

### **Recruit Subject Matter Experts**

- Representatives from Industry, Secondary and Post Secondary Education
- Experts in the field (at least 3 years experience)
- Geographically diverse (at least three states represented)

### **Conduct Test Revision Workshop**

- Revise and/or write tasks and competencies
- Review tasks affiliated with each duty and weigh by importance
- Review/revise existing multiple-choice items
- Write new multiple-choice items
- Review/develop performance jobs according to tasks/competencies
- Develop performance evaluation criteria

### **Conduct Pilot Testing**

- Geographically diverse (at least 3 states)
- Valid pilot group should consist of one more person than the number of items on the assessment
- Inter-rater reliability conducted for performance assessments
- Results are compiled and analyzed through an item analysis
- Modifications made to the assessment based on item analysis results

### **Included in the Process**

#### **Validity**

A key strength of all NOCTI Job Ready assessments concerns content validity. That validity is based upon the fact that each assessment is built upon available national/industry standards and reflects the critical core competencies required in the occupation as reflected in associated job-task analyses performed during the development/revision process. Since NOCTI's assessment development methods rely on subject matter experts to assess the relationship between the assessment content and the defined universe of the job title, NOCTI assessments are a content valid measure of the required skills in a given job title. The Standards for Educational and Psychological Testing (1999) state that content-related evidence demonstrates the degree to which the sample of items, tasks, or questions on a test are representative of some defined universe or domain of content. The methods often rely on expert judgments to assess this relationship. Thus, the content validity of NOCTI Assessments is in accordance with the Standards endorsed by the American Educational Research Association (AERA), The American Psychological Association (APA) and the National Council on Measurement in Education (NCME).

NOCTI assessments do not necessarily parallel any local curriculum. However, it can be assumed that any good curriculum will be based on the critical core competencies required of that occupation. Accordingly, a high degree of correlation should exist between the NOCTI assessment content and a good curriculum in the same occupational field.

#### **Reliability**

The reliability of an assessment refers to its consistency of measurement (i.e., the absence of measurement errors). NOCTI works to ensure that all of the assessments that we create have a stable and consistent performance of measurement. Below are the various approaches that we

have utilized to demonstrate that an assessment is providing a reliable measurement of student skill and/or knowledge.

- Internal consistency – This is a measure often used with written (cognitive) assessments and is calculated using a statistical software package such as SPSS or item analysis programs; NOCTI utilizes both types of programs. The higher the internal consistency the more reliable the assessment.
- Inter-rater reliability – This is a measure that NOCTI often uses with hands-on testing as well as any assessment form that necessitates the use of ratings. We design all ratings around rubrics that are as objective and clear as possible. Measuring these ratings allows us to verify that we have met our goals for developing objective rubrics. To obtain this measure, several raters will score the same group of participants; the scores by the raters are then correlated for agreement.

### **Readability**

Each NOCTI written (cognitive) assessment will parallel (not exceed) the reading level required in the industry. Each development committee member will be asked to bring reading materials that are required in the occupation to the development workshop. These materials will be subjected to readability analysis and the written assessment will then be constructed to parallel this reading level.