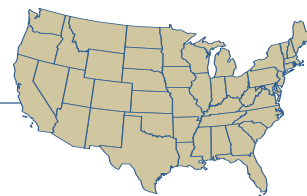


Rhode Island



Introduction

This study linked data from the 2005 administration of Rhode Island's reading and math tests to the Northwest Evaluation Association's Measures of Academic Progress (MAP) assessment, a computerized adaptive test used in schools nationwide. We found that Rhode Island's definitions of proficiency in reading and mathematics are relatively consistent with the standards set by the other 25 states in this study, with its reading tests a bit above average in difficulty and its math tests a bit below average.

In addition, we found Rhode Island's cut scores to be less challenging for third-grade students than for eighth graders. State policymakers might consider adjusting their cut scores to ensure equivalent difficulty at all grades so that parents and schools can be assured that elementary school students scoring at the proficient level are truly prepared for success later in their educational careers.

What We Studied: New England Common Assessment Program (NECAP)

Rhode Island currently uses a fall assessment called the New England Common Assessment Program (NECAP), developed in conjunction with New Hampshire and Vermont. NECAP tests students in grades three through eight in English/language arts and mathematics. Science tests and standards are currently under development. The current study uses linked reading and math data from the fall 2005 NECAP administration (in New Hampshire schools, which use the same assessment tool and proficiency cut scores) to a common scale also administered during the 2005-6 school year.

To determine the difficulty of Rhode Island's proficiency cut scores, we linked reading and math data from Rhode Island's tests to the NWEA assessment. (A "proficiency cut score" is the score a student must achieve in order to be considered proficient.) This was done by analyzing a group of elementary and middle schools in which almost all students took both the state's assessment and the NWEA test. (The methodology section of this report explains how performance on these two tests was compared.)

Part 1: How Difficult are Rhode Island's Definitions of Proficiency in Reading and Math?

One way to evaluate the difficulty of a standard is to determine how many people attempting to attain it are likely to succeed. How do we know that a two-foot high bar is easy to jump over? We know because, if we asked 100 people at random to attempt such a jump, perhaps 80 would make it. How do we know that a six-foot high bar is challenging? Because only one (or perhaps none) of those same 100 individuals would successfully meet that challenge. The same principle can be applied to academic standards. Common sense tells us that it is more difficult for students to solve algebraic equations with two unknown variables than it is for them to solve an equation with only one unknown variable. But we can figure out exactly how much more difficult by seeing how many eighth graders nationwide answer both types of questions correctly.

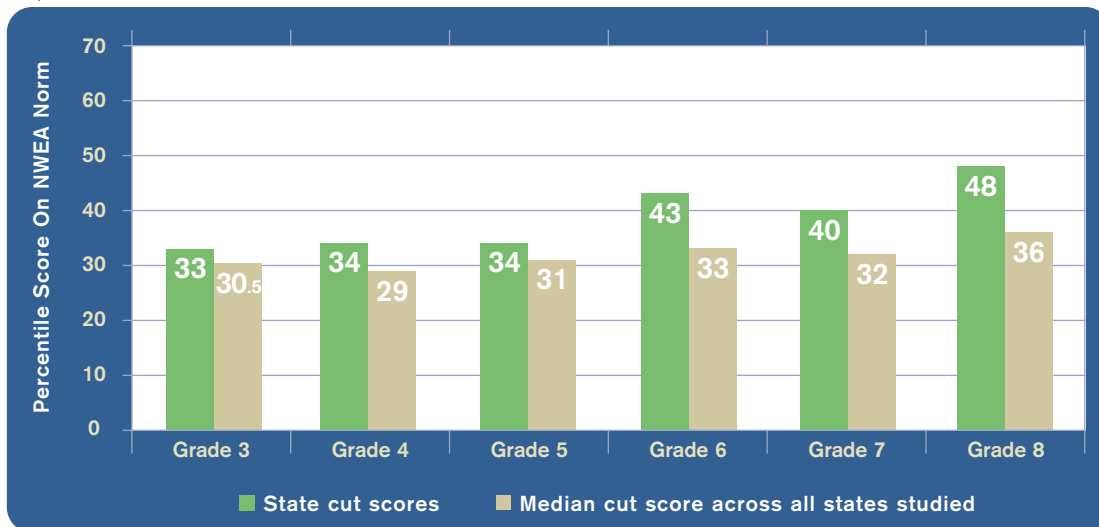
Applying that approach to this task, we evaluated the difficulty of Rhode Island’s proficiency cut scores by estimating the proportion of students in NWEA’s norm group who would perform above the Rhode Island cut score on a test of equivalent difficulty. The following two figures show the difficulty of Rhode Island’s proficiency cut scores for reading (Figure 1) and mathematics (Figure 2) in 2005 in relation to the median cut score for all the states in the study. The proficiency cut scores for **reading** in Rhode Island ranged between the 33rd and 48th percentiles for the norm group, with the eighth-grade cut score being most challenging. In **mathematics**, the proficiency cut scores ranged between the 34th and 53rd percentiles, with eighth grade again being most challenging.

Rhode Island’s cut scores in both reading and mathematics are consistently at or above the median in difficulty among the states studied. Note, though, that Rhode Island’s cut scores for reading are generally lower than its cut scores for mathematics at the same grade. (This was the case in the majority of

states studied.) Thus, reported differences in achievement between the two subjects may be more a product of differences in cut scores than in actual student achievement. In other words, Rhode Island students may be performing worse in reading and better in mathematics than is apparent by just looking at the percentage of students passing state tests in those subjects.

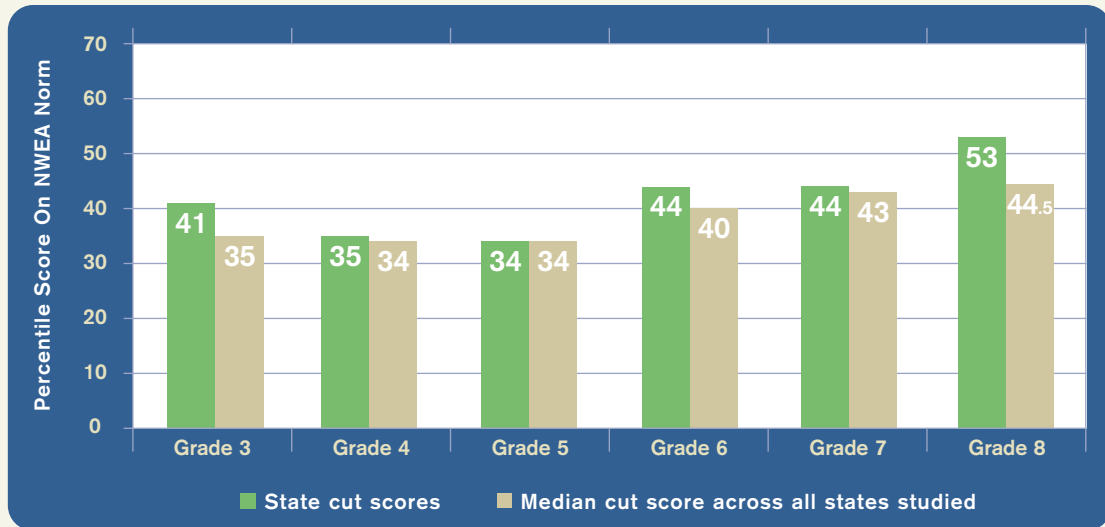
Another way of assessing difficulty is to evaluate how Rhode Island’s proficiency cut scores rank relative to other states. Table 1 shows that Rhode Island’s cut scores generally rank in the upper third for reading and at about the middle for math among the 26 states studied for this report. Its reading cut score in grade eight is particularly high, ranking third out of 26 states.

Figure 1 – Rhode Island Reading Cut Scores in Relation to All 26 States Studied, 2005 (expressed in MAP Percentiles)



Note: This figure compares reading test cut scores (“proficiency passing scores”) as percentiles of the NWEA norm. These percentiles are compared with the median cut score of all 26 states reviewed in this study. Rhode Island’s cut scores are consistently 2.5 to 12 percentiles above the median.

Figure 2 – Rhode Island Mathematics Cut Scores in Relation to All 26 States Studied, 2005
(expressed in MAP Percentiles)



Note: Rhode Island's math test cut scores are shown as percentiles of the NWEA norm and compared with the median cut score of all 26 states reviewed in this study. The cut scores are consistently 1 to 8.5 percentiles above the median, except in grade five, where the cut score is precisely equal to the median.

Table 1 – Rhode Island Rank for Proficiency Cut Scores Among 26 States in Reading and Mathematics, 2005

Ranking (Out of 26 States)						
	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Reading	9	6	7	4	7	3
Mathematics	8	10	13	9	9	6

Note: This table ranks Rhode Island's cut scores relative to the cut scores of the other 25 states in the study, with 1 being highest and 26 lowest.

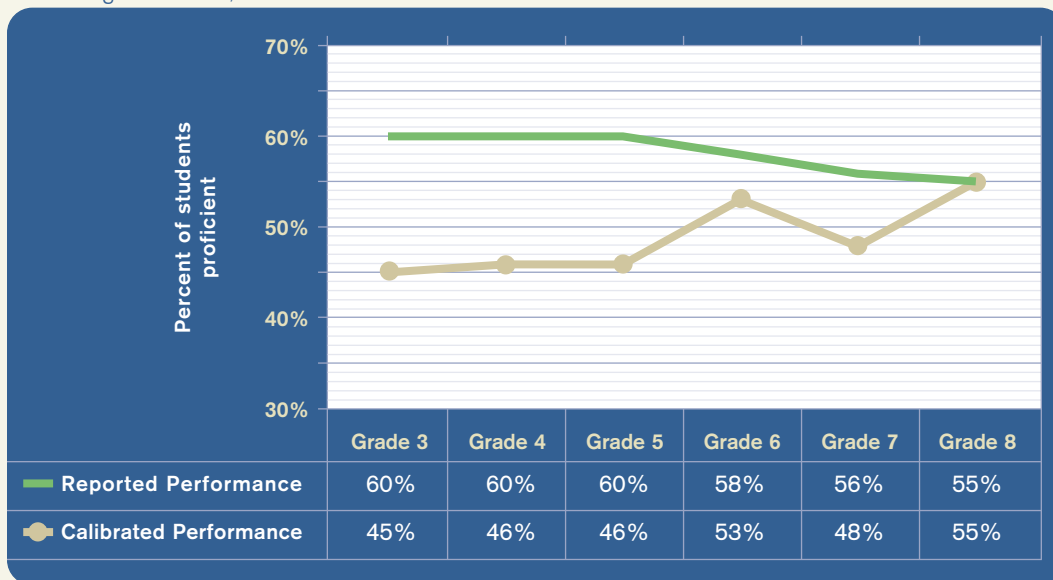
Part 2: Calibration across Grades*

Calibrated proficiency cut scores are relatively equal in difficulty across all grades. Thus, the eighth-grade cut score is no more or less difficult for eighth graders to achieve than the third-grade cut score is for third graders. When cut scores are so calibrated, parents and educators have some assurance that achieving the third-grade proficiency cut score puts a student on track to achieve the standards at eighth grade. It also provides assurance to the public that reported differences in performance across grades are a product of differences in actual educational attainment and not simply differences in the difficulty of the test.

* Rhode Island was one of seven states in this study for which cut score estimates could be determined for only one year. Therefore, it was not possible to examine whether its cut scores have changed over time.

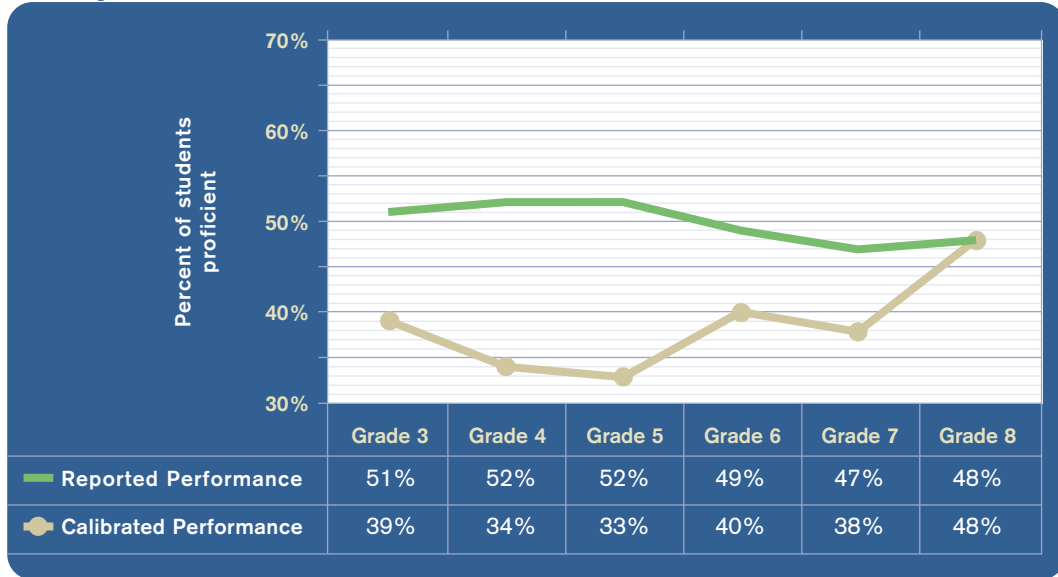
Figures 1 and 2 showed the relative difficulty of the reading and mathematics cut scores across the different grades, indicating that the upper-grade cut scores in reading and mathematics were somewhat more challenging than the cut scores in the lower grades. (This was the case for the majority of states studied.) The following two figures show Rhode Island's reported performance in reading (Figure 3) and mathematics (Figure 4) on its state test and the rate of proficiency that would be achieved if the cut scores were all calibrated to the grade-eight standard. When differences in grade-to-grade difficulty of the cut score are removed, student performance is more consistent at all grades. This would lead to the conclusion that the stronger rates of proficiency that the state has reported for lower grades students are somewhat misleading.

Figure 3 – Rhode Island Reading Performance as Reported and as Calibrated to the Grade-Eight Standard, 2005



Note: This graphic shows, for example, that if Rhode Island's grade-3 reading cut score was set at the same level of difficulty as its grade-8 cut score, 45 percent of third graders would achieve the proficient level, rather than 60 percent, as was reported by the state.

Figure 4 – Rhode Island Mathematics Performance as Reported and as Calibrated to the Grade-Eight Standard, 2005



Note: This graphic shows, for example, that if Rhode Island's grade-3 mathematics cut score was set at the same level of difficulty as its grade-8 cut score, 39 percent of third graders would achieve the proficient level, rather than 51 percent, as was reported by the state.

Policy Implications

When determining what constitutes proficiency in reading and math, Rhode Island is about in the middle of the pack, at least compared to the other 25 states in this study. It's noteworthy that Rhode Island's cut scores are not smoothly calibrated across grades, though. Students who are proficient in third grade are not necessarily on track to be proficient by

the eighth grade. State policymakers might consider adjusting their cut scores across grades so that parents and schools can be assured that elementary school students scoring at the proficient level are truly prepared for success later in their educational careers.