BUROS
CENTER FOR TESTING

2014 Audit I Report:
Document Preparation, Scanning, and Editing

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Introduction

As part of an annual review of key operations for Florida's statewide assessment program, the Buros Center for Testing conducted a review of the document preparation, scanning, and editing operations used for processing FCAT 2.0 Reading, Mathematics, and Science test documents. Two three-day site visits were conducted from May 5 to 7, 2014, to observe processes at Pearson facilities in Iowa City, IA, and Austin, TX. In addition, various documents and materials were reviewed, and scan accuracy checks of small samples of test documents were performed at each site. This report summarizes our observations and findings of the document preparation, scanning, and editing processes as implemented by Pearson. Documentation of the two site visits is provided in the Appendix.

Document Receipt

FCAT 2.0 test answer documents are packed in boxes by Florida schools and then shipped on pallets by the school districts to the Pearson scanning facilities in Iowa City, IA, and Austin, TX. Once pallets are received and unloaded from the truck, a Pearson employee sorts boxes by testing program and document type identified by the color-coded shipping label, then logs the receipt of each box using a bar code scanner. The color codes on the shipping labels indicate the type of test document contained in the box, which allows Pearson to quickly identify boxes that require special handling. For example, a white shipping label indicates that the box contains large-print answer documents that must be handled separately by Pearson's transcription team. Other scanned information on the shipping label identifies the testing program (Florida), the school, and the school district that sent the boxes. The information is entered into a tracking database that verifies that only expected shipments are received. Boxes

with missing or erroneous information on the label are brought to the attention of the program management team for resolution.

Boxes labeled for regular scanning operations are repalleted, and a pallet tag is created that registers each box on the pallet. Pallets are then moved to the document preparation/batching station. Special documents (large print and one-item-per-page) are sent to the in-house transcription team at the Iowa City facility. Any special documents erroneously received at the Austin site are first inspected by a Pearson program team member for completeness and then sent on to the Iowa City facility. Braille answer documents are collected and shipped to a Braille transcription contractor.

The receiving areas at both facilities appeared clean and organized. Pallets pertaining to the same testing program were kept together and processed quickly. Any incomplete shipments of boxes or boxes requiring special handling were held to the side and away from the main work area, ensuring that those boxes could be easily found.

Document Preparation and Batching

In order to prepare test documents for scanning, they must first be removed from boxes, inspected for extraneous materials, and organized into batches. At the document preparation/batching station, a Pearson employee first checks off each box on the pallet tag before opening it. A batcher then unpacks the contents of the box, removing any packing materials. To ensure that all boxes are completely empty, employees ask each other in a buddy-check system to verify that nothing is remaining in the box before it is discarded.

Prior to shipping, school administrators have bundled test answer documents from each school and attached a document count form that identifies the school, district, and grade level of

the documents in the bundle and provides a document count number. For each bundle, the batcher first verifies this information with the information on the first test answer document and then inspects the bundle for any extraneous materials such as sticky notes, bands, or scratch paper, which are removed. Any extraneous materials with written information are stored by the program management team and can be retrieved up to a year later should those materials be found to contain any scorable student responses.

After documents have been inspected, the batcher stacks the test answer documents to a predefined height, beginning each stack with a diagnostic test sheet. A red X is marked on the side of the stack, which is used as a visual cue for the intactness of the stack. Within each stack, the document count forms separate the sets of test answer documents from different schools. Information on the form is later read during scanning and used to verify identifying information on each test answer document as well as to verify that the correct number of documents from each school has been scanned.

Up to 12 stacks are placed on a batch cart that is identified by a batch cart tag. Each individual stack also receives a batch/stack header placed on top of it. This form, along with the batch cart tag, facilitates tracking of the location of test documents during the remaining operations. Once a batch cart has been filled, the batcher fills out a control sheet and takes the cart to a quality control area. A separate group of Pearson employees verifies that the contents of the batch cart are correctly identified on the batch cart tag and the batch/stack headers and then logs the information, along with an estimated document count, into the Work Flow Management system. After sign-off, batch carts are moved to a humidity-controlled holding area in preparation for scanning.

The document preparation and batching stations at both Pearson facilities were well organized and incorporated several checks to ensure that all test documents are captured and placed into appropriate batches. Even during high-volume operations, the work process remained orderly and consistent. Various senior and lead staff members monitored the work flow throughout and were available to provide support when needed.

Slitting and Scanning

After test answer documents have been batched, they are held for eight hours in a humidity-controlled holding area in order to acclimate test documents to an optimal moisture level. Controlling the moisture level of the test documents reduces interruptions during scanning, for example, interruptions that are the result of pages sticking together or are due to small changes in the paper size affecting the processing of calibration marks on those pages. Each batch cart is assigned an acclimation time to indicate the earliest possible time test documents can be scanned. A moisture probe is inserted into several stacks on a batch cart beginning with stacks in the middle of each cart shelf. When the probe indicates a moisture level below a criterion value, the cart is ready for scanning. If the moisture level is too high, then the cart remains in the acclimation area until the moisture level has sufficiently decreased. The acclimation area at the Austin site is located within the humidity-controlled hall where scanning operations take place. The Iowa City facility has a separate acclimation room in addition to the humidity-controlled scanning work area where the acclimation process can be accelerated if needed.

In addition to the moisture check, another quality control check is performed prior to scanning operations during which a Pearson employee verifies the content of each batch cart

with the information on the batch cart tag and batch/stack headers before assigning it to a slitting station. Because FCAT 2.0 test answer documents consist of multi-page answer books, the pages of each answer book must be separated prior to scanning. Special slitting equipment is used that cuts off a small strip along the side where the document is bound. A Pearson operator first verifies the content of the batch cart with the batch cart tag and then prepares the slitting equipment by loading the appropriate program associated with the test documents. Several tests are run prior to using the equipment on the actual test documents, which ensures that the machine is correctly calibrated. Test answer documents are then loaded in smaller bundles onto the machine, which cuts off the bound edge of each document. During processing, the machine searches for various types of anomalies such as differential thickness, misalignment, or erroneous or damaged timing track marks on the document sheets. Excessive paper dust on the camera lens of the machine can also halt the process. Most issues are resolved by the machine operator based on established protocol. In cases of more serious issues, the program management team is alerted. The slit documents are placed back into their original stacks on the batch cart. The operator fills out the control sheet, and the cart is moved to the next available scanning station.

Upon receiving a batch cart, each scanner operator first verifies the cart contents with its tags before preparing the scanner for processing. The operator loads the relevant scan program and runs a series of diagnostic tests to verify the correct calibration of the scanner. The scan program is restricted to the document types permitted under the testing program and will automatically shut down when it encounters an unexpected document type. In addition, the scanner also tracks the order of document pages and will stop the scan process when pages are out of order, missing, or in duplicate. When a scan is halted due to damaged timing track marks

on a page, special tape is used to repair the marks. Damaged or torn pages that cannot be repaired with tape are sent to hand editing where the pages are scanned using a flatbed scanner. Any serious issues that cannot be immediately addressed by the scanner operator are logged, and an alert is created. Support technicians and scan engineers continually monitor the performance of the scanning equipment and address any scanning-related alerts. Any issues that require resolution outside of scanning are alerted to the program team. Scanners undergo routine maintenance after every 2.5 to 3 million scanned document pages. Additionally, scanner calibration frequency reports are generated periodically in order to check the accuracy of mark intensity settings.

During scanning, an electronic image is created, recording any pencil marks found on the page. The scanner automatically evaluates the intensity level of any pencil marks to bubbled or gridded items and data fields. The intensity level is evaluated on a hexadecimal scale (1-F) and must meet a minimum threshold value of 4 for the pencil mark to be recorded as a response. This information is then used to determine whether a mark is an erasure or a so-called multigrid response, which is defined as a pencil mark that differs from a second mark by no more than one intensity level. Multigrid responses are recorded with an asterisk symbol and lead to an incorrect score for the student. Erasures are identified as pencil marks that differ by more than one intensity level from a second mark with a higher intensity level. Per item or data field, only pencil marks with the two highest intensity levels are recorded.

It is our impression that the decision rules for the identification of erasures and multigrids are generally appropriate for the task at hand. In particular, the recording of erasures constitutes valuable information for follow-up analyses that are already being conducted by FDOE. During an accuracy check of a small sample of Grade 3 Reading test answer documents and their

electronic records, we observed that on one occasion a true multigrid response, that is, a response of two intentional pencil marks that had not been erased, were in fact recorded as one valid item response and one erasure mark due to the fact that the marks differed by more than one intensity level. This observation leads us to believe that not all recorded erasures are true erasures. This occurrence does not indicate that the pencil marks were inaccurately scanned and evaluated by Pearson. However, we point this incident out in order to make FDOE aware of its occurrence. Because FDOE already conducts erasure studies as part of its post-test analyses, it may be worthwhile to investigate whether the currently specified erasure decision rule (difference of two or more intensity levels) has an impact on student and demographic data. Specifically, it may be of value to investigate how frequently erasure marks that differ by just two or three intensity levels from an item response are occurring in order to evaluate the likelihood of possible false erasures we observed during our quality check. Such analysis, of course, would require that Pearson electronically store the intensity levels of pencil marks, which may not be the case.

Overall, we find that the processes of slitting and scanning test documents are tightly organized and incorporate numerous checks and controls to ensure that incidents are minimized and test documents are correctly processed. Operators of the slitting and scanning equipment performed their work consistently and were supported by a large staff of technicians and scan engineers at all times. Scanners and slitting equipment were regularly maintained and appeared to perform reliably and without major incident during our site visits.

Flatbed Scanning and Image Editing

After a batch of test documents has been scanned completely, the batch cart moves to a holding area in the hand-editing hall where it is logged into the Work Flow Management system.

Any alerts created during scanning that require resolution from the editing team are processed here. Alerts can include any discrepancies in the demographic and testing data on the header sheet of a test answer document; discrepancies in the document count number for a particular school; any missing, duplicate, or out-of-order document pages; and any document pages that were "unscorable" during scanning. Alerts are generally resolved by editors based on agreed-upon editing rules. Any issues that cannot be resolved with those rules are brought to the attention of the program team.

Document pages that could not be processed during regular scanning are flatbed scanned, if the page is not too damaged or soiled. A Pearson editor locates the page in the batch using various identifying document codes. The flatbed scanner is then prepared by running specific diagnostic tests associated with the document type. After the page is scanned, the editor verifies that image clips were correctly placed to capture the relevant student data. A second team of editors then independently reviews the image clips in the Image Edit Program and key-enters the information. If any discrepancies occur in the entered data, a third senior or lead editor independently reviews the image clip and key-enters the information, which overrides the discrepant entry.

One of the editing team's responsibilities is a quality check of a sample of scanned documents. One out of every 250 physical test answer documents is checked against its electronic scan record. If any discrepancies are found in the documents, the editors will correct those and create an alert to the program team. Our review of alert logs indicated that no additional edits were needed as a result of the quality check at that time.

The editing processes appear to be logically and appropriately organized. Various checks and controls, including a quality check of a sample of non-alerted test documents, are

implemented to ensure that student data is correctly captured in the electronic records. Editors appear to follow the agreed-upon editing and alert rules. Various senior and lead editing staff and program team members were readily available to provide additional support.

Transcriptions

A special transcription process is required for tests taken in Braille or large-print format. All Braille and large-print materials are sent to the Iowa City facility for processing. Each package is checked-in upon arrival. Braille documents are then sent to a third party (Florida Instructional Materials Center) for transcription, and are then returned to the Iowa City facility for processing. Large-print documents are transcribed on site.

The large-print transcription begins with each document being entered in a tracking log, which manages the transcription workflow and ensures that each document received progresses through each step in the transcription process. This process involves hand entering of student responses into regular-print documents. After a transcriber performs the initial hand entry, another employee performs a quality-control check on a sample of transcribed documents. If no errors are found within this sample of documents, the quality-control check is complete. If an error is found, additional samples are taken for further quality control. Following this quality-control check, the regular-print version of each large-print document is sent through the standard test processing.

Training materials for transcribers appear to be comprehensive. The training materials outline the entire transcription process and include guidelines for commonly encountered scenarios where there may be conflicting information on documents. During the site visit, the

transcription of large-print documents was completed without encountering any of these scenarios. As a result, no alerts were created in the transcription process.

Document Storing and Retrieving

Once a batch cart has completed the operations cycle, it is returned to the warehouse and receiving area where the test answer documents are prepared for storage. Each individual stack on a batch cart remains intact for storage. A Pearson employee applies plastic straps to each stack and then places the stacks into a Gaylord storage box in a predetermined order that preserves the stack order on the batch cart. During loading, the Pearson employee scans each stack and registers it to the Gaylord item serial number, which allows future retrieval in the warehouse. Once a Gaylord has been filled, it is stored for up to two years in the warehouse area.

The document storage system appears to be very effective in allowing quick access to test documents after they have been processed. The warehouses at both facilities appeared dry and clean, ensuring that test documents would not be damaged during storage.

Site Security

Both facilities appeared quite secure. Access to the main operations areas was restricted to Pearson employees with electronic access badges. Visitors were to carry ID badges at all times and were accompanied by a Pearson employee at all times while on site. Pearson maintains various policy and ‘plans of action’ documents that outline comprehensive safety and data security measures.

Overall Impressions

The document preparation, scanning, and editing processes were well organized and were appropriately carried out in adherence to the requirements specified by FDOE. Both Pearson facilities operated with great efficiency and with competent and knowledgeable staff. It was evident that Pearson exercises great care in ensuring that all test documents are processed correctly and are accounted for at all times. A wide range of checks and controls that minimize the occurrence of incidents is implemented at numerous steps in the operations cycle. Adequate resolution processes have been developed to address any irregularities. The facilities maintain a high level of security and are clean and well maintained. Overall, we found that the document preparation, scanning, and editing processes are of high quality and were executed with great success.

Appendix

1) Iowa City, IA: Document preparation and scanning site visit (May 5-7, 2014)

2) Austin, TX: Document preparation and scanning site visit (May 5-7, 2014)

Audit Checklist of FCAT 2.0 Document Preparation, Scanning, and Editing Processes

CHECKLIST COMPLETED BY:	Tony Albano
LOCATION:	Pearson 2510 North Dodge Street Iowa City, IA 52445
ASSESSMENTS:	Spring 2014 FCAT 2.0 Grades 3-9 RMS
SITE VISIT DATES:	5/5/2014 – 5/7/2014

TASKS/ACTIVITIES	COMMENTS
REVIEW DOCUMENTS	
Review Disaster Recovery Plan Specific documents: Incident Management Plan (3/24/2014) and Business Recovery Plan (10/21/2013)	These documents outline plans of action for a variety of incidents that may occur at the Iowa City facility. The Incident Management Plan is intended to ensure the health and safety of individuals and to mitigate any negative impact on operations. The Business Recovery Plan describes procedures for reestablishing key processes in the event of an emergency. These processes include receiving, data preparation, scanning, data input, image and editing, customer management, production control, and scanner engineering. Both documents are clear and comprehensive, and they appear to address the procedures necessary to recover from an emergency situation.
Review procedures to safeguard Personally Identifiable Information	A document summarizes Pearson's policies on data security. Data are encrypted and stored on Pearson's own servers. All employees with access to data are trained in a security awareness program. Firewalls and antivirus software are used.
OBSERVE CHECK-IN PROCESS	

Observe to-be-scored documents being processed (removed from boxes, dehumidified, palletized, etc.)	Document processing begins when packaged materials are brought by the shipper directly into a sheltered receiving area. Packages are scanned by barcode upon arrival and are then sorted by testing program. Orders are checked for completeness before being moved to the next stage of processing. Incomplete orders are held on shelves near the receiving area until any remaining packages arrive. The next stage of processing takes place in a second room, adjacent to the receiving area. This stage involves opening the packages, removing the materials, a quick physical inspection for extraneous documents such as scratch paper, and then loading the materials onto carts in one or more stacks by batch. The side of each stack is marked with an "X" to aid in finding and/or resorting a particular document within a stack once it is removed or in the event that it is dropped. A scanner accuracy sheet is placed on top of each stack, and a batch "header" is placed with each batch to identify its contents. Batches are then taken to a separate room for the next stage of processing. After packages are opened and materials are organized into batches on carts, the carts are taken to a separate climate-controlled room where they stay for a minimum of eight hours before moving on the scanning stage. Moisture levels for each batch are measured and monitored by probing the stacks within a batch. Batches with high moisture content are moved to a separate room where the dehumidifying process can be accelerated. Once a batch reaches a specified level of dryness, it is taken to the scanning room.
Review Drop Stack Procedure	In the event of a "dropped stack," where a batch or stack of materials is dropped, the materials may need to be reorganized and checked for completeness. Although this appears to be a rare occurrence, there are simple procedures for handling the situation. A full-time employee and the supervisor of Data Preparations carry out these procedures. Two safeguards simplify the process of reorganizing a batch. First, the spines of all materials remain on the documents until just before the scanning takes place. As a result, individual documents, e.g., one student's test booklet, remains intact as long as possible, reducing the likelihood that portions of the documents get rearranged or mixed with other documents. Second, each document in a stack, e.g., one student's test booklet, contains a unique identifier on every page of the

	document called a lithocode, so that the scanner can identify when individual pages are out of order.
Review scanner calibration frequency reports	A scanner status report was available for FCAT documents scanned up to 5/5. The report included the total number of sheets scanned, the rate per hour, the number of pages that needed to be adjusted and rescanned, and the number of unscorable demographic pages. Scanning engineers recalibrate the scanners every 3 million scans. Calibration checks are also performed prior to each batch being scanned. If a machine does not pass the calibration check, it is put offline until an engineer can recalibrate it.
Review alert logs and procedures to locate missing documents, including FDOE notification	Missing documents, whether entire test booklets or one or more pages for a student's test booklet, would be identified during the scanning process, when the number of documents for a given batch does not match the prescribed Ncount on the Document Count Form. During the check-in process, electronic tracking ensures that all packages that arrive in the receiving area are entered into the system. If a package is missing, FDOE and the shipper are notified and asked to confirm shipment. If a document or page in a document is found to be physically missing, a blank document/page is put in its place with information about the problem. An alert is sent to coordinators who then determine whether the missing page is critical for scoring and initiate further actions with the goal of recovering the missing information.
OBSERVE SCANNING PROCESS	
Compare scan and post edit files to information in answer documents	I observed the comparison process conducted by FDOE and compared a few dozen documents myself. The process is simple and tedious but a good way to confirm that scanning is accurate and complete for a sample of documents.
Review alert processes	No scanning alerts occurred during my visit.
Review resolution processes	No scanning alerts occurred during my visit.
Review procedures for storing documents after scanning (preparations for shipment to warehouse)	After processing of documents is complete, batches are brought back to the receiving room. Stacks are bound and packaged in large boxes by batch. Tracking information is recorded for each box, and the batches it contains, so that documents can be easily retrieved if necessary. Boxes are then stored temporarily within the receiving area before being shipped to another warehouse of longer-term storage.
OBSERVE HAND EDITORS	

Review training materials and procedures for hand editing of documents that do not scan properly	Procedures for flatbed scanning and hand editing are simple and appear to be effective. If a page does not scan properly during the machine scanning process, an electronic alert is created and the hand-editing team is notified. If the scanner operating the scanning machine identifies the problematic page, it is reoriented in the stack so as to be easily identified by the hand editor. However, this merely facilitates the process. The electronic alert contains a code that can be used to identify the problematic page within the batch and stack. Hand editing involves two main steps. First, the page is rescanned on the flatbed scanner. The rescanned pages are then viewed electronically by section, and the data presented in each section are verified and manually corrected if necessary. Hand editing also involves periodic checks of documents. Data are manually validated, with a visual comparison of the printed copy and scanned results, for roughly one document out of every 250.
Review procedures for double key-entry (2 people) for item data not scanned	Another staff member provides a second check for hand editing of rescanned documents. If there are discrepancies in the data from the two hand editors, an alert is presented to the second hand editor. This procedure seems appropriate for minimizing errors in the hand-editing process.
Review alert processes	One alert occurred for hand editing during my visit. It involved a mismatch between gridded and written information for a student's demographic form. The resolution was simple. In general, the person who identifies an alert submits the batch number and any relevant information about the problem to an online system that notifies coordinators of the issue. The alert is then tracked until it is resolved.
Review resolution processes	I discussed some common alert scenarios and resolutions, like the one described above, with a coordinator. Resolution procedures seem appropriate.
OBSERVE TRANSCRIPTIONS	
Review tracking log for special documents	The tracking log ensures that each special document is received and processed appropriately. Special documents are received and processed on an individual basis, and the tracking log helps manage the workflow. The progress of a document is tracked through each stage in the receiving and data-entry processes.
Review alert processes	No transcription alerts occurred during my visit.
Review resolution processes	No transcription alerts occurred during my visit.

Review training materials and procedures for transcription of LP documents	Training materials for transcribers appear comprehensive. They describe the entire transcription process and include guidelines for commonly encountered scenarios where there may be conflicting information on documents. The transcription process involves hand entering of responses in large-print documents into regular-print documents. A second hand editor then performs a quality-control check. This second check starts with a sample of 80 documents. If no errors are found within these 80 documents, the quality control is complete. If an error is found, additional samples are taken for further quality control. After quality control, the regular-print documents are sent through data processing like any other batch of documents.

Audit Checklist of FCAT 2.0 Document Preparation, Scanning, and Editing Processes

CHECKLIST COMPLETED BY:	Anja Römhild
LOCATION:	Pearson ATR 905 W. Howard Lane Austin, TX 78753
ASSESSMENTS:	Spring 2014 FCAT 2.0 Grades 3-10 RMS
SITE VISIT DATES:	5/5/2014 – 5/7/2014

TASKS/ACTIVITIES	COMMENTS
REVIEW DOCUMENTS	
Review Disaster Recovery Plan	This document pertains to the Iowa City Pearson facility, which houses the Pearson data center.
Review procedures to safeguard Personally Identifiable Information	All Pearson employees are required to sign a confidentiality agreement upon hiring. Further instructions on information security are provided in the Pearson employee handbook. Pearson also maintains a Global Information Security Policy document that includes a section on Personal Information/Data. The section addresses policies and requirements concerning data privacy/protection, data access and viewing, data encryption, non-disclosure of business or personal data, and destruction and disposal of personal data. Pearson uses a secure FTP server for communication and exchange of documents with FDOE.
OBSERVE CHECK-IN PROCESS	
Observe to-be-scored documents being processed (removed from boxes, de-humidified, palleted, etc.)	I observed the check-in process of Grades 4-10 FCAT test documents on Monday morning. A large number of shipping pallets with boxes of test documents had already been unloaded and were awaiting sorting and repalleting. A Pearson employee sorted the boxes pertaining to each school and placed them on a new pallet. Boxes were scanned to register receipt and to link them to a pallet tag. Information about the sending school district and school, the test program (Florida), and receipt information is recorded in the inbound label system. A small number of incomplete shipments were placed in a holding area awaiting the arrival of the remaining boxes or processing by the Pearson program team. Pearson staff members monitor receipt of the expected number of boxes via the inbound label report and the work-in-progress (WIP) report.

Review Drop Stack Procedure	Dropped stacks of test documents are always brought to the attention of senior project management team members. Only senior members reassemble dropped stacks based on project specifications and by using a variety of document information sources. Incidents of dropped stacks are documented in an incident report.
Review scanner calibration frequency reports	The scanner calibration frequency reports were not reviewed during the site visit. Blue dot scanning was performed on April 25, 2014. No scanner calibration related alerts were issued while I was on site.
Review alert logs and procedures to locate missing documents, including FDOE notification	At the time of the site visit, no test documents had been recorded as missing. The Pearson program team uses a variety of internal reports, including the inbound label report and WIP report as well as the Materials Return List provided by schools/districts to resolve incidents of missing documents.
OBSERVE SCANNING PROCESS	
Compare scan and post-edit files to information in answer documents	I verified the scan record accuracy of a small sample of 31 Grade 3 Reading responses. The student responses were compared to the scan files. All item responses were correctly recorded. Some erasures that left dark marks meeting a specific intensity threshold on the document were also identified by the scanner and correctly recorded as an erasure. One of the test documents included an unscorable page. The item responses from that page were correctly recorded as missing in accordance with the scan program requirements. In a different test document, one incident of a multigrid occurred in the test group code field; that is, the student marked two bubbles in one data field. Although neither mark constituted an erasure, the scan program applied the erasure rule and recorded only the darker mark. Unlike item responses, there was no erasure field in the scan file to identify that a second mark was present. Although the application of the erasure rule in this particular incident is likely of no consequence to the student, the incident raises a concern that the application of the erasure rule without recording the erasure value could have unintended consequences in other data fields that are not item responses. To the extent that a multigrid in those data fields triggers an alert to the hand-editing team, which can then work to resolve the discrepancy, the incidence is of little consequence. However, it is unclear that multigrids would always trigger an alert. For that reason, an investigation into the impact of this rule on student demographic data may be worthwhile.

Review alert processes	No scanning-related alerts were observed during the site visit. Some scanning issues are addressed during blue dot scanning when scanners are calibrated on a subset of test documents from early return school districts. During live scanning, a team of two senior product support technicians monitors all incidents of scanning problems, including incidents of damaged or soiled documents, dropped stacks, or other issues resulting in unscorable documents. The team alerts scan engineers and program team members if needed for resolution.
Review resolution processes	For issues concerning calibration of scanning and slitting machinery, a team of scan engineers stands by to determine possible adjustments to the equipment. Other scanning-related issues are addressed by the Pearson program team or the team of senior product support technicians. When a problem originates at the document preparation or receiving station, then the affected test documents may be sent back to those stations to remedy the issue. Some scanning-related issues such as torn or damaged documents may be delegated to hand editing for resolution.
Review procedures for storing documents after scanning (preparations for shipment to warehouse)	After processing, intact batch carts are moved to the receiving and warehouse area. A Pearson employee verifies information on the cart and the number of expected stacks on the cart. Stacks are then strapped and loaded into a Gaylord in the same order in which they were placed on the batch cart. A Gaylord Item Serial Number is assigned, linking the stacks to a particular Gaylord. Gaylords are stored on site in a warehouse hall where they remain for up to two years or for an agreed-upon time period. The Gaylord location in the warehouse is recorded in the Oracle tracking database.
OBSERVE HAND EDITORS	
Review training materials and procedures for hand editing of documents that do not scan properly	Documents that do not scan properly are flatbed scanned by a Pearson employee during the hand-editing process. Flatbed scanning requires running an initial diagnostics program using a diagnostic sheet to ensure proper calibration of the scanner. The operator locates the to-be-scanned document page on the batch cart and checks that various document codes, including the print-after-scan number, match system records. Prior to scanning, the operator may resolve some common scanning issues, for example, by properly marking timing tracks on the sheet. For other scanning issues, the operator alerts lead or senior program team members. After scanning, the operator reviews the correct placement of image clips on the scanned

	page.
Review procedures for double key-entry (two people) for item data not scanned	Missing or erroneously scanned data are key-entered by two Pearson editors. The editor reviews the image clip and key-enters the information. A second editor (verifier) also reviews the image clip and key-enters the information. Should there be a discrepancy with the first key-entry, a third editor (resolution) resolves the discrepancy by key-entering the data, which overrides the mismatched value. Should the third editor's entry not match either of the previous entries, the third editor's entry overrides both previously entered values. Student responses to test items were generally not edited unless a test document was unscannable. Then the hand-editing team double key-enters the item responses as described above.
Review alert processes	Missing or duplicate document pages, multigrid student responses, unresolved Ncount discrepancies, and invalid scan values identified during the quality-control check are brought to the attention of lead or senior editing and program team staff. The Austin facility uses TeamTrack to submit alerts that issue notifications to lead and senior program team staff. I reviewed the alert log for hand-editing issues during the site visit. The majority of alerts dealt with Ncount discrepancies (e.g., number of actual documents behind a Document Count Form) and missing or incorrect pre-ID information.
Review resolution processes	When an alert is issued, lead and senior program team members are notified through TeamTrack. Depending on the issue, program team members may use a variety of tools and reports, including PearsonAccess; the WIP report; and information from schools, school districts, and FDOE to resolve data discrepancies. I reviewed an alert log pulled on the second day of my visit (May 6, 2014). I found that most issues on the log had been resolved. All alerts were adequately reported on the log.
OBSERVE TRANSCRIPTIONS	
Review tracking log for special documents	The Austin facility does not process special documents. However, when, on occasion, special documents are received by the facility, program team members inspect the contents of the packages completely before repacking and sending the materials to the Iowa City facility. Shipping and delivery dates are tracked, and an email alert is sent to Iowa City.
Review alert processes	Not applicable.

Review resolution processes	Not applicable.
Review training materials and procedures for transcription of LP documents	Not applicable.