

A Study to Update the Alignment of the NWEA RIT Scale with the Texas Assessment of Knowledge and Skills

John Cronin, Ph.D.

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Northwest Evaluation Association
5885 SW Meadows Road, Suite 200
Lake Oswego, OR 97035-3526

www.nwea.org
Tel 503-624-1951
Fax 503-639-7873

A Study to Update the Alignment of the NWEA RIT Scale with the Texas Assessment of Knowledge and Skills (TAKS)

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Recently NWEA completed a project to connect the scale of the tests used for Texas' mathematics and reading assessments with NWEA's RIT scale. Information from these assessments was used in a study to establish performance level scores on the RIT scale that would indicate a good chance of success on these tests.

The Plano Independent School District provided data from about 12,000 students in grades 3 through 7 who had taken NWEA reading and mathematics tests in fall of 2005 and/or fall of 2006. These students also participated in spring 2006 TAKS testing in those subjects. Because insufficient numbers of students took the NWEA reading assessment in grade 4, estimates for reading in that grade were a mediated score from the Grades 3 and 5 information.

In prior studies we used linear and second order regression to derive estimates of the cut scores for the various performance levels on state tests. Two circumstances caused us to make adjustments to the methodology for this study. First, the distribution of scores showed that relatively small proportions of the study actually failed TAKS. In reading, for example, the rates of students who "did not meet" the standard ranged between about 2% and 7%. Second, scatterplots of the data indicated the presence of a ceiling effect on TAKS. Because this was likely to have a strong effect on regression estimates in the lower ranges, we determined that an equipercentile method would likely provide the best estimate of the "met standard" cut score and that the second-order regression method would generally provide the best estimate of the "commended" performance level.

Readers will note that the estimates sometimes differed significantly from expectations. For example, the met standard estimate for grade 6 does not differ from grade 5 and the estimate for commended performance is significantly lower than the estimate for grade 5. This could be a product of vagaries in the dataset used for this study or the differences could stem from the TAKS assessments themselves. We lack sufficient data to attribute cause to these kinds of differences that appear in this study.

We used fall 2006 NWEA data to estimate performance levels on the spring 2006 TAKS. We then converted these RIT estimates to their equivalent spring 2006 RIT score using an equipercentile method to get the final estimate of equivalent spring cut scores. Estimates of the prior fall (fall 2005) RIT score that would be equivalent to the spring 2006 TAKS levels were directly estimated using the methods described.

Tables 1 through 4 show the best estimate of the RIT equivalent to each TAKS performance level for same season (spring) and prior season (fall) RIT scores. The table may be used to identify students who may need additional help to perform well on these tests.

Tables 5 through 8 show the proportion of students achieving various RIT score ranges who also achieved "meets" or passing performance on the TAKS assessment. These tables can be used to assist in identifying students who are not likely to pass these assessments, thereby increasing the probability that intervention strategies will be planned and implemented. Because data was not available for grade 4 reading, probability tables were not produced for that level.

Table 1 – Recommended same season (spring) RIT cut scores for TAKS performance levels - Reading

Grade	Failing	Met	Commended
3	<180	180 (12)	205 (67)
4	<196	196 (23)	220 (88)
5	<205	205 (30)	227 (91)
6	<205	205 (21)	222 (68)
7	<213	213 (32)	238 (94)

Associated NWEA norm group percentile score appear in parentheses.

Table 2 – Recommended same season (spring) RIT cut scores for TAKS performance levels – Mathematics

Grade	Failing	Met	Commended
3	<196	196 (30)	217 (91)
4	<205	205 (34)	225 (87)
5	<208	208 (24)	228 (74)
6	<218	218 (34)	241 (87)
7	<225	225 (41)	256 (96)

Associated NWEA norm group percentile score appear in parentheses.

Table 3 – Recommended prior season (fall) RIT cut scores for TAKS performance levels - Reading

Grade	Did not meet	Met	Commended
3	<173	173 (13)	200 (73)
4	<190	190 (24)	215 (88)
5	<201	201 (32)	223 (92)
6	<202	202 (23)	219 (71)
7	<208	208 (27)	236 (96)

Associated NWEA norm group percentile score is in parentheses. Percentile scores do not exist for Grade 11.

Table 4 – Recommended prior season (fall) RIT cut scores for TAKS performance levels – Mathematics

Grade	Did not meet	Met	Commended
3	<187	187 (32)	207 (91)
4	<199	199 (34)	217 (90)
5	<202	202 (23)	221 (77)
6	<213	213 (36)	233 (87)
7	<220	220 (39)	249 (96)

Table 5 – Proportion of students estimated to pass the TAKS reading assessment based on same season (spring) reading RIT range

RIT	3	4	5	6	7
155	0%				
160	48%				
165	48%				
170	48%				
175	71%			0%	
180	71%		0%	50%	
185	80%		35%	50%	0%
190	93%		35%	67%	11%
195	97%		58%	71%	42%
200	99%		63%	69%	48%
205	100%		72%	86%	54%
210	100%		89%	96%	67%
215	100%		95%	98%	85%
220			99%	100%	95%
225			100%	100%	97%
230			100%	100%	99%
235				100%	100%

Table 6 – Proportion of students estimated to pass the TAKS mathematics assessment based on same season (spring) RIT range

RIT	3	4	5	6	7
170	0%				
175	20%				
180	20%				
185	34%	0%	0%		
190	43%	11%	30%		
195	62%	25%	30%	0%	
200	86%	41%	40%	22%	
205	96%	66%	52%	34%	
210	99%	83%	55%	30%	0%
215	100%	95%	78%	49%	12%
220		99%	97%	65%	41%
225		100%	96%	77%	52%
230		100%	100%	93%	72%
235			98%	97%	84%
240			100%	99%	96%
245				100%	98%
250				100%	100%

Table 7 – Proportion of students estimated to pass the TAKS reading assessment based on prior season (fall) reading RIT range

RIT	3	4	5	6	7
145	0%				
150	22%				
155	58%				
160	58%				
165	58%				
170	58%		0%		
175	62%		17%	0%	0%
180	92%		40%	25%	31%
185	93%		40%	50%	31%
190	99%		40%	60%	33%
195	100%		56%	65%	45%
200			74%	87%	58%
205			89%	91%	68%
210			95%	97%	79%
215			99%	99%	92%
220			100%	100%	99%
225					99%
230					100%

Table 8 – Proportion of students passing the TAKS mathematics assessment based on prior season (fall) RIT range

RIT Range	3	4	5	6	7
155	0%				
160	19%				
165	19%				
170	40%	0%			
175	41%	22%			
180	62%	22%	0%		
185	79%	41%	4%		
190	89%	41%	7%	0%	
195	97%	59%	10%	13%	
200	99%	83%	27%	38%	3%
205	100%	94%	64%	44%	13%
210		97%	81%	54%	21%
215		99%	91%	65%	27%
220		99%	95%	89%	53%
225		100%	98%	93%	81%
230			98%	95%	90%
235			100%	94%	97%
240				100%	100%