



California State Board of Education

Meeting Agenda Items for March 7-8, 2012

ITEM 9 ADDENDUM

DATE: February 29, 2012

TO: MEMBERS, State Board of Education

FROM: TOM TORLAKSON, State Superintendent of Public Instruction

SUBJECT: Item 09 – Standardized Testing and Reporting Program: Amendment to Educational Testing Service Contract.

Summary of Key Issues

Based on a request from the California Department of Education, Educational Testing Service is proposing an amendment to the current Standardized Testing and Reporting (STAR) Program contract to implement enhancements to the current STAR Program that will support the state's transition activities to the common core state standards and a new assessment system. These proposed enhancements will also provide local education agencies with critical support in making that transition.

Attachment(s)

Attachment 1: Proposed Enhancements to the Standardized Testing and Reporting (STAR) Program (25 pages)



Enhancements to the Standardized Testing and Reporting Program

Contract Amendment 8

February 29, 2012



Table of Contents

Executive Summary.....	3
Proposal for CST ELA and CAPA ELA and Mathematics Blueprint Revisions and CST Item Bank Alignment to the Common Core State Standards	6
Proposal for a Pilot of CSTs for Science in Grades Five and Eight and Biology in a Computer-Based Testing Environment.....	7
Proposal for Paperless Aggregate Reporting	16
Proposal for Conducting Test Security Activities	18
Proposal for Quick-Turnaround Reporting for the CSTs	22
Conclusion.....	25

Executive Summary

Proposed Enhancements to the Standardized Testing and Reporting Program

As California looks to the future of its statewide assessment system, it is crucial to consider implementing enhancements to the current Standardized Testing and Reporting (STAR) Program that will support the state's transition activities to a new assessment system. These proposed enhancements will also provide Local Education Agencies (LEAs) with critical support in making that transition.

To aid California in transitioning to the Common Core State Standards (CCSS), Educational Testing Service (ETS) will complete a curricular crosswalk between the CCSS and the California content standards for English–Language Arts (ELA) in grades K–12 and mathematics in grades K–8 to better determine which specific California content standards align with the CCSS for K–12 Education. Under the direction of the California Department of Education (CDE) and the State Board of Education (SBE), ETS will then convene a group of California educators and standards experts to review and validate the crosswalk documents. Once the crosswalk has been finalized, the finished document will be posted on both the CDE's web site and on startest.org for LEA reference and use.

ETS will then make recommendations for revisions to the STAR California Standards Tests (CSTs) and the California Alternate Performance Assessment (CAPA) blueprints for the given content/grade levels, based on the results of that crosswalk. These blueprint revisions will include any standards that would be appropriate for assessment on a large-scale paper-pencil test. Under the direction of CDE and SBE, ETS will then convene a panel of California educators to validate the blueprints. The finished blueprints will then be ready to be submitted to the SBE for approval by September, 2012.

After making recommendations for the modification of the existing CST and CAPA blueprints for the content/grade levels indicated above, ETS will carefully review the California electronic item bank to determine the number of viable items that California might use in a test to assess the CCSS. ETS will also align the CST released test questions to the CCSS on the starsamplequestions.org web site and will develop new sample assessment items that measure the new CCSS. Each item will be carefully examined by ETS content experts to find the best matches possible. ETS will then convene an Assessment Review Panel (ARP) to review the item matches to the new CCSS. ETS will deliver the results of that alignment in a report to the CDE and SBE testing liaisons. The alignment and review work will be completed by July, 2012.

To better assess science inquiry, and to give California schools and districts experience with the next generation of California's large-scale assessments, ETS proposes administering a Computer-Based Testing (CBT) pilot in October 2012 for science in grade five, science in grade eight, and high school biology. This CBT pilot will help the CDE and SBE better assess participating LEAs preparedness for online testing. Additionally, the CBT pilot will offer students and schools a view into what innovative items may look like, as California transitions from testing with traditional multiple choice items to technology enhanced assessment items. ETS

will develop new and innovative item types for these tests that take advantage of computer technology and that are based on the new *Framework for K–12 Science Education*¹. The majority of items for the CBT pilot will come from the existing CST science item bank and will be based on alignment with the new science framework. ETS will administer the CBT pilot to approximately 30,000 students drawn from a representative sample of schools in California. Both test administrators and test takers will be carefully trained to use the test delivery platform; the training will reflect the same level of customer service that CDE has come to expect from ETS on the STAR Program.

In order to streamline the reporting of the 2013 STAR test results as well as to reduce costs and be environmentally responsible, ETS proposes the introduction of a new paperless aggregate reporting system for 2013, aspects of which will be piloted and demonstrated to a cross-section of districts across the state in October of 2012. If the demonstrations of the system indicate an acceptable level of district interest, CDE and school district staff may opt to use a browser-based graphical user interface to manipulate and view test data online as soon as data are available through the use of a *Data Manager for California STAR*.

Finally, in order to address current concerns around test security, ETS will implement two measures to bolster STAR test security beginning with the 2012 administration. These measures include conducting 135 security audits per year to search out security breaches and producing mark discrimination reports each year for CDE review.

To ensure that there are no additional costs to California for these enhancements, CST field testing will be suspended for the 2013 test administration and no new items will be developed. New field testing for the California Modified Assessment (CMA) for ELA grades 3-8, mathematics grades 3-7, and science grades 5 and 8 will also be suspended. These specific CMA tests have enough items in the item bank to produce test forms for the 2013 administration. Field testing for the upper grade CMA tests—ELA grades 9-11, Algebra I, Geometry, and grade 10 Life Science will continue.

For the 2013 administration, ETS will reuse previously administered forms from different administrations (years) for CST and for CMA grades 3-8. Pre-equating will be performed prior to the operational administration of the test forms using data from the previous administrations. In comparison to the current post-equated model, advantages of reusing intact forms with no new field-testing include the administration of test forms with known psychometric properties and the reduction in time and cost of pre-reporting analysis.

Recognizing that maintaining test security is a primary requirement in safe-guarding the integrity of test scores, equated test forms for the 2013 administration would be drawn from multiple past administrations so as to vary the reused form source administration over content/grades. By varying the source administration by content/grade, it would be much more difficult for users to identify and possibly teach to previous forms. Forms from multiple past administrations would be reused in a given year; for example, forms selected for reuse in 2013

¹ Available through http://www7.nationalacademies.org/bose/Standards_Framework_Homepage.html.

might include the 2009 ELA forms for grades two, six, and ten, the 2010 ELA forms for grades five, seven, and eleven, and the 2011 ELA forms for grades three, four, eight and nine.

Making this change will not only save the state money but could potentially enable quicker turnaround time of student-level CST scores in 2013, with LEAs receiving student-level CST scores as part of a secure electronic file as early as two weeks after testing materials are returned for scoring. This quick- turnaround reporting would include preliminary scores for individual students only in an electronic format. The quick- turnaround reporting would not include state, county, or district-level aggregate reports or any paper reports.

Proposal for CST and CAPA ELA and Mathematics Blueprint Revisions and CST Item Bank Alignment to the Common Core State Standards (Task 6.C)

Standards Crosswalk and Blueprint Revisions for ELA and Mathematics

For ELA and mathematics, ETS staff with expertise in both the California Common Core State Standards (CCSS) and the California content standards will compare the two sets of standards to refine the existing crosswalk ETS initially developed for the CDE. ETS will analyze documentation for ELA in grades K–12 and mathematics in grades K–8 to better determine which specific California content standards align with the CCSS for K–12 Education. ETS will also determine both the percentages of the CST science blueprints and the overall California content standards that map to the Science Framework for K–12 Education, as part of the CBT pilot discussed later in this proposal.

ETS will convene a committee of California educators to review and provide feedback on the crosswalks. The final version of the crosswalks will be presented to the CDE and will be used as the basis for the blueprint revisions.

Based on the results of the California CCSS /California content standards crosswalk, ETS will make recommendations for revisions to the CST and CAPA blueprints so that they align with the California CCSS. These revisions will include any standards that would be appropriate for assessment on a large-scale paper-pencil test and for which there are existing items. After the revised blueprints have been reviewed by CDE staff and by a panel of educators, blueprints will be presented to SBE for approval by September, 2012.

Determine the Number of Items Available for Use/Item Bank Alignment

After the crosswalks have been finalized, ETS will review the California electronic item bank to determine the number of viable ELA and mathematics items for CST and CAPA that align to the CCSS. ETS will take into consideration such issues as standard alignment, content strength, item difficulty, and appropriateness of a CST item (and associated passages for ELA) or CAPA task, as well as its statistical properties. Any aligned item will receive a Common Core State Standard code in addition to its existing California content standard code. ETS will convene the existing CST and CAPA assessment review panels to review and validate the proposed alignments. ETS will deliver the results of this analysis to the CDE by July 12.

Proposal for a Pilot of CSTs for Science in Grades Five and Eight and Biology in a Computer-Based Testing Environment

Within the next five to ten years, most large-scale testing in American schools will take place in technology-enabled environments. Such environments allow for the inclusion of item and task types that can assess knowledge and skills that are difficult to assess in the current paper and pencil formats. At the same time, many schools and districts in California are understandably nervous about the prevailing uncertainty around the transition to new computer-based assessment systems. ETS proposes a CBT pilot that will offer California a no-risk opportunity to gain familiarity in administering standardized assessments on computer, as well as capitalizing on technology to showcase innovative assessments that are custom designed for California.

As the state of California looks to the future of its assessment system, it has elected to become a governing member in the SMARTER Balanced Assessment Consortium (SBAC)—a consortium of states seeking the next generation of assessments based on a common core. By 2015, California will need to have a new assessment system in place that addresses the California CCSS. The SBAC ultimately seeks to utilize Computer Adaptive Testing (CAT) and, to that end, California should begin soon to transition its assessment system to become technology-enabled. Gaining practical experience in technology-enabled assessment before the rollout of common core assessments will help the state, districts, and schools understand and anticipate the kinds of difficulties it may encounter in the transition. Given that California's budget constraints could jeopardize funding for any restructuring and updating of the state's assessment system, ETS proposes a solution that will launch the transition to Computer-Based Testing within the state's budget.

ETS proposes that the CDE administer a CBT pilot in October 2012, giving schools and districts ample opportunity to provide feedback on the computer testing experience and for California to apply any lessons learned well in advance of changes in test administration that may come in 2015. ETS will design three new science tests that are based on the new science frameworks in grades five, eight, and Biology and will utilize innovative item types in the design. This pilot test will be administered to a sample of about 10,000 students per test, selected from across districts and schools representing a range of demographics. The students will come from a broad range of school districts representing the full spectrum of California's technological capabilities. Scores will not count in the pilot test, and simple percent correct will be provided.

Standards Crosswalk and Blueprint Revision (Task 6.C)

ETS science staff familiar with both the *Framework for K–12 Science Education* and the California content standards will compare the two documents to develop a crosswalk for use in developing a computer-based testing pilot. ETS will analyze documentation for the CSTs for science in grades five and eight and end-of-course (EOC) Biology to determine which specific California content standards align with the *Framework for K–12 Science Education*. ETS will determine both the percentages of the CST blueprints and the overall California content standards that map to the *Framework for K–12 Science Education*.

Based on the results of the *Framework for K–12 Science Education*/California content standards crosswalk, ETS will make recommendations for revisions to the blueprint. It is likely that some standards that are not appropriate for assessment on a dichotomously scored paper-pencil test might be a strong fit for a CBT. ETS will target one third of the items in the pilot to be technology-enhanced items.

ETS will organize meetings in Sacramento so that California education stakeholders may review and vet the crosswalk and blueprint work conducted by ETS under the direction of CDE.

Determining the Number of Available Items

After making recommendations for the modification of the existing CST blueprints for grade five science, grade eight science, and Biology, ETS will review the California electronic item bank to determine the number of recommended items for use in this pilot. ETS will take into consideration the following criteria:

- Match to the *Framework for K–12 Science Education*—Does this item’s content accurately map to the *Framework*?
- Statistical robustness—Does this item have statistical flags that would make it ineligible for use on a CST operational form?
- Date (Year) of development—Does ETS assess this standard now as when it was first developed?

Using these criteria, ETS will analyze the existing items and determine how many might be eligible for use.

Great care will need to be taken regarding test security and possible exposure of items in the CST bank when used on the STAR CBT Pilot. ETS will work to minimize any impact on the bank. The items that are in use on the 2012 forms and in use on the forms selected for the 2013 science exams for Grade 5, 8, and biology will be identified and flagged before the pilot items are chosen. ETS will work to build out the multiple choice items needed for the pilot from the remaining operational pool of items.

If an item is identified as being needed for the pilot form and that item is currently selected for use in 2012 or 2013, ETS will look first at relaxing statistical or blueprint parameters for the pilot, attempting to build out the three forms for the pilot exam without the use of items from the 2012 or 2013 forms. The use of an item identified as being on a 2012 or 2013 form will occur only after all other available items and options are fully exhausted.

ETS will organize a four-day meeting in Sacramento so that California education stakeholders may review and vet the item alignment to standards work conducted by ETS, under the direction of CDE.

Developing Items for the CBT Pilot (Task 6.C3)

After completion of the blueprint revisions, ETS will develop item-type models to address the targeted standards, being cognizant of the need to carefully adhere to universal design principles. ETS will develop innovative item types that include features such as simulations or video clips. Dynamic stimuli such as: drawing conclusions from observations of animations that

provide visual context in simulated events instead of students making assumptions about the effect of balanced and unbalanced forces on the motion of an object from static images, they can. These simulations can be used to directly show phenomena that paper assessments can only describe in text or graphics

These science scenario items require a certain level of reading comprehension to both read and understand the scenario being presented and to answer the accompanying questions. Scientific knowledge or skill is also required to successfully read and answer the questions, thus these science scenarios go to the heart of students demonstrating literacy skills in science.

ETS will also plan to develop constructed-response short-answer items that will utilize ETS's artificial-intelligence scoring engines, or *c-rater™* and *m-rater™* systems. These types of items will demonstrate how California can move beyond exclusive multiple-choice tests without incurring the high cost of human scoring.

ETS will provide an opportunity for the CDE to preview the item concepts. Upon completion of ETS's internal item development process, ETS will produce the online test forms of approximately 60 items each that meet the revised blueprints and that include a rich mix of constructed-response and innovative item types. The CDE will have an opportunity to review the online test forms prior to the implementation of the pilot test.

ETS will be using a proven digital delivery platform based on previous experience in delivering large-scale assessments on computers. ETS offers a robust, stable environment that is not vulnerable to the bandwidth issues and reliability concerns that have plagued some other delivery systems. Thus, the platform will be a secure and predictable method for the state to use in testing by the widely distributed technical capabilities of the state's school districts.

Special study

After the CBT pilot test is administered in October of 2012, ETS will conduct a special study at the conclusion of the 2013 paper-based test administration to look at differentiated impacts by subgroup as well as to look at item differences, for the purpose of identifying items that may be less sensitive to the use of technology. ETS will work with CDE to design the specifics of this special study.

CBT Pilot Timeline (Task 12. A)

The testing window for the CBT pilot will be October 1–12, 2012. Following the pilot, ETS will deliver a final report to the CDE and SBE in two stages, beginning in November, 2012. Participating districts will administer the tests to students during this two-week window. ETS will provide districts with an electronic resource calculator to determine exactly how many days they will need to complete testing, given the number of computers available and the number of students to be tested. In May/ June of 2012, ETS will administer sample pilot tests to a small

sample of approximately 300 students; a “trial run” designed to surface any delivery system bugs that should be rectified before the pilot administration window commences.

Timeline

Task	Date
CDE previews test item concepts	03/14/12
Begin selection of participating districts and schools	03/15/12
CDE previews tests	6/4/12
Tests administered to small sample	05/16/12
CBT pilot testing window	10/1/– 10/12/12
Final report delivered to CDE and SBE Staff	11/20/12

Recruiting Participants

ETS will invite school districts, charter schools, and County Offices of Education (COEs) to participate in the technology-enhanced testing pilot. As an incentive to participate, school districts will be offered a complimentary 90-day subscription to ETS’s online writing evaluation service Criterion (<https://criterion1.ets.org/cwe/>), with the goal of recruiting approximately 500 schools in about 200 school districts. Student eligibility will be based on course completion in the previous year. ETS STAR District Outreach staff will seek participation with the following student-level targets:

Test	Target
CST for Science (Grade 5)	10,000 students
CST for Science (Grade 8)	10,000 students
CST for Biology	10,000 students

ETS will seek a sample of school districts across the state that possess the minimum technological capabilities necessary to participate. ETS will select samples of districts and schools while ensuring maximum representation of diverse demographic variables such as geographic representation (e.g., northern, central, and southern California), urban vs. rural, and school district size. Independently testing charter schools will also be represented. ETS will recruit schools that would represent the spectrum of technology readiness from schools that are technically advanced to schools that are more technically challenged, to gain knowledge of the readiness of California schools for CBT testing.

Training the Test Administrators

ETS will conduct Webcasts to present the CBT pilot procedure and materials and to give districts the opportunity to ask questions in real time. Test administrators will also be given access to online and print resources for further support.

By logging on to the CBT pilot Web site, a test administrator can step through a series of screens, similar to a PowerPoint presentation, that display and explain the specifics of using the online tool during the CBT pilot. In addition, a test administration manual will be available for download from the CBT pilot Web site. On this Web site, school district test administrators will also be able to access tools that assist them with scheduling testing seats in a computer lab or other environment, upload Pre-ID, manually add Pre-ID, monitor student testing status, and view preliminary results. Another part of the tools package includes a capacity resource planner to help school districts and charter schools allocate resources for testing based on the number of seats available, hours allotted, and students to be tested. A set of frequently asked questions will be accessible through the CBT pilot Web site, allowing test administrators to obtain quick answers to common questions.

The district STAR administration hierarchy used for the STAR Program will be used to administer the CBT pilot testing. The district STAR coordinator will ensure that all test site coordinators and test administrators have been trained.

Training the Test Takers

Student test takers will be trained using a combination of online, print, and audio (where needed) tutorials. Student tutorials have already been developed that show how the software is used for testing. Students may take the tutorial and access practice test questions to experience the testing software. Scores will not be provided on the practice tests. Both audio and non-audio tutorials are available. Teachers should also review the tutorials as part of their own training.

The student tutorials teach the students how to use the software. It is essential information for both the students and teachers for taking or administering online assessments. The student tutorials are designed to provide an overall introduction to the online testing software.

In certain cases where available Internet connectivity may be an issue, school districts can download the tutorials to local computers. The downloaded version will not automatically update once it is downloaded; therefore, it is recommended that this version only be used in cases where bandwidth is a known issue.

Providing Pre-ID Services

District Pre-ID files can be uploaded directly into the pilot test Web site. Using the pilot test file layout, a school district can upload records for all students. The file upload process will allow the use of Microsoft Excel spreadsheets. Pilot test Pre-ID works differently from what districts may have experienced with STAR Pre-ID in that pilot test Pre-ID files (referred to as "Student Enrollment Files," or SEFs) contain basic information for identifying the students to be tested. Unlike STAR, the files for the pilot test will not contain extensive demographic data.

Once a file is uploaded, edits can be made online in the online student editor or a new file may be uploaded that overwrites the existing file. There is no extended Pre-ID data corrections period. All edits must be made prior to administration of the test.

Once Pre-ID is uploaded or manually entered, tickets may be printed to enable students to take the test. Pre-ID can only be uploaded via a district-level access. School-level users cannot upload Pre-ID. Test session tickets will contain student-specific login information that ensures the student will take the correct test. Students will be given a ticket when arriving at the testing site. Once an SEF has been uploaded, the test administrator can view the class roster of students scheduled to take a particular test.

Minimum System Requirements

California school districts and independently testing charter schools that participate in the CBT pilot will need to have computers onsite at campus locations that meet a set of minimum technical requirements necessary to run the ETS system. The test engine for the CBT pilot is designed to ensure a successful test, regardless of the level of network and computing infrastructure available at different schools in a given district's system.

By design, the CBT pilot will not overburden the testing LEA computer systems. To accomplish this, the pilot testing system has low systems requirements that are within the technical capability available in most California schools. The system can be operated in two configurations, depending on available bandwidth and the number of computers that will be testing simultaneously. In one configuration, testing computers connect directly to the ETS Data Center via the Internet. In the second configuration, utilizing a local caching system (LCS), testing computers connect to a school district computer which in turn connects to the ETS Data Center. In both configurations, the system is based on an installed browser-based solution. This custom approach will combine the advantages of a browser-based delivery system with the robust stability and security that an installation-based solution offers.

The system will also allow the use of a local caching system that requires less bandwidth and supports testing even if the local Internet connection is lost.

System requirements on testing computers are as follows:

Memory

128 MB of RAM, 256 MB recommended.

Note: Running the ETS software requires an average of 32 MB of memory. Under normal conditions, a system with 64 MB of RAM should suffice to run the software; however, if a computer is simultaneously running several applications, the performance of the ETS software could be affected.

Display

- Monitors should have a resolution of at least 800 x 600 pixels.
- Video adapters should have at least 8 MB of memory.

CPU/Processor

- 200 MHz or higher.

Operating system

- Windows 98, NT, ME, 2000, XP, 2003, Vista, 2008, 7
- Mac OS X 10.3 (with Java 1.4)/10.4 and above. Linux Ubuntu 9.04 and 9.10 with Gnome Window Manager 2.26

Internet connectivity and security

- Allow connections to the Internet using HTTP and HTTPS protocols on ports 80 and 443.

The LCS allows an optional additional layer of protection against interruptions in Internet connectivity and supports testing of up to 1,200 students simultaneously. Without LCS, ETS software supports testing of up to 150 students simultaneously. In the LCS configuration, testing computers connect to a school district computer acting as a server, which in turn connects to the ETS Data Center via the Internet rather than directly to the ETS Data Center via the Internet. The LCS has separate additional system requirements:

LCS system server computer requirements

- CPU—1.2 GHz or higher
- Memory—512 MB of available RAM, 1 GB recommended.
- Disk space and file permissions—Minimum 512 MB of free space available in the LCS installation folder; full Permissions to create or write to any files in the LCS installation folder.
- Internet connectivity—Allow connections to the Internet using HTTP and HTTPS protocols on ports 80 and 443.
- Capacity—The LCS has a testing capacity for up to 1,200 simultaneous students. If you need to test more than this number of students at once, you will need to set up more than one LCS server.
- Operating system—Windows NT through Windows 7, Mac 10.4 (with Java 1.5) and 10.5 and above, and Linux.

Reporting the Results

ETS will produce customized reports showing preliminary individual and group-level results for the CBT pilot. ETS will work with the CDE to develop customized reports to ensure that each is clearly identified, specifies the information included, and defines which student populations are represented. The various group reports such as state-, county-, district-, and school-level will be real-time, cumulative, and could provide student listings with all relevant score measures. ETS can also provide standard summary or aggregate score measures—as designated by the CDE—such as average, mean, mode, percentiles, and standard performance graphs.

Each report will clearly identify its intent, the information included, and which student populations are represented. ETS's system, by default, delivers reports online, via a secure web site as well as in Adobe PDF and Microsoft Excel download formats for convenience and flexibility. The PDF version of each level of report results can be transmitted to specified and approved e-mail addresses as designated by the CDE. Downloaded report data can be used to load into local Student Information System (SIS) packages.

The ETS reporting team has a wealth of experience in defining and documenting requirements for complex data analysis and report development and has a solid knowledge base from which to build.

The following figures show a few examples of reports. Figure 1 presents an example of the kind of report that can be created by ETS's reporting system. Figure 2 shows examples of sample reports from ETS's reporting system.

ETS will work with the CDE and each school district to customize report content and display. These reports can be date and time stamped at CDE's request.



Figure 1. Preliminary Report of Test Score Distribution

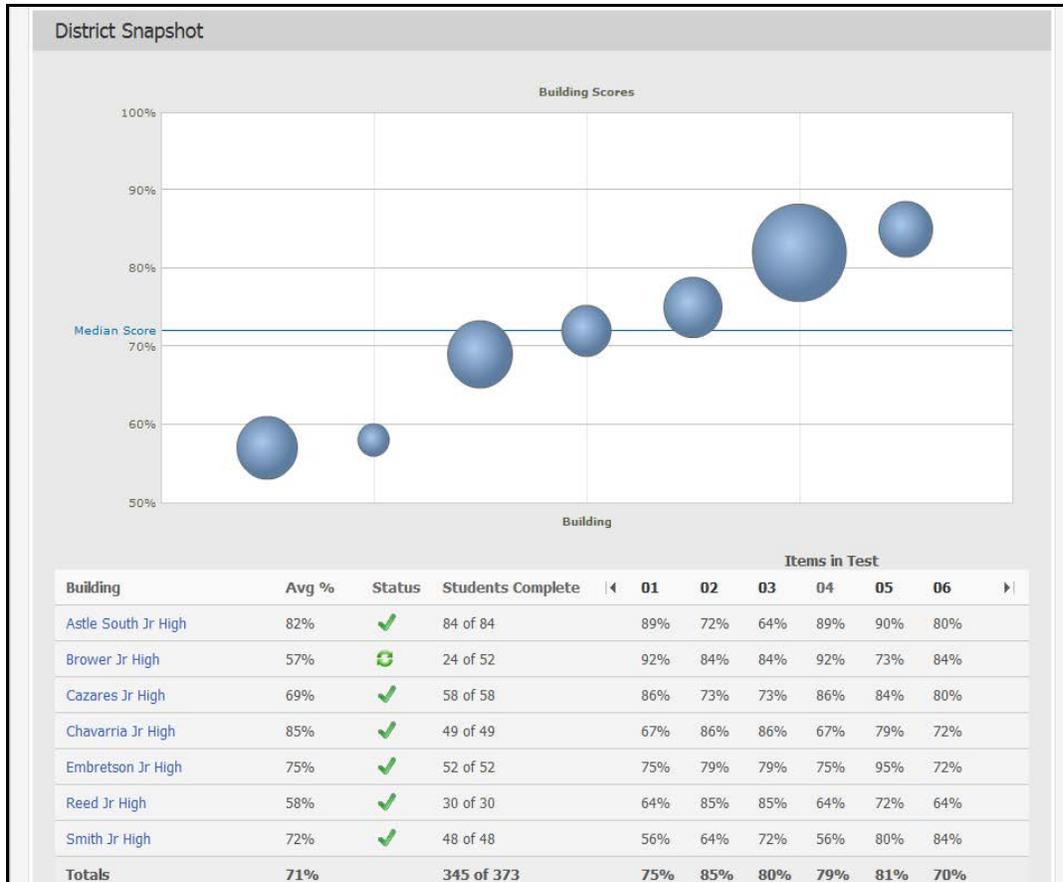


Figure 2. Preliminary Report of Average Score and Student Numbers by School

Post-Test Survey and Site Visits

As part of the CBT pilot follow-up activities ETS STAR District Outreach will deploy an online survey and will conduct onsite visits to school districts and independently testing charter schools that administered the pilot test. The purpose of the survey and site visits will be to learn what worked, what did not, and what information was gleaned from the testing procedures including discovery of district “pain points.” ETS will also capture data on LEAs or schools within LEAs who chose not to participate due to technological constraints. The results of the survey and site visits will be summarized in a full report on what LEAs experienced during the CBT pilot.

Proposal for Paperless Aggregate Reporting

The *ETS Data Manager for California STAR* is a dynamic, interactive, statistical tool that uses STAR data to explore test-taker performance. As a free data-analysis tool, it shows performance trends to help users guide program improvements and provide accountability data. Based on the results of the demonstration of the tool to a cross-section of pilot districts, California may opt to implement paperless aggregate reporting for the 2013 test administration.

Data Manager for California STAR (Task 12.B)

The *ETS Data Manager for California STAR* is an interactive data analysis tool that presents STAR results data in a variety of views including lists, tables and charts. Users will be able to create their own ad hoc reports, view and print the reports, and download data for import into other programs such as student information systems.

Based on the results of the 2012 pilots with LEAs, for the 2013 STAR test administrations, the CDE may opt to use the *ETS Data Manager* to deliver results data to school districts, independently testing charter schools and COEs. This method of delivery will replace paper reports and CDs with the exception of STAR Student Reports, which are required by state regulations; student labels and two copies of the individual Student Reports, will continue to be sent to districts.

Using a browser-based graphical user interface, users will be able to select specific test administrations for analysis. Users can then select filters to apply to the selected data. Grade, gender, ethnicities, and a variety of other demographic data may be used to filter the results. Results can then be displayed in lists, tables, forms, or charts. Given this tool, school districts can mine their own data.

Use of the *ETS Data Manager* represents a significant improvement over paper reports and CDs as access to the software is not dependent on physical distribution, tracking, and receipt.

Users will access the *ETS Data Manager* from within the current STAR Management System. The STAR Management System will include a link to the *ETS Data Manager* in its existing left navigation bar. When the user selects the *ETS Data Manager* link, the STAR Management System will communicate the user's credentials to the *ETS Data Manager*.

Logins and authentication credentials used for the STAR Management System will not change and will remain subject to the terms and conditions of the STAR Management System. District STAR coordinator profiles and logins will be maintained by the same process currently used by the STAR Management System. This maintenance includes assistance by the STAR Technical Assistance Center (TAC) to assist with updating organization and user profile information in the STAR Management System.

Once data is passed to the school district, protection of personally identifiable information such as student data are the responsibility of the school district. By accessing the site, users agree that they shall treat as confidential all data and information received through the site according to the requirements of state and federal laws.

Licensing the ETS Data Manager for California STAR for CDE Access (Task 14.B)

In addition to licensing access to the *ETS Data Manager for California STAR* by the school districts for aggregate reporting, ETS will grant up to fifteen (15) nontransferable licenses to CDE users to access and view the *ETS Data Manager*. This licensing agreement will be in place through the duration of the contract. The CDE will be able to access STAR data and statistics from the 2003 test administration through the latest available test administration.² ETS will provide technical support to the designated CDE users. The CDE will continue to receive the required data files (V1, P1, P2, and P3) separately via secure FTP as described in Task 13 in the current Scope of Work. Cost savings to eliminate aggregate paper reporting in 2013 are not included in this proposal, nor are costs to implement the Data Manager tool for STAR.

² For the 2003 and 2004 test administrations, only P3 data will be accessible by the CDE in the *ETS Data Manager for California STAR*. From the 2005 test administration to the present, P1, P2, and P3 will be accessible by the CDE in the *ETS Data Manager*.

Proposal for Conducting Test Security Activities

Under the current contract, ETS conducts security breach investigations at the request of the CDE for the most serious of testing irregularities. ETS will conduct additional test security activities to assist the CDE and LEAs in monitoring the test administration process. These additional activities include conducting test security audits before, during, and after testing; producing an electronic mark discrimination report.

Conduct Security Audits (Task 3.B1)

ETS will perform annual security audits at selected test sites throughout California for the 2012 and 2013 test administrations. The purposes of the audits are to make certain no breaches have occurred and to document breaches that are observed.

Examples of security breaches include, but are not limited to:

- Removing test materials from testing locations
- Test examiners' sharing test questions and losing secure test materials
- Discovering missing test booklets before or after a test administration
- Photocopying secure test materials
- Failing to follow published test administration procedures

Audits will be performed before, during, and after the administration of the STAR assessments to monitor how closely test site coordinators and administrators are following the required procedures described in the *STAR District and Test Site Coordinator Manual* and the *Directions for Administration (DFAs)*.

The ETS Office of Test Integrity (OTI) will conduct workshops to train auditors to properly conduct all required audits of STAR test sites. These workshops will be presented in Sacramento and Los Angeles, California. ETS will hold additional training via one-on-one phone calls and/or Web-based training.

The auditors, also called Customer Care Coordinators, will conduct audits according to the principles and procedures published in *Responsibilities of Test Site Auditor* and will use the standards prescribed in the *Coordinator Manual* and the *DFAs* for the evaluation. School district test site coordinators and superintendents will be notified at least one week in advance of an audit visit.

ETS will plan to conduct 100 audits per year:

- 25 pre-test
- 60 during testing
- 15 post-test

In addition, the Customer Care Coordinators will visit the stated number of sites in these time periods to supplement the audits:

- March (for writing tests): 20 sites
- April: 5 sites

- May (for writing tests): 5 sites
- June: 3 sites
- July: 2 sites

Pre-Test Audits

Audits before a test administration will occur one to ten days before the site begins testing. Auditors will examine the locked condition of testing materials and whether examiners have received training. They will also visit classrooms to assure that no teachers have tests (except administrators of the California Alternate Performance Assessment [CAPA], who are allowed to review the *CAPA Examiner's Manual* during the week before testing). Teachers should not be preparing students for answering STAR questions other than the use of practice tests in grades two through four.

The visits that occur before the first day of testing will assess test administration planning and test booklet security. The auditor will examine:

1. The handling of test materials at the test site after they are received from the district office
2. The secured storage area where confidential test materials are stored
3. Test booklets

Audits During Testing

The purposes of auditing during test administration include assessing test administration planning, staff performance, test booklet security procedures, and the testing room environment.

During administration, auditors will visit classrooms to determine whether teachers are:

- Setting up classrooms correctly—All test takers side-to-side, facing the same direction, with a minimum of three feet spacing, and without materials (posters, chalk content) that may hint at answers
- Following directions in DFAs and reading “SAY” boxes completely
- Assuring that the pre-identified or previously used answer document goes to each correct student
- Not reading questions (except for the questions on the grade two mathematics test, which are always read aloud), nor answering them for students
- Collecting all testing materials after each testing period
- Never leaving testing materials in unlocked rooms, but turning in test materials to the test site coordinator each day
- Assuring that students are not copying or cheating in any way

Also during testing, auditors will see whether the test site coordinator:

- Accounts for all test materials at all times.
- Locks any test materials not in use.
- Packs scorable materials separately from nonscorable materials.

- Makes arrangements to return all materials to the district no more than two days after testing.

Auditors who find actions that need immediate correction shall notify the test site coordinator or the district STAR coordinator of the action. If the action is not immediately corrected, the auditor shall notify the OTI upon leaving the site.

Post-Test Audits

Post-test audits are designed to assure that proper procedures are followed for the return of test materials. Auditors will visit one to two days after the make-up testing period in a school. After testing, auditors will assure that no materials are remaining in the school.

The auditor will:

- Verify that all test booklets were returned to a secure storage location.
- Evaluate the timeliness and adherence to published procedures for packing materials for return shipment.
- Count the test booklets to determine if all were returned.
- Evaluate the process of transporting tests and other testing materials from the test site.
- Evaluate the secure storage of materials at the district before they are picked up by the courier for shipment to the STAR Processing Center.

Reports

Auditors will immediately report any breaches to STAR management who will immediately notify the CDE. Auditors are required to file an online site visit form within three days of the site visit. The OTI staff conducting site audits will be required to file a site-visit form within two days of returning to their office.

The OTI will review each audit report and summarize the findings to arrive at an overall assessment of the test site or school district office. The assessment will be calculated by adding up the points recorded on the evaluation report. The final assessment will be reported as "Acceptable" or "Improvement Needed." The OTI will send the completed summary report to STAR management no later than 10 working days after the test administration.

Produce an Electronic Mark Discrimination Report (Task 11.B7)

ETS and our scoring subcontractor, Pearson, will create a mark discrimination report that will be delivered to the CDE no later than September 15 each year. The final specifications of this report will be mutually agreed upon by the CDE, ETS, and Pearson.

The mark discrimination report will include any group greater than or equal to 10 students for which the number of answers changed exceeds the statewide average for the same grade and test by two standard deviations.

The mark discrimination report will include the following:

- Number of students with changes
- Number of students in the group

- Average number of changes per student
- Percent of all responses changed
- Percent of responses changed from right to wrong
- Percent of responses changed from wrong to right
- Number of items

The following filters will be applied to the initial mark discrimination report:

- Group was identified for two or more tests
- More than 50 percent of students in the group had changes
- Sixty-five percent or more of all changes were from wrong to right or 90 percent or more of changes on any one test were from wrong to right when the average number of changes was greater than or equal to 2

Pearson will use the filtered mark discrimination report to produce a list of test groups in alphabetical order within grades within schools, schools within districts, and districts within counties. Pearson will also produce student lists showing the students' item responses for the tests identified. The answer documents for the filtered list of test groups will be pulled and shipped to the CDE as soon as the groups are identified. Documents for each identified testing group will be packaged together with the shipping carton(s) clearly labeled.

Pearson will work closely with the CDE and ETS to define a procedure for identifying answer documents that are randomly or pattern marked. Pearson will also collaborate with ETS and the CDE to define the guidelines for reporting individual results for students with pattern or random marked answer documents as well as addressing these results in school, district, county, and state summary reports.

Proposal for Quick-Turnaround Reporting for the CSTs (Task 12.C)

The SBE and CDE has expressed an interest in exploring steps to reduce the turnaround time of student scores on the CSTs for the 2013 STAR test administration year, such that student scores could be electronically delivered within 10–12 working days of the receipt of test materials from LEAs.

Using previously administered intact forms of the tests means that there will be no need to wait to collect the large numbers of results sufficient to conduct post-equating. As a result, the turnaround time for the receipt of student scores at the LEAs for the 2013 test administration will be reduced to 10–12 days after receipt of the returned test materials. District STAR coordinators will be able to access a file containing the student results on the password-protected STAR Management System, such that if a district finished testing on May 6, for example, that district could receive student scale scores and performance levels as early as May 20. It is expected that the turnaround time will be up to 12 days for the earliest test takers, in order to accommodate the few days necessary to complete the final, industry-standard quality control steps to verify that the test keys and scoring tables are being applied correctly.

Background

Currently, a new CST form for each grade and course is used each year, containing a set of items repeated from the form administered in the previous year. The scores on these repeated items enable psychometricians to equate the difficulty of the new form to the difficulty of the previous form(s). This approach, called post-equating, has been the equating methodology used in California since the inception of the STAR Program; it is also used on the California High School Exit Examination. The process is called “post-equating” because it is performed after the administration of the test form, using the data from the operational administration.

A major disadvantage of post-equating in states like California with long testing windows is that it requires accumulation of a sufficient quantity of results before equating can occur, resulting in a reporting delay to stakeholders ranging from several weeks to several months, depending on when the test is taken. Unlike other states, rather than testing in a fixed window regardless of the school schedule like Texas, for example, schools in California administer the CSTs within a window that is 12 instructional days before and after completion of 85% of the instructional days. Factoring the variety of school schedules, this means that the STAR testing window begins in February and ends in July. Currently, due to the wide testing window and post-administration equating analyses, the earliest score reports are delivered in mid-July, with final reports available by August 8.

Pre-equating the CSTs

Post-equating and pre-equating are both generally accepted equating methods that provide scale scores and resulting proficiency classifications that can be accurately compared from year to year. The only difference between the two practices is that in pre-equating, the data used are based on the data from one or more previous years. Because the tables that convert raw

scores to scale scores can be created before the operational administration, there is no need to wait for completion of post-equating data collection and analyses to report scores.

In a pre-equating design, the parameters of all operational items must be established on the basis of previous test administrations. Therefore, special consideration must be given when building and administering the forms to ensure that the items perform the same in each subsequent administration to preserve the comparability and stability of the resulting scores. Below are a few of the guidelines that are used to help achieve this goal:

- None of the items are edited or modified after the administration when item parameters were estimated.
- Item parameters used to develop scoring tables must be obtained from large representative samples, ideally under operational conditions.
- Test design specifications for pre-equated forms should be controlled for context effects; therefore, items used to build pre-equated forms must be administered in approximately the same position in the previous and new test forms.

Pre-equating Design that Limits Exposure: The Intact Multi-Year Option

Recognizing that maintaining test security is a primary requirement in safe-guarding the integrity of test scores, this section describes the intact multiple-years option for pre-equating, which should limit exposure concerns. This involves the reuse of previously administered forms from different administrations (years).

Equated CST test forms from past administrations will be rotated for use in future test administrations with immediate scoring. Within a given administration, for each grade and/or subject, forms will be pulled from a mix of previous administrations to minimize the possibility for deducing the forms to be selected for subsequent administrations.

Prior to 2009, state policy required the release of 30 percent of the items from each year's test form. As a cost-saving measure, the state decided not to release items going forward starting with 2009. With this change, intact test forms with existing scoring tables can be reused in 2013. To date, intact operational test forms from 2009, 2010, and 2011 are available for reuse for CST. For a given future administration, equated test forms could be drawn from multiple past administrations so as to vary the reused form source administration over content/ grades. Forms from multiple past administrations would be reused in a given year.

In comparison to the current post-equated model, reusing intact forms include the administration of test forms with known psychometric properties and the reduction in time and cost of post-administration analysis. There is also the additional cost savings associated with the elimination of several tasks associated with the development of new items and test forms (e.g., item writing and reviews, client reviews, psychometric review, analysis of items, etc.).

Additional Changes to Current Procedures and Schedules to Ensure Validity of Pre-equated Results

To minimize the risks and to ensure validity of pre-equated results, the following changes to current procedures and schedules would need to take place:

- Pre-administration end-to-end testing using simulated data will be conducted in early February instead of May.
- Early post-administration quality-control procedures to verify the accurate application of keys and conversion tables to live student data will be conducted for the first 100 cases for each large-volume test and the first 5 cases for each small volume test.
- No items will be used in the pre-equated forms if they were edited or modified after the administration when item parameters were estimated.
- Prior to distribution of test materials, additional content and editorial review of test items and forms will be conducted by the assessment development team and editorial staff to ensure that items are printed correctly and consistently with the source administration for the item parameters.

In summary, use of a pre-equating design for the CSTs will result in having student test scores available much sooner, as soon as ten days (for the multiple choice items) after school districts return testing materials. For most districts, this would mean receiving student scores before school closes for the year. This quick-turnaround reporting would include preliminary scores for individual students only in an electronic format. This would not include state, county, or district-level aggregate reports or any paper reports.

Conclusion

As a governing member of the SMARTER Balanced Assessment Consortium (SBAC), California is potentially looking at implementing an entirely new assessment system as early as 2015. Bridging activities such as developing curricular crosswalks between California's content standards and the CCSS, revising test blueprints, and determining which CST and CAPA items in the existing bank align to those new standards will help prepare California to make this important transition. Beginning the movement away from traditional multiple-choice items toward innovative item types and online testing and scoring now also makes sense as part of a transition plan for LEAs to move to a new assessment system.

As the current STAR testing contractor, ETS welcomes this opportunity to help the SBE, CDE and the state of California to find no-cost scope trade-offs under the current testing program to assist the state in making this ground-breaking transition.