

## Technical Information Brief – Content Validity

As part of the development process for the CASAS assessments approved by OCTAE for use in the National Reporting System (NRS) for Adult Education, CASAS provides validity evidence to examine the relationship between the content of each test and the construct that each test is designed to measure. All CASAS tests approved for use in the NRS show compelling evidence that their content aligns with the intended construct.

### Introduction

The *Standards for Educational and Psychological Testing* states that “Validity refers to the degree to which evidence and theory support the interpretations of test scores entailed by proposed uses of the test” (AERA et al., 2014, p.11). Content validity is an integral component to the validation of the test. In educational testing, content validity focuses on alignment, which involves evaluating the correspondence between student learning standards and test content.

Each NRS-approved CASAS test series assesses the skills, knowledge, and abilities described in the NRS Educational Functioning Level (EFL) Descriptors for the corresponding modality. CASAS collaborates with psychometricians to conduct a series of alignment studies to evaluate how well the test items and test forms align with these descriptors.

### Alignment Studies

CASAS follows an effective methodology to evaluate the alignment of the test forms to the NRS EFL Descriptors. This methodology consists of multiple studies to examine how well each test form covers the knowledge and skills described in the NRS EFLs and relies on external subject matter experts to judge the alignment of test items to the standards (Webb, 1997, 2002).

### Subject Matter Experts (SMEs)

A panel of subject matter experts is convened to evaluate the alignment of all items contained in the CASAS Item Bank. The panelists are representative of the adult education population, have extensive experience working with the target examinee population and have educational expertise in the content area assessed by the specific test series.

Each SME provides judgments for two main parts of the alignment process. In the first part, the SME aligns each test item to a Depth of Knowledge (DOK) Level to determine the cognitive complexity of the items. Webb’s DOK Levels is a framework to categorize the cognitive complexity of test items.

The SME then aligns each item to the NRS Objectives described in each NRS EFL. The NRS objectives are defined by parsing descriptors for each NRS EFL into individual skills or objectives. The item alignments ensure that all items in the bank align to the NRS EFLs.

SMEs use these alignments in the second part of the study to evaluate whether each test form adequately covers the skill expectations for the NRS EFLs assessed by the form.

### Alignment Analysis and Results

CASAS evaluates the alignment in four principal ways:

#### Evaluation of Individual Item Alignment to the NRS EFLs

Subject matter experts align each test item to specific NRS Objectives described in each NRS EFL. The SMEs’ results are summarized to see the distribution of the test items across the NRS EFLs.

## Categorical Concurrence

This criterion focuses on evaluating the connection between the items in the test series and the knowledge and skills detailed within the modalities described in the NRS EFLs. Based on the results of the individual alignment, each test form is analyzed to determine how many items are aligned to each modality described in the NRS EFLs. Based on these results, this criterion is judged as fully met, partially met, or not met. All NRS-approved assessments have been judged to fully meet this criterion. Furthermore, all items on the test forms align with the NRS EFLs and do not assess skills not associated with the NRS EFLs.

## Depth of Knowledge Consistency

This criterion focuses on evaluating whether the knowledge and skills elicited from students on the exam are as cognitively demanding as what the students are required to know, as described by the NRS objectives. Based on the results of the SME alignment of each test item to a Depth of Knowledge (DOK) Level, each test form is analyzed to determine how many items are aligned to an NRS objective at or above the DOK level for the aligned NRS objective.

Based on this analysis, this criterion is judged as fully met, partially met, or not met. All NRS-approved assessments have been judged to fully meet this criterion of DOK consistency. The evaluation of this criterion shows that the knowledge and skills elicited from examinees through the test items is as cognitively demanding as what the students are required to know, as described by the NRS EFLs. Therefore, the items on the test require the types and levels of skill used to describe the NRS EFLs.

## Range of Knowledge Correspondence

This criterion focuses on evaluating the degree to which a comparable span of knowledge expected of students in each modality is the same as, or corresponds to, the span of knowledge that students need to correctly answer the items. Based on the results of the individual alignment, the results for each test form show how many items are aligned to each modality described in the NRS EFLs. Based on this analysis, this criterion is judged as fully met, partially met, or not met. All NRS-approved assessments have been judged to fully meet this criterion. Furthermore, this analysis provides supporting evidence that all items on the tests require the types and levels of skills used to describe the NRS EFLs.

## Summary

Content validity is the degree to which the test evaluates the construct it is designed to measure. The studies described in this brief evaluate the alignment of each test series to the corresponding National Reporting System's (NRS) Educational Functioning Levels (EFLs). Specifically, the studies focus on how the items within the test series represent the knowledge and skills described in the NRS EFLs. The results for each test form in the NRS-approved CASAS assessments indicate a strong level of alignment for each NRS EFL across the criteria reviewed.

## References

American Educational Research Association, American Psychological Association & National Council on Measurement in Education (2014). *Standards for Educational and Psychological Testing*. Washington, D.C.

Webb, N. (1997). *Criteria for alignment of expectations and assessments in mathematics and science education* (Research Monograph No. 6). Washington, D.C.: Council of Chief State School Officers.

Webb, N. L. (2002). *An Analysis of the alignment between mathematics standards and assessments for three states*. Paper presented at the American Educational Research Association Annual Meeting. New Orleans, LA.