

# Computer Based Testing and Validity

MAPAC

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# Introduction

The convenience of computer based testing is apparent. The capability of computer based testing to provide valid performance assessment is just now beginning to be realized.

Today I want to discuss those capabilities in relation to specific examples of applications.

# Overview

- The capabilities of CBT for enhancing the validity of performance assessment are many.
- Some of these CBT capabilities are being effectively utilized today.
- The challenge is to more fully utilize these capabilities by more sophisticated item and test design as well as test delivery.

# How Does This Effect You?

- What kinds of tests are you using now?
- Might one or more of the CBT capabilities and specific features I discuss today enhance the validity of the information you obtain from those tests?
- What do you need to know and be able to do to more fully utilize the potential of CBT to enhance your testing programs?

# Status Report:

- What does your organization or your client want to find out about the skills of applicants?
- How is that information obtained now?

# CBT Capabilities

- Enhancing the validity of traditional assessment.
- Assessing new skill sets that are a better match with real world performance.
- Support the radical re-design of instruction and assessment.

# Enhancing Traditional Assessment

- Provide for curriculum overlap.
- Support better ADA accommodations
- Reduce linguistic/reading demands.

# Assessing New Skill Sets

- Making performance assessment practical and routine.
- Some applications: Architecture, Medicine, CPA, Retail Customer Service

# Re-design of Instruction and Assessment

- Distance learning.
- Computer Adaptive Testing (CAT).
- Item/scenario generation “on the fly”.

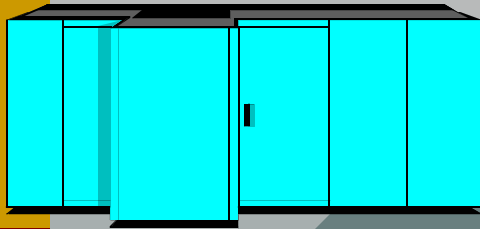
# CBT Test Demonstration

- Designed to show a range of possibilities for CBT item formats and skills assessed.
- Shows only a few of the many possibilities for item and test design.

# Summary

- CBT has the capability to provide many different kinds of item formats and assess many different kinds of skills.
- A “real world” item may not always measure a “real world” skill.
- The challenge: Building better models of performance for better instruction and more valid assessments.

# Computers and Testing Timeline



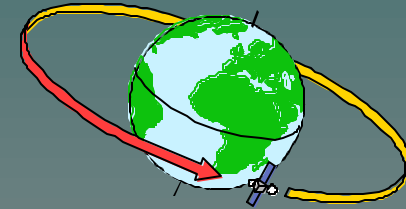
*Mainframes*

teletypes

electronic  
scoring

IRT Models

*Adaptive  
Tests*



The Web

*Simulation*

1950

1960

1970

1980

1990

2000

*Fixed  
Sequence  
Tests*

*Item Banking*

**Multimedia  
Items**



large group  
testing

small group  
testing

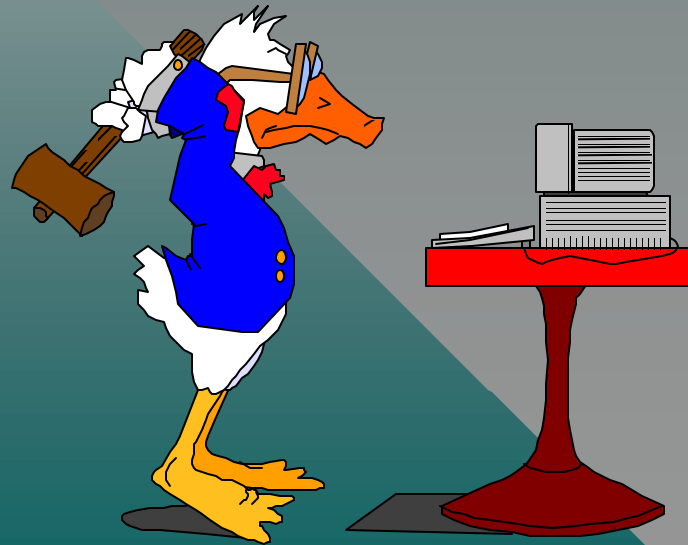
individualized  
testing

# Practical Considerations in Transitioning

- Target and Focus
- Decisions in Transitioning to CBT
- Reporting Enhancements
- Security and Tracking

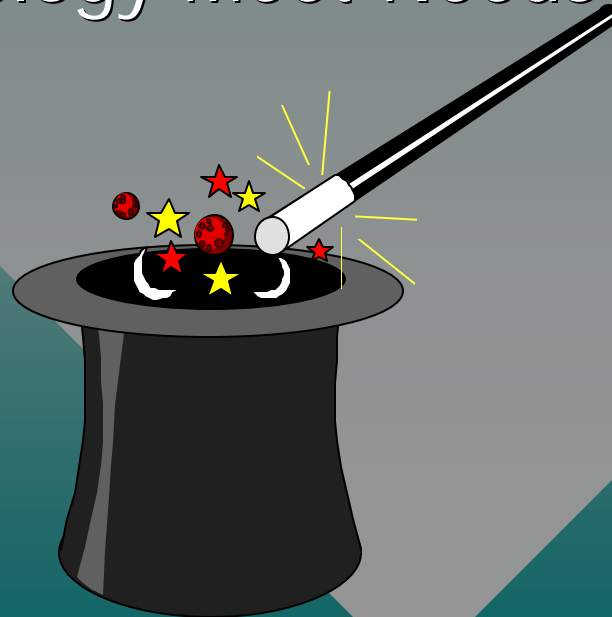
# Target and Focus

- “I just want to tell employers what I can do!”
- Attract, Convince, Capture, and Process



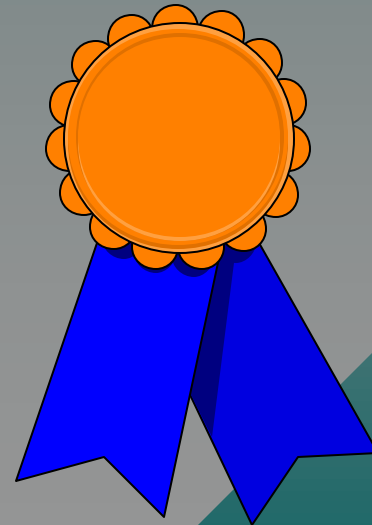
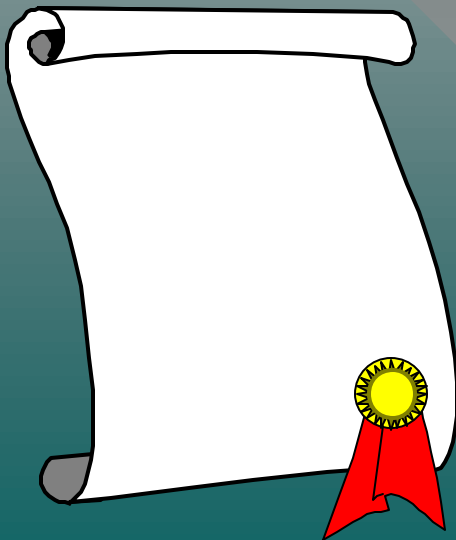
# Decisions in Transitioning to CBT

- Testing Cycle
- Hardware-Software
- Can Technology Meet Needs?
- Expertise



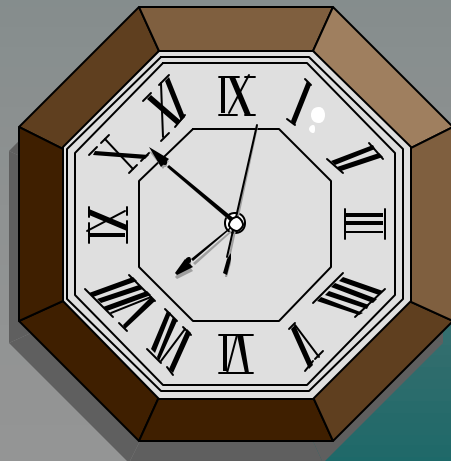
# Reporting Enhancements

- Handbook
- Score
  - Reporting
  - Archiving



# Security and Tracking

- Item Exposure
- Candidate Access
- Measures



# Recap

- Simple Operation
- Investment
  - Technology
  - Communication
  - Knowledge
- Realistic Expectations
- Automate Functions
- Improve Data Collection
- Better Reporting
- Tighter Security
- Accurate Tracking
- More Services from the Human Resources Office