**DATA PREPARATION FOR REPORTING THE RESULTS OF**

**THE WYOMING ACCOUNTABILITY IN EDUCATION (WAEA) 2012-13 PILOT**

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A professional judgment panel (PJP) was convened in September, 2013, to establish pilot index values, weights, and cut scores for the indicators used in the determination of school performance levels. The PJP further established which of the four school performance levels were associated with every possible combination of performance on the indicators.

A WAEA Data Model was built to produce frequency distributions for each indicator. These frequency distributions were used to provide impact data for the PJP deliberations. The WAEA Data Model was further used to demonstrate the number of schools with each possible combination of indicator performance. Then, once PJP judgments had been made about the school performance level associated with each pattern of indicator performance, the WAEA Data Model was used to inform the PJP about the impact of their judgments. Specifically the WAEA Data Model showed the PJP how many schools fell within each of the four performance levels.

Following the 2013-14 school year, school performance level determinations for schools will become live, i.e., it will no longer be a pilot. In order to assist schools with their understanding of the model and to prepare them for the 2013-14 school performance determinations, reports are being prepared for all Wyoming schools which show the school’s results on the 2012-13 pilot. These reports will show the school their scores on each indicator, the indicator performance ranges, and the school performance level associated with their 2012-13 performance. The WAEA Data Model is being used to provide the scores that are being used for reporting. This reporting exercise provided an additional opportunity to inspect all aspects of the WAEA Data Model to assure that all business rules were applied as intended and that proper data sets were included and used appropriately.

The reports for schools with grades 3-8 were prepared using the identical information that was available to the PJP as impact data from the WAEA Data Model. No corrections were made to the WAEA Data Model for grades 3 through 8.

While preparing for reporting to high schools, however, two problems were identified. These problems were substantial enough to require corrections to the cut-scores on the achievement indicator and the equity indicator. **The corrections to the cut-scores were made in a manner that assured that the cut-scores remained an accurate reflection of the judgments made by the PJP**. The school performance levels being reported to schools will accurately reflect performance levels consistent with the judgments of the PJP.

One problem stemmed from the first time use of the ACT subject area tests as the measure of achievement for high schools. This necessitated the identification of student proficiency level cut-scores on these subject area tests that were equivalent to grade 11 PAWS cut scores for proficiency from previous years. During December, 2012, expert consultants used three prior years of ACT and PAWS results to indentify preliminary PAWS equivalent cut-scores for the ACT subject area tests. When the 2013 ACT results became available the suggested cut-scores were applied to the student level file and these files were sent to the Wyoming districts for vetting in August 2013.

Problems with these original ACT subject area student proficiency cut-scores came to light during this vetting process. The December linking study report had suggested confirming the appropriateness of the cut-scores once 2013 ACT results were available. This confirmation process was initiated and it led to an adjustment to the cut-scores. The ACT student level data was then revised to reflect these adjustments.

While preparing WAEA School Performance Reports it became apparent that the student level data in the WAEA Data Model used the original ACT subject area test student proficiency cut-scores. The cut-scores had been adjusted by just one point in reading and one point in mathematics. However, because of the limited range of possible scores on these tests, a one point change in cut-scores had a sizable impact in the percent of proficient scores in reading in math. Specifically the original cut-score in reading had been 15 and it was adjusted to 16. There were 284 students with a score of 15. These students were proficient with the original cut-score and not proficient with the adjusted cut-score. Likewise, in math the cut-score for proficient was moved from 16 to 17. There were 876 students with a score of 16. These students were proficient with the original cut-score, and they were not proficient with the adjusted cut-score.

Using impact data with the original ACT cut-scores, the PJP established school performance level cut-scores for the high school achievement indicator of 70 and 83. For the sample of 73 high schools[[1]](#footnote-1) a score of 70 was equivalent to a percentile rank of 40 and a score of 83 was equivalent to a percentile rank of 83 using the original ACT achievement cut scores.

The impact changed considerably with the corrected ACT cut-scores. Using the adjusted student performance levels, the school achievement score that was at the 40th percentile rank was 63 and the score that was at the 83rd percentile rank was 78. As such **the WAEA pilot corrected cut-scores used for the high school achievement indicator were 63 and 78**.

**These corrected cut-scores accurately reflect the work of the PJP in that they are at the same percentile rank points as those set by the PJP**. **These cut-scores furthermore had an identical impact in terms of the number of schools in each achievement indicator category**. Using the original ACT cut-scores on the subject area tests for students, the impact of the PJP defined cut-scores for schools resulted in 29 schools not meeting targets, 32 schools meeting targets, and 12 schools exceeding targets. Using the adjusted ACT cut-scores on the subject area tests for students, the impact of the corrected WAEA achievement cut-scores for schools resulted in 29 schools not meeting targets, 32 schools meeting targets, and 12 schools exceeding targets.

Next, the high school equity indicator was focused upon student proficiency in reading and math. For high schools the indicator was the *change* in the percent of test scores that were not proficient in reading and math at the high school from 2012 to 2013. The percent of students not proficient on the PAWS reading and math in 2012 was computed for each school, and the percent of students not proficient on the ACT subject area test in reading in math was computed and subtracted from the 2012 percentage. **The PJP did not set cut-scores on this “change” indicator. Rather, consistent with the January 2012 Wyoming School Accountability Report (Marion & Domaleski), the scores that separated the distribution of school “change” scores into three roughly equal groups became the cut-scores**.

While preparing reports for schools a problem with the equity indicator was discovered. The percent of not proficient scores from 2012 were for reading and math only but the percent of not proficient scores from 2013 included reading, math and science. The cut-scores on this indicator at the time of the PJP were -3.12 and +2.76. On this indicator low scores were preferred since low scores meant that a school had decreased the percent of not proficient students.

These cut-scores appeared to be quite plausible until science scores were removed from the computation. Without the science scores included in 2013, nearly all schools showed a fairly substantial reduction in the percent of not proficient students from 2012 to 2013. Considering that there was a slight decrease in the percent of students in Wyoming who were proficient on the 2013 achievement tests compared to the 2012 achievement tests, this finding on the high school equity indicator was not plausible. This finding led to the discovery that the original ACT subject area test cut-scores had been used in the WAEA Data Model instead of the adjusted ACT subject area test cut-scores. Using the adjusted ACT student proficiency cut-scores there were more than 1100 fewer proficient scores compared to using the original ACT student proficiency cut-scores.

When the adjusted ACT student proficiency cut-scores were used in the WAEA Data Model, science was excluded from the computation of the equity indicator scores. After computing the “change” scores for all schools, new cut-scores were computed for this equity indicator.

The intent was to have approximately one/third of the school in each of the three equity indicator categories (i.e., exceeding targets, meeting targets, and not meeting targets). In an attempt to accomplished this, the equity (i.e., change) scores at percentile ranks of 33 and 66 were identified. The identified scores at these percentile ranks were -3.1 and +3.2. There were four schools (i.e., 8% of the 53 schools) with equity scores of -3.1. The next adjacent scores were at -3.9. In order to assure that the schools with the -3.1 scores were all in the same category, **the cut-scores for equity were set at -3.2 and +3.4.**

Schools that had reduced their percent not proficient reading and math test scores by 3.2% or more from 2012 to 2013 were in the exceeding targets category. There were 16 schools in this category. Schools that had an increase in the percent of not proficient test scores from 2012 to 2013 of more than 3.4% were in the not meeting targets category on this indicator. There were 17 schools in the not meeting targets category. Schools that had a change in the percent of not proficient test scores from 2012 to 2013 that was between -3.2 and +3.3 were placed in the meeting targets category. There were 20 high schools in the meeting targets category.

The Appendix to this report shows a comparison of the impact results for high schools that were presented at the PJP and the impact results once the corrections in this report had been applied.

School score reports are being released to school district superintendents and school principals shortly. Once released, the results will be embargoed for two weeks. The schools will have access to all student level data sets used for WAEA school performance determinations by the time the reports are released. During the interval of the embargo, schools may study their results and raise questions. This represents a final opportunity to identify any issues with the WAEA Data Model that still need attention or with concerns related to elements of the school performance rating model.

Appendix

HIGH SCHOOL IMPACT DATA PRESENTED AT THE PJP SESSION[[2]](#footnote-2)



FINAL HIGH SCHOOL IMPACT AFTER THE PJP ESTABLISHED CUT SCORES

WERE CORRECTED PER THIS REPORT[[3]](#footnote-3)



1. Schools with a minimum n of at least 6 and a participation rate of at least 90%. [↑](#footnote-ref-1)
2. Prior to the participation rate adjustments. [↑](#footnote-ref-2)
3. Prior to the participation rate adjustments. [↑](#footnote-ref-3)