

CERTIFIED IRRIGATION CONTRACTOR EXAM DEVELOPMENT

Executive Summary

In June 2017, the Irrigation Association (IA) commissioned a job analysis to be conducted for its CIC program with oversight by a representative panel of subject matter experts (SMEs) and guidance by a psychometric consultant and IA staff. The data for the job analysis was gathered from an online survey that was distributed in October 2017 to 1,030 individuals from IA's membership database. Based on 194 individuals with valid responses, a 19% response rate was attained.

Respondents were asked to rate each of 43 items on the basis of frequency of being used on the job, and the criticality of using the knowledge appropriately. The survey provided a frequency and criticality rating scale for respondents to record their opinions. Each rating scale contained three defined points.

The results culminated in percentage emphases for the six content domains that comprise the exam blueprint. The calculated domain emphases displayed a substantial departure from the emphases that were derived from the prior job analysis in 2009, but the differences largely reflect changes in the number of component content items in five of the six domains.

In February 2018, the SME Panel held an electronic meeting to review the overall survey results and recommendations. Their primary task was to approve the survey results and technical report, and to schedule inserting the sub-content detail within each domain as the number of content items changed significantly. This function was later handled by the IA Certification Board (IACB). The new exam content outline will be invoked to structure new forms of the exam.

Purpose of Job Analysis

The primary purpose of a job analysis in certification is to determine the nature and emphasis of the exam content. By linking exam content to a job analysis, the exam gains content validity, which, as noted earlier, is the most importance trait of a high stakes exam. The ranking of combined frequency and criticality means compares the content items that are deemed most and least important based on the professional experience and expertise of the survey respondents. Domain emphasis is then determined by the number of content items and their relative importance. The following steps are followed in calculating domain importance.

1. Sum the combined frequency and criticality means of the 43 content items.
2. Divide each combined mean by the sum of the means.

3. Sum the content item weights for each of the 6 domains.

Step 3 produces the relative domain weights, which are the most important outcomes. These weights, with their derivation from item frequency and criticality, and the number of items comprising a domain, become the basis for content emphasis in the exam's table of specifications.