
WHITE PAPER

The Psychometrics of Certiverse

Because of its speed and cost-effectiveness, some competitors have insinuated that the Certiverse platform lacks psychometric rigor, but the reality is that the Certiverse platform supports adherence to the same industry standards that most programs use, like *The Standards for Educational and Psychological Testing and ISO 17024*.

These are the standard steps in developing an exam on the Certiverse platform:

Job/Role Analysis

Certiverse has an interface to elicit knowledge, task, or competency statements from subject matter experts (SMEs). We use Natural Language Processing to help ensure that statements are syntactically sound. And we require SMEs to tag job analysis statements with a domain. After review and refinement, these statements are automatically used to create a JTA survey to be completed by a sample of SMEs. After the survey is closed, the system automatically removes records that fail quality checks (fast responding, low variability, idiosyncratic ratings, missing data), analyzes the mean criticality of the statements, and automatically creates a draft exam blueprint.

Exam Blueprint

We use industry-standard blueprints that specify the content of the exam as a weighted outline, ensuring that each form is content valid. The weights are automatically created from the JTA survey results, or may be manually uploaded or edited.

Item Writing

Item writing assignments are automatically generated from the exam blueprint to create a pool that will support the desired number of forms. Optionally, SMEs may use an inbuilt feature to have a state-of-the-art AI model write an item on the topic of their choosing. The SMEs use a simple wizard to review, revise, or write items. Again, we use Natural Language Processing to enforce the syntactical rules for writing items. Items are then submitted to a review queue for peer review, which addresses the other item-writing rules. The items are then given any further reviews (editorial, sensitivity, etc.).

Beta Testing & Analysis

We encourage clients to collect beta data, in which a double-length form is composed (automatically or manually, to conform to the exam blueprint), reviewed, approved, and administered under operational conditions to a sizable sample of candidates with delayed reporting. These response data can be exported for any analysis (e.g., IRT) or the inbuilt item analysis report can be used to compute corrected item-total, proportion correct, and option analyses. The item management module automatically classifies items with statistics into a stoplight model (red, yellow, and green) for ease of use.

Standard Setting

A cut-score is required for all pass/fail exams and the Certiverse platform accepts cut-scores derived outside the system, and also has a module for conducting Angoff studies inside the platform. When the standard setting form is composed from beta exam items, the resulting standard can be equated to each operational form, ensuring the highest level of standardization and fairness.

Scoring & Operational Testing

When operational forms are composed (automatically or manually, to conform to the exam blueprint), reviewed, and approved, the system has a feature to rescore beta candidates onto these forms so that their results can be reported with a credentialing decision.

Operational Analysis & Reporting

The inbuilt item analysis report can be used to compute psychometric item statistics on demand to evaluate the on-going quality of measurement. Other reports address candidate testing volumes and performance.