5, 4/ 5 to 6, 5/ 6 to 7 and 6/7 to 8

Background

- SGPs, and AGP (adequate growth percentiles) are provided to IL
- Scaled Score CSEMs provided by Pearson were incorporated for calculation of SGP SEMs and measurement error corrected (SIMEX adjusted) SGPs.
- Ranked SIMEX adjusted SGPs were provided to PARCC members beginning in Spring 2017.
- Results are provided using both state and consortium level norms.

Results

- SGP analyses successfully completed mid-July 2019.
- All state (and consortium) level analyses required approximately 36 hours to complete.

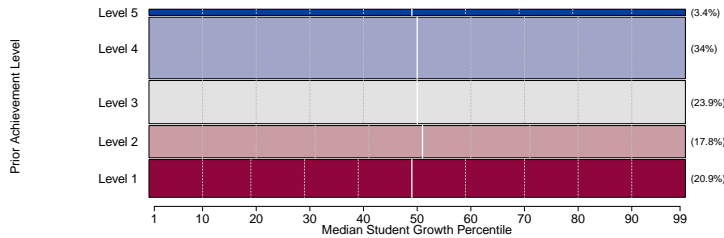
Results

- SGPs are uniformly distributed and uncorrelated with prior achievement: All students, regardless of starting point can demonstrate high/low growth.
- Median SGP for consortium and state norm groups are 50.
 - Consortium-based median SGPs (by state, grade and content area) ranged from 35 to 60.
- Tests of SGP distribution uniformity and the existence of ceiling effects are performed for each SGP norm-group analysis run.
 - Goodness of fit results were generally quite good (i.e., uniform distribution of SGPs by prior achievement) with no indications of ceiling/floor effects.

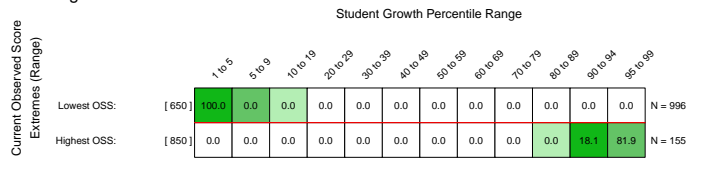
Results

Student Growth Percentile Goodness-of-Fit Descriptives 2018-2019.2 ELA SS SGP, Grade 4 (N = 135,033)

SGP Deciles by Prior Achievement Level (ELA SS)



Ceiling / Floor Effects Test

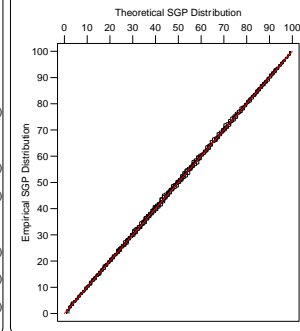


Student Growth Percentile Range

Prior Score Decile/Range*	1 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99
1st(650,681)	9.71	10.03	10.25	10.33	10.21	9.55	9.66	9.84	9.90	10.52 (9.8%)
2nd(681,699)	9.39	10.63	10.43	10.30	9.50	9.85	9.47	9.95	10.53	9.97 (9.7%)
3rd(699,714)	9.43	10.00	9.47	9.53	9.77	10.45	10.61	9.92	9.92	10.90 (10.4%)
4th(714,725)	10.15	9.96	9.34	9.84	10.72	10.12	9.83	10.14	9.38	10.53 (8.8%)
5th(725,736)	9.69	10.32	10.55	10.74	9.55	9.89	9.89	9.58	10.06	9.74 (10.4%)
6th(736,747)	8.92	10.11	10.31	9.61	10.20	10.32	9.30	10.05	9.79	11.39 (10.3%)
7th(747,757)	9.85	9.90	9.63	9.98	10.42	8.97	11.65	9.57	10.09	9.94 (9.2%)
8th(757,771)	9.52	10.08	9.86	10.27	9.39	10.31	9.74	10.43	10.07	10.34 (10.5%)
9th(771,788)	9.28	10.20	9.93	10.57	9.62	10.45	9.66	9.90	9.80	10.58 (10.5%)
10th(788,850)	9.84	9.83	10.26	9.77	9.91	9.96	9.99	10.05	9.92	10.45 (10.4%)

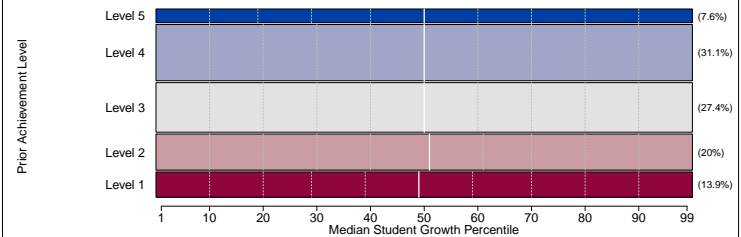
*Prior score deciles can be one win depending upon the prior score distribution.

QQ-Plot: Student Growth Percentiles

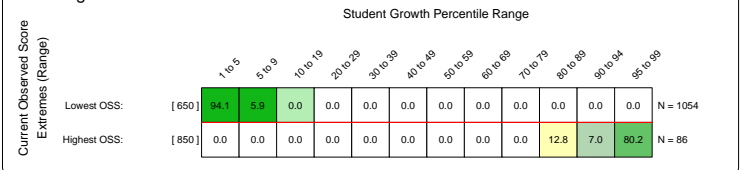


Student Growth Percentile Goodness-of-Fit Descriptives 2018-2019.2 ELA SS SGP, Grade 5 (N = 139,260)

SGP Deciles by Prior Achievement Level (ELA SS)



Ceiling / Floor Effects Test

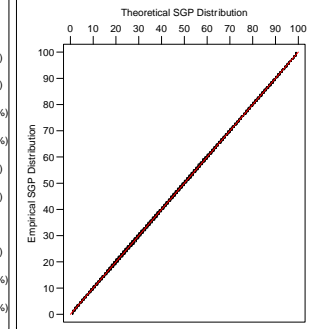


Student Growth Percentile Range

Prior Score Decile/Range*	1 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99
1st(650,692)	9.86	10.22	10.06	9.93	9.98	9.99	9.88	9.85	9.83	10.40 (9.5%)
2nd(692,708)	9.46	10.05	9.96	10.09	9.83	10.05	9.73	10.16	9.84	10.83 (9.8%)
3rd(708,720)	9.34	9.75	10.11	9.94	9.92	9.87	10.33	10.08	10.34	10.31 (10.1%)
4th(720,730)	9.49	10.13	9.89	9.81	10.14	10.11	10.05	9.64	9.83	10.91 (10.2%)
5th(730,739)	9.42	9.69	10.14	10.43	10.11	9.81	9.80	10.22	10.09	10.30 (9.5%)
6th(739,748)	9.74	10.42	9.87	9.69	9.68	9.95	10.04	10.20	10.18	10.23 (9.7%)
7th(748,758)	9.26	9.86	9.98	10.18	9.88	9.97	10.16	9.92	9.95	10.83 (11%)
8th(758,769)	9.75	10.22	10.21	9.75	10.20	10.13	9.79	9.96	9.66	10.33 (9.9%)
9th(769,785)	9.10	9.67	9.93	10.27	10.28	10.01	10.20	9.84	10.29	10.41 (10.2%)
10th(785,850)	9.74	10.04	9.96	9.74	9.78	9.93	9.97	10.29	9.96	10.60 (10.1%)

*Prior score deciles can be one win depending upon the prior score distribution.

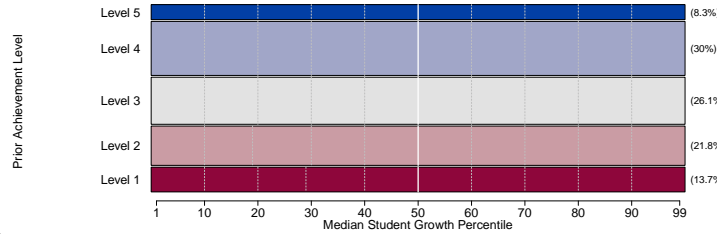
QQ-Plot: Student Growth Percentiles



Results

Student Growth Percentile Goodness-of-Fit Descriptives 2018–2019.2 Mathematics SS SGP, Grade 4 (N = 135,167)

SGP Deciles by Prior Achievement Level (Mathematics SS)



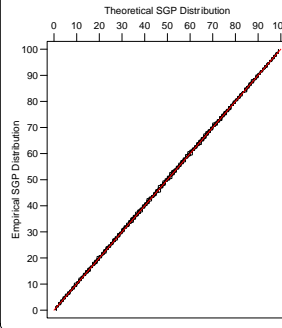
Ceiling / Floor Effects Test

Current Observed Score Extremes (Range)	Student Growth Percentile Range										N		
	1 to 5	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89		90 to 94	95 to 99
Lowest OSS: [650]	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N = 831
Highest OSS: [850]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	88.8	N = 170

Prior Scale Score Decile/Range*	Student Growth Percentile Range										
	1 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	
1st[650,693]	9.73	9.85	10.38	10.43	9.98	9.48	10.02	10.26	9.49	10.37	(9.6%)
2nd[693,708]	9.34	10.55	9.85	9.76	10.48	9.90	9.60	9.72	10.24	10.57	(10.1%)
3rd[708,719]	9.60	9.97	10.14	10.25	9.57	9.57	10.24	10.11	10.14	10.41	(9.5%)
4th[719,729]	10.41	9.42	9.68	9.80	10.51	10.38	9.39	9.90	9.48	11.04	(9.9%)
5th[729,739]	9.09	9.97	10.77	9.66	10.00	10.07	10.42	9.70	10.46	9.86	(10.9%)
6th[739,748]	9.85	10.70	8.63	10.63	9.63	9.49	10.14	10.06	10.05	10.81	(9.5%)
7th[748,757]	9.65	9.44	10.39	9.98	10.24	11.05	9.14	9.79	9.64	10.67	(8.7%)
8th[757,769]	9.57	10.16	10.01	9.34	10.24	10.43	10.52	9.49	10.08	10.16	(11.2%)
9th[769,785]	9.51	9.80	10.20	10.72	9.49	9.81	9.75	10.08	9.97	10.66	(10.2%)
10th[785,850]	9.40	10.27	9.78	9.86	10.25	9.89	10.31	10.02	9.94	10.28	(10.5%)

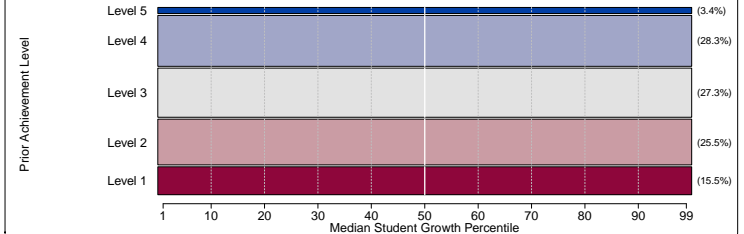
*Prior score deciles can be uneven depending upon the prior score distribution.

QQ-Plot: Student Growth Percentiles



Student Growth Percentile Goodness-of-Fit Descriptives 2018–2019.2 Mathematics SS SGP, Grade 5 (N = 139,286)

SGP Deciles by Prior Achievement Level (Mathematics SS)



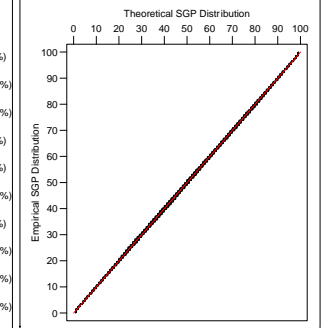
Ceiling / Floor Effects Test

Current Observed Score Extremes (Range)	Student Growth Percentile Range										N		
	1 to 5	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89		90 to 94	95 to 99
Lowest OSS: [650]	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N = 285
Highest OSS: [850]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4	13.3	77.3	N = 128

Prior Scale Score Decile/Range*	Student Growth Percentile Range										
	1 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	
1st[650,692]	9.67	10.03	10.02	10.00	9.97	10.10	10.08	9.96	9.76	10.41	(9.6%)
2nd[692,705]	9.57	9.95	10.04	10.12	9.90	9.85	10.02	10.00	10.07	10.48	(10.2%)
3rd[705,715]	9.28	9.89	9.80	9.96	10.01	9.94	9.95	10.10	10.14	10.93	(10.2%)
4th[715,724]	9.73	10.16	10.33	10.08	9.57	9.83	10.05	9.93	9.86	10.47	(9.9%)
5th[724,732]	9.66	10.00	9.96	9.92	10.44	9.93	10.06	9.67	9.88	10.41	(8.1%)
6th[732,741]	9.40	10.20	9.67	10.16	9.91	10.01	10.10	10.22	10.07	10.25	(11.4%)
7th[741,750]	9.39	9.57	10.02	9.80	9.98	10.34	10.00	9.53	10.54	10.83	(8.8%)
8th[750,762]	9.78	10.09	10.35	10.00	9.62	9.65	9.78	10.47	9.75	10.52	(11.4%)
9th[762,777]	9.36	9.91	9.71	9.60	10.13	10.13	10.16	9.91	10.13	10.96	(10.2%)
10th[777,850]	9.46	10.05	10.07	10.20	10.24	9.98	9.96	9.89	9.92	10.23	(10.2%)

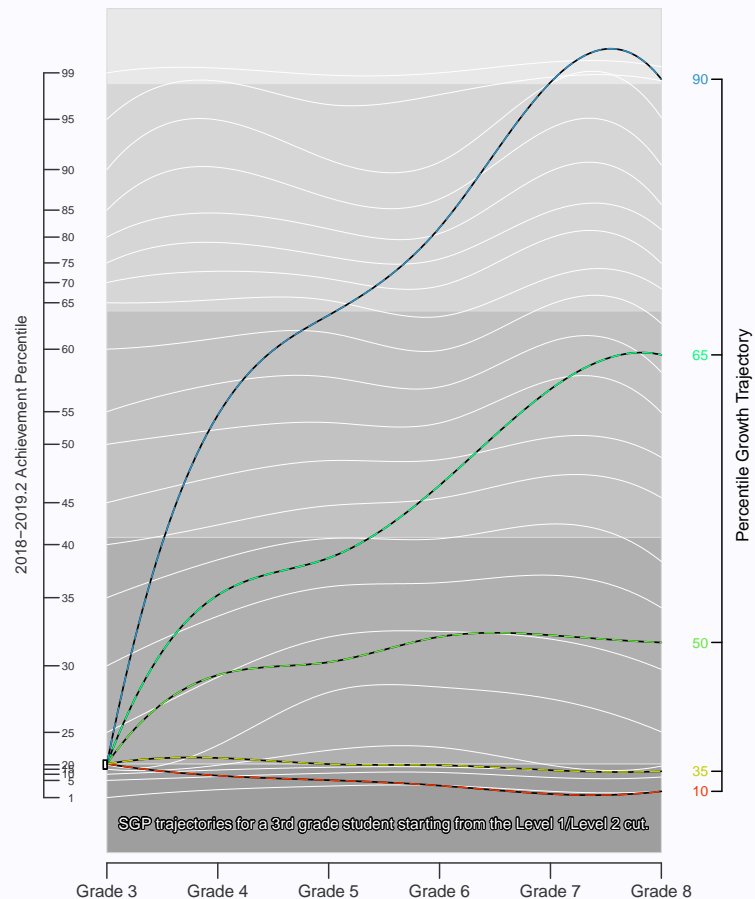
*Prior score deciles can be uneven depending upon the prior score distribution.

QQ-Plot: Student Growth Percentiles

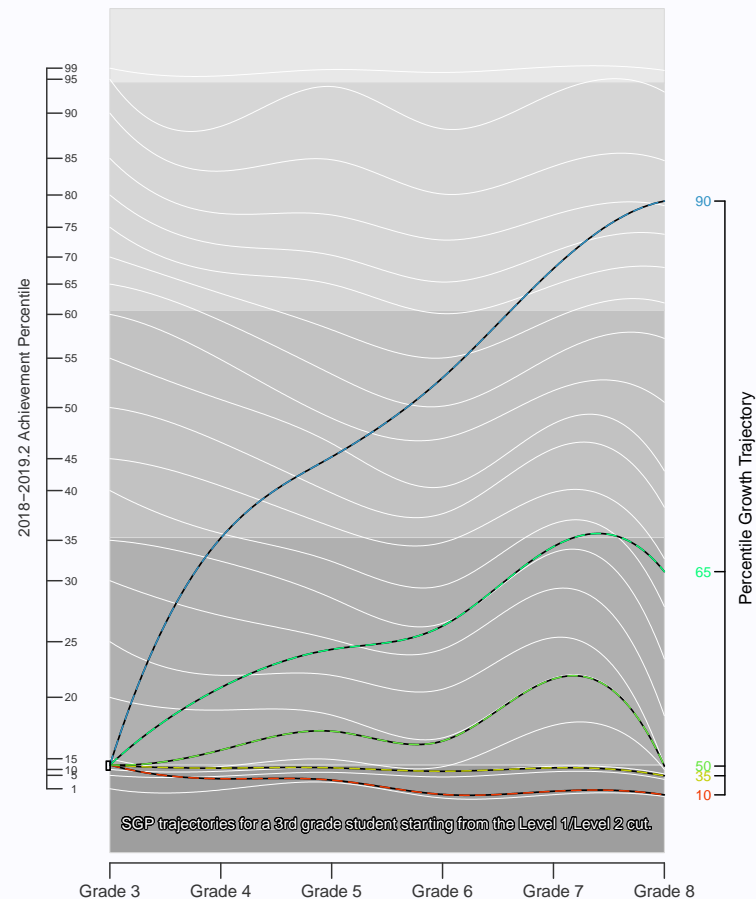


Growth & Achievement Plots

Illinois: 2018–2019.2 ELA
Norm & Criterion Referenced Growth & Achievement

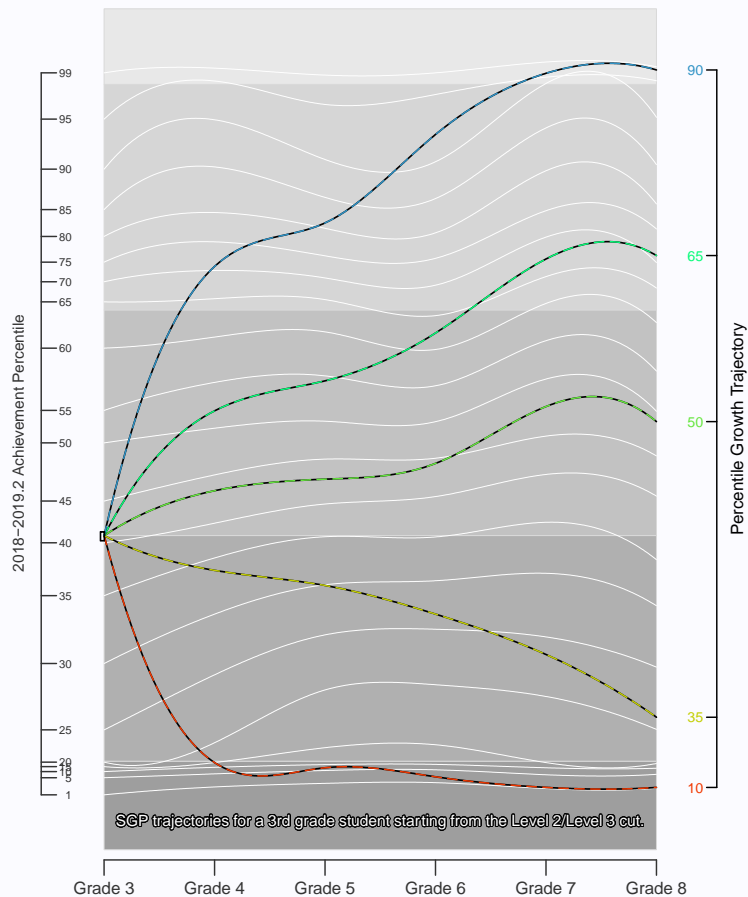


Illinois: 2018–2019.2 Mathematics
Norm & Criterion Referenced Growth & Achievement

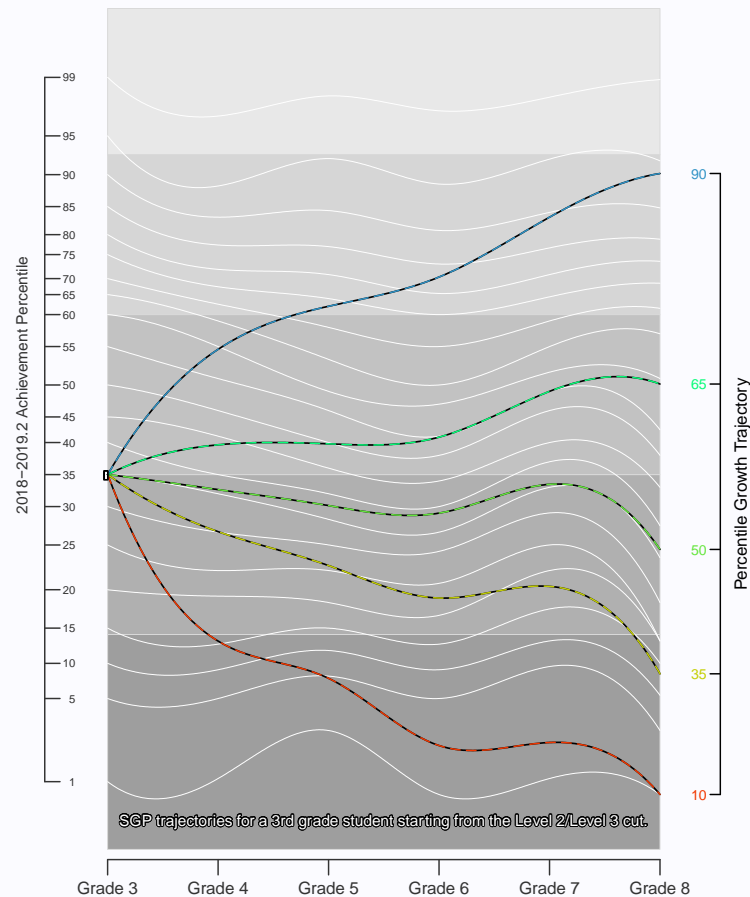


Growth & Achievement Plots

Illinois: 2018–2019.2 ELA
Norm & Criterion Referenced Growth & Achievement

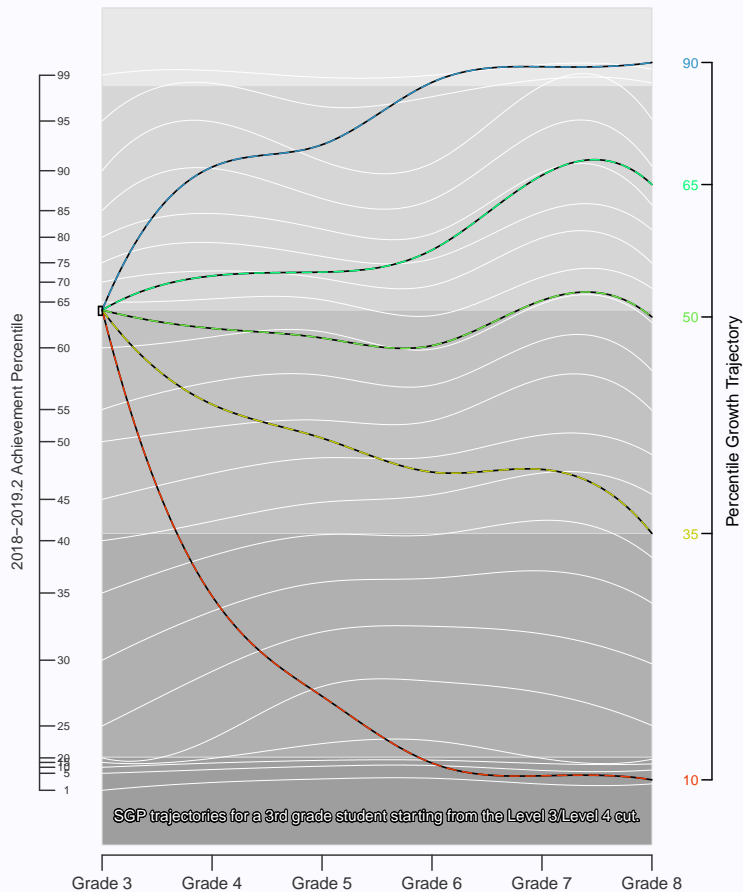


Illinois: 2018–2019.2 Math
Norm & Criterion Referenced Growth & Achievement

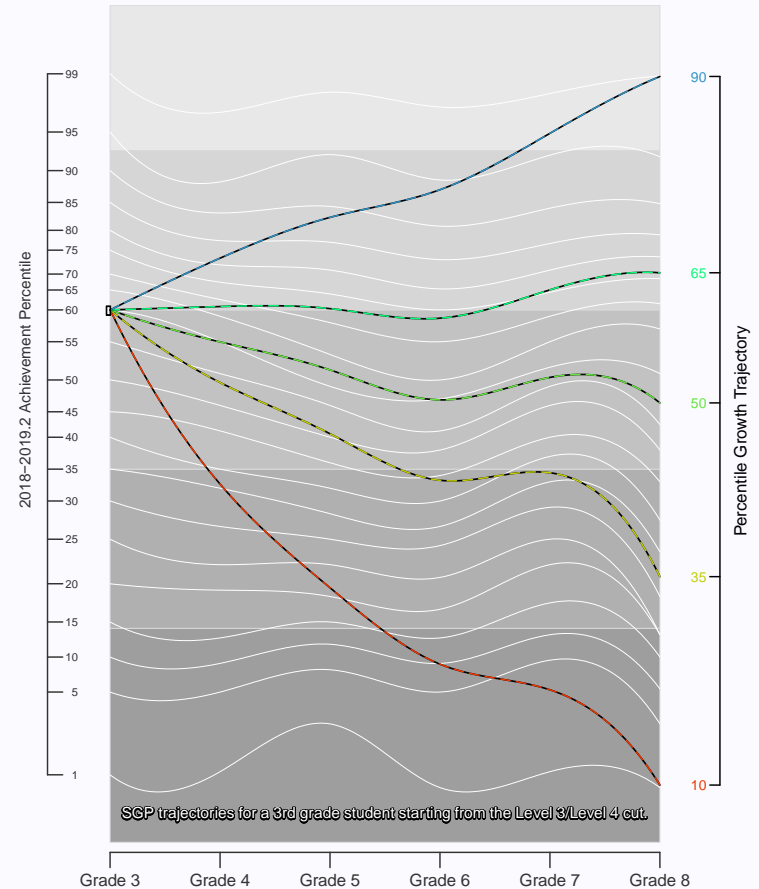


Growth & Achievement Plots

Illinois: 2018–2019.2 ELA
Norm & Criterion Referenced Growth & Achievement

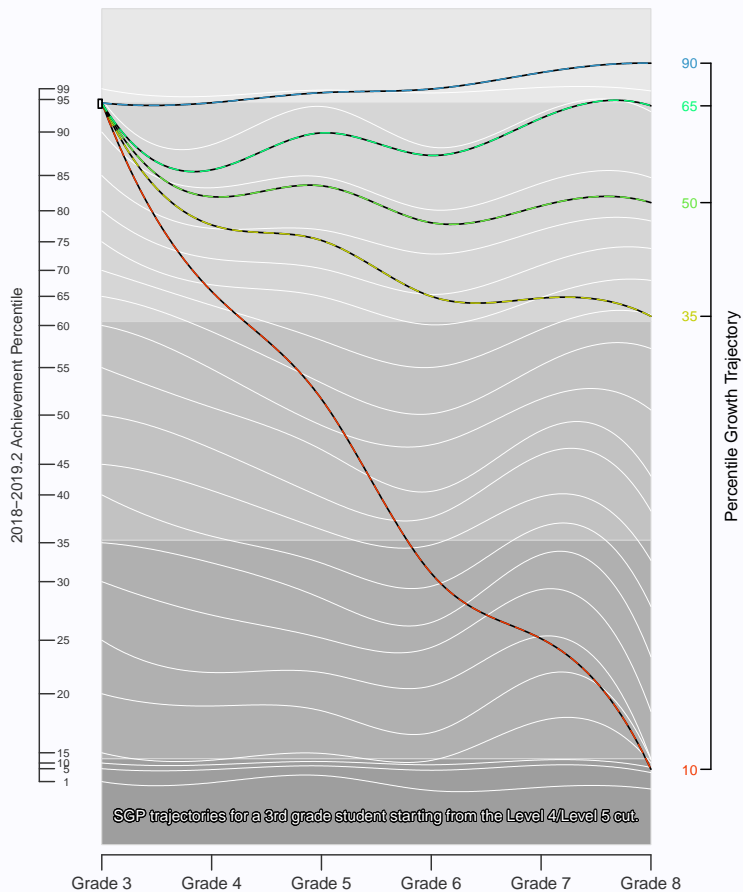


Illinois: 2018–2019.2 Math
Norm & Criterion Referenced Growth & Achievement



Growth & Achievement Plots

Illinois: 2018–2019.2 Mathematics
Norm & Criterion Referenced Growth & Achievement



Illinois: 2018–2019.2 Math
Norm & Criterion Referenced Growth & Achievement

