

CU-101.2

Introduction to Testing:

Elements of a Testing Project



Elements of a Testing Project >>>



Job Task Analysis



Exam Blueprint



Item Writing



Beta Testing & Analysis



Standard Setting



Creating Forms & Scoring



Exam Delivery





Documentation > > >



All elements of test development should be **Documented**

- > For **Test Takers** ... to ensure consistency, transparency, & fairness
- > For **End Consumers** [Employers, General Public, etc.] ... to provide transparency & engender trust
- > For **Test Sponsors** ... to follow best practices, to ensure auditability and legal defensibility

> > > **Integrated** documentation is best! < < <



Subject Matter Experts >>>



We're going to need some help ...

- > To assess competency, we need to the help of people already competent!
- > These are generally referred to as **Subject Matter Experts** [SMEs]
- > SMEs help us ...
 - > Identify & evaluate tasks
 - > Refine the exam blueprint
 - > Write & review items
 - > Set passing standards
- > Without SMEs we're going nowhere fast

Job Task Analysis > > >



An **Exam** should be based on a thorough analysis of curriculum, job, or role

- > It is critical to know what you're asking the exam to assess!
- > This the purpose of a **Job Task Analysis** [JTA]
- > A JTA is made up of three elements ...
 - > **Task Elicitation** – the **Tasks** performed by competent practitioners
 - > **Survey** – a broad review provides data to support task and their validity
 - > **Analysis** - judicious filtering and calculations identify critical tasks



[Exam] Blueprint > > >



We need to know [EXPLICITLY] what the Exam is intended to assess

- > Critical **Tasks** are linked to **Domains** ... broad areas of knowledge/skill/content to be assessed
- > Domains and their relative weightings form the initial basis of the **Exam Blueprint**
- > [Frequently] domains are split or subdivided for more granularity/specificity
- > Relative importance of subdomains is established
- > Domains combined with weighting describes the distribution of items [questions] needed

> > > Methods for arriving at a **final** Blueprint can be highly variable! < < <



Item Writing >>>



Driven by an exam blueprint, **Items** are written

- > Enough **Items** must be written [**Authored**] to satisfy the exam blueprint
- > Factors [typically] include ...
 - > Domain weighting ... determines distribution of items [%] by content area
 - > Length of exam [in items]
 - > Number of equivalent forms needed
 - > Allowances for “bad” items
- > Items should be authored following best practices and job norms
- > Items are [typically] **Reviewed** and **Revised** until they are **Accepted**



Beta Testing & Analysis > > >



Our new exam is **Delivered** and **Results** are **Psychometrically** analyzed

- > We test the test!
- > This is called a **Beta [Test or Exam]**
- > Data is gathered and evaluated to assure exam is fit for purpose
- > To analyze data, we apply the appropriate **Psychometric** statistical techniques

Standard Setting > > >



Standard Setting determines the performance required to **Pass** the exam

- > We need to determine the **Passing Standard**, often referred to as the **Cut Score**
 - > > > **This determination cannot be arbitrary or capricious!** < < <
- > In standard setting, a single form is reviewed resulting in a passing standard for that form
- > There are a number of methodologies that can be used to arrive at the passing standard
- > The **Minimally Qualified Candidate**



Creating Forms & Scoring >>>



Assembling forms and determining outcomes

- > A **Form** is a specific set of items that adheres to the blueprint
- > How forms are assembled can be highly variable
 - > Multiple forms are often used to increase security
 - > We want forms to be as similar as possible
- > **Scores** are the calculated outcomes of the test
 - > Outcomes may or may not be reported

>>> **Reliable outcomes are dependent on the design of the exam!** <<<





Exam Delivery > > >



There are many considerations when it comes to **Exam Delivery**

How do candidates get access?

- > **Prerequisites/Eligibility & Booking** considerations
- > **Availability** by date, window, region, country, etc.
- > **Costs** to test
- > **Retake** policies

Under what conditions do candidates take tests?

- > **Paper/Pencil** vs. **Computer**
- > **Remote** vs. **In-Person**
- > **Proctored** vs. **Un-proctored**



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Till next time ...

