



ATP

**Innovations
in Testing**

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Test Administration: Old Problems, Potential Opportunities

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Why This Session Was Developed

- **ANSI/PCAC accreditation standards**
- **New technology = new forms of test administration**
- **Does greater convenience/access increase security vulnerability**
- **Does greater convenience/access decrease uniformity and standardization**
- **To accredit or not accredit**
- **Do existing forms of test administration have adequate standards**
- **What can/should be done**

Presentations

- **Current test administration standards and guidelines**
- **Expectations of certification bodies**
- **Security challenges of new technologies**
- **Special problems of international test administrations**
- **New opportunities**

Test Administration and Security Guidelines: Current Perspectives

- **Joint Standards Chapter on Test Administration, 1999**
- **ITC Guidelines for Test Use: Administration, 2000**
- **ATP Guidelines for Computer Based Tests, 2002**
- **ANSI/ISO/IEC 17024 International Standard Conformity Assessment – General Requirements for Bodies Operating Certification of Persons, 2003**
- **NCCA Standards for the Accreditation of Certification Programs, 2004**
- **ATP Security Plan Guidelines: Test Administration, 2007**
- **ANSI Guidelines for Test Security in Administration, 2009**
- **ATP Operational Best Practices, Published 2010 (Draft 2009)**

Joint Standards for Test Administration, 1999

- Latest published edition is 1999
- Focused on Educational and Psychological Tests used in variety of contexts
- Standards are in Revision and Publication expected 2012-2013

Test Administration Topics

- Standardized procedures for administration
- Document administration disruptions and modifications
- Comfortable and minimally distracting environment
- Provide instructions on how to respond
- Eliminate opportunities for examinees to attain scores fraudulently
- Users should protect security of test materials

NCCA Standards for the Accreditation of Certification Programs, 2004

■ Accrediting of Professional Certification Programs

Test Administration Topics

- Processing applications
- Administering assessment instruments
- Eligibility criteria and requirements for applicants
- Application and examination process and procedures
- Test administration locations, fees, and reporting
- Standardized and secure procedures for administration
- Tests and results in secure media and method and personnel actions needed to maintain security

ITC Guidelines for Test Administration, 2000

- **International Guidelines for Internet and Computer-Based Testing**

Test Administration Topics

- **Remove any distracting sound devices**
- **All test materials available as test begins**
- **Supervised conditions for administering tests**
- **Adhere to standard test directions while accommodating persons with disabilities**
- **Record deviations from test procedures**
- **Monitor and record response times where appropriate**

ITC Guidelines for Test Administration, 2000

Test Administration Topics

- Ensure all test materials are accounted for
- Provide supervision and authentication of test taker identity
- Train test administrators
- Ensure examinees are never left alone
- Assist examinees who have undue distress or anxiety

ATP Guidelines for Computer Based Testing, 2002

- Guidelines Focus on Technology Delivered Testing

Test Administration Topics

- Establish hardware and software requirements
- Test environment meets hardware and software requirements
- Allow examinees to become familiar with computer test interface and functionality
- Standardized administration procedures
- Train proctors on hardware and software requirements, obtaining technical support, data transfer procedures, test security, handling problems
- Provide reasonable accommodations
- Procedures for test irregularities, disaster recovery, and anomaly reporting

ATP Operational Best Practices (Draft 2009)

- **Primary Focus is Educational Testing (K-12)**

Test Administration Topics

- **Maintain security of intellectual property, data, electronic information and results**
- **Security training and agreements for protecting intellectual property**
- **Dealing with security breaches**
- **Test administration procedures and reporting of test irregularities**
- **Account for and protect secure materials at all stages of testing**

ATP Operational Best Practices (Draft 2009)

Test Administration Topics

- Modifications of testing schedule for examinees needing more time, accommodations, untimed assessments
- Determine if student level directions should be provided prior to testing
- Protocol for preparing testing environment
- Determine materials and training for test administration
- Specify student level directions for administration

ANSI/ISO/IEC 17024 International Standard

- International Standard for Accrediting Certifying Bodies

Test Administration Topic

- Tests and items maintained in a secure environment to protect their confidentiality throughout their useful life

ATP Security Plan Guidelines Administration, 2007

Test Administration Topics

A. Security Procedures and Training

- Security procedures and annual training of site administrators and proctors with responsibilities and reporting mechanisms for security-related problems
- Requirements for examinee admission to the test

B. Before Testing

- Examinee identification needed for entry to test
- Examinee sign-in and signature comparison with ID information
- Examinees seated well apart and/or privacy panels
- Removing any materials that could provide sources for test answers
- Ensuring test materials secure before exam

ATP Security Plan Guidelines Administration, 2007

Test Administration Topics

C. During Testing

- Examinees continuously monitored by trained proctors and never left alone
- Proctor or administrator sign-in needed for computer-based tests
- Control possession of test materials by examinees
- Prohibit electronic devices that can be used to capture/record test content
- Create a seating chart for examinees

D. After Testing

- Identify any missing, lost or stolen test materials, lapses in monitoring/proctoring, distracting noises, distracting examinee activities
- Report examinee misconduct, examinee disruptions, cheating behaviors
- Account for and return all test materials

ANSI Guidelines for Test Security, 2009

- Guidelines for Ensuring Security with Certification Tests

Test Administration Topics

- Design tests with security considerations to limit item exposure, eliminate memorization or sharing of test content, and inhibit cheating and theft
- Item bank available only to authorized individuals, monitoring access, and providing legal agreements to protect copyright
- Protect all test materials after publication of test
- Certification tests should remain secure immediately before, during, and after test administration
- Security incidents should be responded to quickly, decisively, and reliably, with detailed and actionable reports

Expectations Certification Boards Should Have Regarding Test Administration

1. **Customer Experience**: The testing experience is an extension of your brand
2. **Protection of Intellectual Property**: The testing experience should meet stakeholder preferences and assure security

Expectations Certification Boards Should Have Regarding Test Administration

Achieving Expectations:

- Implement policies that address requirements of candidates
- Assure candidates are aware of policies

Expectations Certification Boards Should Have Regarding Test Administration

Achieving Expectations:

- Inform vendors of policies and policy changes
- Be specific about business rules
- Monitor conformity policies and business rules

Expectations Certification Boards Should Have Regarding Test Administration

Achieving Expectations:

- Be sure contracts stipulate the protection and ownership of IP
- Include grounds for restitution
- Include protocols for addressing security breaches
- Perform a risk management analysis of IP

Expectations Certification Boards Should Have Regarding Test Administration

Achieving Expectations:

- **Stipulate in policy and guidance documents for test administrators, proctors, and raters**
- **Assure administrations are standardized in all testing situations — international, performance, settings, testing sites**

Expectations Certification Boards Should Have Regarding Test Administration

Achieving Expectations:

- Identify the weakest links in administrations
- Determine how program changes strengthen points of vulnerability and/or create new ones

Expectations Certification Boards Should Have Regarding Test Administration

Achieving Expectations:

- **Revise policies and contracts address to changes in procedures**
- **Clarify roles and responsibilities of both entities**
- **Assess the impact on candidates**
- **Assess impact on other customers**

Challenges and Opportunities With New Technologies

- **Paper and Pencil Testing (P&P)**
- **Computer Based Testing (CBT)**
 - **Test Center Delivery**
 - Client Server
 - Internet
 - **Alternative Models**
 - Non-Proctored
 - Private Proctored
 - On-line Proctored

Challenges and Opportunities With New Technologies

P&P: Challenges

- IP infringement
- Distribution
- Test administration procedures
- Examinee cheating
- Geographic coverage

Challenges and Opportunities With New Technologies

P&P Opportunities

- **Reduce IP infringement**
 - Break the seal
 - Answer sheet part of booklet
- **Increase security of distribution process**
 - Bar coding and tracking capabilities
- **Test administration procedures**
 - Training and role of supervisor vs. proctor
 - Track incident reports
- **Reduce examinee cheating**
 - Test design (Increase number of forms, randomize items and answer options)
 - Pre-populate answer sheets
 - Post hoc data forensics
- **Geographic coverage**
 - Increased issues with international shipping

Challenges and Opportunities With New Technologies

CBT: Challenges -Test Center Delivery

- IP infringement
- Distribution
- Test administration procedures
- Examinee cheating
- Geographic coverage

Challenges and Opportunities With New Technologies

- **CBT: Opportunities-Test Center Delivery**
- **Reduce IP infringement**
 - Watermarking
 - Testing windows vs. continuous testing
 - Alternate test designs
 - Increase number of forms
 - CAT
 - Multi-stage
 - LOFT

Challenges and Opportunities With New Technologies

- **CBT: Challenges-Test Center Delivery (cont.)**
- **Secure distribution**
 - Encryption
 - Secure storage of exam content and examinee responses
 - Client server vs. Internet both have different challenges
- **Test administration procedures**
 - Training and certification of proctors
 - Biometrics
 - Submission of incident reports

Challenges and Opportunities With New Technologies

- **CBT: Challenges-Test Center Delivery (cont.)**
- **Examinee cheating**
 - Test design
 - Innovative item types
 - Real time data monitoring of test events
- **Geographic coverage**
 - Monitoring and reporting

Challenges and Opportunities With New Technologies

CBT: Challenges-Alternative Models

- IP infringement
- Distribution
- Test administration procedures
- Examinee cheating
- Geographic coverage

Challenges and Opportunities With New Technologies

CBT: Opportunities-Alternative Models

- **IP infringement**
 - Not a concern for non-proctored exams
 - Same issues for private proctored as test center delivery
 - Reduced risk with OLP model since desktop is locked down
- **Distribution**

Challenges and Opportunities With New Technologies

CBT: Opportunities-Alternative Models

- **Test administration procedures**
 - Biometrics
 - Web cams
 - Remote proctoring
- **Examinee cheating**
 - Real time monitoring
- **Geographic coverage**
 - No limits

Special Problems With Administering Tests Outside Your Home Country

- **Challenges exist for all test delivery modalities (eg, P&P, CBT, oral)**
- **Challenges include distance, culture, language, staffing, demand, value of exam, infrastructure**

Special Problems With Administering Tests Outside Your Home Country

Distance Challenges

- Time zones
- Relationships with partners
- Facilities

Special Problems With Administering Tests Outside Your Home Country

Cultural Challenges

- Accepted testing behavior
- “Sharing” seen as cooperation not cheating
- Individual exercise vs. group
- Standardized testing not a local concept

Special Problems With Administering Tests Outside Your Home Country

Language Challenges

- **Need to translate test content? Piloting instructions?**
- **Construct generalization?**
- **Communicating candidate expectations**

Special Problems With Administering Tests Outside Your Home Country

Staffing Challenges

- Overcoming potential cultural differences
- Developing loyalty to the program
- Training
- Developing understanding of the value of the processes and rules

Special Problems With Administering Tests Outside Your Home Country

Demand Challenges

- Predicting administration volumes
- Need for flexibility in dates and venues

Special Problems With Administering Tests Outside Your Home Country

“Value of the Test” Challenges

- Tests with massively high stakes change behavior
- Conversely, need to ensure staff understand the value of the tests

Special Problems With Administering Tests Outside Your Home Country

Infrastructure Challenges

- Need standard conditions
- Electricity, equipment, connectivity, etc.
- Particularly affects CBT

Understanding Test Administration Challenges

Key element: *control*

- Control of examinees
- Control of the IP
- Control of the testing room
- Control of the environment
- Control of the staff
- Control of the data transfer

Requirements for Test Administration

- **Ensuring validity of testing process provides framework for decision-making about administration**
- **Standardized testing conditions for all examinee-examination interactions**
- **Work to increase your control (including specifications) of the entire testing event**

Potential Opportunities

- Why do security and test administration increase despite growth in new testing standards and guidelines
- Should existing standards/guidelines be more prescriptive
- Evidence-based vs best or better practices
- New metrics/research
- Can better practices be implemented without being onerous
- Criterion of “*just noticeable cheating*” for QC
- How important is test administration to validity, reliability, and fairness