CAE

Common Core State Standards Validation through Assessment (CCSSVA) Report

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Executive Summary

The Common Core State Standards (CCSS), which have now been adopted by most states, are designed to be aligned with college expectations (NGA & CCSSO, 2010a, 2010b). The Common Core State Standards Validation through Assessment (CCSSVA) project, with funding from the Bill & Melinda Gates Foundation, was designed to test this assertion. For this project, a test of college readiness aligned with the CCSS was developed and administered to entering college freshmen, and academic outcome data were collected from registrars' offices at the end of the first year of college. Analyses were conducted to examine the relationship between performance on the CCSSVA test and first-year academic outcomes. Additional analyses examined whether the CCSSVA test provided incremental improvement in the prediction of first-year grade-point average (GPA) over that provided by high school GPA and college admissions tests.

In the first phase of this study, college professors were recruited to help identify which CCSS would be most important to include in a test of college readiness. Survey results indicated that most high school English language arts (ELA) standards were rated as important. In contrast, a relatively small proportion of the high school mathematics content standards were rated with high importance. Indeed, many of the mathematics standards rated with high importance came from grades six, seven, and eight.

Using CCSS survey results, CAE staff members worked in collaboration with performance-assessment experts, college professors, and other subject-matter experts to develop several types of assessment tasks for this project. These tasks were pilot tested with high school seniors in spring 2011, and results were used to revise the tasks and select which tasks would be administered on a larger scale in fall 2011. There were four task types developed for this project. Performance Tasks required students to examine a set of documents related to an authentic scenario, answer a series of multiple-choice items, and write an essay analyzing the provided information in order to address a problem described by the scenario. Study-Listen-Apply Tasks emulated school learning by showing a video lecture, providing accompanying text materials, and asking students to apply their new knowledge. Revise Tasks required students to revise the mechanics and organization of a brief sample of text written by an actual high school student. Complete Tasks asked students to finish an incomplete argumentative essay by writing the missing introductory or concluding paragraph.

Eight postsecondary institutions were recruited to participate in the main CCSSVA test administration in fall 2011 (six four-year schools and two community colleges). Each school was responsible for recruiting 100 students and proctoring the computer-based assessment administration of the CCSSVA test and post-test survey, which asked students about their experience of taking the CCSSVA test, academic preparation for college, and demographics. Following the fall administration, a group of scorers was trained by CAE staff to evaluate students' essay responses. Item response theory (IRT) was employed to obtain ELA and mathematics scores for each student.

In winter 2012, a preliminary analysis of CCSSVA test scores and post-test survey results was conducted. The results revealed students' experiences of taking the CCSSVA test: 97% of students reported having enough time to finish the test, 92% of students reported giving at least "a moderate amount of effort" on the test, 66% of students reported that the CCSSVA test was at least "moderately different" from other assessments they have taken, and 71% of students reported that the test was at least "moderately engaging." Students reported that the test measured writing, reading comprehension, critical thinking, and problem solving "moderately well" or "very well." Ratings were lower for mathematics, which was not surprising given that the mathematics portion of the test was somewhat shorter than the ELA portion, and some of the mathematics tasks proved fairly easy for the college students. Regression analysis revealed self-reported high school GPA and number of years taking a foreign language in high school were the best available predictors of CCSSVA test performance.

In June 2012, registrar data collection was conducted to capture students' cumulative first-year GPAs and grades in common first-year courses. Data cleaning and statistical analysis of first-year outcomes followed. Correlations and logistic regression analyses revealed that CCSSVA test scores were significantly associated with getting A or B grades in composition, college algebra, biology, history, psychology, and economics. The final set of analyses examined whether CCSSVA test results provided incremental improvement in the prediction of first-year academic achievement in college. Consistent with prior research (e.g., Geiser & Studley, 2002), high school GPA was the most effective individual predictor of first-year GPA (the precision-weighted average across schools was .46). Both the CCSSVA test and college admissions tests correlated with first-year GPA approximately .35. Overall, the tests provided similar incremental improvements in the prediction of first-year GPA over that provided by high school GPA. However, in five of the six participating four-year schools, high school GPA plus performance on the CCSSVA test was as good as or better than high school GPA plus college admissions test scores as a predictor of first-year GPA. Patterns of associations with first-year GPA varied across schools, so it is recommended that postsecondary institutions investigate the relative utility of available predictors for their students. Compared to participating community colleges, the CCSSVA test tended to be a better predictor of first-year GPA at four-year schools. Combining college admissions test scores and CCSSVA test scores resulted in a notable increase in the predictive validity of either test individually. Thus, the tests appear to measure overlapping, but somewhat different, aspects of college readiness.

The results of this study are consistent with the thesis that the CCSS are aligned to college readiness. This conclusion, however, rests on the assumption that the tasks were well aligned to the CCSS, and some task reviewers raised concerns about the mathematics tasks because they primarily aligned to grades six through eight standards. Nevertheless, this study has possible implications for the use of tests like the CCSSVA test in college admissions. This study demonstrated that a test consisting largely of performance assessments can have predictive validity similar to that of multiple-choice college admissions tests. Such assessments illustrate desired coherence between instruction, assessment, and the complex challenges facing students in the classroom and beyond.