TEST SECURITY’S CHANGING LANDSCAPE IN COMPUTERIZED TESTING ENVIRONMENTS

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Today’s Discussion

- Test security doesn’t go away now that everything is computerized
- Highlight test security best practices in computer-delivered assessments
- Threats to secure, computer-based assessments
- Two state assessment programs will describe the policies, procedures, and practices
- Focus on catching wrongdoers and how to conduct legally defensible investigations that deliver appropriate consequences
- Open up for a panel Q & A
TOP THREATS TO SECURE, COMPUTER-BASED ASSESSMENTS
WHAT IS TEST SECURITY?

- More than cheating; validity of the test score interpretation
- Indiana example:

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrity breach</td>
<td>Any action that undermines integrity or effectiveness of the test</td>
</tr>
<tr>
<td>Security breach</td>
<td>Failure to follow documented procedures in testing process</td>
</tr>
<tr>
<td>Test administration breach</td>
<td>Failure to follow documented test administration procedures that could alter results</td>
</tr>
<tr>
<td>Testing irregularity</td>
<td>Unexpected event that significantly disrupts testing environment</td>
</tr>
</tbody>
</table>

Indiana Admin Code § 511-5-5-2
States have been moving toward computer administration
Many security threats remain the same
New threats are introduced
UNAUTHORIZED TEST ACCESS

- Student logins
  - Analogue to obtaining the testing book or answer sheet
  - States should ensure logins:
    - match the student
    - are classified as secured materials
SECURITY OF TEST DELIVERY SYSTEM

- Computer hacking
- Keystroke logging
- Printing, emailing, or storing information outside the delivery system
- States should:
  - Require districts to follow the technology guidance and specifications provided by the test vendor
TESTING INTERRUPTIONS

- Procedures for dealing with technical difficulties with logins or interruptions during testing
- States should consider:
  - When did the interruption occur (before testing, during testing, or after final score)?
    - Florida: test administrators cannot help resolve issues after testing has begun
  - How many proctors are needed?
    - Kansas: two proctors needed for reactivation
ITEM EXPOSURE

- More problematic the smaller the item pool
- Testing Window
  - Windows are generally longer due to lack of infrastructure
  - Longer the window, more likely items will be exposed
- Performance-based and technology-enhanced items
  - May be more memorable
- Student Workstations
  - Must ensure that other students and proctors do not look at test-takers screen during testing
ITEM EXPOSURE

- Electronic Devices
  - Easier to record items
- Social Media
  - Easier to share
- Multi-state Testing
  - A breach in one state affects another state
## WHEN THREATS OCCUR

<table>
<thead>
<tr>
<th>Threat</th>
<th>Before</th>
<th>During</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unauthorized access</td>
<td>☑</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Computer hacking</td>
<td>☑</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Keystroke logging</td>
<td></td>
<td>☑</td>
<td></td>
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<tr>
<td>Storing outside delivery system</td>
<td></td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Testing interruptions</td>
<td></td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Testing window</td>
<td></td>
<td>☑</td>
<td></td>
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<tr>
<td>Memorable items</td>
<td></td>
<td>☑</td>
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<tr>
<td>Student workstations</td>
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<td>☑</td>
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<tr>
<td>Electronic devices</td>
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<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Social media</td>
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<td>☑</td>
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</tbody>
</table>
RECOMMENDATIONS

- State should have a general test security statutory or regulatory framework in place
  - If paper-and-pencil focused, make sure that computer-based testing fits within the framework
- Reduce test windows
- Better educate policymakers, educators, students, and parents about the importance of test security
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TRANSITION TO SMARTER BALANCED

- Idaho began online testing in the spring of 2002
- Use of secure browsers
- Switch from fixed forms to CAT
- Variety of Item Types
  - Selected response, technology enhanced, constructed response, extended response and performance task
TEST SECURITY AUDIT

- Exemplary Practices
  - Awareness and Commitment
  - Communications
  - Trainings and Resources
  - Assessment Monitoring Visits
  - Proctor Expectations and Requirements
  - Handlings of Secure Materials
  - Secure Item Banks, Servers, Software, and PCs
  - Vendor Requirements
  - IT Security Policies
CURRENT PRACTICES AND ISSUES

- Assessment Monitoring
- Data Forensic
- Incident Logs
- Proctor Training
- Web Patrol
- PITA Hotline
ASSESSMENT MONITORING

- One-third of Idaho public school districts are selected, on a three year cycle, and required to submit the District Assessment Monitoring Tool online to SDE.
  - 10% of those LEA’s will be randomly selected for an onsite review
  - SDE will use the monitoring tool and visit to assist districts in strengthening their assessment practices

- Test Security Related Items
  - Handling of Secure Materials
  - Handling and Storing of Security Agreement
  - Transportation of Assessment Materials from One Site to Another

- SDE reviews the online submission, provides feedback and post best practices.
A series of quality assurance reports is expected to be produced by the vendor.

- Score Changes within/between Years
- Item Response Latency
- Inconsistent Item Response Pattern
- Response Change and Response Similarity

SDE monitors testing time and substantial growth

Policies (TBD)

- Flagging, Visiting, and Escalation Criteria
- District Communications
- Legal Ramifications
INCIDENT LOG

- 6 LEAs voluntarily submitted their incident logs for SY1415, consisting of 82 incidents (as of 06/12/15).
  - Field personnel were encouraged to keep incident logs separate from appeals
  - Purpose
    - Design Future Training and Support Activities
    - Improve Manuals
    - Minimize Similar Incidents

Initial Review of Incident Logs

- Lack of training and/or unclear directions
- Unintentional behaviors/actions may have resulted in improprieties and/or irregularities
Proctor Training

Proctor
- The teacher of record may be an observer of student behavior in the classroom.
- Teachers could serve as proctors but would be advise not to proctor their own students of record.

Proctor Training
- Proctors are encouraged to read TAM and to complete online TA training.
- 2566 out of 12168 (21%) registered local users completed online training under their login for SY1415.
- Online Training will be required for SY1516

Proctoring Policy
- Each district has its own proctoring policy
WEB PATROL

- 19 (SY 1314) and 2 (SY1415) security breaches through social media were identified.
  - External Monitoring
    - UCLA student clerks and personnel were assigned to monitor social media.
    - State Lead was notified in case of an incident, and the LEA was asked to address it.
  - Internal Monitoring
    - Field personnel were trained to address an incident immediately and locally.
    - SDE was notified in case of an incident.
    - Any incidents were asked to be recorded in the Incident Log.

- Inconsistent Local Policies
  - Cellphone Storage
  - Student Discipline/Test Scores
PITA HOTLINE

- SDE is planning to launch a hotline for SY1516
  - Potential Inappropriate Testing Activity - PITA
  - Designated Phone Number, Email Address, and Web Form
  - Open to Public, including Students and Parents
  - Can be Anonymous

- Policies (TBD)
  - Investigation and Escalation Criteria
  - District Communications
  - Legal Ramifications
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OREGON TEST ADMINISTRATOR TRAINING

- Required for all staff administering Oregon Assessments
- Security related components comprise ~25% of training

Purpose of training

- Protect integrity and confidentiality of items
- Ensure test results can be used for accountability

Training includes:

- Description of secure environment
- Appropriate vs. inappropriate student coaching
- Consequences when breach occurs
- Do’s and Don’ts
- Promising Practices
Overall, 1322 improprieties recorded

- 915 adult initiated
- 407 student initiated
- 749 resulted in test invalidations
  - 513 adult-initiated and 246 student-initiated
- 573 determined to have no impact or tests were reset

[Chart showing distribution of improprieties: 57% Invalidated, 38% No Impact, 5% Resets]
### Oregon Improperies: 2013-4 vs 2014-15

<table>
<thead>
<tr>
<th></th>
<th>2013-14</th>
<th>2014-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # of improprieties</td>
<td>1213</td>
<td>1322</td>
</tr>
<tr>
<td># Invalidated</td>
<td>975</td>
<td>749</td>
</tr>
<tr>
<td># No impact</td>
<td>212</td>
<td>573</td>
</tr>
<tr>
<td># Non-allowable resources or students talking (total)</td>
<td>598</td>
<td>436</td>
</tr>
<tr>
<td># Non-allowable resources or students talking (invalid)</td>
<td>522</td>
<td>505</td>
</tr>
</tbody>
</table>
OREGON RESOURCES

- Test Administration Manual and Best Practices Guide: http://www.ode.state.or.us/go/tam
- Oregon Accessibility Manual: http://www.ode.state.or.us/search/page/?=487
- Promising Practices: http://www.ode.state.or.us/search/page/?=2444
- Test Security Forms: http://www.ode.state.or.us/go/testsecurity
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Consultant
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Catching Wrongdoers: Legally Defensible Investigations and Consequences

S. E. Phillips
Assessment Law Consultant
PREREQUISITES

Notice

Training
NOTICE

- Clear Communication of Expectations & Prohibitions
- Nondisclosure Agreement
- Test Administration Manual
- Training
- Supervision
- Code of Ethics for Educators
- Student Affirmation (follow directions; not give/receive help)
TRAINING

- In Person – Train the Trainers
- Webinar
- Interactive Computer Module(s)
- Written Directions
- Specific to Role
- Qualifying Assessment?
- Student Practice Tests
- Annual / Refresher
INVESTIGATIONS

Collecting Information

Chain of Evidence

Interviews

Due Process
COLLECTING INFORMATION

- Proactive Plans
- District & State Responsibility
- Unannounced Site Visits
- Statistical Analyses
- Test Irregularity Reports
- Anonymous Tip Lines
- Seating Charts / Lists of Proctors & Visitors
CHAIN OF EVIDENCE

- **Goal:** Narrow Possibilities
- Preserve Potential Evidence for a Reasonable Time
- Keep Accurate Records of Access to Secure Materials / Content
- Distribution / Collection / Computer Use Plans
- Multiple Proctors
- Clear Lines of Authority for Escalating Action
INTERVIEWS

- Best Assigned to Trained Professionals
- Multiple Interrogators / Recording Helpful
- May Require Multiple Sessions
- Begin with Least Culpable Individual
- Ask for Explanations
- Limit Accusations to Verified Evidence
- Follow Required Administrative/Legal Procedures
DUE PROCESS

- **FAIRNESS**
- Notice – Advance Warning
- Explanation of Basis for Concern
- Appropriate Evidence Collection Procedures
- Opportunity for the Individual to Explain
- Following Administrative Procedures / Rules
CONSEQUENCES

Score Invalidation / Retesting

Corrective Action

License Suspension
Revocation

Civil Actions

Criminal Charges
SCORE INVALIDATION / RETESTING

- **Questionable Test Score Validity**

- **Retesting Example:** Corroborative Circumstantial Evidence
  - 1996 Connecticut District -- Affluent; Awards; ITBS > 98th PR
  - ITBS Scores > 98th Percentile Rank
  - Large Number of Erasures – Most W to R; Few R to same W
  - Parents / Teachers Assert Special Skills / Instruction

- **ACTION:** Unannounced Retests – Target & Cmpr Schools

- **RESULT:** Target Scores & Erasures Decrease; Cmpr No Δ

- **CONSEQUENCES:** Police Investigation; **Principal Fired**
CORRECTIVE ACTION

- Retraining
- Ineligible to Administer Tests
- Letter of Reprimand
- Reassignment
- Dismissal
LICENSE SUSPENSION/REVOCATION

- Administrative Action
- Cooperation DOE & Teacher Licensure Board
- Violation of Test Administration Procedures
- Preponderance of the Evidence
- Legal Representation Optional
- Informal Due Process / Good Faith
CIVIL ACTIONS

- Judicial Cases to Enforce Rights
- Administrative Appeal; Copyright Issue
- Compelling Evidence
- Legal Representation Highly Recommended
- Formal Due Process / Legal Standards

Examples:
- Test Taker Misconduct
- Educator Malfeasance
- Group Test Score Invalidation
- Copyright Violations
- Social Media Violations
- Whistleblower Retaliation
CRIMINAL CHARGES

- Legal Representation Essential
- Evidence Beyond a Reasonable Doubt
- Sample Headlines:
  - 8 Atlanta Educators Sentenced to Jail Terms For Falsifying Test Scores & Subsequent Cover up (2015)
  - Memphis Educator Sentenced to 7 Years Imprisonment For Test Impersonation Scheme (2013)
  - Student Charged with Mail Fraud for TOEFL Score Report Tampering (2003)
  - Students Charged with Burglary in Secret Communication Scheme for GRE Test Administration (2002)
Judge Baxter – Atlanta Case

Justification For Prison Sentences

“Everyone starts crying about these educators.”

“There were thousands of children harmed in this thing.”

“This is not a victimless crime.”
SUMMARY

► Balance
  ► Trust & Cooperation
  ► Investigations Yielding Deterrent Consequences

► Legal Defensibility of Test Security Policies
  ► Notice
  ► Procedure
  ► Evidence
  ► Due Process
DEFENSIBLE TEST SECURITY POLICIES

- Yield Valid Test Scores
- Promote Accurate Decisionmaking
- Create Expectations of Integrity
- Treat Educators & Students with Respect
- Identify & Sanction Wrongdoers
- Psychometrically & Legally Defensible
QUESTIONS?