

Challenges and Results in the Development and Validation of Large Scale Video Based Simulations

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Brief Agenda

- Development
- Production
- Validation
- Conclusions



Example Item - Written

You pull a woman over for running a stop sign. She will only pass her papers through a small crack in the window. You ask her to roll the window down completely. She will not comply, and questions your identity as an officer.

As the officer, what would you do?



Situational Judgment Video Design

- Dramatized items portray officers in variety of settings
- Environmental cues
- Emotional triggers

- Objective: to capture the content established by expert groups and test developers.
 - Maintain situational elements
 - Maintain integrity of characters
 - Support test answer choices.



Video Simulation Development Phases



Pre-Video Shoot

- Logistics
- Auditions
- Rehearsals
- Locations



Key People

- Test Developers/SMEs
- Technical Teams



Key Considerations

- Schedule and timing
- Communication plans
- Designated roles
- Preparation and coaching



Video Shoot

- 16 Days of Shooting
- 66 Scenarios



Video Shoot

- People
 - SME group
 - Test Developers
 - Crew
 - Talent
 - Security
- Locations



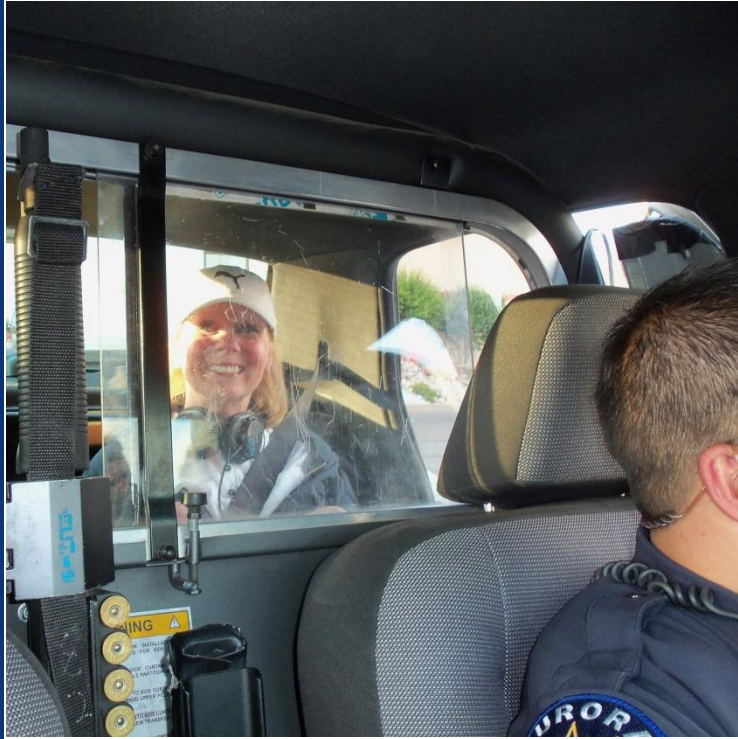
Moving Cars



Hood Mounts



Hood Mounts



Businesses



Outdoors



Talent



Graphics and Audio



METRICS

Other Post Video Production Work

- Recording professional voiceovers
- Linking audio instructions, graphics, and video scenarios
- Review with subject matter experts



Validation

- Content-Related Validity
- Criterion-Related Validity



Job Analysis

- 200+ hours SME panel interviews and test reviews
- 309 incumbent officers complete job analysis surveys
- Document linkage of test items with job analysis findings



Job Analysis Survey Documented

- Essential Duties
- Tasks
- KSAO's
- General Competencies
- Job Behaviors (Pairs)



Behavior Pair Analysis

How important for an officer to be on the strong side of this:

Strong (Positive)		Weak (Negative)
Does not demand more control than is needed and appropriate for situation.	v.	Demands more control than is needed and appropriate for situation.
Patient and outcome oriented with subjects - no personal response or overreaction.	v.	Overreacts to attitude or provocation.

Behavior Pairs Organized into Nine Dimensions

- **Observation/Assessment/Critical Thinking Ability**
- **Interrogation/Investigative Communication Ability**
- **Team Orientation**
- **Confrontation/Enforcement Initiative**
- **Restraint in Use of Authority**
- **Ethical Orientation**
- **Ability to Understand and Help with Human Distress**
- **Organizational Orientation**
- **Customer/Community Relations Skills**



Behavior Pair Survey Results

- The nine dimensions including all 215 behaviors rated as important indicators of successful performance
- 145 rated “very important” to “critical” to successful performance



Answer Choices Directly Linked With 215 Validated Behavior Pairs

<i>Answer Choice</i>	<i>Dimension and Behavior Pair Rationale</i>
Pass papers through the window. Don't ask her to roll the window down again.	<p><i>Restraint in Use of Authority</i></p> <ul style="list-style-type: none">•Patient and outcome oriented with subjects – no personal response or overreaction. <p><i>Customer/Community Relations</i></p> <ul style="list-style-type: none">•Gains cooperation with positive, outcome oriented communication style.
Warn her she can be arrested for noncompliance if she doesn't roll the window down all the way.	<p><i>Restraint in Use of Authority</i></p> <ul style="list-style-type: none">•Fails to use positive approach when it would be useful for gaining rapport or cooperation. <p><i>Customer/Community Relations</i></p> <ul style="list-style-type: none">•Puts people in their place if they criticize.

Pilot Test

- $n = 311$ incumbents from 4 agencies
- Mean = 79.98% correct
- Standard Deviation = 7.00
- Distribution positively skewed



Performance Evaluations: Behavior Pairs

Observation/Assessment/Critical Thinking Ability

Strong Behaviors

- Checks out inconsistencies.
- Acts decisively to control situation.

Weak Behaviors

- Makes assumptions.
- Rash or impulsive, acts immediately without necessary assessment.

Rating Scale

Bottom 5%	Bottom 15%	Lower 33%	Average Competent	Upper 33%	Top 15%	Top 5%
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Criterion-Related Validity Results

Dimensions Rated	Pilot Video Test Validity Coefficients	Corrected Estimates
	r	r_c
Overall Performance	.35**	.47
Overall Dimension Average	.34**	.46

**Correlation is significant at the 0.01 level (2-tailed). r_c indicates corrected correlation between test and criteria, corrected for both criterion unreliability and restriction in range.

No Adverse Impact

- At the recommended passing point video test shows no adverse impact.
- In compliance with 4/5ths rule.

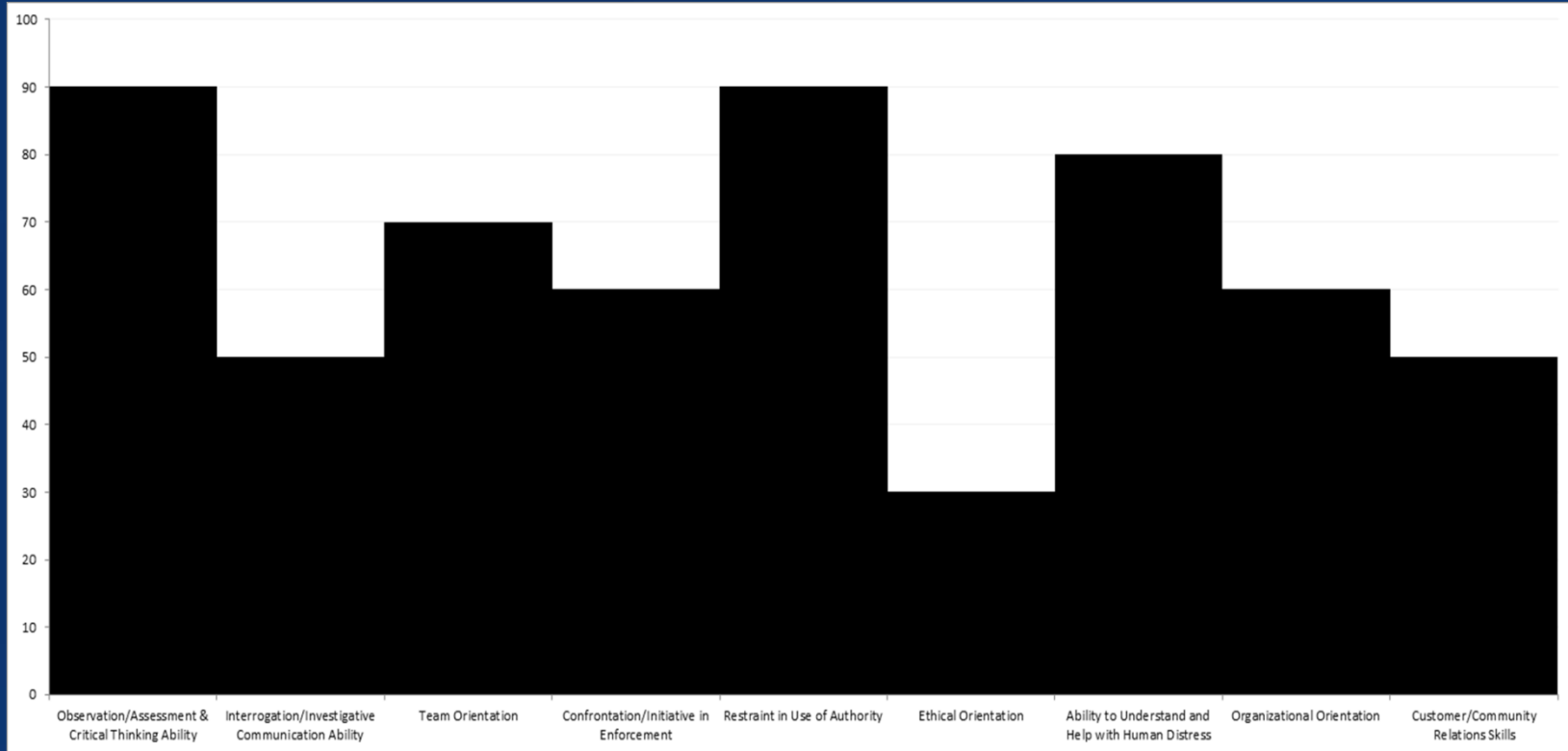


Alternate Forms

- Two 46-item exams
 - Similar descriptive statistics
 - Similar internal consistency
 - Similar validity coefficients
 - Similar dimensional coverage
 - No adverse impact



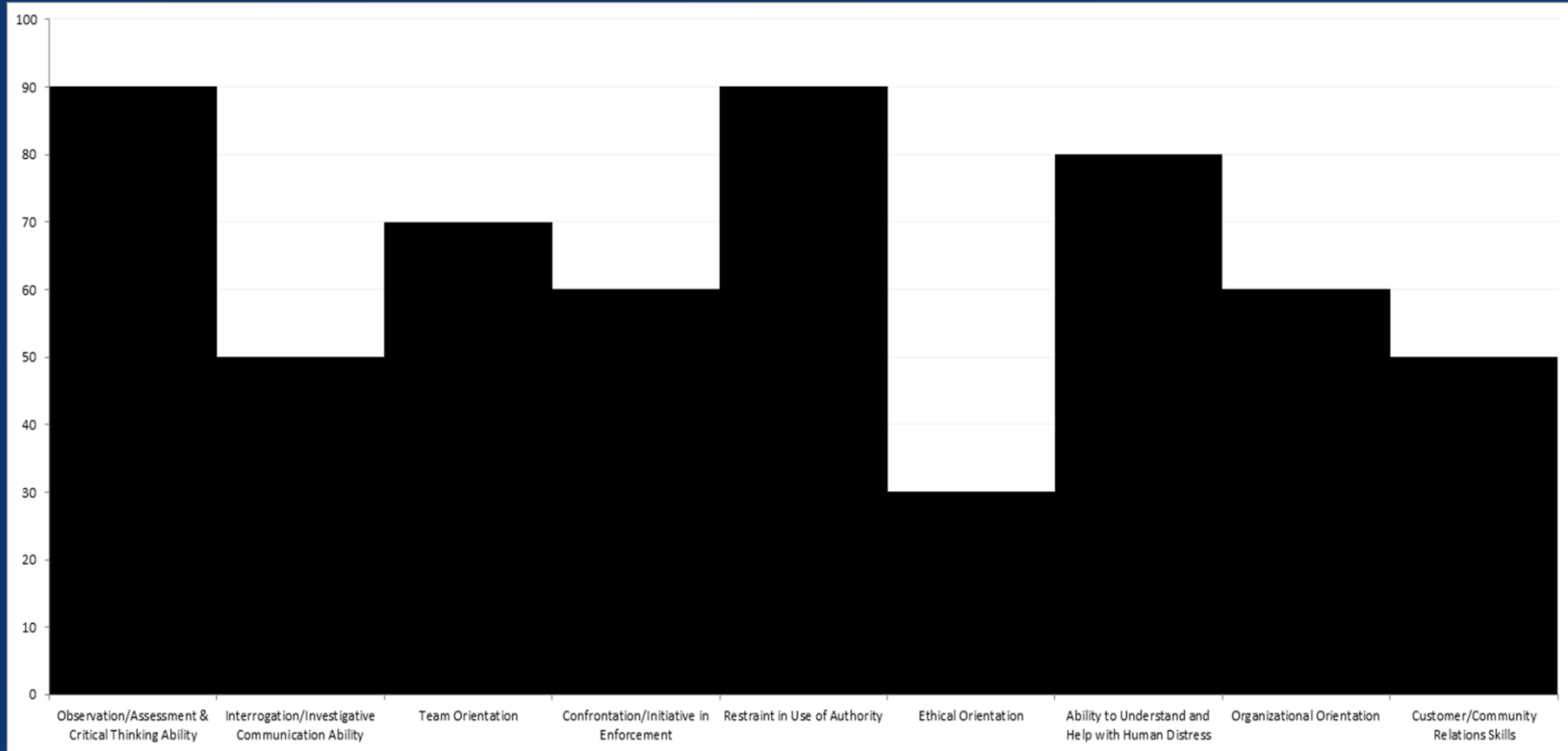
Dimensional Scores



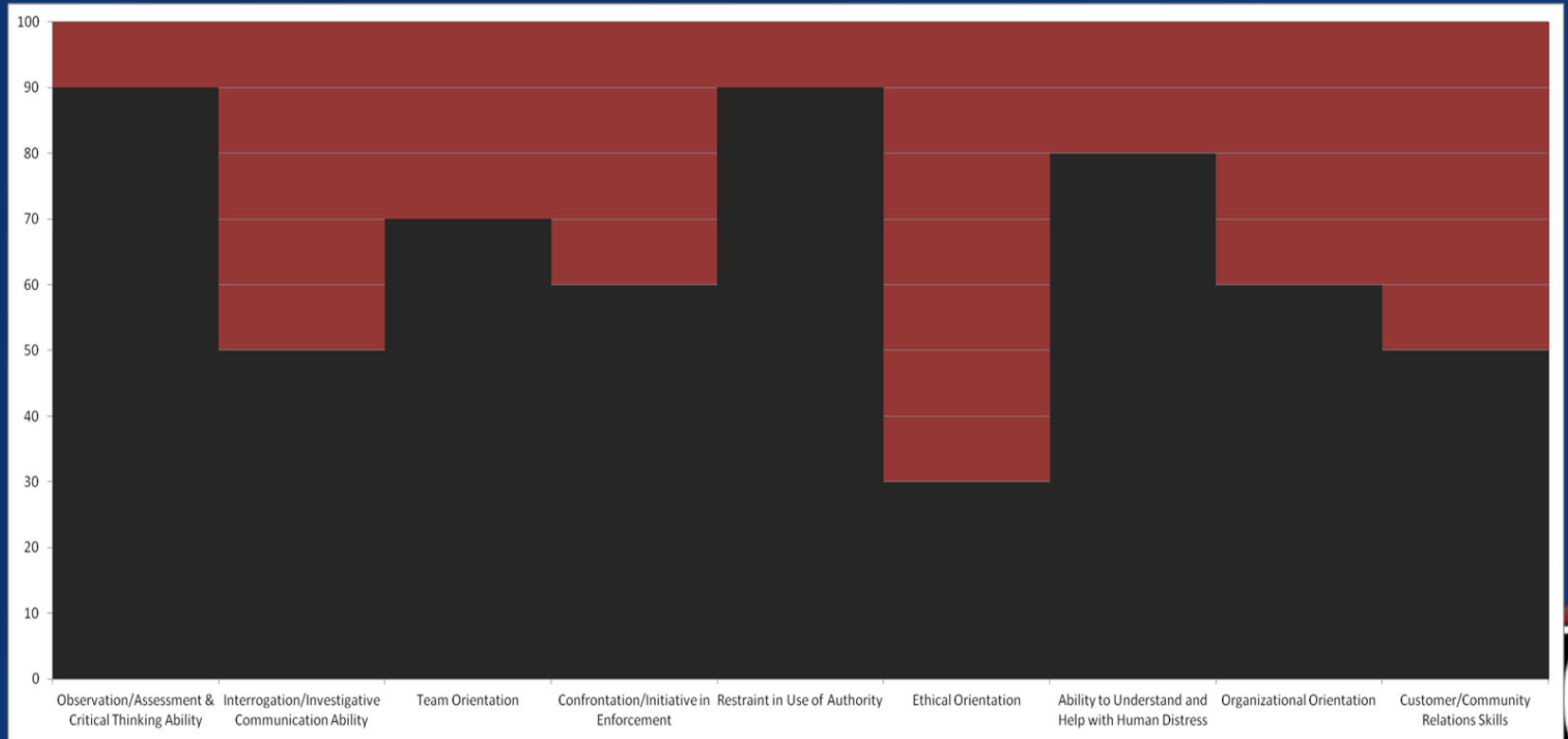
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Dimensional Scores



Interpreting Dimensional Scores



The End

Questions or Comments?

