ALTERNATIVE ACCOUNTABILITY USER'S GUIDE

NWEA SCHOOL RANK PERCENTILE DISTRIBUTIONS

Momentum
STRATEGY & RESEARCH

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NWEA SCHOOL-LEVEL GROWTH: RANK PERCENTILES FOR ALTERNATIVE SCHOOLS

A USERS GUIDE

Purpose

Schools serving a disproportionately high percentage of high-risk students[1] can struggle to meet accountability targets that were set using data from schools serving a wider variety of students and much lower proportions of high-risk students. Prior research conducted by Dr. Jody Ernst and colleagues[i], suggests that students enrolled in alternative schools across the country tend to grow at a slower pace than same grade students in the NWEA norming sample.[2] While this research brought light to the issue and helped schools in target setting with individual students, it did not inform how the alternative schools performed on the aggregate. Therefore, schoolwide expectations for average student-level growth remained unclear.

Recently, Dr. Ernst conducted an updated NWEA alternative norming study,[3] providing a revised set of student norms for grade level RIT and typical RIT growth, as well as average school-level growth outcomes. The *2015 NWEA Alternative Norming Study* was conducted by Momentum Strategy & Research in partnership with NWEA[4] and utilized NWEA MAP assessment data (for 2011-12 through 2014-15) from more than 300 alternative schools across the country. While the report does include the average grade-level RIT gains observed across over 300 alternative schools, we felt that a rank percentile distribution would provide a more finite tool for alternative schools to compare the growth of their students.

This user's guide provides grade-level rank percentile distributions for grades 6-12, based on actual data from over 300 alternative schools across the country, for the NWEA's reading, mathematics, and language usage assessments. Details regarding how the alternative schools were identified is included in the *2015 NWEA Alternative Norming Study*.

[1] For our purpose, and consistent with many state definitions of "high-risk," high-risk students include (but are not limited to) pregnant and parenting students, prior dropouts, expelled or chronically absent students, adjudicated youth, homeless youth, overage students, and students that have experiences trauma and loss, or have experienced psychological and/or emotional problems. (See Appendix A for a list of the most commonly defined high-risk student characteristics).

[2] More recent research conducted by Dr. Ernst has replicated these findings on other nationally normed assessments[2] and the lagged growth patterns have also been observed on statewide growth assessments in Colorado and Arizona.

[3] To obtain an electronic copy of the 2015 Alternative Norming Study, contact Jody Ernst at jernst@momentum-sr.org.

[4] NWEA supplied the data to Momentum in support of the research on AEC norms. However, all products are Momentum's and should not be interpreted as NWEA norms.

RANK PERCENTILE DISTRIBUTIONS

Consistent with NWEA methodology, percentile ranks were computed for each grade level. Almost all the 300+ alternative schools serve high school grades, though there are a number that also serve students in elementary and middle school grades. t=The number of alternative schools that serve grades 1-5 and use NWEA are few (and are most commonly K-12 schools); therefore, we provide here only the average RIT growth for grades six through 12.

Perhaps the largest benefit of using a short-cycle assessment, such as NWEA, for alternative schools is that it allows the schools to capture growth measures on students that may not be enrolled for an entire academic year. Whether students enroll late or exit early, if the school has two valid assessment results in a subject area (that are at least 8 weeks apart) they have some data on whether students were beginning to show progress. For students that remain enrolled, each subsequent assessment provides additional data for educators to use in tracking student progress. Each data point can be used to inform internal performance management as well as external accountability.

The tables presented in this guide show the average RIT growth for schools performing in each decile of the ranked distribution. Schools with average grade level RIT growth similar to the results shown in the 10th percentile rank are performing in the bottom 10 percent alternative schools across the country, for that grade level. Those schools with average RIT growth that is similar to the result shown in the 80th percentile rank are performing in the top 20 percent of alternative schools, for that particular grade level. The 50th percentile can be interpreted as how the "typical" alternative school performs, since a school performing at the 50th percentile can be said to be doing better than (as well as "worse than") 50 percent of schools.

Consistent with NWEA's percentile rank tables, the average RIT growth per decile is provided for three growth periods per grade level: fall to spring (or beginning of year to end of year), fall to winter (or beginning of year to mid-year), and winter to spring (or mid-year to end of year). The "N" for each table represents the number of alternative schools included in each grade level analysis.

Mathematics

Table 1 shows the average school-level RIT growth, per decile, for alternative schools for grades 6, 7, and 8 and Table 2 shows the results for grades 9, 10, 11, and 12. To abbreviate the term for alternative schools we borrow from Colorado's vernacular "AEC," which stands for alternative education campus.

Table 1. Rank Percentiles (in deciles) for the Average AEC-Level RIT Growth in Mathematics: Grades 6, 7, and 8

	AEC 6th Grade Mean Growth			AEC 7th Grade Mean Growth			AEC 8th Grade Mean Growth		
Growth Period	Fall to Spring	Fall to Winter	Winter to Spring	Fall to Spring	Fall to Winter	Winter to Spring	Fall to Spring	Fall to Winter	Winter to Spring
N	*0*	*34*	*32*	*76*	*58*	*47*	*97*	*77*	*61*
Rank Percentile									
10th	-	-4.40	-12.58	-6.56	-4.73	-5.59	-6.77	-4.50	-6.64
20th	-	-0.69	-7.26	-1.39	-2.13	-2.72	-2.87	-2.16	-2.42
30th	-	0.84	-1.24	1.27	-0.70	-0.56	-0.45	-0.64	-1.40
40th	-	2.30	0.11	3.05	1.21	1.03	1.21	-0.01	0.70
50th	-	3.41	1.86	4.05	2.44	1.85	2.21	1.23	1.39
60th	-	4.18	2.56	4.60	2.96	2.45	4.09	2.13	1.93
70th	-	5.33	3.70	6.14	3.70	3.66	5.42	3.21	3.33
80th	-	5.94	5.02	7.88	5.04	6.04	7.49	4.98	5.30
90th	-	9.26	8.97	9.56	8.33	11.11	9.49	6.78	8.14

Table 2. Rank Percentiles (in deciles) for the Average AEC-Level RIT Growth in Mathematics: Grades 9, 10, 11, and 12

	AEC 9th Grade Mean Growth			AEC 10th Grade Mean Growth			AEC 11th Grade Mean Growth			AEC 12th Grade Mean Growth		
Growth Period	Fall to Spring	Fall to Winter	Winter to Spring	Fall to Spring	Fall to Winter	Winter to Spring	Fall to Spring	Fall to Winter	Winter to Spring	Fall to Spring	Fall to Winter	Winter to Spring
N	*181*	*160*	*127*	*199*	*175*	*142*	*182*	*166*	*134*	*158*	*151*	*103*
Rank Percentile												
10th	-6.20	-4.87	-5.45	-5.74	-4.67	-7.78	-5.46	-6.16	-5.56	-7.17	-5.05	-6.36
20th	-1.60	-1.22	-2.59	-2.73	-1.44	-3.41	-3.02	-1.68	-2.99	-2.49	-2.70	-4.22
30th	-0.06	-0.28	-1.52	-0.62	-0.48	-1.89	-0.60	-0.43	-2.30	-1.27	-0.96	-2.04
40th	1.03	0.93	-0.55	0.87	0.33	-0.64	0.41	0.81	-1.29	0.15	0.34	-1.06
50th	2.06	1.63	0.38	2.11	1.55	0.15	1.39	1.86	-0.49	1.68	1.45	0.65
60th	3.15	2.48	1.69	2.87	2.76	1.10	2.60	2.32	0.08	3.14	2.31	1.63
70th	4.53	3.76	2.68	4.48	3.51	2.11	3.54	3.21	1.10	4.56	3.61	3.15
80th	6.19	5.05	4.21	5.65	4.62	3.74	5.96	4.15	3.03	6.39	4.75	5.03
90th	8.22	9.11	7.10	8.91	7.18	6.94	8.60	6.32	6.17	9.86	7.70	8.93

Reading

Table 3 shows the average school-level RIT growth, per decile, for AECs for grades 6, 7, and 8 and Table 4 shows the results for grades 9, 10, 11, and 12.

Table 3. Rank Percentiles (in deciles) for the Average AEC-Level RIT Growth in Reading: Grades 6, 7, and 8

	AEC 6th Grade Mean Growth			AEC 7th Grade Mean Growth			AEC 8th Grade Mean Growth		
Growth Period	Fall to Spring	Fall to Winter	Winter to Spring	Fall to Spring	Fall to Winter	Winter to Spring	Fall to Spring	Fall to Winter	Winter to Spring
N	*40*	*35*	*31*	*75*	*56*	*51*	*98*	*69*	*64*
Rank Percentile									
10th	-6.51	-15.98	-3.59	-8.90	-11.90	-3.67	-9.45	-11.77	-8.22
20th	-4.04	-3.92	-1.46	-2.87	-7.39	-0.51	-2.84	-2.73	-4.04
30th	-0.47	-0.48	-0.12	-0.66	-2.91	0.73	-0.63	-1.19	-0.53
40th	2.50	0.70	1.36	1.62	-0.28	1.36	0.79	0.21	0.13
50th	3.10	2.09	1.94	3.33	1.74	1.82	1.88	1.29	1.51
60th	4.35	2.80	3.49	4.10	2.70	5.17	3.28	2.47	2.14
70th	7.77	3.94	5.35	5.57	3.21	5.62	4.55	4.43	3.26
80th	9.65	7.10	7.29	7.96	4.80	7.93	6.51	5.90	4.20
90th	12.93	13.16	12.97	13.33	9.03	12.87	9.42	9.35	9.16

Table 4. Rank Percentiles (in deciles) for the Average AEC-Level RIT Growth in Reading: Grades 9, 10, 11, and 12

	AEC 9th Grade Mean Growth			AEC 10th Grade Mean Growth			AEC 11th Grade Mean Growth			AEC 12th Grade Mean Growth		
Growth Period	Fall to Spring	Fall to Winter	Winter to Spring	Fall to Spring	Fall to Winter	Winter to Spring	Fall to Spring	Fall to Winter	Winter to Spring	Fall to Spring	Fall to Winter	Winter to Spring
N	*173*	*155*	*138*	*200*	*178*	*161*	*189*	*167*	*146*	*145*	*149*	*113*
Rank Percentile												
10th	-9.16	-6.40	-7.09	-9.11	-7.96	-9.11	-9.44	-4.51	-9.03	-8.38	-7.27	-8.68
20th	-4.75	-3.65	-4.59	-3.47	-3.39	-4.26	-4.69	-2.38	-4.68	-4.87	-2.64	-5.49
30th	-2.47	-1.70	-2.65	-1.46	-1.65	-2.51	-2.85	-1.02	-3.23	-2.79	-1.83	-3.61
40th	-0.32	-0.54	-0.37	-0.70	-0.38	-0.47	-1.50	0.04	-1.60	-0.88	-0.43	-1.86
50th	1.14	0.76	0.55	1.04	0.82	0.42	-0.10	0.86	-0.40	1.00	0.68	-0.11
60th	2.42	1.78	2.09	2.75	2.01	1.46	1.18	1.74	1.03	2.11	1.87	1.31
70th	3.62	2.70	3.46	3.78	3.38	2.97	2.55	2.99	2.00	3.51	3.22	2.94
80th	5.24	4.41	4.76	5.83	4.70	4.61	4.26	4.39	4.48	5.12	4.38	4.41
90th	9.22	8.74	6.82	8.12	7.88	7.42	9.43	7.16	8.20	8.20	8.24	8.85

Language Usage

Table 5 shows the average school-level RIT growth, per decile, for AECs for grades 6, 7, and 8 and Table 6 shows the results for grades 9, 10, 11, and 12.

Table 5. Rank Percentiles (in deciles) for the Average AEC-Level RIT Growth in Language Usage: Grades 6, 7, and 8

	AEC 6th Grade Mean Growth			AEC 7th Grade Mean Growth			AEC 8th Grade Mean Growth		
Growth Period	Fall to Spring	Fall to Winter	Winter to Spring	Fall to Spring	Fall to Winter	Winter to Spring	Fall to Spring	Fall to Winter	Winter to Spring
N	76	32	30	19	22	14	24	23	19
Rank Percentile									
10th	-5.02	-15.67	-3.14	-9.99	-6.46	-24.07	-9.58	-7.91	-4.78
20th	-2.53	-2.70	-1.31	0.01	0.17	-11.68	-4.00	-3.97	-3.29
30th	-0.53	-0.36	-0.54	2.17	2.02	-1.59	-2.55	-2.54	-0.80
40th	0.96	0.19	1.09	3.17	3.25	-0.65	1.29	2.17	1.14
50th	2.26	0.79	1.60	6.34	4.63	0.95	3.69	3.67	1.49
60th	3.18	2.58	1.79	7.14	5.49	1.72	4.58	5.26	4.34
70th	4.42	4.04	3.86	8.80	7.55	3.15	5.27	5.76	8.33
80th	5.63	4.89	8.25	9.90	9.65	4.15	7.88	6.66	10.19
90th	7.55	7.05	10.74	10.91	11.61	8.34	13.29	10.28	11.78

Table 6. Rank Percentiles (in deciles) for the Average AEC-Level RIT Growth in Language Usage: Grades 9, 10, 11, and 12

	AEC 9th Grade Mean Growth			AEC 10th Grade Mean Growth			AEC 11th Grade Mean Growth			AEC 12th Grade Mean Growth		
Growth Period	Fall to Spring	Fall to Winter	Winter to Spring	Fall to Spring	Fall to Winter	Winter to Spring	Fall to Spring	Fall to Winter	Winter to Spring	Fall to Spring	Fall to Winter	Winter to Spring
N	57	54	42	65	63	47	35	62	49	18	53	33
Percentile Rank												
10th	-5.71	-7.47	-6.62	-6.25	-8.08	-8.01	-13.38	-6.19	-8.14	-9.43	-10.18	-6.55
20th	-1.87	-3.38	-2.65	-4.52	-4.63	-4.88	-7.22	-3.05	-3.73	-2.72	-4.08	-4.03
30th	1.00	-0.75	-1.15	-2.68	-2.42	-2.29	-3.51	-1.76	-2.33	-1.73	-1.74	-1.88
40th	1.73	1.20	-0.65	-0.54	0.19	-0.77	0.97	0.07	-1.21	0.15	-1.16	-0.85
50th	2.20	2.36	-0.03	1.29	1.50	0.94	2.25	0.96	-0.56	2.34	-0.18	0.23
60th	3.98	3.06	1.11	2.81	2.83	1.80	5.02	2.13	1.78	3.15	1.48	2.03
70th	6.79	4.36	2.59	4.70	4.33	3.53	6.43	2.84	2.19	5.57	1.82	2.85
80th	7.98	7.54	4.63	6.84	5.44	5.09	9.86	4.37	5.20	10.20	2.92	5.50
90th	12.08	8.33	6.89	9.77	8.86	8.07	13.16	7.26	9.32	14.57	5.97	9.73

SUMMARIZING AEC SCHOOL-LEVEL GROWTH OUTCOMES

As stated in the introduction to the rank percentile tables, short-cycle assessments provide invaluable insight into alternative school performance by capturing growth data on students that may not have been enrolled for an entire academic year.

However, the expected amount of growth for students attending a school for less than a full academic year should be adjusted accordingly:

- The average RIT growth, per decile, for fall to winter or winter to spring should be used for the set of students whose assessment results fall in line with those testing windows (per NWEA) and whose time between assessments is no fewer than 8 weeks and no more than 27 weeks.
- Students with two assessment results in the same subject that are more than 27 weeks apart and fewer than 42 weeks apart should be included in the average fall to spring RIT growth calculations.
- For students that have valid assessment results in all three assessment windows, the growth between the first and last assessments (i.e. fall and spring) should be used.

INSTRUCTIONS FOR CALCULATING AND SUMMARIZING A SCHOOL'S AVERAGE ANNUAL RIT GROWTH

After exporting all student records from the NWEA portal, complete the following steps:

Step 1: Cleaning the data

-NWEA will denote spoiled, or invalid, assessment results. All of these should be removed from your computation file.

-If a student has more than one result in a subject area during the same testing window, keep only the results with the lowest standard error. If both results have the same standard error, but the RIT scores differ, than keep the highest RIT score. The other results for that student should be removed from the computation file.

-Compute the number of weeks between testing occasions and remove from your computation file any that are fewer than 8 weeks apart.

Step 2: Assign students to the appropriate "growth period" for each applicable subject area

Using the test dates and number of weeks between assessments, assign each student to one of three groups: fall to winter, winter to spring, or fall to spring. Each student should only appear in one group. For example, if a student tested in all three test windows, fall, winter, and spring, then the growth between the fall and spring assessment should be used. For students with only fall and winter, or winter and spring, assessments use the growth result from those respective time periods. Each subject area should be done separately, as some students may have three results for one subject, but only one or two for another.

Step 3: Compute the average RIT growth achieved for each subject by grade-level, and growth period

Group students by assigned grade level and applicable growth period (from step 2) and compute the average RIT growth achieved for each group by subject area.

Step 4: Compare each average grade and growth period result to the corresponding rank percentile tables in this document and record the nearest corresponding rank percentile average (the average RIT growth that is in the rank percentile tables and is nearest the school's outcome for each grade and growth period) and the corresponding percentile rank.

Table 7 provides an illustration of a school's outcomes, by grade and growth period. For simplicity, our hypothetical schools serves only 9^{th} and 10^{th} grade students.

Table 7. Example of School Growth Outcomes in NWEA Math, with Corresponding Rank Percentiles

Student Grade	Growth Period	N	Average Student RIT Growth Achieved: Math	Nearest Rank Percentile Average: Math	Corresponding Rank Percentile: Math
9th	Fall to Winter	5	1.64	1.63	50th
9th	Winter to Spring	16	1.82	1.69	60th
9th	Fall to Spring	48	3.26	3.15	60th
10th	Fall to Winter	10	1.10	1.55	50th
10th	Winter to Spring	3	0.35	0.15	50th
10th	Fall to Spring	39	3.00	2.87	60th

Notice that the nearest rank percentile RIT growth average can be either higher than or lower than the school's result, as the distance of the school's average RIT growth is based on the absolute difference between the two closest figures in the rank percentile tables. If the school's average RIT growth is equidistant between two decile figures, than use the higher of the two. Otherwise, the nearest should be used.

Taking the average RIT growth achieved by the school's 10th grade students for fall to winter (in the table above) as an example; the two closest figures from the rank percentile distributions for math (Table 2) are 0.33 (which corresponds to the 40th percentile) and 1.55 (which corresponds to the 50th percentile). Since the absolute difference between 1.10 and 0.33 is 0.77 and the difference between 1.10 and 1.55 is 0.45, the school records 1.55 and 50th percentile as the nearest figure to the school's outcome.

GOAL SETTING & ACCOUNTABILITY

Armed with the rank percentiles for RIT growth alternative schools and organizations responsible for holding them accountable can set empirically informed goals for growth outcomes. There are a variety of ways to go about setting goals and we recommend using a method consistent with the mission of the school, as well as the mission of the entities that oversee them. Below is just one example of how these data can be used to inform accountability.

Example: Achieving Rank Percentile Goals

One way to utilize the NWEA Alternative School Rank Percentile Distributions is to set goals for meeting expectations by selecting a specific decile of performance. For example, a state/authorizer/school district may decide that a school is meeting standard if it performs at least as well as 50 percent of the alternative schools across the country and set the expectation that a school must meet 50th percentile RIT growth in each grade level served to meet expectations.

The following tables show a hypothetical school's 9th and 10th grade outcomes for Math (Table 8), and Reading (Table 9)

Table 8. Hypothetical School's RIT Growth in Math

Student Grade	Growth Period	N	Average Student RIT Growth Achieved: Math	Nearest Rank Percentile Average: Math	Corresponding Rank Percentile: Math	Rating
9th	Fall to Winter	5	1.64	1.63	50th	Meets
9th	Winter to Spring	16	-1.40	-1.52	30th	Does not Meet
9th	Fall to Spring	48	3.26	3.15	60th	Meets
10th	Fall to Winter	10	1.10	1.55	50th	Meets
10th	Winter to Spring	3	-3.01	-3.41	20th	Does not Meet
10th	Fall to Spring	39	2.00	2.87	50th	Meets

Table 9. Hypothetical School's RIT Growth in Reading

Student Grade	Growth Period	N	Average Student RIT Growth Achieved: Reading	Nearest Rank Percentile Average: Reading	Corresponding Rank Percentile: Reading	Rating
9th	Fall to Winter	15	-0.60	-0.54	40th	Does not Meet
9th	Winter to Spring	20	-1.48	-2.65	30th	Does not Meet
9th	Fall to Spring	49	1.01	1.14	50th	Meets
10th	Fall to Winter	12	-1.00	-1.65	30th	Does not Meet
10th	Winter to Spring	0	-	-	-	N/A
10th	Fall to Spring	42	1.50	1.04	50th	Meets

There are a number of ways to summarize these ratings and come up with a total rating, or each rating can stand on its own. Some things to consider when deciding whether, or how, to aggregate results:

1. The number of students represented in each outcome
    a. Should outcomes only be considered if they represent a minimum number of students (consider statewide policies on minimum Ns)?
    b. Should each outcome count equally or should the outcomes be weighted somehow, based on respective Ns?
2. Minimum enrollment period
    a. Is there a policy (either at the state/district/authorizer or the school level) with implications on how long a student must be enrolled before their scores are counted in any outcome measure for accountability purposes?
    b. If not a policy, is there a minimum length of time that students should be enrolled before the state/district/authorizer is comfortable attributing student outcomes to a school?
3. Are there other measures that also need to be incorporated into the overall rating?
    a. How should NWEA outcomes be weighted or otherwise integrated with otherwise applicable growth measures?
    b. Should growth be weighted equally to other types of measures, such as measures of proficiency, post-secondary readiness, student engagement, or high-school completion?

These are but a few of the considerations that alternative schools and the entities responsible for their oversight must take into account. Should organizations need further assistance, Momentum is well versed in assisting schools, SEAs, LEAS, and charter school authorizers in developing frameworks for alternative schools that are relevant, data based, and take into account the needs of both the schools and the oversight organizations. Please feel free to contact us:

Dr. Jody Ernst, Vice President, Research & Policy Analytics: jernst@momentum-sr.org

Jim Griffin, President: jgriffin@momentum-sr.org

APPENDIX A:

Top 10 Student Characteristics Defining High-Risk from State Statutes and/or Regulations

Student Characteristic	# of States
Poor Academics (e.g., retained, poor test results, academic failure, behind grade level)	21
Chronic suspensions and/or expulsions	20
Prior dropouts, out of school for extended period	17
Pregnant/ Parenting Teens	15
Problem/Disruptive Behaviors	14
Poor, inconsistent attendance/ Chronic Truancy	13
Credit deficient/ over-aged and under-credited	10
Alcohol or substance issues	9
Adjudicated youth/court involvement	8
Experienced major trauma, abuse, or neglect	8

[i] Ernst, J. L. & Turnbull, J.J. (2010). NWEA Technical paper; Ernst, J.L. (2010), NWEA Report for CDE.