

Best Practices and Key Considerations for Written Testing

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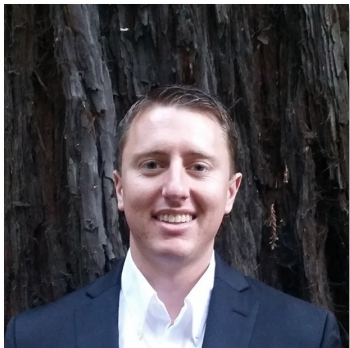
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Hi!

Introductions



Chris Atkinson

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Agenda

- ◆ The legal framework surrounding written testing
- ◆ Test validation methods
- ◆ Job analysis, written test development and validation
- ◆ Pass point setting
- ◆ Whole person approach to testing
- ◆ Q & A

Written Testing

- ◆ In the public sector, written tests are most frequently multiple choice exams designed to assess candidates' job specific knowledge (i.e., accounting principles) or cognitive abilities (i.e., mechanical reasoning or mathematical ability)
- ◆ Advantages
 - Ability to administer to many candidates in a short amount of time
 - Relatively lower cost

Disparate Treatment

- ◆ Plaintiff must demonstrate that applicants were treated differently due to a protected class status – race, sex, gender, religion, age or national origin (*Title VII of the Civil Rights Act 1964*)
- ◆ Involves deliberate acts of discrimination
- ◆ Plaintiff **must show intent** from direct or inferential evidence

Disparate Impact (Adverse Impact)

- ◆ A substantially different rate of selection in hiring, promotion or other employment decision which works to the disadvantage of members of a race, sex or ethnic group
- ◆ **Does not** require plaintiff to show intent



Adverse Impact Legal Framework

Section 703(k)(1)(A) of the 1964 Civil Rights Act (i.e., Title VII) states:
An unlawful employment practice based on disparate impact is established only
if:

- ◆ A complaining party demonstrates that a respondent uses a particular employment practice that causes an adverse impact

AND

- ◆ The respondent fails to demonstrate that the challenged practice is job-related for the position in question and consistent with business necessity

OR

- ◆ the complaining party makes the demonstration described above with respect to an alternate employment practice, and the respondent refuses to adopt such alternative employment practice

1964/1991 Civil Rights Act



Plaintiff Burden: Identify if Disparate Selection Rates Exist

- 80% Test (4/5ths rule)
- Statistical Significance

Men Pass (60)	Men Fail (40)	Men Passing Rate (60%)	Selection ratio comparison $40\%/60\% = 66\%$ 66% is less than 80%: violation of the 80% rule
Women Pass (40)	Women Fail (60)	Women Passing Rate (40%)	

Important note: Discrimination can impact any group.

What is validity?

- ◆ In a legal realm, a selection procedure is valid if it can be demonstrated by an employer that it is “...job related and consistent with business necessity”
(Uniform Guidelines of Employee Selection Procedures)
- ◆ It is the *inferences* regarding the specific uses of a test that are validated, not the test itself



Three types of validation

Content

Requires a connection between the important parts of the job and the test

Criterion

A mathematical study that demonstrates that the test predicts job performance

Construct

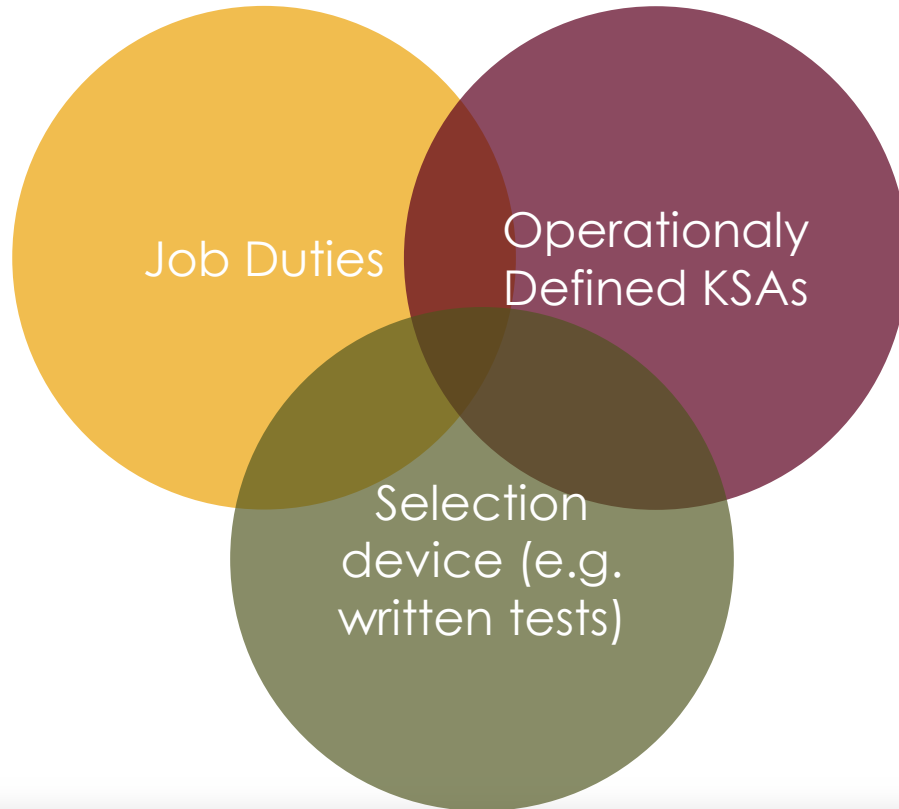
A connection between the test, a trait, and job performance

Content Validity

- ◆ Jobs requires employees possess certain Knowledge Skills and Abilities (KSAs) to be successful
- ◆ KSAs the test measures must be required for performing critical or important work behaviors that constitute most of the job

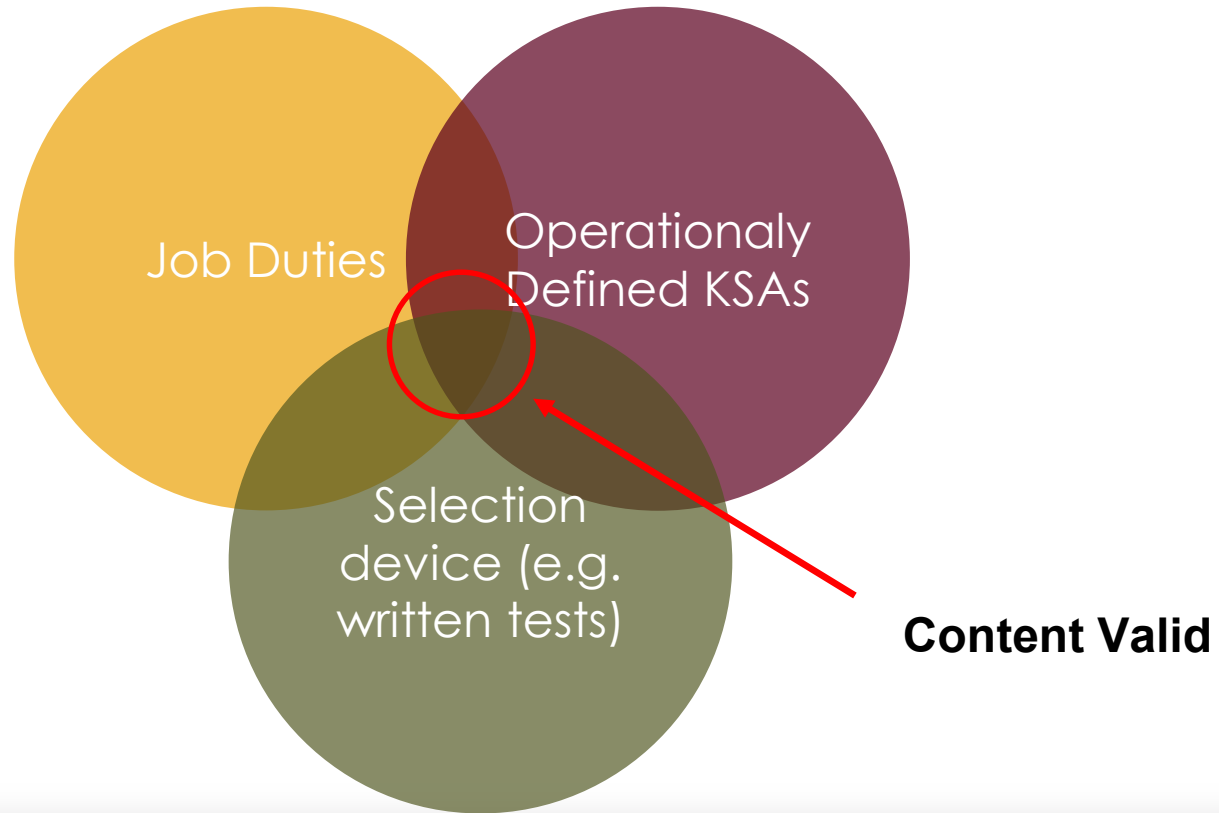


Content Validation Process





Content Validation Process





Using Job Analysis for Test Development

- ◆ A job analysis is a study that provides the legal basis for testing & selection decisions
 - » Identifies important tasks and work behaviors required for successful job performance
 - » Any selection tool must assess the KSAs needed for performing those important work behaviors
- ◆ SMEs are critical for providing input/ratings

Using Job Analysis for Test Development

What information can SMEs provide in a job analysis?

- ◆ The duties and tasks performed
- ◆ Frequency with which specific tasks are performed
- ◆ Relative importance of the tasks

Using Job Analysis for Test Development

What information can SMEs provide in a job analysis?

- ◆ The qualities needed for successful job performance (knowledge, skills, and abilities – aka KSAs)
- ◆ Relative importance of each KSA
- ◆ When each must be possessed (at entry vs. learned on the job)
- ◆ If each KSA is positively correlated to job performance

Using Job Analysis for Test Development

What information can SMEs provide in a job analysis?

- ◆ Level and complexity of the work
- ◆ Work environment/working conditions
- ◆ Physical requirements
- ◆ Tools and equipment used



Written Test Development & Validation

- ◆ Test Plan Development
 - » From the job analysis, the test plan/KSAs are identified to be measured in the test
 - Review the job analysis data
 - Weight the KSAs per the job analysis
 - Create test plan with test sections and number of items



Written Test Development & Validation

◆ Test Development

- » Test content (i.e., test items/questions) is chosen and/or developed
 - Gather a SME panel
 - Review the test plan and KSAs
 - Choose and/or develop test items to measure those KSAs



Written Test Development & Validation

◆ Test Development

- » When renting an exam, agency also has a responsibility to conduct local validation efforts
 - Review of test content compared to agency job analysis
 - SME review and input on test content
 - Development of a semi stock or custom exam if needed
 - Documentation of validation evidence

Ranking, Banding and Pass/Fail Cutoffs

Applicant	Score
Julie	90
Bob	90
Matt	90
Sam	90
Felicia	89
Andrew	89
Stacey	88
Ruby	88
Marty	87
Rachel	87
Sue	86
Becky	86
Janet	85
Tom	84
John	83
Mike	83
Ray	82
Kathy	81
Josh	80

Ranking – assumes one applicant is reliability more qualified than the other

Banding – puts applicants in score categories and “ties” them

Pass/fail cutoff – treats applicants above a certain scores as qualified and those below as not qualified

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Setting Pass/Fail Cutoff Scores – Angoff Approach

- ◆ Determine the “normal expectations of proficiency” by identifying the percent of minimally qualified job applicants who should answer the question correctly
- ◆ *A minimally qualified job applicant* possesses the necessary baseline knowledge, skills and abilities measured by the test to perform the first day on the job



Angoff Process

- ◆ SMEs review each item on a written test and provide their “best estimate” on the percentage of minimally qualified applicants they believe would answer the item correctly
- ◆ These ratings are averaged and a valid cutoff for the test can be developed



Banding

- ◆ Groups individuals with similar scores into the same band
- ◆ Requires appropriate statistical calculations
- ◆ Sometimes has less adverse impact than rank ordering

Ranking

- ◆ Ordering scores from highest to lowest and choosing candidates in that order
- ◆ Must link the selection procedures to “performance differentiating” KSAOs
- ◆ Typically easier to support with strong criterion validity

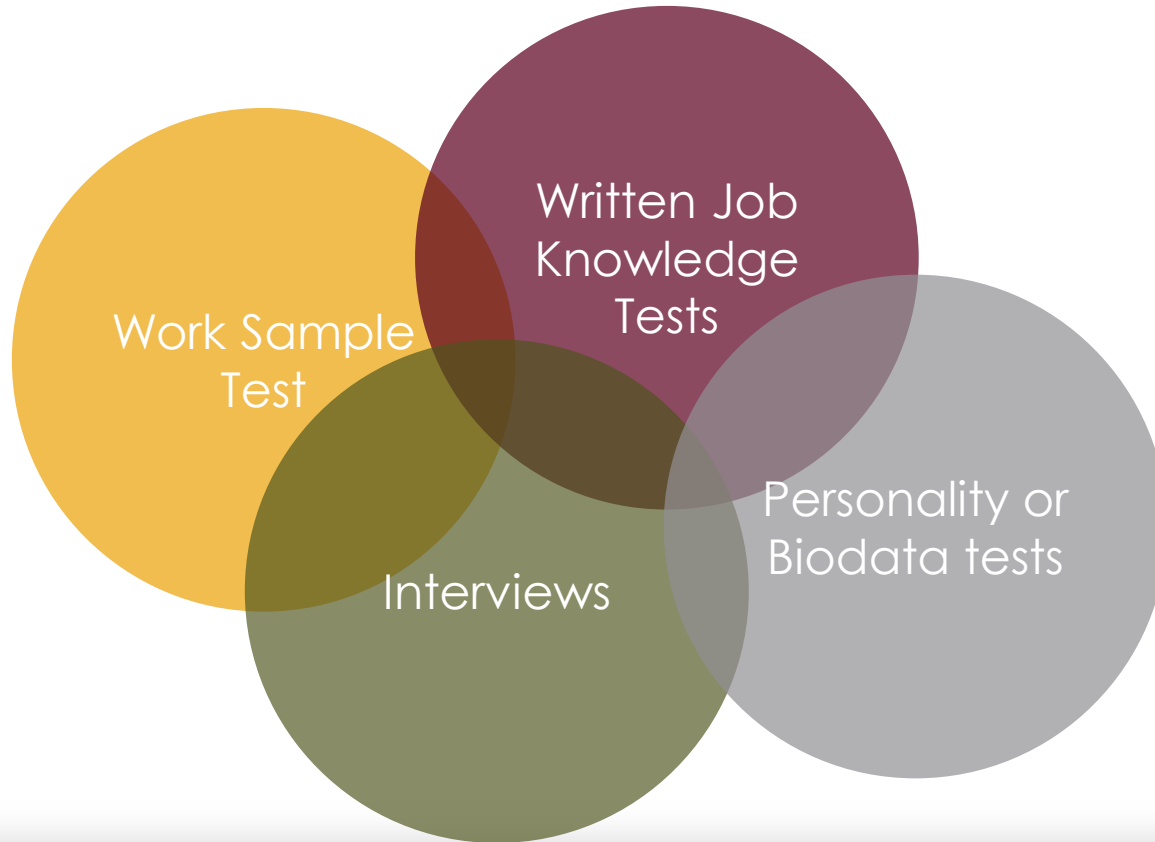


Whole Person Approach

- ◆ The U.S. Department of Labor recommends that employers use a variety of tests and procedures that measure different aspects of the applicant to reduce employment selection errors and increase the effectiveness of selection decision-making



Whole Person Approach





Thanks!

Any Questions?

Please contact us by email

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