

An Independent Study of the Alignment between the 2016 ETS HiSET Exam Items and the College and Career Readiness Standards for Adult Education

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In May 2015, WestEd contracted with Educational Testing Service (ETS) to conduct an independent, third-party analysis of the alignment between items in the 2016 HiSET exam (HiSET) item pool for English language arts (ELA) and mathematics, and the College and Career Readiness Standards for Adult Education (CCRS-AE) released in 2013 by the U.S. Department of Education, Office of Vocational and Adult Education (OVAE). Outcomes from this study were intended to provide the HiSET development team with an independent evaluation of the degree to which items appearing on HiSET test forms correspond to the CCRS-AE in the two content areas. This report describes the methodology used to complete this scope of work and the findings from specified analyses.

Methodology

WestEd's analysts examined the strength of the relationship between the HiSET items and the CCRS-AE, using a modified Webb-based protocol for studying categorical concurrence (Webb, 1999, 2002, 2007).¹ WestEd analysts systematically compared each HiSET item in each of the two content areas to the standards in the relevant set of the CCRS-AE, searching for the strongest match(es) in terms of measuring a fundamental skill or concept embedded in one or more standards. This analysis was designed to answer the following research question: *Does this HiSET item align with one or more standards in the CCRS-AE?*

For each HiSET item, analysts documented the standard(s) in the CCRS-AE found to match that item in a meaningful way. In addition, WestEd analysts assigned one of the following ratings to best describe the level of the match:

- **Strong Alignment.** WestEd analysts found substantial or foundational overlap between the HiSET item and one or more standards in the CCRS-AE. Both were found to measure the same central idea, fundamental skill, or core concept.
- **Partial Alignment.** WestEd analysts found some overlap between the HiSET item and one or more standards in the CCRS-AE, but the relationship is weaker because (a) some elements of the standards in the CCRS-AE were represented in and aligned to the HiSET item, but a strong alignment for all elements could not be found or (b) the standard in the CCRS-AE was a broad statement that could potentially align to one or more HiSET items, but the degree of specificity

¹ Webb, N. L. (1999). *Alignment of science and mathematics standards and assessments in four states* (Research Monograph No. 18). Washington, DC: Council of Chief State School Officers.

Webb, N. L. (2002). *An analysis of the alignment between mathematics standards and assessments for three states*. Paper presented at the meeting of the American Educational Research Association, New Orleans, LA.

Webb, N. L. (2007). Issues related to judging the alignment of curriculum standards and assessments. *Applied Measurement in Education*, 20, 7–25.

in the text was insufficient to justify a rating of *Strong*. When warranted, the analyst included a rationale for the *Partial* rating in the master data collection spreadsheet.

- *No Alignment*. WestEd analysts found no alignment between the HiSET item and any standards in the CCRS-AE. When warranted, the analyst included a rationale for a *No* rating in the master data collection spreadsheet.

The resources used by WestEd analysts to conduct this alignment study are listed in Table 1.

Table 1. Sources of Information for Alignment Study

| Content Area | College and Career Readiness Standards for Adult Education | 2016 HiSET Item Source |
|------------------------------------|--|--|
| English Language Arts (ELA) | <i>College and Career Readiness Standards: ELA, Reading and Language; Levels A–E</i> | Test Forms for Reading (Forms A, B, and C) |
| Mathematics | <i>College and Career Readiness Standards for Adult Education: Mathematics; Levels A–E</i> | Test Forms for Mathematics (Forms A, B, and C) |

As noted, in all content areas, the items were pulled from the relevant HiSET test forms that ETS provided to WestEd for this study. The CCRS-AE were accessed from the OVAE’s public website. These standards are bundled into five grade-level groupings: Level A (Kindergarten–grade 1; Beginning Adult Basic Education Literacy), Level B (grades 2–3; Beginning Basic Education), Level C (grades 4–5; Low Intermediate Basic Education), Level D (grades 6–8; High Intermediate Basic Education), and Level E (grades 9–12; Low/High Adult Secondary Education).

As part of best practices for WestEd alignment work, WestEd content staff develop and document decision rules as necessary to ensure that procedures are transparent, systematic, and repeatable. This process ensures consistency over time and across analysts in their interpretations of items and standards text and in the application of the rating protocol. Six decision rules were noted by analysts during this HiSET–CCRS-AE alignment study:

Decision Rule 1: For ELA and mathematics, in some instances, one or more standards in the CCRS-AE may be necessary to align to all of the content found in one HiSET item. In these instances, WestEd content staff will list all aligned standards, indicating *Strong* alignment and *Partial* alignment where appropriate.

Decision Rule 2: For ELA and mathematics, if at least one *Strong* match has been identified for an item, analysts may or may not record *Partial* matches. If both *Strong* and *Partial* matches have been identified, the rating will be considered *Strong*.

Decision Rule 3: For ELA and mathematics, final calculations of percentage of total alignment will include both *Strong* and *Partial* ratings. Subsequent repeats of an item will not be excluded when determining final calculations.

Decision Rule 4: For ELA, the four types of reading standards (RI, RL, RH, RST) will be grouped together in a combined reading category (RD).

Decision Rule 5: For ELA, if a tested vocabulary word or phrase crosses similarly worded standards of RD.4.C-D-E and L.4.C-D-E, the item will be aligned to the Level E standard.

Decision Rule 6: For ELA, identification of figurative language or literary device does not align to a standard, as that type of item does not match the intent of the standard's rigor.

This alignment work was conducted by a team of WestEd content experts, alignment specialists, and support staff in WestEd's Assessment and Standards Development Services (ASDS) program. The team was directed by Dr. Carole Gallagher, a Senior Research Associate who oversees ASDS's research activities. Each content expert and each alignment specialist has prior experience in conducting studies of items-to-standards alignment or crosswalks between sets of standards. All alignment staff members received training in applying the alignment protocol and were monitored for calibration at two points following training. Quality control checks were completed by WestEd editors to ensure error-free results.

Summary of Findings

HiSET Items and the College and Career Ready Standards for Adult Education

Overall, in ELA and mathematics, WestEd’s analysts found strong alignment among the items in the 2016 HiSET pool and the College and Career Readiness Standards for Adult Education (CCRS-AE). Specifically, for ELA, the percentage of total alignment (*Strong* and *Partial*) is 87%. For mathematics, the percentage of total alignment (*Strong* and *Partial*) is 88%. This “overall” finding encompasses all levels (A–E) of the CCRS-AE.

A summary of the percentages of *Strong*, *Partial*, and *No Alignment* ratings, by content area, is provided in Table 2.

Table 2. Percentage of HiSET Item Alignment to CCRS-AE for Each Rating Category, by Content Area

| Content Area | Pool Size | <i>Strong</i> Alignment | <i>Partial</i> Alignment | <i>No Alignment</i> |
|-----------------------|-----------|-------------------------|--------------------------|---------------------|
| English Language Arts | 120 items | 79% | 8% | 13% |
| Mathematics | 150 items | 79% | 9% | 12% |

As previously described, the *Partial* rating was often used when a mismatch emerged between the level of specificity in the standard(s) in the CCRS-AE and the level of specificity in the item. For this reason, in evaluating the percentage of alignment results for both content areas, it is most appropriate to consider the percentage of total alignment, which combines the *Strong* and *Partial* ratings. As shown in Table 2, in this study, WestEd analysts found relatively greater percentages (13% for ELA and 12% for mathematics) of HiSET items that did *not* align to any standard in the CCRS-AE than aligned partially to particular standards (8% for ELA and 9% for mathematics).

ELA Summary

ELA-specific findings are presented in Table 3.

Table 3. Percentage of HiSET ELA Item Alignment at Each Level of CCRS-AE

| Level | Descriptor | Total Alignment |
|---------|--|-----------------|
| Level A | Kindergarten–Grade 1 Beginning Adult Basic Education Literacy | 1% |
| Level B | Grades 2–3 Beginning Basic Education | 12% |
| Level C | Grades 4–5 Low Intermediate Basic Education | 51% |
| Level D | Grades 6–8 High Intermediate Basic Education | 5% |
| Level E | Grades 9–12 Low/High Adult Secondary Education | 18% |

As shown in Table 3, in ELA, WestEd analysts found that relatively few of the HiSET ELA items (13% of total pool) aligned to CCRS-AE standards at Levels A and B. These levels include standards described as targeting knowledge and skills at the Kindergarten–Grade 3 levels. Relatively higher percentages of ELA items (74% of total pool) were found to align to standards at Levels C, D, and E, which target knowledge and skills at the Grades 4–12 levels. As previously discussed, 13% of HiSET ELA items in the 2016 pool were not found to align to any CCRS-AE standard.

Mathematics Summary

Mathematics-specific findings are presented in Table 4.

Table 4. Percentage of HiSET Mathematics Item Alignment at Each Level of CCRS-AE

| Level | Descriptor | Total Alignment |
|---------|--|-----------------|
| Level A | Kindergarten–Grade 1 Beginning Adult Basic Education Literacy | 0% |
| Level B | Grades 2–3 Beginning Basic Education | 1% |
| Level C | Grades 4–5 Low Intermediate Basic Education | 8% |
| Level D | Grades 6–8 High Intermediate Basic Education | 49% |
| Level E | Grades 9–12 Low/High Adult Secondary Education | 30% |

As shown in Table 4, in mathematics, WestEd analysts found that relatively few of the HiSET mathematics items (9% of total pool) aligned to CCRS-AE standards at Levels A–C. These levels include standards described as targeting knowledge and skills at the Kindergarten–Grade 5 levels. Relatively higher percentages of mathematics items (79% of total pool) were found to align to standards at Levels D–E, which target knowledge and skills at the Grades 6–12 levels. As previously discussed, 12% of HiSET mathematics items in the 2016 pool were not found to align to any CCRS-AE standard.

Conclusion

Overall, the findings of this independent alignment study indicate high rates of total alignment (*Strong* and *Partial* combined) between the ETS HiSET exam items in ELA and mathematics (87% and 88%, respectively) and the College and Career Readiness Standards for Adult Education (CCRS-AE).