

CASAS – Comprehensive Adult Student Assessment System

Technical Manual

Reading Assessments

Life and Work Reading
Life Skills Reading for Adults with Intellectual Disabilities
Reading for Citizenship
Secondary Assessment English/Language Arts

July 2010



Table of Contents

(a) Format of the Technical Manual	1
(b) General Information	2
Item b1 – A statement, in the technical manual for the test, of the intended purpose of the test and how the test will allow examinees to demonstrate the skills that are associated with the NRS educational functioning levels 462.44.....	2
(c) Development.....	4
Item c1 – The nature of samples of examinees administered the test during pilot or field testing	13
(c1i) The number of examinees administered each item	13
(c1ii) How similar the sample or samples of examinees used to develop and evaluate the test were to the adult education population of interest to the NRS.....	19
(c1iii) The steps, if any, taken to ensure that the examinees were motivated while responding to the test	19
Item c2 – The steps taken to ensure the quality of test items or tasks.....	20
(c2i) The extent to which items or tasks on the test were reviewed for fairness and sensitivity	20
(c2ii) The extent to which items or tasks on the test were screened for the adequacy of their psychometric properties	36
Item c3 –The procedures used to assign items	44
(c3i) Forms, for tests that are constructed prior to being administered to examinees.....	44
(d) Maintenance. Documentation of how the test is maintained	44
Item d1 – How frequently, if ever, new forms of the test are developed;	44
Item d2 – The steps taken to ensure the comparability of scores across forms of the test	46
Item d3 – The steps taken to maintain the security of the test	56
Item d4 – A history of the test’s use.....	65
(e) Match of the content to the NRS educational functioning levels (content validity). Documentation of the extent to which the items or tasks on the test cover the skills in the NRS educational functioning levels.....	66
Item e1 – Whether the items or tasks on the test require the types and levels of skills used to describe the NRS educational functioning levels	66
Item e2 – Whether the items or tasks measure skills that are not associated with the NRS educational functioning levels.....	140
Item e3 – Whether aspects of a particular NRS educational functioning level are not covered by any of the items or tasks	140
Item e4 – The procedures used to establish the content validity of the test	140
Item e5 – The number of subject matter experts who provided judgments linking the items or tasks to the NRS educational functioning levels and their qualifications for doing so, particularly their familiarity with adult education and the NRS educational functioning levels	141

(f) Match of scores to the NRS educational functioning levels. Documentation of the adequacy of the procedure used to translate the performance of an examinee on a particular test to an estimate of the examinee's standing with respect to the NRS educational functioning levels	142
Item f1 – The standard-setting procedures used to establish cut scores for transforming raw or scale scores on test into estimates of an examinee's NRS educational functioning level	142
Item f2 – The standard error of each cut score, and how it was established.....	149
(g) Reliability. Documentation of the degree of consistency in performance across different forms of the test in the absence of any external interventions.....	164
Item g1 – The correlation between raw (or scale) scores across alternate forms of the test or, in the case of computerized adaptive tests, across alternate administrations of the test	164
Item g2 – The consistency with which examinees are classified	178
Item g3 – The adequacy of the research design leading to the estimates of the reliability of the test	180
(g3i) The size of the samples	183
(g3ii) The similarity between the sample(s) used in the data collection and the adult education population	183
(g3iii) The steps taken to ensure the motivation of the examinees.....	184
Item g4 – Any other information explaining the methodology and procedures used to measure the reliability of the test.....	184
(h) Construct Validity. Documentation of the appropriateness of a given test for measuring educational gain for the NRS, i.e., documentation that the test measures what it is intended to measure	197
Item h1 – The extent to which the raw or scale scores and the educational functioning classifications associated with the test correlate (or agree) with scores or classifications associated with other tests designed or intended to assess educational gain in the same adult education population as the NRS.....	197
Item h2 – The extent to which the raw or scale scores are related to other relevant variables, such as teacher evaluation, hours of instruction, or other measures that may be used to test performance.....	208
Item h3 – The adequacy of the research designs associated with these sources of evidence	218
(h3ii) The similarity between the sample(s) used in the data collection and the adult education population	221
Item h4 – Other evidence demonstrating that the test measures gains in educational functioning resulting from adult education and not from other construct irrelevant variables such as practice effects	224
(i) Other Information.....	229
Item i1 – A description of the manner in which test administration time was determined, and an analysis of the speededness of the test	229
Item i2 – Additional guidance on the interpretation of scores resulting from any modifications of the tests for an individual with a disability.....	232

Item i3 – The manual provided to test administrators containing procedures and instructions for test security and administration	236
Item i4 – A description of the training or certification required of test administrators and scorers by the test publisher	236
Item i5 – A description of retesting (e.g., re-administration of a test because of problems in the original administration such as a test taker becomes ill and cannot finish, there are external interruptions during testing, or there are administration errors) procedures and the analysis upon which the criteria for retesting are based	236
(j) Previous Tests	237
Item j1 – For a test used to measure educational gain in the NRS before the effective date of these regulations that is submitted to the Secretary for review under this part, the test publisher must provide documentation of the periodic review of the content and specifications of the test to ensure that the test continues to reflect the educational functioning levels	237
References	242

Tables

Table b3-1	Life and Work Reading Test Forms	3
Table c-1	Historical Summary of CASAS Item Pool.....	5
Table c-2	CASAS Field Tests – Summary of Removed Items	11
Table c1i-1	Life and Work Reading Field Test Information – Total Population	15
Table c1i-2	Life and Work Reading Field Test Demographic Information – Gender	16
Table c1i-3	Life and Work Reading Field Test Demographic Information – Years of Education	17
Table c1i-4	Life and Work Reading Field Test Demographic Information – Ethnicity/Race	18
Table c1ii-1	NRS Adult Education Population – Gender Information.....	19
Table c1ii-2	NRS Adult Education Population – Ethnicity Information.....	19
Table c2i-1	Fairness and Sensitivity Panel Gender Information	27
Table c2i-2	Fairness and Sensitivity Panel Age Information	27
Table c2i-3	Fairness and Sensitivity Panel Race or Ethnicity Information.....	27
Table c2i-4	Fairness and Sensitivity Panel Background Information	28
Table c2i-5	Sample Data Collection Form for Panel Reviews	29
Table c2i-6	Panel Member Comments from Life and Work Reading and Overall Item Decision	30
Table c2i-7	Summary of Mantel-Haenszel Analysis for Gender	32
Table c2i-8	Summary of Mantel-Haenszel Analysis for Ethnicity (Anglo – Hispanic)	33
Table c2i-9	Summary of Mantel-Haenszel Analysis for Ethnicity (Anglo- African American).....	34
Table c2i-10	Summary of Mantel-Haenszel Analysis for Spoken Language (English – Language Other Than English).....	35
Table c2ii-1	Descriptive Statistics by Test Form.....	37
Table c2ii-2	Descriptive Statistics by Demographic Characteristic Subgroups – Level Pre-A Forms	38
Table c2ii-3	Descriptive Statistics by Demographic Characteristic Subgroups – Level A Forms	39
Table c2ii-4	Descriptive Statistics by Demographic Characteristic Subgroups – Level B Forms	41
Table c2ii-5	Descriptive Statistics by Demographic Characteristic Subgroups – Level C Forms	42
Table c2ii-6	Descriptive Statistics by Demographic Characteristic Subgroups – Level D Forms	43
Table d1-1	Life and Work Reading Test Publishing Information	45
Table d2-1	Raw to Scale Score Correlations of Life and Work Reading Parallel Forms	49
Table d2-2	Raw to Scale Score Conversion with CSEM – Level Pre-A Forms	50
Table d2-3	Raw to Scale Score Conversion with CSEM – Level A Forms	51
Table d2-3a	Raw to Scale Score Conversion with CSEM – Level A Forms (cont.).....	52

Table d2-4	Raw to Scale Score Conversion with CSEM – Level B Forms	53
Table d2-5	Raw to Scale Score Conversion with CSEM – Level C Forms	54
Table d2-6	Raw to Scale Score Conversion with CSEM – Level D Forms	55
Table d3-1	CASAS Test Security Policy from Test Administration Manual.....	59
Table d3-2	Agency Test Security Policy from Test Administration Manual	61
Table e1-1	Comparison of NRS Educational Functioning Level Descriptors and CASAS Level Descriptors for Reading – Adult Basic Education (ABE)	68
Table e1-1a	Comparison of NRS Educational Functioning Level Descriptors and CASAS Level Descriptors for Reading – Adult Basic Education (ABE) (cont.).....	69
Table e1-2	Comparison of NRS Educational Functioning Level Descriptors and CASAS Level Descriptors for Reading – Adult Secondary Education (ASE).....	70
Table e1-3	Comparison of NRS Educational Functioning Level Descriptors and CASAS Level Descriptors for Reading– ESL	71
Table e1-3	Comparison of NRS Educational Functioning Level Descriptors and CASAS Level Descriptors for Reading– ESL (cont.).....	72
Table e1-4	Reading Basic Skills Content Standards by Test Item for CASAS Life and Work Reading Assessments Forms 310, 311, 27R, and 28R	73
Table e1-5	Reading Basic Skills Content Standards by Test Item for CASAS Life and Work Reading Assessments.....	80
Table e1-6	Life and Work Reading Form 310 Competencies.....	98
Table e1-7	Life and Work Reading Form 311 Competencies.....	99
Table e1-8	Life and Work Reading Form 27R Competencies	100
Table e1-9	Life and Work Reading Form 28R Competencies	101
Table e1-12	Life and Work Reading Form 81RX Competencies	104
Table e1-13	Life and Work Reading Form 82X Competencies.....	106
Table e1-14	Life and Work Reading Form 951 Competencies.....	108
Table e1-15	Life and Work Reading Form 952 Competencies.....	110
Table e1-16	Life and Work Reading Form 951X Competencies.....	112
Table e1-17	Life and Work Reading Form 952X Competencies.....	114
Table e1-18	Life and Work Reading Form 83R Competencies	116
Table e1-19	Life and Work Reading Form 84R Competencies	118
Table e1-20	Life and Work Reading Form 85R Competencies	120
Table e1-21	Life and Work Reading Form 86R Competencies	123
Table e1-22	Life and Work Reading Form 185R Competencies	126
Table e1-23	Life and Work Reading Form 186R Competencies	129
Table e1-24	Life and Work Reading Form 187R Competencies	132
Table e1-24	Life and Work Reading Form 187R Competencies	132
Table e1-25	Life and Work Reading Form 188R Competencies	135
Table e1-26	Life and Work Reading Form 513R Competencies	138
Table e1-27	Life and Work Reading Form 514R Competencies	139
Table e1-27	Life and Work Reading Form 514R Competencies	139
Table f2-1	Relationship of CASAS levels to NRS for ABE and ASE	150

Table f2-2	Life and Work Reading Forms – CASAS NRS Functional Instructional Cut Score Points and CSEM for ABE and ASE Level Pre-A	151
Table f2-3	Life and Work Reading Forms – CASAS NRS Functional Instructional Cut Score Points and CSEM for ABE and ASE Level A	152
Table f2-4	Life and Work Reading Forms – CASAS NRS Functional Instructional Cut Score Points and CSEM for ABE and ASE Level A	153
Table f2-5	Life and Work Reading Forms--CASAS NRS Functional Instructional Cut Score Points and CSEM for ABE and ASE Level B	154
Table f2-6	Life and Work Reading Forms -- CASAS NRS Functional Instructional Cut Score Points and CSEM for ABE and ASE Level C	155
Table f2-7	Life and Work Reading Forms -- CASAS NRS Functional Instructional Cut Score Points and CSEM for ABE and ASE Level D	156
Table f2-8	Relationship of CASAS levels to NRS for ESL.....	157
Table f2-9	Life and Work Reading Forms--CASAS NRS Functional Instructional Cut Score Points and CSEM for ESL Level Pre-A.....	158
Table f2-10	Life and Work Reading Forms--CASAS NRS Functional Instructional Cut Score Points and CSEM for ESL Level A	159
Table f2-11	Life and Work Reading Forms--CASAS NRS Functional Instructional Cut Score Points and CSEM for ESL Level A	160
Table f2-12	Life and Work Reading Forms--CASAS NRS Functional Instructional Cut Score Points and CSEM for ESL Level B.....	161
Table f2-13	Life and Work Reading Forms -- CASAS NRS Functional Instructional Cut Score Points and CSEM for ESL Level C.....	162
Table f2-14	Life and Work Reading Forms -- CASAS NRS Functional Instructional Cut Score Points and CSEM for ESL Level D	163
Table g1-1	Correlations between Parallel Forms	164
Table g1-2	Changes to Displays within the Life and Work Reading Series	167
Table g1-3	CBT and PPT Comparability Analysis Participants by NRS Level.....	168
Table g1-4	Correlation between CBT and PPT Administrations	169
Table g1-5	Paired-Samples T Test on CBT and PPT Administrations	169
Table g1-6	CBT and PPT Comparability Statistics	173
Table g2-1	Correlation between Parallel Forms	179
Table g2-2	Paired-Samples T Test.....	179
Table g3-1	Research Design Summary for Parallel Forms Reliability Analysis	181
Table g3-2	Research Design Summary for Classification Consistency Analysis	182
Table g3i-1	Sample Sizes for Reliability Analyses	183
Table g3ii-1	Demographic Characteristics for Reliability Analyses	184
Table g4-1	Reliability Summary Statistics	185
Table h1-1	Relationship between CASAS and MELT	199
Table h1-2	Relationship among SPL Levels, BEST Scores, and CASAS Scores.....	200
Table h1-3	Relationship among CASAS, NRS, NALS, SPL, Work Keys, and Years of School Completed.....	201
Table h1-4	CASAS Reading Mean Test Scores Associated with GED Reading Score Ranges	202

Table h1-5	Mean Reading GED Scores by NRS Educational Functioning Level and CASAS Reading Scale Score Ranges	203
Table h1-6	CASAS Reading Mean Test Scores Associated with GED Total Score Ranges	203
Table h1-7	CASAS-CAHSEE Readiness Preliminary Correlation Results	204
Table h1-8	Table 27 from UK NARIC Study – English Language Qualifications Level Comparisons.....	207
Table h2-1	Teacher Evaluation Study – Participating Teachers’ Background.....	209
Table h2-2	Teacher Evaluation Study – Participating Teachers’ Teaching Experience	209
Table h2-3	Teacher Evaluation Study – Participating Teachers’ Gender	209
Table h2-4	Teacher Evaluation Study – Participating Teachers’ Age.....	210
Table h2-5	Teacher Evaluation Study – Participating Teachers’ Race/Ethnicity	210
Table h2-6	Mean CASAS Test Scale Scores by NRS Level Assigned via Teacher Evaluation (ABE/ASE)	211
Table h2-7	Mean CASAS Test Scale Scores by NRS Level Assigned via Teacher Evaluation (ESL)	211
Table h2-8	Iowa Population Mean Scale Scores by Highest Grade Completed	212
Table h2-9	Iowa Population Mean Scale Scores by Highest Degree Earned.....	212
Table h2-10	Mean Pre-Test Scores by Years of Education Completed	214
Table h2-11	Study Population – Hours of Instruction and Learning Gains	215
Table h2-12	Principal Components Factor Analysis	217
Table h3-1	Research Design Summary for Hours of Instruction by Learning Gains Analysis.....	218
Table h3i-1	Construct Validity Research Studies Information.....	221
Table h3ii-1	Life and Work Reading Examinee Information	223
Table h4-1	Parallel Forms T-Test Results	225
Table h4-2	Complete Practice Effects Study Design.....	226
Table h4-3	Data Collected for the Current Practice Effects Study.....	227
Table h4-4	Group C3a and C3b Students Tested with Parallel Reading Forms.....	228
Table h4-5	Group D Students Tested with Similar Reading Forms	228
Table i1-1	Test Taking Time and Student Performance – Correlation Analysis.....	229
Table j1-1	CASAS Revised Competencies – 2008.....	239

Figures

Figure e1-1	Underlying Basic Skills Content Standards	67
Figure f1-1	The Bookmark Standard Setting Procedure	145
Figure f1-2	The Bookmark Standard Setting Procedure (cont.).....	146
Figure f1-3	The Bookmark Standard Setting Procedure (cont.).....	146
Figure g1-1	Graphical Representation of Scores on Parallel Forms.....	165
Figure g1-2	Score Distribution between CBT and PPT – Form 81RX.....	170
Figure g1-3	Score Distribution between CBT and PPT – Form 83R	170
Figure g1-4	Score Distribution between CBT and PPT – Form 85R	171
Figure g1-5	Score Distribution between CBT and PPT – Form 185R	171
Figure g1-6	Score Distribution between CBT and PPT – Form 187R	172
Figure g1-7	Score Distribution between CBT and PPT – Form 513R	172
Figure g1-8	CBT and PPT DIF Analysis – Form 81RX.....	174
Figure g1-9	CBT and PPT DIF Analysis – Form 83R.....	175
Figure g1-10	CBT and PPT DIF Analysis – Form 85R.....	175
Figure g1-11	CBT and PPT DIF Analysis – Form 185R.....	176
Figure g1-12	CBT and PPT DIF Analysis – Form 187R.....	177
Figure g1-13	CBT and PPT DIF Analysis – Form 513R.....	177
Figure g3-1	Research Design Notation for Parallel Forms Reliability Analysis	181
Figure g3-2	Research Design Notation for Classification Consistency Analysis	182
Figure g4-2	Test Information Function – Form 310	186
Figure g4-3	Test Information Function – Form 311	186
Figure g4-4	Test Information Function – Form 27R	187
Figure g4-5	Test Information Function – Form 28R	187
Figure g4-6	Test Information Function – Form 81R	188
Figure g4-7	Test Information Function – Form 82R	188
Figure g4-8	Test Information Function – Form 81RX.....	189
Figure g4-9	Test Information Function – Form 82RX.....	189
Figure g4-10	Test Information Function – Form 951R	190
Figure g4-11	Test Information Function – Form 952R	190
Figure g4-12	Test Information Function – Form 951RX.....	191
Figure g4-13	Test Information Function – Form 952RX.....	191
Figure g4-14	Test Information Function – Form 83R	192
Figure g4-15	Test Information Function – Form 84R	192
Figure g4-16	Test Information Function – Form 85R	193
Figure g4-17	Test Information Function – Form 86R	193
Figure g4-18	Test Information Function – Form 185R	194
Figure g4-19	Test Information Function – Form 186R	194
Figure g4-20	Test Information Function – Form 187R	195
Figure g4-21	Test Information Function – Form 188R	195
Figure g4-22	Test Information Function – Form 513R	196
Figure g4-23	Test Information Function – Form 514R	196
Figure h2-1	Average Learning Gains by Hours of Instruction	216

Figure h3-1	Research Design Notation for Hours of Instruction by Learning Gains Analysis.....	219
Figure i1-1	Test Taking Time for A Level Reading Forms	230
Figure i1-2	Test Taking Time for B Level Reading Forms	230
Figure i1-3	Test Taking Time for C Level Reading Forms	231
Figure i1-4	Test Taking Time for D Level Reading Forms	231

(a) Format of the Technical Manual

This manual provides the technical information related to reading assessments developed by the CASAS – Comprehensive Adult Student Assessment Systems. These assessments include Life and Work Reading, Life Skills for Adults with Intellectual Disabilities, Reading for Citizenship, and Secondary Assessment English Language Arts. For simplicity, all forms covered in this manual will generally be referred to as the Life and Work Reading Assessments

The *General Information* section describes the purpose of the aforementioned assessments and lists all test forms that are covered in this manual.

The *Development* section describes the process used to create the Life and Work Reading Assessment and assign items to test forms. The psychometric properties are analyzed for all items in the item bank and for the complete test forms.

The *Maintenance* section includes information about publishing dates for the Life and work Reading Assessments, steps taken to ensure score comparability across test forms, steps taken to maintain the security of the assessment, and a history of the assessments use.

The *Content Validity* section includes information on the match of the content to the NRS Educational Functioning Levels, the competencies measured by the Life and Work Reading Assessments, and the subject matter experts involved in the determination of content.

The *Standard-Setting Procedures* section describes the procedures used to establish cut scores for each NRS Educational Functioning Level and the standard error of measurement for each cut score.

The *Reliability* section includes information on the correlation of scores across alternate or parallel test forms, classification consistency into NRS Educational Functioning Levels (EFL) when using parallel test forms, and a description of the research designs used to test the reliability of the Life and Work Reading Assessments.

The *Construct Validity* section includes information on the comparability of the Life and Work Reading Assessments with other assessments designed to assess educational gain, the extent to which performance on the reading assessments is related to other related measures of the intended construct, and analyses regarding practice effects.

The *Other Information* section includes information on the determination of test administration time, appropriate modifications, and recommendations for retesting.

The *Previous Tests* section includes information on the periodic reviews of the Life and Work Reading Assessments and the validation of new CASAS competencies.

(b) General Information

Item b1 – A statement, in the technical manual for the test, of the intended purpose of the test and how the test will allow examinees to demonstrate the skills that are associated with the NRS educational functioning levels 462.44.

The intended purpose of the Life and Work Reading Assessments, which include forms from Life Skills for Adults with Intellectual Disabilities, Reading for Citizenship, and Reading for Language Arts, is to measure learning progress of members of the youth and adult education population in the content domain of reading. Specifically, the Life and Work Reading Series is approved by the National Reporting System for Adult Education (NRS) to measure learning gains of adults in Adult Basic Education (ABE), Adult Secondary Education (ASE), and English as a Second Language (ESL) programs. Some analyses presented in this document are conducted with respect to the NRS Educational Functioning Levels and reporting guidelines. Other analysis may refer to the CASAS Educational Functioning Levels. A description of the NRS Educational Functioning Levels and the CASAS Educational Functioning Levels can be found in Tables e1-1 through e1-3 of this document.

The Life and Work Reading series includes two or more secure and parallel equated forms at each of four difficulty levels. Agencies are able to use four distinct test levels to place and subsequently to measure educational gains for learners as related to all NRS Educational Functioning Levels of ABE/ASE and ESL.

These assessments are appropriate for use with learners with beginning to advanced level reading skills (in ABE/ASE programs from ABE beginning literacy to adult secondary education, and in ESL programs from ESL beginning literacy to advanced ESL). The direct relationship between the NRS Educational Functioning Levels for both ESL and ABE/ASE programs to the CASAS scale score ranges is covered under Section f3.

The Life and Work Reading Assessments can be administered as traditional paper-and-pencil tests or as computer-based assessments.

The basic skills content standards as measured on the Life and Work Reading Assessments relate directly to curriculum content, which in turn allows test results to inform instruction and program improvement. Life and Work Reading Assessments are one of the key components in an integrated system that links curriculum, instruction, and assessment. CASAS develops assessments based on specifications that include learner goals, basic skills content standards and life skill competencies, range of test difficulty level, and curriculum. The Life and Work Reading Assessment test items are based on the application of functional reading skills as found in realistic life-skill or workplace contexts.

Item b3 – A summary of the precise editions, forms, levels, and, if applicable, subtests and abbreviated tests that the test publisher is requesting that the Secretary review and determine for suitable use in the NRS.

Table b3-1 lists the twenty-two *Life and Work Reading Assessment* forms covered in this technical manual. In addition, the test level (CASAS levels A-D), number of items, test use, and computer-based testing (CBT) availability is listed for each form. For a comparison of CASAS test levels to NRS Educational Functioning Levels, please refer to Tables e1-1 through e1-3.

Table b3-1 Life and Work Reading Test Forms

Form	Test Level	No. Items	Test Use	CBT Availability
310	Pre-A	24	progress (pre/post testing)	
311	Pre-A	24	progress (pre/post testing)	
27R	Pre-A	30	progress (pre/post testing)	
28R	Pre-A	30	progress (pre/post testing)	
81R	A	24	progress (pre/post testing)	Yes
82R	A	24	progress (pre/post testing)	Yes
81RX	A	28	progress (pre/post testing)	Yes
82RX	A	28	progress (pre/post testing)	Yes
951R	A	24	progress (pre/post testing)	
952R	A	24	progress (pre/post testing)	
951RX	A	26	progress (pre/post testing)	
952RX	A	26	progress (pre/post testing)	
83R	B	32	progress (pre/post testing)	Yes
84R	B	32	progress (pre/post testing)	Yes
85R	C	37	progress (pre/post testing)	Yes
86R	C	37	progress (pre/post testing)	Yes
185	C	38	progress (pre/post testing)	Yes
186	C	38	progress (pre/post testing)	Yes
187	D	32	progress (pre/post testing)	Yes
188	D	32	progress (pre/post testing)	Yes
513R	D	40	progress (pre/post testing)	Yes
514R	D	40	progress (pre/post testing)	Yes

(c) Development

The CASAS assessment system comprises a range of assessment instruments that serve a variety of purposes. The major test series are used in adult education classes and training programs to measure student learning gains in reading comprehension, listening comprehension, math, writing, and speaking. The reading, listening, and math series consist of multiple-choice test items that can be administered as pre- and post-tests across a range of student ability levels in a life and work skills context.

The first CASAS test forms were created in 1981. New tests have been created over the ensuing years to expand or strengthen the CASAS assessment system. As test items are developed, they are placed in an item pool. New multiple-choice test forms and modes for delivery are constructed from this calibrated item bank.

Table c.1 provides a historical summary of the progressive development of the item bank. The chart shows the number of test forms, the number of items field tested, and the number of field-test items that were eliminated due to poor statistical or operational performance. The information on the Life and Work Reading series is in bold.

Table c-1 Historical Summary of CASAS Item Pool

Year	Total item field-test forms	Total field-test items	Field-test items dropped	Total items in bank	Purpose of items
1980-85	112	3,050	671	2,379	Initial development of reading, math and listening item bank
1987-88	32	832	113	3,098	Mostly additional employment-oriented items in reading and math
1989-91	49	1,064	194	3,968	High-school level items in subject-area reading and in math; additional math items
1992	10	200	14	4,154	Additional reading and math items
1993	3	72	1	4,225	Items for beginning literacy tests
1995	8	196	33	4,388	Items for D-level ECS reading and math forms
1998	5	105	8	4,485	Additional employability items for new ECS reading forms
2000-03	20	512	33	4,964	New Life and Work Reading series; Reading for Citizenship series; WLS Reading and Math
2004-05	-	-	-	2,732	Internal review retires a large number of reading and math items
2005-07	25	452	39	3,145	New Life and Work listening test series
2008	2	48	2	3,191	Items for additional Life and Work reading forms

Establish Test Design

The purpose and parameters of a CASAS test development project are set collaboratively with the National Consortium or the state or agency requesting the test and CASAS staff.

The main considerations in designing a new CASAS assessment include:

- I. Purpose of test
 - a. Appraisals, progress tests and certification tests will differ in length, scale score range, content coverage, etc.
- II. Content Focus
 - a. General focus: life skills, general employability, workplace, or other.
 - b. Specific: the basic skill content standards and competencies that relate to NRS Education Functioning Levels.
- III. Modality, item types, and breadth and depth of coverage to be included
 - a. For reading tests, there are a number of item types that assess different reading skills.
- IV. Level and range of difficulty
 - a. Difficulty of item content, the complexity of the items, and the cognitive level of the skills to be assessed.
- V. Test length
 - a. A natural constraint on the range of skills and competencies that can be assessed.
- VI. Need for Parallel Forms
 - a. Appropriate items are needed to create two forms that are parallel in content coverage and range of difficulty.

Determine Item Development Needs

CASAS items are developed in response to a request for an approved test development project or to expand an existing item pool to meet future test construction needs. When item development is targeted to a specific assessment development project, a needs assessment is conducted to identify the priority content and skill areas to be measured for each assessment. For assessment development intended for adult education programs, adult education professionals are surveyed to identify and prioritize relevant content domains, usually expressed in the form of life skill competencies and basic skill content standards. Surveys are prepared and distributed or electronically disseminated to adult education agencies across the country. The results from these surveys provide guidance to item and test development.

In addition to identifying target content domains, an initial step in planning item development is identifying the number of items that need to be created. Items undergo an extensive review and pilot testing process and item attrition will occur at several stages of the process. About three times the number of items needed for the final calibrated test form are generated during the item development process. For example, if two 32-item test forms at an intermediate adult proficiency level are needed, 200 initial draft items are written to ensure a minimum of 80 calibrated items are available for selecting the final test forms and items. This provides flexibility to have enough calibrated items that are aligned with the test specifications for both content coverage and range of difficulty on a test form.

Qualified Item Writers

CASAS engages item writers in addition to the CASAS item and test development staff to contribute to item writing projects. Item writers are selected on the basis of:

- experience in adult education (teaching, curriculum development), with adult ESL and ABE populations for which the tests are intended
- familiarity with the language and cultural issues and life experience of ESL and ABE populations; and with the real-life language and literacy needs of adults in society
- successful experience in writing test items, assessment materials and curriculum
- academic background that relates to their language or literacy teaching expertise
- demonstrated ability to write to specific test blueprint specifications and standards
- having completed fairness and sensitivity training

Potential writers receive a day-long training by a master item writer that includes theory and practice in test development. The training covers the CASAS item writing/editing guidelines, (see “*Criteria applied in the editing process*” below) the CASAS competencies and basic skills content standards, as well as practical exercises in writing items to specific targeted competencies and standards. Item writers who are selected are mentored by master writers, who give specific feedback on their work in order to build skills. The progression of draft items illustrates the development of test items from initial draft to final form for pilot testing. Item writers occasionally come together for group writing and review sessions with qualified editors where additional guidelines or advice on content and on item development issues are discussed.

Item writers are given detailed test blueprint specifications, including specific competencies, basic skills or content standards, at a specific targeted instructional level. Copies of all source material are submitted with draft items to CASAS. Item writers follow established procedures, including confidentiality and non-disclosure policies, in preparing, organizing and submitting their draft item materials.

Item Development and Editing

Draft items are submitted to the CASAS Item and Test Development Department to review and edit. Three to four test development professional staff review and edit each draft item. This is essential, as different perspectives and interpretations can be brought to the material. If an initial draft item requires major revision or a change in focus or complexity, it is returned to the original writer with specific feedback to be revised. Other revisions are made by the CASAS test development team. The team also does some initial item development.

The lead editor is responsible for compiling the multiple edits and discussing them with the editing team as a whole to reach a consensus on the final revisions, and a final pilot test version of the items is compiled. Further refinements to items continue to be made through the entire development process, from this “final” draft, to clinical tryout to pilot to field-test stage.

Criteria applied in the editing process include the following questions:

- Were the initial item criteria met (e.g., level, Content Standards, competency)?

- Are all parts of the content as free as possible of potential biases (e.g., age, race, gender, ethnic background, specialized knowledge)?
- Could any part of the content be considered tricky?
- Is the display easily accessible (i.e., it is something that could be encountered in daily life)?
- Is there any cultural bias? (Please refer to Item c2i for a description of the *CASAS Fairness and Sensitivity Review Process*.)
- Does the group of items intended for a pilot or field-test form have diverse ethnic and gender representation (e.g., names, roles)?
- Does the item test what it is intended to test?
- Is the stem of the test question and distracters clear and direct?
- Is the stem phrased in the positive form?
- Can the item be answered solely from the information given? (i.e., Is it a knowledge question? Is information from another item needed to answer the question?)
- Is there only one best answer?
- Are all options plausible?
- Are all options homogeneous in content and length?
- Are options containing numbers presented consecutively when possible?
- Is grammar and punctuation correct?

Conduct Clinical Tryout

During the item drafting process, a small-scale clinical tryout of certain items may be conducted, especially if there are uncertainties as to level of difficulty or relevance of topic, or if a new assessment strategy approach is being tried. Items will be placed on an informal test form and administered in several adult education classes by CASAS development staff to gain more insight on how examinees respond to the item. Classes that are representative in terms of the learner population for whom the final tests are intended are chosen for this exercise. On the basis of the results of the clinical tryout, a shift in direction or leveling in item development may be made.

Conduct Pilot Testing

When the editing process has resulted in an acceptable number of final-draft items, the items are sent to the production staff for formatting in preparation for the next step of pilot testing. This stage is important especially in discovering flaws in items and noting general reactions to the test items from teachers and students. In the pilot test, draft items are assembled into item test forms and administered to a total of approximately 100 students in classes at two or three schools that are representative of the target population for the final test forms in terms of ability level, gender, age, and ethnic group. The pilot tests are administered by teachers who have training and experience in administering CASAS tests. The teachers are provided a feedback form to record teacher and student comments on the test items.

An item analysis is computed from the pilot test and the results are reviewed by the CASAS test development, editing and psychometric staff. Teacher and student feedback is also reviewed. The evaluation criteria for the pilot test follow the same general criteria as analysis of the field tests discussed below. The CASAS editing team identifies and corrects any item flaws suggested by the statistical item and option analysis including, for example, incorrect options being interpretable as correct; lack of clarity in the wording of questions, options, or prompts; and distractors that are not attractive to examinees. Items that have content that is not seen as appropriate to certain demographic groups are either revised or dropped. The draft items that have no problems – and those with flaws that have been edited, revised or modified – are then ready for formal field testing. It is vital that any problems with the items be resolved before items are placed on item field tests, after which further revision cannot be made without additional field testing.

Conduct Item Field Test

The best-performing items from the pilot test are selected to be placed on item field-test forms. Selection is made on the basis of the item analysis statistics from the pilot tests, anecdotal information from teacher feedback, and appropriate coverage of the competencies and basic skills identified as priorities for the final test forms to be constructed. Consideration is also given to achieving variety and balance in difficulty, content and display type (e.g., narrative text, chart, graphic) as well as in gender and ethnic representation. The items placed on the field test forms need to meet all the content domain and psychometric requirements identified in the initial project planning and test blueprint specifications, since the majority of calibrated items for the final operational test forms will come from this set of items. The remainder may come from calibrated items already in the item bank that meet the test blueprint specifications.

To allow for linking of results from each of the field test forms to the standard CASAS measurement scale, 8 to 10 linking items from the item pool are included on each of the item field-test forms. The difficulties of the linking items should range from an expected p-value of .40 to about .70; they should have point biserial correlations of at least .30; show good high and low group discrimination of .30 or above; and have content compatible with the draft test items being field tested. A representative set of linking items is selected to measure examinees at different positions within the ability continuum.

Administration of the field tests to the appropriate population is vital to the success of the process. To ensure a total minimum *N* of at least 300, approximately 500 to 600 copies of each form are sent out. Agencies are selected based on diversity of size, population served, in urban and non-urban areas in a range of states. Classes at an instructional level corresponding to the test level are selected. The final sample size includes some students above the targeted instructional level and below the test level. Instruction in participating classes needs to be related to the domain being tested. The field tests are administered by teachers or other staff who are trained to administer CASAS tests. Test administrators receive detailed instructions on how to administer the test, collect student information, and provide for test security before, during, and after testing.

In addition to program and class level, information collected on students includes gender, age, ethnic background, native language, and number of years of education. Test administrators complete structured feedback forms to record teacher and learner comments and observations on specific test items, on the test overall, and on the testing process. The number of participants for the Life and Work Reading field tests (agencies and examinees) and the examinees' demographic information is included in Tables c1i-3 through c1i-5.

As completed answer sheets are returned to CASAS, numbers are tallied to ensure that the overall *N* will be achieved and that the diversity of level and population is being obtained; if these are not the case, more field tests are sent out to representative populations.

Analyze Results of Field Test

When a sufficient number of field-test forms have been received, the answer sheets are scanned and statistical analyses are completed. Statistics for each item include classical item analysis showing for each response option: the p-value, biserial, point biserial, discrimination index, and breakdown by high and low-performing examinees; overall test form performance statistics; breakdown of *N* by agency and level; and student demographics. Based on the analyses of these data, additional analyses and reviews are conducted by item writers and SMEs as necessary.

The main statistical criteria considered in determining item viability can be summarized as follows:

- point biserial (minimum 0.30 acceptable)
- p-value (ideally between 0.30 and 0.80)
- high and low group discrimination index (higher than 0.20 is desirable)
- option choice by high and low-performing examinees
- percent on option choices, including non-response
- overall mean percentage test score (between 0.40 and 0.70)
- infit-outfit statistics (between 0.7 and 1.3)
- estimated IRT discrimination
- lower asymptote (examined if greater than 0.10)
- item bias data (please refer to Item c2i detailing CASAS Fairness and Sensitivity Process)

The comments and reactions collected from test administrators and students are compiled and carefully reviewed to identify possible bias, formatting issues, or other problems with items.

Items that show poor performance on the basis of statistics or other factors are flagged for review. Items whose topic or content was considered by teachers and students to be objectionable, inappropriate, questionable, of little relevance, etc., are deleted. In other cases, items can be returned to the editing stage and reworked for possible additional field testing.

Table c-2 provides a summary of field test items that were dropped from CASAS assessment series.

Table c-2 CASAS Field Tests – Summary of Removed Items

Test Series	Number of Final Test Forms Created	Number of Items Removed During Field-Test Process
Life and Work/Life Skills/Citizenship/Secondary Level Assessments	22	47 items from 24 item field-tests forms
ECS/WLS Reading	14	265 items from 117 item field-tests forms
ECS/LS Listening	10	541 items from 87 item field-tests forms
LS Math/Secondary Level Assessments	10	260 items from 88 item field-tests forms
ECS/WLS Math	12	74 items from 106 item field-tests forms
Life and Work Listening	6	39 items from 25 field-test forms

CASAS Item Bank

CASAS policy is to have a selection of reserve items across difficulty levels and content areas for each test series so that there is a continuous pipeline of items available. This reserve of items is available should specific items become compromised. Refer to item d3 for more information on the CASAS test security policy. These reserve items are also available if CASAS determines, through the continual analysis of psychometric properties, that items do not maintain the characteristics of reliability, validity, fairness, and sensitivity to demographic groups.

In order to keep this pipeline of items, CASAS field-tests a 40 to 50 percent surplus of items above the number of items originally needed for placement on the fixed item forms for a given series. Based on an analysis of the psychometric properties of field-test items, the items are grouped into three categories:

- Items that meet CASAS qualifications and are marked for inclusion on current test forms
- Items the meet CASAS qualifications and are included in the item bank as reserve items
- Items that do not meet CASAS qualifications and are marked for archiving and possible future revision

When an entire test form or series is to be retired and replaced, the replenishment of the item bank requires the field-testing of large quantities of items to provide sufficient new items for the construction of the new test forms. The Life and Work Reading tests are delivered via PPT and CBT, and CASAS uses an intact forms model to construct the test forms. This means that items were selected from the CASAS reading item bank for construction of six intact test forms which were individually packaged in the test file. Significant item field testing was required to develop items for this series, as described in this technical manual.

The CASAS reading item bank for the Life and Work Reading series is organized to be a comprehensive source of information for the item and test developers. The database consists of easy-to-reference and up-to-date information on each item. Table c-3 describes the information elements contained in the item bank for the CASAS Life and Work Reading series.

Table c-3 Attributes of CASAS Life and Work Reading Item Bank

General Item Information	Item identification number
	Item field-test form number and location
	Item intact form and location
	Administration type
	Item text
	Correct answer
Item Statistics/Psychometric Properties	Field-test item information
	Historical item information
	Current p-value
	Rasch Unit (RIT difficulty index)
	Point bi-serial
	Index of Bias Fairness and sensitivity review comments
	Demographics and Sample Size
Item Details	Dataset used for analyses
	Item type
	Item referenced to CASAS Content
	Item referenced to CASAS Competencies
	Standards Word count
	Item type
	Word count of listening passage
	Gender reference
	Item enemies or clones
	Key words
Item Development History	Item status version
	Year written
	Item writer

Calibrate New Items and Add to the Item Pool

Poor-performing or problematic items are dropped, and the remaining items are then calibrated and then linked to the common CASAS measurement scale using the Rasch one-parameter IRT model (if an anchor item performed poorly on the field test form, it is not used in the calibration process.). These newly calibrated items are then placed into the calibrated item pool. They are listed in the item database along with their statistical data, competency codes, and content standard codes. This process is further detailed under Item D of this document.

Construct Test Forms from the Item Pool

To construct a planned test form, the CASAS test development team selects items from the item pool to create a test that meets the design criteria (*Determine test development needs*). Factors considered include:

- item difficulty, by Rasch Unit (RIT)
- topical content
- skill content, in terms of the competencies and basic skills the item assesses
- item type – there are a number of reading item types that address different reading skills.
- Item task and format – refers to how the information is presented and what the examinee needs to do to process it. Item task and format often relate to the skills an item addresses. A variety of item tasks and formats are represented on a test form to cover a broad range of reading skills. Items are initially placed on the test form by difficulty: easier items first, followed by increasingly more difficult items. Adjustments are made to achieve variety and flow in topical and skill content, item task and format.

In selecting items for the test, achieving the desired coverage of skills is one consideration. Another is the scoring scale of the test: to fit into a test series of pre- and post-tests, a fairly specific scale score range is required. Items of different RITs may need to be substituted into the original selection to achieve the desired scale score range. Additionally, the proposed number of items on the test form may be increased or decreased in achieving the desired scale score range.

Parallel test forms are constructed simultaneously to achieve similarity in content and scale score range.

The final forms are reviewed by the CASAS directors who check the coverage of competencies and basic skills, the scoring scale, the overall balance and flow, and the quality of the items themselves. When approved, the tests are assigned form numbers.

The performance of new test forms is monitored on a continual basis after implementation with various types of statistical analysis to ensure the tests are performing as intended, that the items are stable and not biased with subsequent adult populations being assessed. Many of these analyses are performed on an annual basis and include:

- classical item analyses
- fairness and sensitivity review including Differential Item Functioning (DIF) analyses and fairness and sensitivity item review panels
- reliability estimates
- validity studies

Item c1 – The nature of samples of examinees administered the test during pilot or field testing

(c1i) The number of examinees administered each item

Table c1i-1 includes the total number of examinees that were tested on items that comprise the final assessment forms. Tables c1i-2 through c1i-4 present demographic information on these

examinees by NRS Educational Functioning Level. The percentage breakouts are reported on those examinees that provided demographic information. Also provided is the total number of examinees that did not provide demographic information.

Table c1i-1 Life and Work Reading Field Test Information – Total Population

Form Number	NRS Educational Functioning Level	<u>N</u>
312	ABE - Beginning ABE Literacy	246
313	ESL - Beginning ESL Literacy, Low Beginning ESL	
27R	ABE - Beginning ABE Literacy	1,170
28R	ESL - Beginning ESL Literacy, Low Beginning ESL	
81R	ABE - Beginning ABE Literacy	974
82R	ESL - Beginning ESL Literacy, Low Beginning ESL, High Beginning ESL	
81RX	ABE - Beginning ABE Literacy	1,034
82RX	ESL - Beginning ESL Literacy, Low Beginning ESL, High Beginning ESL	
951R	ABE - Beginning ABE Literacy	1,338
952R	ESL - Beginning ESL Literacy, Low Beginning ESL, High Beginning ESL	
951RX		
952Rx		
83R	ABE - Beginning Basic Education, Low Intermediate Basic Education	1,166
84R	ESL - Low Intermediate ESL, High Intermediate ESL	
85R	ABE - High Intermediate Basic Education	973
86R	ESL- Low Advanced ESL	
185R	ABE - High Intermediate Basic Education	From Bank Items
186R	ESL- Low Advanced ESL	
187R	ABE - Low Adult Secondary Education	
188R	ESL - High Adult Secondary Education	
513R	ABE - Low Adult Secondary Education	1,180
514R	ABE - High Adult Secondary Education	

Table c1i-2 Life and Work Reading Field Test Demographic Information – Gender

Form Numbers	NRS Educational Functioning Level	Male (%)	Female (%)	No Info (%)
312,313	ABE - Beginning ABE Literacy ESL - Beginning ESL Literacy, Low Beginning ESL	59.8	28.5	11.7
27R,28R	ABE - Beginning ABE Literacy ESL - Beginning ESL Literacy, Low Beginning ESL, High Beginning ESL	42.5	57.5	0.0
81R,82R,81RX, 82RX 951R,952R 951RX, 952RX	ABE - Beginning ABE Literacy ESL - Beginning ESL Literacy, Low Beginning ESL, High Beginning ESL	38.4	59.6	2.0
83R,84R	ABE - Beginning Basic Education, Low Intermediate Basic Education ESL - Low Intermediate ESL, High Intermediate ESL	44.8	51.8	3.4
85R,86R 185R,186R	ABE - High Intermediate Basic Education ESL - Low Advanced ESL	37.9	62.0	0.1
187R,188R 513R,514R	ABE - Low Adult Secondary Education ABE- High Adult Secondary Education	39.6	60.4	0.0

Table c1i-3 Life and Work Reading Field Test Demographic Information – Years of Education

Form Numbers	NRS Educational Functioning Level	6 or Less (%)	7 to 13 (%)	Greater than 13 (%)	No Info (%)
312,313	ABE - Beginning ABE Literacy ESL - Beginning ESL Literacy, Low Beginning ESL				100.0
27R,28R	ABE - Beginning ABE Literacy ESL - Beginning ESL Literacy, Low Beginning ESL, High Beginning ESL	48.6	47.1	4.3	0.0
81R,82R,81RX,82RX 951R,952R 951RX, 952RX	ABE - Beginning ABE Literacy ESL - Beginning ESL Literacy, Low Beginning ESL, High Beginning ESL	27.7	53.3	12.2	6.8
83R,84R	ABE - Beginning Basic Education, Low Intermediate Basic Education ESL - Low Intermediate ESL, High Intermediate ESL	15.2	55.9	25.6	3.3
85R,86R 185R,186R	ABE - High Intermediate Basic Education ESL- Low Advanced ESL	10.8	67.0	22.1	0.1
187R,188R 513R,514R	ABE - Low Adult Secondary Education ABE - High Adult Secondary Education	4.0	81.0	15.0	0.0

Table c1i-4 Life and Work Reading Field Test Demographic Information – Ethnicity/Race

Form Numbers	NRS Educational Functioning Level	Asian (%)	African American (%)	Hispanic (%)	White (%)	Other (%)	No info (%)
312,313	ABE - Beginning ABE Literacy ESL - Beginning ESL Literacy, Low Beginning ESL	0.8	15.9	56.9	17.9	4.5	4.0
27R,28R	ABE - Beginning ABE Literacy ESL - Beginning ESL Literacy, Low Beginning ESL, High Beginning ESL	19.7	1.2	68.3	7.6	3.2	0.0
81R,82R,81RX,82RX 951R,952R 951RX, 952RX	ABE - Beginning ABE Literacy ESL - Beginning ESL Literacy, Low Beginning ESL, High Beginning ESL	21.6	1.3	61.1	5.3	8.4	2.3
83R,84R	ABE - Beginning Basic Education, Low Intermediate Basic Education ESL - Low Intermediate ESL, High Intermediate ESL	24.5	5.4	52.4	9.3	5.4	3.0
85R,86R 185R,186R	ABE - High Intermediate Basic Education ESL Low Advanced ESL	25.1	2.5	59.3	9.8	3.2	0.1
187R,188R 513R,514R	ABE - Low Adult Secondary Education ABE - High Adult Secondary Education	14.6	8.3	56.9	14.9	5.3	0.0

(c1ii) How similar the sample or samples of examinees used to develop and evaluate the test were to the adult education population of interest to the NRS

Prior to the item field-testing and calibration process, all items were pilot-tested with both Adult Basic Education (ABE/ASE) and English as a Second Language (ESL) learners. The items are then field-tested with both ABE/ASE and ESL learners. The demographic characteristics of the sample are analyzed during the process to ensure that they are as representative as possible of the adult population of interest to the NRS. For comparison purposes, Tables c1ii-1 and c1ii-2 show the demographics of the adult educational population at the national and regional level during the 2005-06 program year.

Table c1ii-1 NRS Adult Education Population – Gender Information

Region	Male		Female	
	N	%	N	%
United States	1,134,114	46.2	1,321,651	53.8
Eastern Region	152,404	41.9	211,319	58.1
Midwestern Region	177,037	47.0	199,456	53.0
Southern Region	416,017	46.4	479,919	53.6
Western Region	365,440	47.0	412,596	53.0

Table c1ii-2 NRS Adult Education Population – Ethnicity Information

Region	White		Hispanic		Asian		Black or African American	
	%	%	N	%	N	%	N	%
United States	663,799	27.0	1,072,641	43.7	190,830	7.8	472,854	19.3
Eastern Region	99,050	27.2	139,094	38.2	32,641	9.0	90,242	24.8
Midwestern Region	149,652	39.7	108,702	28.9	27,583	7.3	83,893	22.3
Southern Region	294,703	32.9	302,495	33.8	28,038	3.1	255,780	28.5
Western Region	120,297	15.5	483,858	62.2	102,305	13.1	42,509	5.5

(c1iii) The steps, if any, taken to ensure that the examinees were motivated while responding to the test

During the administration of field tests, CASAS provides detailed instructions to test administrators. Item two from the Field-test Administration Directions specifically states:

Explain to learners that we are developing a new reading test. Today we are going to find out how well the test works and if the questions are right for your level.

Prior to administration of the test forms, administrators emphasize to the examinees the importance of doing their best on the test and answering the questions to the best of their ability, but not to guess at answers just to finish the test. Examinees are told the significant role they are playing in the creation of a new test.

In addition, to help ensure that the test results are from examinees who were motivated while responding to the test, the actual calibration of items followed the recommendations of Wright (1968) and the experience of the Northwest Evaluation Association (Ingebo & Forster, 1980) to include for item calibration purposes only those item response sets for examinees who had responded correctly to more than 20 percent and fewer than 90 percent of the items on the test. The exclusion of responses for this lower success range minimized the influence of including results for those who may have been guessing. Also the lower asymptote is analyzed to further investigate if item guessing may be a concern. Items with a lower asymptote value greater than .10 are subject to further review. In addition, items with a high percentage of non-responses are reviewed by the item development staff and psychometricians. One additional restriction eliminates the inclusion of results for those who do not have at least one correct answer on the last half of the test. Lastly, all field-test administrators are asked to complete an evaluation of the field-test process. Their comments are analyzed to identify any potential issues including examinee motivation.

Item c2 – The steps taken to ensure the quality of test items or tasks

(c2i) The extent to which items or tasks on the test were reviewed for fairness and sensitivity

The first part of this section describes CASAS policy for Fairness and Sensitivity Reviews. This is followed by results from the review conducted in 2008 on the items contained in the Life and Work Reading Assessments.

Purpose

Bias and sensitivity reviews of all CASAS items are conducted to ensure that the performance of an examinee is based on construct-relevant factors and not construct-irrelevant factors or group classification characteristics such as gender, race, ethnicity, native language, or disability. The CASAS policy for bias and sensitivity review of all items and forms follows the guidelines outlined in the *ETS Fairness Review Guidelines* (Educational Testing Service, 2003). Also the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999) and *Educational Measurement* (Brennan, 2006) were used in developing CASAS Fairness and Sensitivity policy.

CASAS has adopted this document as an outline for our policy for bias and sensitivity review. It also details specific guidelines to be used in CASAS bias and sensitivity reviews as recommended by CASAS psychometricians.

The majority of CASAS tests assess basic skills in an adult functional context. These tests are designed to assess a general skill or construct, such as reading comprehension, writing, mathematical reasoning, listening comprehension, speaking, or problem solving that can be applied across competency areas such as consumer economics or employability.

General Guidelines for CASAS Fairness and Sensitivity Reviews (From ETS Fairness Review Guidelines)

1. *Equality of Treatment* – An important aspect of fairness is treating people with impartiality regardless of such characteristics as gender, age, race, ethnicity, or disability that are not relevant to the test. As a test publisher, CASAS publishes guidelines and works with test administrators to ensure appropriate accommodations for persons with disabilities. Please refer to Item i2.
2. *Familiarity with ETS Guidelines* – Fairness is addressed during the design and development phases of test creation. Content or images that would otherwise violate the guidelines are included in a test only if required for validity. All item writers review and are familiar with all guidelines for fairness prior to writing items and developing tests.
3. *External Contributions Outside CASAS* – There are contributions to tests from external people who represent relevant perspectives and diverse adult education groups. Representatives of various groups are included in test development committees to determine the knowledge, skills, and abilities to be tested. During the field test period these contributions include feedback from teachers and test administrators as well as examinees.
4. *Preliminary Reviews* – Materials receive a preliminary fairness review before any substantive test publication work is done. This helps to recognize changes recommended by review panels at an early date and makes these changes less expensive and difficult to incorporate.
5. *Differential Item Functioning (DIF)* – The DIF procedure that CASAS has chosen to use is based on the work of Holland and Thayer (1988). The Mantel-Haenszel statistic compares the performance on an item for a “focal” group to that of a “reference” group matched in overall ability or proficiency. This matching controls for differences in abilities of these different groups. Example focal groups could be “females” or “Hispanic” and example reference groups could be “males” or “Caucasian,” respectively. In other words, the Mantel-Haenszel DIF statistic is calculated to evaluate whether there is any statistical difference in item performance for groups of “females” and “males” that are matched for ability or proficiency. The DIF analyses are run on all CASAS items with the focal groups representing classifications of gender, ethnicity, and spoken language groups for which there is a large enough *N*. A statistically significant Mantel-Haenszel statistic does not automatically indicate that an item is biased. Rather, from these analyses, items are flagged for additional review by subject matter experts (SMEs). For CASAS, these subsequent reviews occur for any item with an absolute DIF value (Mantel-Haenszel statistic) greater than 1.5. CASAS chose this value based on ETS guidelines (Doran and Holland, 1993). Additional details on the DIF procedure and results from the DIF analyses on the Life and Work Reading assessments are presented later in this section.
6. *Other Psychometric Analyses* – Additional psychometric analyses are conducted to analyze item difficulty for subgroup populations, such as the calculation of p-values, point bi-serial correlations for both correct responses and distractors, high and low group discrimination parameters, lower asymptotes, in-fit and out-fit statistics, and reliability statistics.

7. *Validation* – The strategies by which we collect evidence of fairness is called validation. Essentially, validation is the systematic collection of a body of evidence to evaluate intended interpretations and uses of test scores. Sources of evidence include test content, response processes, internal test structure, and relationships to other relevant variables. CASAS groups these aspects of validity evidence in two general clusters:
 - a. Content validity – the examination of the test content to determine whether it covers a representative sample of the content domain the test is intended to measure
 - b. Construct validity – the examination of the test to ensure that it only measures the construct of interest.
8. *Score interpretation and use* – The appropriate interpretation and use of each CASAS test score is made available to test administrators, test users and score recipients.

Timeline for Fairness and Sensitivity Reviews

Consistent with best practice, items are reviewed for fairness and sensitivity throughout the item development process.

- Item writers review the items for fairness and sensitivity at the time of item development.
- Educators submit comments regarding fairness and sensitivity when they return completed field tests.
- The demographic characteristics of the field test examinees are reviewed to ensure that they are representative of the target population (i.e. the population that will be taking the test). If the demographic representation is not deemed adequate additional field tests are administered.
- DIF analyses are conducted on items based on field test results and ongoing psychometric analyses. A significant DIF statistic indicates that an item may be measuring something other than the construct of interest, but it is not proof of bias. Therefore, items that yield significant DIF statistics are not immediately deleted; instead, they are flagged for further in-depth review by SMEs and fairness and sensitivity panel members.
- A fairness and sensitivity panel is convened to review all items just prior to the time items are allocated to alternative test forms and prior to publishing. Special attention is given to items with DIF statistics greater than 1.5; see the section on DIF analysis later in this section.
- Continuous test improvement and evaluation includes running DIF analyses and convening fairness and sensitivity panels. CASAS follows ETS and NRS Submission Guidelines by reviewing test items for fairness and sensitivity at least once every five years. Special attention is given to items with DIF statistics greater than 1.5.

Guidelines for Fairness and Sensitivity – Item Writers and Educators

- All CASAS item writers receive Fairness and Sensitivity Training. This training consists of the review of example items and an in-depth review of six fairness review guidelines published by ETS and the standards outlined in chapter seven of *Standards for Educational and Psychological Testing*. In addition, items writers observe and participate on all Fairness and Sensitivity Review Panels conducted by CASAS.

- All new field-tested items are reviewed by educators in the field. Their comments are documented and reviewed by the CASAS team of item writers. The qualifications and experience of these educators is documented.

Guidelines for Selection of Fairness Review Panel Members

- Fairness and Sensitivity review panels are convened to:
 - Review items that are considered for inclusion on final test forms
 - Conduct periodic reviews of items on published CASAS tests
 - Conduct periodic reviews of items that have been flagged with DIF statistics greater than 1.5
- The fairness reviewers must have been trained in fairness review or have had the original training updated within the last five years. CASAS has developed a sensitivity and fairness training program that each panel member attends. This training lasts approximately two hours with a one hour of discussion with a CASAS trainer of the guidelines that each panel member should use in their review and one hour of self-study in which the panel members review and study the guidelines on an individual basis. This supplements the other fairness and sensitivity training they have received. Demographic characteristics of the reviewers are considered as detailed below.
- The fairness reviewers have no stake in the test or other material being reviewed.
- The fairness reviewers are demographically diverse (age, ethnicity, gender).
 - The ethnicity of the panel members represents the populations being served.
 - The panel consists of a minimum of three members from each major ethnic group.
 - The gender of the panel members is diverse and not weighted too much to one gender
 - Different age groups are represented by the panel members

Guidelines for Fairness and Sensitivity Reviewers

The guidelines are intended to help ensure that only construct relevant factors affect examinees' scores. (Something that is construct-relevant is part of the knowledge, skills, abilities, or other characteristics a test is supposed to measure.) Test items that cause group differences because of construct-irrelevant factors do not meet standards for fairness and sensitivity.

The groups of primary concern for the Guidelines for Fairness and Sensitivity Reviewers, as outlined by ETS are defined by:

- Age
- Disability
- Ethnicity
- Gender
- National Origin
- Race
- Religion
- Sexual Orientation

The ETS Fairness Review Guidelines represent one consideration when evaluating validity evidence. Therefore, material required for construct-relevant measurement for a given intended use may be necessary even if it includes topics, ideas, attitudes, images, or other content that the guidelines would otherwise discourage. For example, a detailed description of the effects of a severe injury may be required to appropriately measure emergency medical personnel on a licensure test. However, such a description would likely not generalize to measuring reading ability in the average adult population because it would contain construct irrelevant factors that are unrelated to the intended use of the scores.

All CASAS fairness and sensitivity reviewers are given a brief background on the procedures followed to test for fairness and sensitivity during the design and development phases of the creation of the test.

Following are the six specific guidelines outlined by ETS. Below each guideline are examples of areas that each CASAS fairness reviewer considers when judging whether the specific guideline has been met. Below each guideline are examples of characteristics the items should have. Each CASAS fairness reviewer has access to the document *ETS Fairness Review Guidelines (2003)* to reference additional information about each guideline.

ETS Guideline 1. Treat people with respect in all test materials.

- Language and images show respect for all groups, unless required for validity (for example a history test might require material that normally would be out of compliance).
- Items emphasize that people in different groups function in a variety of societal roles.
- Items do not treat problems or beliefs of specific groups as humorous or inconsequential.
- Items do not state or imply that one group is superior to another or promote a certain opinion, value, or preference.
- Items do not assume that all examinees are citizens of the United States and have the same cultural background.
- Items avoid inappropriate underlying assumptions. For example, “The doctors and their wives attended the event.” (implies all doctors are men)

ETS Guideline 2. Minimize the effects of construct-irrelevant knowledge or skills.

- As per ETS, the following can cause problems with construct relevance and are included only if clearly construct relevant
 - Items avoid the use of charts, maps, graphs and the like if they are randomly chosen among many possible means of testing a point. In other words, if the examinee’s ability to correctly use the chart, map, or graph may create a new construct that the item is not meant to measure.
 - Items avoid unnecessarily difficult words, figures of speech, idioms or synthetic structures. Also avoid:
 - Words or topics mainly associated with wealthier social class
 - Specialized legal, political words, scientific, and transportation words (affidavit, filibuster, vacuole)
 - Regionalisms
 - Items do not require that the examinee needs specific knowledge about a religion to respond to an item.

- Items do not place the primary focus on military topics
- Items avoid that an examinee requires specific knowledge of culture in the United States (unless, as in previous guidelines, the item is designed to test such knowledge such as in a citizenship examination).

ETS Guideline 3. Avoid material that is unnecessarily controversial, inflammatory, offensive, or upsetting

- Items including unnecessarily inflammatory or upsetting material. Reasonably controversial material may be necessary for valid measurement even in skill tests. When controversial material is necessary for an item, use neutral language to discuss the issue.
- Items avoid, if possible, certain extremely controversial topics such as certain political issues, abortion, or abuse of people.
- Items treat certain topics with extreme care such as shocking accidents, illness, or natural disasters, death or dying, evolution, religion, slavery, suicide, violence, and suffering.
- Items use sensitivity regarding images that may be offensive to people from other countries.
- Items avoid using the test to promote a particular cause.

ETS Guideline 4. Use appropriate terminology to refer to people.

- Items do not attach unnecessary labels to people. If a person's membership in a group is not relevant to the item, do not mention this. If it is relevant, be certain to use the proper terminology to refer to the person/group. See the *ETS Fairness Review Guidelines* for a summary of the appropriate terminology for a wide variety of groups of persons.

ETS Guideline 5. Avoid stereotypes.

- As stated in the *ETS Fairness Review Guidelines*, a stereotype is defined as “a conventional, over-generalized, and oversimplified conception of the characteristics of a group of people. Stereotypes attribute characteristics to a group on the basis of age, disability, ethnicity, gender, national origin, race, religion, or sexual orientation. Stereotypes ignore differences among members of the group.”

ETS Guideline 6. Represent diversity in depictions of people.

- Gender balance
- Racial and ethnic balance
- As mentioned under ETS Guideline #1, items emphasize that people in different groups function in a variety of societal roles. Depictions show diversity and balance.

Methodology of the CASAS Fairness and Sensitivity Reviews

- The CASAS fairness review is done with respect to the most recent version of the *ETS Fairness Review Guidelines*. The guidelines (see above) are reviewed with the fairness and sensitivity panel prior to beginning the review. The following documents are made available to all reviewers for reference:
 - *ETS Fairness Review Guidelines (2003)*

- *ETS Standards for Quality and Fairness (2002)*
- The CASAS fairness reviewer has access to the test specifications and is aware of the characteristics of the test-taking population and the purpose of the test. The reviewers have access to all components of the test that an examinee would have, such as audiotapes (or scripts) and visual materials, in addition to the items. They are able to view items as the examinee would (same item placement).
- Fairness reviewers are provided a survey form to record their review results and recommendations. This survey form is designed so that reviewers can effectively record their review of each item and facilitates the aggregation of the results from each fairness and sensitivity reviewer. The survey form ensures that the panel member is responding to each of the guidelines listed above.
- Fairness reviewers first review the items individually noting any fairness and sensitivity issues with respect to the *ETS Fairness Review Guidelines*. The specific guideline that is violated is cited in each instance. Other comments or suggested actions recommended by the reviewers that are not violations of the Fairness Review Guidelines are noted and discussed but distinguished from violations of the Fairness Review Guidelines.
- To avoid reviewer fatigue, review panels are normally not assigned more than 175 review items. The panel process is usually completed within 2-3 weeks.
- After the individual review, all fairness reviewers meet to discuss the items that were identified as having any fairness or sensitivity issues. From these final group discussions, panel reviewers arrive at consensus regarding recommendations and issues with the reviewed items. Members from the CASAS item writing team and psychometrics team are present at this discussion.
- To protect the integrity of the results and the CASAS assessments, all testing related materials used by reviewers are returned and accounted for by CASAS. In addition, all panel members must sign a confidentiality and non-disclosure agreement.
- Based on the results from the review panel, CASAS may decide to replace problematic items with new items covering the same content standards and with comparable difficulty.

Reporting Results from the CASAS Fairness Review Panel

- The methodology followed by the panel to conduct the review is summarized and documented by the leader of the study.
- All information on the panel members' demographic characteristics and qualifications (including any previous fairness and sensitivity training) is collected, aggregated as necessary, and summarized for reporting purposes.
- All conclusions (survey results) from the panel are summarized and aggregated for review by the item development team and for presentation in CASAS technical manuals.
- Any changes to test forms or items based on the panel's recommendations are documented.

CASAS Fairness and Sensitivity Review of Life and Work Reading Assessments

As part of CASAS policy to continually validate items and forms to ensure that they remain fair and sensitive to the intended testing population, in fall 2008 a panel of key gender, ethnic, racial, ESL literacy and language specialists, to specifically analyze items from each test form with Mantel Haenzel Delta statistics greater than 1.5. A total 93 items were reviewed from the Life and Work Reading test series. The selection of panel members, review methodology, and reporting of results all followed the process outlined above. The panel consisted of 14 members. The demographic characteristics and background of the panel are presented in Tables c2i-1 through c2i-4.

Table c2i-1 Fairness and Sensitivity Panel Gender Information

Gender	N	%
Female	7	50.0
Male	7	50.0
Total	14	100.0

Table c2i-2 Fairness and Sensitivity Panel Age Information

Age	N	%
< 35	3	21.4
35-45	6	42.9
46-59	3	21.4
60+	2	14.3
Total	14	100.0

Table c2i-3 Fairness and Sensitivity Panel Race or Ethnicity Information

Race or Ethnicity	N	%
Hispanic or Latino	4	28.6
White (Non Hispanic or Latino)	2	14.3
Asian	5	35.7
Black or African American	3	21.4
Total	14	100.0

Table c2i-4 Fairness and Sensitivity Panel Background Information

Panel Member	Panel Members Background and Qualifications
1	Lecturer – PhD in Education
2	Retired Adult Education Administrator/Coordinator – BS Education, MS Educational Management
3	Dean, San Francisco Community College – MA Bilingual Education
4	Intake/Assessment Specialist – MA in TESOL
5	Senior Forecast Analyst - MS in Social and Applied Economics, MBA in International Business
6	Adult Education Coordinator, PhD
7	Instructor
8	Teacher – BA California Teaching Credential, MA Education
9	Professor – California Community College Teaching Lifetime Credential – BA Communications
10	Education Policy Analyst – ED.M. Education Policy and Management, B.A. Psychology
11	Teacher/PDC Manager, MA
12	Coordinator San Diego Office of Education – BA English Home Economics Masters in Education-Education Tech, Life Secondary Teaching Credential
13	Director of Academic Development – M.A. TESOL
14	Coordinator – BA Social Science, Masters in Education – Ed. Leadership, ESOL Certified

To illustrate the review process and criteria, a sample of a review form is presented in Table c2i-5. Overall, the review panel reported very few comments regarding potential violations of the six fairness guidelines and there was consensus not to remove any specific items. As per CASAS guidelines, members from the CASAS item writing team and psychometrics team were present at the final panel discussion. Detailed notes were recorded of the panel's comments. When the tests were originally constructed, only those items that qualified for inclusion in the CASAS item bank were used in constructing the final test forms.

Based on the comments and recommendations of the panel review no additional items were selected for removal from the Life and Work Reading test series. A summary of the reviewers comments are listed in Table c2i-6.

Table c2i-5 Sample Data Collection Form for Panel Reviews

Test Item	Guidelines						Comments
	<i>1. Treats people with respect in all test materials</i>	<i>2. Minimizes the effects of construct-irrelevant knowledge or skills</i>	<i>3. Avoid material that is unnecessarily controversial, inflammatory, offensive, or upsetting</i>	<i>4. Uses appropriate terminology to refer to people</i>	<i>5. Avoids stereotypes</i>	<i>6. Represents diversity in depictions of people</i>	
1	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No	
2	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No	
3	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No	
4	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No	
5	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No	
6	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No	
7	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No	
8	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No	
9	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No	
10	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No	

Table c2i-6 Panel Member Comments from Life and Work Reading and Overall Item Decision

Form/Item	Comment	Consensus
27R/19	Hard to differentiate between coins/there are new coins available	Update on next version
81R/20	School situation-all are women	Keep item
82RX/7,8	Hand drawn picture is distracting, prefer photo	Keep item
84R/19	All stylists are female	Keep item
85R/2	Technical, confusing	Keep item
85R/6	Vocabulary – termination	Keep item
187R/4	Material might be found upsetting	Keep item
187R/25	One reviewer felt there could be two possible correct answers	Keep item
188R	Instructions are vague, technical vocabulary - submerged	Keep item
514R/25	Cultural concepts raising children – western point of view	Keep item
310/6	Lunch time is cultural	Keep item

Differential Item Functioning (DIF) Procedure

As mentioned under the CASAS Fairness and Sensitivity Review Procedure, items are evaluated empirically for fairness and sensitivity using Differential Item Functioning (DIF) procedures to flag any items for panel review that show statistical differences in performance. These items are then reviewed by content expert panels to determine possible reasons for the DIF results and to determine if the DIF results are sufficiently large that the task should be removed from the assessment form.

The DIF procedure is based on the work of Holland and Thayer (1986). They adapted the Mantel-Haenszel statistic from medical research to compare the performance on an item of a “focal” group to that of a “reference” group matched in overall proficiency or ability. In other words, the Mantel-Haenszel statistic is calculated to show how an examinee is responding to an item and if it is consistent with what their performance on the assessment as a whole would lead us to expect. This procedure provides a cumulative statistic of the log odds ratio of passing or failing an item for the two groups (focal and reference) that have been matched for overall proficiency or ability. This odds ratio is then converted to the Delta scale based on procedures developed at the Educational Testing Service (Holland & Thayer, 1986).

The Delta value indicates the average amount by which examinees in a focal group found an item more difficult than did a reference group. Positive values on this scale indicate that the item favors the focal group, that is, an item with a positive value is differentially easier for the focal group than the reference group. Similarly, an item with a negative Delta differentially favors the reference group over the focal group.

Based on criteria developed by ETS (DeMauro, 1990), items having a Delta statistic less than an absolute value of 1.0 are used as needed to meet the content requirements of the test specifications. Items having a Delta statistic greater than 1.0 are subjected to review by content specialists to verify and determine possible reasons, if any, for the differential item functioning. Items having a Delta statistic greater than 1.5 are only used in a test if no other item from the required domain has a lower value and the item content is deemed critical to the assessment.

Results of DIF Analysis

Tables c2i-7 through c2i-10 summarize the statistical DIF analyses by form. Items having an absolute Delta value of 1.5 or higher were subjected to a critical review by content specialists and only retained if the item content was essential to the assessment and no other item was available with a lower Delta statistic. Content specialists conducting the review included representatives from both the reference and focal groups.

Analysis by gender placed male as the reference group and female as the focal group. Ethnicity analyses were carried out with Anglo/white as the reference group and other ethnic groups as the focal group. Language analysis placed English as the reference group and speaking a language other than English as the focal group. DIF analysis was carried out for gender, ethnicity, and spoken language for the 2005-2006 program year.

Results from Table c2i-7 show that 21 items (3.1 percent of the total items) screened through DIF were identified and further reviewed by content specialists and psychometricians for gender bias or insensitivity, especially the five items (0.8 percent) with absolute values greater than 1.5.

Results from Table c2i-8 show that 110 items (16.2 percent of the total items) screened through DIF were identified and further reviewed by content specialists and psychometricians for Anglo-Hispanic ethnic bias or insensitivity, especially the 41 items (6.0 percent) with absolute values greater than 1.5.

Table c2i-7 Summary of Mantel-Haenszel Analysis for Gender

Reading Form	Total Number of Items	Delta Difference Range		
		Test Items with Absolute Value Less than 1.0	Test Items with Absolute Value Between 1.0 and 1.5	Test Items with Absolute Value Greater than 1.5
310	28	27	1	0
311	28	24	4	0
27R	30	27	2	1
28R	30	29	1	0
81R	24	23	1	0
82R	24	23	1	0
81RX	28	28	0	0
82RX	28	27	1	0
951R	24	24	0	0
952R	24	24	0	0
951RX	26	25	1	0
952Rx	26	25	1	0
83R	32	32	0	0
84R	32	31	1	0
85R	37	36	0	1
86R	37	37	0	0
185R	38	36	1	1
186R	38	35	1	2
187R	32	32	0	0
188R	32	32	0	0
513R	40	40	0	0
514R	40	40	0	0

Table c2i-8 Summary of Mantel-Haenszel Analysis for Ethnicity (Anglo – Hispanic)

Reading Form	Total Number of Items	Delta Difference Range		
		Test Items with Absolute Value Less than 1.0	Test Items with Absolute Value Between 1.0 and 1.5	Test Items with Absolute Value Greater than 1.5
310	28	24	4	0
311	28	21	7	0
27R	30	24	3	3
28R	30	20	6	4
81R	24	16	2	6
82R	24	22	2	0
81RX	28	19	3	6
82RX	28	16	6	6
951R	24	19	4	1
952R	24	20	4	0
951RX	26	23	2	1
952RX	26	21	5	0
83R	32	29	2	1
84R	32	23	4	5
85R	37	36	1	0
86R	37	33	2	2
185R	38	34	3	1
186R	38	32	4	2
187R	32	30	0	2
188R	32	30	2	0
513R	40	40	0	0
514R	40	36	3	1

Results from Table c2i-9 show that, 102 items (17.7 percent of the total items) screened through DIF were identified and further reviewed by psychometricians and subject-matter experts for Anglo-African American ethnic bias or insensitivity especially the 15 items (2.6 percent) with absolute values greater than 1.5.

Results from Table c2i-10 show that 148 items (21.8 percent of the total items) screened were identified and further reviewed by psychometricians and subject-matter experts for other than English language bias or insensitivity, especially the 47 items (8.1 percent) with absolute values greater than 1.5.

Table c2i-9 Summary of Mantel-Haenszel Analysis for Ethnicity
(Anglo-African American)

Reading Form	Total Number of Items	Data Difference Range		
		Test Items with Absolute Value Less than 1.0	Test Items with Absolute Value Between 1.0 and 1.5	Test Items with Absolute Value Greater than 1.5
310	28	24	3	1
311	28	22	4	2
27	30	20	10	0
28R	30	23	6	1
81R	24	15	7	2
82R	24	20	4	0
81RX	28	23	5	0
82RX	28	23	4	1
951R	24			
952R	24			
951RX	26			
952RX	26			
83R	32	26	4	2
84R	32	28	3	1
85R	37	32	5	0
86R	37	26	9	2
185R	38	33	4	1
186R	38	31	6	1
187R	32	29	2	1
188R	32	28	4	0
513R	40	36	4	0
514R	40	37	3	0

Table c2i-10 Summary of Mantel-Haenszel Analysis for Spoken Language
(English – Language Other Than English)

Read Form	Total Number of Items	Delta Difference Range		
		Test Items with Absolute Value Less than 1.0	Test Items with Absolute Value Between 1.0 and 1.5	Test Items with Absolute Value Greater than 1.5
310	28	24	4	0
311	28	20	7	1
27R	30	14	10	6
28R	30	16	9	5
81R	24	15	6	3
82R	24	17	6	1
81RX	28	21	6	1
82RX	28	20	6	2
951R	24			
952R	24			
951RX	26			
952RX	26			
83R	32	22	9	1
84R	32	27	2	3
85R	37	25	6	6
86R	37	24	7	6
185R	38	26	6	6
186R	38	25	10	3
187R	32	29	2	1
188R	32	28	3	1
513R	40	40	0	0
514R	40	37	2	1

(c2ii) The extent to which items or tasks on the test were screened for the adequacy of their psychometric properties

Both classical test theory and Rasch Item Response theory (IRT) measure the adequacy of the psychometric properties of the test items and forms. Rasch IRT is a measurement model designed to specify the relationship between observable examinee test performance on a set of items within a test form and the unobservable trait or ability measure assumed to underlie that performance. CASAS uses the Rasch item parameters and other diagnostic information during the development process to determine if any items are mis-fitting the intended measurement model. Classical Test Theory (CTT) is also employed to evaluate the difficulty of items, the correlation between item and total scores, the mean and standard deviation of test form scores, the standard error of measurement, and the reliability of the assessments.

Table c2ii-1 provides descriptive statistics for all test forms submitted in the Life and Work Reading Assessments. Included are the mean raw scores, standard deviations, mean p-values, and mean point bi-serial correlation coefficients. The p-value for each item shows the percentage of examinees who answered the item correctly. The point biserial correlates the performance of examinees on the item (correct or incorrect) with the total form score. A positive point biserial score for a particular item tells us that those examinees who scored higher on the overall exam were more likely to answer the item correctly. In addition, the alpha reliability coefficient, internal consistency reliability statistic Kuder-Richardson Formula 20 (KR-20), and standard error of measurement (SEM) are reported. The alpha reliability coefficient for each scale is an index of the homogeneity of each scale. It can range from 0.0 to 1.0. This statistic is appropriate only for non-speeded scales designed to measure a single trait. The alpha value is usually considered to be a lower-bound estimate of the reliability of a scale (Crocker & Algina, 1984). The KR-20 coefficient measures how well a set of items (or variables) measures a single unidimensional latent construct. Higher values (closer to 1) indicate higher average inter-item correlations and provide evidence that the items are measuring the same underlying construct. The KR-20 reliability is equivalent to Cronbach's alpha reliability.

Table c2ii-1 Descriptive Statistics by Test Form

Form	No. of Items	N	Mean Raw Score	Standard Deviation	Mean P- Value	Mean Point Biserial	Alpha	KR-20
310R	28	787	15.09	5.52	0.539	0.53	0.82	0.83
311R	28	824	14.28	5.52	0.510	0.53	0.82	0.83
27R	30	24,822	22.06	6.55	0.735	0.75	0.91	0.92
28R	30	16,419	22.89	5.85	0.763	0.75	0.89	0.91
81R	24	44,649	17.59	4.54	0.733	0.68	0.84	0.85
82R	24	23,674	18.08	4.42	0.753	0.69	0.83	0.87
81RX	28	31,392	18.28	5.43	0.653	0.60	0.84	0.85
82RX	28	28,118	18.39	5.44	0.657	0.58	0.84	0.85
951R	24	4,870	17.09	4.98	0.712	0.65	0.85	0.88
952R	24	3,483	17.66	4.80	0.740	0.65	0.84	0.87
951RX	26	2,740	17.36	5.13	0.668	0.58	0.83	0.84
952RX	26	2,482	17.66	5.41	0.679	0.62	0.85	0.86
83R	32	60,935	18.73	7.04	0.585	0.61	0.88	0.89
84R	32	41,600	19.63	6.82	0.614	0.59	0.87	0.88
85R	37	28,666	19.75	7.77	0.534	0.57	0.88	0.89
86R	37	18,308	20.54	7.47	0.555	0.54	0.87	0.87
185R	38	15,512	21.72	7.25	0.572	0.54	0.87	0.87
186R	38	10,392	21.80	6.72	0.574	0.52	0.85	0.85
187R	32	8,461	18.41	6.28	0.575	0.55	0.85	0.85
188R	32	4,745	20.10	5.91	0.628	0.56	0.84	0.84
513R	40	9,763	25.87	7.68	0.647	0.57	0.88	0.88
514R	40	6,776	23.89	7.78	0.597	0.55	0.88	0.88

Tables c2ii-2 through c2ii-6 provide descriptive statistics for each test level by form for a set of demographic characteristic subgroups. The descriptive statistics include mean raw score, standard deviation, mean p-value, mean point biserial, and alpha reliability coefficient. The demographic characteristic subgroups include gender, ethnicity, and language groups. Viewing the statistics in these groups provides evidence as to how different population subgroups are performing on the individual test forms.

Table c2ii-2 Descriptive Statistics by Demographic Characteristic Subgroups – Level Pre-A Forms

Form	No. of Items	Sub Groups	N	Mean Raw Score	Standard Deviation	Mean P-Value	Mean Point Biserial	Alpha
310	28	Male	396	14.93	5.53	0.53	0.41	0.82
		Female	389	15.24	5.51	0.54	0.41	0.82
		Hispanic	184	14.02	6.14	0.50	0.45	0.86
		White	475	15.36	5.16	0.55	0.39	0.79
		English Speaking	648	15.51	5.24	0.55	0.39	0.80
311	28	Male	453	14.16	5.47	0.51	0.41	0.82
		Female	369	14.42	5.59	0.52	0.42	0.83
		Hispanic	185	13.20	5.57	0.47	0.42	0.82
		White	522	14.32	5.36	0.51	0.40	0.81
		English Speaking	720	14.22	5.49	0.51	0.41	0.82
27R	30	Male	11,549	22.32	6.48	0.74	0.53	0.91
		Female	12,920	21.80	6.62	0.73	0.52	0.91
		Black	254	19.47	7.20	0.65	0.53	0.91
		Hispanic	17,034	22.51	6.56	0.75	0.54	0.92
		White	1,442	22.57	6.02	0.75	0.49	0.89
		English Speaking	551	20.89	6.83	0.70	0.52	0.91
		Non Eng. Speaking	24,271	22.09	6.54	0.74	0.53	0.91
28R	30	Male	7,335	23.05	5.69	0.77	0.49	0.89
		Female	8,797	22.74	5.97	0.76	0.50	0.90
		Black	196	19.14	7.20	0.64	0.53	0.91
		Hispanic	10,974	23.26	5.64	0.78	0.49	0.89
		White	735	22.73	6.00	0.76	0.50	0.89
		English Speaking	318	20.37	6.52	0.68	0.50	0.89
		Non Eng. Speaking	16,101	22.94	5.83	0.77	0.50	0.89

Table c2ii-3 Descriptive Statistics by Demographic Characteristic Subgroups – Level A Forms

Form	No. of Items	Sub Groups	N	Mean Raw Score	Standard Deviation	Mean P-Value	Mean Point Biserial	Alpha
81R	24	Male	2,660	17.97	4.53	0.75	0.47	0.84
		Female	22,678	17.72	4.52	0.74	0.47	0.84
		Black	470	17.57	5.10	0.73	0.50	0.87
		Hispanic	30,496	19.78	4.45	0.73	0.47	0.83
		White	2,660	17.97	4.53	0.75	0.47	0.84
		English Speaking	548	17.97	5.31	0.75	0.53	0.89
		Non Eng. Speaking	41,082	17.59	4.53	0.73	0.47	0.84
82R	24	Male	10,621	17.90	4.47	0.75	0.47	0.84
		Female	12,751	18.21	4.38	0.76	0.47	0.83
		Black	293	17.68	4.92	0.74	0.50	0.86
		Hispanic	17,429	18.11	4.38	0.76	0.46	0.83
		White	1,488	18.28	4.39	0.76	0.47	0.84
		English Speaking	292	17.18	4.93	0.72	0.49	0.85
		Non English Speaking	23,382	18.09	4.41	0.75	0.47	0.83
81RX	28	Male	13,252	18.24	5.43	0.65	0.44	0.84
		Female	17,867	18.31	5.42	0.65	0.44	0.84
		Black	363	17.65	6.31	0.63	0.49	0.88
		Hispanic	22,346	18.18	5.34	0.65	0.44	0.84
		White	2,558	19.15	5.44	0.68	0.44	0.85
		English Speaking	426	18.35	6.44	0.66	0.51	0.89
		Non Eng. Speaking	30,966	18.28	5.41	0.65	0.44	0.84
82RX	28	Male	11,656	18.17	5.51	0.65	0.44	0.84
		Female	16,307	18.55	5.38	0.66	0.43	0.83
		Black	337	17.61	6.32	0.63	0.48	0.88
		Hispanic	20,462	18.17	5.37	0.65	0.43	0.83
		White	2,259	19.47	5.35	0.70	0.43	0.84
		English Speaking	378	19.03	6.29	0.68	0.50	0.89
		Non Eng. Speaking	27,740	18.38	5.43	0.66	0.43	0.84
951	24	Male	1,682	17.02	4.97	0.71	0.47	0.85
		Female	3,140	17.15	4.98	0.72	0.48	0.85
		Hispanic	2,662	17.84	4.83	0.74	0.48	0.85
		Non Eng. Speaking	4,861	17.10	4.98	0.71	0.47	0.85
952	24	Male	1,226	17.69	4.65	0.74	0.45	0.84
		Female	2,236	17.82	4.67	0.74	0.46	0.84

Form	No. of Items	Sub Groups	N	Mean Raw Score	Standard Deviation	Mean P-Value	Mean Point Biserial	Alpha
951X	26	Hispanic	1,870	18.58	4.52	0.77	0.47	0.84
		Non Eng. Speaking	3,478	17.76	4.68	0.74	0.46	0.84
		Male	900	17.74	5.06	0.68	0.43	0.83
		Female	1,804	17.18	5.15	0.66	0.43	0.83
		Hispanic	1,497	17.73	5.15	0.68	0.44	0.83
		Non Eng. Speaking	2,720	17.34	5.14	0.67	0.43	0.83
		Male	793	17.94	5.41	0.69	0.47	0.86
		Female	1,663	17.56	5.39	0.68	0.46	0.85
952X	26	Hispanic	1,205	17.88	5.45	0.69	0.47	0.86
		Non Eng. Speaking	2,466	17.65	5.40	0.68	0.46	0.85

Table c2ii-4 Descriptive Statistics by Demographic Characteristic Subgroups – Level B Forms

Forms	No. of Items	Sub Groups	N	Mean Raw Score	Standard Deviation	Mean P-Value	Mean Point Biserial	Alpha
83R	32	Male	24,669	18.55	7.10	0.58	0.47	0.89
		Female	35,358	18.85	6.97	0.59	0.46	0.88
		Black	952	20.92	7.53	0.65	0.52	0.91
		Hispanic	41,265	18.44	6.93	0.58	0.46	0.88
		White	4,413	19.92	6.96	0.62	0.47	0.89
		English Speaking	1,969	23.17	7.14	0.72	0.52	0.91
		Non Eng. Speaking	58,966	18.59	6.99	0.58	0.46	0.88
84R	32	Male	16,602	19.45	6.88	0.61	0.46	0.88
		Female	24,291	19.67	6.74	0.62	0.45	0.87
		Black	596	20.78	7.51	0.65	0.51	0.91
		Hispanic	27,820	19.53	6.64	0.61	0.45	0.87
		White	3,101	21.28	6.85	0.67	0.47	0.88
		English Speaking	1,350	23.17	7.20	0.72	0.52	0.91
		Non Eng. Speaking	40,250	19.51	6.77	0.61	0.45	0.87

Table c2ii-5 Descriptive Statistics by Demographic Characteristic Subgroups – Level C Forms

Forms	No. of Items	Sub Groups	N	Mean Raw Score	Standard Deviation	Mean P-Value	Mean Point Biserial	Alpha
85R	38	Male	11,141	20.31	7.89	0.55	0.45	0.89
		Female	17,065	19.31	7.62	0.52	0.43	0.88
		Black	1,034	22.74	7.74	0.62	0.45	0.89
		Hispanic	16,946	19.48	7.51	0.53	0.43	0.87
		White	3,044	22.00	8.44	0.60	0.48	0.91
		English Speaking	4,068	24.13	7.68	0.65	0.46	0.89
		Non Eng. Speaking	24,598	19.03	7.54	0.51	0.43	0.88
86R	38	Male	6,923	20.75	7.54	0.56	0.43	0.88
		Female	11,221	20.36	7.41	0.55	0.42	0.87
		Black	461	22.33	7.32	0.60	0.43	0.87
		Hispanic	11,402	20.08	7.26	0.54	0.41	0.86
		White	1,688	22.70	8.07	0.61	0.46	0.90
		English Speaking	1,868	23.89	7.39	0.65	0.44	0.88
		Non English Speaking	16,440	20.16	7.39	0.55	0.42	0.87
185R	38	Male	5,984	21.98	7.45	0.58	0.42	0.88
		Female	9,369	21.64	7.08	0.57	0.40	0.86
		Black	501	24.61	6.82	0.65	0.40	0.86
		Hispanic	9,268	21.83	6.97	0.57	0.40	0.86
		White	1,606	22.66	7.84	0.60	0.44	0.89
		English Speaking	1,625	25.77	7.07	0.68	0.43	0.88
		Non English Speaking	13,887	21.25	7.12	0.56	0.40	0.86
186R	38	Male	3,989	22.36	6.87	0.59	0.40	0.86
		Female	6,328	21.44	6.60	0.56	0.38	0.84
		Black	207	23.12	7.04	0.61	0.41	0.87
		Hispanic	6,308	21.84	6.56	0.58	0.39	0.84
		White	1,123	22.17	7.43	0.58	0.43	0.88
		English Speaking	750	25.65	7.36	0.68	0.45	0.89
		Non Eng. Speaking	9,642	21.50	6.58	0.57	0.38	0.84

Table c2ii-6 Descriptive Statistics by Demographic Characteristic Subgroups – Level D Forms

Forms	No. of Items	Sub Groups	N	Mean Raw Score	Standard Deviation	Mean P-Value	Mean Point Biserial	Alpha
187R	32	Male	3,845	18.55	6.41	0.58	0.43	0.86
		Female	4,589	18.29	6.15	0.57	0.41	0.84
		Black	607	18.76	6.07	0.59	0.42	0.84
		Hispanic	4,488	18.17	6.12	0.57	0.41	0.84
		White	1,622	19.80	6.67	0.62	0.60	0.87
		English Speaking	3,218	19.16	6.48	0.60	0.44	0.86
		Non Eng. Speaking	5,243	17.95	6.11	0.56	0.41	0.84
188R	32	Male	2,061	19.90	6.10	0.62	0.42	0.85
		Female	2,671	20.25	5.77	0.63	0.41	0.83
		Black	286	19.51	5.63	0.61	0.40	0.82
		Hispanic	2,677	19.93	5.86	0.62	0.41	0.84
		White	776	21.43	6.04	0.67	0.44	0.86
		English Speaking	1,570	20.44	6.11	0.64	0.43	0.86
		Non Eng. Speaking	3,175	19.93	5.81	0.62	0.40	0.83
513R	40	Male	3,959	25.28	7.88	0.63	0.43	0.89
		Female	5,595	26.33	7.50	0.66	0.42	0.88
		Black	1,080	26.37	7.54	0.66	0.42	0.88
		Hispanic	5,211	25.39	7.51	0.64	0.41	0.87
		White	1,704	28.49	7.69	0.71	0.45	0.90
		English Speaking	5,371	27.14	7.56	0.68	0.43	0.88
		Non Eng. Speaking	4,392	24.33	7.55	0.61	0.41	0.87
514R	40	Male	2,381	22.75	8.07	0.57	0.43	0.88
		Female	4,338	24.51	7.55	0.61	0.41	0.87
		Black	729	24.17	7.79	0.60	0.42	0.88
		Hispanic	3,776	23.40	7.43	0.59	0.40	0.86
		White	1,074	27.15	7.98	0.68	0.45	0.90
		English Speaking	3,795	24.81	7.89	0.62	0.43	0.89
		Non Eng. Speaking	2,971	22.71	7.47	0.57	0.40	0.86

Item c3 –The procedures used to assign items

(c3i) Forms, for tests that are constructed prior to being administered to examinees

The main considerations in assigning items to forms can be summarized as follows:

- Purpose of the test
- Content Focus and Construct being measured
- Modality
- Educational Functioning Level and range of difficulty
- Length of test
- Need for parallel or alternate forms

Please refer to Item C for more detailed information on the procedures to assign items to test forms.

(d) Maintenance. Documentation of how the test is maintained

Item d1 – How frequently, if ever, new forms of the test are developed;

After a test or test series has been implemented, situations may arise that call for the creation of new test forms. The CASAS Life and Work Reading series was designed to replace the CASAS Life Skills Reading Series which had been originally published in 1990.

In one case, agencies reported they often had to administer pre- and post-tests to examinees more than twice within the A level. They also requested A Level forms that would bridge to Level B. This created a need for additional tests, and *extended level* forms at the A level were created and added to the Life and Work Reading Assessments to provide additional alternative test forms for post-testing that also bridged to the next level.

In another case, the field requested reading assessments that targeted content appropriate for beginning readers whose goal it is to pass the US citizenship exam. As a result of this request, four *Reading for Citizenship* assessments were created at the A level.

In some instances a test form may be revised for a new version. In other instances, updating of formatting or minor content adjustments require a new edition of a test. In some cases a problematic item may need to be replaced and a new version created.

Table d1-1 contains test form publishing information for the Life and Work Reading Assessments. This table shows that periodically the Life and Work Reading Assessments have been added to as needed based on both statistical information and feedback from teachers, test administrators, and examinees.

Table d1-1 Life and Work Reading Test Publishing Information

Test Form	Level	Type	Publish Date	Subsequent Editions	Publish Date CBT
310	Pre-A	Pre/Post	1990	Released	
311	Pre-A	Pre/Post	1990	Released	
27R	Pre-A	Pre/Post	1994		
28R	Pre-A	Pre/Post	1994		
81R	A	Pre/Post	2003		2005
82R	A	Pre/Post	2001		2005
81RX	A	Pre/Post	2003		2005
82RX	A	Pre/Post	2001		2005
951R	A	Pre/Post	2002		
952R	A	Pre/Post	2002		
951RX	A	Pre/Post	2002		
952Rx	A	Pre/Post	2002		
83R	B	Pre/Post	2002		2005
84R	B	Pre/Post	2002		2005
85R	C	Pre/Post	2001		2005
86R	C	Pre/Post	2001		2005
185R	C	Pre/Post	2005		2005
186R	C	Pre/Post	2005		2005
187R	D	Pre/Post	2005		2005
188R	D	Pre/Post	2005		2005
513R	D	Pre/Post	1991		2008
514R	D	Pre/Post	1991		2008

Item d2 – The steps taken to ensure the comparability of scores across forms of the test

Item Response Theory and the comparability of scores across test forms and series

Item Response Theory (IRT) is a measurement model designed to specify the relationship between observable examinee test performance on a set of test items within a form and the unobservable trait or measured ability assumed to underlie that performance. IRT is the fundamental measurement model and procedures used to ensure comparability of scores across different CASAS forms and test series. Multiple banks of field-tested, calibrated items are used to develop specific CASAS assessment instruments and test series, including the Life and Work Reading Assessments. Although the development of CASAS assessment instruments from the multiple item banks are based on many traditional psychometric procedures including the preparation of test specifications, sound item writing practices, and both the pilot and field-testing of items using classical item analysis procedures, the underlying theoretical measurement foundation is IRT.

One major task in building and maintaining an item bank is to place all the items in a given learning modality, such as reading, listening, or mathematics, on a common measurement scale. This involves calibrating the level of difficulty of each item within the content domain. An item bank can be developed by computing the item difficulty estimates from all examinees' responses to all items. However, establishing an item bank typically requires many more items than can be given in one test or far more than a single examinee can be realistically expected to answer in a reasonable amount of time. For each test series, such as Life and Work Reading, CASAS chose to develop calibration forms having the same domain coverage with similar content coverage and a range of difficulty. Expert teachers in the domain judged the item content similarity and range of difficulty to be appropriate for examinees participating in the initial calibration forms study. On all initial forms more than 95 percent of test examinees responded to all items.

The characteristic of the Rasch and other IRT models, which makes them appropriate for item banking, is that they separately measure an item difficulty calibration from the ability or proficiency of the group taking the item. This makes it possible to do horizontal and vertical equating of scores from different test forms of the same difficulty level (horizontal equating) or increasing difficulty levels (vertical equating) within a content domain. This allows for the measurement of achievement gains between the administrations of two different sets of items to the same examinee over a specified instructional time period. The use of an item banking model with Rasch IRT parameters for each item allows the development of a more general curriculum-based or common content domain scale that measures specific content and competencies in a variety of adult employment preparation and workplace situations.

Results presented in other items of this submission, notably Item e for match of content and Item g for degree of consistency across different forms, provide evidence that parallel forms within the Life and Work Reading Assessments are comparable in content and difficulty (as demonstrated in the raw to scale score correlations between parallel forms).

Initial Calibration and Linking of Forms

To fully explain the calibration and linking process used for the Life and Work Reading Assessment, it is necessary to describe the process used to calibrate and link the initial CASAS assessments.

CASAS conducted the initial calibration of items in the fall of 1980 based on ten test forms. All forms contained basic life skills items measured in a functional life skills context. Since math in a functional context requires the ability to read, these items were initially included on the reading scale. A total of 4,115 examinees enrolled in adult basic education programs, including ESL and high school completion, participated in this first item calibration of 422 items.

In order to place all items on a single scale, sets of 8-10 common linking items were embedded among the ten forms. One calibration form was chosen as the “anchor” test to which all other tests were directly linked to establish the common content domain scale. The choice of an anchor test form was made following an earlier decision to focus on the development and selection of life skills competencies appropriate to a mid-range achievement level, that of intermediate ABE and ESL participants. This population was chosen because it had more experience in the classroom and with taking tests and was judged to be broadly representative of adult learners in general. The anchor form was also designed so that these examinees would respond successfully to more than 50 percent of the items. It was also decided to center the scale at this same mid-range achievement level and to convert the logit metric to a three-digit numerical scale by multiplying the logit scale by 10 and adding 200. This established the initial scaling of the CASAS tests with a mean of 200 and a standard deviation of 10 scale points.

Standard test form linking procedures were used to consecutively link each test form to the common IRT scale established by the anchor form. The calibrated item parameters from the linking items on each calibration form were used to compute scale transformation values for placing the non linking items the same common measurement scale. This linking process was continued for each of the ten calibration forms. This first series of calibration forms also included items appropriate for beginning and advanced levels of ABE and ESL.

The actual calibration of items followed the recommendations of Wright (1968) and the experience of the Northwest Evaluation Association (Ingebo and Forster 1980) to include only those item response sets for those who had responded correctly to more than 20 percent and fewer than 90 percent of the items on the test. The exclusion of responses from the lower success range minimized the influence of including results for those who may have been guessing. One additional restriction eliminated results for examinees who did not have at least one correct answer on the last half of the test.

Model Data Fit

During the calibration process, all items were examined to determine their level of model fit to the Rasch Model. Individual forms were independently subjected to a one-parameter analysis using BICAL as the Rasch item calibration program (Wright & Mead, 1977). The two mean-square residual summary statistics, infit and outfit, were used to determine the degree of fit to the Rasch model. Although no hard-and-fast rules were used to identify misfitting items, those items with either infit or outfit values less than .7 or greater than 1.3 were reviewed by psychometricians and subject-matter experts and eliminated if not essential to the measurement of the competency statement.

Following this procedure, 863 student item response sets were then included for item calibration for the anchor form per content domain. This sample size was more than adequate to establish accurate calibrations. Research accomplished by the Northwest Evaluation Association indicated a sample size of 300 to be adequate for calibration purposes (NWEA, 1979). The remaining nine calibration forms were then scaled and linked to the base anchor form per content domain. All calibration forms met the minimum requirement of having at least 300 examinees respond to each item.

In addition to individual item responses on these item calibration forms, demographic and program descriptor information (including age, sex, ethnicity, primary language, number of years of school completed and program level enrollment) was collected for all learners in the initial item and form-linking calibrations.

In the spring of 1981, 16 additional item calibration forms were administered to 4,606 learners enrolled in Adult Basic Education, English as a Second Language, and high school completion programs. Items from the fall 1980 item calibrations were included in these forms to serve as linking items for the item calibration process. Items from these two administrations were extensively analyzed, and those test items that met the assumptions of the Rasch Model were then included in the initial item banks. The BICAL program (Wright & Mead, 1977) was used for the initial calibration of the CASAS item banks. Subsequent calibration programs used include RASCAL (Assessment Systems Corporation, 1989) and the Rasch program currently in use, WINSTEPS (Linacre, 2003). Each of these programs has been widely used in the psychometric research literature to calibrate educational test items.

Ongoing Item Bank Expansion

CASAS items are developed in response to a request for an approved test development project or to expand an existing item pool to meet future test construction needs. When item development is targeted to a specific assessment development project, a needs assessment is conducted to identify the priority content and skill areas to be measured for each assessment. For assessment development intended for adult education programs, adult education professionals are surveyed to identify and prioritize relevant content domains, usually expressed in the form of life-skill competencies and basic skill content standards. Surveys are prepared and distributed or electronically disseminated to adult education agencies across the country. The results from these surveys provide guidance to item and test development.

In addition to identifying target content domains, an initial step in planning item development is identifying the number of items that need to be created. Items undergo an extensive review and pilot testing process and item attrition will occur at several stages of the process. About three times the number of items needed for the final calibrated test form are generated during the item development process. For example, if two 32-item test forms at an intermediate adult proficiency level are needed, a total of 200 initial draft items are written to ensure a minimum of 80 calibrated items are available for selecting the final test forms and items. This provides flexibility to have enough calibrated items that are aligned with the test specifications for both content coverage and range of difficulty on a test form.

Please refer to Item C for a detailed description of the procedures followed to expand the item bank and a historical summary of the expansion of the CASAS item bank.

Raw to Scale Score Conversion

The parallel forms on the Life and Work Reading Assessments are designed to perform identically for similar examinees taking the parallel forms of the tests. From the correlations of over .99, more than 98 percent of the variation can be accounted for when comparing raw and scale scores among parallel forms. This means a given raw score achieved on either parallel form (for example 81R or 82R) will translate to essentially the same scale score across the two test forms. Table d2-1 below illustrates the one-to-one relationship between raw score to scale conversions on parallel forms of the Life and Work Reading Assessments. Because of this relationship the raw to scale score correlations of parallel forms will always approach 1 as is evident in Table d2-1.

Table d2-1 Raw to Scale Score Correlations of Life and Work Reading Parallel Forms

Reading Level	Correlation	Parallel Form Numbers
Pre-A	0.99	310 with 311
Pre-A	0.99	27R with 28R
A	0.99	81R with 82R
A	0.99	81RX with 82RX
A	0.99	951 with 952
A	0.99	951X with 952X
B	0.99	83R with 84R
C	0.99	85R with 86R
C	0.99	185R with 186R
D	0.99	187R with 188R
D	0.99	513R with 514R

The following Tables, d2-2 through d2-6, provide raw to scale score conversion charts along with the conditional standard error of measurement (CSEM) of the scale score for each measurement point for the Life and Work Reading forms. The CSEM provides an estimate of the average test score measurement error conditional on the proficiency estimate. This means that an error estimate is provided at each score point. Results presented in Tables d2-2 through d2-6 show that the CSEM is smallest with scores in the middle of the distribution. This is to be expected as Rasch IRT makes it clear that precision is not uniform across the entire range of test scores. Typically there is more information about learners with scores in the middle of the score distribution and the scores are more reliable. Scores in the accurate score precision range are signified with a dashed bar. Conversely scores at the edges of the range of the test generally have a higher CSEM and provide less reliable information. Scores that have a corresponding CSEM of 5.6 or greater have scale estimates that are outside the accurate score precision range and are signified with a diamond symbol (♦).

Table d2-2 Raw to Scale Score Conversion with CSEM – Level Pre-A Forms

Form 310			Form 311			Form 27R			Form 28R		
Raw Score	Scale Score	CSEM	Raw Score	Scale Score	CSEM	Raw Score	Scale Score	CSEM	Raw Score	Scale Score	CSEM
1	-	10.3	1	-	10.3	1	-	10.4	1	-	10.3
2	-	7.4	2	-	7.5	2	-	7.6	2	-	7.6
3	-	6.2	3	-	6.3	3	-	6.4	3	-	6.3
4	-	5.6	4	-	5.6	4	-	5.7	4	-	5.7
5	163	5.1	5	163	5.1	5	153	5.3	5	153	5.2
6	165	4.8	6	166	4.8	6	155	5.0	6	156	4.9
7	167	4.6	7	168	4.6	7	158	4.7	7	158	4.7
8	169	4.4	8	170	4.4	8	160	4.5	8	160	4.5
9	171	4.3	9	172	4.3	9	162	4.4	9	162	4.4
10	173	4.2	10	174	4.2	10	164	4.3	10	164	4.3
11	175	4.1	11	175	4.1	11	165	4.2	11	166	4.2
12	176	4.0	12	177	4.1	12	167	4.2	12	167	4.1
13	178	4.0	13	179	4.1	13	169	4.1	13	169	4.1
14	180	4.0	14	180	4.1	14	170	4.1	14	170	4.0
15	181	4.0	15	182	4.1	15	172	4.1	15	172	4.0
16	183	4.0	16	184	4.1	16	174	4.1	16	174	4.0
17	184	4.1	17	185	4.2	17	176	4.1	17	175	4.1
18	186	4.2	18	187	4.2	18	177	4.1	18	177	4.1
19	188	4.3	19	189	4.3	19	179	4.2	19	179	4.2
20	190	4.4	20	191	4.5	20	181	4.3	20	180	4.2
21	192	4.6	21	193	4.6	21	183	4.4	21	182	4.3
22	194	4.8	22	195	4.9	22	184	4.5	22	184	4.5
23	196	5.1	23	198	5.2	23	187	4.7	23	186	4.6
24	198♦	5.6	24	200♦	5.6	24	189	4.9	24	189	4.9
25	200♦	6.3	25	201♦	6.3	25	191	5.2	25	191	5.2
26	201♦	7.5	26	203♦	7.5	26	192♦	5.7	26	192♦	5.6
27	203♦	10.3	27	205♦	10.3	27	194♦	6.3	27	194♦	6.3
28	205♦		28	206♦		28	196♦	7.5	28	196♦	7.6
						29	199♦	8.7	29	199♦	8.9
						30	202♦		30	202♦	

Table d2-3 Raw to Scale Score Conversion with CSEM – Level A Forms

Form 81R			Form 82R			Form 81RX			Form 82RX		
Raw Score	Scale Score	CSEM	Raw Score	Scale Score	CSEM	Raw Score	Scale Score	CSEM	Raw Score	Scale Score	CSEM
1	151	10.4	1	151	10.4	1	163	10.3	1	163	10.3
2	159	7.6	2	159	7.6	2	170	7.6	2	171	7.6
3	164	6.4	3	164	6.5	3	175	6.3	3	175	6.3
4	167	5.8	4	167	5.8	4	179	5.6	4	179	5.6
5	171	5.4	5	170	5.4	5	182	5.2	5	182	5.1
6	173	5.1	6	173	5.1	6	184	4.9	6	184	4.8
7	176	4.9	7	176	4.9	7	186	4.6	7	186	4.6
8	178	4.7	8	178	4.8	8	188	4.5	8	188	4.4
9	180	4.6	9	180	4.7	9	190	4.3	9	190	4.3
10	182	4.6	10	182	4.6	10	192	4.2	10	192	4.2
11	185	4.5	11	184	4.6	11	194	4.2	11	194	4.1
12	187	4.5	12	186	4.5	12	196	4.1	12	196	4.1
13	189	4.6	13	189	4.5	13	197	4.1	13	197	4.1
14	191	4.6	14	191	4.6	14	199	4.1	14	199	4.1
15	193	4.7	15	193	4.7	15	201	4.1	15	201	4.1
16	195	4.8	16	195	4.8	16	202	4.1	16	202	4.1
17	197	4.9	17	197	4.9	17	204	4.2	17	204	4.2
18	200	5.1	18	200	5.1	18	206	4.2	18	206	4.2
19	203	5.4	19	203	5.4	19	208	4.3	19	208	4.3
20	205♦	5.8	20	205♦	5.8	20	210	4.5	20	210	4.5
21	206♦	6.5	21	206♦	6.5	21	212	4.6	21	212	4.7
22	208♦	7.6	22	208♦	7.6	22	214	4.9	22	214	4.9
23	209♦	8.8	23	209♦	8.8	23	216	5.2	23	216	5.2
24	210♦		24	210♦		24	218♦	5.7	24	218♦	5.7
						25	220♦	6.3	25	220♦	6.4
						26	222♦	7.6	26	222♦	7.5
						27	224♦	8.8	27	224♦	8.7
						28	227♦		28	227♦	

Table d2-3a Raw to Scale Score Conversion with CSEM – Level A Forms (cont.)

Form 951			Form 952			Form 951X			Form 952X		
Raw Score	Scale Score	CSEM	Raw Score	Scale Score	CSEM	Raw Score	Scale Score	CSEM	Raw Score	Scale Score	CSEM
1	-	10.4	1	-	10.4	1	-	10.4	1	-	10.4
2	-	7.6	2	-	7.6	2	-	7.5	2	-	7.5
3	-	6.5	3	-	6.5	3	-	6.4	3	-	6.4
4	-	5.8	4	-	5.8	4	-	5.7	4	-	5.7
5	175	5.4	5	175	5.3	5	186	5.2	5	186	5.2
6	178	5.1	6	178	5.0	6	188	4.9	6	188	4.9
7	180	4.8	7	180	4.8	7	191	4.7	7	190	4.7
8	182	4.7	8	182	4.7	8	193	4.5	8	193	4.5
9	185	4.6	9	185	4.6	9	195	4.4	9	195	4.4
10	187	4.5	10	187	4.5	10	197	4.3	10	196	4.3
11	189	4.5	11	189	4.5	11	198	4.2	11	198	4.2
12	191	4.4	12	191	4.4	12	200	4.2	12	200	4.2
13	193	4.5	13	193	4.5	13	202	4.1	13	202	4.2
14	195	4.5	14	195	4.5	14	204	4.1	14	204	4.2
15	197	4.6	15	197	4.6	15	205	4.2	15	205	4.2
16	199	4.7	16	199	4.7	16	207	4.2	16	207	4.2
17	201	4.8	17	201	4.8	17	209	4.3	17	209	4.3
18	204	5.1	18	204	5.1	18	211	4.4	18	211	4.4
19	206	5.4	19	206	5.4	19	213	4.6	19	213	4.6
20	207♦	5.8	20	207♦	5.8	20	215	4.8	20	215	4.8
21	209♦	6.5	21	209♦	6.5	21	217	5.1	21	217	5.1
22	210♦	7.6	22	210♦	7.6	22	220	5.5	22	220	5.5
23	212♦	8.8	23	212♦	8.8	23	221♦	6.2	23	221♦	6.2
24	213♦		24	213♦		24	223♦	7.5	24	223♦	7.4
						25	224♦	8.8	25	224♦	8.6
						26	226♦		26	226♦	

Table d2-4 Raw to Scale Score Conversion with CSEM – Level B Forms

Form 83R			Form 84R		
Raw Score	Scale Score	CSEM	Raw Score	Scale Score	CSEM
1	-	10.2	1	-	10.2
2	-	7.4	2	-	7.5
3	-	6.2	3	-	6.2
4	186	5.5	4	186	5.5
5	189	5.0	5	189	5.0
6	191	4.7	6	191	4.7
7	194	4.5	7	193	4.5
8	195	4.3	8	195	4.3
9	197	4.1	9	197	4.1
10	199	4.0	10	199	4.0
11	200	3.9	11	200	3.9
12	202	3.8	12	202	3.8
13	203	3.8	13	203	3.8
14	205	3.8	14	205	3.8
15	206	3.7	15	206	3.7
16	208	3.7	16	208	3.7
17	209	3.7	17	209	3.7
18	210	3.8	18	210	3.8
19	212	3.8	19	212	3.8
20	213	3.8	20	213	3.8
21	215	3.9	21	215	3.9
22	216	4.0	22	216	4.0
23	218	4.1	23	218	4.1
24	220	4.3	24	220	4.3
25	222	4.4	25	222	4.4
26	224	4.7	26	224	4.7
27	226	5.0	27	226	5.0
28	229	5.5	28	229	5.5
29	230♦	6.2	29	230♦	6.2
30	231♦	7.5	30	231♦	7.5
31	232♦	8.7	31	232♦	8.7
32	234♦	10.2	32	234♦	10.2

Table d2-5 Raw to Scale Score Conversion with CSEM – Level C Forms

Form 85R			Form 86R			Form 185R			Form 186R		
Raw Score	Scale Score	CSEM	Raw Score	Scale Score	CSEM	Raw Score	Scale Score	CSEM	Raw Score	Scale Score	CSEM
1	-	10.2	1	-	10.2	1	-	10.2	1	-	10.2
2	-	7.4	2	-	7.4	2	-	7.4	2	-	7.4
3	-	6.1	3	-	6.1	3	-	6.2	3	-	6.2
4	200	5.4	4	200	5.4	4	197	5.5	4	197	5.5
5	202	4.9	5	203	4.9	5	200	5.0	5	200	5.0
6	205	4.6	6	205	4.6	6	202	4.7	6	202	4.7
7	207	4.3	7	207	4.3	7	204	4.4	7	204	4.4
8	208	4.2	8	209	4.1	8	206	4.2	8	206	4.2
9	210	4.0	9	210	4.0	9	208	4.1	9	208	4.1
10	212	3.9	10	212	3.8	10	209	3.9	10	209	3.9
11	213	3.8	11	213	3.7	11	211	3.8	11	211	3.8
12	215	3.7	12	215	3.7	12	212	3.7	12	212	3.7
13	216	3.6	13	216	3.6	13	214	3.7	13	214	3.7
14	217	3.6	14	217	3.5	14	215	3.6	14	215	3.6
15	218	3.5	15	218	3.5	15	216	3.6	15	216	3.6
16	220	3.5	16	220	3.5	16	218	3.6	16	218	3.6
17	221	3.5	17	221	3.5	17	219	3.5	17	219	3.5
18	222	3.5	18	222	3.5	18	220	3.5	18	220	3.5
19	223	3.5	19	223	3.5	19	221	3.5	19	221	3.5
20	224	3.5	20	224	3.5	20	222	3.5	20	223	3.5
21	226	3.5	21	226	3.5	21	224	3.5	21	224	3.5
22	227	3.5	22	227	3.5	22	225	3.6	22	225	3.6
23	228	3.6	23	228	3.6	23	226	3.6	23	226	3.6
24	230	3.6	24	230	3.6	24	228	3.6	24	228	3.6
25	231	3.7	25	231	3.7	25	229	3.7	25	229	3.7
26	232	3.8	26	232	3.8	26	230	3.8	26	230	3.8
27	234	3.9	27	234	3.9	27	232	3.9	27	232	3.8
28	235	4.0	28	235	4.0	28	233	4.0	28	233	3.9
29	237	4.2	29	237	4.1	29	235	4.1	29	235	4.1
30	239	4.4	30	239	4.3	30	237	4.2	30	237	4.2
31	241	4.6	31	241	4.6	31	238	4.4	31	238	4.4
32	243	4.9	32	243	4.9	32	241	4.7	32	241	4.7
33	246	5.4	33	246	5.4	33	243	5.0	33	243	5.0
34	247♦	6.1	34	247♦	6.1	34	246	5.5	34	246	5.5
35	248♦	7.4	35	248♦	7.4	35	247♦	6.2	35	247♦	6.2
36	250♦	8.7	36	250♦	8.7	36	248♦	7.4	36	248♦	7.4
37	252♦		37	252♦		37	250♦	8.2	37	250♦	10.2
						38	252♦		38	252♦	

Table d2-6 Raw to Scale Score Conversion with CSEM – Level D Forms

Form 187R			Form 188R			Form 513R			Form 514R		
Raw Score	Scale Score	CSEM	Raw Score	Scale Score	CSEM	Raw Score	Scale Score	CSEM	Raw Score	Scale Score	CSEM
1	-	10.2	1	-	10.2	1	192	10.2	1	193	10.2
2	-	7.4	2	-	7.4	2	200	7.4	2	200	7.4
3	-	6.2	3	-	6.2	3	204	6.1	3	204	6.1
4	213	5.5	4	213	5.5	4	207	5.4	4	208	5.4
5	216	5.0	5	216	5.0	5	210	4.9	5	210	4.9
6	218	4.7	6	218	4.7	6	212	4.6	6	213	4.6
7	220	4.4	7	220	4.4	7	214	4.3	7	215	4.3
8	222	4.3	8	222	4.3	8	216	4.1	8	216	4.1
9	224	4.1	9	224	4.1	9	218	4.0	9	218	4.0
10	226	4.0	10	226	4.0	10	219	3.8	10	220	3.8
11	227	3.9	11	227	3.9	11	221	3.7	11	221	3.7
12	229	3.8	12	229	3.9	12	222	3.6	12	222	3.6
13	230	3.8	13	230	3.8	13	223	3.6	13	224	3.6
14	232	3.8	14	232	3.8	14	225	3.5	14	225	3.5
15	233	3.7	15	233	3.8	15	226	3.5	15	226	3.5
16	234	3.7	16	234	3.8	16	227	3.4	16	227	3.4
17	236	3.8	17	236	3.8	17	228	3.4	17	228	3.4
18	237	3.8	18	237	3.8	18	229	3.4	18	230	3.4
19	239	3.8	19	239	3.8	19	230	3.4	19	231	3.4
20	240	3.9	20	240	3.9	20	232	3.4	20	232	3.3
21	242	3.9	21	242	4.0	21	233	3.4	21	233	3.3
22	243	4.0	22	243	4.0	22	234	3.4	22	234	3.4
23	245	4.1	23	245	4.2	23	235	3.4	23	235	3.4
24	247	4.3	24	247	4.3	24	236	3.4	24	236	3.4
25	248	4.5	25	249	4.5	25	237	3.5	25	238	3.4
26	251	4.7	26	251	4.7	26	238	3.5	26	239	3.5
27	253	5.1	27	253	5.1	27	240	3.6	27	240	3.5
28	256	5.5	28	256	5.5	28	241	3.6	28	241	3.6
29	258♦	6.2	29	258♦	6.2	29	242	3.7	29	242	3.7
30	260♦	7.5	30	260♦	7.5	30	244	3.8	30	244	3.8
31	262♦	10.3	31	262♦	10.3	31	245	3.9	31	245	3.9
32	265♦		32	265♦		32	247	4.1	32	247	4.1
						33	249	4.3	33	249	4.3
						34	251	4.6	34	251	4.5
						35	253	4.9	35	253	4.9
						36	256	5.4	36	256	5.4
						37		6.1	37		6.1
						38		7.3	38		7.3
						39		10.2	39		10.2
						40			40		

Item d3 – The steps taken to maintain the security of the test

CASAS ascribes to all the rights and responsibilities of test administrators, proctors, and test takers as spelled out in the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999). Test security policy issues are discussed on an ongoing basis with the CASAS National Policy Council and National Consortium member state representatives at biannual meetings and special conference calls. CASAS, together with the National Consortium members, has developed, and updates as necessary, state and local assessment policy guidelines regarding how security concerns should be reported, the score appeal processes, and the rights and responsibilities of test administrators, proctors, and test takers. CASAS recommends that states incorporate these policy guidelines into their state and local-level assessment policies. Overall responsibility for test security policy rests with both the director of assessment development and the director of program development.

Test security is maintained throughout the life cycle of all CASAS testing, from development to administration and the scoring and reporting stages.

Item and Test Security During Development and Field Testing Process

The item and test development department is responsible for all aspects of the development and field-testing process. The item materials are kept secure at the CASAS offices and access is limited to authorized members of the item and test development department. During the field-test process, materials are sent to the test administrator who is instructed on procedures and policies to keep field-test materials secure. More information on test administration policies is provided below.

Upon completion of the field-testing, all test materials are returned to CASAS, and each test booklet is logged in and checked off to ensure that all booklets are accounted for. At CASAS offices all forms are kept in a secure location and access to items and test forms is strictly controlled and limited to members of the item and test development department, the research and development department, and in the case of items to be sent or received by CASAS, the shipping and receiving department.

CASAS Item Bank

The item bank for the Life and Work Reading series is organized to be a comprehensive source of information for the item and test developers. The database consists of easy-to-reference and up-to-date information on each item. Section C in this document describes the information contained in the CASAS item bank for the Life and Work Reading series.

CASAS policy is to have a selection of reserve items in the CASAS Reading item bank. These reserve items span the difficulty levels and content areas for each reading test series and provide a pipeline of available items.

These reserve items are available should specific items become compromised and it is determined that these items must be replaced. These items are also available if CASAS determines, through the continuous analysis of psychometric properties, that an item or item set does not remain reliable, valid, fair, or sensitive to demographic groups.

Access to the CASAS item bank is strictly controlled and the bank is stored on a secure file server location and access is limited to members of the item and test development department and the research and development department. These security controls eliminate unauthorized access.

Test Publication and Distribution

Detailed records are maintained by CASAS regarding the distribution of all exam materials. The responsibilities of test administrators are detailed below. During and after the publication process all electronic materials are stored on a secure file server. Access is limited to members of the item and test development department, research and development department, and in the case of items to be delivered or received by CASAS, the shipping and receiving department. As with the distribution of field-testing materials, the distribution of all test materials is strictly controlled and all testing material inventory must be reconciled and accounted for. This chain-of-custody process in place specifies the responsible CASAS staff at each step of the development, publication, and distribution process.

Security and Confidentiality of Examinee Data

All examinee field-test answer sheets are returned to CASAS where they are scored on site. All answer sheets and subsequent databases containing test information and results are stored in secure files.

Access to examinee data is strictly controlled and limited to the item and test development department and the research and development department. Before items are analyzed by members of the Research and Development Department, student-level identifying information is removed from the data files. When examinee data is analyzed as part of the process to determine the continued validity and reliability of test scores, all identifying variables are removed from the datasets and any summary reports. Test professionals who have access to examinee data and results must sign confidentiality agreements. When aggregate examinee results are supplied to outside parties, the permissible use of these results is communicated to these parties. Outside parties are educated on the proper interpretation of scores. In addition, possible incorrect uses of examinee information and scores are identified and communicated to outside parties using the scores or test results.

As described above, for ongoing test security of existing test forms, local agencies are instructed during required training on the procedures and processes they are mandated to follow. In addition to test security information covered during training, all agencies automatically receive test administration manuals that include required test security measures. The test administration manuals (TAMs) for all CASAS assessments contain information on test security as presented in Tables d3-1 and d3-2.

All CASAS software applications are encrypted including databases and program files. The software applications are password protected with the ability to set different permissions and access levels for individual users. All online data transfer and updates use HTTPS, a secure file transfer protocol that provides encryption and a secure channel over an insecure local network system.

Test Administrators Responsibilities

In accordance with Standard 13.10 of *The Standards of Educational and Psychological Testing* (AERA, APA, & NCME, 1999), the CASAS professional development department provides training and training materials to test administrators. When an agency places an order for CASAS assessments, the test coordinator must sign a Training and Test Use Agreement as presented in Table d3-2. The test coordinator must indicate who has been trained, date and location of training, and name of the CASAS certified trainer. This information is verified at the CASAS office by the customer service department before an order can be processed and shipped. If an agency has not completed training, that agency is provided with training options, and CASAS test materials are not shipped until the agency has satisfactorily met the training requirement. Table d3-1 below includes the information provided in the CASAS test administration manual. A test administrator or proctor must be present at all times during any testing session. If there are more than 25 examinees, CASAS requires that a second additional proctor be present. During administration of the CASAS exams, the responsibility for maintaining test security is the responsibility of the test administrator or proctor. Proctors are trained to observe examinees to ensure that they are not using prohibited materials or devices. For example, proctors must be aware that small electronic devices such as cell phones, voice recorders, and personal digital assistants are not used to capture the items to which examinees are exposed. Proctors are instructed to verify examinee identity and communicate to examinees the importance of not sharing information regarding specific items with others.

Table d3-1 CASAS Test Security Policy from Test Administration Manual

CASAS publishes this test security policy to maintain the integrity of each of its assessments and to assist with the implementation of and adherence to the test security practices contained in this document. Administrators and testing personnel are responsible for following these practices and ensuring that agency staff are aware of and follow said practices.

It is the immediate legal responsibility of the agency director, principal, or other primary administrator to enforce securing testing materials *upon taking delivery of materials and at all times afterward*. Only testing personnel and others qualified as part of the testing process may have access to any testing materials.

Security of Testing Materials

All testing materials, including but not limited to computerized-testing versions of CASAS eTests, whether online or desktop, test booklets, CDs, answer sheets, and answer keys, must be kept *secure*.

No unauthorized personnel should be allowed access to CASAS eTests or to paper test booklets. Security procedures for computerized-testing and paper test booklets must be held to the same standard.

Test Administration

Testing personnel must remain in the testing room throughout an entire test session to ensure that students follow all testing rules. Examinees must sit three to five feet apart and refrain from talking during the testing session or seeking help from others in any way, including use of electronic devices.

Testing personnel must ensure that they follow all test administration directions and language as dictated in the appropriate CASAS Test Administration Manual.

CASAS eTests: CASAS will occasionally embed unpublished test items into operational CASAS eTests in order to maintain and build its item bank. These items are not scored. The security of these items cannot be compromised and must be maintained in the same manner as all testing materials.

Paper test booklets: Paper test booklets and related test support materials should be kept in locked storage at all times when not in use. Prior to distribution of test booklets, the test administrator must number each test booklet for tracking purposes. As examinees finish the test, they must put their answer sheet inside their test booklet and wait until the conclusion of the testing session. The administrator must ensure that each test booklet is returned before anyone leaves the testing facility.

Confidentiality of Tests and Test Items

No agency, school, or other entity may use any CASAS test or test item – published or unpublished – as a tool to prepare examinees for the testing process. CASAS tests may never serve as practice tests in any capacity or for any purpose. Test items may not be reviewed, discussed, or explained to anyone at any time.

Paper test booklets: If test booklets have been marked in or torn, agencies should shred these test booklets. If an agency is transitioning to a new test series, CASAS requests that

agencies shred old test booklets and destroy related testing materials including CDs. It is never appropriate to retain test materials for use as a practice test or for instructional purposes.

No agency, school, or other testing entity may share or provide any testing materials to another agency or school. Agencies that make such requests should be advised to contact CASAS directly. Testing materials must remain at the testing site at all times.

Copyright Infringement

No test materials may be duplicated, photocopied, or reproduced in any manner. Federal copyright law prohibits unauthorized reproduction and use of copyrighted test materials. Reproducing test materials is a violation of federal copyright law.

Test Security Policy

Agency directors, principals, and other primary administrators need to maintain a specific test security policy that discusses the proper handling and use of test materials.

All testing personnel must sign the **Test Security Policy** statement below agreeing to uphold the security policies of the agency, school, or testing entity.

Should CASAS determine that any agency, school, or other testing entity has violated any provision of this test security policy or that testing materials have been compromised in any manner, purposely or otherwise, CASAS reserves the right to take appropriate action to rectify the violation of its test security policy.

To protect the quality and standardization of CASAS assessments, I agree to:

1. Follow all test procedures as required in this Test Security Policy document.
2. Secure all CASAS test materials, whether paper-based or computer delivered, under lock and key except during testing sessions.
3. Ensure that before or after any test administration all test materials are secure and inaccessible to any non-testing personnel, examinees, or others not responsible for test administration.
4. Remain in the testing room at all times during the testing event and monitor all examinee activity as appropriate and in compliance with test security procedures.
5. Ensure that examinees sit at least three to five feet apart and do not talk or seek help from others during the testing event in any way, including use of electronic devices.
6. Refrain from assisting examinees with test answers on any test before or during the testing event.
7. Refrain from reviewing test questions with examinees after the testing event.
8. Ensure that agency staff members follow all specific testing procedures as stated in CASAS Test Administration Manuals.
9. Disallow use of any CASAS assessments as practice tests or as instructional tools.
10. Advise any agency, school, or testing entity to contact CASAS, and not my agency, with any inquiry about sharing or duplicating CASAS testing materials.
11. Refrain from duplicating or in any way reproducing any CASAS testing materials, including but not limited to test booklets, answer keys, answer sheets, CDs, and CASAS eTests.
12. Report any violation of this test security policy.

My signature on this document certifies that I have read the above policy, will follow all test administration directions as stated in my CASAS Test Administration Manual, and agree to abide by all test security procedures.

Signature

Position/Title

Date

Print Name

Detecting and Reporting Security Concerns

All users of CASAS tests are to have procedures in place for any instance where the security of an examination has, or is suspected of having been breached. As agreed to by CASAS and National Consortium members, all security concerns are to be reported to the local assessment coordinator. If a matter is not resolved, the concern is to be referred to the state assessment coordinator. State staff members are required to monitor WIA II funded programs on an annual basis to make sure test security procedures are being followed. All users of CASAS tests are provided contact information to report directly to CASAS any information related to the security of CASAS items and test forms, including the potential compromise of test items.

In addition, CASAS reviews aggregate test data on a yearly basis to examine potential security concerns including improper or fraudulent test usage. This includes improper use by test administrators and teachers. CASAS conducts a series of data integrity checks by which CASAS is able to help identify potential misuse. Training sessions and the Life and Work Reading Test Administration Manual (TAM) strongly emphasize the inappropriateness of improper test preparation including teaching to specific items. The manual states:

It is prohibited for any individual, school, program, or business enterprise to develop any workshop, training or instructional session or create any materials designed to teach or prepare students to answer specific questions that appear on any CASAS test.

CASAS has an item and test security monitoring group to monitor the potential for illegal sharing of CASAS test items or improper test preparation. This monitoring is done via internet searches, regular meetings with trainers and program specialists, meetings with the research and development department, and review of data integrity reports. Any suspicion of improper usage is addressed immediately through a meeting with CASAS executive management. The item and test security monitoring group and CASAS executive management team decide on the proper course of action. This may involve requesting the development of additional items and scheduling pilot studies and field-test studies, replacing or retiring compromised items or forms, requesting the analysis of data or other studies to determine the scope of the issue, and initiating appropriate action against parties using CASAS items or tests in an inappropriate manner.

CASAS Response to Security Concerns

As mentioned above, if a potential security concern is detected, the CASAS item and test security monitoring group meets with CASAS management. Based on the issue, the item and test development department and the research and development department will also be included in discussions to address the appropriate next steps in each of the following areas:

- What evidence has been obtained regarding the security concern?

- What is the extent/potential impact of the security concern?
- Potentially what communication is required to CASAS test users?
- Potentially what other communication is needed (media release, etc.?)
- What additional analyses need to be conducted regarding this concern?
- Based on the decisions made, what replenishing of the CASAS item bank may be necessary?

All communication from CASAS to CASAS test users is through the director of assessment development and the director of program development.

Test Taker Rights

All users of CASAS tests are to have the right to appeal a test score as described in Standard 8.13 in the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999). As agreed to by CASAS and National Consortium members, test score appeals are to be reported to the local assessment coordinator. If a matter is not resolved, the concern is to be referred to the state assessment coordinator. If a local agency contacts CASAS directly, the person is referred to their state assessment coordinator.

Other test taker rights also follow the guidelines outlined by the *Standards for Educational and Psychological Testing*:

- Examinees whose results are invalidated are informed of available means of appeal or recourse (Standard 8.13).
- CASAS arranges for rescoring of examinee scores upon request (Standard 11.10).
- Examinees are informed of CASAS retake and reporting policies (Standard 11.12).
- The purpose of the testing is explained to students – that there are no pass or fail scores, that pretests are to inform instruction, and that post-tests are to measure progress (Standard 8.2).
- Test results and score interpretations are shared with examinees in language that the examinee should reasonably be expected to understand (Standard 12.20).
- Examinees are offered up to three retest opportunities to succeed on equivalent forms of the Life and Work Reading assessments. CASAS guidelines state that the recommended interval between consecutive pre- and post-test administrations is between 70-100 hours (Standard 13.6)

Item Exposure Analysis

As part of periodic psychometric maintenance for assessment programs, CASAS evaluates the stability of item parameter estimates over time (Wendler & Walker, 2006). If item characteristics substantively change over time, it raises a potential threat to the validity of intended score use and interpretations. When these item parameter changes influence decisions about items or the scale, it is often called item parameter drift or scale drift (Yen & Fitzpatrick, 2006). As outlined in Standard 4.17 of *The Standards of Educational and Psychological Testing*, CASAS periodically checks the stability of the measurement scale and the respective scores on the scale. To evaluate item parameter drift, CASAS conducts two types of analyses. First, CASAS analyzes classical item statistics across all items contained in the item bank. Because classical test theory statistics are sample dependent, a second level of analyses occurs at the item level and relies on IRT principles to control for different abilities. Using IRT, specifically the Rasch model, differential item functioning (DIF) analyses are conducted using item performance from different testing periods as the reference and focal groups to examine if there are any statistically significant changes in item functioning over different testing periods.

Item d4 – A history of the test’s use

In addition to paper forms, agencies may also order a fixed number of computer based test (CBT) administrations. Table d4-1 lists the total number of states that have ordered CBT administrations and the specific mode of administration.

Table d4-1 States Ordering CBT Administrations*

State	
California	Online
Connecticut	Online
Delaware	Online
Dist Of Columbia	Online
Florida	Online
Georgia	Online
Guam	Desktop
Hawaii	Online
Idaho	Online
Illinois	Online
Iowa	Online
Kansas	Online
Kentucky	Online
Maine	Online
Maryland	Online
Massachusetts	Online
Michigan	Online
Minnesota	Online
Nevada	Online
New Mexico	Online
New York	Online
North Carolina	Online
Ohio	Online
Oklahoma	Online
Oregon	Online
Rhode Island	Online
Texas	Online
Virginia	Online
Washington	Online

*Information on the District of Columbia is also included.

(e) Match of the content to the NRS educational functioning levels (content validity). Documentation of the extent to which the items or tasks on the test cover the skills in the NRS educational functioning levels

Item e1 – Whether the items or tasks on the test require the types and levels of skills used to describe the NRS educational functioning levels

CASAS has developed a variety of documentation to provide evidence as to the comparability of test content to the types and levels of skills used to describe the NRS educational functioning levels.

Figure e1-1 presents the relationship between content standards and competencies. The CASAS assessment system links and aligns the following key elements: curriculum (including specified underlying basic skills content standards as well as competencies negotiated and agreed upon by at least an 80 percent consensus of a national consortium of states using CASAS), suggested instructional materials and guides aligned to assessments and indexed to competencies and task areas, and assessments aligned with the competencies and content standards, as well as instructional materials. This provides the base of information needed to support and reinforce the learning process. Assessment becomes an integral part of instruction and instruction becomes targeted to the identified needs of learners. Through this system, the progress of each student can be monitored so that the agency and the learner are aware of specific outcomes or goals attained.

Tables e1-1 through e1-3 directly compare the NRS Basic Reading and Writing and Functional and Workplace Skills Level Descriptors to the corresponding CASAS Reading/Writing and Employability Skill Level Descriptors.

Tables e1-4 and e1-5 provide information on the content standards measured by the Life and Work Reading Assessments. Content standards, for ABE, ASE, and ESL programs are defined as clear statements about what learners should know and be able to do at specific points along an educational pathway. They are used together with CASAS Competencies to guide and focus instruction. Tables e1-4 and e1-5 list all the content standards addressed by the forms in the Life and Work Reading Assessments. The table lists the total number of items per Life and Work Reading Assessments form (data is provided for one form for each set of parallel forms) that address each content standard. In addition, the corresponding NRS educational functioning level for each content standard is identified for ESL, ABE, and ASE. For example, content standard R2.6 is: Interpret basic abbreviations. This content standard includes skills associated with NRS ESL educational functioning levels 2 and 3 and NRS ABE educational functioning level 1 and 2.

Tables e1-6 through e1-27 provides information on the specific competency addressed by each item on each form of the Life and Work Reading Assessments. Competencies specifically identify the skills that learners will obtain and be measured on and are

aligned to the content standards. They help form the basis of the CASAS integrated assessment and curriculum management system.

R2.6 "Interpret basic abbreviations" is typically taught and mastered at NRS levels 2 and 3 in ESL and NRS levels 1 and 2 in ABE

		TEST FORMS																	
		ESL						ABE						ASE					
		1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
NRS LEVEL	CASAS LEVEL																		
R2.6	Interpret basic abbreviations (e.g., Mr., apt., lb.)																		
R2.7	Interpret abbreviations in specialized contexts (e.g., tsp., bnfts.)																		

Content standard R2.6 is assessed in 24 test items in LW Form 81

Figure e1-1 Underlying Basic Skills Content Standards

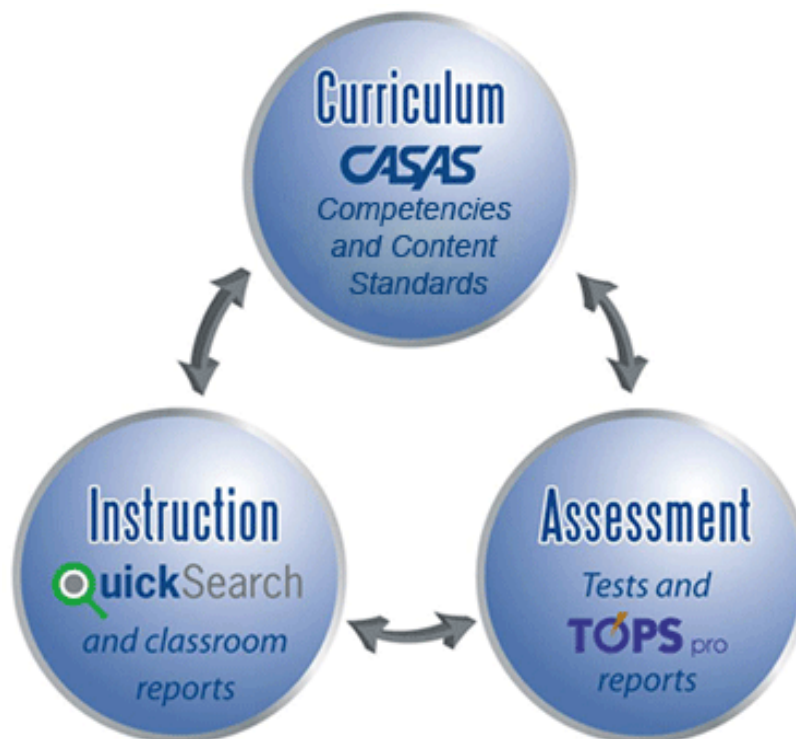


Table e1-1 Comparison of NRS Educational Functioning Level Descriptors and CASAS Level Descriptors for Reading – Adult Basic Education (ABE)

NRS Literacy Level	Basic Reading and writing (NRS)	Functional and Workplace Skills (NRS)	CASAS
Beginning ABE Literacy	Individual has no or minimal reading and writing skills. May have little or no comprehension of how print corresponds to spoken language and may have difficulty using a writing instrument. At the upper range of this level, individual can recognize, read, and write letters and numbers but has a limited understanding of connected prose and may need sight words and familiar words and phrases: may also be able to write simple sentences or phrases, including very simple messages. Can write basic personal information. Narrative writing is disorganized and unclear, inconsistently uses simple punctuation (e.g., periods, commas, question marks), and contains frequent errors in spelling.	Individual has little or no ability to read basic signs or maps and can provide limited personal information on simple forms. The individual can handle routine entry level jobs that require little or no basic written communication or computational skills and no knowledge of computers or other technology.	Beginning Literacy/Pre-Beginning Very limited ability to read or write. Persons at the upper end of this score range can read and write numbers and letters and simple words and phrases related to immediate needs. Can provide very basic personal identification in written form such as on job applications. Can handle routine entry-level jobs that require only basic written communication. Employability: Can handle routine entry-level jobs that involve only the most basic oral and written communication and in which tasks can be demonstrated and/or clarified orally.
Beginning Basic Education	Individual can read simple material on familiar subjects and comprehend simple and compound sentences in single or linked paragraphs containing a familiar vocabulary: can write simple notes and messages on familiar situations but lacks clarity and focus. Sentence structure lacks variety, but individual shows some control of basic grammar (e.g., present and past tense) and consistent use of punctuation (e.g., periods, capitalization).	Individual is able to read simple directions, signs, and maps, fill out simple forms requiring basic personal information, write phone messages, and make simple changes. There is minimal knowledge of and experience with using computers and related technology. The individual can handle basic entry level jobs that require minimal literacy skills; can recognize very short, explicit, pictorial texts (e.g., understands logos related to worker safety before using a piece of machinery); and can read want ads and complete simple job applications	Beginning Basic Skills Reading/Writing: Can read and interpret simple material on familiar topics. Can read and interpret simple directions, signs, maps, and simple menus. Can fill out simple forms requiring basic personal information; write a simple list or telephone message based on familiar situations. Can read and interpret simple sentences on familiar topics. Employability: Can handle entry-level jobs that involve some simple oral and written communication but in which tasks can also be demonstrated and/or clarified orally.

Table e1-1a Comparison of NRS Educational Functioning Level Descriptors and CASAS Level Descriptors for Reading – Adult Basic Education (ABE) (cont.)

NRS Literacy Level	Basic Reading and Writing (NRS)	Functional and Workplace Skills (NRS)	CASAS
Low Intermediate Basic Education	Individual can read text on familiar subjects that have a simple and clear underlying structure (e.g., clear main idea, chronological order); can use context o determine meaning; can interpret actions required in specific written directions; and write simple paragraphs with a main idea and supporting details on familiar topics (e.g., daily activities, personal issues) by recombining learned vocabulary and structures; and can self and peer edit for spelling and punctuation errors.	Individual is able to handle basic reading, writing, and computational tasks related to life roles, such as completing medical forms, order forms, or job applications; and can read simple charts, graphs, labels, and payroll stubs and simple authentic material if familiar with the topic. The individual can use simple computer programs and perform a sequence of routine tasks given direction using technology (e.g., fax machine, computer operation). The individual can qualify for entry-level jobs that require following basic written instructions and diagrams with assistance, such as oral clarification; can write a short report or message to fellow workers; and can read simple dials and scales and take routine measurements.	Intermediate Basic Skills Reading/Writing: Can handle basic reading and writing tasks related to life roles. Can read and interpret simplified and some authentic materials on familiar topics, follow basic written instructions and diagrams; can fill out basic medical information forms and basic job applications; follow basic oral and written instructions and diagrams. Can write messages or notes related to basic needs. Employability: Can handle jobs and/or training that involve following basic oral and written instructions and diagrams if they can be clarified orally.
High Intermediate Basic Education	Individual is able to read simple descriptions and narratives on familiar subjects or from which new vocabulary can be determined by context and can make some minimal inferences about familiar texts and compare and contrast information from such texts but not consistently. The individual can write simple narrative descriptions and short essays on familiar topics and has consistent use of basic punctuation but makes grammatical errors with complex structures.	Individual is able to handle basic life skills tasks such as graphs, charts, and labels and can follow multistep diagrams; can read authentic materials on familiar topics, such as simple employee handbooks and payroll stubs; can complete forms such as a job application and reconcile a bank statement. Can handle jobs that involve following simple written instructions and diagrams; can read procedural texts, where the information is supported by diagrams, to remedy a problem, such as locating a problem with a machine or carrying out repairs using a repair manual. The individual can learn or work with most basic computer software, such as using a word processor to produce own texts, and can follow simple instructions for using technology.	Advanced Basic Skills Reading/Writing: Can handle most routine reading and writing tasks related to their life roles; can fill out routine medical information forms and job applications. Can follow multi-step diagrams and written instructions; and write a simple accident or incident report. Can handle jobs and job training situations that involve following oral and simple written instructions and diagrams. Persons at the upper end of this score range are able to begin GED preparation. Employability: Can handle jobs and job training situations that involve following oral and simple written instructions and multi-step diagrams and limited public contact. Can read a simple employee handbook and make simple log entries

Table e1-2 Comparison of NRS Educational Functioning Level Descriptors and CASAS Level Descriptors for Reading – Adult Secondary Education (ASE)

NRS Literacy Level	Basic Reading and writing (NRS)	Functional and Workplace Skills (NRS)	CASAS
Low Adult Secondary Education	Individual can comprehend expository writing and identify spelling, punctuation, and grammatical errors; can comprehend a variety of materials such as periodicals and nontechnical journals on common topics; can comprehend library reference materials and compose multiparagraph essays; can listen to oral instructions and write an accurate synthesis of them; and can identify the main idea in reading selections and use a variety of context issues to determine meaning. Writing is organized and cohesive with few mechanical errors; can write using a complex sentence structure; and can write personal notes and letters that accurately reflect thoughts.	Individual is able or can learn to follow simple multistep directions and read common legal forms and manuals; can integrate information from texts, charts, and graphs; can create and use tables and graphs; can complete forms and applications and complete resumes; can perform jobs that require interpreting information from various sources and writing or explaining tasks to other workers; is proficient using computers and can use most common computer applications; can understand the impact of using different technologies; and can interpret the appropriate use of new software and technology.	<p>Adult Secondary</p> <p>Reading/Writing: Can read and follow multi-step directions; read and interpret common legal forms and manuals; communicate personal opinion in written form; write an accident or incident report. Can integrate information from multiple texts, charts, and graphs as well as evaluate and organize information. Can perform tasks that involve oral and written instructions in both familiar and unfamiliar situations. Can fill out medical information forms and job applications. Can read and interpret non-simplified materials on everyday subjects; can interpret routine charts, graphs, and labels;</p> <p>Employability: Understands routine work-related conversations. Can handle work that involves following oral and simple written instructions and interact with the public. Can perform reading and writing tasks, such as most logs, reports, and forms, with reasonable accuracy to meet work needs.</p>
High Adult Secondary Education	Individual can comprehend, explain, and analyze information from a variety of literacy works, including primary source materials and professional journals, and can use context cues and higher order processes to interpret meaning of written material. Writing is cohesive with clearly expressed ideas supported by relevant detail, and individual can use varied and complex sentence structures with few mechanical errors.	Individual is able to read technical information and complex manuals; can comprehend some college level books and apprenticeship manuals; can function in most job situations involving higher order thinking; can read text and explain a procedure about a complex and unfamiliar work procedure, such as operating a complex piece of machinery; can evaluate new work situations and processes; and can work productively and collaboratively in groups and serve as facilitator and reporter of group work. The individual is able to use common software and learn new software applications; can define the purpose of new technology and software and select appropriate technology; can adapt use of software or technology to new situations; and can instruct others, in written or oral form, on software and technology use.	<p>Advanced Adult Secondary</p> <p>Reading/Writing: Can handle most reading and writing tasks related to life roles; can read and interpret most non-simplified materials; can interpret charts, graphs, and labels. With some assistance, persons at this level are able to interpret technical information, more complex manuals, and material safety data sheets (MSDS). Can comprehend some college textbooks and apprenticeship manuals.</p> <p>Employability: Can meet work demands with confidence, interact with the public, and follow written instructions in work manuals.</p>

Table e1-3 Comparison of NRS Educational Functioning Level Descriptors and CASAS Level Descriptors for Reading– ESL

NRS Literacy Level	Basic Reading and Writing (NRS)	Functional and Workplace Skills (NRS)	CASAS
Beginning ESL Literacy	Individual has no or minimal reading or writing skills in any language. May have little or no comprehension of how print corresponds to spoken language and may have difficulty using a writing instrument.	Individual functions minimally or not at all in English and can communicate only through gestures or a few isolated words, such as name and other personal information; may recognize only common signs or symbols (e.g., stop sign, product logos); can handle only very routine entry-level jobs that do not require oral or written communication in English. There is no knowledge or use of computers or technology.	Reading/Writing: May not be literate in any language. Employability: Can handle very routine entry-level jobs that do not require oral or written communication in English and in which all tasks are easily demonstrated. Employment choices would be extremely limited.
Low Beginning ESL	Individual can read numbers and letters and some common sight words. May be able to sound out simple words. Can read and write some familiar words and phrases, but has a limited understanding of connected prose in English. Can write basic personal information (e.g., name, address, telephone number) and can complete simple forms that elicit this information.	Individual functions with difficulty in social situations and in situations related to immediate needs. Can provide limited personal information on simple forms, and can read very simple common forms of print found in the home and environment, such as product names. Can handle routine entry level jobs that require very simple written or oral English communication and in which job tasks can be demonstrated. May have limited knowledge and experience with computers.	Reading/Writing: Recognizes and writes letters and numbers and reads and understands common sight words. Can write own name and address. Employability: Can handle only routine entry-level jobs that do not require oral or written communication in English and in which all tasks are easily demonstrated.
High Beginning ESL	Individual can read most sight words, and many other common words. Can read familiar phrases and simple sentences but has a limited understanding of connected prose and may need frequent re-reading. Individual can write some simple sentences with limited vocabulary. Meaning may be unclear. Writing shows very little control of basic grammar, capitalization and punctuation and has many spelling errors.	Individual can function in some situations related to immediate needs and in familiar social situations. Can provide basic personal information on simple forms and recognizes simple common forms of print found in the home, workplace and community. Can handle routine entry level jobs requiring basic written or oral English communication and in which job tasks can be demonstrated. May have limited knowledge or experience using computers.	Reading/Writing: Reads and writes letters and numbers and a limited number of basic sight words and simple phrases related to immediate needs. Can write basic personal information on simplified forms. Employability: Can handle routine entry-level jobs that involve only the most basic oral or written communication in English and in which all tasks can be demonstrated.

Table e1-3 Comparison of NRS Educational Functioning Level Descriptors and CASAS Level Descriptors for Reading– ESL (cont.)

NRS Literacy Level	Basic Reading and Writing (NRS)	Functional and Workplace Skills (NRS)	CASAS
Low Intermediate ESL	Individual can read simple material on familiar subjects and comprehend simple and compound sentences in single or linked paragraphs containing a familiar vocabulary; can write simple notes and messages on familiar situations but lacks clarity and focus. Sentence structure lacks variety but shows some control of basic grammar (e.g., present and past tense) and consistent use of punctuation (e.g., periods, capitalization).	Individual can interpret simple directions and schedules, signs, and maps; can fill out simple forms but needs support on some documents that are not simplified; and can handle routine entry level jobs that involve some written or oral English communication but in which job tasks can be demonstrated. Individual can use simple computer programs and can perform a sequence of routine tasks given directions using technology (e.g., fax machine, computer).	<p>Reading/Writing: Can read and interpret simple material on familiar topics. Able to read and interpret simple directions, schedules, signs, maps, and menus. Can fill out forms requiring basic personal information and write short, simple notes and messages based on familiar situations.</p> <p>Employability: Can handle entry-level jobs that involve some simple oral and written communication but in which tasks can also be demonstrated and/or clarified orally.</p>
High Intermediate ESL	Individual can read text on familiar subjects that have a simple and clear underlying structure (e.g., clear main idea, chronological order); can use context to determine meaning; can interpret actions required in specific written directions; can write simple paragraphs with main idea and supporting details on familiar topics (e.g., daily activities, personal issues) by recombining learned vocabulary and structures; and can self and peer edit for spelling and punctuation errors.	Individual can meet basic survival and social needs, can follow some simple oral and written instruction, and has some ability to communicate on the telephone on familiar subjects; can write messages and notes related to basic needs; can complete basic medical forms and job applications; and can handle jobs that involve basic oral instructions and written communication in tasks that can be clarified orally. Individual can work with or learn basic computer software, such as word processing, and can follow simple instructions for using technology.	<p>Reading/Writing: Can read and interpret simplified and some authentic material on familiar subjects. Can write messages or notes related to basic needs. Can fill out basic medical forms and job applications.</p> <p>Employability: Can handle jobs and/or training that involve following basic oral and written instructions and diagrams if they can be clarified orally.</p>
Advanced ESL	Individual can read moderately complex text related to life roles and descriptions and narratives from authentic materials on familiar subjects. Uses context and word analysis skills to understand vocabulary, and uses multiple strategies to understand unfamiliar texts. Can make inferences, predictions, and compare and contrast information in familiar texts. Individual can write multi-paragraph text (e.g., organizes and develops ideas with clear introduction, body, and conclusion), using some complex grammar and a variety of sentence structures. Makes some grammar and spelling errors. Uses a range of vocabulary.	Individual can function independently to meet most survival needs and to use English in routine social and work situations. Can communicate on the telephone on familiar subjects. Understands radio and television on familiar topics. Can interpret routine charts, tables and graphs and can complete forms and handle work demands that require non-technical oral and written instructions and routine interaction with the public. Individual can use common software, learn new basic applications, and select the correct basic technology in familiar situations.	<p>Reading/Writing: Can read and interpret simplified and some non-simplified materials on familiar topics. Can interpret simple charts, graphs, and labels; interpret a payroll stub; and complete a simple order form; fill out medical information forms and job applications. Can write short personal notes and letters and make simple log entries.</p> <p>Employability: Can handle jobs and job training situations that involve following oral and simple written instructions and multi-step diagrams and limited public contact. Can read a simple employee handbook. Persons at the upper end of this score range are able to begin GED preparation</p>

Table e1-4 Reading Basic Skills Content Standards by Test Item for CASAS Life and Work Reading Assessments Forms 310, 311, 27R, and 28R

		TEST FORMS▶															Form 310	Form 311	Form 27R	Form 28R
		ESL							ABE				ASE							
		NRS LEVEL▶	1	2	3	4	5	6		1	2	3	4	5	6					
CASAS LEVEL▶		A	A	A	B	B	C	D	A	B	B	C	D	E						
Content Standards▼																				
R0	Pre-Beginning literacy / Phonics																			
R0.1.1	Use picture ID and context to make predictions about content in material								●											
R0.1.2	Listen attentively to speaker and directions								●											
R0.1.3	Use non-verbal communication skills to convey information, needs, and wants								●											
R0.1.4	Use verbal communication, including alternative communication systems, to convey information, needs, and wants								●											
R0.1.5	Ask questions for clarification and understanding of directions								●											
R0.1.6	Recognize when it is appropriate to speak/respond								●											
R0.1.7	Follow one-step oral directions								●											
R0.1.8	Follow two-step oral directions								●											
R0.1.9	Understand that printed words provide information								●											
R0.1.10	Distinguish letters from words								●											
R0.1.11	Recognize and name common letters and sight words (own name, doctor, SSN, etc.)								●											
R0.1.12	Identify and sort common words in basic categories (e.g. colors, shapes, foods)								●											
R0.1.13	Match oral words to printed words								●											
R0.1.14	Respond to who, what, when, where, and how questions								●											
R0.1.15	Track (move sequentially from sound to sound) and represent changes in simple syllables and words)								●											
R0.1.16	Track auditorily each word in a sentence and each syllable in a word								●											
R0.1.17	Describe common objects and events in both general and specific language								●											

		TEST FORMS▶														Form 310	Form 311	Form 27R	Form 28R
		ESL							ABE				ASE						
		NRS LEVEL▶	1	2	3	4	5	6		1	2	3	4	5	6				
CASAS LEVEL▶		A	A	A	B	B	C	D	A	B	B	C	D	E					
Content Standards▼																			
R0.1.18	Read days of the week								●							1	1		
R0.1.19	Read months of the year								●							1			
R0.1.20	Comprehend first, second, third, etc.								●										
R0.1.21	Comprehend prepositions, i.e. toward, away, etc.								●										
R0.1.22	Read a ruler								●							2	1		
R0.1.23	Read dials, gauges, etc.								●							1	1		
R0.1.24	Recognize coins								●							8	5		
R0.1.25	Recognize dollar bills, dollars and cents								●							8	5		
R0.1.26	Comprehend directions, i.e. up, down, right, left								●										
R0.1.27	Recognize name and numbers of objects								●							1	3		
R0.1.28	Identify and classify objects, people								●										
R0.1.29	Recognize differences in numbers, i.e. telephone social security, address								●							1	1		
R0.1.30	Recognize and discriminate pictures of men, women, police, etc								●								1		
R0.1.31	Read written time								●								1		
R0.1.32	Recognize kind of interaction appropriate for different circumstances								●										
R0.1.33	Use simple written form to convey information, needs, and wants								●								1		
R0.1.34	Use pictures and context to make predictions about content in material								●							1	1		
R0.1.35	Form basic opinions about a variety of presentations and media								●										
R0.1.36	Recognize cause and effect relationships for a simple procedure								●							10	10		
R1	Beginning literacy / Phonics								●										
R1.1	Identify the letters of the English alphabet (upper and lower case)	●	●						●							3	2	30	30
R1.2	Recognize that letters make words and words make sentences	●							●							12	8		

		TEST FORMS▶												Form 310	Form 311	Form 27R	Form 28R	
		ESL							ABE				ASE					
									1	2	3	4	5					6
		NRS LEVEL▶	CASAS LEVEL▶	1	2	3	4	5	6	7	1	2	3					4
Content Standards▼		A	A	A	B	B	C	D	A	B	B	C	D	E				
R1.3	Read from left to right, top to bottom, front to back	•							•						12	8	25	24
R1.4	Relate letters to sounds	•	•						•						12	8		
R1.5	Relate letters to a range of possible pronunciations, including recognizing common homonyms	•	•	•	•				•	•								
R1.6	Use common phonological patterns to sound out unfamiliar words (e.g., man/van)	•	•	•					•						3	2		
R2	Vocabulary																	
R2.1	Interpret common symbols (e.g., restroom signs, traffic signs; #, ▶, ↑)	•	•						•						5	6	5	5
R2.2	Read basic sight words (e.g., the, is)	•							•						2	2	5	6
R2.3	Interpret common high-frequency words and phrases in everyday contexts (e.g., signs, ads, labels)	•							•						6	5	12	13
R2.4	Use capitalization as a clue to interpret words (e.g., names, place names, other proper nouns)														1	1	4	5
R2.5	Interpret contractions		•	•	•				•	•								
R2.6	Interpret basic abbreviations (e.g., Mr., apt., lb.)		•	•	•				•	•							7	9
R2.7	Interpret abbreviations in specialized contexts (e.g., tsp., bnfts.)				•	•				•	•							
R2.8	Interpret meaning from word formations (e.g., verb endings, plurals, possessives, comparative forms)		•	•	•	•			•	•	•							
R2.9	Interpret common prefixes and suffixes to determine the meaning of words (e.g., un-happy, work-er)			•	•	•			•	•	•							
R2.10	Interpret less common prefixes and suffixes to determine the meaning of words (e.g., impossible, anti-war, employee)					•	•				•	•						
R2.11	Interpret familiar words used in a new context (e.g., enter a room, enter data on a computer)				•					•								
R2.12	Interpret specialized vocabulary in context (e.g., consumer, work, field of interest)						•	•					•	•	•			
R3	General reading comprehension																	

		TEST FORMS▶														Form 310	Form 311	Form 27R	Form 28R
		ESL							ABE				ASE						
		NRS LEVEL▶	1	2	3	4	5	6		1	2	3	4	5	6				
CASAS LEVEL▶	A	A	A	B	B	C	D	A	B	B	C	D	E						
Content Standards▼																			
R3.1	Interpret common punctuation and sentence-writing conventions (e.g., capitalized first word)	●	●	●					●										
R3.2	Read and understand simple sentences that contain familiar vocabulary		●	●	●				●	●									
R3.3	Read and understand simple texts on familiar topics (e.g., short narratives, basic consumer materials)			●	●				●	●						2	2		
R3.4	Read and understand moderately complex texts (e.g., general informational materials, common workplace materials)				●	●				●	●								
R3.5	Read and understand complex texts (e.g., newspaper and magazine articles, technical materials, literature)						●	●				●	●	●					
R3.6	Interpret simple written instructions		●	●	●				●	●						2	2		
R3.7	Interpret detailed instructions (e.g., workplace procedures, operating instructions, consumer materials)					●	●	●			●	●	●	●					
R3.8	Interpret basic sentence structure and grammar (e.g., statements, questions, negatives; adjectives modifying nouns)		●	●	●				●	●									
R3.9	Interpret complex sentence structure and grammar (e.g., relative clauses, perfect tenses)					●	●	●			●	●	●	●					
R3.10	Follow pronoun references within a text (e.g., Ms. Smith... she; This is important.)		●	●	●				●	●									
R3.11	Make connections between related information across different sections of a text					●	●	●			●	●	●	●					
R3.12	Use supporting illustrations to interpret text	●	●	●					●									8	
R3.13	Use contextual clues to determine the meaning of words and phrases (e.g., Save \$10 on your next purchase.)				●	●			●	●	●					3	3		
R3.14	Interpret signal words as clues to the organization and content of a text (e.g., first... then; however; it’s important that...)			●	●	●	●	●	●	●	●	●	●	●		2	2		
R3.15	Interpret idioms and collocations from context				●	●	●	●		●	●								
R3.16	Interpret figurative meanings of words from context (e.g., flooded with calls)						●	●				●	●	●					
R3.17	Interpret the connotative meaning of a word (e.g., inexpensive vs. cheap)					●	●				●	●							

		TEST FORMS▶															Form 310	Form 311	Form 27R	Form 28R
		ESL							ABE				ASE							
		1	2	3	4	5	6		1	2	3	4	5	6						
		NRS LEVEL▶							CASAS LEVEL▶											
		A	A	A	B	B	C	D	A	B	B	C	D	E						
Content Standards▼																				
R3.18	Interpret analogies in familiar contexts						•	•					•	•	•					
R3.19	Interpret meaning of metaphors and similes in context							•						•	•					
R4	Text in format																			
R4.1	Read numbers	•	•						•							10				
R4.2	Read clock times	•							•							2				
R4.3	Read dates	•	•	•					•							8				
R4.4	Read money amounts	•	•						•											
R4.5	Read simple handwriting		•	•	•				•	•										
R4.6	Interpret simple forms (e.g., appointment sign-in sheet, class registration)		•	•	•	•			•	•	•									
R4.7	Interpret complex forms (e.g., rental, insurance, pay statements)					•	•	•			•	•	•	•						
R4.8	Interpret information in charts and tables (e.g., bus schedules)		•	•	•				•	•										
R4.9	Interpret maps, diagrams, and graphs			•	•	•	•	•	•	•	•	•	•	•						
R4.10	Interpret written materials using formatting clues (e.g., headings, captions, bullets, print features such as bold)		•	•	•	•	•		•	•	•	•				3				
R5	Reference materials																			
R5.1	Find a word or number in an alphabetical, numeric, or other ordered listing (e.g., telephone directory, list of part numbers)		•	•					•							1				
R5.2	Locate information using an index or table of contents (e.g., of a book, manual, computer application help feature)				•	•	•			•	•	•								
R5.3	Locate information organized in groups or categories (e.g., in a department directory, catalog, on a web page)			•	•	•	•		•	•	•	•				1				
R5.4	Use a picture dictionary	•	•						•											
R5.5	Use a simplified dictionary or glossary		•	•	•				•	•										

		TEST FORMS▶												Form 310	Form 311	Form 27R	Form 28R
		ESL							ABE				ASE				
		NRS LEVEL▶	1	2	3	4	5	6		1	2	3	4				
CASAS LEVEL▶	A	A	A	B	B	C	D	A	B	B	C	D	E				
Content Standards▼																	
R5.6	Use a standard dictionary to distinguish between multiple meanings of a word					•	•	•				•	•	•	•		
R5.7	Use reference tools such as a print or online encyclopedia							•						•	•		
R6	Reading strategies																
R6.1	Predict the content of a text from title, pictures, type of material		•	•	•	•			•	•	•						
R6.2	Scan simple text (e.g., ads, schedules, forms, paragraphs) to find specific information		•	•	•	•			•	•	•					2	2
R6.3	Scan complex or extended text (e.g., web pages, documents, narratives) to find specific information					•	•	•				•	•	•	•		
R6.4	Skim simple text for general meaning				•	•				•	•						
R6.5	Skim complex text for general meaning or to determine subject matter or organization					•	•	•				•	•	•	•		
R6.6	Use appropriate reading strategy (e.g., skimming, scanning, predicting, inferring) to understand content of unfamiliar material or specialized information				•	•	•	•		•	•	•	•	•	•		
R6.7	Increase reading fluency (accuracy, speed)				•	•	•	•	•	•	•	•	•	•	•		
R7	Reading and thinking skills																
R7.1	Identify the main idea of a simple paragraph			•					•								
R7.2	Identify the main idea of a multi-paragraph text				•	•	•	•		•	•	•	•	•	•		
R7.3	Identify supporting points or details for a statement, position or argument on a familiar topic						•	•				•	•	•			
R7.4	Determine the sequence of events in a simple narrative		•	•	•				•	•							
R7.5	Determine the sequence of events in a complex narrative					•	•	•				•	•	•	•		
R7.6	Paraphrase information					•	•	•				•	•	•	•		
R7.7	Summarize a text					•	•	•				•	•	•	•		
R7.8	Make inferences and draw conclusions from simple text			•	•	•			•	•	•						

		TEST FORMS▶														Form 310	Form 311	Form 27R	Form 28R
		ESL							ABE				ASE						
		NRS LEVEL▶																	
		CASAS LEVEL▶																	
Content Standards▼		1	2	3	4	5	6		1	2	3	4	5	6					
R7.9	Make inferences and draw conclusions from complex text						●	●					●	●	●				
R7.10	Differentiate fact from opinion in a written text					●	●				●	●							
R7.11	Identify the writer, audience, and purpose of a text						●	●					●	●	●				
R7.12	Determine a writer’s point of view							●						●	●				
R7.13	Compare related information from various sources (e.g., consumer ads)			●	●	●	●	●	●	●	●	●	●	●	●				
R7.14	Verify and clarify facts in written information (e.g., advertising claims)						●	●					●	●	●				

Table e1-5 Reading Basic Skills Content Standards by Test Item for CASAS Life and Work Reading Assessments

[illegible]

Content Standards▼		TEST FORMS▶																	
		ESL							ABE				ASE			Form 81R level A			
		NRS LEVEL▶																	
		CASAS LEVEL▶																	
		1	2	3	4	5	6		1	2	3	4	5	6					
		A	A	A	B	B	C	D	A	B	B	C	D	E					
R2.2	Read basic sight words (e.g., the, is)	●							●										
R2.3	Interpret common high-frequency words and phrases in everyday contexts (e.g., signs, ads, labels)	●							●										
R2.4	Use capitalization as a clue to interpret words (e.g., names, place names, other proper nouns)																		
R2.5	Interpret contractions		●	●	●				●	●									
R2.6	Interpret basic abbreviations (e.g., Mr., apt., lb.)		●	●	●				●	●									
R2.7	Interpret abbreviations in specialized contexts (e.g., tsp., bnfts.)				●	●				●	●								
R2.8	Interpret meaning from word formations (e.g., verb endings, plurals, possessives, comparative forms)		●	●	●	●			●	●	●								
R2.9	Interpret common prefixes and suffixes to determine the meaning of words (e.g., un-happy, work-er)			●	●	●			●	●	●								
R2.10	Interpret less common prefixes and suffixes to determine the meaning of words (e.g., impossible, anti-war, employee)					●	●				●	●							

[illegible]

Content Standards ▼		TEST FORMS ▶																	
		ESL						ABE						ASE					
		1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
		A	A	A	B	B	C	D	A	B	B	C	D	E					
R3.7	Interpret detailed instructions (e.g., workplace procedures, operating instructions, consumer materials)					•	•	•			•	•	•	•					
R3.8	Interpret basic sentence structure and grammar (e.g., statements, questions, negatives; adjectives modifying nouns)		•	•	•				•	•									
R3.9	Interpret complex sentence structure and grammar (e.g., relative clauses, perfect tenses)					•	•	•			•	•	•	•					
R3.10	Follow pronoun references within a text (e.g., Ms. Smith... she; This is important.)		•	•	•				•	•									
R3.11	Make connections between related information across different sections of a text					•	•	•			•	•	•	•					
R3.12	Use supporting illustrations to interpret text	•	•	•					•										
R3.13	Use contextual clues to determine the meaning of words and phrases (e.g., Save \$10 on your next purchase.)				•	•			•	•	•								
R3.14	Interpret signal words as clues to the organization and content of a text (e.g., first... then; however; it's important that...)			•	•	•	•	•	•	•	•	•	•	•					
R3.15	Interpret idioms and collocations from context				•	•	•	•	•	•									
		Form 81R level A																	
		Form 82R level A																	
		Form 81RX level A																	
		Form 82X level A																	
		Form 951R																	
		Form 952R																	
		Form 951RX																	
		Form 952RX																	
		Form 83R level B																	
		Form 84R level B																	
		Form 85R level C																	
		Form 86R level C																	
		Form 185R level C																	
		Form 186R level C																	
		Form 187R level D																	
		Form 188R level D																	
		Form 513R LA																	
		Form 514R LA																	

Content Standards ▼		TEST FORMS ▶																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
		ESL								ABE				ASE		Form 81R level A				Form 82R level A																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
		NRS LEVEL ▶								CASAS LEVEL ▶																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
1	2	3	4	5	6		1	2	3	4	5	6	A	B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

[illegible]

Content Standards ▼		TEST FORMS ►																	
		ESL						ABE						ASE					
		1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
		A	A	A	B	B	C	D	A	B	B	C	D	E					
		Form 81R level A																	
		Form 82R level A																	
		Form 81RX level A																	
		Form 82X level A																	
		Form 951R																	
		Form 952R																	
		Form 951RX																	
		Form 952RX																	
		Form 83R level B																	
		Form 84R level B																	
		Form 85R level C																	
		Form 86R level C																	
		Form 185R level C																	
		Form 186R level C																	
		Form 187R level D																	
		Form 188R level D																	
		Form 513R LA																	
		Form 514R LA																	
R7.4	Determine the sequence of events in a simple narrative		•	•	•			•	•									1	
R7.5	Determine the sequence of events in a complex narrative					•	•	•			•	•	•	•					
R7.6	Paraphrase information					•	•	•			•	•	•	•					
R7.7	Summarize a text					•	•	•			•	•	•	•					
R7.8	Make inferences and draw conclusions from simple text			•	•	•		•	•	•								1	
R7.9	Make inferences and draw conclusions from complex text						•	•				•	•	•					
R7.10	Differentiate fact from opinion in a written text					•	•				•	•							
R7.11	Identify the writer, audience, and purpose of a text						•	•				•	•	•					
R7.12	Determine a writer's point of view							•					•	•					
R7.13	Compare related information from various sources (e.g., consumer ads)			•	•	•	•	•	•	•	•	•	•	•					
R7.14	Verify and clarify facts in written information (e.g., advertising claims)						•	•				•	•	•					
R8	Academic-oriented skills												•	•					

Content Standards▼		TEST FORMS▶														Form 81R level A	Form 82R level A	Form 81RX level A	Form 82X level A	Form 951R	Form 952R	Form 951RX	Form 952RX	Form 83R level B	Form 84R level B	Form 85R level C	Form 86R level C	Form 185R level C	Form 186R level C	Form 187R level D	Form 188R level D	Form 513R LA	Form 514R LA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		ESL							ABE				ASE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
		NRS LEVEL▶							1	2	3	4	5	6	1																			2	3	4	5	6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
		CASAS LEVEL▶							A	A	A	B	B	C	D																			A	B	B	C	D	E																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
R8.1	Critique the logic of functional documents by examining the sequence of information and procedures in anticipation of possible reader misunderstandings																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

Content Standards▼		TEST FORMS▶																		Form 81R level A	Form 82R level A	Form 81RX level A	Form 82X level A	Form 951R	Form 952R	Form 951RX	Form 952RX	Form 83R level B	Form 84R level B	Form 85R level C	Form 86R level C	Form 185R level C	Form 186R level C	Form 187R level D	Form 188R level D	Form 513R LA	Form 514R LA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
		ESL								ABE				ASE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
		NRS LEVEL▶																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
		CASAS LEVEL▶																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
		1	2	3	4	5	6		1	2	3	4	5	6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					</

Content Standards ▼		TEST FORMS ▶														Form 81R level A	Form 82R level A	Form 81RX level A	Form 82X level A	Form 951R	Form 952R	Form 951RX	Form 952RX	Form 83R level B	Form 84R level B	Form 85R level C	Form 86R level C	Form 185R level C	Form 186R level C	Form 187R level D	Form 188R level D	Form 513R LA	Form 514R LA
		ESL							ABE				ASE																				
		NRS LEVEL ▶																															
		CASAS LEVEL ▶																															
		1	2	3	4	5	6		1	2	3	4	5	6																			
		A	A	A	B	B	C	D	A	B	B	C	D	E																			
R8.9	Analyze an author’s implicit and explicit philosophical assumptions and beliefs about a subject													●	●															2	1		
R8.10	Synthesize the content from several sources or works by a single author dealing with a single issue; paraphrase the ideas and connect them to other sources and related topics to demonstrate comprehension													●																			
R8.11	Analyze the way in which clarity of meaning is affected by the patterns of organization, hierarchical structures, repetition of the main ideas, syntax, and the word choice in the text																																
R9	Literary analysis								●																								
R9.1	Identify the story elements such as setting, character, plot, and resolution								●																								
R9.2	Draw from personal experiences in responding to a work of literature (i.e., the learner recognizes similarities between the experiences of fictional characters in non-complex events and his/her own experiences)								●																								

Content Standards▼		TEST FORMS▶														Form 81R level A	Form 82R level A	Form 81RX level A	Form 82X level A	Form 951R	Form 952R	Form 951RX	Form 952RX	Form 83R level B	Form 84R level B	Form 85R level C	Form 86R level C	Form 185R level C	Form 186R level C	Form 187R level D	Form 188R level D	Form 513R LA	Form 514R LA
		ESL							ABE				ASE																				
		1	2	3	4	5	6		1	2	3	4	5	6																			
		NRS LEVEL▶	CASAS LEVEL▶	A	A	A	B	B	C	D	A	B	B	C	D																		
R9.3	Identify uncomplicated themes in reading selections									●																							
R9.4	Differentiate between factual and fictional elements									●																							
R9.5	Identify story elements including setting, plot, character, conflict, and resolution increasingly more complex fiction									●																							
R9.6	Identify the function of introductory and concluding paragraphs in an essay										●																						
R9.7	Identify cause-and-effect relationships in literary texts											●																					
R9.8	Identify the impact of language such as literary devices that are characteristic of an author’s work											●																					
R9.9	Respond to a work of literature by explaining how the motives of the characters or the causes of events compare with those in his/her life											●																					
R9.10	Identify the major theme in increasingly more complex stories											●																					

Content Standards ▼		TEST FORMS ▶																		Form 81R level A	Form 82R level A	Form 81RX level A	Form 82X level A	Form 951R	Form 952R	Form 951RX	Form 952RX	Form 83R level B	Form 84R level B	Form 85R level C	Form 86R level C	Form 185R level C	Form 186R level C	Form 187R level D	Form 188R level D	Form 513R LA	Form 514R LA		
		ESL								ABE				ASE																									
		NRS LEVEL ▶								1	2	3	4	5	6	1	2	3	4																			5	6
		CASAS LEVEL ▶								A	A	A	B	B	C	D	A	B	B																			C	D
R9.11	Use specifics from literary passages to support his/her ideas formed from reading literary text													•																									
R9.12	Identify historical and cultural perspectives in reading selections (i.e., the impact of beliefs, attitudes, and values on a literary work)													•																									
R9.13	Interpret a work of literature and relate the information to contemporary experiences													•																									
R9.14	Identify more complex elements of plot, setting, character development, conflict, and resolution													•																									
R9.15	Recognize universal themes in literature (e.g., tragic hero, man versus nature, triumph over adversity, coming of age)														•																								
R9.16	Articulate the relationship between the expressed purposes and the characteristics of different forms of dramatic literature (e.g., comedy, tragedy, drama, dramatic monologue)														•																								

[illegible]

Content Standards▼		TEST FORMS▶														Form 81Rlevel A	Form 82R level A	Form 81RX level A	Form 82X level A	Form 951R	Form 952R	Form 951RX	Form 952RX	Form 83R level B	Form 84R level B	Form 85R level C	Form 86R level C	Form 185R level C	Form 186R level C	Form 187R level D	Form 188R level D	Form 513R LA	Form 514R LA
		ESL							ABE				ASE																				
		1	2	3	4	5	6		1	2	3	4	5	6																			
		NRS LEVEL▶	CASAS LEVEL▶	A	A	A	B	B	C	D	A	B	B	C	D																		
R9.22	Analyze and trace an author’s development of time and sequence, including the use of complex literary devices (e.g., foreshadowing, flashbacks)													•																			
R9.23	Recognize and understand the significance of various literary devices (figurative language, imagery, allegory, symbolism) and explain their appeal													•															1				
R9.24	Interpret and evaluate the impact of ambiguities, subtleties, contradictions, ironies, and incongruities in a text													•																1			
R9.25	Explain how voice, persona, and the choice of a narrator affect characterization and the tone, plot, and credibility of a text													•																			
R9.26	Explain how the tone and plot describe the function of dialogue, scene designs, soliloquies, asides, and character foils in dramatic literature													•																			

Content Standards ▼		TEST FORMS ▶																		Form 81R level A	Form 82R level A	Form 81RX level A	Form 82X level A	Form 951R	Form 952R	Form 951RX	Form 952RX	Form 83R level B	Form 84R level B	Form 85R level C	Form 86R level C	Form 185R level C	Form 186R level C	Form 187R level D	Form 188R level D	Form 513R LA	Form 514R LA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
		ESL								ABE				ASE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
		NRS LEVEL ▶																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
		CASAS LEVEL ▶																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
		1	2	3	4	5	6		1	2	3	4	5	6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

Content Standards▼		TEST FORMS▶														Form 81R level A	Form 82R level A	Form 81RX level A	Form 82X level A	Form 951R	Form 952R	Form 951RX	Form 952RX	Form 83R level B	Form 84R level B	Form 85R level C	Form 86R level C	Form 185R level C	Form 186R level C	Form 187R level D	Form 188R level D	Form 513R LA	Form 514R LA
		ESL							ABE				ASE																				
		1	2	3	4	5	6		1	2	3	4	5	6																			
		NRS LEVEL▶	CASAS LEVEL▶	A	A	A	B	B	C	D	A	B	B	C	D																		
R9.32	Analyze the ways in which irony, tone, mood, the author’s style, and the “sound” of language achieve specific rhetorical or aesthetic purposes or both													•																	1		
R9.33	Analyze the ways in which poets use imagery, personification, figures of speech, and sounds to evoke readers’ emotions													•																	1		
R9.34	Analyze recognized works of American literature representing a variety of genres and traditions													•																			
R9.35	Analyze the way in which authors through the centuries have used archetypes drawn from myth and tradition in literature, film, political speeches, and religious writings													•																			
R9.36	Analyze recognized works of world literature from a variety of authors													•																			

Content Standards▼		TEST FORMS▶														Form 81R level A	Form 82R level A	Form 81RX level A	Form 82X level A	Form 951R	Form 952R	Form 951RX	Form 952RX	Form 83R level B	Form 84R level B	Form 85R level C	Form 86R level C	Form 185R level C	Form 186R level C	Form 187R level D	Form 188R level D	Form 513R LA	Form 514R LA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		ESL							ABE				ASE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		NRS LEVEL▶							1	2	3	4	5	6	A																			B	B	C	D	E																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		CASAS LEVEL▶							A	A	A	B	B	C	D																			A	B	B	C	D	E																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
R9.37	Evaluate the philosophical, political, religious, ethical, and social influences of the historical period that shaped the characters, plots, and settings of a literary work																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

Table e1-6 Life and Work Reading Form 310 Competencies

ITEM	COMP.	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1.	8.2.5	Recognize and/or demonstrate yard and garden tasks and activities
2.	8.2.5	Recognize and/or demonstrate yard and garden tasks and activities
3.	6.6.8	Interpret mechanical concepts or spatial relationships
4.	6.6.2	Recognize, use, and measure linear dimensions, geometric shapes, or angles
5.	6.6.2	Recognize, use, and measure linear dimensions, geometric shapes, or angles
6.	2.3.1	Interpret clock time
7.	2.3.1	Interpret clock time
8.	1.1.4	Select, compute, or interpret appropriate standard measurement for length, width, perimeter, area, volume, height, or weight
9.	1.7.3	Interpret operating instructions, directions, or labels for consumer products
10.	2.5.4	Read, interpret, and follow directions found on public signs and building directories
11.	2.1.6	Interpret information about using a pay telephone
12.	1.1.9	Interpret clothing and pattern sizes and use height and weight tables
13.	3.1.2	Identify information necessary to make or keep medical and dental appointments
14.	6.0.2	Count and associate numbers with quantities, including recognizing correct number sequencing
15.	1.1.6	Count, convert, and use coins and currency, and recognize symbols such as (\$) and (.)
16.	6.0.2	Count and associate numbers with quantities, including recognizing correct number sequencing
17.	6.0.2	Count and associate numbers with quantities, including recognizing correct number sequencing
18.	6.1.1	Add whole numbers
19.	4.4.1	Identify appropriate behavior, attire, attitudes, and social interaction, and other factors that affect job retention and advancement
20.	4.1.2	Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application
21.	4.1.2	Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application
22.	2.2.2	Recognize and use signs related to transportation
23.	1.1.6	Count, convert, and use coins and currency, and recognize symbols such as (\$) and (.)
24.	2.5.4	Read, interpret, and follow directions found on public signs and building directories
25.	2.5.4	Read, interpret, and follow directions found on public signs and building directories
26.	2.5.4	Read, interpret, and follow directions found on public signs and building directories
27.	1.1.4	Select, compute, or interpret appropriate standard measurement for length, width, perimeter, area, volume, height, or weight
28.	1.1.5	Interpret temperatures

Table e1-7 Life and Work Reading Form 311 Competencies

ITEM	COMP.	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1.	2.2.2	Recognize and use signs related to transportation
2.	1.7.3	Interpret operating instructions, directions, or labels for consumer products
3.	8.2.5	Recognize and/or demonstrate yard and garden tasks and activities
4.	2.3.1	Interpret clock time
5.	1.1.4	Select, compute, or interpret appropriate standard measurement for length, width, perimeter, area, volume, height, or weight
6.	6.6.2	Recognize, use, and measure linear dimensions, geometric shapes, or angles
7.	2.5.4	Read, interpret, and follow directions found on public signs and building directories
8.	3.1.2	Identify information necessary to make or keep medical and dental appointments
9.	6.0.2	Count and associate numbers with quantities, including recognizing correct number sequencing
10.	2.3.1	Interpret clock time
11.	6.6.2	Recognize, use, and measure linear dimensions, geometric shapes, or angles
12.	1.1.6	Count, convert, and use coins and currency, and recognize symbols such as (\$) and (.)
13.	1.1.6	Count, convert, and use coins and currency, and recognize symbols such as (\$) and (.)
14.	4.1.5	Identify procedures involved in interviewing for a job, such as arranging for an interview, acting and dressing appropriately, and selecting appropriate questions and responses
15.	6.0.2	Count and associate numbers with quantities, including recognizing correct number sequencing
16.	6.0.2	Count and associate numbers with quantities, including recognizing correct number sequencing
17.	4.1.2	Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application
18.	1.1.6	Count, convert, and use coins and currency, and recognize symbols such as (\$) and (.)
19.	6.1.1	Add whole numbers
20.	1.1.6	Count, convert, and use coins and currency, and recognize symbols such as (\$) and (.)
21.	4.1.2	Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application
22.	4.1.2	Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application
23.	1.1.9	Interpret clothing and pattern sizes and use height and weight tables
24.	2.5.4	Read, interpret, and follow directions found on public signs and building directories
25.	1.1.6	Count, convert, and use coins and currency, and recognize symbols such as (\$) and (.)
26.	1.1.5	Interpret temperatures
27.	2.5.4	Read, interpret, and follow directions found on public signs and building directories
28.	2.5.4	Read, interpret, and follow directions found on public signs and building directories

Table e1-8 Life and Work Reading Form 27R Competencies

ITEM	COMP.	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1.		Recognize and discriminate among lowercase letters
2.		Recognize and discriminate among uppercase letters
3.		"
4.		Recognize and discriminate among lowercase letters
5.		Discriminate between upper- and lowercase letters
6.		Discriminate among sight words (lowercase)
7.		"
8.		Discriminate among sight words (uppercase to lowercase)
9.		Recognize one-word signs (uppercase to lowercase)
10.	2.3.1-5	Interpret clock time
11.	2.3.2-2	Identify the months of the year and the days of the week
12.	2.5.4-4	Read, interpret, and follow directions found on public signs and building directories
13.	1.2.1-4	Interpret advertisements, labels, charts, and price tags in selecting goods and services
14.	1.1.9-4	Interpret clothing and pattern sizes and use height and weight tables
15.	2.2.2-4	Recognize and use signs related to transportation
16.	2.5.4-4	Read, interpret, and follow directions found on public signs and building directories
17.	0.2.2-1	Complete a personal information form
18.	1.1.4-5	Select, compute, or interpret appropriate standard measurement for length, width, perimeter, area, volume, height, or weight
19.	1.1.6-4	Count, convert, and use coins & currency, and recognize symbols such as (\$) and (.)
20.	2.2.2-4	Recognize and use signs related to transportation
21.	1.7.3-3	Interpret operating instructions, directions, or labels for consumer products
22.	3.1.2-2	Identify information necessary to make or keep medical and dental appointments
23.	1.7.3-3	Interpret operating instructions, directions, or labels for consumer products
24.	0.2.2-1	Complete a personal information form
25.	0.2.2-1	"
26.	0.2.2-1	"
27.	2.3.2-2	Identify the months of the year and the days of the week
28.	2.2.2-4	Recognize and use signs related to transportation
29.	0.2.2-1	Complete a personal information form
30.	2.3.2-1	Identify the months of the year and the days of the week

Table e1-9 Life and Work Reading Form 28R Competencies

ITEM	COMP.	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1.		Recognize and discriminate among lowercase letters
2.		Recognize and discriminate among uppercase letters
3.		"
4.		"
5.		Discriminate between upper- and lowercase letters
6.		Recognize typewritten letters
7.		Recognize sight words (lowercase)
8.		Recognize one-word signs
9.		Discriminate among sight words (uppercase to lowercase)
10.	2.3.1-5	Interpret clock time
11.	1.2.1-4	Interpret advertisements, labels, charts, and price tags in selecting goods and services
12.	2.3.2-2	Identify the months of the year and the days of the week
13.	1.1.9-4	Interpret clothing and pattern sizes and use height and weight tables
14.	2.2.2-4	Recognize and use signs related to transportation
15.	2.5.4-4	Read, interpret, and follow directions found on public signs and building directories
16.	2.5.4-4	"
17.	0.2.2-1	Complete a personal information form
18.	3.1.2-2	Identify information necessary to make or keep medical and dental appointments
19.	1.1.6-4	Count, convert, and use coins and currency, and recognize symbols such as (\$) and (.)
20.	1.1.4-5	Select, compute, or interpret appropriate standard measurement for length, width, perimeter, area, volume, height, or weight
21.	1.7.3-3	Interpret operating instructions, directions, or labels for consumer products
22.	0.2.2-1	Complete a personal information form
23.	1.7.3-3	Interpret operating instructions, directions, or labels for consumer products
24.	0.2.2-1	Complete a personal information form
25.	0.2.2-1	"
26.	2.2.2-4	Recognize and use signs related to transportation
27.	2.2.2-4	"
28.	0.2.2-1	Complete a personal information form
29.	0.2.2-1	"
30.	2.3.2-1	Identify the months of the year and the days of the week

Table e1-10 Life and Work Reading Form 81R Competencies

ITEM	COMP.	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1. Household item	1.4.1-3	Identify different kinds of housing, areas of the home, common household items
2. Article of clothing	1.3.9-3	Identify common articles of clothing
3. Address	0.2.3-3 2.4.1	Interpret or write a personal note, invitation, or letter Address letters and envelopes
4. Number	6.0.1-3	Identify and classify numeric symbols
5. Identification	5.3.1-3	Interpret common laws and ordinances, and legal forms and documents
6. Money	1.1.6-3	Count, convert, and use coins and currency, recognize symbols such as (\$), (.)
7. Time	2.3.1-3	Interpret clock time
8. Community location	2.5.4-3 2.5.3 3.1.3	Read, interpret, and follow directions found on public signs, building directories Locate medical and health facilities in the community Identify and utilize appropriate health care services and facilities, including interacting with providers
9. Community location	2.5.4-3 1.8.1	Read, interpret, and follow directions found on public signs, building directories Demonstrate the use of savings and checking accounts, including using an ATM
10. Illness	3.1.1-3	Describe symptoms of illness, including identifying parts of the body; interpret doctor's directions
11. Common activity	0.2.4-3	Converse about daily and leisure activities and personal interests
12. Common activity	0.2.4-3	Converse about daily and leisure activities and personal interests
13. Housing problem	1.4.7-3 1.4.1	Interpret information about home maintenance, and communicate housing problems to a landlord Identify different kinds of housing, areas of the home, common household items
14. Housing ad	1.4.2-4	Select appropriate housing by interpreting classified ads, signs, and other info
15. Interior sign	2.5.4-4	Read, interpret, and follow directions found on public signs, building directories
16. Hours sign	2.5.4-4	Read, interpret, and follow directions found on public signs, building directories
17. Food ad	1.2.1-4	Interpret advertisements, labels, charts, and price tags in selecting goods, services
18. Menu	1.3.8-4	Identify common food items
19. School form	2.5.5-1 0.2.2	Locate and use educational services in the community, including interpreting and writing school-related communications Complete a personal information form
20. School form	2.5.5-1 0.2.2	Locate and use educational services in the community, including interpreting and writing school-related communications Complete a personal information form
21. Job ad	4.1.3-4	Identify and use sources of information about job opportunities such as job descriptions, job ads, announcements, and about the workforce and job market
22. Appointment list	2.5.2-2 2.3.1	Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers Interpret clock time
23. Time card	4.2.1-2 2.3.2 2.3.1	Interpret wages, wage deductions, benefits, and timekeeping forms Identify the months of the year and the days of the week Interpret clock time
24. Work schedule	4.4.3-2 2.3.2	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Identify the months of the year and the days of the week

Table e1-11 Life and Work Reading Form 82R Competencies

ITEM	COMP.	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1. Household item	1.4.1-3	Identify different kinds of housing, areas of the home, common household items
2. Article of clothing	1.3.9-3	Identify common articles of clothing
3. Document	5.3.1-3	Interpret common laws and ordinances, and legal forms and documents
4. Number	6.0.1-3	Identify and classify numeric symbols
5. Address	0.2.2-3 2.4.1	Complete a personal information form Address letters and envelopes
6. Month	2.3.2-3	Identify the months of the year and the days of the week
7. Money	1.1.6-3	Count, convert, and use coins and currency, recognize symbols such as (\$), (.)
8. Community location	2.5.4-3 2.5.5	Read, interpret, and follow directions found on public signs, building directories Locate and use educational services in the community, including interpreting and writing school-related communications
9. Community location	2.5.4-3 1.8.1	Read, interpret, and follow directions found on public signs, building directories Demonstrate the use of savings and checking accounts, including using an ATM
10. Common activity	0.2.4-3	Converse about daily and leisure activities and personal interests
11. Illness	3.1.1-3	Describe symptoms of illness, including identifying parts of the body; interpret doctor's directions
12. Housing problem	1.4.7-3 1.4.1	Interpret information about home maintenance, and communicate housing problems to a landlord Identify different kinds of housing, areas of the home, common household items
13. Housing ad	1.4.2-4	Select appropriate housing by interpreting classified ads, signs, and other info
14. Interior sign	2.5.4-4	Read, interpret, and follow directions found on public signs, building directories
15. Hours sign	2.5.4-4	Read, interpret, and follow directions found on public signs, building directories
16. Traffic sign	1.9.1-4 1.4.1	Interpret highway and traffic signs Identify different kinds of housing, areas of the home, common household items
17. Food ad	1.2.1-4	Interpret advertisements, labels, charts, and price tags in selecting goods, services
18. Menu	1.3.8-4	Identify common food items
19. School form	2.5.5-1 0.2.2	Locate and use educational services in the community, including interpreting and writing school-related communications Complete a personal information form
20. School form	2.5.5-1 0.2.2 0.2.1	Locate and use educational services in the community, including interpreting and writing school-related communications Complete a personal information form Respond appropriately to common personal information questions
21. Job ad	4.1.3-4 4.4.4	Identify and use sources of information about job opportunities such as job descriptions, job ads, announcements, and about the workforce and job market Interpret job responsibilities and performance reviews
22. Appointment list	2.5.2-2 2.3.1	Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers Interpret clock time
23. Time card	4.2.1-2 2.3.2	Interpret wages, wage deductions, benefits, and timekeeping forms Identify the months of the year and the days of the week
24. Work schedule	4.4.3-2 2.3.1	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Interpret clock time

Table e1-12 Life and Work Reading Form 81RX Competencies

ITEM	COMP.	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1. Transportation sign	2.2.2-4 1.9.1	Recognize and use signs related to transportation Interpret highway and traffic signs
2. Public sign	2.5.4-4 2.5.3	Read, interpret, and follow directions found on public signs and building directories Locate medical and health facilities in the community
3. Public sign	2.5.4-4 2.2.1	Read, interpret, and follow directions found on public signs and building directories Ask for, give, follow, or clarify directions
4. Emergency info	2.1.2-4	Identify emergency numbers and place emergency calls
5. Narrative	4.1.8-3	Identify common occupations and the skills and education required for them
6. Narrative	4.1.6-3 2.3.2	Interpret general work-related vocabulary Identify the months of the year and the days of the week
7. Identification card	4.4.3-4 0.2.1 2.3.2	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Respond appropriately to common personal information questions Identify the months of the year and the days of the week
8. Timekeeping form	4.2.1-2	Interpret wages, wage deductions, benefits, and timekeeping forms
9. Timekeeping form	4.2.1-2	Interpret wages, wage deductions, benefits, and timekeeping forms
10. Calendar	2.3.2-2	Identify the months of the year and the days of the week
11. Menu	2.6.4-2	Interpret and order from restaurant and fast food menus, and compute related costs
12. Narrative	4.1.8-3 4.4.4	Identify common occupations and the skills and education required for them Interpret job responsibilities and performance reviews
13. Narrative	4.4.1-3 4.4.4	Identify appropriate behavior, attire, attitudes, and social interaction, and other factors that affect job retention and advancement Interpret job responsibilities and performance reviews
14. Schedule	4.4.3-2 2.3.2 3.1.2	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Identify the months of the year and the days of the week Identify information necessary to make or keep medical and dental appointments
15. Schedule	4.4.3-2 3.1.2 2.3.2	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Identify information necessary to make or keep medical and dental appointments Identify the months of the year and the days of the week
16. Street map	2.2.1-2 2.2.5	Ask for, give, follow, or clarify directions Use maps relating to travel needs
17. Street map	2.2.1-2 2.2.5	Ask for, give, follow, or clarify directions Use maps relating to travel needs
18. Building directory	2.5.4-4 3.1.3	Read, interpret, and follow directions found on public signs and building directories Identify and utilize appropriate health care services and facilities, including interacting with providers
19. Building directory	2.5.4-4 3.1.3	Read, interpret, and follow directions found on public signs and building directories Identify and utilize appropriate health care services and facilities, including interacting with providers
20. Medicine ad	1.2.2-4 1.2.1	Compare price or quality to determine the best buys for goods and services Interpret advertisements, labels, charts, and price tags in selecting goods and services

ITEM	COMP.	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
21. Narrative	3.1.1-3	Describe symptoms of illness, including identifying parts of the body; interpret doctor's directions
22. Narrative	3.1.3-3	Identify and utilize appropriate health care services and facilities, including interacting with providers
23. Safety sign	4.3.1-4	Interpret safety signs found in the workplace
24. Insurance form	3.2.3-1	Interpret information associated with medical, dental, or life insurance
	0.2.2	Complete a personal information form
	4.4.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
25. Insurance form	3.2.3-1	Interpret information associated with medical, dental, or life insurance
	0.2.2	Complete a personal information form
	4.4.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
26. Insurance form	3.2.3-1	Interpret information associated with medical, dental, or life insurance
	4.4.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
27. Message form	2.1.7-1	Take and interpret telephone messages, leave messages on answering machines, and interpret recorded messages
	2.3.1	Interpret clock time
28. Message form	2.1.7-1	Take and interpret telephone messages, leave messages on answering machines, and interpret recorded messages
	7.2.1	Identify and paraphrase pertinent information

Table e1-13 Life and Work Reading Form 82X Competencies

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1. Traffic sign	1.9.1-4 2.2.2	Interpret highway and traffic signs Recognize and use signs related to transportation
2. Store sign	1.2.1-4	Interpret advertisements, labels, charts, and price tags in selecting goods and services
3. Public sign	2.5.4-4 2.3.1	Read, interpret, and follow directions found on public signs and building directories Interpret clock time
4. Narrative	4.8.4-3 7.2.4	Demonstrate initiative and resourcefulness in meeting the needs and solving the problems of customers Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary
5. Calendar	2.3.2-2	Identify the months of the year and the days of the week
6. Job ad	4.1.3-4 2.3.1	Identify and use sources of information about job opportunities such as job descriptions, job ads, and announcements, and about the workforce and job market Interpret clock time
7. Identification form	1.9.2-1 0.2.1 2.3.2	Identify driving regulations and procedures to obtain a driver's license Respond appropriately to common personal information questions Identify the months of the year and the days of the week
8. "	1.9.2-1 0.2.1 1.1.4	Identify driving regulations and procedures to obtain a driver's license Respond appropriately to common personal information questions Select, compute, or interpret appropriate standard measurement for length, width, perimeter, area, volume, height, or weight
9. Application form	4.1.2-1 2.3.2	Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application Identify the months of the year and the days of the week
10. Statement of earnings	4.2.1-2 4.1.6	Interpret wages, wage deductions, benefits, and timekeeping forms Interpret general work-related vocabulary
11. "	4.2.1-2 4.1.6	Interpret wages, wage deductions, benefits, and timekeeping forms Interpret general work-related vocabulary
12. "	4.2.1-2 4.1.6	Interpret wages, wage deductions, benefits, and timekeeping forms Interpret general work-related vocabulary
13. Narrative	1.3.3-3	Identify or use various methods to purchase goods and services, and make returns and exchanges
14. "	0.1.4-3	Identify or use appropriate language in general social situations
15. Price tag	1.2.1-4 1.2.2 1.1.6	Interpret advertisements, labels, charts, and price tags in selecting goods and services Compare price or quality to determine the best buys for goods and services Count, convert, and use coins and currency, and recognize symbols such as (\$) and (.)
16. "	1.2.1-4 1.4.1	Interpret advertisements, labels, charts, and price tags in selecting goods and services Identify different kinds of housing, areas of the home, and common household items
17. Invoice	4.4.3-2 1.1.6	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Count, convert, and use coins and currency, and recognize symbols such as (\$) and (.)
18. "	4.4.3-2	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
	1.1.6	Count, convert, and use coins and currency, and recognize symbols such as (\$) and (.)
19. Check	1.8.2-1	Interpret the procedures and forms associated with banking services, including writing checks
20. "	1.8.2-1	Interpret the procedures and forms associated with banking services, including writing checks
21. Schedule	4.4.3-2	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	4.7.4	Identify, secure, evaluate, process, and/or store information needed to perform tasks or keep records
22. Street map	2.2.1-2	Ask for, give, follow, or clarify directions
	2.2.5	Use maps relating to travel needs
23. Menu	2.6.4-2	Interpret and order from restaurant and fast food menus, and compute related costs
24. "	2.6.4-2	Interpret and order from restaurant and fast food menus, and compute related costs
25. Narrative	4.4.4-3	Interpret job responsibilities and performance reviews
26. "	4.4.4-3	Interpret job responsibilities and performance reviews
	7.2.2	Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships
27. Building directory	2.5.4-4	Read, interpret, and follow directions found on public signs and building directories
	1.4.1	Identify different kinds of housing, areas of the home, and common household items
28. Safety sign	4.3.1-4	Interpret safety signs found in the workplace

Table e1-14 Life and Work Reading Form 951 Competencies

ITEM	COMP.	TASK	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
Social Security card	5.3.1	3	Interpret common laws and ordinances, and legal forms and documents
Number	6.0.1	3	Identify and classify numeric symbols
Public sign	2.5.4	4	Read, interpret, and follow directions found on public signs and building directories
Year	2.3.2	3	Identify the months of the year and the days of the week
	5.2.1		Interpret information about U.S. history
Signature	5.3.1	3	Interpret common laws and ordinances, and legal forms and documents
	0.2.2		Complete a personal information form
Address	0.2.2	3	Complete a personal information form
	2.4.1		Address letters and envelopes
Picture	5.2.1	3	Interpret information about U.S. history
	2.2.3		Identify or use different types of transportation in the community, and interpret traffic information
Narrative	0.2.1	3	Respond appropriately to common personal information questions
School registration form	2.5.5	1	Locate and use educational services in the community, including interpreting and writing school-related communications
Information form	0.2.2	1	Complete a personal information form
Appointment list	2.5.2	2	Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers
	2.3.1		Interpret clock time
Weather map	2.3.3	3	Interpret information about weather conditions
	5.2.4		Interpret information about U.S. states, cities, geographical features, and points of interest
Information form	5.3.6	1	Interpret information or identify requirements for establishing residency and/or obtaining citizenship
	5.3.1		Interpret common laws and ordinances, and legal forms and documents
Building sign	2.5.4	4	Read, interpret, and follow directions found on public signs and building directories
	2.2.2		Recognize and use signs related to transportation
Calendar - holiday	2.7.1	2	Interpret information about holidays
	2.3.2		Identify the months of the year and the days of the week
Book title	2.5.5	3	Locate and use educational services in the community, including interpreting and writing school-related communications
	7.4.4		Identify or utilize appropriate informational resources, including the Internet
Sample ballot	5.1.3	2	Interpret a ballot
Narrative	5.3.6	3	Interpret information or identify requirements for establishing residency and/or obtaining citizenship
	7.2.1		Identify and paraphrase pertinent information
Information form	5.3.6	1	Interpret information or identify requirements for establishing residency and/or obtaining citizenship
	5.3.1		Interpret common laws and ordinances, and legal forms and documents
Job ad	4.1.3	4	Identify and use sources of information about job opportunities such as job descriptions, job ads, and announcements, and about the workforce and job market
Bus schedule	2.2.4	2	Interpret transportation schedules and fares

ITEM	COMP.	TASK	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
Map	2.2.5	2	Use maps relating to travel needs
Map	2.2.5	2	Use maps relating to travel needs
Sign	2.5.4	4	Read, interpret, and follow directions found on public signs and building directories
	2.2.1		Ask for, give, follow, or clarify directions

Table e1-15 Life and Work Reading Form 952 Competencies

ITEM	COMP.	TASK	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1. Address	0.2.2 2.4.1	3	Complete a personal information form Address letters and envelopes
2. Month	2.3.2	3	Identify the months of the year and the days of the week
3. Public sign	2.5.4	4	Read, interpret, and follow directions found on public signs and building directories
4. Number	6.0.1	3	Multiply whole numbers
5. Picture	5.2.1 2.2.3	3	Interpret information about U.S. history Identify or use different types of transportation in the community, and interpret traffic information
6. Identification card	5.3.1	3	Interpret common laws and ordinances, and legal forms and documents
7. Clock	2.3.1	3	Interpret clock time
8. Narrative	0.2.1	3	Respond appropriately to common personal information questions
9. Price tag	1.2.1	4	Interpret advertisements, labels, charts, and price tags in selecting goods and services
10. Information form	5.3.6 5.3.1 2.3.2	1	Interpret information or identify requirements for establishing residency and/or obtaining citizenship Interpret common laws and ordinances, and legal forms and documents Identify the months of the year and the days of the week
11. Information form	0.2.2	1	Complete a personal information form
12. School registration form	2.5.5 2.3.2	1	Locate and use educational services in the community, including interpreting and writing school-related communications Identify the months of the year and the days of the week
13. Weather map	2.3.3 5.2.4	3	Interpret information about weather conditions Interpret information about U.S. states, cities, geographical features, and points of interest
14. Interview appointments	2.5.2 2.3.1	2	Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers Interpret clock time
15. Information form	5.3.6 5.3.1 0.2.1	1	Interpret information or identify requirements for establishing residency and/or obtaining citizenship Interpret common laws and ordinances, and legal forms and documents Respond appropriately to common personal information questions
16. Calendar	2.3.2 5.1.4	2	Identify the months of the year and the days of the week Interpret information about electoral politics and candidates
17. Building sign	2.5.4 5.3.6	4	Read, interpret, and follow directions found on public signs and building directories Interpret information or identify requirements for establishing residency and/or obtaining citizenship
18. Bus schedule	2.2.4	2	Interpret transportation schedules and fares
19. Narrative	5.3.6 7.2.4	3	Interpret information or identify requirements for establishing residency and/or obtaining citizenship Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary

ITEM		COMP.	TASK	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
20.	Office sign	2.5.4	4	Read, interpret, and follow directions found on public signs and building directories
		2.5.2		Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers
21.	Office sign	2.5.4	4	Read, interpret, and follow directions found on public signs and building directories
		2.3.2		Identify the months of the year and the days of the week
		2.5.2		Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers
22.	Job ad	4.1.3	4	Identify and use sources of information about job opportunities such as job descriptions, job ads, and announcements, and about the workforce and job market
23.	Map	2.2.5	2	Use maps relating to travel needs
		2.2.1		Ask for, give, follow, or clarify directions
24.	Information form	5.3.1	1	Interpret common laws and ordinances, and legal forms and documents
		0.2.2		Complete a personal information form

Table e1-16 Life and Work Reading Form 951X Competencies

ITEM	COMP.	TASK	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1. Signature	5.3.1 0.2.2	3	Interpret common laws and ordinances, and legal forms and documents Complete a personal information form
2. Picture	5.2.1 2.2.3	3	Interpret information about U.S. history Identify or use different types of transportation in the community, and interpret traffic information
3. Door sign	2.5.4	4	Read, interpret, and follow directions found on public signs and building directories
4. Social Security number	5.3.1 0.2.2	3	Interpret common laws and ordinances, and legal forms and documents Complete a personal information form
5. Map	5.2.4 1.1.3	3	Interpret information about U.S. states, cities, geographical features, and points of interest Interpret maps and graphs
6. Calendar - holiday	2.7.1 2.3.2	2	Interpret information about holidays Identify the months of the year and the days of the week
7. Information form	5.3.6 5.3.1	1	Interpret information or identify requirements for establishing residency and/or obtaining citizenship Interpret common laws and ordinances, and legal forms and documents
8. Information form	5.3.6 5.3.1	1	Interpret information or identify requirements for establishing residency and/or obtaining citizenship Interpret common laws and ordinances, and legal forms and documents
9. Envelope	2.4.1	3	Address letters and envelopes
10. Appointment list	2.5.2 2.3.2	3	Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers Identify the months of the year and the days of the week
11. Appointment list	2.5.2 2.3.1	2	Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers Interpret clock time
12. Narrative	5.3.6 7.2.1	3	Interpret information or identify requirements for establishing residency and/or obtaining citizenship Identify and paraphrase pertinent information
13. Narrative	5.3.6 7.2.1	3	Interpret information or identify requirements for establishing residency and/or obtaining citizenship Identify and paraphrase pertinent information
14. Map	2.2.5	2	Use maps relating to travel needs
15. Map	2.2.5	2	Use maps relating to travel needs
16. Voter registration form	5.1.2 5.1.4	1	Interpret a voter registration form Interpret information about electoral politics and candidates
17. Office sign	2.5.4 2.5.2	4	Read, interpret, and follow directions found on public signs and building directories Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers
18. Office sign	2.5.4 2.3.2 2.5.2	4	Read, interpret, and follow directions found on public signs and building directories Identify the months of the year and the days of the week Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with

ITEM		COMP.	TASK	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
				service providers
19.	Narrative	5.3.6	3	Interpret information or identify requirements for establishing residency and/or obtaining citizenship
		7.2.1		Identify and paraphrase pertinent information
20.	Narrative	5.3.6	3	Interpret information or identify requirements for establishing residency and/or obtaining citizenship
		7.2.1		Identify and paraphrase pertinent information
21.	Information form	5.3.6	1	Interpret information or identify requirements for establishing residency and/or obtaining citizenship
		5.3.1		Interpret common laws and ordinances, and legal forms and documents
22.	Information form	5.3.6	1	Interpret information or identify requirements for establishing residency and/or obtaining citizenship
		5.3.1		Interpret common laws and ordinances, and legal forms and documents
23.	Narrative	5.3.6	3	Interpret information or identify requirements for establishing residency and/or obtaining citizenship
		7.2.1		Identify and paraphrase pertinent information
24.	Building directory	2.5.4	2	Read, interpret, and follow directions found on public signs and building directories
25.	Permanent resident card	5.3.6	1	Interpret information or identify requirements for establishing residency and/or obtaining citizenship
		5.3.1		Interpret common laws and ordinances, and legal forms and documents
		2.3.2		Identify the months of the year and the days of the week
26.	Narrative	0.2.1	3	Respond appropriately to common personal information questions
		2.3.1		Interpret clock time

Table e1-17 Life and Work Reading Form 952X Competencies

ITEM	COMP.	TASK	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1. Number	6.0.1	3	Identify and classify numeric symbols
2. Picture	5.2.1 2.2.3	3	Interpret information about U.S. history Identify or use different types of transportation in the community, and interpret traffic information
3. Signature	5.3.1 0.2.2	3	Interpret common laws and ordinances, and legal forms and documents Complete a personal information form
4. Door sign	2.5.4	4	Read, interpret, and follow directions found on public signs and building directories
5. Map	5.2.4 1.1.3	3	Interpret information about U.S. states, cities, geographical features, and points of interest Interpret maps and graphs
6. Class advertisement	2.5.5	4	Locate and use educational services in the community, including interpreting and writing school-related communications
7. Class advertisement	2.5.5 2.3.2	4	Locate and use educational services in the community, including interpreting and writing school-related communications Identify the months of the year and the days of the week
8. Permanent resident card	5.3.6 5.3.1 2.3.2	1	Interpret information or identify requirements for establishing residency and/or obtaining citizenship Interpret common laws and ordinances, and legal forms and documents Identify the months of the year and the days of the week
9. Narrative	5.3.6 7.2.1	3	Interpret information or identify requirements for establishing residency and/or obtaining citizenship Identify and paraphrase pertinent information
10. Narrative	5.3.6 7.2.4	3	Interpret information or identify requirements for establishing residency and/or obtaining citizenship Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary
11. Information form	5.3.1 0.2.2	1	Interpret common laws and ordinances, and legal forms and documents Complete a personal information form
12. Envelope	2.4.1	3	Address letters and envelopes
13. Envelope	2.4.1	3	Address letters and envelopes
14. Calendar - holiday	2.7.1 2.3.2	2	Interpret information about holidays Identify the months of the year and the days of the week
15. Narrative	0.2.1 2.2.3	3	Respond appropriately to common personal information questions Identify or use different types of transportation in the community, and interpret traffic information
16. Narrative	0.2.1 0.2.4	3	Respond appropriately to common personal information questions Converse about daily and leisure activities and personal interests
17. Information form	5.3.6 5.3.1	1	Interpret information or identify requirements for establishing residency and/or obtaining citizenship Interpret common laws and ordinances, and legal forms and documents
18. Information form	5.3.6 5.3.1	3	Interpret information or identify requirements for establishing residency and/or obtaining citizenship Interpret common laws and ordinances, and legal forms and documents
19. Map	2.2.5 2.2.1	2	Use maps relating to travel needs Ask for, give, follow, or clarify directions
20. Map	2.2.5	2	Use maps relating to travel needs

ITEM		COMP.	TASK	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
21.	Narrative	2.2.1		Ask for, give, follow, or clarify directions
		5.3.6	3	Interpret information or identify requirements for establishing residency and/or obtaining citizenship
22.	Narrative	2.3.1		Interpret clock time
		5.3.6	3	Interpret information or identify requirements for establishing residency and/or obtaining citizenship
23.	Accident report	7.2.1		Identify and paraphrase pertinent information
		4.3.4	1	Report unsafe working conditions and work-related accidents, injuries, and damages
24.	Building directory	2.5.4	2	Read, interpret, and follow directions found on public signs and building directories
25.	Narrative	0.2.1	3	Respond appropriately to common personal information questions
		2.3.1		Interpret clock time
26.	Education record	4.1.2	1	Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application

Table e1-18 Life and Work Reading Form 83R Competencies

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1. Narrative	0.2.1-3 7.2.1	Respond appropriately to common personal information questions Identify and paraphrase pertinent information
2. Narrative	4.2.1-3 7.2.1	Interpret wages, wage deductions, benefits, and timekeeping forms Identify and paraphrase pertinent information
3. Job ad	4.1.3-4 4.1.6	Identify and use sources of information about job opportunities such as job descriptions, job ads, and announcements, and about the workforce and job market Interpret general work-related vocabulary
4. Job ad	4.1.3-4 4.1.6	Identify and use sources of information about job opportunities such as job descriptions, job ads, and announcements, and about the workforce and job market Interpret general work-related vocabulary
5. Job application form	4.1.2-1 0.2.1	Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application Respond appropriately to common personal information questions
6. Job application form	4.1.2-1 0.2.1 2.3.2	Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application Respond appropriately to common personal information questions Identify the months of the year and the days of the week
7. Narrative	1.4.7-3 7.3.1 7.2.1	Interpret information about home maintenance, and communicate housing problems to a landlord Identify a problem and its possible causes Identify and paraphrase pertinent information
8. Narrative	1.4.7-3 7.2.1	Interpret information about home maintenance, and communicate housing problems to a landlord Identify and paraphrase pertinent information
9. Narrative	1.4.7-3 7.2.1	Interpret information about home maintenance, and communicate housing problems to a landlord Identify and paraphrase pertinent information
10. House ads	1.4.2-4	Select appropriate housing by interpreting classified ads, signs, and other information
11. Rental application	1.4.3-1	Interpret lease and rental agreements
12. Rental application	1.4.3-1	Interpret lease and rental agreements
13. Rental application	1.4.3-1	Interpret lease and rental agreements
14. Medicine label	3.3.2-4 3.3.1	Interpret medicine labels Identify and use necessary medications
15. Narrative	0.2.4-3 7.2.1	Converse about daily and leisure activities and personal interests Identify and paraphrase pertinent information
16. Narrative	4.1.8-3 4.1.9 7.2.1	Identify common occupations and the skills and education required for them Identify procedures for career planning, including self-assessment Identify and paraphrase pertinent information
17. Work schedule	4.4.3-2 7.2.2	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships
18. Work schedule	4.4.3-2 2.3.1	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Interpret clock time

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
	7.2.2	Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships
19. Work schedule	4.4.3-2	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	2.3.2	Identify the months of the year and the days of the week
	7.2.2	Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships
20. Pay stub	4.2.1-2	Interpret wages, wage deductions, benefits, and timekeeping forms
	1.1.6	Count, convert, and use coins and currency, and recognize symbols such as (\$) and (.)
21. Pay stub	4.2.1-2	Interpret wages, wage deductions, benefits, and timekeeping forms
	7.2.3	Make comparisons, differentiating among, sorting, and classifying items, information, or ideas
22. Pay stub	4.2.1-2	Interpret wages, wage deductions, benefits, and timekeeping forms
	1.1.6	Count, convert, and use coins and currency, and recognize symbols such as (\$) and (.)
23. Narrative	5.3.8-3	Identify procedures for reporting a crime
	7.2.2	Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships
24. Narrative	5.3.8-3	Identify procedures for reporting a crime
	7.2.2	Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships
25. Narrative	5.3.8-3	Identify procedures for reporting a crime
	7.2.1	Identify and paraphrase pertinent information
26. Store return policy	1.3.3-3	Identify or use various methods to purchase goods and services, and make returns and exchanges
	7.2.1	Identify and paraphrase pertinent information
27. Store return policy	1.3.3-3	Identify or use various methods to purchase goods and services, and make returns and exchanges
28. Store return policy	1.3.3-3	Identify or use various methods to purchase goods and services, and make returns and exchanges
29. Street map	1.1.3-2	Interpret maps and graphs
	2.2.5	Use maps relating to travel needs
	1.9.4	Interpret maps related to driving
	2.2.1	Ask for, give, follow, or clarify directions
30. Street map	1.1.3-2	Interpret maps and graphs
	2.2.5	Use maps relating to travel needs
	1.9.4	Interpret maps related to driving
31. Medical history form	3.2.1-1	Fill out medical health history forms
	7.2.4	Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary
32. Explanation of health benefits	4.2.1-3	Interpret information associated with medical, dental, or life insurance
	3.2.3	Interpret wages, wage deductions, benefits, and timekeeping forms

Table e1-19 Life and Work Reading Form 84R Competencies

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1. Narrative	7.1.1-3 7.2.1	Identify and prioritize personal, educational, and workplace goals Identify and paraphrase pertinent information
2. Narrative	0.2.1-3 4.1.8	Respond appropriately to common personal information questions Identify common occupations and the skills and education required for them
3. Job ad	4.1.3-4 4.1.6	Identify and use sources of information about job opportunities such as job descriptions, job ads, and announcements, and about the workforce and job market Interpret general work-related vocabulary
4. Job ad	4.1.3-4 4.1.6	Identify and use sources of information about job opportunities such as job descriptions, job ads, and announcements, and about the workforce and job market Interpret general work-related vocabulary
5. Job application form	4.1.2-1 4.1.6	Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application Interpret general work-related vocabulary
6. Pay stub	4.2.1-2 1.1.6	Interpret wages, wage deductions, benefits, and timekeeping forms Count, convert, and use coins and currency, and recognize symbols such as (\$) and (.)
7. Pay stub	4.2.1-2 2.3.2	Interpret wages, wage deductions, benefits, and timekeeping forms Identify the months of the year and the days of the week
8. Narrative	1.4.1-3 7.2.1	Identify different kinds of housing, areas of the home, and common household items Identify and paraphrase pertinent information
9. Narrative	1.4.6-3 7.2.1	Interpret information about housing loans and home-related insurance Identify and paraphrase pertinent information
10. Narrative	1.4.6-3 7.2.1	Interpret information about housing loans and home-related insurance Identify and paraphrase pertinent information
11. House ads	1.4.2-4	Select appropriate housing by interpreting classified ads, signs, and other information
12. House ads	1.4.2-4	Select appropriate housing by interpreting classified ads, signs, and other information
13. Medicine label	3.3.2-4 3.3.1	Interpret medicine labels Identify and use necessary medications
14. Medicine label	3.3.2-4 3.4.1	Interpret medicine labels Interpret product label directions and safety warnings
15. Narrative	4.4.1-3 7.2.1	Identify appropriate behavior, attire, attitudes, and social interaction, and other factors that affect job retention and advancement Identify and paraphrase pertinent information
16. Narrative	4.1.4-3 7.2.1	Identify and use information about training opportunities Identify and paraphrase pertinent information
17. Narrative	4.2.1-3 7.2.1	Interpret wages, wage deductions, benefits, and timekeeping forms Identify and paraphrase pertinent information
18. Work schedule	4.4.3-2 2.3.1 2.3.2	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Interpret clock time Identify the months of the year and the days of the week
19. Work schedule	4.4.3-2	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
	4.1.8	Identify common occupations and the skills and education required for them
20. Product warranty	1.7.1-3	Interpret product guarantees and warranties
21. Product warranty	1.7.1-3	Interpret product guarantees and warranties
22. Medical history form	3.2.1-1	Fill out medical health history forms
23. Medical history form	3.2.1-1 7.2.4	Fill out medical health history forms Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary
24. Medical appointment notice	3.1.2-3 3.1.3	Identify information necessary to make or keep medical and dental appointments Identify and utilize appropriate health care services and facilities, including interacting with providers
25. Medical appointment notice	3.1.2-3 3.2.2 7.2.1	Identify information necessary to make or keep medical and dental appointments Interpret immunization requirements Identify and paraphrase pertinent information
26. Narrative	2.2.3-3 7.2.1	Identify or use different types of transportation in the community, and interpret traffic information Identify and paraphrase pertinent information
27. Narrative	5.3.8-3 7.2.2	Identify procedures for reporting a crime Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships
28. Narrative	5.3.8-3 7.2.1	Identify procedures for reporting a crime Identify and paraphrase pertinent information
29. Class flyer	2.5.5-3 4.1.5 7.2.1	Locate and use educational services in the community, including interpreting and writing school-related communications Identify procedures involved in interviewing for a job, such as arranging for an interview, acting and dressing appropriately, and selecting appropriate questions and responses Identify and paraphrase pertinent information
30. Class flyer	2.5.5-3 7.2.4	Locate and use educational services in the community, including interpreting and writing school-related communications Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary
31. Street map	1.1.3-2 2.2.5 1.9.4	Interpret maps and graphs Use maps relating to travel needs Interpret maps related to driving
32. Street map	1.1.3-2 7.4.8	Interpret maps and graphs Interpret visual representations, such as symbols, blueprints, flowcharts, and schematics

Table e1-20 Life and Work Reading Form 85R Competencies

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1. Map	2.2.5-2 2.2.1	Use maps relating to travel needs Ask for, give, follow, or clarify directions
2. Map	2.2.5-2 2.2.1	Use maps relating to travel needs Ask for, give, follow, or clarify directions
3. Equipment manual	4.5.7-2	Demonstrate ability to identify and resolve problems with machines and to follow proper maintenance procedures
4. Equipment manual	4.5.7-2	Demonstrate ability to identify and resolve problems with machines and to follow proper maintenance procedures
5. Company policy	4.2.4-3 3.4.5	Interpret employee handbooks, personnel policies, and job manuals Recognize problems related to drugs, tobacco, and alcohol and identify where treatment may be obtained
6. Company policy	4.2.4-3 3.4.5	Interpret employee handbooks, personnel policies, and job manuals Recognize problems related to drugs, tobacco, and alcohol and identify where treatment may be obtained
7. Company policy	4.2.4-3 3.4.5	Interpret employee handbooks, personnel policies, and job manual Recognize problems related to drugs, tobacco, and alcohol and identify where treatment may be obtained
8. Accident report	4.3.4-3 7.2.2	Report unsafe working conditions and work-related accidents, injuries, and damages Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships
9. Accident report	4.3.4-3	Report unsafe working conditions and work-related accidents, injuries, and damages
10. Info on computer program	4.5.5-2	Demonstrate basic computer skills and use of common software programs, including reading or interpreting computer-generated printouts
11. Info on computer program	4.5.5-3	Demonstrate basic computer skills and use of common software programs, including reading or interpreting computer-generated printouts
12. Info on computer program	4.5.5-3	Demonstrate basic computer skills and use of common software programs, including reading or interpreting computer-generated printouts
13. Workplace goals	4.7.2-2 7.1.1 4.9.4	Identify or demonstrate effective management of material resources, including acquisition, storage, and distribution Identify and prioritize personal, educational, and workplace goals Assess the operation of a system or organization and make recommendations for improvement, including development of new systems
14. Workplace goals	4.7.2-2 7.1.1 4.9.4	Identify or demonstrate effective management of material resources, including acquisition, storage, and distribution Identify and prioritize personal, educational, and workplace goals Assess the operation of a system or organization and make recommendations for improvement, including development of new systems
15. Workplace goals	4.7.2-2 7.1.1 4.9.4	Identify or demonstrate effective management of material resources, including acquisition, storage, and distribution Identify and prioritize personal, educational, and workplace goals Assess the operation of a system or organization and make recommendations for improvement, including development of new systems
16. Leave request	4.2.4-3 4.4.3	Interpret employee handbooks, personnel policies, and job manuals Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
17. Leave request	4.2.4-3 4.4.3	Interpret employee handbooks, personnel policies, and job manuals Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
18. Leave request	4.2.4-3 4.4.3	Interpret employee handbooks, personnel policies, and job manuals Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
19. Workplace safety ad	4.3.2-3 1.2.1	Interpret work safety manuals and related information Interpret advertisements, labels, charts, and price tags in selecting goods and services
20. Workplace safety ad	4.3.2-3 1.2.1	Interpret work safety manuals and related information Interpret advertisements, labels, charts, and price tags in selecting goods and services
21. Workplace safety ad	4.3.2-3 1.2.1	Interpret work safety manuals and related information Interpret advertisements, labels, charts, and price tags in selecting goods and services
22. Teamwork ideas	4.8.1-3 4.4.1	Demonstrate ability to work cooperatively with others as a member of a team, contributing to team efforts, maximizing the strengths of team members, promoting effective group interaction, and taking personal responsibility for accomplishing goals Identify appropriate behavior, attire, attitudes, and social interaction, and other factors that affect job retention and advancement
23. Teamwork ideas	4.8.1-3 4.4.1	Demonstrate ability to work cooperatively with others as a member of a team, contributing to team efforts, maximizing the strengths of team members, promoting effective group interaction, and taking personal responsibility for accomplishing goals Identify appropriate behavior, attire, attitudes, and social interaction, and other factors that affect job retention and advancement
24. Teamwork ideas	4.8.1-3 4.4.1	Demonstrate ability to work cooperatively with others as a member of a team, contributing to team efforts, maximizing the strengths of team members, promoting effective group interaction, and taking personal responsibility for accomplishing goals Identify appropriate behavior, attire, attitudes, and social interaction, and other factors that affect job retention and advancement
25. Workplace procedures	4.4.3-3 4.7.2 4.6.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Identify or demonstrate effective management of material resources, including acquisition, storage, and distribution Interpret written workplace announcements and notices
26. Workplace procedures	4.4.3-3 4.7.2 4.6.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Identify or demonstrate effective management of material resources, including acquisition, storage, and distribution Interpret written workplace announcements and notices
27. Workplace procedures	4.4.3-3 4.7.2 7.3.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Identify or demonstrate effective management of material resources, including acquisition, storage, and distribution Evaluate the outcome of an implemented solution and suggest modifications to the solution as needed
28. Equipment instructions	4.5.6-3 4.4.3 4.4.8	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Interpret job-related technical information, such as from service manuals and training classes
29. Equipment instructions	4.5.6-3 4.4.3	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
	4.4.8	Interpret job-related technical information, such as from service manuals and training classes.
30. Equipment instructions	4.5.6-3	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system
	4.4.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	4.4.8	Interpret job-related technical information, such as from service manuals and training classes.
31. Performance evaluation	4.4.4-3	Interpret job responsibilities and performance reviews
32. Performance evaluation	4.4.4-3	Interpret job responsibilities and performance reviews
33. Performance evaluation	4.4.4-3	Interpret job responsibilities and performance reviews
34. Office equipment instructions	4.5.6-3	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system
	4.5.4	Demonstrate use of common business machines
35. Office equipment instructions	4.5.6-3	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system
	4.5.4	Demonstrate use of common business machines
36. Info on insurance	4.2.1-3	Interpret wages, wage deductions, benefits, and timekeeping forms
37. Info on insurance	4.2.1-3	Interpret wages, wage deductions, benefits, and timekeeping forms

Table e1-21 Life and Work Reading Form 86R Competencies

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1. Equipment manual	4.5.7-2	Demonstrate ability to identify and resolve problems with machines and to follow proper maintenance procedures
2. Equipment manual	4.5.7-2	Demonstrate ability to identify and resolve problems with machines and to follow proper maintenance procedures
3. Company memo	4.4.3-3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	4.6.2	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail
4. Company memo	4.4.3-3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	4.6.2	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail
5. Company memo	4.4.3-3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	4.6.2	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail
	7.2.4	Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary
6. Accident report	4.3.4-3	Report unsafe working conditions and work-related accidents, injuries, and damages
7. Accident report	4.3.4-3	Report unsafe working conditions and work-related accidents, injuries, and damages
	7.3.2	Devise and implement a solution to an identified problem
8. Letter of recommendation	4.6.2-3	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail
	4.4.2	Identify appropriate skills and education for keeping a job and getting a promotion
	4.1.2	Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application
9. Letter of recommendation	4.6.2-3	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail
	4.4.2	Identify appropriate skills and education for keeping a job and getting a promotion
10. Letter of recommendation	4.6.2-3	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail
	4.4.2	Identify appropriate skills and education for keeping a job and getting a promotion
11. Company policy	4.2.4-3	Interpret employee handbooks, personnel policies, and job manuals
	3.4.5	Recognize problems related to drugs, tobacco, and alcohol and identify where treatment may be obtained
12. Company policy	4.2.4-3	Interpret employee handbooks, personnel policies, and job manuals
	3.4.5	Recognize problems related to drugs, tobacco, and alcohol and identify where treatment may be obtained
13. Company policy	4.2.4-3	Interpret employee handbooks, personnel policies, and job manuals
	3.4.5	Recognize problems related to drugs, tobacco, and alcohol and identify where treatment may be obtained
14. Workplace announcement	4.6.3-3	Interpret written workplace announcements and notices
	4.4.5	Identify job training needs and set learning goals

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
15. Workplace announcement	4.6.3-3	Interpret written workplace announcements and notices
	4.4.5	Identify job training needs and set learning goals
16. Workplace announcement	4.6.3-3	Interpret written workplace announcements and notices
	4.4.5	Identify job training needs and set learning goals
17. Company policy memo	4.6.2-3	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail
	4.2.4	Interpret employee handbooks, personnel policies, and job manuals
18. Company policy memo	4.6.2-3	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail
	4.2.4	Interpret employee handbooks, personnel policies, and job manuals
19. Company policy memo	4.6.2-3	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail
	4.2.4	Interpret employee handbooks, personnel policies, and job manuals
	7.2.4	Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary
20. Company departments	4.4.3-2	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	4.8.3	Demonstrate effective communication skills in working with customers and clients
21. Company departments	4.4.3-2	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	4.8.3	Demonstrate effective communication skills in working with customers and clients
22. Company departments	4.4.3-2	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	4.8.3	Demonstrate effective communication skills in working with customers and clients
23. Equipment instructions	4.5.6-3	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system
	4.4.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	4.4.8	Interpret job-related technical information, such as from service manuals and training classes
24. Equipment instructions	4.5.6-3	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system
	4.4.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	4.4.8	Interpret job-related technical information, such as from service manuals and training classes
25. Equipment instructions	4.5.6-3	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system
	4.4.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	4.4.8	Interpret job-related technical information, such as from service manuals and training classes
26. Office equipment instructions	4.5.6-3	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system
	4.5.4	Demonstrate use of common business machines
27. Office equipment instructions	4.5.6-3	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system
	4.5.4	Demonstrate use of common business machines

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
28. Map	2.2.1-2	Ask for, give, follow, or clarify directions
29. Map	2.2.1-2	Ask for, give, follow, or clarify directions
30. Info on computer program	4.5.5-2	Demonstrate basic computer skills and use of common software programs, including reading or interpreting computer-generated printouts
31. Info on computer program	4.5.5-2	Demonstrate basic computer skills and use of common software programs, including reading or interpreting computer-generated printouts
32. Workplace safety ad	4.3.2-3 1.2.1	Interpret work safety manuals and related information Interpret advertisements, labels, charts, and price tags in selecting goods and services
33. Workplace safety ad	4.3.2-3 1.2.1	Interpret work safety manuals and related information Interpret advertisements, labels, charts, and price tags in selecting goods and services
34. Teamwork ideas	4.8.1-3 4.4.1	Demonstrate ability to work cooperatively with others as a member of a team, contributing to team efforts, maximizing the strengths of team members, promoting effective group interaction, and taking personal responsibility for accomplishing goals Identify appropriate behavior, attire, attitudes, and social interaction, and other factors that affect job retention and advancement
35. Teamwork ideas	4.8.1-3 4.4.1	Demonstrate ability to work cooperatively with others as a member of a team, contributing to team efforts, maximizing the strengths of team members, promoting effective group interaction, and taking personal responsibility for accomplishing goals Identify appropriate behavior, attire, attitudes, and social interaction, and other factors that affect job retention and advancement
36. Info on insurance	4.2.1-3	Interpret wages, wage deductions, benefits, and timekeeping forms
37. Info on insurance	4.2.1-3	Interpret wages, wage deductions, benefits, and timekeeping forms

Table e1-22 Life and Work Reading Form 185R Competencies

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1. Appointment list	2.5.2-2	Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers
	2.3.1	Interpret clock time
2. Sign	1.3.6-4	Use coin-operated machines
	2.5.4	Read, interpret, and follow directions found on public signs and building directories
3. Office memo	4.6.2-3	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail
	4.3.4	Report unsafe working conditions and work-related accidents, injuries, and damages
	7.2.2	Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships
4. Office sign	2.5.4-4	Read, interpret, and follow directions found on public signs and building directories
	2.3.2	Identify the months of the year and the days of the week
	2.5.2	Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers
5. Safety rules	4.3.2-3	Interpret work safety manuals and related information
	4.6.1	Follow, clarify, give, or provide feedback to instructions; give and respond appropriately to criticism
6. Safety rules	4.3.2-3	Interpret work safety manuals and related information
	4.4.1	Identify appropriate behavior, attire, attitudes, and social interaction, and other factors that affect job retention and advancement
7. Hospital directory	3.1.3-2	Identify and utilize appropriate health care services and facilities, including interacting with providers
	2.1.1	Use the telephone directory and related publications to locate information
8. Hospital directory	3.1.3-2	Identify and utilize appropriate health care services and facilities, including interacting with providers
	2.1.1	Use the telephone directory and related publications to locate information
9. Workplace announcement	4.6.3-3	Interpret written workplace announcements and notices
	4.4.5	Identify job training needs and set learning goals
	4.4.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
10. Workplace announcement	4.6.3-3	Interpret written workplace announcements and notices
	4.4.5	Identify job training needs and set learning goals
	4.4.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
11. Company policy	4.2.4-3	Interpret employee handbooks, personnel policies, and job manuals
	3.4.5	Recognize problems related to drugs, tobacco, and alcohol and identify where treatment may be obtained
	4.6.3	Interpret written workplace announcements and notices
	4.4.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
12. Company policy	4.2.4-3	Interpret employee handbooks, personnel policies, and job manuals
	3.4.5	Recognize problems related to drugs, tobacco, and alcohol and identify where treatment may be obtained
	4.6.3	Interpret written workplace announcements and notices
	4.4.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
13. Company memo	4.4.3-3 4.6.2	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Interpret and write work-related correspondence, including notes, memos, letters, and e-mail
14. Company memo	4.4.3-3 4.6.2	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Interpret and write work-related correspondence, including notes, memos, letters, and e-mail
15. Phone message	2.1.7-1 4.6.2 4.4.3	Take and interpret telephone messages, leave messages on answering machines, and interpret recorded messages Interpret and write work-related correspondence, including notes, memos, letters, and e-mail Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
16. Information on illness	3.1.1-2 3.4.3	Describe symptoms of illness, including identifying parts of the body; interpret doctor's directions Interpret procedures for simple first-aid
17. Information on illness	3.1.1-2 3.4.3	Describe symptoms of illness, including identifying parts of the body; interpret doctor's directions Interpret procedures for simple first-aid
18. Information on legal services	5.3.2-3 5.6.2	Identify individual legal rights and procedures for obtaining legal advice Interpret information about civic organizations and public service groups
19. Maintenance checklist	1.9.6-2 4.5.7 4.3.2	Interpret information related to automobile maintenance Demonstrate ability to identify and resolve problems with machines and to follow proper maintenance procedures Interpret work safety manuals and related information
20. Maintenance checklist	1.9.6-2 4.5.7 4.3.2	Interpret information related to automobile maintenance Demonstrate ability to identify and resolve problems with machines and to follow proper maintenance procedures Interpret work safety manuals and related information
21. Recipe	1.1.1-3 1.7.3	Interpret recipes Interpret operating instructions, directions, or labels for consumer products
22. Workplace safety ad	4.3.2-3 1.2.1	Interpret work safety manuals and related information Interpret advertisements, labels, charts, and price tags in selecting goods and services
23. Workplace safety ad	4.3.2-3 1.2.1	Interpret work safety manuals and related information Interpret advertisements, labels, charts, and price tags in selecting goods and services
24. Phone chart	4.4.3-2 4.5.3 4.8.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Demonstrate ability to use a filing system or other ordered system (e.g., coded or numbered) Demonstrate effective communication skills in working with customers and clients
25. Phone chart	2.1.8 4.4.3-2 4.5.3 4.8.3	Use the telephone to make and receive routine personal and business calls Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Demonstrate ability to use a filing system or other ordered system (e.g., coded or numbered) Demonstrate effective communication skills in working with customers and clients
26. Map	2.1.8 1.9.4-2 2.2.5	Use the telephone to make and receive routine personal and business calls Interpret maps related to driving Use maps relating to travel needs

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
	2.2.1	Ask for, give, follow, or clarify directions
27. Letter of recommendation	4.6.2-3	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail
	4.4.2	Identify appropriate skills and education for keeping a job and getting a promotion
	4.1.2	Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application
28. Letter of recommendation	4.6.2-3	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail
	4.4.2	Identify appropriate skills and education for keeping a job and getting a promotion
	4.1.2	Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application
29. Course description	2.5.5-4	Locate and use educational services in the community, including interpreting and writing school-related communications
30. Course description	2.5.5-4	Locate and use educational services in the community, including interpreting and writing school-related communications
31. Course description	2.5.5-4	Locate and use educational services in the community, including interpreting and writing school-related communications
32. Summons	5.3.3-1	Interpret basic court procedures
	5.3.1	Interpret common laws and ordinances, and legal forms and documents
33. Equipment instructions	4.5.6-3	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system
	4.4.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	4.4.8	Interpret job-related technical information, such as from service manuals and training classes
34. Equipment instructions	4.5.6-3	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system
	4.4.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	4.4.8	Interpret job-related technical information, such as from service manuals and training classes
35. Newspaper article	5.6.1-3	Interpret information about neighborhood or community problems and their
	2.7.3	Interpret information about social issues
36. Newspaper article	5.6.1-3	Interpret information about neighborhood or community problems and their
	2.7.3	Interpret information about social issues
37. Letter to the editor	5.1.6-3	Communicate one's opinions on a current issue
	1.4.5	Interpret information about tenant and landlord rights
38. Letter to the editor	5.1.6-3	Communicate one's opinions on a current issue
	1.4.5	Interpret information about tenant and landlord rights

Table e1-23 Life and Work Reading Form 186R Competencies

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1. Ad for services	1.2.1-4 2.3.2 5.3.6	Interpret advertisements, labels, charts, and price tags in selecting goods and services Identify the months of the year and the days of the week Interpret information or identify requirements for establishing residency and/or obtaining citizenship
2. Safety procedures	4.3.3-3	Identify safe work procedures and common safety equipment, including wearing safe work attire
3. Safety sign	4.3.1-4 3.4.2	Interpret safety signs found in the workplace Identify safety measures that can prevent accidents and injuries
4. Permanent Resident card	5.3.6-1 5.3.1 2.3.2	Interpret information or identify requirements for establishing residency and/or obtaining citizenship Interpret common laws and ordinances, and legal forms and documents Identify the months of the year and the days of the week
5. Calendar	2.3.2-2	Identify the months of the year and the days of the week
6. Product label	1.7.3-4	Interpret operating instructions, directions, or labels for consumer products
7. Product label	1.7.3-4	Interpret operating instructions, directions, or labels for consumer products
8. Map	2.2.5-2 1.1.3 1.9.4 2.2.1	Use maps relating to travel needs Interpret maps and graphs Interpret maps related to driving Ask for, give, follow, or clarify directions
9. Product label	1.7.3-4	Interpret operating instructions, directions, or labels for consumer products
10. Product label	1.7.3-4 3.4.1	Interpret operating instructions, directions, or labels for consumer products Interpret product label directions and safety warnings
11. Safety instructions	3.4.2-3 1.4.8	Identify safety measures that can prevent accidents and injuries Recognize home theft and fire prevention measures
12. Safety instructions	3.4.2-3 1.4.8	Identify safety measures that can prevent accidents and injuries Recognize home theft and fire prevention measures
13. Phone chart	4.4.3-2 4.5.3 4.8.3 2.1.8	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Demonstrate ability to use a filing system or other ordered system (e.g., coded or numbered) Demonstrate effective communication skills in working with customers and clients Use the telephone to make and receive routine personal and business calls
14. Phone chart	4.4.3-2 4.5.3 4.8.3 2.1.8	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Demonstrate ability to use a filing system or other ordered system (e.g., coded or numbered) Demonstrate effective communication skills in working with customers and clients Use the telephone to make and receive routine personal and business calls
15. Phone message	2.1.7-1 4.6.2 4.4.3	Take and interpret telephone messages, leave messages on answering machines, and interpret recorded messages Interpret and write work-related correspondence, including notes, memos, letters, and e-mail Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
16. Phone message	2.1.7-1 4.6.2	Take and interpret telephone messages, leave messages on answering machines, and interpret recorded messages Interpret and write work-related correspondence, including notes, memos,

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
		letters, and e-mail
	4.4.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
17. Consumers information	1.6.2-3	Identify consumer protection resources available when confronted with fraudulent practices
	1.6.3	Identify procedures the consumer can follow if merchandise or service is unsatisfactory
18. Consumers information	1.6.2-3	Identify consumer protection resources available when confronted with fraudulent practices
	1.6.3	Identify procedures the consumer can follow if merchandise or service is unsatisfactory
19. Consumers information	1.6.2-3	Identify consumer protection resources available when confronted with fraudulent practices
	1.6.3	Identify procedures the consumer can follow if merchandise or service is unsatisfactory
20. Recipe	1.1.1-3	Interpret recipes
	1.7.3	Interpret operating instructions, directions, or labels for consumer products
21. Resume	4.1.2-3	Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application
	4.1.8	Identify common occupations and the skills and education required for them
22. Resume	4.1.2-3	Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application
	4.1.8	Identify common occupations and the skills and education required for them
23. Resume	4.1.2-3	Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application
	4.1.8	Identify common occupations and the skills and education required for them
	4.4.2	Identify appropriate skills and education for keeping a job and getting a promotion
24. Workplace procedures	4.4.3-3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	4.7.2	Identify or demonstrate effective management of material resources, including acquisition, storage, and distribution
	4.6.3	Interpret written workplace announcements and notices
25. Workplace procedures	4.4.3-3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	4.7.2	Identify or demonstrate effective management of material resources, including acquisition, storage, and distribution
	4.6.3	Interpret written workplace announcements and notices
26. Performance evaluation	4.4.4-3	Interpret job responsibilities and performance reviews
	4.4.2	Identify appropriate skills and education for keeping a job and getting a promotion
27. Performance evaluation	4.4.4-3	Interpret job responsibilities and performance reviews
	4.4.2	Identify appropriate skills and education for keeping a job and getting a promotion
28. Performance evaluation	4.4.4-3	Interpret job responsibilities and performance reviews
29. Summons	5.3.3-1	Interpret basic court procedures
	5.3.1	Interpret common laws and ordinances, and legal forms and documents
30. Workplace safety ad	4.3.2-3	Interpret work safety manuals and related information
	1.2.1	Interpret advertisements, labels, charts, and price tags in selecting goods and services
	7.2.4	Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
31. Workplace safety ad	4.3.2-3 1.2.1	Interpret work safety manuals and related information Interpret advertisements, labels, charts, and price tags in selecting goods and services
32. Class flyer	2.5.5-3 4.2.1	Locate and use educational services in the community, including interpreting and writing school-related communications Interpret wages, wage deductions, benefits, and timekeeping forms
33. Mayor's Team article	5.6.1-3 2.7.3	Interpret information about neighborhood or community problems and their solutions Interpret information about social issues
34. Mayor's Team article	5.6.1-3 2.7.3	Interpret information about neighborhood or community problems and their solutions Interpret information about social issues
35. Equipment instructions	4.5.6-3 4.4.3 4.4.8	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Interpret job-related technical information, such as from service manuals and training classes
36. Equipment instructions	4.5.6-3 4.4.3 4.4.8	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Interpret job-related technical information, such as from service manuals and training classes
37. Office equipment instructions	4.5.6-3 7.2.2 2.1.8	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships Use the telephone to make and receive routine personal and business calls
38. Office equipment instructions	4.5.6-3 7.2.2 2.1.8	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships Use the telephone to make and receive routine personal and business calls

Table e1-24 Life and Work Reading Form 187R Competencies

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1. Company policy	4.2.4-3 4.4.3	Interpret employee handbooks, personnel policies, and job manuals Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
2. Company policy	4.2.4-3 4.4.3	Interpret employee handbooks, personnel policies, and job manuals Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
3. Health article	3.4.5-3 3.5.9 2.7.3	Recognize problems related to drugs, tobacco, and alcohol and identify where treatment may be obtained Identify practices that promote physical well being Interpret information about social issues
4. Health article	3.4.5-3 3.5.9 2.7.3	Recognize problems related to drugs, tobacco, and alcohol and identify where treatment may be obtained Identify practices that promote physical well being Interpret information about social issues
5. Deposit slip	1.8.2-1 1.1.6	Interpret the procedures and forms associated with banking services, including writing checks Count, convert, and use coins and currency, and recognize symbols such as (\$) and (.)
6. Information on renting	1.4.5-3 1.4.7	Interpret information about tenant and landlord rights Interpret information about home maintenance, and communicate housing problems to a landlord
7. Information on renting	1.4.5-3 1.4.7	Interpret information about tenant and landlord rights Interpret information about home maintenance, and communicate housing problems to a landlord
8. Office equipment instructions	4.4.3-3 4.6.1 2.1.8	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Follow, clarify, give, or provide feedback to instructions; give and respond appropriately to criticism Use the telephone to make and receive routine personal and business calls
9. Office equipment instructions	4.4.3-3 4.6.1 2.1.8	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Follow, clarify, give, or provide feedback to instructions; give and respond appropriately to criticism Use the telephone to make and receive routine personal and business calls
10. Office memo	4.6.2-3 4.1.3	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail Identify and use sources of information about job opportunities such as job descriptions, job ads, and announcements, and about the workforce and job market
11. Office memo	4.6.2-3 4.1.3	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail Identify and use sources of information about job opportunities such as job descriptions, job ads, and announcements, and about the workforce and job market
12. Benefits information	2.5.2-2 4.2.1 4.8.1	Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers Interpret wages, wage deductions, benefits, and timekeeping forms Demonstrate ability to work cooperatively with others as a member of a team, contributing to team efforts, maximizing the strengths of team members, promoting effective group interaction, and taking personal responsibility for accomplishing goals

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
13. Benefits information	2.5.2-2 4.2.1 4.8.1	Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers Interpret wages, wage deductions, benefits, and timekeeping forms Demonstrate ability to work cooperatively with others as a member of a team, contributing to team efforts, maximizing the strengths of team members, promoting effective group interaction, and taking personal responsibility for accomplishing goals
14. Benefits procedures	4.2.1-3 2.5.2 3.2.3 4.4.3	Interpret wages, wage deductions, benefits, and timekeeping forms Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers Interpret information associated with medical, dental, or life insurance Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
15. Benefits procedures	4.2.1-3 2.5.2 3.2.3 4.4.3	Interpret wages, wage deductions, benefits, and timekeeping forms Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers Interpret information associated with medical, dental, or life insurance Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
16. Office equipment instructions	4.5.6-3 4.5.4 4.5.1	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system Demonstrate use of common business machines Identify common tools, equipment, machines, and materials required for one's job
17. Article	2.7.5-3 7.2.2	Interpret literary materials such as poetry and literature Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships
18. Article	2.7.5-3 7.2.4	Interpret literary materials such as poetry and literature Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary
19. Office memo	4.6.2-3 4.6.3	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail Interpret written workplace announcements and notices
20. Office memo	4.6.2-3 4.6.3	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail Interpret written workplace announcements and notices
21. Health information	3.1.1-3 3.4.4	Describe symptoms of illness, including identifying parts of the body; interpret doctor's directions Interpret information about AIDS and other sexually transmitted diseases
22. Editorial	5.4.4-3 5.5.2 5.6.1	Interpret tax information from articles and publications Interpret information about legislative activities Interpret information about neighborhood or community problems and their solutions
23. Editorial	5.4.4-3 5.5.2 5.6.1	Interpret tax information from articles and publications Interpret information about legislative activities Interpret information about neighborhood or community problems and their solutions
24. Table of contents	7.4.6-2	Use indexes and tables of contents
25. Table of contents	7.4.6-2	Use indexes and tables of contents
26. Editorial	5.1.6-3	Communicate one's opinions on a current issue

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
27. Editorial	2.7.3	Interpret information about social issues
	2.7.2	Interpret information about ethnic groups, cultural groups, and language groups
	7.4.2	Take notes or write a summary or an outline
	5.1.6-3	Communicate one's opinions on a current issue
28. Editorial	2.7.3	Interpret information about social issues
	2.7.2	Interpret information about ethnic groups, cultural groups, and language groups
	5.1.6-3	Communicate one's opinions on a current issue
	2.7.3	Interpret information about social issues
29. Safety information chart	2.7.2	Interpret information about ethnic groups, cultural groups, and language groups
	7.2.2	Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships
	4.3.2-2	Interpret work safety manuals and related information
	7.2.4	Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary
30. Work instructions	4.3.1	Interpret safety signs found in the workplace
	4.4.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	4.4.3-3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	7.2.2	Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships
31. Work instructions	4.6.1	Follow, clarify, give, or provide feedback to instructions; give and respond appropriately to criticism
	4.5.1	Identify common tools, equipment, machines, and materials required for one's job
	4.4.3-3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	7.2.2	Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships
32. Graph	4.6.1	Follow, clarify, give, or provide feedback to instructions; give and respond appropriately to criticism
	4.5.1	Identify common tools, equipment, machines, and materials required for one's job
	2.5.9-2	Identify child care services in the community
	1.1.3	Interpret maps and graphs

Table e1-25 Life and Work Reading Form 188R Competencies

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
1. Company policy	4.2.4-3 4.4.2	Interpret employee handbooks, personnel policies, and job manuals Identify appropriate skills and education for keeping a job and getting a promotion
2. Company policy	4.2.4-3 4.4.2	Interpret employee handbooks, personnel policies, and job manuals Identify appropriate skills and education for keeping a job and getting a promotion
3. Graph	4.4.3-2 1.1.3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Interpret maps and graphs
4. Health information	3.1.1-3	Describe symptoms of illness, including identifying parts of the body; interpret doctor's directions
5. Health information	3.1.1-3	Describe symptoms of illness, including identifying parts of the body; interpret doctor's directions
6. Information on renting	1.4.3-3 1.4.5	Interpret lease and rental agreements Interpret information about tenant and landlord rights
7. Information on renting	1.4.3-3 1.4.5	Interpret lease and rental agreements Interpret information about tenant and landlord rights
8. Graph	2.5.9-2 1.1.3	Identify child care services in the community Interpret maps and graphs
9. Employee handbook	4.2.4-3 3.1.3 4.1.2	Interpret employee handbooks, personnel policies, and job manuals Identify and utilize appropriate health care services and facilities, including interacting with providers Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application
10. Employee handbook	4.2.4-3 4.1.2	Interpret employee handbooks, personnel policies, and job manuals Follow procedures for applying for a job, including interpreting and completing job applications, résumés, and letters of application
11. Benefits procedures	4.2.1-3 2.5.2 4.4.3 3.2.3	Interpret wages, wage deductions, benefits, and timekeeping forms Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Interpret information associated with medical, dental, or life insurance
12. Benefits procedures	4.2.1-3 2.5.2 4.4.3 3.2.3 7.2.2	Interpret wages, wage deductions, benefits, and timekeeping forms Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc. Interpret information associated with medical, dental, or life insurance Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships
13. Product information	3.5.1-4 1.6.1 1.2.1	Interpret nutritional and related information listed on food labels Interpret food packaging labels Interpret advertisements, labels, charts, and price tags in selecting goods and services
14. Phone message	2.1.7-1 4.4.3	Take and interpret telephone messages, leave messages on answering machines, and interpret recorded messages Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
	4.6.2	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail
15. Work instructions	4.4.3-3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	7.2.4	Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary
	6.6.5	Interpret diagrams, illustrations, and scale drawings
	4.5.1	Identify common tools, equipment, machines, and materials required for one's job
16. Work instructions	4.4.3-3	Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.
	7.2.2	Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships
	6.6.5	Interpret diagrams, illustrations, and scale drawings
	4.5.1	Identify common tools, equipment, machines, and materials required for one's job
17. Information on medicine	3.4.1-2	Interpret product label directions and safety warnings
	3.3.1	Identify and use necessary medications
	3.3.3	Identify the difference between prescription, over-the-counter, and generic medications
18. Information on medicine	3.4.1-2	Interpret product label directions and safety warnings
	3.3.1	Identify and use necessary medications
	3.3.3	Identify the difference between prescription, over-the-counter, and generic medications
19. Ballot information	5.1.3-3	Interpret a ballot
	2.7.3	Interpret information about social issues
	7.2.4	Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary
	7.2.1	Identify and paraphrase pertinent information
20. Ballot information	5.1.3-3	Interpret a ballot
	2.7.3	Interpret information about social issues
	7.2.4	Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary
21. Ballot information	5.1.3-3	Interpret a ballot
	2.7.3	Interpret information about social issues
	7.2.4	Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary
22. Benefits information	2.5.2-2	Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers
	4.2.1	Interpret wages, wage deductions, benefits, and timekeeping forms
	5.8.1	Interpret economic information and statistics
23. Benefits information	2.5.2-2	Identify how and when to obtain social and governmental services (e.g., low-income housing, Social Security, Medicare), and how to interact with service providers
	4.2.1	Interpret wages, wage deductions, benefits, and timekeeping forms
	5.8.1	Interpret economic information and statistics
24. Table of contents	7.4.6-2	Use indexes and tables of contents
25. Table of contents	7.4.6-2	Use indexes and tables of contents
26. Editorial	5.1.6-3	Communicate one's opinions on a current issue

ITEM	COMP.*	THE LEARNER WILL DEMONSTRATE THE ABILITY TO:
	2.7.3	Interpret information about social issues
	2.7.2	Interpret information about ethnic groups, cultural groups, and language groups
	7.2.4	Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary
27. Editorial	5.1.6-3	Communicate one's opinions on a current issue
	2.7.3	Interpret information about social issues
	2.7.2	Interpret information about ethnic groups, cultural groups, and language groups
	7.2.4	Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary
28. Office memo	4.6.2-3	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail
	4.6.3	Interpret written workplace announcements and notices
29. Office memo	4.6.2-3	Interpret and write work-related correspondence, including notes, memos, letters, and e-mail
	4.6.3	Interpret written workplace announcements and notices
30. Technical information	1.4.7-3	Interpret information about home maintenance, and communicate housing problems to a landlord
	1.7.4	Interpret maintenance procedures for household appliances and personal possessions
	7.2.2	Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships
31. Office equipment instructions	4.5.6-3	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system
	4.5.4	Demonstrate use of common business machines
	4.5.1	Identify common tools, equipment, machines, and materials required for one's job
32. Office equipment instructions	4.5.6-3	Demonstrate ability to select, set up and use tools and machines in order to accomplish a task, while operating within a technological system
	4.5.4	Demonstrate use of common business machines
	4.5.1	Identify common tools, equipment, machines, and materials required for one's job
	7.2.1	Identify and paraphrase pertinent information

Table e1-26 Life and Work Reading Form 513R Competencies

Item	Comp.	The learner will demonstrate the ability to:
1	5.1.6	Communicate one's opinion on a current issue
2	5.1.6	Communicate one's opinion on a current issue
3	5.1.6	Communicate one's opinion on a current issue
4	5.5.7	Interpret information about local policy-making groups
5	5.5.7	Interpret information about local policy-making groups
6	2.5.5	Locate, use educational services in the community
7	2.5.5	Locate, use educational services in the community
8	2.7.5	Interpret literary materials such as poetry and literature
9	2.7.5	Interpret literary materials such as poetry and literature
10	2.7.5	Interpret literary materials such as poetry and literature
11	2.7.5	Interpret literary materials such as poetry and literature
12	2.7.5	Interpret literary materials such as poetry and literature
13	2.7.5	Interpret literary materials such as poetry and literature
14	2.7.5	Interpret literary materials such as poetry and literature
15	2.7.5	Interpret literary materials such as poetry and literature
16	2.7.5	Interpret literary materials such as poetry and literature
17	2.7.5	Interpret literary materials such as poetry and literature
18	2.7.5	Interpret literary materials such as poetry and literature
19	2.7.5	Interpret literary materials such as poetry and literature
20	2.7.5	Interpret literary materials such as poetry and literature
21	2.7.5	Interpret literary materials such as poetry and literature
22	2.7.5	Interpret literary materials such as poetry and literature
23	2.7.5	Interpret literary materials such as poetry and literature
24	2.7.5	Interpret literary materials such as poetry and literature
25	5.1.6	Communicate one's opinion on a current issue
26	5.1.6	Communicate one's opinion on a current issue
27	5.1.6	Communicate one's opinion on a current issue
28	2.7.5	Interpret literary materials such as poetry and literature
29	2.7.5	Interpret literary materials such as poetry and literature
30	2.7.5	Interpret literary materials such as poetry and literature
31	2.7.5	Interpret literary materials such as poetry and literature
32	2.7.5	Interpret literary materials such as poetry and literature
33	5.4.4	Interpret tax information from articles and publications
34	5.4.4	Interpret tax information from articles and publications
35	2.7.5	Interpret literary materials such as poetry and literature
36	2.7.5	Interpret literary materials such as poetry and literature
37	2.7.5	Interpret literary materials such as poetry and literature
38	2.7.5	Interpret literary materials such as poetry and literature
39	5.1.6	Communicate one's opinion on a current issue
40	5.1.6	Communicate one's opinion on a current issue

Table e1-27 Life and Work Reading Form 514R Competencies

Item	Comp.	The learner will demonstrate the ability to:
1	5.1.6	Communicate one's opinion on a current issue
2	5.1.6	Communicate one's opinion on a current issue
3	5.5.6	Interpret information about law-enforcement activities
4	5.5.6	Interpret information about law-enforcement activities
5	4.1.8	Identify common occupations, skills and education req'd
6	4.1.8	Identify common occupations, skills and education req'd
7	2.7.5	Interpret literary materials such as poetry and literature
8	2.7.5	Interpret literary materials such as poetry and literature
9	2.7.5	Interpret literary materials such as poetry and literature
10	2.7.5	Interpret literary materials such as poetry and literature
11	2.7.5	Interpret literary materials such as poetry and literature
12	2.7.5	Interpret literary materials such as poetry and literature
13	2.7.5	Interpret literary materials such as poetry and literature
14	2.7.5	Interpret literary materials such as poetry and literature
15	2.7.5	Interpret literary materials such as poetry and literature
16	2.7.5	Interpret literary materials such as poetry and literature
17	2.7.5	Interpret literary materials such as poetry and literature
18	5.1.6	Communicate one's opinion on a current issue
19	5.1.6	Communicate one's opinion on a current issue
20	2.7.5	Interpret literary materials such as poetry and literature
21	2.7.5	Interpret literary materials such as poetry and literature
22	2.7.5	Interpret literary materials such as poetry and literature
23	2.7.5	Interpret literary materials such as poetry and literature
24	2.7.5	Interpret literary materials such as poetry and literature
25	2.7.5	Interpret literary materials such as poetry and literature
26	2.7.5	Interpret literary materials such as poetry and literature
27	2.7.5	Interpret literary materials such as poetry and literature
28	5.4.4	Interpret tax information from articles and publications
29	5.4.4	Interpret tax information from articles and publications
30	2.7.5	Interpret literary materials such as poetry and literature
31	2.7.5	Interpret literary materials such as poetry and literature
32	2.7.5	Interpret literary materials such as poetry and literature
33	2.7.5	Interpret literary materials such as poetry and literature
34	2.7.5	Interpret literary materials such as poetry and literature
35	2.7.5	Interpret literary materials such as poetry and literature
36	2.7.5	Interpret literary materials such as poetry and literature
37	2.7.5	Interpret literary materials such as poetry and literature
38	2.7.5	Interpret literary materials such as poetry and literature
39	5.1.6	Communicate one's opinion on a current issue
40	5.1.6	Communicate one's opinion on a current issue

Item e2 – Whether the items or tasks measure skills that are not associated with the NRS educational functioning levels

All items in the Life and Work Reading Assessments measure skills that are associated with the NRS educational functioning levels. The Life and Work Reading Assessments do not measure competencies or skills that are not tied to the NRS educational functioning levels for ABE and ESL adults.

Item e3 – Whether aspects of a particular NRS educational functioning level are not covered by any of the items or tasks

The items that comprise the assessments in the Life and Work Reading Assessments measure skills that span the continuum within and across each of the NRS educational functioning levels.

Item e4 – The procedures used to establish the content validity of the test

Reading as measured in the Life and Work Reading Assessments is in functional contexts commonly encountered in common everyday settings. The competencies – or the content – selected to measure reading was determined by conducting surveys with adult educators throughout the country. They identified and prioritized a subset of the CASAS Competencies as being critical and important for their students in their community and programs. The competencies included on the Life and Work Reading test forms are listed in Tables e1-6 through e1-27.

Content validity of the Life and Work Reading Assessments were established through panels of educational specialists who provided assurance that the test items developed for each specific set of tests accurately assessed reading skills in the context of the identified competencies.

CASAS test items are based on the application of functional language or math skills (competencies) in realistic life-skill or workplace contexts. Every item addresses one or more competency. For example:

A reading item assessing competency 4.3.3 *Interpret safe work procedures, safety manuals, and related information such as ergonomic requirements*, might involve reading a memo on safe work practices for child-care workers or following written procedures for safely operating a gas furnace. According to their content these items would also address 4.6.2 *Interpret and write work-related correspondence, including notes, memos, letters, and e-mail* and 4.4.3 *Interpret job-related signs, charts, diagrams, forms, and procedures, and record information on forms, charts, checklists, etc.*, and perhaps other competencies.

Test items also are presented in a variety of task types:

- Forms
- Charts, maps, consumer billings, matrices, graphs or tables

- Articles, paragraphs, sentences, directions, manuals
- Signs, price tags, advertisements or product labels
- Measurement scales or diagrams

Item e5 – The number of subject matter experts who provided judgments linking the items or tasks to the NRS educational functioning levels and their qualifications for doing so, particularly their familiarity with adult education and the NRS educational functioning levels

At the request of the CASAS National Consortium - representing approximately 30 states - CASAS developed reading basic skills content standards as a formal part of the CASAS system. This National Consortium project was coordinated with the assistance of a thirteen-state technical workgroup comprised of reading subject matter experts. The initial process included a review of existing state adult education content standards for California, New York, Massachusetts, Arizona, Maryland, and Florida, as well as a review of a variety of other national and state standards documents. The National Consortium Technical Workgroup used this information as a basis to begin development and pilot testing of the CASAS Basic Skills Content Standards. These standards were then correlated to CASAS performance levels, the WIA II National Reporting System levels, and aligned to CASAS assessments. Several states extensively field-tested the content standards to ensure they were complete and that they were aligned with CASAS and NRS levels. These basic skills content standards assist adult education instructors identify the underlying basic skills embedded in employment related life skill competencies to strengthen teaching and learning.

(f) Match of scores to the NRS educational functioning levels.
Documentation of the adequacy of the procedure used to translate the performance of an examinee on a particular test to an estimate of the examinee's standing with respect to the NRS educational functioning levels

Item f1 – The standard-setting procedures used to establish cut scores for transforming raw or scale scores on test into estimates of an examinee's NRS educational functioning level

The initial goal of CASAS since the 1980s was to develop an adult competency measurement scale that would assist adult educators in describing the functional performance capabilities and levels of their learners. The adult competency measurement scale to be developed needed to be sensitive to the learning accomplishment of learners enrolled in the various levels of ABE, ASE, and ESL classes. Learners used in the development of the initial scale were enrolled in classes that were supported in part by federal adult education act funding — currently WIA Title II. It was decided by a group of California adult education practitioners, and later verified by national leaders and state directors of adult education, that item content and presentation formats should reflect the content and competencies underlying both the Adult Performance Level Study (1974) and the California High School Proficiency Examination (1975) that measured the attainment of basic skills in a functional life skills context. These item types later were expanded to include employment-related contexts and measured, in addition to reading and math, listening and writing.

The strategy was to create items and to field-test them on adult education learners who could successfully handle common, noncomplex reading and math in a life skills context. Learners enrolled at the intermediate levels of adult education were chosen as examinees for the initial field-testing and linking of items to a common adult competencies measurement scale. The Rasch IRT scaling procedure was chosen to facilitate the concurrent calibration and the vertical equating of the field-tested items. Using these scaling procedures, easier and more difficult items were added to extend the adult competencies measurement scale both lower and higher. A reporting scale was developed that was distinct from other K-12 and college entrance educational scales by centering the CASAS scale with a mean of 200 with a standard deviation of 10 scale points.

The content and competencies were analyzed for the items forming the typical CASAS scale score ranges of adult (theta) ability values from below 170 to 240 and above and were found to compare favorably with the findings from other national studies, including the Student Performance Level Study conducted by the Center for Applied Linguistics (CAL, 1984). These scale ranges were then used to describe and level instruction while providing a reporting mechanism for programs and states adopting CASAS throughout the nation for their adult education and literacy learners.

A modified borderline group method was used to recommend the original cut scores that were eventually established by CASAS policymakers. With this method a group of

borderline examinees is identified for each performance standard based on the ratings of teachers or other qualified persons. The test scores for these borderline examinees are gathered, and their median test score is typically recommended as the performance standard.

CASAS analyzed the functioning level of different groups of examinees, and their observed performance on CASAS assessments was used to recommend cut scores. After the establishment of the original CASAS cut scores, CASAS continued to use a modified borderline group method that included analysis of aggregated examinee data. Based on these analyses, the cut points were revised in 1996. The subject matter experts (SMEs) who were chosen to comprise the ESL Consortium committees and work on the performance standard setting process were qualified due to their experience as ESL leaders and professionals. The large number of SMEs allowed these recommended cut points to be based on a representative body of SME input.

The cut points were set to mark the scores on the CASAS scale score range where an examinee was classified into each different skill level. The CASAS Skill Level Descriptors, which describe the ability and skills associated with these levels, were used in these studies to guide judgments. During meetings convened to address the standard setting process and determination of cut scores, the SMEs were trained on the skill level descriptors. As mentioned above, aggregate examinee data was also used to assist in facilitating discussion and determining the final policy decision for setting the cut points.

The validation of the cut points included the monitoring of aggregate student data on an annual basis to analyze trends in student performance. In 2008 CASAS conducted a formal study to evaluate the validity of the performance standards. The results of this study were used to inform CASAS policymakers of the ongoing interpretation of the cut points. This study is described in the following section.

In the mid 1990s, with the development and establishment of the National Reporting System (NRS), these CASAS scale score ranges were reviewed and modified to fit the current NRS educational functioning levels used to report the performance of learners enrolled in adult education and literacy programs supported in part by federal funding under WIA Title II. In 1996 the CASAS Skill Level Descriptors were submitted to the United States Department of Education, Office of Adult Education and are referenced in the creation of the NRS (Division of Adult Education and Literacy Office of Vocational and Adult Education U.S. Department of Education, 2010).

The validation of the cut points included the monitoring of aggregate student data on an annual basis to analyze trends in student performance. In 2008 CASAS conducted a formal study to evaluate the validity of the performance standards. The results of this study were used to inform CASAS policymakers of the ongoing interpretation of the cut points. This study is described in the following section.

On each parallel test form pairing in the *Life and Work Reading Assessment Series*, the accurate range of scale scores covering more than one NRS educational functioning level

is identified. The conditional standard error (CSEM) for all NRS cut scores is less than 5.6.

Standard Setting Cut Score Study

In February and March 2008, CASAS conducted formal performance standard setting studies as part of its process to periodically review and continuously validate all CASAS assessments. The goal was to use a test-centered judgment based standard setting procedure to re-examine and provide evidence of the relationship between CASAS scale scores and the NRS Educational Functioning Levels.

While performance level cut scores are the result of a subjective judgment process by subject matter experts (SMEs) and are impossible to prove as correct (ETS, 2004), performance level cut score validation studies provide useful information if conducted using a carefully followed procedural design with expert SMEs.

Separate performance level standard setting studies were conducted for each skill area or “modality” – reading, math, and listening. The results of the standard setting process for the reading modality are included in Tables f1-1 and f1-2. The cut scores and scale were reviewed for consistency with the reporting and analytical guidelines and standards established in the ETS Standards for Quality and Fairness (ETS, 2002).

A group of demographically diverse SMEs in adult education within each specific skill area were convened to identify the performance level descriptors and cut scores which separate each of the NRS Educational Functioning Levels. From the panelists who were invited to participate for each skill area, two similar but independent panels were formed, with different panel leaders/facilitators, so that the results from each panel could be compared for consistency.

Panels consisted of four to six adult education experts with two separate panels for each modality (reading, math, and listening). Selection of panelists was based on their individual relevant adult education expertise and their ability to devote uninterrupted time to the study. Each panel was conducted remotely over a consecutive two-day period. Panelists included experienced teachers, professional development specialists and adult education administrators from a variety of backgrounds, including the local agency level and state education departments. On the reading panel participants’ adult education experience ranged from 14 – 20 years, leading to a qualified group of SMEs. There were nine states represented in the two reading panels, seven states in the listening panels, and six states in the math panels, encompassing 15 states in all four continental US time zones (CA, CO, CT, DC, FL, IA, KS, MD, MI, MN, NC, OH, OR, RI, VA). A list of the panelists and their relevant experience is included in Table f2i-1. A survey of panelists conducted at the end of the study found that they were generally satisfied with the way that the study was conducted, including clear explanations, facilitation procedures and materials, and adequate time to process and discuss their responses.

The Bookmark standard setting method, a common technique for setting multiple performance standard setting cut points for tests that use Item Response Theory (IRT),

was chosen to allow for SMEs to identify the cut scores that they deemed appropriate for each of the NRS Functioning Levels. This method was possible and appropriate for the CASAS assessments due to the availability of extensive IRT data on each test question.

The bookmark standard setting method is displayed visually in Figures f1-1 through f1-3 (Maryland State Department of Education, 2004).

Figure f1-1 The Bookmark Standard Setting Procedure

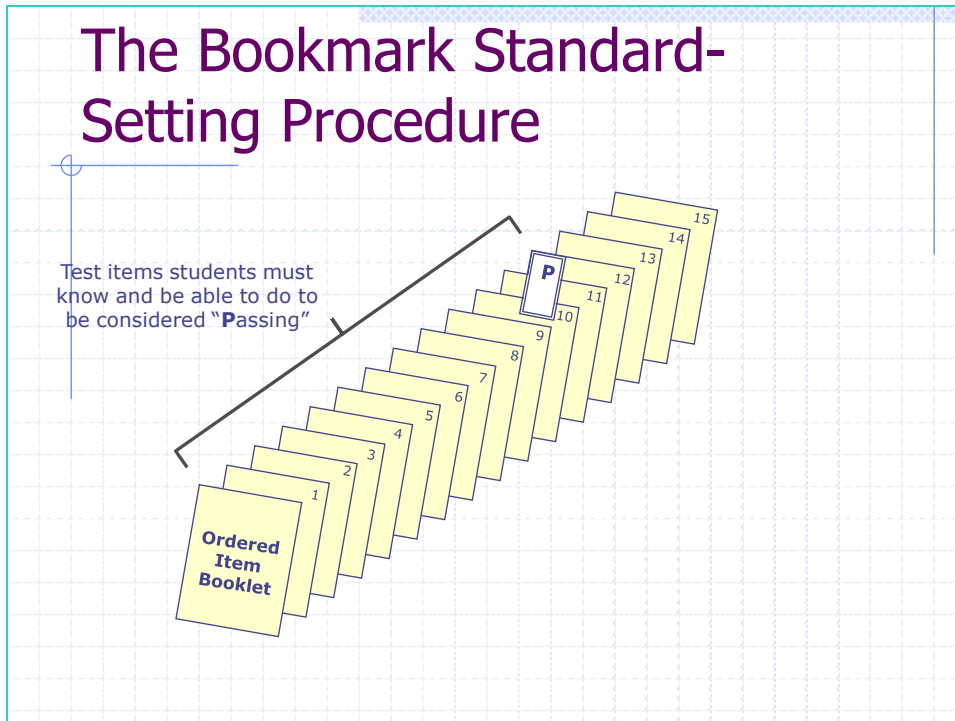


Figure f1-2 The Bookmark Standard Setting Procedure (cont.)

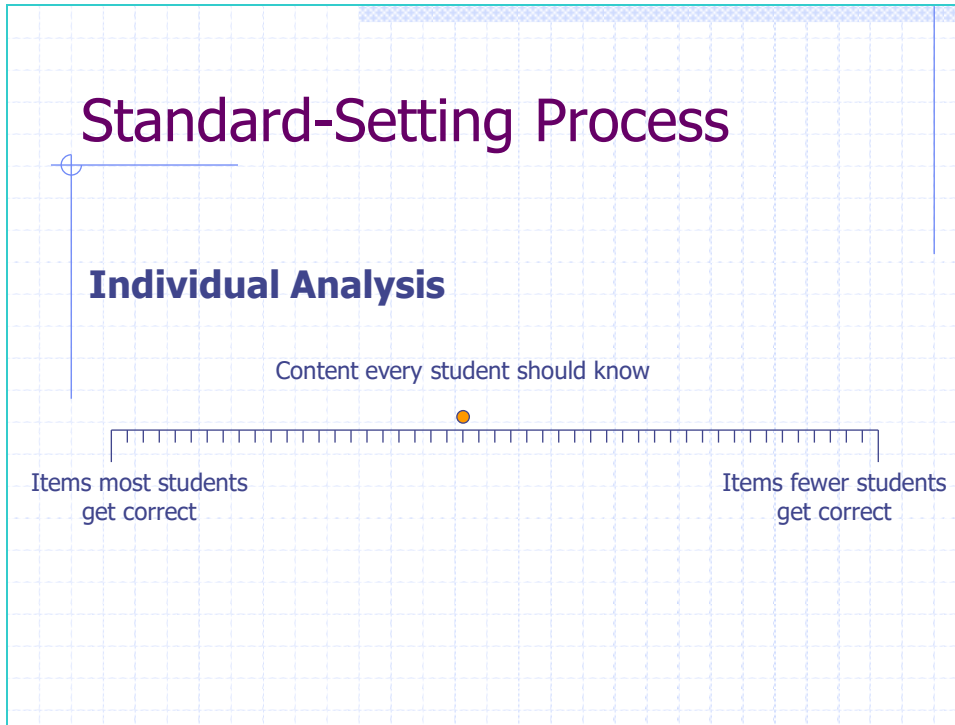
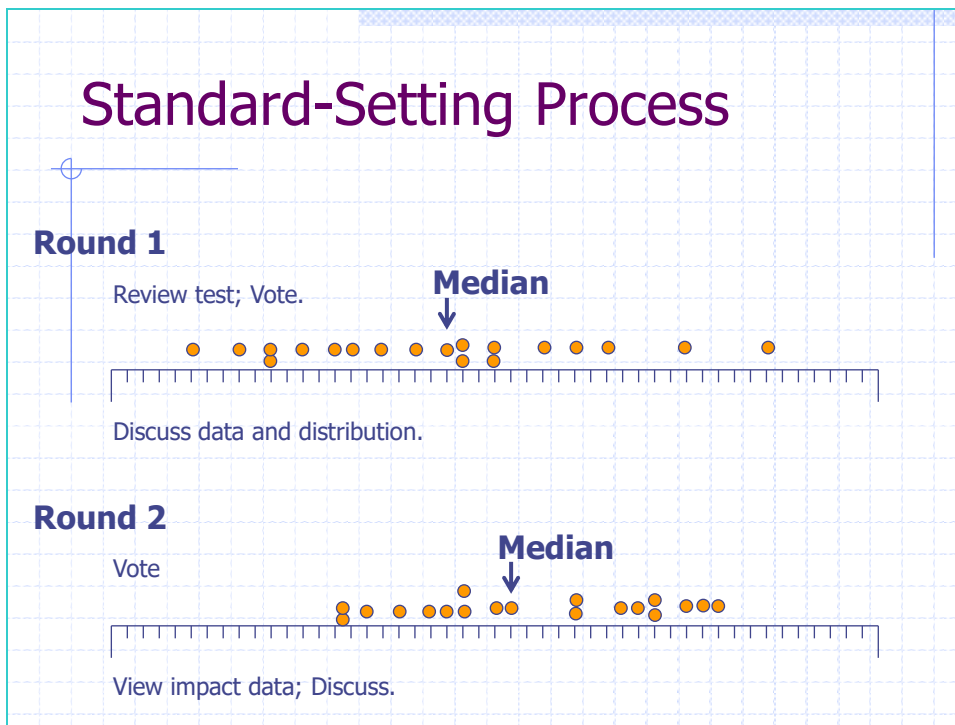


Figure f1-3 The Bookmark Standard Setting Procedure (cont.)



The implementation of the Bookmark method follows the general guidelines outlined in *A Primer on Setting Cut Scores on Tests of Educational Achievement* (ETS, 2004). Judgment experts were provided Ordered Item Booklets (OIBs) which included actual multiple-choice test items in order of difficulty from easiest to most difficult. All items in the odd-numbered parallel test forms were included from the Life and Work reading series in order to adequately represent the entire content, task areas, and difficulty range of the tests in the Life and Work reading series. Items from other Life and Work reading test forms were also included to expand the number of items at the existing CASAS defined NRS cut scores. There were a total of 385 items in the Reading OIB.

The SMEs were provided information on the content standards, performance level descriptors, a bookmark recording form and the ordered item booklets described above including item type, item directions, and the correct answer for each question, in addition to the display/prompt, stem and distractors.

The panel leader began each panel with an explanation of the purpose of the study and the bookmark standard setting procedure and process. The panel leader also led the panelists through a detailed examination of the NRS Educational Functioning Level descriptors for each level, focusing on the descriptors that were relevant for each panel's work. The Reading panel reviewed the descriptor language related to reading from the "Basic Reading and Writing" and the "Functional and Workplace Skills" columns for both ABE and ESL.

Three rounds of bookmark placements were conducted for each modality (reading, math and listening). For each judgment round, the SMEs, working individually and independently, were asked to place a bookmark between the most difficult question that borderline or minimally competent examinees would be likely to answer correctly at least 50 percent of the time, and the easiest question that they would not be likely to answer correctly at least 50 percent of the time at the border or transition between NRS Educational Functioning Levels. Thus, the Bookmark response probability or RP value for these studies was RP50. The panel members then reconvened to discuss their individual bookmark placements for each round. Feedback was provided to the SME panelists regarding the high, low and median bookmark placements.

Between the second and third rounds, the panelists were provided with impact data from three states contained in two summary tables. The first table contained the percentage of students placed in each NRS level using the current CASAS cut points for California, Oregon and Iowa, as well as aggregate data for the three states. The second table contained the percentage of students placed in each NRS level using the standard setting panel group median Round 2 bookmark recommendations if they were implemented. The panelists were then able to compare results from the two sets of performance levels (percent of examinees from existing NRS levels from three states and the percent of examinees at the NRS levels using the standard setting panel performance levels). By examining the changes in percentages of students that would be placed in each NRS level using the standard setting panel recommendations, they could see the effects or impacts of their individual and group panel median bookmark recommendations. The panelists could see if they did in fact believe, for example, that 20 percent of students should be

enrolled in Low Adult Secondary Education, as compared to 10 percent using the current NRS performance levels for the three states.

The impact data provided another perspective for panelists to consider in making adjustments to their bookmarks if they perceived important differences between their knowledge and understanding of this student population and the effects of their existing Round 2 bookmark placements. During this process, the panelists were not provided with the related CASAS scale scores. Panelists discussed the ramifications of the impact data, and then had an opportunity to revise or maintain their bookmarks for the last judgment round.

Once the panels concluded their work, the results were examined comparing the current NRS cut points and the recommendations from the two independent standard setting panels for each of the three modalities (reading, math and listening).

As a policy driven process, the results from the standard setting study were used to inform policymakers' deliberations regarding the stability and continued appropriateness of the CASAS cut scores. The results of a standard setting panel are one source of evidence that a policy body can use to inform cut score decisions (Kane, 1994; 2001). The standard setting study provides evidence for the previously established CASAS cut scores for five of the seven cut points for transitioning into NRS Levels. Beginning ESL Literacy, Low Beginning ESL, High Beginning ESL, and Low Intermediate ESL have high correspondence, and High Intermediate ESL shows high correspondence within one standard error of the panelists' recommended value. Policymakers often use standard error bands to provide additional flexibility in establishing final cut scores that consider multiple influencing factors.

Two NRS levels, Advanced ESL and Exit from Advanced ESL, show values that deviate from the historical CASAS cut scores. CASAS analyzed the results at the advanced levels and arrived at the conclusion that the differences between the panels' recommended cut scores and the CASAS cut score may be due to a limitation of the Bookmark Standard Setting method. This resulted because of the lack of individual items with Rasch Item Difficulty (RIT) values that represented the full scale range, particularly in the higher NRS levels based on the current CASAS cut scores. For example, the range of scale scores for a test series may be appropriate for measuring the NRS levels; in the case of Life and Work Listening the range is from scale scores of 170 to 248 as detailed in Tables d2-2 through d2-4 of the original submission, without having a large number of items (item density) in the Ordered Item Booklet with RITs at the top end of the scale score range. However, without measurement specificity at the upper end of the scale this makes it difficult for panel members, using the Bookmark Method, to confidently place their bookmark between test items representing the cut points separating items at the highest levels where there are few test items representing that high level. Cizek and Bunch (2007) note this fundamental weakness of the Bookmark standard setting method, "Yet one fundamental aspect of the procedure must be reckoned with each time it is employed. The cut score is absolutely bound by the relative difficulty of the test. It is this limitation that future research on the Bookmark method must address."

Therefore, the cut score recommendations arrived at by the panels at the highest level are not as clear as those at other levels. Based on this limitation CASAS determined that the results of the study at the highest levels, while informative, may possibly be emphasizing the limitations of the Bookmark method at these levels and the need for alternative research studies to continue to study the cut points at the highest levels. Studies presented in Item h, such as the Work Keys study, indicate that the current cut scores at the advanced levels are appropriate and should remain at their current cut points. In addition, the strong amount of confirming evidence from multiple sources to set the original cut scores (see the section above) and the CASAS executive and test development department desire to maintain the rigorous standards developed through National Consortium policy justified maintaining current NRS cut points for the Life and Work Listening Assessments.

Because of the known limitation of the Bookmark method at the advanced levels, CASAS has planned a series of research studies to more thoroughly analyze the cut points at these levels. First, CASAS plans to look specifically at a group of students that have tested into the highest NRS levels or out of the program and use this group to conduct a teacher evaluation validity and CASAS assessment classification study. Teachers will be asked, based on their knowledge of each student's ability, if that student is functioning at the NRS level that they tested into using the CASAS Life and Work Reading Assessment. This is the same procedure that was used in the Teacher Evaluation Study that is presented in Item h2. It is important to note that in this previous teacher evaluation classification validity study that the highest degree of exact agreement between teacher evaluation and performance on the Life and Work Reading Assessment was at NRS Level 6- Low Advanced ESL.

A second method will be to compare the performance on the Life and Work Reading Assessments to performance on other assessments such as the GED and the CAHSEE for students functioning at the highest NRS Educational Functioning Levels.

A third method that CASAS has discussed to improve the usefulness of the Bookmark Method at the highest levels, is to add reading items of greater difficulty at the upper end of the Ordered Item Booklet so that the SMEs have sufficient items to work with when making decisions regarding cut points at these high performance levels.

CASAS reviewed the panels' recommendations in the light of other research and policy considerations. Based on the panel's comments, the limitations of the Bookmark study at the highest levels, and other studies (see Section h), CASAS determined that the original cut points were valid and appropriate.

Item f2 – The standard error of each cut score, and how it was established

Table f2-1 shows the CASAS relationship to NRS educational functioning levels for ESL. For example, an ESL student who scores 206 on a Life and Work Reading test is classified into CASAS level B and NRS Low Intermediate ESL. See Tables f2-2 through f2-7 for the conditional standard error of measurement (CSEM) for each CASAS cut scale score

corresponding to the NRS educational functioning levels for ABE and ASE. These CSEMs were arrived at during the calibration process and were calculated using Winsteps[®].

Table f2-1 Relationship of CASAS levels to NRS for ABE and ASE

NRS Educational functioning levels		CASAS Level	Reading Scale Score Ranges
1	Beginning ABE Literacy	A	200 and below
2	Beginning Basic Education	B	201-210
3	Low Intermediate Basic Education	B	211-220
4	High Intermediate Basic Education	C	221-235
5	Low Adult Secondary Education	D	236-245
6	High Adult Secondary Education	E	246 and above

Tables f2-2 through f2-7 provides the conditional standard error (CSEM) for each Life and Work Reading scale score that is a cut point for an ABE and ASE NRS educational functioning level by form. For example, if an examinee is administered Form 185 and achieves a scale score of 220, the cut score associated between CASAS levels B and C and NRS educational functioning levels Low Intermediate Basic Education and High Intermediate Basic Education, the CSEM is 3.5. This means that at the 68 percent confidence level the true scale score at a scale score of 200 falls within the range of 216.5 and 223.5. The recommended scale score range for each form is highlighted. This range corresponds to scores with a CSEM less than 5.6.

Table f2-2 Life and Work Reading Forms – CASAS NRS Functional Instructional Cut Score Points and CSEM for ABE and ASE Level Pre-A

		Level Pre-A							
		Form 310		Form 311		Form 27R		Form 28R	
NRS Scale Score Cut Points		Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM
Beginning ABE Literacy	180	181	4.0	180	4.1	181	4.3	180	4.2
	190	190	4.4	189	4.3	189	4.9	189	4.9
	200								
Beginning Basic Education	210								
Low Intermediate Basic Education	220								
High Intermediate Basic	235								
Low Adult Secondary Education	245								
High Adult Secondary Education	246+								

Table f2-3 Life and Work Reading Forms – CASAS NRS Functional Instructional Cut Score Points and CSEM for ABE and ASE Level A

		Level A							
		Form 81R		Form 82R		Form 81RX		Form 82RX	
	NRS Scale Score Cut Points	Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM
Beginning ABE Literacy	180	180	4.6	180	4.7	182	5.2	182	5.1
	190	189	4.6	189	4.5	190	4.3	190	4.3
	200	200	5.1	200	5.1	199	4.1	201	4.1
Beginning Basic Education	210					210	4.5	210	4.5
Low Intermediate Basic Education	220								
High Intermediate Basic	235								
Low Adult Secondary Education	245								
High Adult Secondary Education	246+								

Table f2-4 Life and Work Reading Forms – CASAS NRS Functional Instructional Cut Score Points and CSEM for ABE and ASE Level A

		Level A							
		Form 951		Form 952		Form 951X		Form 952X	
	NRS Scale Score Cut Points	Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM
Beginning ABE Literacy	180	180	4.8	180	4.8				
	190	189	4.5	189	4.5	191	4.7	190	4.7
	200	199	4.7	199	4.7	200	4.2	200	4.2
Beginning Basic Education	210					209	4.3	209	4.3
Low Intermediate Basic Education	220					220	5.5	220	5.5
High Intermediate Basic	235								
Low Adult Secondary Education	245								
High Adult Secondary Education	246+								

Table f2-5 Life and Work Reading Forms--CASAS NRS Functional Instructional Cut Score Points and CSEM for ABE and ASE Level B

		Level B			
		Form 83R		Form 84R	
	NRS Scale Score Cut Points	Scale Score	CSEM	Scale Score	CSEM
	180				
Beginning ABE Literacy	190	191	4.7	191	4.7
	200	199	4.0	199	4.0
Beginning Basic Education	210	210	3.8	210	3.8
Low Intermediate Basic Education	220	220	4.3	220	4.3
High Intermediate Basic	235				
Low Adult Secondary Education	245				
High Adult Secondary Education	246+				

Table f2-6 Life and Work Reading Forms -- CASAS NRS Functional Instructional Cut Score Points and CSEM for ABE and ASE Level C

			Level C							
			Form 85R		Form 86R		Form 185R		Form 186R	
	NRS Scale Score Cut Points		Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM
Beginning ABE Literacy	200		200	5.4	200	5.4	200	5.0	200	5.0
Beginning Basic Education	210		210	4.0	210	4.0	211	3.8	209	3.9
Low Intermediate Basic Education	220		220	3.5	220	3.5	220	3.5	220	3.5
High Intermediate Basic Education	235		235	4.0	235	4.0	235	4.1	235	4.1
Low Adult Secondary Education	245									
High Adult Secondary Education	246+									

Table f2-7 Life and Work Reading Forms -- CASAS NRS Functional Instructional Cut Score Points and CSEM for ABE and ASE Level D

			Level D							
			Form 187R		Form 188R		Form 513R		Form 514R	
	NRS Scale Score Cut Points		Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM
Beginning ABE Literacy	200									
Beginning Basic Education	210									
Low Intermediate Basic Education	220		220	4.4	220	4.4	219	3.8	220	3.8
High Intermediate Basic Education	235		234	3.7	234	3.8	235	3.4	235	3.4
Low Adult Secondary Education	245		245	4.1	245	4.2	245	3.9	245	3.9
High Adult Secondary Education	246+									

The following chart shows the CASAS relationship to NRS educational functioning levels for ESL. For example, an ESL student who scores 217 on a Life and Work Reading test is classified into CASAS level B and NRS High Intermediate ESL. See Tables f2-9 through f2-14 for the conditional standard error of measurement (CSEM) for each CASAS cut scale score corresponding to the NRS educational functioning levels for ESL. These CSEMs were arrived at during the calibration process and were calculated using Winsteps® and are therefore distinct from the standard errors reported in Table f2ii-1 which are based on the results from the standard setting panel.

Table f2-8 Relationship of CASAS levels to NRS for ESL

NRS Educational functioning levels		CASAS Level	Reading Scale Score Ranges
1	Beginning ESL Literacy	A	180 and below
2	Low Beginning ESL	A	181-190
3	High Beginning ESL	A	191-200
4	Low Intermediate ESL	B	201-210
5	High Intermediate ESL	B	211-220
6	Low Advanced ESL	C	221-235

For a description of the calibration process and calculating scale scores, please refer to Item d2.

Tables f2-9 through f2-14 provides the CSEM for each Life and Work Reading scale score that is a cut point for an ESL NRS educational functioning level by form. For example, if an examinee is administered Form 185 and achieves a scale score of 220, the cut score associated between CASAS levels B and C and NRS educational functioning level High Intermediate ESL and Low Advanced ESL, the CSEM is 3.5. This means that at the 68 percent confidence level the true scale score at a scale score of 220 falls within the range of 216.5 and 223.5. The recommended scale score range for each form is highlighted. This range corresponds to scores with a CSEM less than 5.6.

Table f2-9 Life and Work Reading Forms--CASAS NRS Functional Instructional Cut Score Points and CSEM for ESL Level Pre-A

		Level Pre-A							
		Form 310		Form 311		Form 27R		Form 28R	
	NRS Scale Score Cut Points	Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM
Beginning ESL Literacy	180	181	4.0	180	4.1	181	4.3	180	4.2
Low Beginning ESL	190	190	4.4	189	4.3	189	4.9	189	4.9
High Beginning ESL	200								
Low Intermediate ESL	210								
High Intermediate ESL	220								
Advanced ESL	235								

Table f2-10 Life and Work Reading Forms--CASAS NRS Functional Instructional Cut Score Points and CSEM for ESL Level A

		Level A							
		Form 81R		Form 82R		Form 81RX		Form 82RX	
	NRS Scale Score Cut Points	Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM
Beginning ESL Literacy	180	180	4.6	180	4.7	182	5.2	182	5.1
Low Beginning ESL	190	189	4.6	189	4.5	190	4.3	190	4.3
High Beginning ESL	200	200	5.1	200	5.1	199	4.1	201	4.1
Low Intermediate ESL	210					210	4.5	210	4.5
High Intermediate ESL	220								
Advanced ESL	235								

Table f2-11 Life and Work Reading Forms--CASAS NRS Functional Instructional Cut Score Points and CSEM for ESL Level A

		Level A							
		Form 951		Form 952		Form 951X		Form 952X	
	NRS Scale Score Cut Points	Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM
Beginning ESL Literacy	180	180	4.8	180	4.8				
Low Beginning ESL	190	189	4.5	189	4.5	188	4.9	188	4.9
High Beginning ESL	200	199	4.7	199	4.7	200	4.2	200	4.2
Low Intermediate ESL	210					209	4.3	209	4.3
High Intermediate ESL	220					220	5.5	220	5.5
Advanced ESL	235								

Table f2-12 Life and Work Reading Forms--CASAS NRS Functional Instructional Cut Score Points and CSEM for ESL Level B

		Level B			
		Form 83R		Form 84R	
	NRS Scale Score Cut Points	Scale Score	CSEM	Scale Score	CSEM
Beginning ESL Literacy	180				
Low Beginning ESL	190	191	4.7	191	4.7
High Beginning ESL	200	199	4.0	199	4.0
Low Intermediate ESL	210	210	3.8	210	3.8
High Intermediate ESL	220	220	4.3	220	4.3
Advanced ESL	235				

Table f2-13 Life and Work Reading Forms -- CASAS NRS Functional Instructional Cut Score Points and CSEM for ESL Level C

		Level C							
		Form 85R		Form 86R		Form 185R		Form 186R	
	NRS Scale Score Cut Points	Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM
Beginning ESL Literacy	180								
Low Beginning ESL	190								
High Beginning ESL	200	200	5.4	200	5.4	200	5.0	200	5.0
Low Intermediate ESL	210	210	4.0	210	4.0	211	3.8	209	3.9
High Intermediate ESL	220	220	3.5	220	3.5	220	3.5	220	3.5
Advanced ESL	235	235	4.0	235	4.0	235	4.1	235	4.1

Table f2-14 Life and Work Reading Forms -- CASAS NRS Functional Instructional Cut Score Points and CSEM for ESL Level D

		Level D							
		Form 187R		Form 188R		Form 513R		Form 514R	
	NRS Scale Score Cut Points	Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM	Scale Score	CSEM
Beginning ESL Literacy	180								
Low Beginning ESL	190								
High Beginning ESL	200								
Low Intermediate ESL	210								
High Intermediate ESL	220	220	4.4	220	4.4	219	3.8	220	3.8
Advanced ESL	235	234	3.7	234	3.8	235	3.4	235	3.4

(g) Reliability. Documentation of the degree of consistency in performance across different forms of the test in the absence of any external interventions

Item g1 – The correlation between raw (or scale) scores across alternate forms of the test or, in the case of computerized adaptive tests, across alternate administrations of the test

Parallel Form Reliability Analysis

The parallel forms that comprise the Life and Work Reading Assessments are constructed so that the two forms can be used independently of each other and are considered equivalent measures. The items within the parallel forms contain comparable content to reflect the same construct. Examinees with similar ability taking the parallel forms of the tests should show comparable performance. Examinees who tested with the parallel forms at maximum interval of 15 days and scoring within the accurate range of each test form are included in the analysis. The amount of instruction received within the fifteen-day interval between and first and the second test is unknown.

The correlations listed in Table g1-1 are estimates of parallel reliability of scores between the two alternative forms taken by the same examinees. The data below shows the correlations of scores across alternate forms of the test in the Life and Work Reading Assessments. The overall test score correlation of the 2,256 examinees who tested with the parallel forms are .81 i.e. 66 percent of the variation in performance on one parallel form of the test can be accounted for by scores on the other parallel form of the test. Nearly 91 percent of the 2,256 examinees had a test score correlation of .89 excluding outliers.

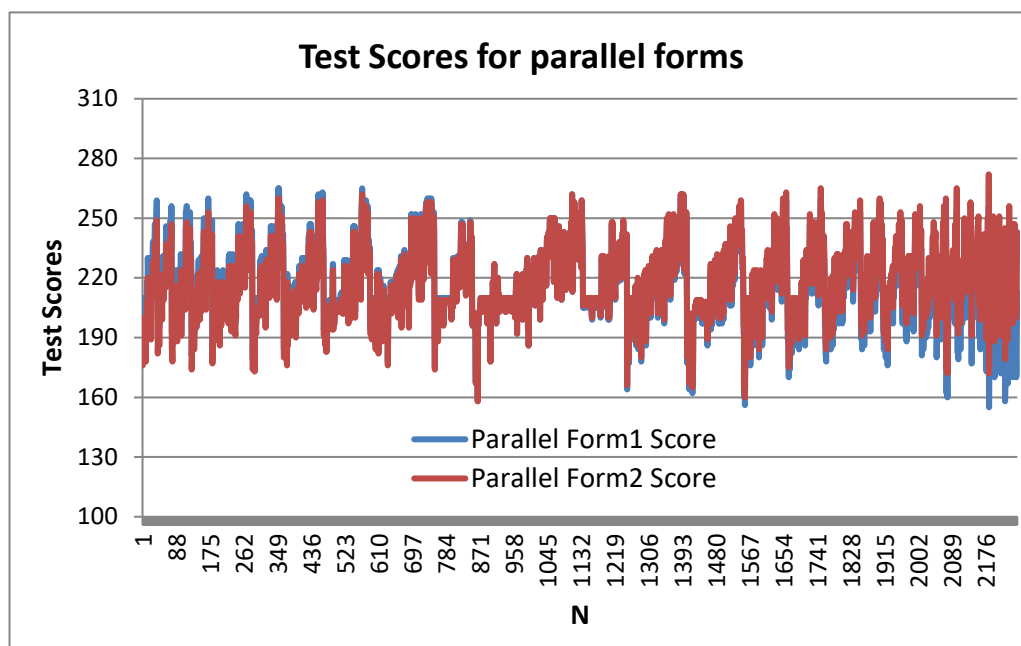
Table g1-1 Correlations between Parallel Forms

Reading Level	Parallel Forms	Correlation	
		All Examinees	Excluding Outliers
Beginning Literacy	27R-28R	0.84	0.92
CASAS Level A	81R-82R	0.72	0.81
CASAS Level A Extended	81RX-82RX	0.74	0.86
CASAS Level B	83R-84R	0.80	0.88
CASAS Level C	85R-86R	0.86	0.92
CASAS Level C	185R-186R	0.80	0.88
CASAS Level D	187R-188R	0.78	0.88
CASAS Level D	513R-514R	0.78	0.88
All Data		0.81	0.89

Note. The correlation calculation excluding outliers removed a total of 9.3 percent of the examinees with a range of 6.4 percent to 14.3 percent across the reading levels.

Figure g1-1 shows the examinees' score on the parallel form1 in comparison to form2.

Figure g1-1 Graphical Representation of Scores on Parallel Forms



Mode of Administration Analysis – PPT and CBT

The Life and Work Reading series of tests were transferred from paper and pencil (PPT) to computer-based delivery to offer a more convenient and efficient option for test administration. Among the advantages of a computer-based test (CBT) over PPT are the following:

- score results are available immediately,
- errors associated with bubbling are eliminated,
- effort to administer tests is greatly reduced,
- scoring errors are reduced and
- test security is improved.

Since the CBT version of the Life and Work Reading tests was designed to be no more than a different mode of delivery, every effort was made to ensure comparability. The initial concern of comparability is that of a potential mode effect (APA, 1986). Numerous studies have compared the test scores of PPT versus CBT to determine their effect. Reviews of many of these studies were conducted by Mazzeo and Harvey (1988) and by Mead and Drasgow (1993). The overall results of these reviews of comparability suggested that the test administration mode did not result in significant differences in test score for most tests. However, some items and item types did produce mode differences.

The potential for a mode effect in the transition from PPT to CBT was recognized and deliberately minimized in the design of the Life and Work Reading tests. Item displays were produced with near

perfect fidelity by making screenshots from the source file Microsoft Word™ documents. In the vast majority of cases the display fit in the available CBT screen space and thus no size changes were made. Some items were slightly reduced in size in order to fit the available screen size while other items were increased in size. In all cases, the resizing was judged to be appropriate for consistent computer screen legibility. A total of 15 out of 382 items (3.9 percent) required vertical scrolling in order for the entire display to be viewed. See Table g1-2 below.

Scrolling was generally avoided at the A and B levels where students were judged by the development team to likely have less facility with scrolling. Stems and item responses the PPT tests used Times New Roman 12 for the font. However, in the transition to CBT, this font was deemed less legible on computer screen so all stems and item responses were uniformly changed to Arial 14.

Another concern of comparability of delivery modes is that of students' familiarity with computers. In response to these potential concerns, the CBT software includes a tutorial about how to use the computer for the test and also administers a practice test of six items. This allows students with little to no computer experience to practice using the mouse and navigating through the test prior to live administration. The test is also designed so that it can be operated exclusively from the keyboard as an alternative to using the mouse.

Table g1-2 Changes to Displays within the Life and Work Reading Series

Level	Form	# of items	Scroll bar	Other changes to display
A	81R	24	no	5,6,7,15,16,17,18,24 – colored 12 - enlarged
A	82R	24	no	3,15,17,18,24 - colored 3 - added new photo
AX	81RX	28	no	1,2,3,4,7,11,16,17,27,28 - colored 7 - added new photo 8,9 - new image, removed white space to fit on screen 14-15 - new, sharper image, redrawn for computer 18 - replaced shadow with gray frame
AX	82RX	28	23,24 vertical	2,3,7,8,19,20,21,22,23,24,27,28 - colored 6 - replaced dotted outline 9 - redesigned
B	83R	32	5,6 vertical	none
B	84R	32	22,23 vertical	24,25 - colored 29,30 - reduced to fit on screen 24,25 - enlarged
C	85R	37	16,17,18 vertical	5,6,7,19,20,21 - colored 13,14,15,36,37 - enlarged picture 28,29,30 - fix control box picture 34,35 - phone picture larger
C	86R	37	23,24,25 vertical	8,9,10,11,12,13,32,33 - colored 3,4,5,8,9,10,14,15,16,36,37 - enlarged 11,20,22 - reformat text to fit on fewer lines
C	185R	38	no	4,7,8,11,12,15,22,23 - colored
C	186R	38	32,35,36 vertical	6,7,9,10,15,16,30,31 - colored
D	187R	32	no	29,32 - colored
D	188R	32	no	8,13 - colored background

Comparability Analysis – Test-Retest with Different Modes (CBT and PPT)

Beyond the design features described above, CASAS also conducted comparability analyses between tests administered via computer (CBT) and the more traditional paper and pencil test booklets (PPT). The logistics of many adult education programs that use CASAS tests requires assessments to be delivered both via computer and paper and pencil. To analyze the comparability of the two delivery modes, samples of students across all CASAS assessment series and spanning all NRS Educational Functioning Levels were administered two tests – one via CBT and another via PPT – on back-to-back days. The order of administration was alternated among testing groups to counterbalance the potential practice effect of taking the same tests over a short interval. The students were convened to take an appropriate CASAS test based on their NRS Educational Functioning Level. On day one, half of the group took the PPT version of the test and the other half took the CBT version of the test. The following day the examinees were reconvened and were administered the tests again using the alternate delivery mode – those who were tested with the PPT on day one received the CBT version on day two and vice versa. Adult schools from California, Connecticut and Florida participated in the study.

Students functioning at different NRS Levels took part in the study. Students included in this study collectively form a representative sample of the intended population such that the results can be generalized to that larger population. See Table g1-3.

Table g1-3 CBT and PPT Comparability Analysis Participants by NRS Level

CASAS Scale Score Range	NRS Functional Level	Number of Students
Less than 200	ABE Beg Lit, ESL Beg Lit, ESL Low Beg, ESL High Beg	78
201-210	ABE Beg Basic, ESL Intermediate Low	113
211-220	ABE Intermediate Low, ESL Intermediate High	129
221-235	ABE Intermediate High, ESL Advanced	249
236-245	ASE Low	83
246 and above	ASE High	29

Results show that both delivery modes produced similar mean scale scores, standard deviations, and rank ordering of scores for select forms of the tests that were included in these studies. The data, including correlations shown in Table g1-4 provides an estimate of the reliability of scores from the same forms administered to the same student via computer and paper and pencil. The correlations are statistically significant for all the forms in the table at the 0.01 level (2-tailed). The average scores for both CBT and PPT were also very similar with further analysis of these data described in Tables g1-4 and g1-5.

Results show that both delivery modes produced similar mean scale scores, standard deviations, and rank ordering of scores for select forms of the tests that were included in these studies. The data, including correlations shown in Table g1-4 provides an estimate of the score comparability, score standard deviation, and score reliability from the same forms administered to the same student via computer and paper and pencil. The correlations range from 0.83 to 0.94 for the different reading forms. The correlations are significant at the 0.00 and 0.01 levels (2-tailed). The scores and standard deviations for both CBT and PPT were also very similar with further analysis of these data described below.

Table g1-4 Correlation between CBT and PPT Administrations

Reading Form	No. of Items	N	Mean Scale Score		Standard Deviation		Correlation	Correlation Significant
			CBT	PPT	CBT	PPT		
81RX	28	32	210.3	210.6	10.72	11.60	0.93	0.00
83R	32	40	212.7	212.5	11.23	12.85	0.89	0.01
85R	37	51	224.4	225.5	8.91	8.24	0.87	0.01
185R	38	39	228.1	227.1	7.27	7.00	0.83	0.01
187R	32	42	241.5	241.9	8.57	8.67	0.84	0.01
513R	40	47	240.8	240.7	10.24	10.72	0.94	0.01

Note. Forms with less than an N of 25 students who took the test twice in CBT and PPT are not reported in this study.

Table g1-5 shows results from paired samples t-test calculations that compare the mean scale score obtained from the CBT and PPT tests both administered to a single group of students at different times. The paired samples t-test can be used to evaluate whether two means are different from each other when the two samples that the means are based on were taken from the matched individuals or the same individuals. According to the result of these t-tests the mean scaled score between the two modes of administrations were not statistically significant ($p \geq 0.05$) suggesting that scores observed on PPT and CBT were not different. These results provide evidence of the comparability of interpreting scores on both modes.

Table g1-5 Paired-Samples T Test on CBT and PPT Administrations

Reading Form	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
	Lower	Upper			
81RX	-1.86	1.17	-0.46	31	0.65
83R	-1.67	2.07	0.22	39	0.83
85R	-2.83	-0.31	-2.07	50	0.07
185R	-0.29	2.44	1.60	38	0.12
187R	-1.88	1.15	-0.49	40	0.63
513R	-0.97	1.14	0.16	46	0.87

Figures g1-2 through g1-7 show the score distribution between the CBT and PPT administration of the same forms.

Figure g1-2 Score Distribution between CBT and PPT – Form 81RX

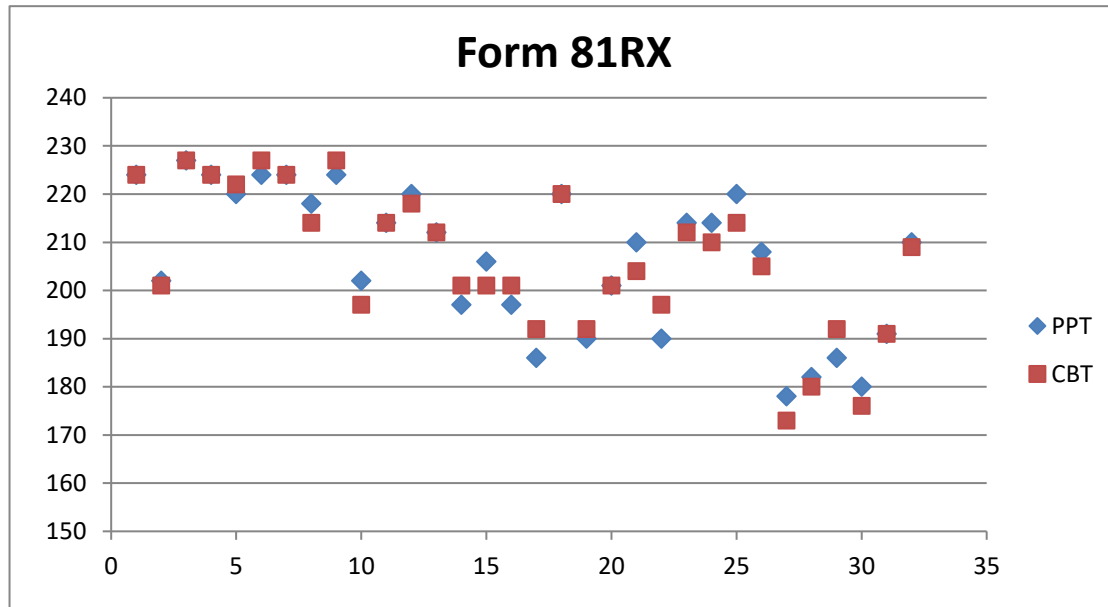


Figure g1-3 Score Distribution between CBT and PPT – Form 83R

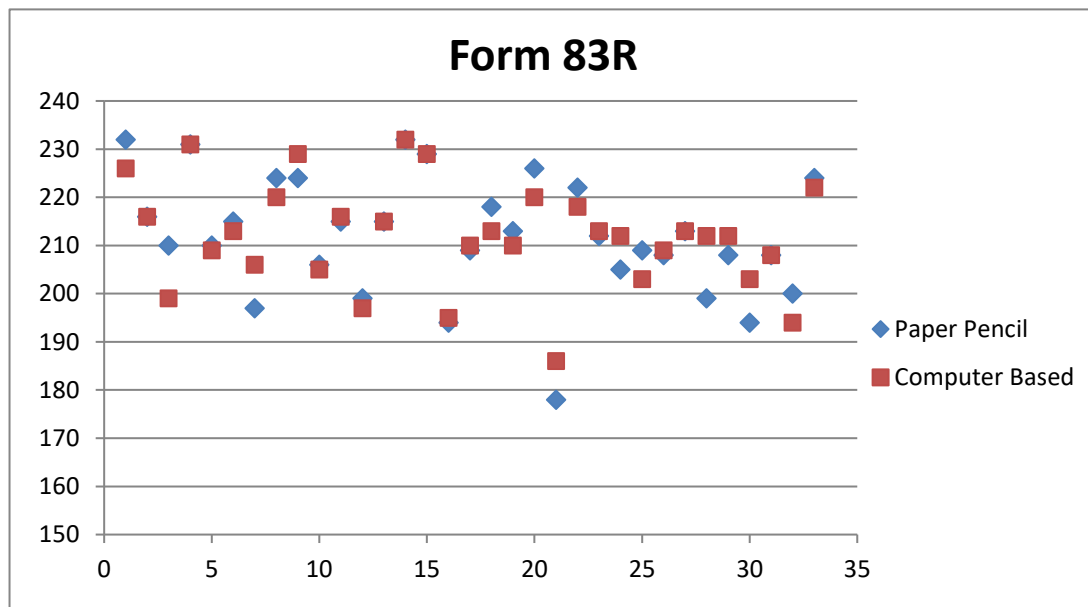


Figure g1-4 Score Distribution between CBT and PPT – Form 85R

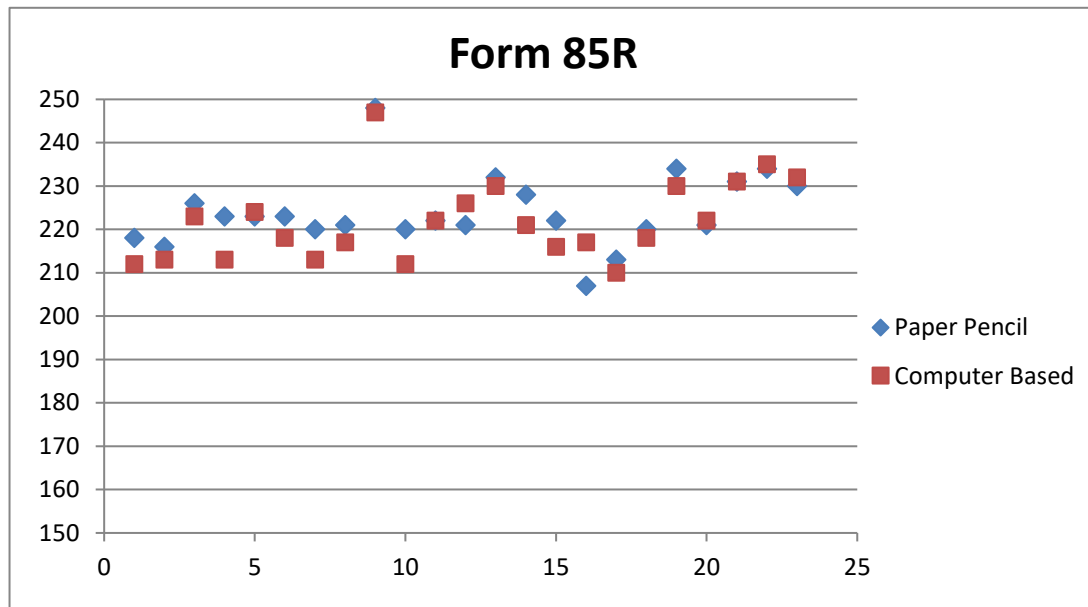


Figure g1-5 Score Distribution between CBT and PPT – Form 185R

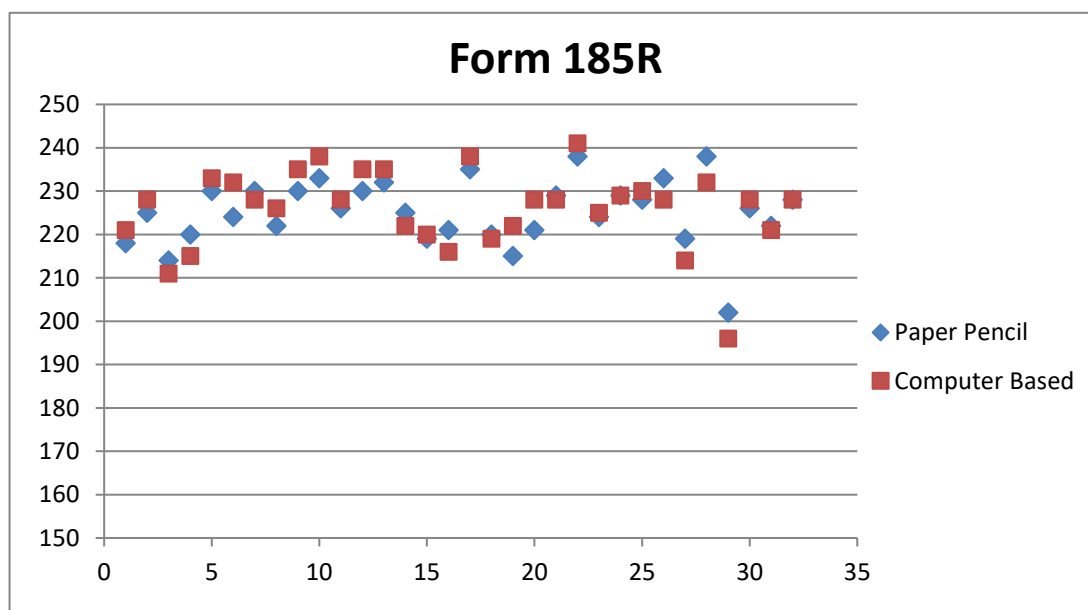


Figure g1-6 Score Distribution between CBT and PPT – Form 187R

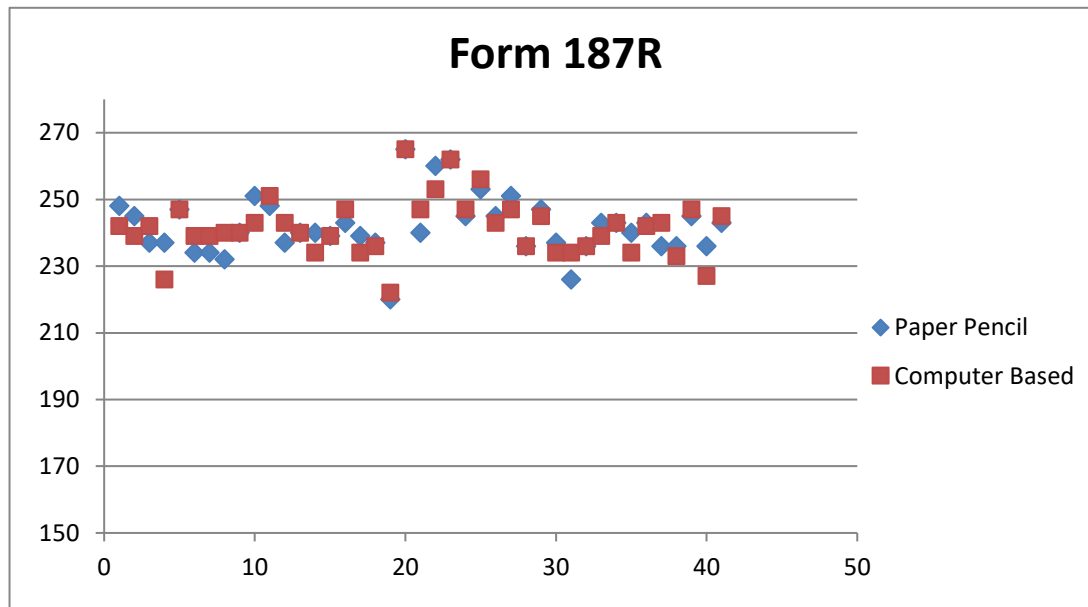
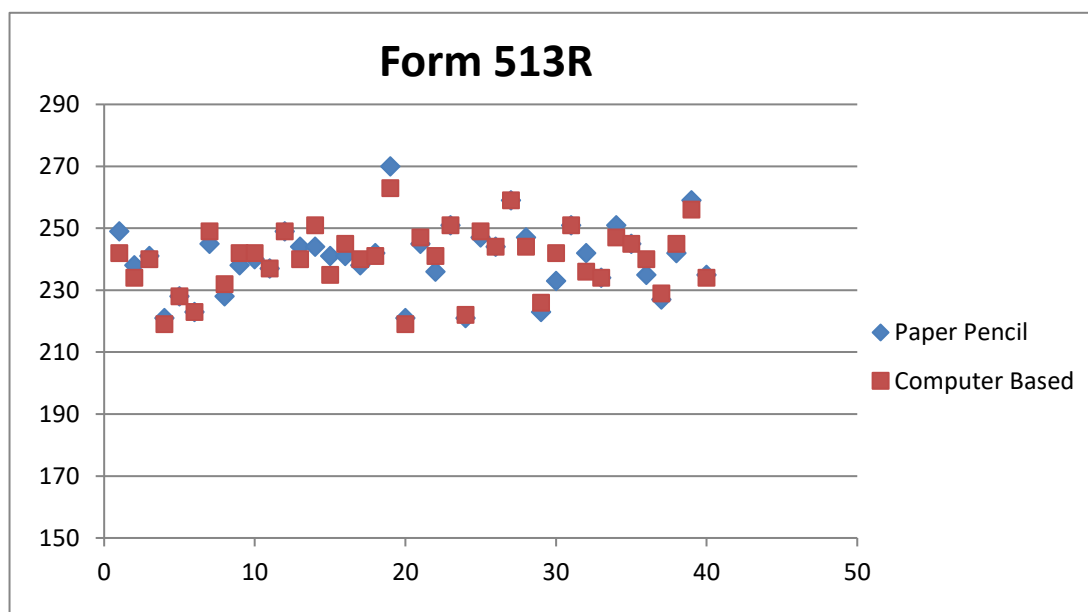


Figure g1-7 Score Distribution between CBT and PPT – Form 513R



In addition to evaluating the difference of the means and score distributions we also analyzed the descriptive information that is available through classical test theory. Table g1-6 shows the results of these analyses. It is important to note that the standard errors of measurement (SEM) between modes

of administration were very similar. Other diagnostic measures of item quality (e.g., item difficulty, item discrimination) were also similar for both CBT and PPT modes.

Table g1-6 CBT and PPT Comparability Statistics

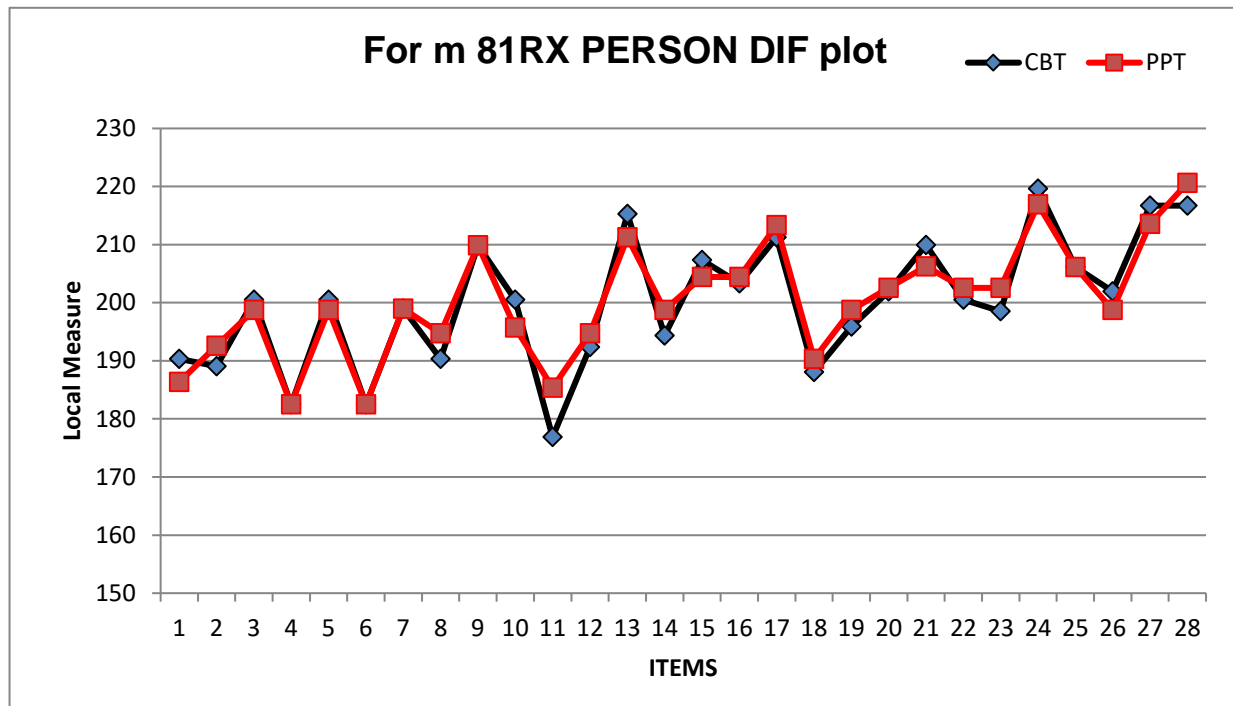
Reading Forms Descriptive Statistics	Read 81RX		Read 83R		Read 85R	
	CBT	PPT	CBT	PPT	CBT	PPT
Alpha	0.85	0.93	0.87	0.91	0.83	0.83
SEM	2.05	2.02	2.42	2.37	2.72	2.75
Mean P	0.71	0.65	0.60	0.59	0.51	0.53
Mean Item-Tot.	0.45	0.58	0.45	0.51	0.37	0.37
Mean Biserial	0.62	0.77	0.59	0.66	0.48	0.48
Max Score (Low)	15	11	15	14	14	15
N (Low Group)	13	10	11	11	15	17
Min Score (High)	24	24	23	24	23	24
N (High Group)	13	12	12	12	17	18

Reading Forms Descriptive Statistics	Read 185R		Read 187R		Read 513R	
	CBT	PPT	CBT	PPT	CBT	PPT
Alpha	0.88	0.87	0.77	0.87	0.88	0.89
SEM	2.52	2.61	2.38	2.34	2.61	2.63
Mean P	0.58	0.56	0.64	0.62	0.66	0.64
Mean Item-Tot.	0.43	0.43	0.35	0.45	0.42	0.45
Mean Biserial	0.59	0.58	0.48	0.60	0.57	0.60
Max Score (Low)	18	17	17	17	22	21
N (Low Group)	11	14	12	13	14	15
Min Score (High)	27	26	23	23	32	31
N (High Group)	13	18	13	15	14	18

Comparability Analysis – All CBT and PPT Administrations

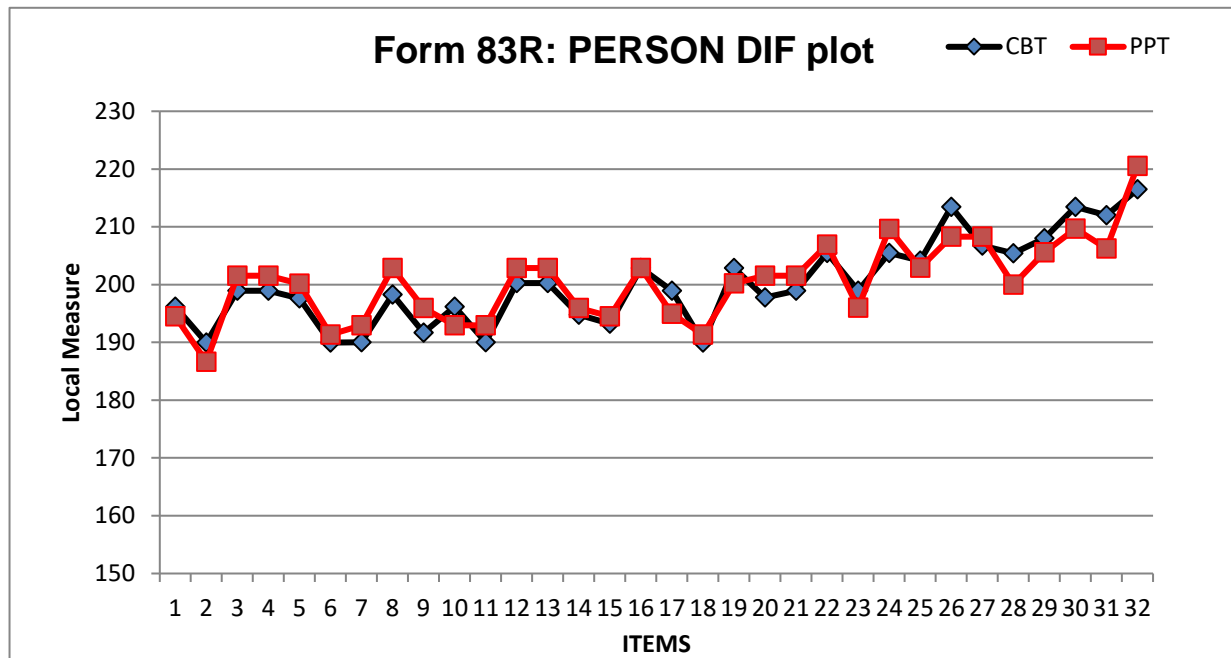
To further evaluate the comparability between administration modes across these selected test forms, we conducted one additional series of analyses. Because classical test theory statistics are sample dependent, this second level of analyses occurs at the item level and relies on item response theory (IRT) principles to control for different abilities. Using IRT, specifically the Rasch model, differential item functioning (DIF) analyses were conducted between the CBT and PPT as the reference and focal groups respectively. Data for DIF analysis is run in the Winsteps[®] software. Figures g1-8 through g1-13 show the results of the DIF analysis. Item parameters for the forms are compared on the logit scale based on 10 and a mean of 200. For all forms there were some items that scaled to be slightly easier for CBT and some that scaled to be slightly easier for PPT. Many of the items had almost identical parameter estimates. From these charts it appears that there are no systematic shifts in item difficulty from CBT and PPT. A brief description of the findings from each analysis is included after each chart.

Figure g1-8 CBT and PPT DIF Analysis – Form 81RX



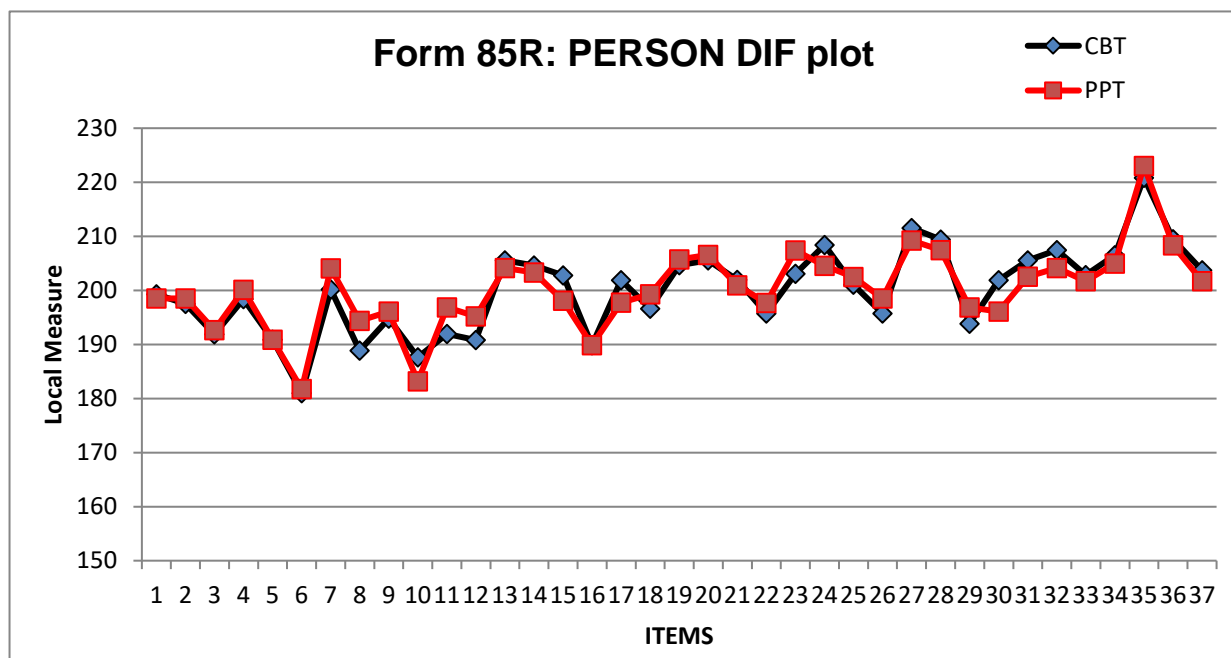
On the reading form 81RX (Figure g1-8), items 3 through 7, 9, 12, 15 through 20, 22, 24, and 25 had almost identical parameter estimates. Items 2, 8, 14, 23 and 28 scaled to be slightly easier in CBT than in PPT. Items 1, 10, 13, 21, 26 and 27 were easier in PPT than in CBT. Evaluating these graphical illustrations also serve as a flag to highlight where additional exploration may be needed. For example, Item 11 shifted to be half a logit easier in CBT than PPT. It also suggests the need to look at the current characteristics of this item (e.g., difficulty, discrimination) to ensure that it continues to meet the empirical review criteria necessary for inclusion in the pool or on a form of the assessment. Items that were identified for review in subsequent analyses would also be subject to the same scrutiny.

Figure g1-9 CBT and PPT DIF Analysis – Form 83R



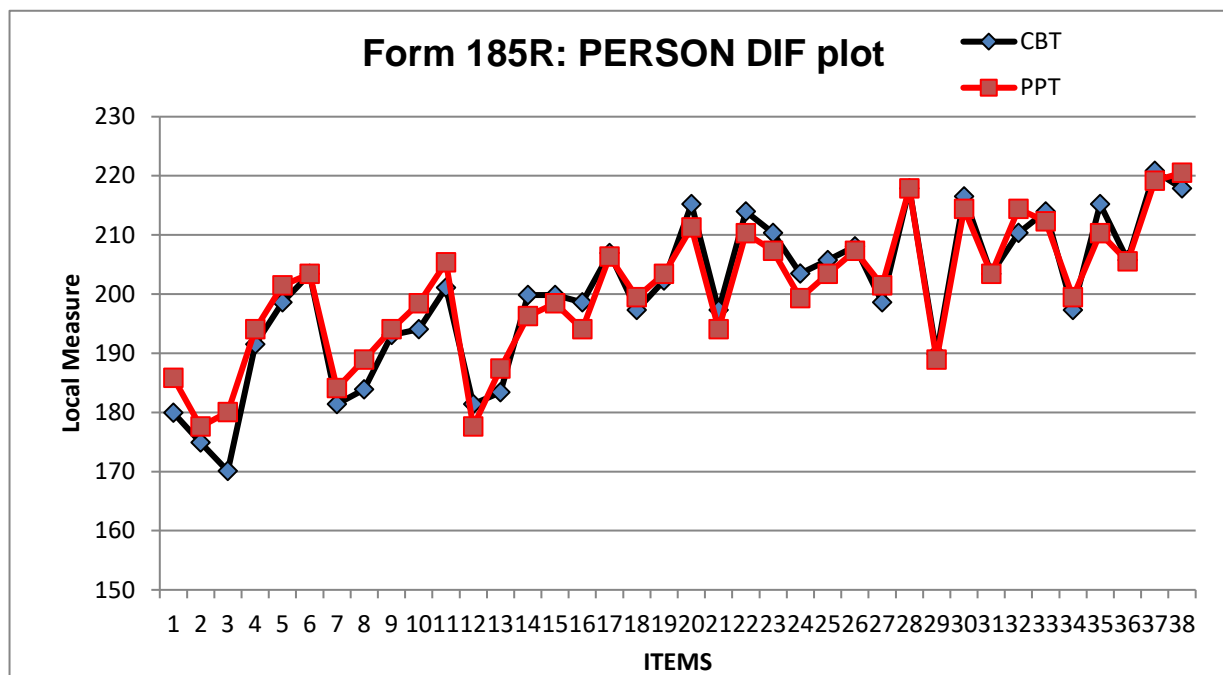
On Form 83R (Figure g1-9), items 1, 6, 14-16, 18, 22, 25, and 27 had almost identical parameter estimates. Items 3-5, 7, 11-13, 20, 21 and 32 scaled to be slightly easier in CBT than in PPT. Items 2, 10, 17, 19, 23, 29 and 30 were easier in PPT than in CBT. Item 28 and 31 shifted to be half a logit (.34) easier in PPT than CBT and item 8 shifted to be half a logit easier in CBT than PPT. Items that were significantly more easy or difficult were identified for additional review.

Figure g1-10 CBT and PPT DIF Analysis – Form 85R



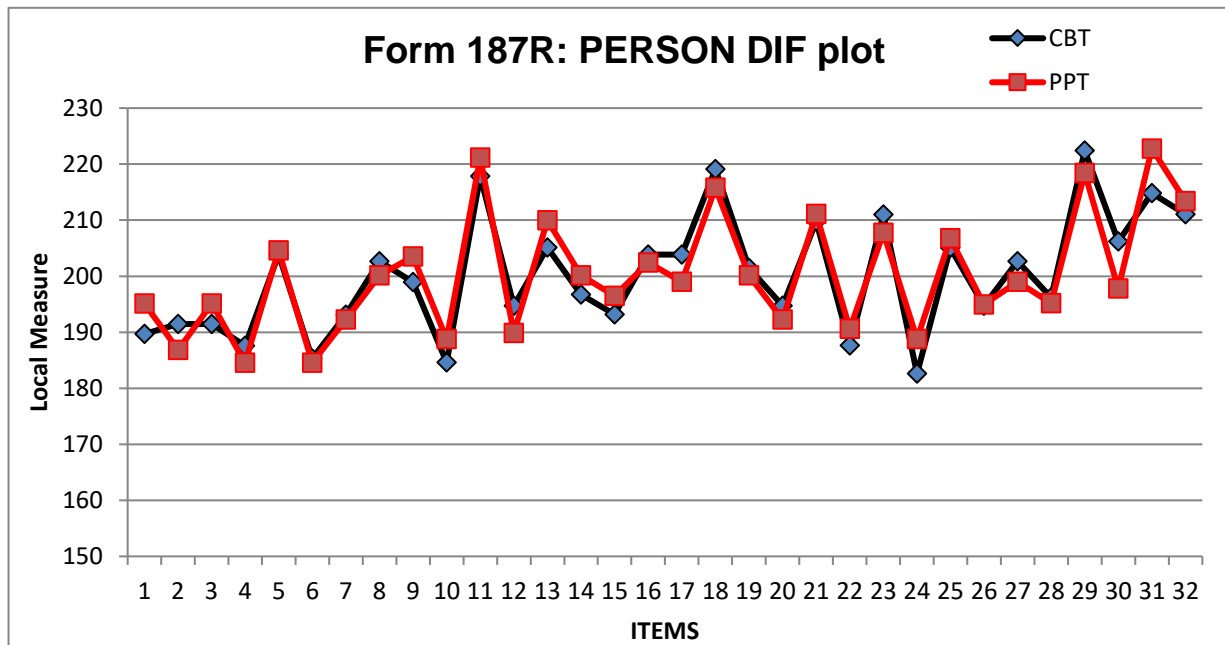
Similarly in form 85R (Figure g1-10) items 1- 6, 9, 13, 14, 16, 18-22, 25, 28, 33, 36 and 37 had almost identical parameter estimates. Items 7, 24, 27, 31, 32 and 34 scaled to be slightly easier in PPT than in CBT. Items 11, 26, 29 and 35 were easier in CBT than in PPT. Items that were significantly more easy or difficult were identified for additional review.

Figure g1-11 CBT and PPT DIF Analysis – Form 185R



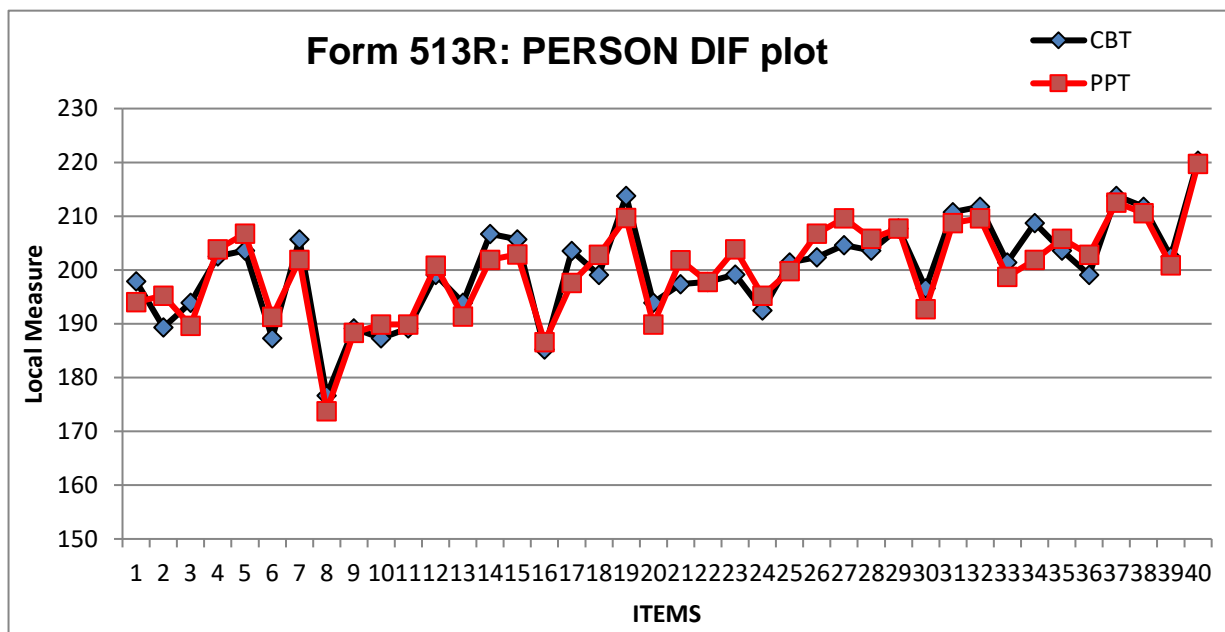
In form 185R (Figure g1-11) items 2, 4-7, 9, 15, 17-19, 25-31, 33, 34, and 36-38 had almost identical parameter estimates. From these data, only item 3 was identified for review for showing significant variation.

Figure g1-12 CBT and PPT DIF Analysis – Form 187R



In form 187R (Figure g1-12) items 4-8, 16, 19-22, 25, 26, 28 and 32 had almost identical parameter estimates. However, items 30 and 31 were identified for review for showing significant variation.

Figure g1-13 CBT and PPT DIF Analysis – Form 513R



In form 513R (Figure g1-13) items 4, 8-13, 15, 16, 22, 24, 25, 28, 29 and 31-33 had almost identical parameter estimates. However, items 2 and 34 need to be reviewed because they showed significant variation.

Item g2 – The consistency with which examinees are classified

Classification Consistency Analysis – Parallel Test Forms

As part of the analyses to estimate test reliability CASAS conducts classification consistency analyses to compare examinee performance across parallel test forms. CASAS most recently completed a classification consistency analysis in fall 2008. Although the burden of repeating a test can be high within the setting of adult education, CASAS received outstanding support from adult educators in order to conduct this study. In addition, students were awarded gift certificates worth up to \$20 for participating in the classification consistency study. The test proctors felt the gift certificates provided sufficient motivation for the students to give their best effort on both tests. Groups of examinees across all CASAS assessment series and spanning all NRS Educational Functioning Levels were administered parallel test forms (for example Form 81R and Form 82R) on the same day. Due to teacher and student class schedules it was not possible to test-retest on adjacent days. Same day retesting was deemed the most effective way to obtain the largest sample size across all CASAS test series and NRS Education Functioning Levels while also eliminating the effect of any intervening instruction.

The order of administration was alternated within the testing groups. For example, a group of examinees was convened to take an appropriate CASAS test based on their NRS Educational Functioning Level and split in two. Half of the group took Form 81R and the other half was administered Form 82R. After completing the first test the students were given a break and then were administered a second parallel test – those who were first administered Form 81R now received Form 82R and vice versa. Agencies from California, Connecticut and Florida participated in this analysis.

The results in Table g2-1 show that parallel forms produced similar mean scale scores, standard deviations, and rank ordering of scores. The correlations provide an estimate of the reliability of scores from the same forms. The correlations are statistically significant for all the forms in the table at the 0.00 level (2-tailed). The average scores for both parallel forms were also very similar.

Table g2-1 Correlation between Parallel Forms

Reading Form	Form Level	No. of Items	N	Mean Scale Score		Standard Deviation		Corr.	Sig.
				Parallel 1	Parallel 2	Parallel 1	Parallel 2		
310-311	Pre-A	24	54	171.3	170.9	5.99	6.89	0.75	0.00
951RX-952RX	A	26	27	206.7	205.2	12.62	13.31	0.94	0.00
81R-82R	A	24	18	197.0	195.0	13.34	13.65	0.73	0.00
81RX-82RX	A	28	80	209.2	208.4	11.85	13.30	0.88	0.00
83R-84R	B	32	82	212.0	210.8	11.66	10.20	0.85	0.00
85R-86R	C	37	114	223.6	224.1	8.79	8.74	0.85	0.00
185R-186R	C	38	86	225.9	224.8	8.01	7.89	0.84	0.00
187R-188R	C	32	84	242.1	244.1	8.89	7.83	0.84	0.00
513R-514R	C	40	101	240.3	237.1	10.65	10.47	0.88	0.00

Table g2-2 shows results from paired samples t-test calculations that compare the mean scale score obtained from the parallel forms both administered to a single group of students. The paired samples t-test can be used to evaluate whether two means are different from each other when the two samples that the means are based on were taken from the matched individuals or the same individuals. According to the result of these t-tests the mean scaled score between the two parallel forms (except for 185R-186R, 187R-188R, and 513R-514R) were not statistically significant ($p \geq 0.05$) suggesting that scores observed on both the parallel forms were not different. These results provide evidence of the comparability of interpreting scores.

Table g2-2 Paired-Samples T Test

Reading Form	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
	Lower	Upper			
310-311	-0.87	1.68	0.64	53	0.53
951RX-952RX	-0.31	3.43	1.71	26	0.10
81R-82R	-2.63	6.63	0.91	19	0.38
81RX-82RX	-2.37	1.80	-0.27	83	0.79
83R-84R	-0.14	2.61	1.78	81	0.08
85R-86R	-1.59	0.61	-0.89	113	0.38
185R-186R	0.17	2.09	2.34	85	0.02
187R-188R	-4.00	-1.88	-5.54	83	0.00
513R-514R	3.00	5.01	7.90	100	0.00

Item g3 – The adequacy of the research design leading to the estimates of the reliability of the test

The empirical analyses listed in sections g1 and g2 involved the collaboration of psychometric and data collection experts in the field of adult education. A detailed summary of the results of each study is included in section g1 and g2.

The research designs for the parallel forms correlation and classification consistency studies each focused on the proper selection of the study population to ensure representation of the adult education population being served. Section g3i details the size of the population associated with the research designs, and g3ii presents the demographic characteristics of the population studied.

In the analyses presented in Sections g1 and g2, CASAS used examinee data submitted by agencies that provide adult education services under WIA Title I and WIA Title II. CASAS is responsible for the collection and aggregation of these submissions via the TOPSpro™ (Tracking of Programs and Learners) software. The data collection process follows strict guidelines to ensure accuracy and uniformity. This begins with the training process for test administrators and scorers (See Section i4) and continues as the data – received by CASAS on a quarterly basis – is then subject to rigorous data quality checks.

The research designs for each study take into consideration and can be described by five “elements” of research design: observations or measures, treatment or programs, groups, assignment to group, and time (Trochim, 2006). The layout design for the empirical data analyses generally follows the example outlined in Tables g3-1 and g3-2 and Figures g3-1 and g3-2.

Table g3-1 Research Design Summary for Parallel Forms Reliability Analysis

Research Component	Description
Observations/Measures:	The first measure is the test score on the first administration for examinees who took a test during a given program year(s). The second measure is the score on the parallel test form given to examinees within fifteen days of the date that they were administered the first test.
Treatment or Programs:	There is the possibility of instruction between the two tests; however, the study is designed to limit this as much as possible by allowing a maximum of only fifteen days between the two tests.
Groups:	The data is grouped into four subgroups: examinees taking CASAS level A, B, C, and D test forms.
Assignment of Groups:	The four groups are not equivalent (N) and are assigned based on testing level.
Time:	Time moves from left to right in Figure g3-1 showing that once the groups are identified, the scores on each of the two test administrations are collected and analyzed.

Figure g3-1 Research Design Notation for Parallel Forms Reliability Analysis

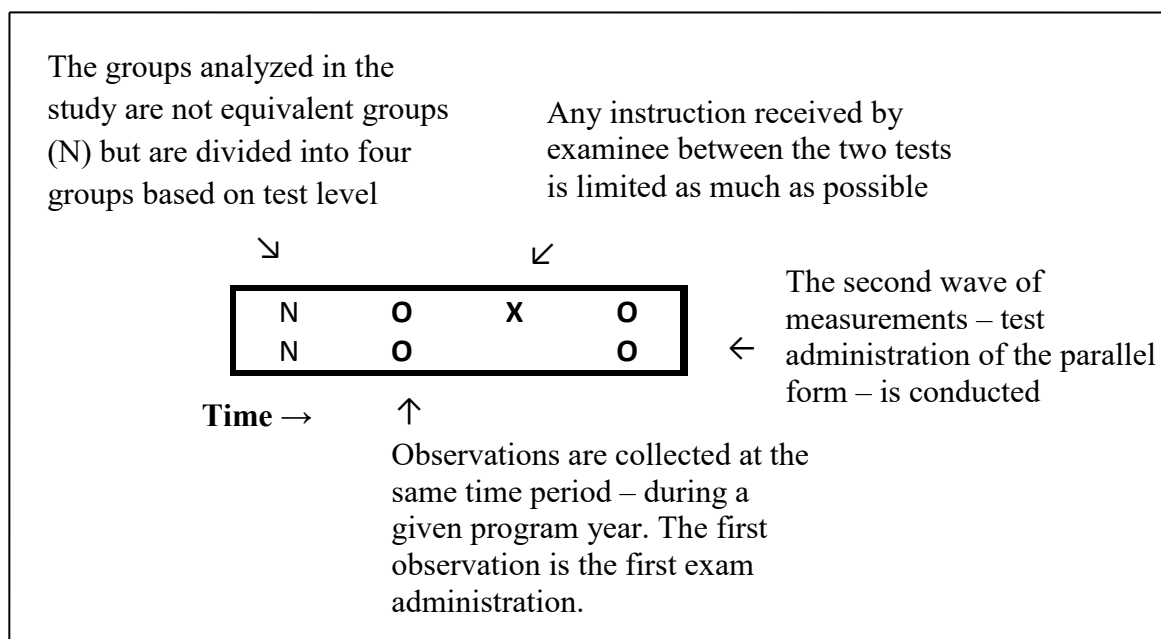
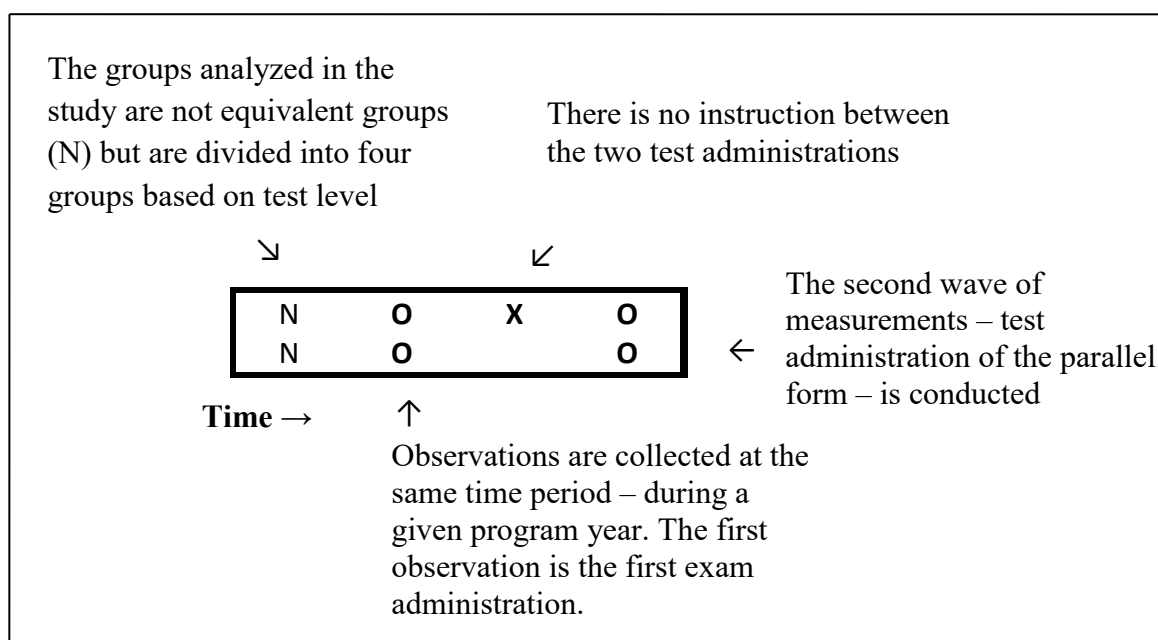


Table g3-2 Research Design Summary for Classification Consistency Analysis

Research Category	Description
Observations/Measures:	The first measure is the test score on the first administration for examinees who took a test during a given program year(s). The second measure is the score on the parallel test form given to examinees on the same date that they were administered the first test.
Treatment or Programs:	There is no treatment between the two test administrations. The order of test administration was alternated among the groups of examinees. Approximately 50 percent of the examinees received one of the two test forms first and the other 50 percent received the other parallel form first.
Groups:	The data is grouped into four subgroups: examinees taking CASAS level A, B, C, and D test forms.
Assignment of Groups:	The four groups are not equivalent (N) and are assigned based on testing level.
Time:	Time moves from left to right in Figure g3-1 showing that once the groups are identified, the scores on each of the two test administrations are collected and analyzed.

Figure g3-2 Research Design Notation for Classification Consistency Analysis



Item and test form data is further reviewed by psychometric experts to determine if items and test forms conform to psychometric standards such as unidimensionality, inter-item consistency (KR 20), model fit, differential item functioning, standard errors of measurement, and other standards. When items do not appear to meet standards, they are reviewed again by psychometric and subject matter experts for possible elimination, revision, or retention of the items. After items are calibrated, reviewed, and included on test forms, a raw to scale score is calculated and linked back to original scale. Only scale scores with a conditional standard error of measurement (CSEM) less than 5.6 are included in the accurate range of the test (see Section d2).

In addition, when conducting analyses such as those included in Sections g1 and g2, psychometric experts review all data to determine if further controls are necessary based on the specific data analysis. For the purpose of these analyses, any exams with scores that did not fall in the accurate range with a CSEM less than 5.6 (see Section d2) were eliminated. The access to this robust dataset from a complete population of examinees, collected based on the strict standards and procedures that CASAS follows, allows for a high level of confidence in the results.

CASAS continually conducts research related to reliability of Life and Work Reading Assessments. CASAS regularly updates analyses, such as the Parallel Form Reliability and Classification Consistency, as part of its continuous reliability measures to ensure that the assessments remain reliable over time. The analysis presented in Section g1 is from the 2005-06 and, if necessary to increase the sample size, the 2006-07 program years. The analysis presented in 2008 was conducted in fall 2008.

(g3i) The size of the samples

Table g3i-1 includes the sample sizes for the Parallel Forms and Classification Consistency analyses.

Table g3i-1 Sample Sizes for Reliability Analyses

Study	N
Parallel Forms Reliability	2,256
Classification Consistency	628
Comparability Analysis – CBT/PPT	251

(g3ii) The similarity between the sample(s) used in the data collection and the adult education population

For comparison purposes, Table g3ii-1 includes the demographics characteristics for the Parallel Forms analysis.

Table g3ii-1 Demographic Characteristics for Reliability Analyses

Study	Examinees	Gender		Ethnicity				Years of Education		Language	
	N	Male	Female	White	Hispanic	Asian	Black	6 and below	7 and higher	English	Non English
Parallel Forms/ Classification Consistency	2,256	1,034	1,215	292	1,387	443	73	411	1,698	439	1,818

(g3iii) The steps taken to ensure the motivation of the examinees

The parallel forms reliability study uses actual aggregated student pre- and post-test data administered during the course of regular classroom instruction and assessment. Students in the classification consistency analysis were administered two tests on the same day. Participating students were awarded gift certificates up to twenty dollars. Test administrators explained to each student that it is important to complete and give their best effort on the test. The following language is provided to the test administrators:

Thank you so much for participating in this testing study! You are one of a few classes that has been selected to participate in this national study. With your participation, we are able to provide tests that will be used throughout the country. Please complete and give your best efforts on both tests you will be taking. As a small thank you, we would like to provide you with the following gift_____.

In both analyses, examinees who did not score in the accurate precision score ranges on both parallel forms were not included in the analysis.

Item g4 – Any other information explaining the methodology and procedures used to measure the reliability of the test

Table g4-1 shows the mean score, standard deviation, and the KR-20 reliability for the Life and Work Reading series. The alternate forms have similar mean scores and standard deviations. As a measure of internal consistency reliability, the KR-20 is the average inter-item correlation among items in the form. The Winsteps calibration program computes upper and lower boundary values for the True Reliability. The lower boundary is the Real Reliability. The upper boundary is the Model Reliability. The unknowable True Reliability lies somewhere between the Real and the Model Reliability. As contradictory sources of error or noise are removed from the data, the True Reliability approaches the Model Reliability. The Empirical Reliability of the item score pattern is also provided from the Bilog calibration program. The four reliability computations presented in Table g4-1 provide reliability estimates from 0.83 to 0.92 for the KR-20 reliability, 0.96 to 0.98 for the item reliability, 0.96 to 0.98 for the Model Reliability and 0.82 to 0.89 for the empirical

reliability of the score patterns. Each of these different reliability estimation procedures show high precision for the each of the parallel test forms in the Life and Work Reading series.

Table g4-1 Reliability Summary Statistics

Life Skills Reading Forms	No. of Items	N	Mean Scale Score	Standard Deviation	KR-20	Items Reliability		Empirical Reliability (Bilog)
						Real	Model	
310R	28	787	181.5	9.82	0.83	0.96	0.97	0.83
311R	28	824	181.0	10.01	0.83	0.97	0.97	0.82
27R	30	24,822	185.2	12.18	0.92	0.98	0.98	0.88
28R	30	16,419	186.6	10.91	0.91	0.98	0.98	0.85
81R	24	44,649	198.7	9.87	0.85	0.98	0.98	0.82
82R	24	23,674	199.7	9.53	0.87	0.97	0.98	0.82
951R	24	4,870	201.0	9.98	0.88	0.98	0.98	0.84
952R	24	3,483	202.2	9.43	0.87	0.97	0.98	0.82
81RX	28	31,392	207.0	10.22	0.85	0.97	0.98	0.85
82RX	28	28,118	207.2	10.29	0.85	0.97	0.97	0.84
951RX	26	2,740	210.1	9.71	0.84	0.96	0.98	0.83
952Rx	26	2,482	210.7	10.40	0.86	0.96	0.96	0.83
83R	32	60,935	212.1	11.45	0.89	0.96	0.96	0.89
84R	32	41,600	213.5	11.16	0.88	0.96	0.96	0.88
85R	37	28,666	224.7	10.96	0.89	0.96	0.96	0.89
86R	37	18,308	225.7	10.48	0.87	0.96	0.96	0.88
185R	38	15,512	225.2	10.41	0.87	0.97	0.98	0.87
186R	38	10,392	225.4	9.59	0.85	0.97	0.98	0.85
187R	32	8,461	238.5	10.26	0.85	0.96	0.97	0.86
188R	32	4,745	241.1	9.83	0.84	0.96	0.97	0.84
513R	40	9,763	239.7	11.03	0.88	0.96	0.97	0.88
514R	40	6,776	237.1	10.65	0.88	0.96	0.96	0.88

With Rasch IRT models the test information function, a sum of all the item information functions within the test, is a useful tool in measuring the reliability of a test. In general, test information functions tend to look bell-shaped. A highly discriminating test would have a tall narrow information function which indicates that it contributes a large amount of information but over a narrow ability range. A less discriminating test would have a flatter but wider information function which indicates that it provides less information but over a greater ability range. Figures g4-2 through g4-23 include test information functions and standard error functions for each assessment. The test information functions for the parallel test forms in the Life and Work Reading Assessments are nearly identical in size, form, and structure showing a high degree of consistency between the test information and standard error functions from the parallel test forms. The peak of the test information functions, where the test provides the most information, is similar for each the parallel test forms.

Figure g4-2 Test Information Function – Form 310

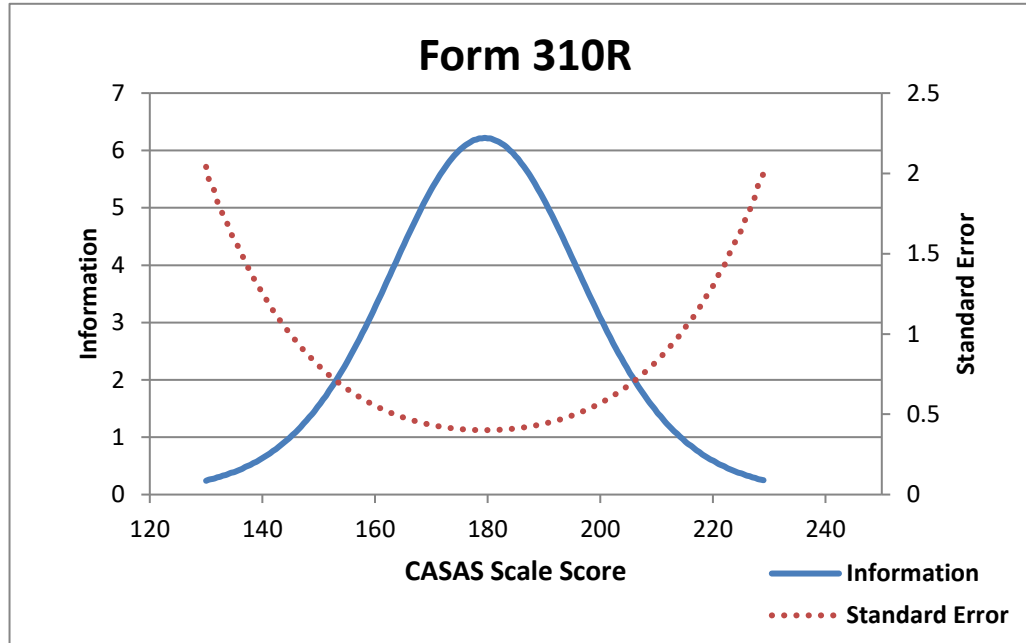


Figure g4-3 Test Information Function – Form 311

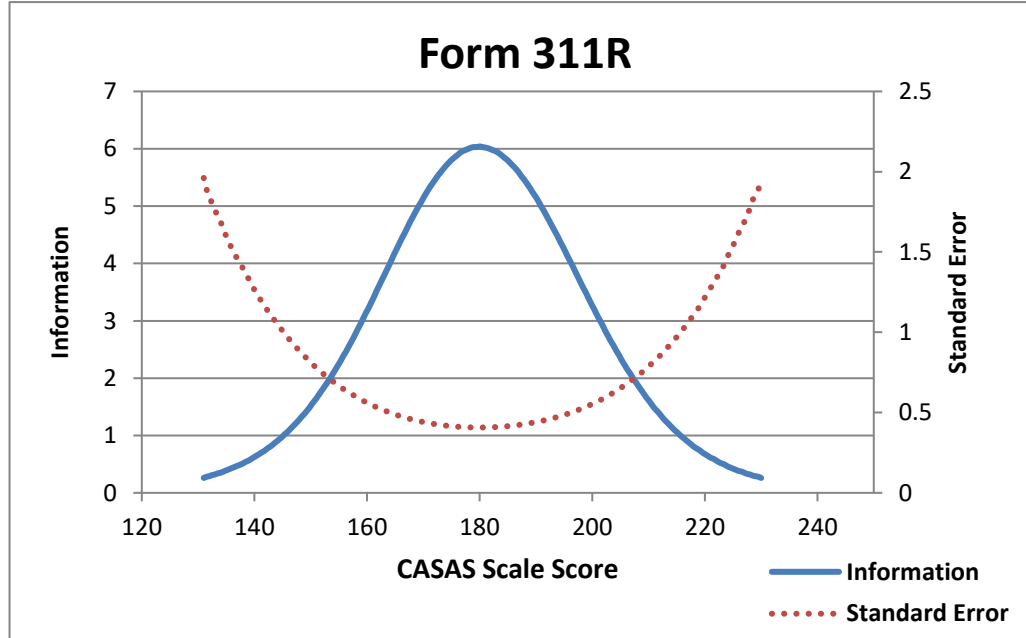


Figure g4-4 Test Information Function – Form 27R

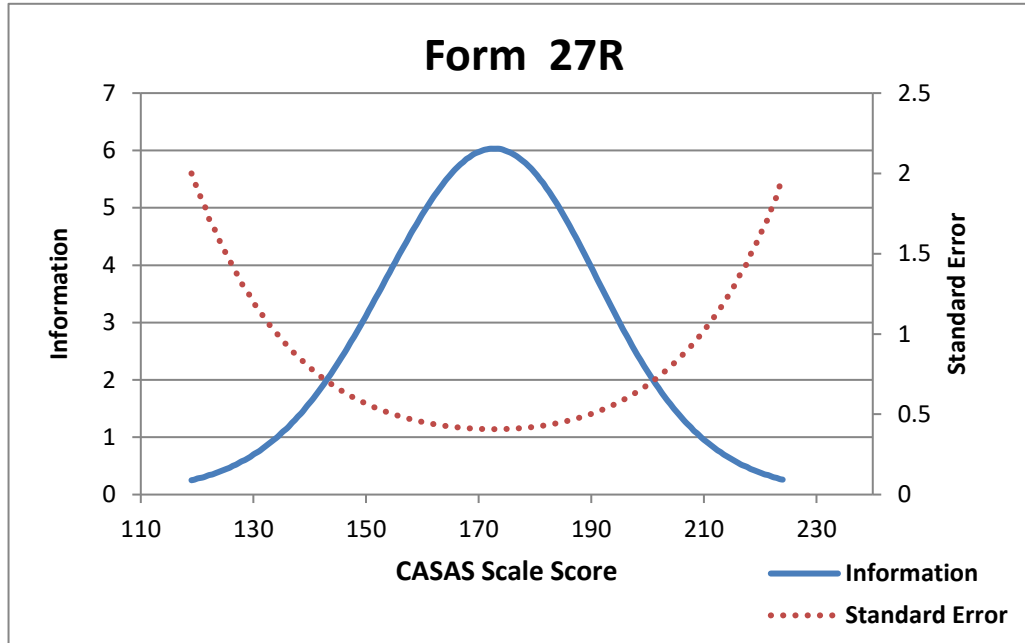


Figure g4-5 Test Information Function – Form 28R

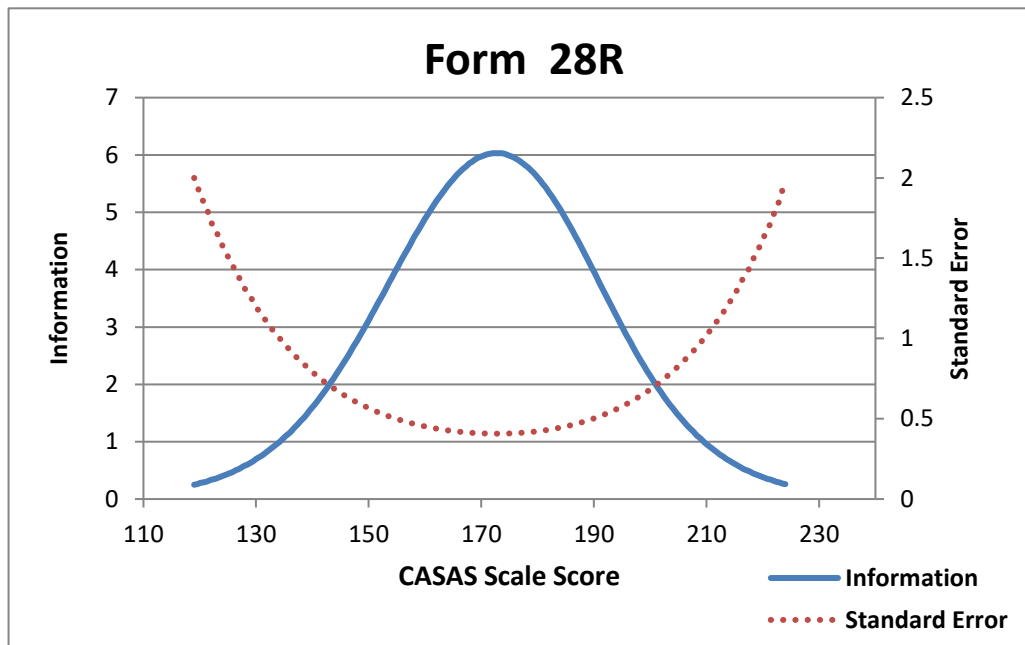


Figure g4-6 Test Information Function – Form 81R

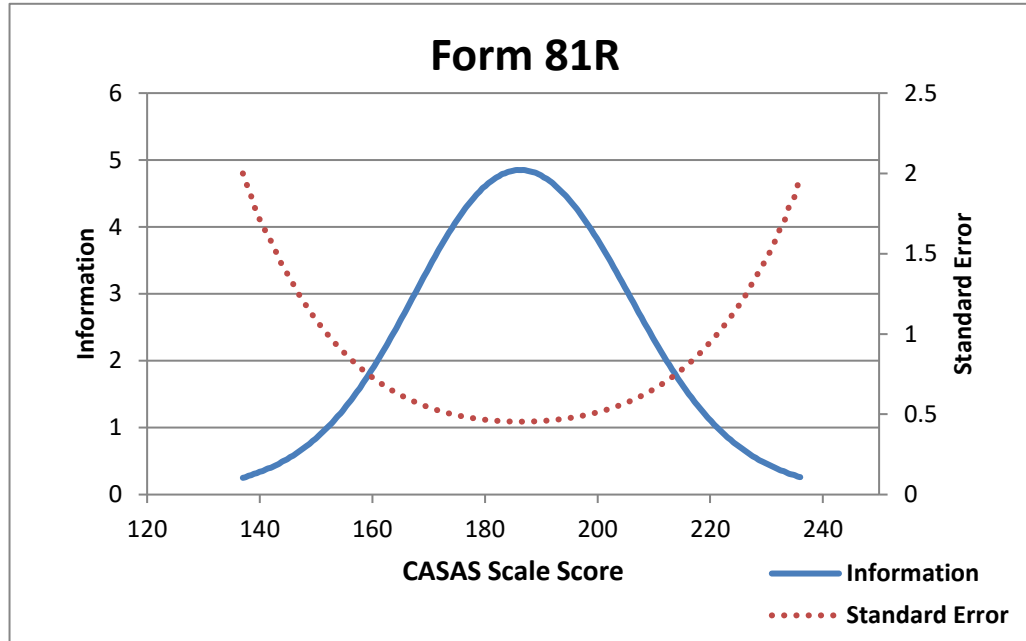


Figure g4-7 Test Information Function – Form 82R

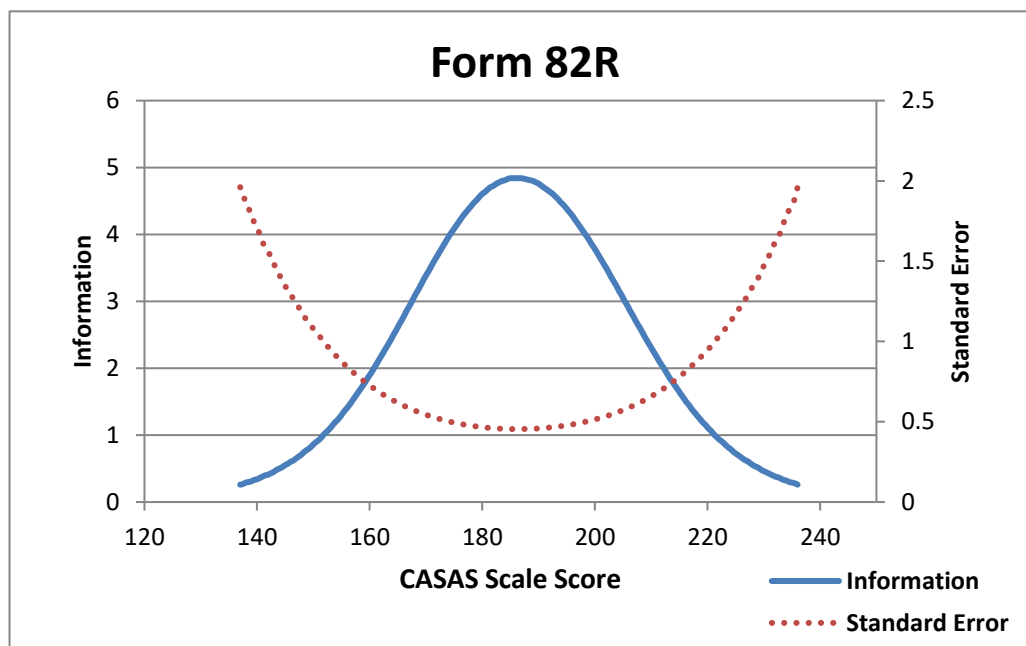


Figure g4-8 Test Information Function – Form 81RX

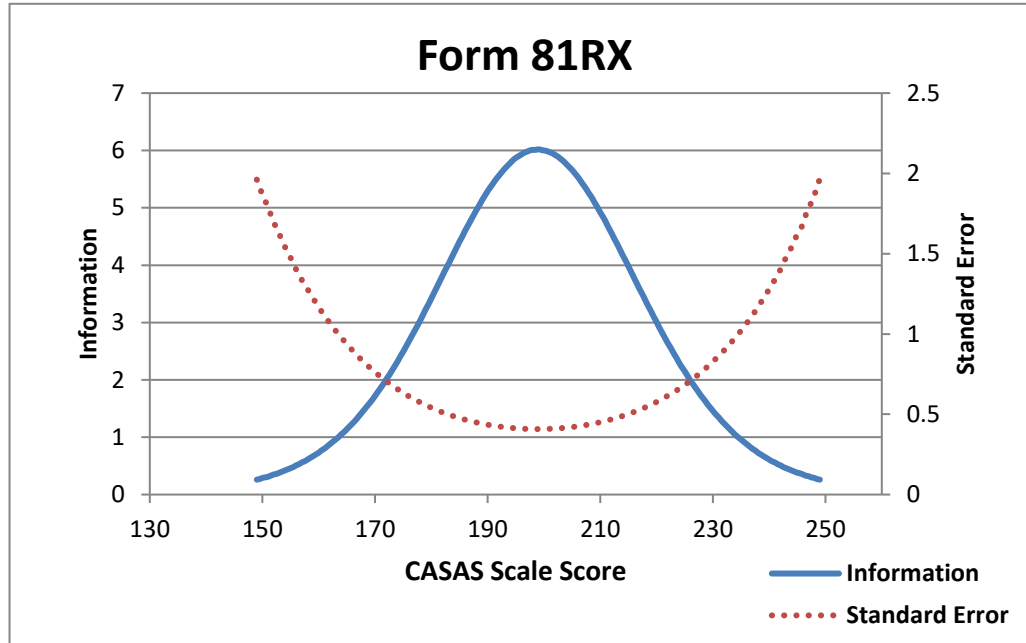


Figure g4-9 Test Information Function – Form 82RX

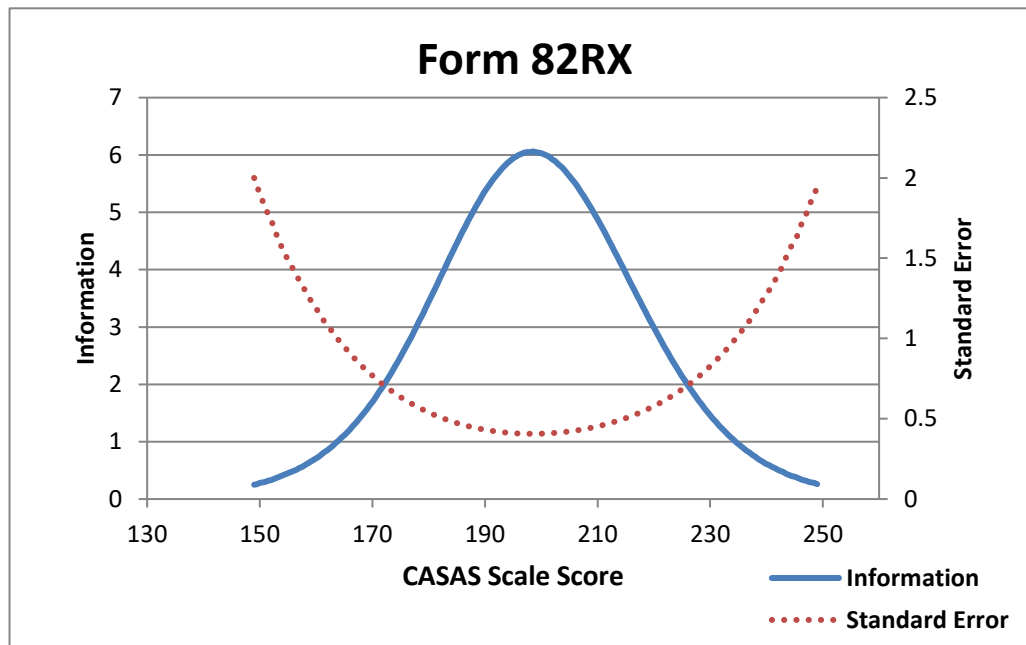


Figure g4-10 Test Information Function – Form 951R

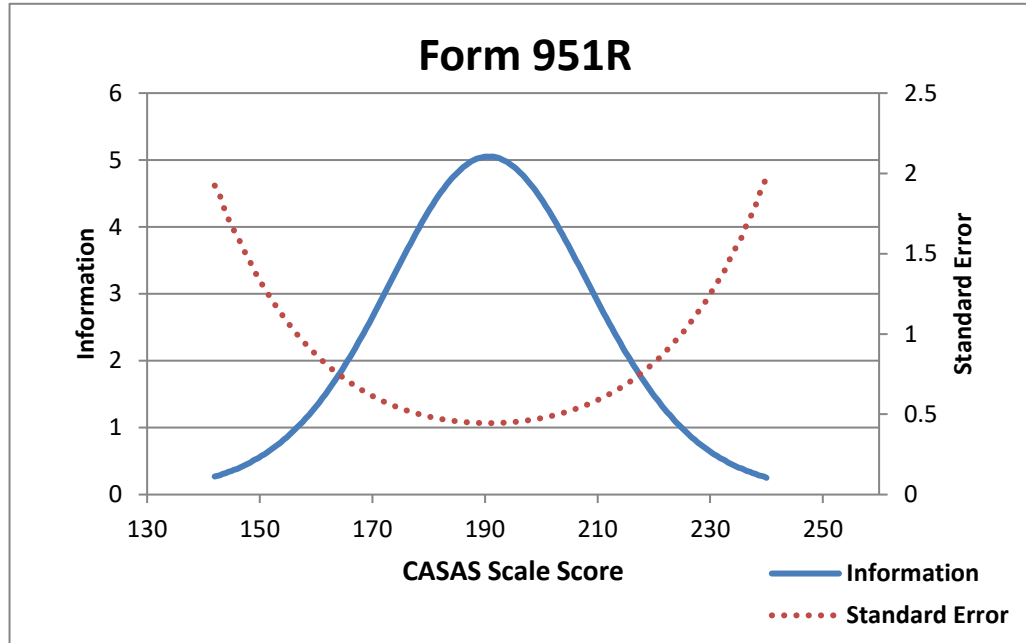


Figure g4-11 Test Information Function – Form 952R

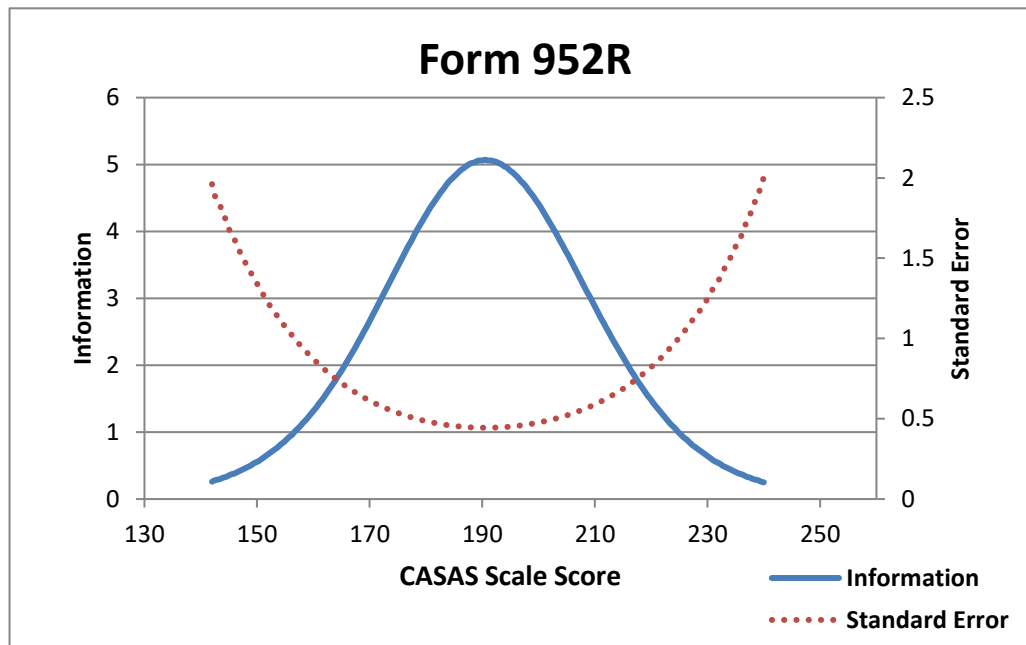


Figure g4-12 Test Information Function – Form 951RX

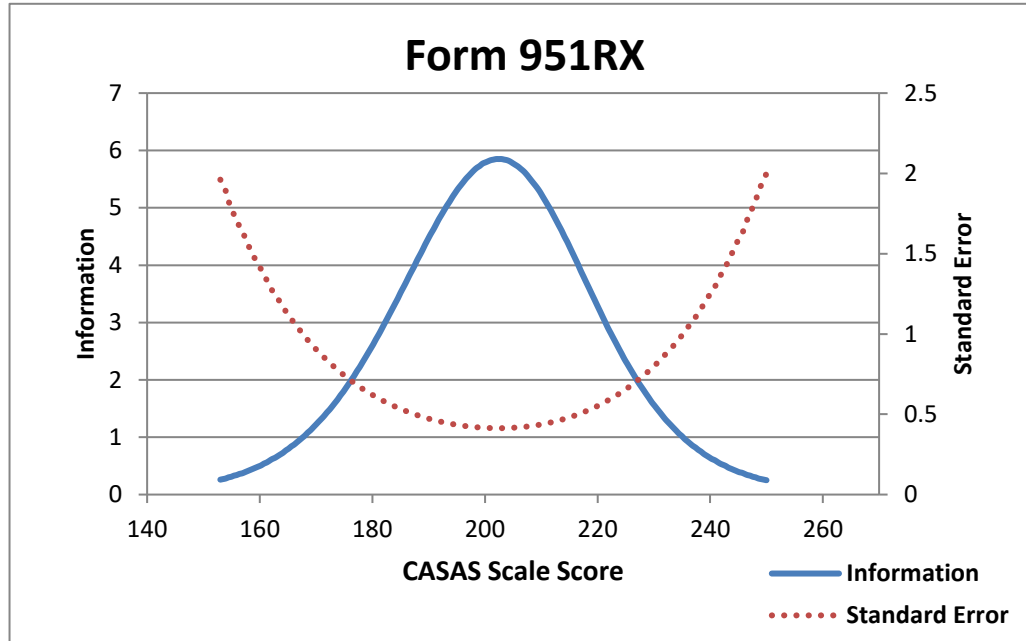


Figure g4-13 Test Information Function – Form 952RX

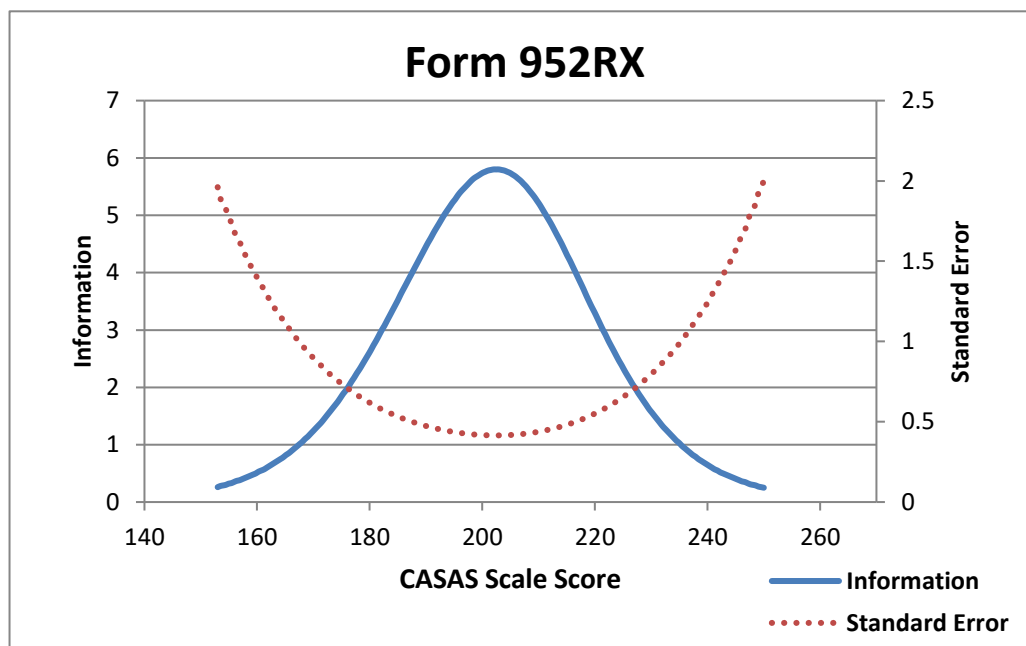


Figure g4-14 Test Information Function – Form 83R

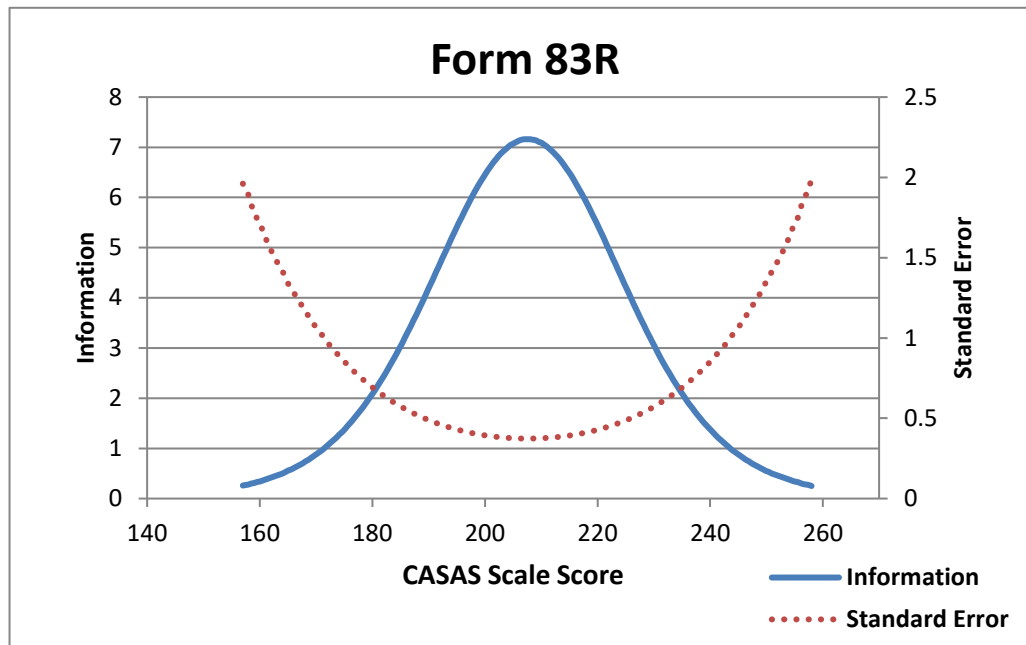


Figure g4-15 Test Information Function – Form 84R

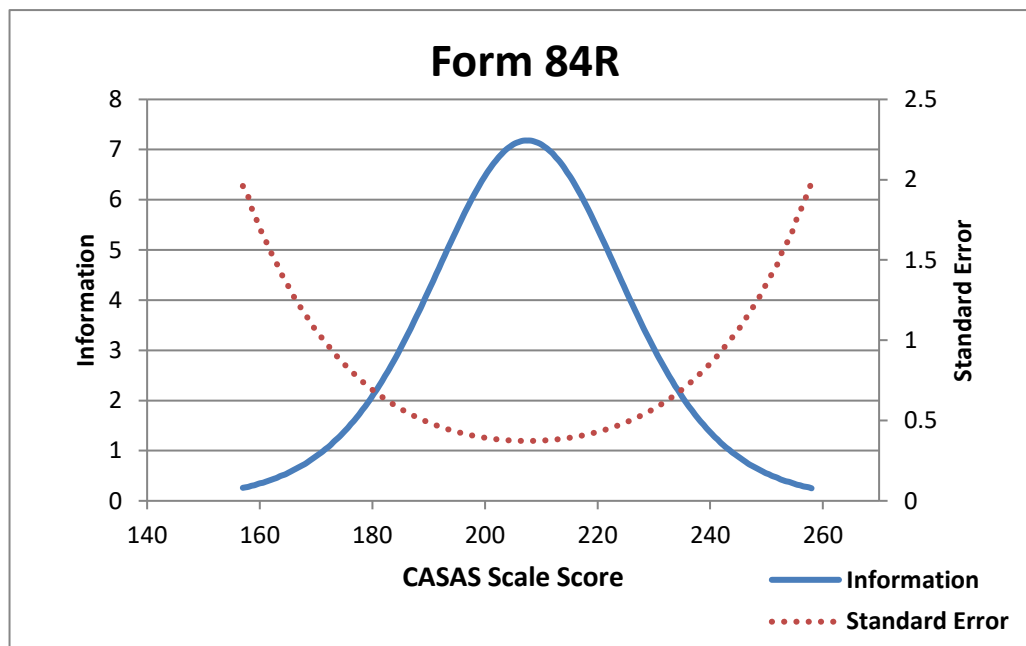


Figure g4-16 Test Information Function – Form 85R

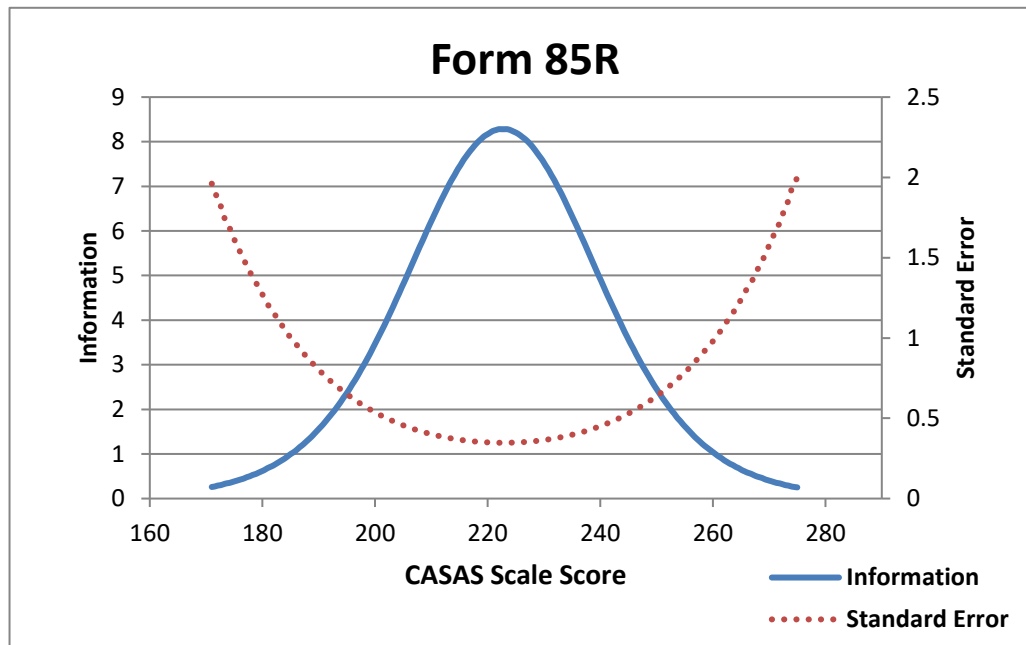


Figure g4-17 Test Information Function – Form 86R

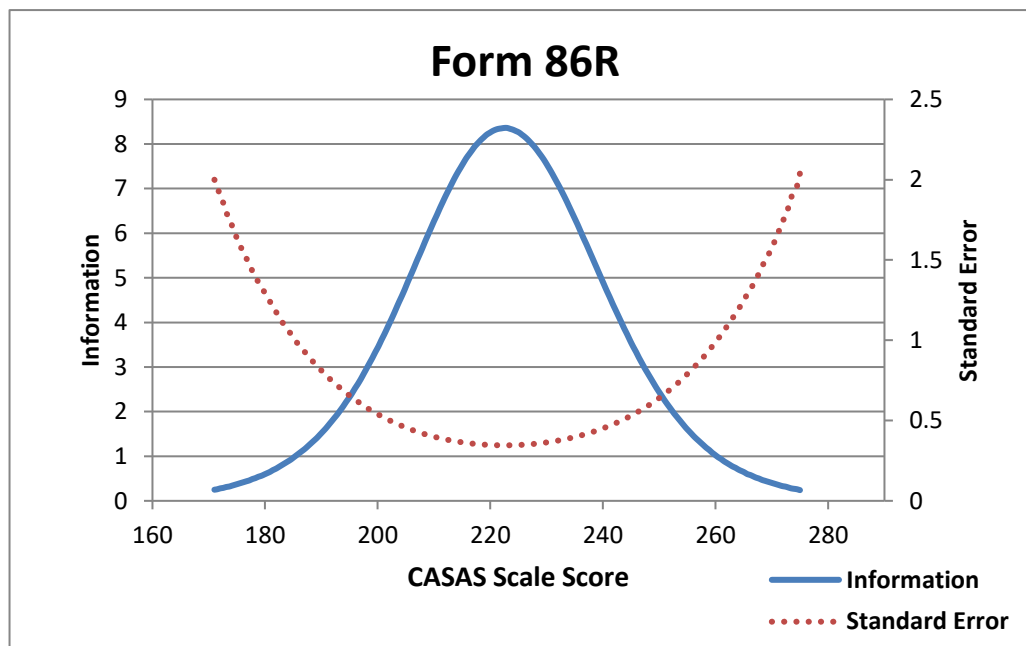


Figure g4-18 Test Information Function – Form 185R

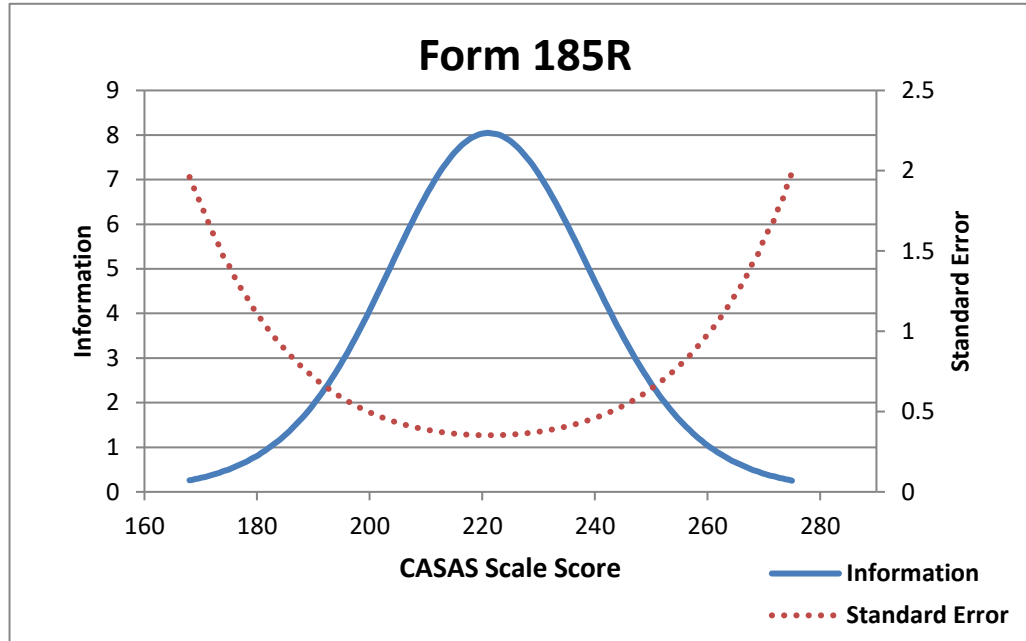


Figure g4-19 Test Information Function – Form 186R

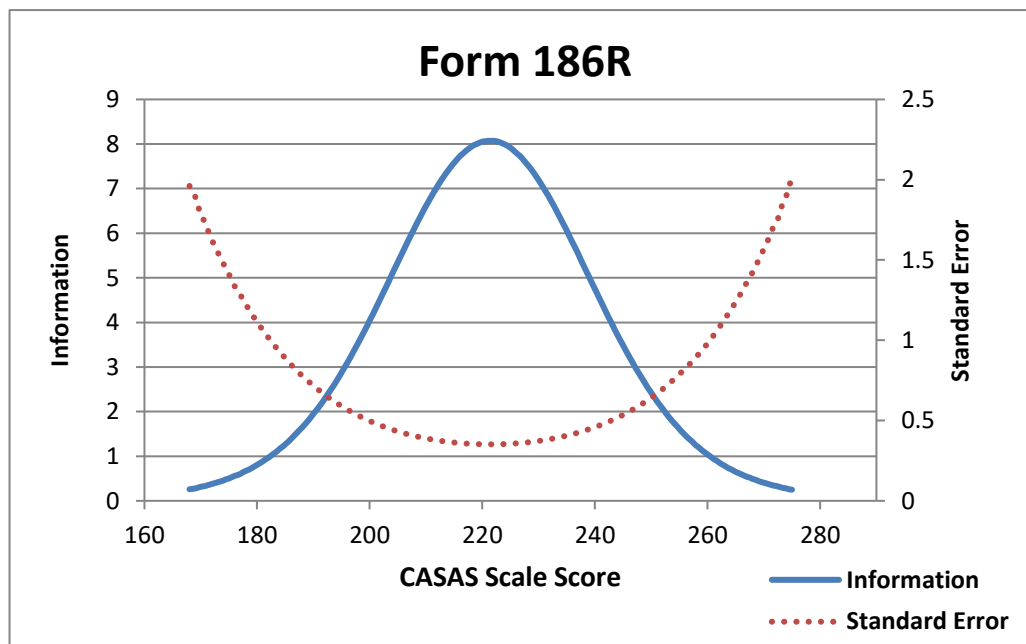


Figure g4-20 Test Information Function – Form 187R

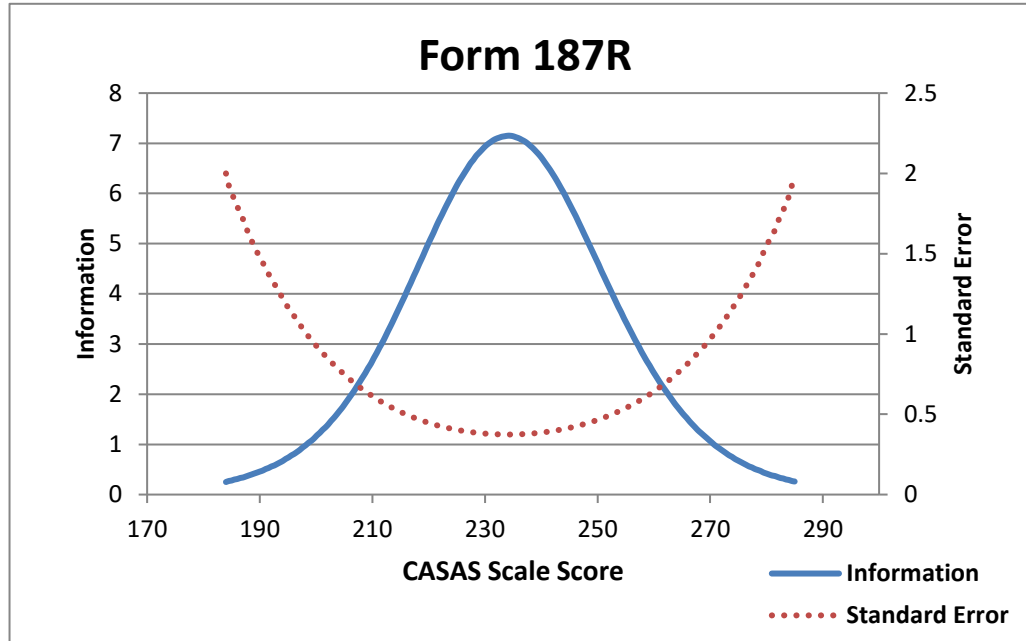


Figure g4-21 Test Information Function – Form 188R

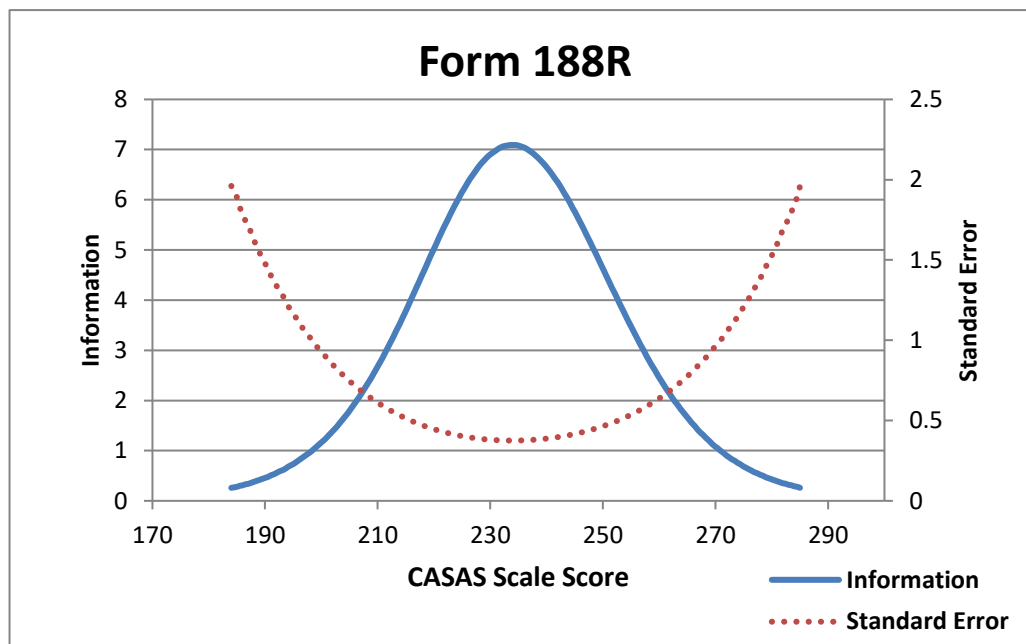


Figure g4-22 Test Information Function – Form 513R

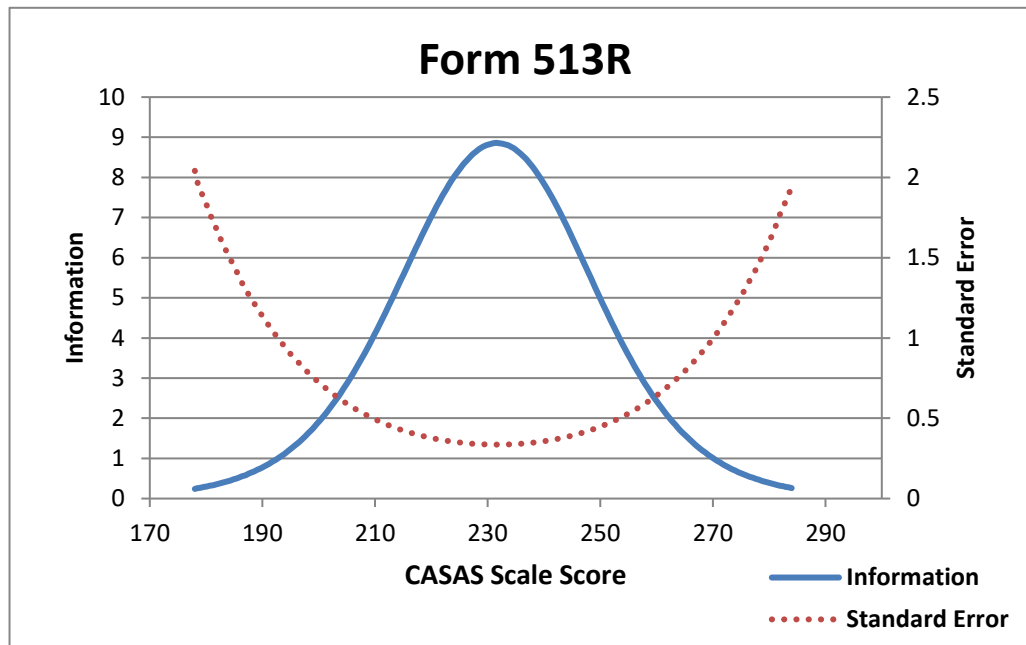
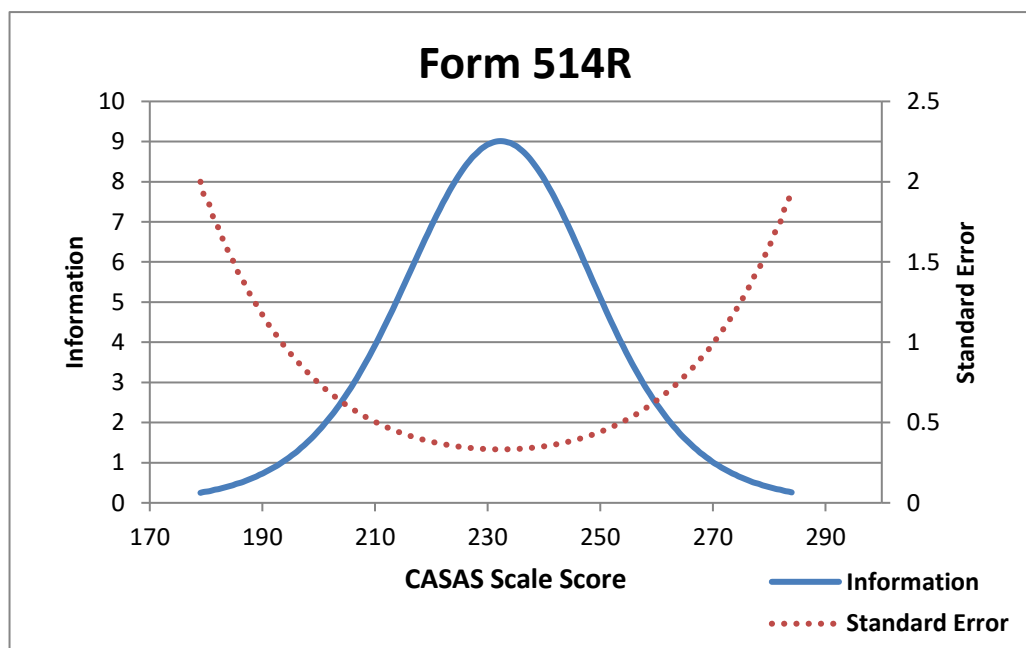


Figure g4-23 Test Information Function – Form 514R



As part of the continuing reliability, CASAS is currently conducting Livingston's Coefficient of decision consistency. This is the proportion of score variance surrounding the cut score that is due to true score variance. The higher the value, the more reliable is the positioning of scores on one side or the other of the cut point.

$$K^2(X, T) = \frac{\sigma_x^2(KR20) + (\mu_x - n_i C)^2}{\sigma_x^2 + (\mu_x - n_i C)^2}, \text{ where } KR20 = \alpha, \sigma_x^2 = \text{variance of test scores,}$$

μ_x = mean of test scores, and C = criterion level cut score for the test.

One computation for each relevant cut score. Either KR20 or alpha reliability can be used in the formula. The results of this analysis will be reported in the next edition of the technical manual.

(h) Construct Validity. Documentation of the appropriateness of a given test for measuring educational gain for the NRS, i.e., documentation that the test measures what it is intended to measure

Current validity theory (e.g., Kane, 2006) reiterates validity as a unified concept that relies on multiple sources of evidence when evaluating the use and interpretation of scores. Messick (1989) championed the concept that construct validity was an overarching concept whereby, all evidence should be focused and directed to support the defined use of test scores. Prioritizing and collecting validity evidence is a function of the defined, intended uses of the scores; and can be classified into different categories of evidence that are all related to the underlying construct.

The series of studies listed in this section involved the collaboration of psychometric experts, subject matter experts, and data collection experts in the field of adult education. Brief descriptions of each study and its results are also included.

The evidence presented here for the use of CASAS test scores covers three areas related to the intended construct. The first substantive area of evidence relates to the alignment of content represented on the CASAS tests with the NRS Levels. The second area of validation that is presented here is related to the internal structure of the tests, specifically evidence of dimensionality within content areas and evidence that these constructs do not overlap with the structure of other content areas. The third area is related to external evidence and includes evidence from comparing test content and/or performance to other related measures of the intended construct. The *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999) suggest that such information be provided for any testing program and include how the test content was defined (standards 1.6 & 1.7) and details about any validity studies that were conducted (standards 1.6, 1.7, 1.14).

Item h1 – The extent to which the raw or scale scores and the educational functioning classifications associated with the test correlate (or agree) with scores or classifications associated with other tests designed or intended to assess educational gain in the same adult education population as the NRS

This section reports a series of descriptive studies followed by a series of empirical studies.

Relationship between CASAS and Student Performance Levels (SPL)

In the middle 1980s the Center for Applied Linguistics (CAL) convened a national group of experts in the field of teaching ESL to refugee adults to identify behavioral objectives related to standardization of student performance levels (SPLs). They provided general descriptions of adult refugee learners' language ability at a range of levels and a common reference standard for refugee programs nationwide. This group also served as a vehicle to facilitate understanding of a student's modality abilities within and between ESL programs. These performance levels, along with sufficient instructional contact hours, were generally described as necessary in order to move from one student performance level to the next.

The first draft of the CAL document was field-tested by seven Mainstream English Language Training (MELT) demonstration projects nationally. Two of the projects included in the field-test were also members of the CASAS Consortium, the San Diego Community College District and the San Francisco Community College District.

Each demonstration project assigned learners a performance level in two areas of language proficiency domains, language/oral communication and reading/writing. Individual SPL ratings were made by relating existing local program instructional levels to the SPL descriptions and then assigning SPLs to learners in the same instructional level.

Early studies that helped to develop the classification levels used by CASAS were developed with the San Diego Community College District during this same period. Data were collected from instructors in 46 ESL classrooms among four satellite locations, averaging 20 to 25 learners per class. Instructors were asked to identify the MELT level of each individual learner based on classroom performance in reading and listening comprehension. The results were matched to CASAS achievement scores to produce the criterion ranges described in Table h1-1.

Table h1-1 Relationship between CASAS and MELT

CASAS SCORES	MELT LEVEL	POSSIBLE PROGRAM PLACEMENT	MELT DESCRIPTION
165-180	I	ESL Pre-Literate Orientation	Functions minimally, if at all, in English.
181-190	II	ESL Beginning (Level 1)	Functions in a very limited way in situations related to immediate need.
191-200	III	ESL Beginning (Level 2)	Functions with some difficulty in situations related to immediate needs.
201-208	IV	ESL Intermediate (Level 1)	Can satisfy basic survival needs and a few very routine social demands.
209-215	V	ESL Intermediate (Level 2)	Can satisfy basic survival needs and some limited social demands.
216-224	VI	ESL Advanced (Level 1)	Can satisfy most survival needs and limited social demands.
225+	VII	ESL Advanced (Level 2)	Can satisfy survival needs and routine work and social demands.

The Basic English Skills Test (BEST) is an individually administered oral communication and literacy test that can be used to determine the SPL of adult refugees or immigrants. Each of the SPLs describes what a person at that proficiency level can do in terms of listening, speaking, reading, and writing. It also includes an overall statement of an individual's general language ability, including a description of the kind of employment a person would be able to handle based on assessed language performance.

In 1985 these SPL descriptions, along with the CASAS achievement scale, provided a sound basis for articulating instructional program levels. The relationship among the SPLs, the literacy sections of BEST, and the CASAS reading tests are shown in Table h1-2.

Table h1-2 Relationship among SPL Levels, BEST Scores, and CASAS Scores

SPL Levels	BEST scores	CASAS Scores
0	0 - 2	< 165
1	3 - 7	165 - 185
2	8 -21	186 - 190
3	22 - 35	191 - 200
4	36 - 46	201 - 208
5	47 - 53	209 - 216
6	54 - 65	217 - 223
7	> 65	224 - 231

During the late 1990s staff from the CAL and CASAS worked together to review and update the education level mapping between SPL and CASAS levels in order to ensure that the National Reporting System (NRS) skill level descriptors used for reporting learning gains to the U.S. Department of Education were accurate and reflected the most current information.

Relationship between CASAS and Other National Reference Scales

The relationship among CASAS levels and score ranges of the National Reporting System (NRS) levels, National Adult Literacy Survey (NALS) levels, Student Performance Levels (SPL), Work Keys levels, and years of schooling completed is provided in Table h1-3.

Table h1-3 Relationship among CASAS, NRS, NALS, SPL, Work Keys, and Years of School Completed

CASAS Levels	CASAS Score Ranges	NRS Levels and Names for ABE	NRS Levels and Names for ESL	NALS Levels	SPL Levels	Work Keys Levels	Years of School Completed
A	180 and below		1 Beginning ESL Literacy	1	1	Below 3	1 to 2
A	181 – 190		2 Low Beginning ESL	1	2	Below 3	1 to 2
A	191 – 200	1 Beginning ABE Literacy	3 High Beginning ESL	1	3	Below 3	1 to 2
B	201 – 210	2 Beginning Basic Education	4 Low Intermediate ESL	1	4	Below 3	3 to 5
B	211 – 220	3 Low Intermediate Basic Education	5 High Intermediate ESL	1	5	Below 3	6 to 7
C	221 – 235	4 High Intermediate Basic Education	6 Advanced ESL	1/2	6	3	8 to 10
D	236 – 245	5 Low Adult Secondary Education		2/3	7	4	11 to 12
E	246 and above	6 High Adult Secondary Education		3	8	4	>12

Note. NALS is the National Adult Literacy Survey and SPL are Student Performance Levels.

Relationship between CASAS and GED 2002

The relationship of CASAS to the 2002 official GED Test was examined using data from California, Iowa, Oregon, Kansas, and Hawaii (n = 4,801). In this study CASAS reading scores along with official GED test results were collected from the participating states. All individuals had been administered the appropriate CASAS test form within six months of taking the GED test. The sample of adult learners in this study was restricted in range because of the fact that many agencies are reluctant to allow learners to take the GED until they are very likely to pass. However, a clear monotonic increasing relationship was found between CASAS reading scores and GED reading scores. Also, a similar relationship was found between CASAS reading scores and overall GED results averaged across the five test content areas. (Criteria for passing the GED is a minimum of 410 in each area and an average of at least 450 across the five areas). Results of this study appear in Tables h1-4 through h1-6. Table h1-4 shows the relationship between CASAS Mean Reading Test scale scores and the GED Reading scores. Table h1-5 examines this same group of examinees by NRS Educational Functioning Level. Table h1-6 shows the relationship between CASAS mean reading test scale scores and the GED total scores across the five content areas.

Table h1-4 CASAS Reading Mean Test Scores Associated with GED Reading Score Ranges

GED Reading Score Range	CASAS Reading Test Mean	N	CASAS S.D.
≤400	234	530	9.90
401-425	237	282	8.93
426-449	238	380	10.76
450-476	239	671	9.54
477-494	240	523	10.64
495-510	242	403	10.14
511-524	243	247	11.09
525-540	244	247	9.69
541-556	244	211	9.33
557-576	244	101	8.39
577-600	244	308	9.82
601-638	246	263	9.77
≥639	247	635	9.79

Table h1-5 Mean Reading GED Scores by NRS Educational Functioning Level and CASAS Reading Scale Score Ranges

NRS Educational Functioning Levels		CASAS Reading Scale Score Ranges	GED Reading Score	
			N	Mean
1	Beginning ABE Literacy	≥200	2	--
2	Beginning Basic Education	201-210	36	446
3	Low Intermediate Basic Education	211-220	116	443
4	High Intermediate Basic Education	221-235	1,220	471
5	Low Adult Secondary Education	236-245	1,676	508
6	High Adult Secondary Education	246 and above	1,751	557

Table h1-6 CASAS Reading Mean Test Scores Associated with GED Total Score Ranges

GED Total Score Range	CASAS Reading Test Mean	N	CASAS S.D.
≤425	231	205	9.40
426-449	235	264	8.83
450-476	237	449	9.35
477-494	239	403	9.01
495-540	242	322	9.23
511-524	243	286	10.36
525-540	244	304	10.01
541-556	245	276	10.03
557-576	246	277	9.91
577-600	247	233	10.51
601-638	248	247	9.51
≥639	250	197	10.93

CASAS-CAHSEE Readiness Exams

The field test results of the CAHSEE Readiness Test for the English Language Arts (ELA) is presented here as evidence of the strength of the construct of reading assessments and items in the CASAS item bank.

CASAS has developed an exam to assist WIA Title II adult education agencies in determining the readiness of their learners to take the California High School Exit Examination (CAHSEE). During the development process of this exam, CASAS field tested a readiness exam for the English Language Arts (ELA) sections of the CAHSEE. Participating adult education agencies administered the CAHSEE Readiness field tests to examinees one week prior to the CAHSEE exam. The ELA readiness field test was comprised of nearly an equal number of CASAS and CAHSEE questions.

At the end of the field test process, the database included 480 examinees who took both sections of the CAHSEE ELA Readiness Exam. Of these 480 examinees, 224 also took the actual CAHSEE. The results of the field test showed a correlation of .81 between the score on the field test items taken from CASAS reading tests and those that were practice items from the CAHSEE. These results indicate a strong internal correlation between the performance on the CASAS items and the CAHSEE practice items.

The correlation between the score on the CAHSEE Readiness Test and the actual CAHSEE was .78. This indicates a strong relationship between performance on the CASAS-CAHSEE Readiness ELA Exam as a whole and actual the CAHSEE scores achieved by the learners. These preliminary results are summarized in Table h1-7.

Table h1-7 CASAS-CAHSEE Readiness Preliminary Correlation Results

	Correlation	N
CASAS ELA Items and CAHSEE ELA Practice Items	0.81	480
CASAS ELA Items and Actual CAHSEE ELA Reading Score	0.78	224

Construct Validity – UK NARIC Study

In 2008 the UK NARIC published a study titled *National and International Benchmarking of WDA Workplace Literacy and Numeracy Qualifications*. A portion of this study, which provides information on how the CASAS Levels compare with other international tests, is presented in this section. Although these tests measure a variety of populations that may extend beyond the populations served by the National Reporting System (NRS), CASAS deemed the comparisons from this study, although international in scope, as informative regarding the construct validity of CASAS assessments.

One purpose of the study was a level comparison of qualifications using the Common European Framework of Reference for Languages (CEFR) to other qualifications and measures. Excerpts of this portion of the study are reproduced and summarized below. Please note that this information is taken directly from the study; therefore, the reader will see the use of British English.

The comparisons include the following measures and qualifications:

- Singapore WP Literacy – An assessment system in place in Singapore to test workplace literacy in English.
- Cambridge International English Language Testing System (IELTS) – The IELTS qualification is designed to assess the language ability of candidates who need to study or work where English is the language of communication. IELTS is recognised by universities and employers in many countries, and is also recognised by professional bodies, immigration authorities and other government agencies. The IELTS qualification scores are often used to provide an indicator of the readiness of a candidate to enter higher education.
- The Business Language Testing Service (BULATS) – BULATS is a service for companies designed to help them find out the level of language skills among their staff, trainees or job applicants. The test assesses language skills which are needed for the workplace and for students and employees on language courses. A benchmarking process has been designed to help identify the needs of different clients.

BULATS is an examination based qualification benchmarked to the framework provided by CEFR. Competency statements, which are derived from the ALTE project relating statements of language competency to social, work and study based contexts, underpin achievement in the BULATS qualification. Consequently, performance in the examination is not seen in terms of pass or fail, but as a reflection of what an individual is able to do within the social, work or study contexts.

- Testing of English for International Communication (TOEIC) –The TOEIC test measures the listening and reading comprehension skills of non-native speakers of English and is designed for use by organisations working in an international market where English is the primary language of communication. In December 2006 TOEIC introduced Speaking and Writing examinations to complete the full complement of language skills tested. TOEIC scores are often used by organisations to make employment decisions about selection, assignment to overseas posts, promotion, training needs and training effectiveness.
- Testing of English as a Foreign Language (TOEFL) iBT – The main objective of the TOEFL Internet Based Test (iBT) qualification is very similar to that of the IELTS qualification: to indicate the level of English Language proficiency for the achievement of other ends. This is principally focussed towards demonstrating language proficiency as an entrance requirement into further education. TOEFL iBT, consequently, is regarded as an academic proficiency indicator, a purpose that differs significantly from the purposes of the WPL series. There are further similarities between the TOEFL and the IELTS qualifications in that they are both regarded as examination focussed qualifications.
- Comprehensive Adult Student Assessment System (CASAS) – CASAS focuses on teaching and assessing basic skills in contexts that are relevant and important to adult learners. CASAS is approved and validated by the U.S. Department of Education and the U.S. Department of Labour to assess both native and non-native speakers of English. The CASAS system is backed up by 25 years of research and development in adult assessment, instruction and evaluation.

The CASAS listening modality measures the following: recognizing vocabulary, understanding imperatives, instructions, and requests, interpreting grammatical structures, understanding conversations, comprehending informational and factual discourse, and making inferences.

Table h1-8 (Table 27 in the UK NARIC Study) provides comparisons between the above mentioned organizations using CEFR as a benchmarking framework. The comparison demonstrates that the WPL and CASAS programs broadly compare to levels A1 to B2 on the framework. It also demonstrates that WPL caters to a level of language proficiency below the lowest CEFR level A1. This highlights a strength of the literacy series that starts at Level 1 for people who are barely literate, whereas CEFR A1 describes people with a basic awareness of a second language. In relation to TOEIC and TOEFL, the table shows an inconsistent distribution of the qualification grades. It also emphasises that the TOEFL and TOEIC scores cover a narrower band of CEFR, suggesting limitations on the value of these scores. Furthermore, with the TOEIC qualification the table shows that near maximum scores are required for the result to be considered comparable to CEFR C1. BULATS and IELTS relate well across all levels of the CEFR

Table h1-8 Table 27 from UK NARIC Study – English Language Qualifications Level Comparisons

	WP Literacy	CASAS *	IELTS	BULATS	TOEIC				TOEFL iBT				
					Minimum scores				Minimum scores				
					Listening 5-495	Reading 5-495	Speaking 0-200	Writing 0-200	Overall 0-120	Listening 0-30	Reading 0-30	Speaking 0-30	Writing 0-30
CEFR C2			8 - 9	90-100							29		
CEFR C1			7 - 8	75-89	490		200	200	110-120	26	28	28	28
CEFR B2	8	E	6 - 7	60-74	400	385	160	150	87-109	21	22	23	21
CEFR B1	7	D	5 - 6	40-59	275	275	120	120	57-86	13	8	19	17
	6	C											
CEFR A2	5	B	4 - 5	20-39	110	115	90	70				13	11
	4												
CEFR A1	3	A	3 - 4	0-19	60	60	50	30				8	
	2	A											
	1												

* For a summary of the NRS Educational Functioning Levels and their equivalence to CASAS levels, refer to page 144 of the original Life and Work Listening submission.

Item h2 – The extent to which the raw or scale scores are related to other relevant variables, such as teacher evaluation, hours of instruction, or other measures that may be used to test performance

Teacher Evaluation Study

To provide additional external evidence of construct validity, CASAS conducted a concurrent validity study. The goal of this study was to determine the degree to which the placement of examinees into NRS Educational Functioning Levels based on independent teacher evaluations compared to scores achieved on the CASAS Life and Work Reading assessments. The use of the teacher evaluations can be interpreted as an independent measure of students' abilities on the same construct measured by CASAS assessments.

For the purposes of this study, CASAS requested the participation of teachers across a variety of adult education classes. Special attention was taken to choose classes of all levels so that the sample population consisted of students who spanned all six of the NRS Educational Functioning Levels and from a variety of forms covering the Life and Work Reading assessment series.

The study took place during the middle of the instructional year so that teachers would have sufficient knowledge of their students' ability. Also, the timing of the study was specifically chosen to coincide with a CASAS testing administration so that students would have recently taken a CASAS test and been placed into a corresponding NRS Educational Functioning Level. It was important that the teachers' judgments were proximate with the assessment, so the estimates of students' abilities were at similar times.

Teachers were educated on the descriptions of the NRS Educational Functioning Levels. In general, teachers' familiarity with these levels was very limited. Because of this limitation, CASAS researchers noted that more advanced training regarding the NRS Educational Functioning Levels might be beneficial for future studies.

Teachers were then asked to place each student into an NRS Educational Functioning Level based solely on their knowledge of students' abilities without consideration of construct irrelevant factors (e.g., motivation, behavior, attendance). If a teacher did not have sufficient contact with a student, they were asked not to evaluate that student. Teachers were specifically instructed to make their evaluation without seeing the score the student had recently achieved on their CASAS test or the corresponding NRS Educational Functioning Level in which this placed them. The goal was to receive teacher evaluations that were not influenced by, and therefore independent of, students' test scores.

The background and demographic information of the participating teachers is listed in Tables h2-1 through h2-5.

Table h2-1 Teacher Evaluation Study – Participating Teachers’ Background

Title, Degree(s), Certification(s)	N	%
BA/BS	10	27.0
MA/MS	13	35.1
ESL Instructor	1	2.7
Teacher	3	8.1
Multiple Subject Teaching Credential	1	2.7
Adult Ed. Credential (Designated Subjects)	2	5.4
ABE/GED Instructor	1	2.7
Non-Credit Instructor	1	2.7
Special Education Credential	1	2.7
ABE Teacher, Multi Subject Certification w/Bilingual		
BCLAD & TESOL Certif.	1	2.7
No Response	3	8.1
Total	37	100.0

Table h2-2 Teacher Evaluation Study – Participating Teachers’ Teaching Experience

Years Adult Education Teaching Experience	N	%
<5	7	18.9
5-10	10	27.0
11-15	6	16.2
16-20	6	16.2
21-25	2	5.4
26-30	3	8.1
No Response	3	8.1
Total	37	100.0

Table h2-3 Teacher Evaluation Study – Participating Teachers’ Gender

Gender	N	%
Female	23	62.2
Male	10	27.0
No Response	4	10.8
Total	37	100.0

Table h2-4 Teacher Evaluation Study – Participating Teachers’ Age

Age	N	%
< 35	4	10.8
35-45	9	24.3
46-59	14	37.8
60+	6	16.2
No Response	4	10.8
Total	37	100.0

Table h2-5 Teacher Evaluation Study – Participating Teachers’ Race/Ethnicity

Race/Ethnicity	N	%
White (Not Hispanic or Latino)	23	62.2
Hispanic or Latino	5	13.5
Asian	2	5.4
Black or African American	4	10.8
No Response	3	8.1
Total	37	100.0

Tables h2-6 and h2-7 provide evidence of the agreement, defined as classification consistency, between NRS Educational Functioning Level placement by teachers and by CASAS test scores.

For future studies, CASAS is designing new training methods that will be used to ensure that teachers are adequately trained on the descriptions of each NRS Educational Functioning Level. This includes allotting more time to this process. In addition, we feel it is important to train teachers to be aware of a possible tendency to use construct irrelevant factors (e.g. behavior, attendance, effort) to evaluate student ability.

Table h2-6 provides the mean CASAS test scale scores by ABE/ASE NRS Level that was assigned through teacher evaluation. For example, for all ABE students that were assigned an NRS Level of Low Intermediate Basic Education by teachers, the mean CASAS test score was 214.1. These results suggest that the teachers, on average, were able to classify students into categories that were also differentiated by their observed scores.

Table h2-6 Mean CASAS Test Scale Scores by NRS Level Assigned via Teacher Evaluation (ABE/ASE)

NRS ABE/ASE Educational Functioning Level	Mean CASAS Test Score	<u>N</u>
Beginning ABE Literacy	--	1
Beginning Basic Education	192.8	13
Low Intermediate Basic Education	214.1	24
High Intermediate Basic Education	223.0	23
Low Adult Secondary Education	232.0	17
High Adult Secondary Education	--	1

Note. Mean scores less than 10 are not reported.

Table h2-7 provides the mean CASAS test scale scores by ESL NRS Level that was assigned through teacher evaluation. For example, for all ESL students that were assigned an NRS Level of High Beginning ESL by teachers, the mean CASAS test score was 208.2. Similar to the results observed in Table h2-7 above, the teachers were generally able to classify students into NRS levels that also demonstrated differences in their observed CASAS scores.

Table h2-7 Mean CASAS Test Scale Scores by NRS Level Assigned via Teacher Evaluation (ESL)

NRS ESL Educational Functioning Level	Mean CASAS Test Score	<u>N</u>
Beginning ESL Literacy	175.5	63
Low Beginning ESL	195.8	82
High Beginning ESL	208.2	38
Low Intermediate ESL	212.5	82
High Intermediate ESL	218.4	130
Low Advanced ESL	224.4	71

CASAS to Years of Schooling and Degree

A study addressing predictive validity issues was conducted in Iowa in 1996. This study, *A Workforce Basic Skills Norming Study of Iowa's JTPA and PROMISE JOBS Target Populations*, comprised 819 JTPA and/or PROMISE JOBS participants from 11 of the 15 community college programs. Data were collected using the ECS Appraisal Form 130 and analyzed to establish evidence of relationships to educational level and to develop accurate and reliable score cut-off points for various educational, certification, and career goals. Results showed a strong correlation between the ECS test scores and various educational levels. Table h2-8 shows the relationship between highest grade completed and ECS reading

mean scores. This study is included in this manual as general evidence of the construct validity of the CASAS tests in the reading modality.

Table h2-8 Iowa Population Mean Scale Scores by Highest Grade Completed

Highest Grade Completed	Number	%	Reading
8 or less	97	12	229 *
9	107	13	233 ±
10	114	14	235 ±
11	118	15	237 *
12	288	35	241 *
13+	86	11	245

Note.* Statistically significant different from subsequent level at the .05 level. ± Statistically significant difference from the second subsequent level at the .05 level.

The results above demonstrate that while CASAS scale scores are not precise equivalents for grade levels completed, there is a clear correlation between the two, and that CASAS scale scores in reading on the ECS Series do translate to higher grade levels completed. In Table h2-8 it is also worth noting that the majority of the differences between CASAS means for a grade level completion are significant. Therefore, in general, participants who have more years of schooling score higher in reading, indicating a predictive relationship between the test scores and grade level completion.

Table h2-9 Iowa Population Mean Scale Scores by Highest Degree Earned

Highest Degree Completed	Number	% of sample	Reading
None	380	49	232
High School	239	31	240
GED	121	15	243
Vocational/Technical	21	3	246
AA/AS	13	2	248

Table h2-9 demonstrates the relationship between highest degree completed and reading mean scale scores. The data show that higher reading scores translate to higher degree completion rates. The differences between the means for no degree and all other noted degrees were significant at the .05 level, and differences between a high school diploma and all higher degrees (including GED) were significant as well.

An additional study compared Life and Work Reading scale scores across the 22 test forms for examinees having six or fewer years of schooling and those examinees having seven or more years. Results of t-test comparisons between the two groups were consistent with earlier studies. Examinees who have had seven or more years of schooling demonstrated higher scale scores when compared to those having six or fewer years of schooling. The t-value and significance values on these forms provide evidence that we can reject the null-hypothesis that the mean scores are similar and accept the hypothesis that the means are different for the two education groups analyzed. Form 215R was the only exception; the mean score for examinees with six or fewer years of education was slightly higher (226.5 vs. 225.1 and t-value of 1.18). The results of the statistical analysis by test level are shown in Table h2-10.

Table h2-10 Mean Pre-Test Scores by Years of Education Completed

Forms	Years Group	N	Mean	Standard Deviation	t Value	SIG.
310R	6 or less	97	176.0	10.28	-4.64	0.000
	7 or more	271	181.4	8.58		
311R	6 or less	64	177.3	7.56	-3.48	0.001
	7 or more	332	181.1	9.55		
27R	6 or less	10,052	183.5	12.51	-29.28	0.000
	7 or more	10,180	188.3	10.73		
28R	6 or less	6,572	185.5	11.02	-16.88	0.000
	7 or more	6,311	188.7	10.06		
81R	6 or less	12,286	195.9	10.54	-37.68	0.000
	7 or more	24,918	200.1	9.12		
82R	6 or less	7,760	197.0	10.56	-25.30	0.000
	7 or more	13,848	200.7	9.44		
951R	6 or less	1,679	198.8	10.58	-11.84	0.000
	7 or more	2,939	202.4	9.24		
952R	6 or less	1,176	200.1	10.09	-10.50	0.000
	7 or more	2,143	203.7	8.53		
81RX	6 or less	8,152	203.0	10.13	-42.27	0.000
	7 or more	21,016	208.6	9.82		
82RX	6 or less	7,133	203.3	10.23	-38.35	0.000
	7 or more	18,858	208.7	9.86		
951RX	6 or less	790	207.0	9.71	-11.42	0.000
	7 or more	1,830	211.6	9.26		
952RX	6 or less	685	207.1	10.94	-10.49	0.000
	7 or more	1,683	212.2	10.07		
83R	6 or less	10,730	207.2	10.72	-52.16	0.000
	7 or more	45,887	213.2	11.26		
84R	6 or less	7,069	209.1	10.58	-37.90	0.000
	7 or more	31,637	214.4	10.99		
85R	6 or less	2,937	220.0	9.79	-26.52	0.000
	7 or more	23,989	225.1	10.91		
86R	6 or less	2,063	220.9	9.68	-23.55	0.000
	7 or more	15,251	226.3	10.40		
185R	6 or less	1,398	220.4	9.24	-20.69	0.000
	7 or more	13,157	225.8	10.37		
186R	6 or less	1,032	221.1	8.53	-16.80	0.000
	7 or more	8,840	225.9	9.59		
187R	6 or less	305	235.0	10.17	-6.01	0.000
	7 or more	7,715	238.6	10.25		
188R	6 or less	204	238.7	9.55	-3.62	0.000
	7 or more	4,368	241.2	9.86		
513R	6 or less	309	236.3	11.55	-5.60	0.000

Forms	Years Group	N	Mean	Standard Deviation	t Value	SIG.
514R	7 or more	8,556	239.9	10.99	-8.62	0.000
	6 or less	235	231.4	10.35		
	7 or more	6,277	237.4	10.59		

Performance by Hours of Instruction

The study looked at the relationship between hours of instruction and learning gains. The table and figures below represent combined data from three states: California, Iowa, and Oregon for the program year 2006-07. The data was collected for NRS Federal Table reporting purposes using TOPSpro software. There were 241,722 examinees who took a pre- and post-test using a CASAS reading assessment and had over 40 hours of instruction. The data represents all 12 NRS functioning levels. See Table h2-11.

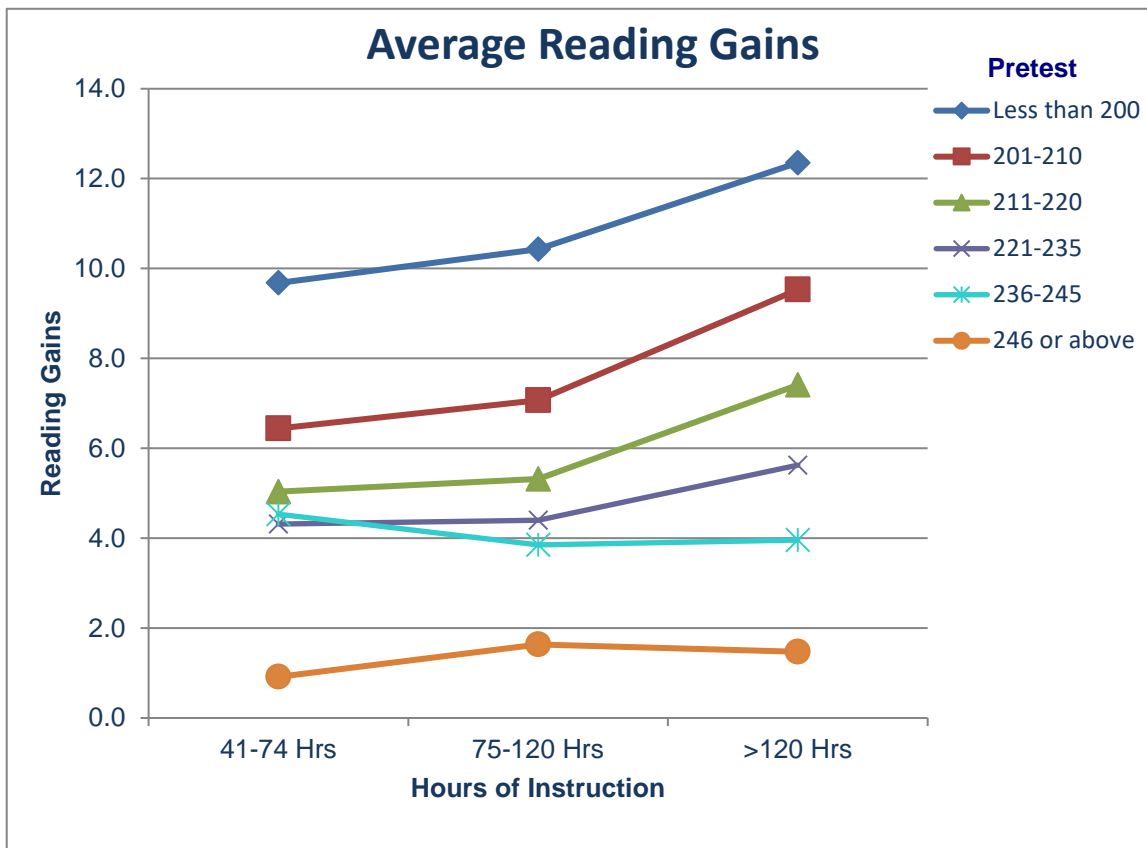
Table h2-11 Study Population – Hours of Instruction and Learning Gains

Educ. Functioning Level	Hours of Instruction		
	41-74 Hrs	75-120 Hrs	>120 Hrs
ABE Beginning Literacy	377	365	1,880
ABE Beginning	596	711	2,192
ABE Intermediate Low	993	924	2,508
ABE Intermediate High	3,318	3,106	7,684
ASE Low	1,444	1,256	2,934
ASE High	878	651	1,715
ESL Beginning Literacy	1,503	1,682	3,535
ESL Beginning Low	3,001	3,448	7,435
ESL Beginning High	7,810	9,317	22,496
ESL Intermediate Low	13,121	16,922	44,706
ESL Intermediate High	5,601	7,693	24,213
ESL Advanced	5,091	7,386	23,230

Examinees who took a pretest and post-test on a CASAS reading assessment are grouped according to the hours of instruction: 41-74, 75-120, and above 121 hours. It is important to note that the study used the total hours of instruction within a program year as reported for the NRS Federal tables for each student without consideration as to hours specifically devoted to reading instruction. Overall, the figure shows a positive correlation between average gain and hours of instruction. The highest gains between pre- and post-test are seen at the lower levels. Additional research has shown that the positive relationship between hours of instruction and learning gains in the adult education program is mainly seen across instructional levels in the ESL program and does not always hold, especially at the high levels, in ABE and ASE programs. One hypothesis for this is that ESL classes often may have more structure and more consistent attendance patterns that are not completely captured by analyzing results by total hours of instruction. Because there are many other factors other than hours of instruction that determine learning gains and because data reporting the hours of instruction in a specific

learning modality can be imprecise, CASAS is conducting additional analyses to examine this relationship further.

Figure h2-1 Average Learning Gains by Hours of Instruction



Unidimensionality and Principal Components Factor Analysis

Fundamental to all IRT models is the notion that a test measures one and only one construct. This is referred to as unidimensionality. The assumption is that the items in a test are homogenous and are measuring a single trait. One of the more common and early ways of testing this assumption was through criteria developed by Reckase (1979). Generally, these criteria related to the proportion of variance associated with the first eigenvalue and the ratio of the first to the second eigenvalue. The eigenvalue for a factor measures the variance in all the variables which is accounted for by that factor and the ratio of eigenvalues is the ratio of explanatory importance of the factors with respect to the variables. A factor with a low eigenvalue is contributing little to the explanation of variances in the variable. Thus, eigenvalues measure the amount of variance in the total sample accounted for by each factor. Eigenvalues are computed by summing the squared factor loadings (the correlation between the variable and the factor) for all the variables.

The procedure, proposed by Reckase, for assessing unidimensionality called for generating a tetrachoric inter-item correlation matrix and then conducting a principal components analysis to determine whether the first factor accounted for at least 20 percent of the total variance.

Results showed that the first principal component included the majority of the variance compared to the subsequent principal component extractions across the Life and Work Reading Forms. For example, for Form 81R, 24.4 percent of the variance can be accounted for by the first eigenvalue; and the first eigenvalue is much larger than the second eigenvalue (5.86 compared to 1.71 or a ratio of 3.43). These are indicators, among others, of an essentially unidimensional construct measurement. See Table h2-12 for information on the reading forms analyzed separately.

Table h2-12 Principal Components Factor Analysis

Form	No. of Items	Largest Eigenvalues			% of Variance of First Factor	λ^1 λ^2
		1	2	3		
310	28	5.099	1.465	1.330	18.208	3.481
311	28	5.150	1.849	1.477	19.391	2.785
27R	30	9.537	2.692	1.514	31.788	3.543
28R	30	8.421	2.931	1.410	28.069	2.873
81R	24	5.863	1.709	1.037	24.429	3.431
82R	24	6.410	1.726	1.103	26.708	3.714
81RX	28	5.747	1.574	1.129	20.526	3.651
82RX	28	5.567	1.532	1.099	19.883	3.634
951	24	6.366	1.752	1.108	26.524	3.634
952	24	6.031	1.612	1.126	25.129	3.741
951x	26	5.336	1.354	1.252	20.525	3.941
952x	26	6.172	1.537	1.148	23.737	4.016
83R	32	7.538	1.487	1.207	22.993	5.069
84R	32	6.967	1.452	1.271	21.773	4.798
85R	37	7.408	1.489	1.110	20.022	4.975
86R	37	6.859	1.632	1.219	18.538	4.203
185R	38	6.769	1.618	1.160	17.813	4.184
186R	38	5.958	1.717	1.137	15.680	3.470
187R	32	5.922	1.414	1.209	18.505	4.188
188R	32	5.900	1.431	1.162	18.439	4.123
513R	40	7.534	1.665	1.133	18.834	4.525
514R	40	7.332	1.576	1.166	18.331	4.652

Item h3 – The adequacy of the research designs associated with these sources of evidence

The series of descriptive and empirical analyses listed in sections h1 and h2 involved the collaboration of psychometric experts, subject matter experts, and data collection experts in the field of adult education. A detailed summary of the results of each study is included in sections h1 and h2.

The research designs for each project focused on the proper selection of the study population to ensure adequate representation of the adult education population being served. Section h3i details the size of the study populations associated with the research designs, and Section h3ii presents the demographic characteristics of the study population. In the Relationships Between CASAS and MELT, Work Keys Study, and the CASAS-GED Correlation Study, multiple states participated in the studies, allowing for a broader representation of the entire adult education population.

In the empirical analyses Mean Scale Scores by Years of Education, Mean Scale Scores by Hours of Instruction, and the Unidimensionality and Principal Components Analysis, CASAS used data submitted by WIA Title II funded agencies from examinees, encompassing examinees in California during the 2005-06 and 2006-07 program years. CASAS is responsible for the collection and aggregation of these submissions via the TOPSpro™ (Tracking of Programs and Learners) software. The data collection process follows strict guidelines to ensure accuracy and uniformity. This begins with the training process on data collection requirements and techniques for test administrators and scorers, detailed in Section i4, and continues as the data received by CASAS is then subject to rigorous data quality checks. These data quality checks are based on the Data Quality Checklist published by the NRS. Examples include a comprehensive data dictionary provided to all local programs and the review of data on a quarterly basis using error checking functions that identify out-of-range values, anomalous, or missing data.

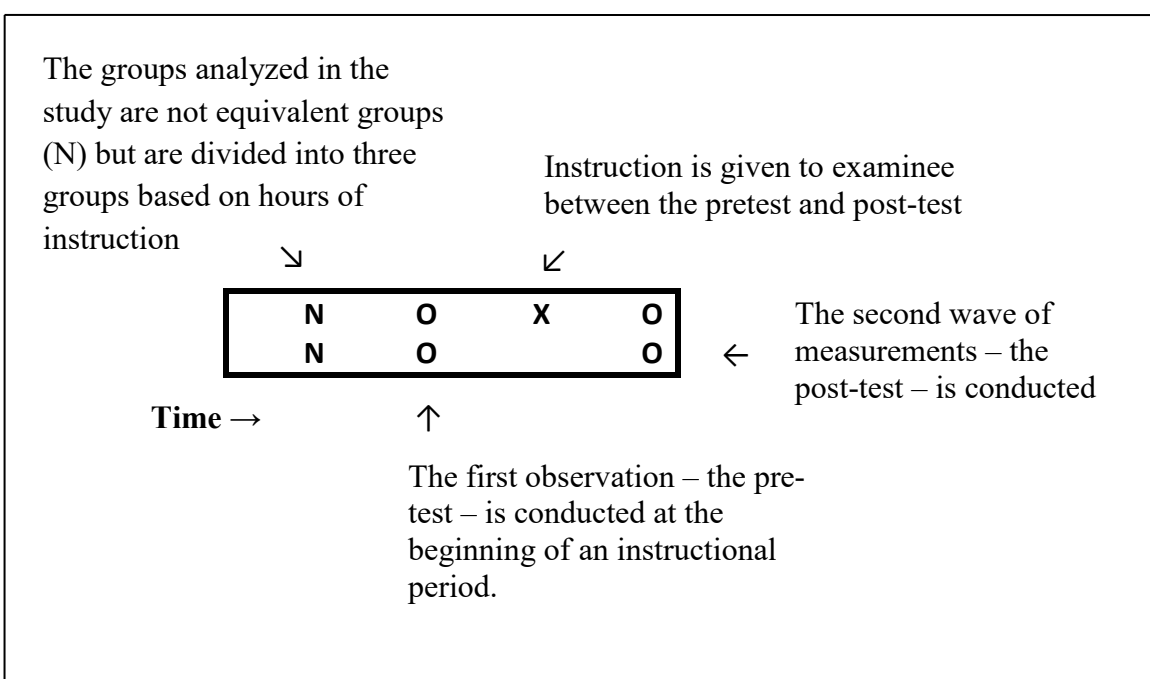
The research designs for each study take into consideration and can be described by five “elements” of research design: observations or measures, treatment or programs, groups, assignment to group, and time (Trochim, 2006). The layout design for the empirical data analyses generally follows the example outlined in Table h3-1 and Figure h3-1.

Table h3-1 Research Design Summary for Hours of Instruction by Learning Gains Analysis

Research Category	Description
Observations/Measures:	The first measure is the pretest score for examinees who took a pretest during a given program year(s). The second measure is the post-test score for examinees given a post-test during the same program year(s).
Treatment or Programs:	The treatment is the instruction given between the pretest and post-test.

Groups:	The data is grouped into three subgroups: examinees with 41-74, 75-120, or 120+ hours of instruction between pre- and post-tests.
Assignment of Groups:	The two groups are not equivalent (N) and are assigned based on hours of instruction.
Time:	Time moves from left to right in Figure h3-1 showing that once the groups are identified, the mean learning gains are then calculated and analyzed

Figure h3-1 Research Design Notation for Hours of Instruction by Learning Gains Analysis



Item and test form data is further reviewed by psychometric experts to determine if items and test forms conform to psychometric standards such as unidimensionality, inter-item consistency (KR 20), model fit, differential item functioning, standard errors of measurement, etc. When items do not appear to meet professional psychometric standards, they are reviewed again by psychometric and subject matter experts for possible elimination, revision, or retention of the items. After items are calibrated, reviewed, and included on test forms, a raw to scale score transformation is calculated and linked back to original scale. Only scale scores with a conditional standard error of measurement (CSEM) less than 5.6 are included in the accurate range of each test form (see Section d2).

In addition, when conducting analyses such as those included in Sections h1 and h2, psychometric experts review all data to determine if further controls are necessary based on the specific data analysis. For the purpose of these analyses, any exams with scores that did not fall in the accurate range with a CSEM less than 5.6 (see Section d2) were eliminated. The access to this robust dataset from a complete population of examinees, collected based on

strict standards and procedures that CASAS follows, allows for a high level of confidence in the results.

CASAS continues to conduct research related to construct validity. CASAS regularly updates analyses, such as the Mean Scale Scores by Years of Education, with current program year data and reviews its items and tests for item difficulty drift, bias, sensitivity, and current relevance. For analyses that are still in progress, such as the CASAS-CAHSEE Readiness Study, additional data collection continues to further increase the reliability and validity of the results. Currently data is being collected to analyze the relationship between the TABE and Life and Work Reading Assessments.

(h3i) The size of the samples

Table h3i-1 Construct Validity Research Studies Information

Study	Participants	Table
Teacher Evaluation Study	564 examinees and 37 teachers	h2-1 to h2-7
Relationships between CASAS and MELT	46 classrooms with 20-25 learners per class	h1-1
Relationship among SPL Levels, Best Scores, and CASAS Scores	810 learners	h1-2
Work Keys Study	494 learners from 27 sites across 8 states	h1-3
CASAS-GED Correlation Study	4,801 learners from five states	h1-4 to h1-6
CASAS-CAHSEE ELA Readiness Study	480 learners from 44 agencies (224 learners with actual CAHSEE scores)	h1-7
CASAS-IOWA Studies Examining Mean Scale Scores by Highest Degree Completed and Grade Level	774 learners	h2-8, h2-9
Mean Scale Scores by Years of Education	352,734 examinees	h2-10
Mean Scale Scores by Hours of Instruction	241,722 examinees	h2-11
Unidimensionality and Principal Components Analysis	386,399 examinees	h2-12
Parallel Forms T-Test	2,256 examinees	h4-1

(h3ii) The similarity between the sample(s) used in the data collection and the adult education population

As outlined in section h3i, several of the studies included participants from a wide variety of agencies and states to represent better the diversity of the adult education population.

For the Mean Scale Scores by Years of Education and the Unidimensionality and Principal Components analyses, please refer to Table h3ii that reports overall demographic characteristics on the populations used in these analyses. Because of the differences in the number of learners at each educational functioning level and differences in number of forms administered by agencies providing adult education, the number of examinees administered each form varies.

The N may vary slightly when different controls are implemented, such as analyzing scores only in the accurate range and adding 2006-07 program year data to increase the sample size for specific forms. The demographic characteristics did not change significantly based on these additional controls.

Table h3ii-1 Life and Work Reading Examinee Information

Reading Form	No. of Items	<u>Gender</u>			<u>Ethnicity</u>				<u>Years of Education</u>		<u>Language</u>	
		N	Male	Female	White	Hispanic	Asian	Black	6 and below	7 and higher	English	Non English
310R	28	787	396	389	475	184	44	66	97	271	139	648
311R	28	824	453	369	522	185	39	62	64	332	104	720
27R	30	24,822	11,549	12,920	1,442	17,034	4,949	254	10,052	10,180	551	24,271
28R	30	16,419	7,335	8,797	735	10,974	3,729	196	6,572	6,311	318	16,101
81R	24	41,630	18,364	22,678	2,660	30,496	6,310	412	12,286	24,918	548	41,082
82R	24	23,674	10,621	12,751	1,488	17,429	3,697	293	7,760	13,848	292	23,382
951R	24	4,870	1,682	3,140	139	2,662	1,952	14	1,679	2,939		4,861
952R	24	3,483	1,226	2,236	128	1,870	1,420	12	1,176	2,143		3,478
81RX	28	31,392	13,252	17,867	2,558	22,346	4,996	362	8,152	21,016	426	30,966
82RX	28	28,118	11,656	16,307	2,259	20,462	4,422	337	7,133	18,858	378	27,740
951RX	26	2,740	900	1,804	113	1,497	1,042	20	790	1,830		2,720
952RX	26	2,482	793	1,663	108	1,205	1,090	25	685	1,683		2,466
83R	32	60,935	24,669	35,358	4,413	41,265	12,302	952	10,730	45,887	1,969	58,966
84R	32	41,600	16,602	24,291	3,101	27,820	8,701	596	7,069	31,637	1,350	40,250
85R	37	28,666	11,141	17,065	3,044	16,946	6,254	1,034	2,937	23,989	4,068	24,598
86R	37	18,308	6,923	11,221	1,688	11,402	4,096	461	2,063	15,251	1,868	16,440
185R	38	15,512	5,984	9,369	1,606	9,268	3,677	501	1,398	13,157	1,625	13,887
186R	38	10,392	3,989	6,328	1,123	6,308	2,531	207	1,032	8,840	750	9,642
187R	32	8,461	3,845	4,589	1,622	4,488	1,318	607	305	7,715	3,218	5,243
188R	32	4,745	2,061	2,671	776	2,677	859	286	204	4,368	1,570	3,175
513R	40	9,763	3,959	5,595	1,704	5,211	882	1,080	309	8,556	5,371	4,392
514R	40	6,776	2,381	4,338	1,074	3,776	741	729	235	6,277	3,795	2,971
Total		386,399	159,781	221,746	32,778	255,505	75,051	8,506	82,728	270,006	28,340	357,999
%			41.4	57.4	8.5	66.1	19.4	2.2	21.4	69.9	7.3	92.7

(h3iii) The steps taken to ensure the motivation of the examinees

When field tests were administered, the test administration directions were provided and reviewed with participating agencies. Item 2 from the Field-test Administration Directions specifically states:

Explain to learners that we are making a new reading test. Today we are going to find out how well the test works and if the questions are right for your level.

Prior to administration of the test forms, administrators emphasized to the examinees the importance of doing their best on the test and answering the questions to the best of their ability, but not to guess at answers just to finish the test. Test administrators explained to examinees the important role they play in the creation of a new test.

Other analyses, such as the CASAS-GED Correlation Study, the CASAS-IOWA Study Examining CASAS Scale Score and Grade Level, the CASAS-IOWA Study Examining Mean Scale Scores by Highest Degree Completed, and the Mean Scale Scores by Years of Education Study were conducted as continuing validity studies and use actual aggregated student pre- and post-test data administered during the course of regular classroom instruction and assessment.

Item h4 – Other evidence demonstrating that the test measures gains in educational functioning resulting from adult education and not from other construct irrelevant variables such as practice effects

Additional construct-related analyses were needed to determine if the Life and Work Reading Assessments were adequately measuring only the intended construct.

Parallel Form T-Test Analysis

Additional evidence of construct validity is provided from the results of the Parallel Form T-Test Analysis. For this analysis, the same group of examinees was used as in the Correlation between Parallel Forms Analysis reported under requirement g1. This dataset consisted of examinees who were assessed with each of two parallel forms within a specified time period. The purpose of this analysis was to determine if the mean scores achieved by these examinees on each of the two parallel forms were significantly different.

For the purpose of this analysis, the parallel form administrations were divided into two random groups, so that the test-taking patterns were comprehensive and did not always measure the same administration pattern (for example, to ensure that the first comparison group did not always reflect examinees taking Form 81R and the second group did not always reflect examinees taking Form 82R).

The results, comparing the mean scale scores, show low t-values. This provides evidence that we can accept the null hypothesis that the mean scores on parallel test forms at each CASAS test level are not significantly different. These results appear in Table h4-1.

Table h4-1 Parallel Forms T-Test Results

Reading Test Form Pair	Mean Group One	Mean Group Two	N	T-Value	Sig.
27R-28R	188.9	189.3	126	-0.592	0.555
81R-82R	203.2	203.3	439	-0.161	0.872
81RX-82RX	207.0	207.1	277	-0.279	0.780
83R-84R	216.1	215.9	560	0.756	0.450
85R-86R	231.2	231.0	222	0.368	0.713
185R-186R	227.4	227.3	288	0.208	0.836
187R-188R	241.7	242.4	213	-1.448	0.149
513R-514R	238.2	238.1	131	0.155	0.877

The Effect of Practice on Test Scores

Practice effects in adult education assessments are present when an examinee test form score and the resulting proficiency estimate on a given test form (second administration) is affected or changed by the administration of the given test form (first administration) with no measurable amount of instruction occurring between the two administrations of the same given test form. If an examinee's test scores and the resulting proficiency estimates are statistically higher on the second administration than on the first administration with no measurable instruction occurring between the two test administrations, this is an indication of practice effects. The two test scores and the resulting proficiency estimates should be the same for a given examinee and should be comparable for groups of examinees within statistical errors of the mean and errors of measurement.

CASAS standard procedural assessment policies state that the amount of instructional time between the administration of the pretest and post-test forms should include approximately 70-100 hours of ESL, ABE, or ASE instruction. Two test forms are available at each of five proficiency levels (A-E) in the mathematics assessments and the Secondary Level Assessments. Training is provided for adult educators to give one alternate form (e.g. Level A, Form 81R) as the pretest and the other alternate form (e.g., Level A, Form 82R) as the post-test. Because the CASAS assessments are administered statewide in many ABE and ASE programs, there are sometimes human errors in following the standard procedural assessment policies.

Future Research Design to Study the Influence of Practice effects

An ideal study to measure the practice effects within a certain period when no measureable instruction has occurred would entail administering parallel forms to sample students in the order presented in Table h4-2. A group of students who are given a test form (e.g., A Level, Form 81R) is administered immediately (within less than one day) after a prior administration of the same test form (e.g., A Level, Form 81R). This would form groups C1 (A Level, Form 81R, 81R) and D1 (A Level, Form 82R, 82R) as specified below. Another group of students take one of the parallel test forms at each NRS achievement level within less than one day of time. These will form the groups C3a and C3b as specified below. Groups should be formed representing the time order of the administration of the alternative test forms (e.g., A Level

Form 81R, 82R where Form 81R was administered before Form 82R and A Level Form 82R, 81R where Form 82R was administered before Form 81R). The study would repeat administrations of the same test form or alternative test forms with one day separating the same test form administrations, two days separating the same test form administrations, and three days separating the same test form administrations.

Table h4-2 Complete Practice Effects Study Design

Group	Pretest Form	Experimental Treatment	Post-test Form	Time
Group C1	Form A	No Measurable Instruction	Form A	Immediate
Group C2	Form B	No Measurable Instruction	Form B	Immediate
Control C3a	Form A	No Measurable Instruction	Form B	Immediate
Control C3b	Form B	No Measurable Instruction	Form A	Immediate
Group D1	Form A	No Measurable Instruction	Form A	One Day
Group D2	Form B	No Measurable Instruction	Form B	One Day
Control D3a	Form A	No Measurable Instruction	Form B	One Day
Control D3b	Form B	No Measurable Instruction	Form A	One Day
Group E1	Form A	No Measurable Instruction	Form A	Two Days
Group E2	Form B	No Measurable Instruction	Form B	Two Days
Control E3a	Form A	No Measurable Instruction	Form B	Two Days
Control E3b	Form B	No Measurable Instruction	Form A	Two Day
Group F1	Form A	No Measurable Instruction	Form A	Three Days
Group F2	Form B	No Measurable Instruction	Form B	Three Days
Control F3a	Form A	No Measurable Instruction	Form B	Three Days
Control F3b	Form B	No Measurable Instruction	Form A	Three Days

Analyses of mean scores, standard errors of means, and one-way analyses of variance should be conducted at each of the NRS achievement levels to determine if the mean test scores were statistically greater for the second administration of a given test form in comparison to administration of alternative test forms with test administration time periods less than one day, one day, two days, and three days. Standard errors of the mean scores should be computed to determine the expected variation in the respective mean scores. One way analyses of variance can determine if there was a difference between groups (Same Test Form 81R, Same Test Form 82R, counterbalanced test form Groups Form 81R then 82R and Form 82R then 81R), test forms, and time periods. Also, any mean score differences plotted across time periods will determine if the effects increased, remained the same, or decreased over the different time periods analyzed. We expect the practice effects on test scores would be present in the case of tests administered within the same day and one day apart. We do not expect to see practice effects on test scores administered three days apart.

CASAS is now conducting a study to determine the practice effect when a parallel test or a same test was administered to students within the same day, the next day, two days, and three days apart. To date we have collected test data from the Life and Work Reading series and initial results of the study are reported below in Tables h4-3 through h4-5. The study has covered only some of the sample groups as shown in Table h4-3.

A group of students was convened to take an appropriate CASAS reading test based on their NRS Educational Functioning Level. The order of administration was alternated within the testing groups, half of the group took Form 81R and the other half took Form 82R. Groups were formed representing the time order of the administration of the alternative test forms (e.g., A Level Form 81R, 82R where Form 81R was administered before Form 82R and A Level Form 82R, 81R where Form 82R was administered before Form 81R). This would form groups C3a and C3b respectively. After completing the first test, the students took a break and then were administered a second parallel test – those who were first administered Form 81R now received Form 82R and vice versa. The study also included group D1 consisting of students who received the same test one day apart. See Table h4-3.

Table h4-3 Data Collected for the Current Practice Effects Study

Group	Pretest Form	Experimental Treatment	Posttest Form	Time
Control C3a	Form A	No Measurable Instruction	Form B	Immediate
Control C3b	Form B	No Measurable Instruction	Form A	Immediate
Group D1	Form A	No Measurable Instruction	Form A	One Day

Analyses of mean scores and standard errors of means were conducted to determine if the mean test scores were statistically greater for the second administration of a given test form in comparison to administration of alternative test forms with test administration time periods – less than one day and one day apart. Standard errors of the mean scores were computed to determine the expected variation in the respective mean scores. We expect the practice effects on test scores to be present in the case of tests administered within the same day and one day apart. We do not expect to see practice effects on test scores administered three days apart. In most cases, when examining tests administered within the same day or one day apart it was observed that the mean score is higher for the second group. As expected, this could be due to practice effect.

Table h4-4 shows the result from the study for groups C3a and C3b who tested with the parallel form. The parallel 2 group showed a slightly higher mean than the parallel 1 group. According to the result of these t-tests, the mean scale score between the two parallel groups for forms 83R-84R, 85R-86R, 185R-186R, 187R-188R, and 513R-514R are different ($p < 0.05$).

Table h4-4 Group C3a and C3b Students Tested with Parallel Reading Forms

Parallel Reading Forms	N	Mean Scale Score		Stand. Deviation		Stand. Error		Corr.	t-test	df	Sig. (2-tailed)
		Parallel 1	Parallel 2	Parallel 1	Parallel 2	Parallel 1	Parallel 2				
81RX-82RX	80	208.5	209.5	12.53	12.54	1.410	1.410	0.883	-1.43	79	0.157
83R-84R	82	210.7	212.1	11.61	10.58	1.233	1.169	0.866	2.32	81	0.023
85R-86R	114	223.3	224.6	8.89	8.35	0.836	0.786	0.829	-2.86	113	0.005
185R-186R	86	224.9	225.9	7.98	7.80	0.856	0.836	0.839	-2.06	85	0.043
187R-188R	84	242.4	243.8	7.99	8.28	0.872	0.904	0.843	-2.77	83	0.007
310R-311R	54	170.5	171.7	6.45	6.42	0.877	0.873	0.751	-1.91	53	0.060
513R-514R	101	238.0	239.8	9.94	10.68	0.999	1.074	0.855	-3.25	100	0.002
951RX-952RX	27	205.4	206.5	13.49	12.46	2.596	2.397	0.933	-1.19	26	0.250

Results from Group D Reading students who tested with similar reading forms one day apart also shows a higher mean for most forms except 513R. The t-test results show that the means are not statistically significant ($p \geq 0.05$), suggesting that scores observed were not different except for Form 85R. Also, when we examine the mean scores for Form 85R we see that they are comparable and that there isn't a meaningful measurement difference (223.0 vs. 224.8). These results provide evidence that there is not an issue of practice effects with the Life and Work Reading series when the tests are administered appropriately. Complete results are presented in Table h4-5.

Table h4-5 Group D Students Tested with Similar Reading Forms

Similar Forms	N	Mean Scale Score		Stand. Deviation		Stand. Error		Correlation	t-test	df	Sig. (2-tailed)
		Test 1	Test 2	Test 1	Test 2	Test 1	Test 2				
81RX	27	208.6	210.3	13.51	12.65	1.84	1.96	0.837	-1.17	26	0.25
83R	38	211.0	212.6	11.34	12.09	1.29	1.29	0.883	-1.73	37	0.09
85R	51	223.0	224.8	9.19	9.20	1.29	1.29	0.820	-2.36	50	0.02
185R	42	224.9	226.1	10.30	8.09	1.59	1.25	0.880	-1.61	41	0.11
187R	39	240.6	241.4	9.86	9.66	1.58	1.55	0.877	-1.51	38	0.30
513R	48	239.8	240.9	10.71	10.82	1.55	1.56	0.942	-2.12	47	0.04

(i) Other Information

Item i1 – A description of the manner in which test administration time was determined, and an analysis of the speededness of the test

Test Administration Times

There is no time limit for the Life and Work Reading Assessments, but most examinees finish within one hour. From October to December 2007, CASAS conducted a study to analyze the relationship between test-taking time and student performance. Participating test administrators volunteered to record the amount of time examinees took to complete their assessments by writing the beginning and ending times and then recording the total test-taking time on the answer sheets. The answer sheets were then scored and a correlation analysis was run between test-taking time and test score. Results on the correlation of test taking time with all CASAS Reading Assessments, including the Life and Work Reading Assessments, are summarized in Table i1-1. Results showed no significant correlation between test-taking time and the scores achieved. In many cases examinees with lower abilities take longer to finish the test and, hence, a negative correlation can be expected.

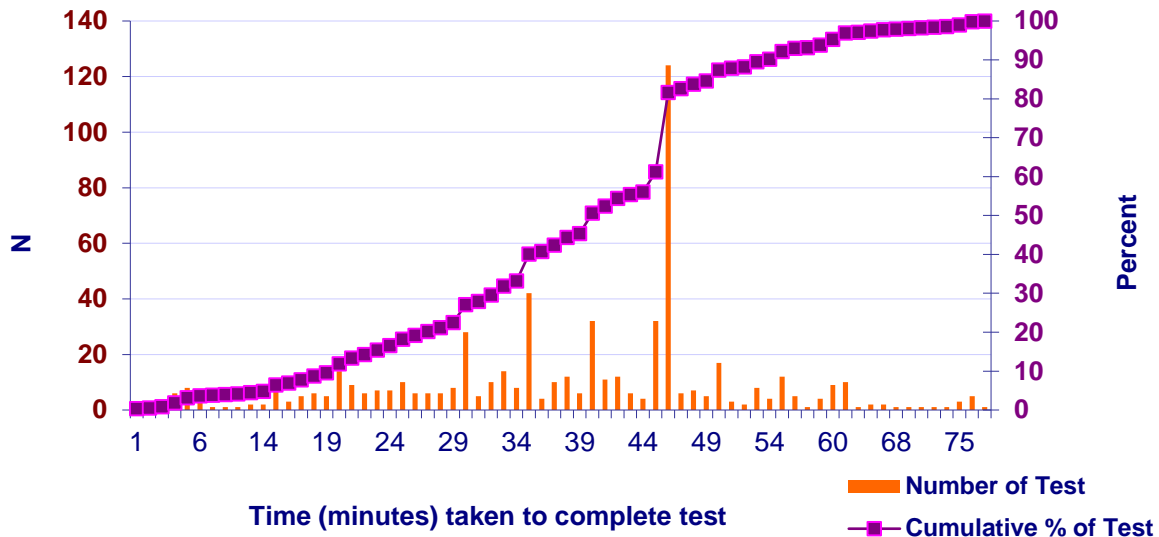
Table i1-1 Test Taking Time and Student Performance – Correlation Analysis

Form Level	CASAS Scale Score	Total Number of Test N	Correlation between test score & time
A	200 or Below	609	0.035
B	201-220	478	-0.115
C	221-235	649	-0.181
D	236-245	544	-0.153

Figures i1-1 through i1-4 display the distribution of the total number of minutes to complete the test. Nearly 82 percent of 609 examinees who were administered an A level form took 46 minutes or less to complete the test. The cumulative percent is shown on the secondary X axis.

Figure i1-1 Test Taking Time for A Level Reading Forms

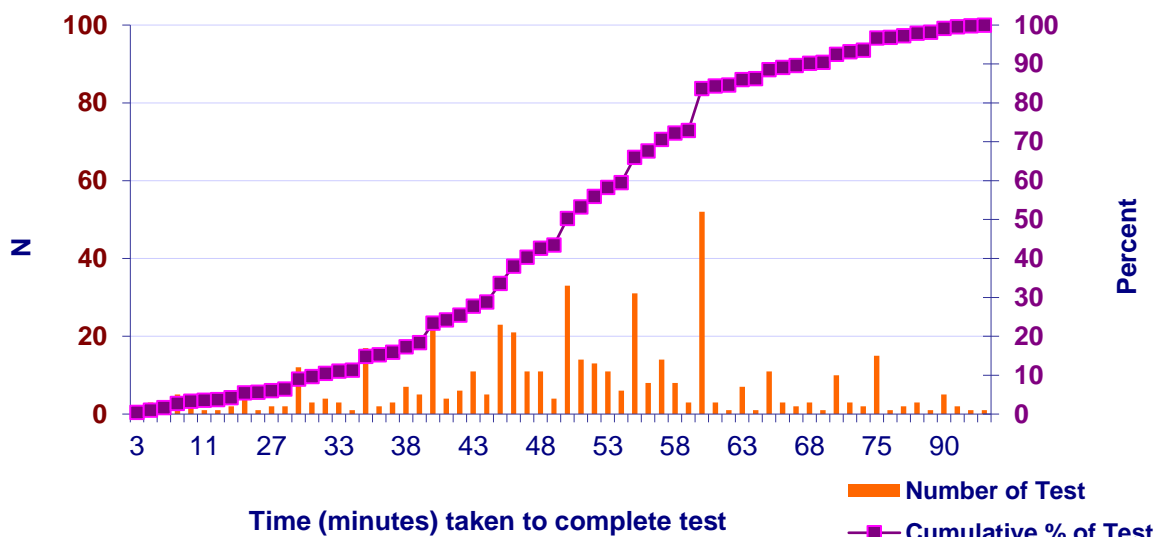
A Level Form - CASAS Score Range 200 or below



Nearly 84 percent of 478 examinees who were administered a B level form took 60 minutes or less to complete the test.

Figure i1-2 Test Taking Time for B Level Reading Forms

B Level Form - CASAS Score Range 201 - 220



Eighty percent of 649 examinees who were administered a C level form and 80 percent of 544 examinees who were administered a D level form took nearly 60 minutes or less to complete the test.

Figure i1-3 Test Taking Time for C Level Reading Forms

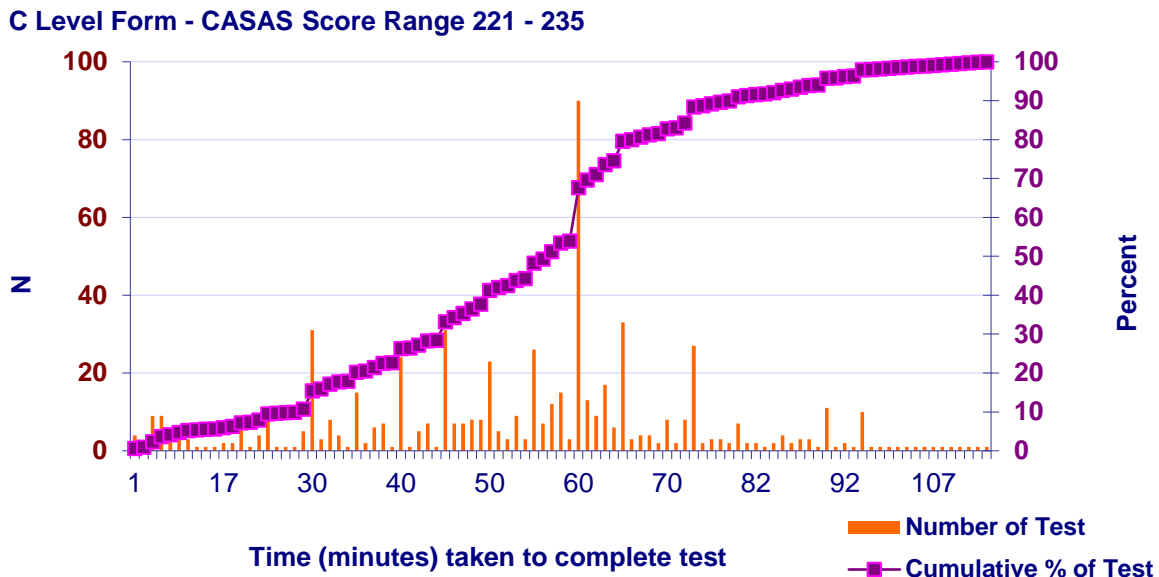
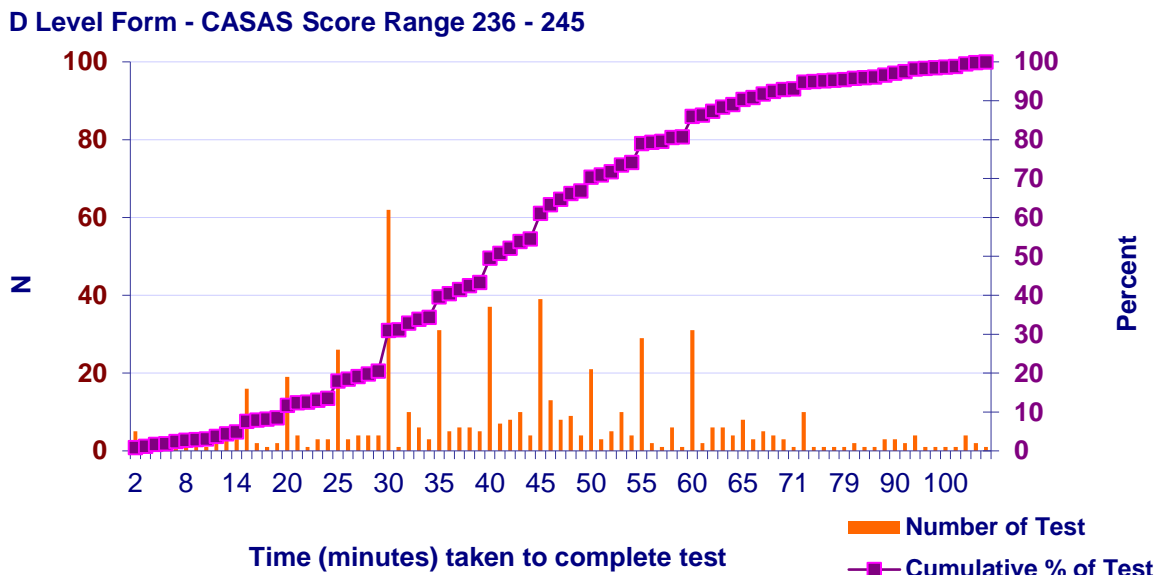


Figure i1-4 Test Taking Time for D Level Reading Forms



Item i2 – Additional guidance on the interpretation of scores resulting from any modifications of the tests for an individual with a disability

The following guidelines are published for providing accommodations using CASAS assessment for learners with disabilities:

The accountability standards in the 1998 Workforce Investment Act include the Rehabilitation Act Amendments of 1998 to improve access to adult programs and achieve employment outcomes for learners with disabilities. Other legislation addresses provisions related to testing accommodations for learners with disabilities, including the ADA Amendments of 2008, Section 504 in the Rehabilitation Act of 1973, the Individuals with Disabilities Education Improvement Act of 2004, and the No Child Left Behind Act of 2001. These laws ensure equal access for all learners in education programs, including learners with disabilities. Test accommodations provide an opportunity for all test takers to demonstrate their skills and ability. The accommodations may alter test administration procedures without changing what the test is intended to measure.

The following guidelines address methods for administering CASAS assessments using accommodations for learners with documented disabilities. The suggested accommodations for disability categories consist of local agency responsibility, accommodations in test administration procedures, and use of appropriate CASAS test forms.

Local Agency Responsibility

Local test administrators must consider the individual needs of the learner when they provide test accommodations. The responsibility of fulfilling learner requests for accommodations is that of the local agency following its state guidelines, not those of CASAS. However, CASAS will work with state and local agencies to develop additional tests that are in a format reflecting the manner in which learners acquire and report information needed to function in everyday life. For example, if a learner is legally blind and reads information using Braille, then a standardized reading test in a Braille format is appropriate for testing. CASAS has developed a life and work skills assessment in Braille format that reflects functional literacy situations in the life and work of a person who is blind.

Local agencies are responsible for providing fully accessible services and have the responsibility to ensure that these services meet reasonable criteria. In addition, the agency administering the test must provide any necessary accommodations at no cost to the learner. The costs are negligible for most of the common accommodations that learners will request. The agency may wish to contact district or state rehabilitative or health and human welfare agencies for diagnostic services such as for learning disabilities.

Local agency, district, and state accountability data collection systems should include CASAS test results for learners with disabilities. However, all public reports of test results must follow confidentiality laws and report scores without reference to name, address, or Social Security number of the learner. Local and state agencies may also want to collect accountability data on which and how many accommodations or alternate test forms are provided during test administration for program improvement purposes.

Adult learners with disabilities are responsible for requesting accommodations and for submitting documentation of their disability at the time of registration, program entry, or after diagnosis. The need to use an accommodation should be documented in official learner records, such as the Individual Educational Plan (IEP), Individual Program Plan (IPP), or Individualized Plan for Employment (IPE). The information could come from a doctor's report, a diagnostic assessment from a certified professional, and other clinical records. Adult agencies can often contact the local division of vocational rehabilitation or a secondary school to request documentation of a disability. The documentation must show that the disability interferes with the learner's ability to demonstrate performance on the test.

Local agencies should provide the same accommodations when they administer CASAS assessment as they do for the learner during instruction and as documented in annual plans such as individual education plans. For example, if the learner acquires information and receives instruction with the assistance of a sign language interpreter, then an interpreter is also necessary to provide directions for standardized testing. However, interpreters *do not sign the test questions themselves* when the purpose of the assessment is to determine level of basic reading literacy skill.

It is important that a learner practice using the appropriate accommodation during instruction *before* using the accommodation during the assessment. Also, it is important to *ask learners* what accommodations will work best in their situation.

CASAS has a variety of standardized performance-based assessment instruments to use with learners who do not demonstrate their skills well on multiple-choice tests. Standardized performance-based instruments are available for special purposes such as demonstration of writing and speaking skills and functional life skills for adults who have intellectual and developmental disabilities.

Accommodations in Test Administration Procedures

Local test administrators may provide or allow some accommodations in test administration procedures or test environment for documented disabilities without contacting CASAS. Test administrators often use these same strategies as *test taking strategies* for other learners who do not have documented disabilities. Students may request to take only one test per day or to test in an alternate quiet room. Learners may also use a variety of strategies when they take a test, such as a plain straight-edge ruler, magnifying strips or glass, colored overlays, ear plugs, and other devices as deemed appropriate¹.

Sample accommodations in test administration procedures or environment are shown in Table i2-1. Examples of these accommodations are extended time, supervised breaks, or sign language interpreter *for test administration directions only*. The accommodations listed are suggestions only. Accommodations are based on needs of individual learners and *not* on a disability category. Any testing accommodation must be consistent with documentation in the annual plan, such as an IEP. These accommodation strategies do not alter the validity of the test results. The local test administrator does not need to contact CASAS when providing these accommodations.

¹ www.acenet.edu/calec/ged/

Use of Appropriate CASAS Test Forms

It is important to use an appropriate test form that best meets the learner's goals and manner of receiving and reporting information. Most learners with a disability can take some form of a CASAS test. CASAS provides large-print versions of all tests. Large-print tests and CASAS eTests® are examples of test forms often used for learners with documented disabilities based on need as well as for *all* learners.

CASAS is currently expanding development of other test forms to measure basic literacy skills of learners with specific documented disabilities. The CASAS test development process always includes field-based specialists who help design, develop, and field test assessment instruments to ensure appropriateness for assessment of the specific population.

When Appropriate CASAS Tests are not Available

Please contact CASAS to obtain permission before changing the test format locally, if the test form is not currently available from CASAS. CASAS requires approval because changes in test format affect the standardization and statistical measures for the test. CASAS will provide advice regarding appropriate accommodations and use of test formats or test administration directions that are not currently available to test administrators.

Table i2-1 Accommodations in Test Administration Procedures

DISABILITY	TEST ADMINISTRATION PROCEDURES	CASAS TEST FORMS AVAILABLE	FORMS FOR DEVELOPMENT
Specific Learning Disability and/or ADHD such as dyslexia, dyscalculia, receptive aphasia, hyperactivity, written language disorder, attention deficit disorder	Extended time (1.5) Alternate schedule Frequent breaks Scribe/writer/alternate room Computer — spelling and grammar check disabled Simple calculator <i>for Level A/B only</i>	Large-print forms and Answer Sheet for all CASAS tests Oral assessment for Citizen. Interview Test Large-Print Answer Sheets for Reading for Citizenship CASAS eTests®	<i>Low-Level Literacy Forms in CASAS eTests® (with touch screen)</i>
Deaf or Hearing Impairment	Sign language interpreter <i>for test directions only</i> Head phones for those taking a listening test		
Blind or Visual Impairment	Magnifier/Template Text-to-speech software Video magnifiers Scribe/reader	Level A/B Reading test in contracted Braille format Large-print CASAS tests CASAS Listening test series (A, B and C)	<i>Level B/C Reading test in contracted Braille format Audio Version</i>
Mobility Impairment	Extended time Alternate site/equipment Scribe/writer/communication board		
Emotional/Mental Disability such as bipolar disorder and major depression	Extended time Supervised breaks Private room Limit testing per day		
Intellectual and Developmental Disabilities such as traumatic brain injury, autism, cerebral palsy, epilepsy, mental retardation	One-on-one administration Extended time	Adult Life Skills Color-Photo Forms 312 -352 POWER Forms 301- 307 Beginning Literacy Forms 27R/28R	<i>Low-Level Literacy Forms in CASAS eTests® (with touch screen)</i>

Note. The accommodations listed in Table i2-1 above are suggestions only and in addition to use of regular CASAS tests. Accommodations are based on needs of individual learners and *not* on a disability category. Any testing accommodation should be consistent with documentation in the annual plan, such as an IPP. Alternate test forms developed by CASAS do not modify test standards.

Item i3 – The manual provided to test administrators containing procedures and instructions for test security and administration

The Life and Work Reading Assessments Technical Administration Manual (TAM) contains detailed information regarding the administration of the assessments. It is available for purchase from CASAS. Please refer to the CASAS catalog for instructions on how to order this manual. The catalog can be found online at www.casas.org.

Item i4 – A description of the training or certification required of test administrators and scorers by the test publisher

To ensure the accurate administration of tests and the consistent interpretation of test results for each examinee, all agencies that use the CASAS system must complete CASAS Implementation Training. Depending on the particular assessments that an agency chooses, Implementation Training may be four to six hours long.

Throughout the Implementation Training workshop, participants learn standardized test administration procedures, take a sample CASAS test themselves, score and interpret their test results, identify appropriate instructional materials based on test results, and complete a variety of additional activities. These activities include a case study that follows a student from initial intake and pretesting through the post-testing process.

Implementation Training workshops are conducted by CASAS certified trainers who have completed a series of detailed steps to become state or national-level trainers. These steps are outlined in the Facilitator and Trainer Classifications form and include observing multiple trainings, co-training with a state or national-level trainer and, as a final step, conducting training while being observed and evaluated by a CASAS national-level trainer. States that implement CASAS on a statewide basis maintain their own certified trainers and track those who have completed Implementation Training.

CASAS offers several venues for local providers to attend training. CASAS can send a certified trainer to the provider's agency, agency staff can come to CASAS, or staff can attend the CASAS National Summer Institute held each June. Smaller, rural agencies have a distance-training option offered via CD-Rom or through an online meeting center. The distance-training option is also widely used as an ongoing staff development tool for agencies that use the CASAS system.

Local providers who have completed Implementation Training and have questions about test administration or related matters receive ongoing, complimentary technical assistance through the CASAS 800 number. CASAS assessment specialists are always available to answer questions as a follow up to training.

At the completion of all training workshops, attendees complete a CASAS Training Verification form collected by CASAS. Information about each attendee is entered into the CASAS training database to ensure that only those who have met training requirements are eligible to obtain and administer CASAS assessments

Item i5 – A description of retesting (e.g., re-administration of a test because of problems in the original administration such as a test taker becomes ill and cannot finish, there

are external interruptions during testing, or there are administration errors) procedures and the analysis upon which the criteria for retesting are based

The following is the CASAS re-testing policy for the Life and Work Reading Assessments:

CASAS Retesting Policy Statement

The re-administration of a test may be necessary because of problems in original administration that can include student illness, external disruptions, or administration errors. Although such events may be infrequent, CASAS has an established assessment policy to mitigate these circumstances. CASAS recommends that learners who experience any of these events will need to repeat the testing procedure. CASAS advises that these learners be administered the alternate form of the test in progress at the time of the disruption. For example, a student in the process of taking a Life and Work Reading Form 81R Level A test during the disruption should, upon returning to the testing situation, take the alternate form of this test: Life and Work Reading Form 82 Level A. The parallel forms that comprise the Life and Work Reading Assessments are constructed so that the two forms can be used independently of each other and are considered equivalent measures. The items within the parallel forms contain comparable content to reflect the same construct.

The same policy applies to examinees who take a CASAS computer-based test (CBT).

Test administrators should not retest learners on the same day that the disruption occurred. It is preferable to wait at least three days after the original test disruption event before retesting to mitigate any possible practice effects.

(j) Previous Tests

Item j1 – For a test used to measure educational gain in the NRS before the effective date of these regulations that is submitted to the Secretary for review under this part, the test publisher must provide documentation of the periodic review of the content and specifications of the test to ensure that the test continues to reflect the educational functioning levels

Periodic Review

CASAS conducts periodic reviews of test content, specifications, and psychometric properties, including validity and reliability analyses. The majority of the analyses and results presented in this document use 2005-06, and 2006-07 program year data. Use of current data is more relevant in documenting the current performance of the assessments and to examine evidence of the current validity and reliability of the assessment.

Validation of New CASAS Competencies

CASAS life skill competencies provide the basis for CASAS assessment. The competencies are revalidated periodically by the CASAS National Consortium of adult education agencies from across the country.

In May 2008 CASAS disseminated a major revision of its competencies, which had last been updated in 2003. More than 60 new competencies have been added and many other statements are significantly expanded in scope.

In 2004 CASAS began compiling input for this revision. The CASAS National Consortium members were consulted during their semi-annual meetings. Another initial source of input was the California EL Civics curriculum objectives, which inspired the addition of a variety of life-skill and community-related content, including a new competency area for education and expanded civic participation objectives. Other additions stemmed from the need for more specificity in the coding of instructional materials. In 2006 and 2007 deliberations by CASAS staff and National Consortium members on the changing needs of life skills essential for the 21st century highlighted the need for a major revision for new and updated competencies. The changes were related to living and functioning in today's society, including the areas of financial literacy, consumerism, health and technology. Discussions with a network of public radio and television station staff suggested a category on media literacy. CASAS's work with Singapore contributed to the new competencies on information and communication technology. A detailed review of the statements led to rewording and clarifying language as well as some reorganization.

A preliminary version of the revisions was presented to the CASAS National Consortium in January 2007. State committees reviewed the changes, and their comments and suggestions were compiled and reviewed. CASAS submitted another version of the proposed changes to the National Consortium at the CASAS Summer Institute in June 2007; states were asked to review and comment. Results from the national online survey and remarks were compiled and a final version of the competencies was presented in January 2008 to the National Consortium, which ratified the changes. The ratified new competencies are listed in Table j1-1.

Implementation of the new competencies occurred in May 2008, when CASAS posted the new competencies on its Web site, notified CASAS users and other major agencies and incorporated the new competencies in training materials and in future test development. In January 2009 CASAS completed updating the competency coding of its tests, and the changes will be included in the TOPSpro scoring system. Recoding of published instructional materials in QuickSearch will be completed over a period of time yet to be determined.

Creation of New Assessments

After a test or test series has been implemented, situations may arise that call for the creation of new test forms.

In one case, agencies reported they often had to administer pre- and post-tests to examinees more than twice within the A level. They also requested A Level forms that would bridge to Level B. This created a need for additional tests, and *extended level* forms at the A level were created and added to the Life and Work Reading Assessments to provide additional alternative test forms for post-testing that also bridged to the next level.

In another case, the field requested reading assessments that targeted content appropriate for beginning readers whose goal it is to pass the US citizenship exam. As a result of this request, four Reading for Citizenship assessments were created at the A level.

In another case, agencies serving adults with developmental disabilities requested that test item displays at the Pre-A level use photos in place of line drawings. The conversion from line drawings – as found on Forms 310 and 311 – to photos has been completed. After sufficient data has been collected and analyzed from the updated forms – Forms 312 and 313 – the psychometric properties of these forms will be provided in the next edition of this technical manual.

In some instances a test form may be revised for a new version. In other instances, updating of formatting or minor content adjustments require a new edition of a test. In some cases a problematic item may need to be replaced and a new version created.

For a detailed description of the test development process please refer to Section C of this document. For a summary of items that were dropped from the Life and Work Reading series during the field test process please refer to Table c.2.

Table j1-1 CASAS Revised Competencies – 2008

Revised CASAS competencies	
0.1.7	Understand, follow or give instructions, including commands and polite requests (e.g., Do this; Will you do this?)
0.1.8	Understand or use appropriate language to express emotions and states of being (e.g., happy, hungry, upset)
1.2.6	Identify places to purchase goods and services, including the Internet
1.6.5	Identify and interpret advertising, offers, junk mail and other marketing materials, including claims and disclaimers
1.6.6	Interpret information about consumer privacy rights and policies
1.6.7	Identify risks such as identity theft and ways to safeguard personal and financial information
1.7.6	Place a notice or ad to sell items
1.8.6	Interpret information about credit and debt, including interest rates, payment terms and credit reports (see also 1.3.2)
1.8.7	Identify and use services to send money or exchange currency
1.9.9	Identify types of vehicles and basic car parts and features, including safety equipment
2.2.6	Identify and interpret documentation requirements for travel, including applying for documents and completing forms
2.2.7	Interpret and follow security policies and procedures, and regulations related to travel and transport
2.3.4	Interpret and write dates
2.4.7	Interpret postal regulations and mailing and shipping procedures and requirements
2.5.8	Identify community organizations and their purpose and functions
2.7.7	Obtain and interpret news from a variety of media sources (see also 7.6)
2.7.8	Identify societal influences such as the media, popular culture, politics, and religion, and how they affect people's perceptions, attitudes, and actions (see also 7.6)
2.8.1	Interpret information about the educational system, from early childhood to post-secondary
2.8.2	Identify, evaluate, and access schools and other learning resources
2.8.3	Locate and interpret information related to classes, schedules, programs, faculty, facilities, etc.

Revised CASAS competencies

- 2.8.4 Interpret policies and procedures of educational institutions regarding attendance, grades, conduct, student rights, etc.
 - 2.8.5 Interpret school-related forms, such as registration and application forms
 - 2.8.6 Interpret information from schools and communicate with staff
 - 2.8.7 Interpret information about educational support services, such as counseling, accommodations, and financial aid, and identify ways to access them
 - 2.8.8 Interpret information related to student and school performance, and identify ways to promote change
 - 2.8.9 Identify ways to get involved or volunteer in an educational setting
 - 3.1.4 Identify and access counseling services
 - 3.1.5 Interpret information about health care plans, insurance, and benefits
 - 3.1.6 Interpret information about patient rights, such as confidentiality and health care decisions
 - 3.3.4 Interpret information on medications and their proper and safe use
 - 3.4.6 Interpret health and danger alerts
 - 3.4.7 Interpret information regarding disaster preparedness
 - 3.6.1 Identify parts of the body
 - 3.6.2 Interpret medical-related vocabulary (e.g., X-ray, blood test)
 - 3.6.3 Interpret information about illnesses, diseases, and health conditions, and their symptoms
 - 3.6.4 Communicate with a doctor or other medical staff regarding condition, diagnosis, treatment, etc.
 - 3.6.5 Interpret information on the development, care, and health and safety concerns of children
 - 3.6.6 Interpret information about health issues related to aging
 - 3.6.7 Interpret information about sexuality
 - 3.6.8 Interpret information about medical procedures and the considerations and risks involved
 - 3.6.9 Interpret and critically assess health and medical-related information from public sources such as the Internet
 - 4.2.5 Interpret information about employee benefits
 - 4.2.6 Interpret information about legal rights of employees, including issues such as discrimination and sexual harassment
 - 4.7.5 Identify factors and procedures involved in starting a small business
 - 5.1.7 Identify how to contact public officials about issues and concerns
 - 5.2.6 Identify the US flag, other national symbols, and principal monuments
 - 5.3.9 Identify rights, responsibilities, and legal obligations in domestic relationships (e.g., parental, spousal) and how to report problems
 - 5.5.9 Interpret information about the structure of government and the political system, including federal, state, and local
 - 5.6.4 Identify ways of conserving resources, including recycling and using energy efficiently
 - 5.6.5 Identify volunteer agencies and opportunities in the community
 - 5.7.5 Interpret information related to social science issues
 - 5.7.6 Interpret information related to ethical and philosophical issues
 - 7.2.8 Demonstrate abstract thinking, such as understanding symbolism and metaphors
 - 7.6.1 Identify the different forms of media, sources and purposes of media messages, and how content is determined and shaped
 - 7.6.2 Interpret literal and indirect media messages and the influence of factors such as popular culture and sensationalism
 - 7.6.3 Distinguish fact from opinion, fiction from non-fiction, and point of view in media messages and presentations
 - 7.6.4 Interpret rating systems for media content
 - 7.7.1 Identify common ICT and other electronic devices and their uses, and how they work together
 - 7.7.2 Demonstrate basic skills in using a computer, including using common software applications
-

Revised CASAS competencies

7.7.3 Demonstrate ability to use the Internet

7.7.4 Demonstrate ability to use e-mail and other messaging systems

7.7.5 Identify safe and responsible use of ICT

7.7.6 Interpret operating and maintenance procedures for ICT equipment and devices

References

- American Council on Education and National Council on Measurement in Education. (2006). *Educational Measurement* (4th ed.). Westport, CT: American Council on Education and Praeger Publishers.
- American Council on Education and National Council on Measurement in Education. (1989). R. L. Linn (Ed.) *Educational Measurement* (3rd ed.). New York: Macmillan Publishing Company.
- American Council on Education. (1995). *The External Diploma Program: Assessment Procedures and Sample Assessment Materials*. Washington, D.C.
- American Education Research Association, American Psychological Association, and National Council on Measurement in Education. (1999). *Standards for Educational and Psychological Testing*. Washington, D.C.
- American Psychological Association. (1985). *Standards for Educational and Psychological Testing*. Washington, D.C.
- American Psychological Association. (1986). *Guidelines for computer-based tests and interpretations*. Washington, D.C.
- Anastasi, A. and Urbina, S. (1997). *Psychological testing* (7th ed.). Upper Saddle River, N.J.: Simon & Schuster.
- Anderson, E. (1977). Sufficient Statistics and Latent Trait Models. *Psychometrika*, 42, 69-81.
- Angoff, W.H. (1971). Scales, Norms and Equivalent Scores. In R.L. Thorndike (Ed.), *Educational Measurement* (2nd ed.) Washington, D.C.: American Council on Education.
- Baldwin, J., Kirsch, I., Rock, D., and Yamamoto, K. (1995). *The Literacy Proficiencies of GED Examinees: Results from the GED-NALS Comparison Study*. Washington, D.C.: American Council on Education and Educational Testing Service.
- Berk, R.A. (2000). Ask Mr. Assessment Person: How do you estimate the reliability of teacher licensure/certification tests? In *Teachers: Supply and demand in an age of rising standards*. National Evaluation Systems, Inc.
- Bond, T.G., and Fox, C. (2001). *Applying the Rasch Model: Fundamental Measurement in the Human Sciences*. Mahwah, N.J.
- Brennan, Robert L. (2006). National Council on Measurement in Education, American Council on Education. *Educational Measurement*. Westport, CT: Praeger Publishers
- Browne, M. W., and Cudeck, R. (1993). Alternative Ways of Assessing Model Fit. In K.A. Bollen and J.J. Long (Eds.). *Testing Structural Equation Models*, 132-162. Beverly Hills, CA: SAGE.

California Department of Education. (1977). *California Proficiency Assessment Exercise Manual*. Sacramento, CA.

California State Department of Education. (1987). *CBAE Evaluation Study Report. Investing In Change: Competency-Based Adult Education in California*. Sacramento, CA.

California Department of Education. (1977). *Technical Assistance Guide*. Sacramento, CA.

Campbell, D.T., and Stanley, J.C. (1966). *Experimental and quasi-experimental designs for research*. Chicago: Rand McNally.

Center for Applied Linguistics. (1984). *Basic English Skills Test (BEST)*. Washington, D.C.

Center for Applied Linguistics. (1984). *Student Performance Levels (SPL)*. Washington, D.C.

Chau, P.K. (1997). Re-Examining a Model for Evaluating Information Center Success Using a Structural Equation Modeling Approach. *Decision Sciences* 28, no. 2, 309-334.

Comprehensive Adult Student Assessment System (CASAS). (1993). *An Application Submitted to the Program Effectiveness Panel of the National Diffusion Network, U.S. Department of Education: Summary Document*. San Diego, CA: Comprehensive Adult Student Assessment System, Foundation for Educational Achievement.

Comprehensive Adult Student Assessment System (CASAS). (1999). *The CABSS Report: California Adult Basic Skills Survey*. San Diego, CA: Comprehensive Adult Student Assessment System, Foundation for Educational Achievement.

Comprehensive Adult Student Assessment System (CASAS). (2002). *A CYA and CCC Study conducted for proposal submitted to California Department of Education for the Alternative School Accountability Model (ASAM)*. San Diego, CA: Comprehensive Adult Student Assessment System, Foundation for Educational Achievement.

Comprehensive Adult Student Assessment System (CASAS). (1994, 1998, 2000). *Continuous Improvement Measure: CIM Manual*. San Diego, CA: Comprehensive Adult Student Assessment System, Foundation for Educational Achievement.

Comprehensive Adult Student Assessment Systems (CASAS). (2009). *Guidelines for Providing Accommodations Using CASAS Assessment for Learners with Disabilities*. San Diego, CA: Comprehensive Adult Student Assessment System, Foundation for Educational Achievement.

Comprehensive Adult Student Assessment System (CASAS). (1997). *The Iowa Adult Basic Skills Survey*. San Diego, CA: Comprehensive Adult Student Assessment System, Foundation for Educational Achievement.

Comprehensive Adult Student Assessment System (CASAS). (2003). *Study of the CASAS Relationship to GED 2002*. San Diego, CA: Comprehensive Adult Student Assessment System, Foundation for Educational Achievement.

Comprehensive Adult Student Assessment System (CASAS). (1997). *Targeting Education: The Connecticut Adult Basic Skills Survey*. San Diego, CA: Comprehensive Adult Student Assessment System, Foundation for Educational Achievement.

Comprehensive Adult Student Assessment System (CASAS). (1996). *A Workforce Basic Skills Norming Study of Iowa's JTPA and PROMISE JOBS Target Populations*. San Diego, CA: Comprehensive Adult Student Assessment System, Foundation for Educational Achievement.

Comprehensive Adult Student Assessment System (CASAS) and ACT Center for Education and Work. (1997). *Extending the Ladder: From CASAS to Work Keys Assessments*. San Diego, CA: Comprehensive Adult Student Assessment System, Foundation for Educational Achievement, and Iowa City, Iowa: ACT.

Cook, L., Eignor, D. and Petersen, N. (1982). *A Study of the Temporal Stability of IRT Item Parameter Estimates*. Paper presented at the annual meeting of the American Educational Research Association, New York.

Crocker, L. and Algina, J. (1984). *Introduction to Classical and Modern Test Theory*. New York: Holt, Rinehart, and Winston.

Cronbach, L.J. and Shavelson, R.J. (2004). My current thoughts on coefficient alpha and successor procedures. *Educational and Psychological Measurement*, 64 (3), 391-418.

Division of Adult Education and Literacy Office of Vocational and Adult Education U.S. Department Of Education (2010). *Implementation Guidelines Measures and Methods for the National Reporting System for Adult Education*.

Dorans, N. J., and Holland, P.W. (1993). DIF Detection and Description: Mantel-Haenszel and Standardization. In P.W. Holland and H. Wainer (Eds.). In *Differential Item Functioning*. Hillsdale, N.J.: Lawrence Erlbaum Associates.

Downing, Steven M. and Haladyna, Thomas M. (2006). *Handbook of Test Development*. Mahwah, N.J.: Lawrence Erlbaum Associates.

Drasgow, F., Luecht, R. M., and Bennett, R. E. (2006). Technology and Testing. In R. L. Brennan (Ed.). *Educational Measurement* (4th ed.). Westport, CT: American Council on Education and Praeger Publishers.

Educational Testing Service. (2008). *ETS fairness review guidelines*. Princeton, N.J.

Educational Testing Service. (2002). *ETS Standards for Quality and Fairness*. Princeton, N.J. Federal Office of Refugee Resettlement (ORR). (1983). *Mainstream English Language Training Project (MELT)*. Washington, D.C.

Feldt, L.S. (1980). A test of the hypothesis that Cronbach's alpha reliability coefficient is the same for two tests administered to the same sample. *Psychometrika*, 45, 99-105.

- Feldt, L.S., and Brennan, R.L. (1989). Reliability. In R.L. Linn (Ed.), *Educational measurement*. (3rd ed., pp. 105-146). New York: Macmillan.
- Forster, F., and Ingebo, G. (1978). The Theory of the Rasch Model (for School Testing Folk). *Rasch Monograph Series of the Northwest Evaluation Association*.
- Gulliksen, H. (1950). *Theory of mental tests*. New York: Wiley.
- Haladyna, Thomas M. (1985). *A Quantitative Review of Research on Multiple-Choice Item Writing*. Paper presented at the annual meeting of the American Educational Research Association, Chicago.
- Haladyna, Thomas M. (1999). *Developing and Validating Multiple-Choice Test Items*. (2nd ed.). Mahwah, N.J.: Lawrence Erlbaum Associates.
- Hambleton, R., and Swaminathan, H. (1985). *Item Response Theory: Principles and Applications*. Boston: Kluwer-Nyhoff.
- Hambleton, R.K., and Jones, R.W. (1993). Comparison of classical test theory and item response theory and their applications to test development. *Educational Measurement: Issues and Practice*, 12 (3), 38-45.
- Hambleton, R.K., ed., (1983). *Applications of Item Response Theory*. Vancouver, British Columbia: Educational Research Institute of British Columbia.
- Hambleton, R.K., Swaminathan, H., and Rogers, H.J. (1991). *Fundamentals of Item Response Theory*. Newbury Park, CA: SAGE.
- Holland P. W., and Thayer, D.T. (1988). Differential Item Performance and the Mantel-Haenszel Procedure. In H. Wainer, and H. I. Brown (Eds.). In *Test Validity*. Hillsdale, N.J.: Laurence Erlbaum Associates.
- Indiana Department of Education, Division of Adult Education. (1996). *Validation of Foundation Skills*. Indianapolis, IN.
- Jöreskog, K. G., and Sörbom, D. (2001). LISREL 8, *User's Reference Guide*. [Computer Software]. Chicago: Scientific Software International.
- Kane, M. (2006). Validation. In R. Brennan (Ed.). *Educational Measurement* (4th ed.) (pp. 17-65). Westport, CT: American Council on Education and Praeger Publishers.
- Karantonis, A. and Sireci, S. G. (2006). The bookmark standard setting method: A literature review. *Educational Measurement*, 25(1), 4-12
- Kasworm, C. (1980). Administrative Issues in CBAE: Fairy Tales, the In-Between, and the Reality. *NAPCAE Exchange* 3, no. 2, 18-21.
- King, J.A., and Evans, K.M. (1991). Can We Achieve Outcome-Based Education? *Educational Leadership*, 49, no. 2.

Lewis, D. M., Mitzel, H.C., and Green, D. R. (1996, June). Standard setting: A bookmark approach. In D. R. Green (Chair), *IRT-based standards-setting procedures utilizing behavioral anchoring*. Symposium conducted at the Council of Chief State School Officers Annual Conference on Large-Scale Assessment, Phoenix, AZ.

Linacre, J.M. (2003). WINSTEPS Rasch Measurement Computer Program. [Computer Software]. Chicago.

Lord, F.M. (1980). *Applications of item response theory to practical testing problems*. Hillsdale, N.J.: Laurence Erlbaum Associates.

Lord, F.M. (1984). Standard errors of measurement at different ability levels. *Journal of Educational Measurement*, 21, 239-243.

Martois, John. (1984). Measurement Issues Related to the Use of Item Response Theory Based on Life Skills Tests. Commissioned research submitted to the California State Department of Education, Adult Education Unit, Sacramento, CA.

Martois, J., Rickard, P., and Stiles, R. (1985). *Item Response Theory Based Life Skills Reading Tests: Their Unidimensionality and the Temporal Stability of Item Difficulty Estimates*. Paper presented at the annual meeting of the National Council on Measurement in Education, Chicago.

Mazzeo, J. and Harvey, A. L. (1988). The equivalence of scores from automated and conventional educational and psychological tests: A review of the literature (College Board Rep. No. 88-8, ETS RR No. 88-21). Princeton, N.J.

Mead, A. D., and Drasgow, F. (1993). Equivalence of computerized and paper-and-pencil cognitive ability tests: A meta-analysis. *Psychological Bulletin*, 9, 287-304.

Messick, S. (1988). The once and future issues of validity. Assessing the meaning and consequences of measurement. In H. Wainer & H Braun. (Eds.) Hillsdale, N.H: Lawrence Erlbaum.

Messick, S. (1989). Validity. In *Educational Measurement*. In R.L. Linn. (3d ed.) New York: American Council on Education, Macmillan Publishing Company.

Mitzel, H. C., Lewis, D. M., Patz, R. J., and Green, D. R. (2001). The bookmark procedure: Psychological perspectives. In Cizek, G. J. (Ed.). *Setting performance standards: Concepts, methods and perspectives*. Mahwah, N.J.: Lawrence Erlbaum Associates.

National Research Council. (2000). *How People Learn Brain Mind Experience and School*. John D. Bransford, Ann L. Brown, and Rodney R. Cocking (Eds.). With additional materials from The Committee on Learning Research and Educational Practice, M. Suzanne Donovan, John D. Bransford, and James W. Pellegrino (Eds.). Washington, D.C. The National Academy Press.

National Research Council. (2001). *Knowing what learners know: The science and design of educational assessment*. Committee on the Foundations of Assessment. Pellegrino, J., Chudowsky, N., and Glaser, R (Eds.). Board on Testing and Assessment, Center for

Education. Division of Behavioral and Social Sciences and Education. Washington, D.C: The National Academy Press.

National Research Council. (2005). *Measuring literacy: Performance levels for adults*. Committee on Performance Levels for Adult Literacy, R.M. Hauser, C.F. Edley, Jr., J.A Koenig, and S.W. Elliott (Eds.). Board on Testing and Assessment, Center for Education. Division of Behavioral and Social Sciences and Education. Washington, D.C: The National Academy Press.

Nickse, R. (1980). *Assessing Life-Skills Competence: The New York State External High School Diploma Program*. CBE Forum Perspectives on Competency-Based Education 3. Belmont, CA: Pitman Learning, Inc.

Northcutt, N. (1977). *The Adult Performance Level Study*. Austin, TX: University of Texas. Northwest Evaluation Association. (1979). *Rasch Monograph Series of the Northwest Evaluation Association*.

Plake, B. S. (2005). Setting performance standards: Issues, methods. In Brian S. Everitt and David C. Howell (Eds.) *Encyclopedia of Statistics in Behavioral Science*, 4, 1820-1823.

Plake, B. S. (2007). Standards setters: Stand up and take a stand. 2006 Career Award address presented at the annual meeting of the National Council on Measurement in Education, Chicago.

Porter, K., and Feldman, N. *New York State External High School Diploma Program: Assessment Procedures and Sample Assessment Materials*. Syracuse, N.Y.: Syracuse Research Corporation.

RASCAL [Computer software]. (1989). St. Paul, MN: Assessment Systems Corporation. Rasch, G. (1980). *Probabilistic Models for Some Intelligence and Attainment Tests*. Copenhagen: Danmarks Paedagogiske Institut, 1960. Reprint, Chicago: University of Chicago Press.

Reckase, M. (1979). Unifactor Latent Trait Models Applied to Multi-factor Tests: Results and Implications. *Journal of Educational Statistics* 4, 207-230.

Reckase, M. (1988). *Computerized Adaptive Testing: A Good Idea Waiting for the Right Technology*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

Rentz, R.R., and Bashaw, W.L. (1979). The National Reference Scale for Reading: An Application of the Rasch Model. *Journal of Educational Measurement*.

Rickard, P. and Stiles, R. (1987). *Predicting the GED Test with CASAS, an IRT Life Skills Item Bank*. Paper presented at the annual meeting of the National Council on Measurement in Education, Washington, D.C.

Rickard, P. and Whitney, D. (1983). *CASAS and GED Competencies: Are We Measuring the Same Skills?* Paper presented at the National Competency-based Adult Education Conference.

Samajima, Fumiko. (1994). Estimation of Reliability Coefficients Using the Test Information Function and Its Modifications. *Applied Psychological Measurement*, 18, 229.

Segars, A.H., and Grover, V. (1993, December). Re-Examining Perceived Ease of Use and Usefulness: A Confirmatory Factor Analysis. *MIS Quarterly* 17, no. 4, 517-525.

Sireci, S.G, Rogers, H.J., Swaminathan, H., Meara, K. and Robin, F. (2000). Appraising the Dimensionality of the NAEP Science Assessment Data. In *Grading the Nation's Report Card*. Washington, D.C.: National Academies Press.

Spady, W.G. (1974). The Sociological Implications of Mastery Learning. In *Schools, Society, and Mastery Learning*. J.H. Block (Ed.). New York: Holt, Rinehart & Winston.

Spady, W.G. (1977). Competency Based Education: A Bandwagon in Search of a Definition. *Educational Researcher* 6, no. 1, 9-14.

Spady, W.G. (1978). The Concept and Implication of Competency Based Education. *Educational Leadership* 36, 16-22.

Sticht, Thomas. (1990). *Testing and Assessment in Adult Basic Education and English as a Second Language Programs*. San Diego, CA: Applied Behavioral and Intellectual Sciences, Inc.

Stiles, R (1978). *Annual Evaluation Report*. Sacramento, CA: California State Department of Education.

Stiles, R., and Tibbets, J. (1986). Competency Based Education (CBE). In *Handbook on GAIN Educational Services*. Sacramento, CA: California Department of Education.

Subkoviak, M.J. (1976). Estimating reliability from a single administration of a criterion-referenced test. *Journal of Educational Measurement*, 13, 265-276.

Subkoviak, M.J. (1978). Empirical investigation of procedures for estimating reliability for mastery tests. *Journal of Educational Measurement*, 15, 111-116.

Thompson, B., and Vacha-Haase, T. (2000). Psychometrics is datametrics: The test is not reliable. *Educational and Psychological Measurement*, 60, 174-195.

TOPSpro [Computer Software]. Data collected July 1, 2004, through June 30, 2005. Workforce Investment Act, Title II, Aggregated Student Database. San Diego, CA: Comprehensive Adult Student Assessment System, Foundation for Educational Achievement.

Trochin, W. and Donnelly, J.P. (2007). The Research Methods Knowledge Base (3rd ed.). [Online], Atomic Dog Publishing.

UK NARIC. (2008). *National and International Benchmarking of WDA Workplace Literacy and Numeracy Qualifications*.

- U.S. Department of Education. *Goals 2000*. (1993). Washington, D.C.
- U.S. Department of Education. National Center for Educational Statistics. (1982). *Adult Learning Activities Terminology*. Washington, D.C.
- U.S. Department of Labor. (1991). *The Secretary's Commission on Achieving Necessary Skills. What Work Requires of Schools: A SCANS Report for America 2000*. Washington, D.C.
- Woodruff, D.J. (1990). Conditional standard error of measurement in prediction. *Journal of Educational Measurement*, 27, 191-208.
- Wright, B.D. (1968). Sample-Free Test Calibration and Person Measurement. In *Proceedings of the 1967 Invitational Conference on Testing Problems*. Princeton, N.J.: Educational Testing Service.
- Wright, B.D. (1977, Summer). Solving Measurement Problems with the Rasch Model. *Journal of Educational Measurement* 14, no. 2, 195-215.
- Wright, B.D., and Masters, G.N. (1982). *Rating Scale Analysis: Rasch Measurement*. Chicago: MESA Press.
- Wright, B.D. and Mead, R.J. (1977). *BICAL: Calibrating Items and Scales with the Rasch Model*. Research Memorandum No. 23. Chicago: University of Chicago, Department of Education, Statistical Laboratory.
- Wright, B.D. and Mead, R.J. (1978). *BICAL: Calibrating Items and Scales with the Rasch Model*. Research Memorandum No. 23A. Chicago: University of Chicago, Department of Education, Statistical Laboratory.
- Wright, B.D., and Stone, M.H. (1979). *Best Test Design*. Chicago: MESA Press.
- Wright, B.D. and Stone, M.H. (1988). Stone. *Reliability in Rasch Measurement*. Research Memorandum No. 53. Chicago: University of Chicago, MESA Psychometric Laboratory.
- Wright, B.D. and Stone, M.H. (1988, November). *Validity in Rasch Measurement*. Research Memorandum No. 54. Chicago: University of Chicago, MESA Psychometric Laboratory.
- Yen, W.M. and Fitzpatrick, A. R. (2006). Item Response Theory. In R.L. Brennan (Ed.). *Educational Measurement* (4th ed.). Westport, CT: Praeger Publishers.