2015 ICE EXCHANGE

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PORTLAND MARRIOTT DOWNTOWN WATERFRONT
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ICE Institute for Credentialing Excellence

Fast-tracking New Item Types into an Existing Exam: Using Cognitive Labs to Evaluate Item Types and Inform Decisions

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Your Presenters

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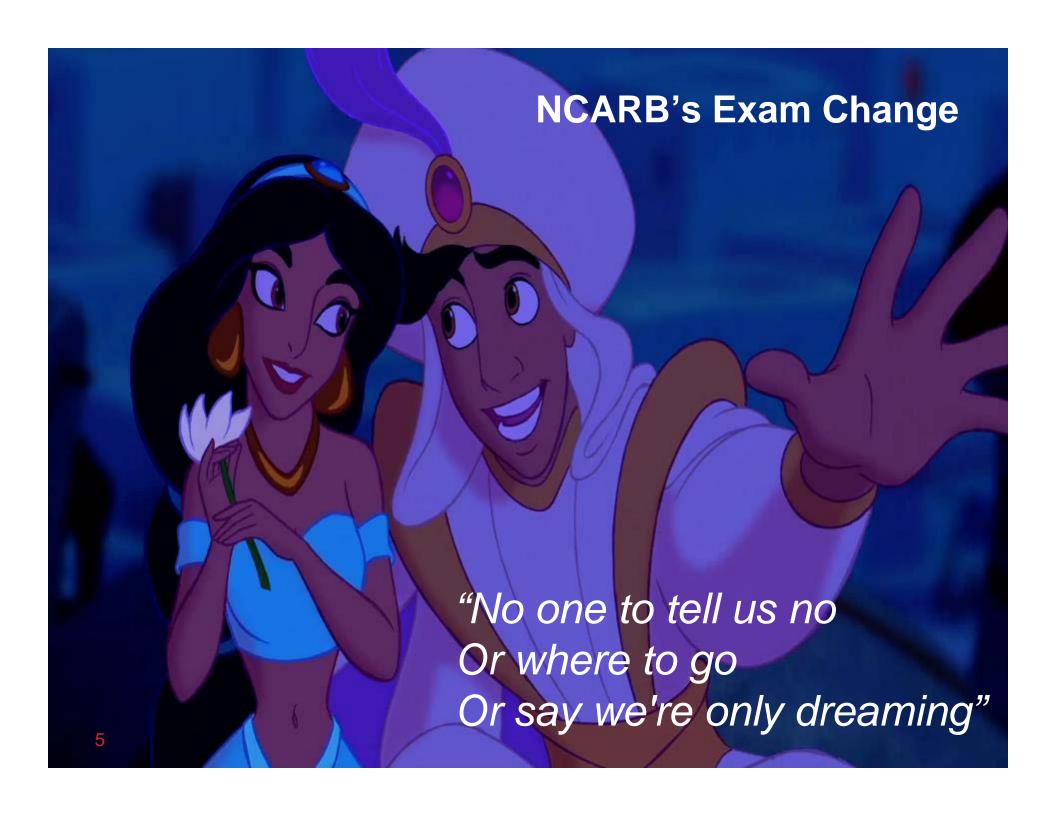National Council of Architectural Registration Boards

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Session Objectives

- Understand the challenges associated with pretesting new item types and presentation formats on an existing exam.
- Gain insight into how a more agile approach can allow for an iterative approach to test design.
- Understand how cognitive labs can be designed and carried out to predict performance aspects of new item types and formats.
- Be able to interpret the results of a cognitive lab to inform examination decisions and predict how new item types will achieve identified measurement goals.

"No one to tell us no
Or where to go
Or say we're only dreaming"

Challenges & Solutions

- Urgency to "Get it Done"

- Lack of details early

- Understanding new items

- Unbiased pretesting

- Agile Approach

- Open Communication

- Cognitive lab

- Post-delivery analysis

Think Aloud Study

Timing Study

Cognitive Lab Design

Part 1: Think Aloud Study

Who & What

- Mock candidates (RLAs)
- Exam "form" included 1 case study (+ items) and new item types
- Candidates were asked to verbally report (think aloud) as they worked through each item

How

Observers record process, thoughts, points of confusion, sources of challenge

A Volunteer Opportunity

- A VERY BRIEF Think Aloud Session

- FYI: It's a math question

A quantitative fill-in-the-blank

A machine packs boxes at one box every 45 seconds (3/4 of a minute). How many boxes can this machine pack in ten minutes?

Boxes

Think Aloud Findings

- Preparation is key! Topics and content for advance materials

- Interface: Image display, response functionality, tools

- Case Studies: Use of case resources, ideas for training materials, relationship of items to cases

- New item types: Sources of challenge/confusion

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Part II: Timing Study

Who & What

- Mock candidates (RLAs)
- Exam "form" included multiple items with known parameters and a collection of new items
- Candidates were introduced to the exam and allowed to test interrupted

How

Timing data was captured for timing analysis and candidates completed a post-event survey.

Timing Study Findings

- Candidates spent longer than in the operational exam

- Estimates of case study review time

- Refined our estimates of average time by item type

Challenges Encountered

- Study Design
    - » Putting together the right selection of content
    - » Coordinating work

- Execution
    - » Recruiting candidates
    - » Interpretation of findings, generalization

Summary and Recommendations

- Cognitive labs
  - » Plausible option to evaluate format and content
  - » Provide value resources to the development team and program leaders

- Guidance for implementation
  - » Make this part of your overall test development plan
  - » Conduct when you feel comfortable with content development progress but also have time to implement changes

Questions?