New York State Regents Examination in Earth Science

2014 Field Test Analysis, Equating Procedure, and Scaling of Operational Test Forms

Technical Report

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Section I: Introduction

PURPOSE

The purpose of this report is to document the psychometric properties of the New York State Regents Examination in Earth Science. In addition, this report documents the procedures used to analyze the results of the field test and to equate and scale the operational test forms.

Section II: Field Test Analysis

In May 2014, prospective items for the New York State Regents Examination in Earth Science were field tested. The results of this testing were used to evaluate item quality. Only items with acceptable statistical characteristics can be selected for use on operational tests.

Representative student samples for participation in this testing were selected to mirror the demographics of the student population that is expected to take the operational test. The Need/Resource Capacity Categories in Table 1 were used as variables in the sampling plan.

Table 1. Need/Resource Capacity Category Definitions

Need/Resource Capacity (N/RC) Category	Definition
High N/RC Districts: New York City	New York City
Large Cities	Buffalo, Rochester, Syracuse, Yonkers
Urban/Suburban	All districts at or above the 70th percentile on the index with at least 100 students per square mile or enrollment greater than 2500
Rural	All districts at or above the 70th percentile on the index with fewer than 50 students per square mile or enrollment of fewer than 2500
Average N/RC Districts	All districts between the 20th and 70th percentiles on the index
Low N/RC Districts	All districts below the 20th percentile on the index
Charter Schools	Each charter school is a district

FILE PROCESSING AND DATA CLEANUP

The Regents examinations utilize both multiple-choice (MC) and constructed-response (CR) item types in order to more fully assess student ability. Multiple field test (FT) forms were given during this administration to allow for a large number of items to be field tested without placing an undue burden on the students participating in the field test; each student took only a small subset of the items being field tested. The New York State Education Department (NYSED) handled all scanning of the MC responses and scoring of the CR responses, along with the composition of the student data file in-house and with other external vendors. After all scoring and scanning activities had been completed and the student data file built, it was supplied to Pearson and contained student MC responses and CR scores. In addition, the NYSED also created and supplied a test map file that documented the items on each of the FT forms, and a student data file layout that contained the position of every field within the student data file. Upon receipt of these files, Pearson staff checked the data, test map, and layout for consistency. Any anomalies were referred back to the NYSED for resolution. After these had been resolved and corrected as necessary, final processing of the data file then took place. This processing included the identification and deletion of invalid student test records through the application of a set of predefined exclusion rules.[1] The original student data file received from the NYSED contained 17,991 records; the final field test data file contained 17,944 records.

Within the final data file used in the field test analyses, MC responses were scored according to the item keys contained in the test map; correct responses received a score of 1 while incorrect responses received a score of 0. CR item scores were taken directly from the student data file, with the exception that out-of-range scores were assigned scores of 0. For Item Response Theory (IRT) calibrations, blanks (i.e., missing data; not omits) were also scored as 0.

In addition to the scored data, the final data file also contained the unscored student responses and scores. Unscored data was used to calculate the percentage of students who selected the various answer choices for the MC items or the percentage of students who received each achievable score point for the CR items. The frequency of students leaving items blank was also calculated. The scored data were used for all other analyses.

CLASSICAL ANALYSIS

Classical Test Theory assumes that any observed test score x is composed of both true score t and error score e. This assumption is expressed as follows:

$$x = t + e$$

[1] These exclusion rules flagged records without both an MC and a CR component, records with invalid or out-of-range form numbers, records without any responses, and duplicate records. These records were dropped prior to analysis.

All test scores are composed of both a true and an error component. For example, the choice of test items or administration conditions might influence student responses, making a student's observed score higher or lower than the student's true ability would warrant. This error component is random and uncorrelated with (i.e., unrelated to) the student's true score. Across an infinitely large number of administrations, the mean of the error scores would be zero. Thus, the best estimate of a student's true score for any test administration (or their expected score given their [unobservable] true level of ability or true score) is that student's observed score. This expectation is expressed as follows:

$$E(x) = t$$

Item difficulties, point-biserial correlations, reliability estimates, and various statistics related to rater agreement have been calculated, and are summarized in the following section.

Item Difficulty

Item difficulty is typically defined as the average of scores for a given item. For MC items, this value (commonly referred to as a p-value) ranges from 0 to 1. For CR items, this value ranges from 0 to the maximum possible score. In order to place all item means on a common metric (ranging from 0 to 1), CR item means were divided by the maximum points possible for the item.

Item Discrimination

Item discrimination is defined as the correlation between a score on a given test question and the overall raw test score. These correlations are Pearson correlation coefficients. For MC items, it is also known as the point-biserial correlation.

Table 2 presents a summary of the classical item analysis for each of the field test forms. The first three columns from the left identify the form number, the number of students who took each form, and the number of items on each field test form, respectively. The remaining columns are divided into two sections (item difficulty and discrimination). Recall that for CR items, item means were divided by the maximum number of points possible in order to place them in the same metric as the MC items. Two items had a difficulty that was greater than 0.90, and 15 items had correlations that were less than 0.25. In addition to the summary information provided in Table 2, further classical item statistics are provided in Appendix A.

Table 2. Classical Item Analysis Summary

Form	N-Count	No. of Items	Item Difficulty			Item Discrimination		
			<0.50	0.50 to 0.90	>0.90	<0.25	0.25 to 0.50	>0.50
845	949	21	11	10	0	2	15	4
846	919	21	7	8	0	0	15	0
847	857	21	11	10	0	1	19	1
848	952	21	11	10	0	0	20	1
849	956	21	8	13	0	1	17	3
850	964	21	12	9	0	0	17	4
851	956	21	8	12	0	2	16	2
852	924	21	12	8	0	0	13	7
853	946	21	13	7	0	0	17	3
854	966	21	12	8	0	0	16	4
855	965	21	14	5	0	1	18	0
856	929	21	7	12	1	2	13	5
857	948	21	9	11	1	2	14	5
858	932	21	9	12	0	2	16	3
859	967	21	8	13	0	0	18	3
860	956	21	13	8	0	0	18	3
861	959	21	9	12	0	2	16	3
862	965	21	14	6	0	0	19	1
863	934	20	5	15	0	0	17	3

For some forms, the item counts in the “Item Difficulty” and “Item Discrimination” columns may not sum to the value in the “No. of Items” column due to DNS (Do Not Score) items.

Test Reliability

Reliability is the consistency of the results obtained from a measurement with respect to time or between items or subjects that constitute a test. As such, test reliability can be estimated in a variety of ways. Internal consistency indices are a measure of how consistently examinees respond to items within a test. Two factors influence estimates of internal consistency: (1) test length and (2) homogeneity of the items. In general, the more items on the examination, the higher the reliability and the more similar the items, the higher the reliability.

Table 3 contains the internal consistency statistics for each of the field test forms under the heading “Test Reliability.” These statistics ranged from 0.66 to 0.80. It should be noted that operational tests generally are composed of more items, and would be expected to have higher reliabilities than do these field test forms.

Scoring Reliability

One concern with CR items is the reliability of the scoring process (i.e., consistency of the score assignment). CR items must be read by scorers who assign scores based

on a comparison between the rubric and student responses. Consistency between scorers is a critical part of the reliability of the assessment. To track scorer consistency, approximately 10% of the test booklets are scored a second time (these are termed "second read scores") and compared to the original set of scores (also known as "first read scores").

As an overall measure of scoring reliability, the Pearson correlation coefficient between the first and second scores for all CR items with second read scores was computed for each form. This statistic is often used as an overall indicator of scoring reliability, and it generally ranges from 0 to 1. Table 3 contains these values in the column headed "Scoring Reliability." They ranged from 0.87 to 0.98, indicating a very high degree of reliability.

Table 3. Test and Scoring Reliability

Form Number	Test Reliability	Scoring Reliability
845	0.78	0.95
846	0.70	0.89
847	0.75	0.92
848	0.73	0.95
849	0.75	0.97
850	0.79	0.87
851	0.75	0.95
852	0.80	0.93
853	0.74	0.92
854	0.76	0.90
855	0.66	0.96
856	0.73	0.89
857	0.77	0.98
858	0.76	0.95
859	0.76	0.94
860	0.76	0.94
861	0.74	0.94
862	0.71	0.92
863	0.75	0.96

Inter-rater Agreement

For each CR item, the difference between the first and second reads was tracked, and the number of times each possible difference between the scores occurred was tabulated. These values were then used to calculate the percentage of times each possible difference occurred. When examining inter-rater agreement statistics, it should be kept in mind that the maximum number of points per item varies, as shown in the "Score Points" column. Blank cells in the table indicate out-of-range differences (e.g., It

is impossible for two raters to differ by more than one point in their scores on an item with a maximum possible score of one; cells in the table other than −1, 0, and 1 would therefore be blanked out.).

Appendix B contains the proportion of occurrence of these differences for each CR item. Although most items had a maximum point value of one, two items had a maximum point value of two. One of the two-point items had any ratings that differed by more than one point. Appendix C contains additional summary information regarding the first and second reads, including the percentage of first and second scores that were exact or adjacent matches. These were 99% and 100% for the two-point items. Nonadjacent scores were not possible for the one-point items.

Constructed-Response Item Means and Standard Deviations

Appendix C also contains the mean and standard deviation of the first and second scores for each CR item. While there were minimal differences between the standard deviation statistics, the largest difference between the item means for the first and second read scores was 0.1.

Intraclass Correlation

In addition, Appendix C contains the intraclass correlations for the items. These correlations are calculated using a formulation given by Shrout and Fleiss (1979). Specifically, they described six different models based on various configurations of judges and targets (in this case, papers that are being scored). For this assessment, the purpose of the statistic is to describe the reliability of single ratings, and each paper is scored by two judges who are randomly assigned from the larger pool of judges, and who score multiple papers. This description fits their “Case 1.” Further, they distinguish between situations where the score assigned to the paper is that of a single rater versus that when the score is the mean of k raters. Since the students’ operational scores are those from single (i.e., the first) raters, the proper intraclass correlation in this instance is termed by Shrout and Fleiss as “ICC(1,1).” It will be referred to herein simply as the “intraclass correlation” (ICC).

While the ICC is a bona fide correlation coefficient, it differs from a regular correlation coefficient in that its value remains the same, regardless of how the raters are ordered. A regular Pearson correlation coefficient would change values if, for example, half of the second raters were switched to the first position, while the ICC would maintain a consistent value. Because the papers were randomly assigned to the judges, ordering was arbitrary, and thus the ICC is a more appropriate measure of reliability than the Pearson correlation coefficient in this situation. The ICC ranges from zero (the scores given by the two judges are unrelated) to one (the scores from the two judges match perfectly); negative values are possible, but rare, and have essentially the same meaning as values of zero. It should also be noted that the ICC can be affected by low degrees of variance in the scores being related, similar to the way that regular Pearson correlation coefficients are affected. ICCs for items where almost every examinee achieved the same score point (e.g., an extremely easy dichotomous item

where almost every examinee was able to answer it correctly) may have a low or negative ICC, even though almost all ratings by the judges matched exactly.

McGraw and Wong (1996, Table 4, p. 35) state that the ICC can be interpreted as "the degree of absolute agreement among measurements made on randomly selected objects. It estimates the correlation of any two measurements." Since it is a correlation coefficient, its square indicates the percent of variance in the scores that is accounted for by the relationship between the two sets of scores (i.e., the two measurements). In this case, these scores are those of the pair of judges. ICC values greater than 0.60 indicate that at least 36% (0.60^2) of the variation in the scores given by the raters is accounted for by variations in the responses to the items that are being scored (e.g., variations in the ability being measured) rather than by variations caused by a combination of differences in the severity of the judges, interactions between judge severity and the items, and random error (e.g., variations exterior to the ability being measured). It is generally preferred that items have ICCs at this level or higher. Only one item had an ICC that was less than 0.60. Consistent with other information provided in the table, these values indicate a high to very high level of scoring reliability for almost all of the items in the field test.

Weighted Kappa

Weighted Kappa (Cohen, 1968) was also calculated for each item, based on the first and second reads, and is included in Appendix C as well. This statistic is an estimate of the agreement of the score classifications over and above that which would be expected to occur by chance. Similar to the ICC, its value can range between zero (the scores given by the judges agree as often as would be expected by chance) and one (scores given by the judges agree perfectly). In addition, negative values are possible, but rare, and have the same interpretation as zero values. One set of guidelines for the evaluation of this statistic is (Fleiss, 1981):

- $k > 0.75$ denotes excellent reproducibility
- $0.4 < k \leq 0.75$ denotes good reproducibility
- $0 < k \leq 0.4$ denotes marginal reproducibility

The results show excellent reproducibility between the first and second reads for all but four items, and good reproducibility for those four. With the lowest kappa being equal to 0.47, there were no items displaying marginal reproducibility. The scoring reliability analyses offer strong evidence that the scoring of the CR items was performed in a highly reliable manner.

ITEM RESPONSE THEORY (IRT) AND THE CALIBRATION AND EQUATING OF THE FIELD TEST ITEMS

While classical test theory-based statistical measures are useful for assessing the suitability of items for operational use (e.g., use as part of an assessment used to measure student ability and thus having real-world consequences for students, teachers, schools, and administrators), their values are dependent on both the

psychometric properties of the items and the ability distributions of the samples upon which they are based. In other words, classical test theory-based statistics are *sample-dependent statistics*.

In contrast, Item Response Theory (IRT)-based statistics are not dependent on the sample over which they are estimated—they are invariant across different samples (Hambleton, Swaminathan & Rogers, 1991; Lord, 1980). This invariance allows student ability to be estimated on a common metric even if different sets of items are used (as with different test forms over different test administrations).

The process of estimating IRT-based item parameters is referred to as "item calibration," and the placing of these parameters on a common metric or scale is termed "equating." While one reason for the field testing of items is to allow their suitability for use in the operational measurement of student ability to be assessed, the data resulting from field testing is also used to place items on the scale of the operational test (i.e., they are equated to the operational metric). Once items are on this common metric, any form composed of items from this pool can be scaled (the process through which scale score equivalents for each achievable raw score are derived), and the resulting scale scores will be directly comparable to those from other administrations, even though the underlying test forms are composed of different sets of items.

There are several variations of IRT that differ mainly in the way item behavior is modeled. The New York State Regents Examinations use the Rasch family of IRT statistics to calibrate, scale, and equate all subjects (Rasch, 1980; Masters, 1982).

The most basic expression of the Rasch model is in the item characteristic curve. It conceptualizes the probability of a correct response to an item as a function of the ability level and the item's difficulty. The probability of a correct response is bounded by "1" (certainty of a correct response) and "0" (certainty of an incorrect response). The ability scale is theoretically unbounded. In practice, the ability scale ranges from approximately −4 to +4 logits. The relationship between examinee ability θ, item difficulty D_i, and probability of answering the item correctly P_i is shown in the equation below:

$$P_i(\theta) = \frac{\exp(\theta - D_i)}{1 + \exp(\theta - D_i)}$$

Examinee ability (θ) and item difficulty (D_i) are on the same scale. This is useful for certain purposes. An examinee with an ability level equal to the item difficulty will have a 50% chance of answering the item correctly; if his or her ability level is higher than the item difficulty, then the probability of answering the item correctly is commensurately higher, and the converse is also true.

The Rasch Partial Credit Model (PCM) (Masters, 1982) is a direct extension of the dichotomous one-parameter IRT model above. For an item involving *m* score

categories, the general expression for the probability of achieving a score of *x* on the item is given by

$$P_x(\theta) = \frac{\exp[\sum_{k=0}^{x}(\theta - D_k)]}{\sum_{h=0}^{m}\exp[\sum_{k=0}^{h}(\theta - D_k)]}$$

where

$$D_0 \equiv 0.0$$

In the above equation, P_x is the probability of achieving a score of *x* given an ability of θ; *m* is the number of achievable score points minus one (note that the subscript *k* runs from 0 to *m*); and D_k is the step parameter for step *k*. The steps are numbered from 0 to the number of achievable score points minus one, and step 0 (D_0) is defined as being equal to zero. Note that a four-point item, for example, usually has five achievable score points (0, 1, 2, 3, and 4), thus the step numbers usually mirror the achievable point values.

According to this model, the probability of an examinee scoring in a particular category (step) is the sum of the logit (log-odds) differences between θ and D_k of all the completed steps, divided by the sum of the differences of all the steps of an item. Thissen and Steinberg (1986) refer to this model as a divide-by-total model. The parameters estimated by this model are $m_{i\ -1}$ threshold (difficulty) estimates, and they represent the points on the ability continuum where the probability of the examinee achieving score m_i exceeds that of m_{i-1}. The mean of these threshold estimates is used as an overall summary of the polytomous item's difficulty.

If the number of achievable score points is one (i.e., the item is dichotomous), then the PCM reduces to the basic Rasch IRT model for dichotomous items. This means that dichotomous and polytomous items are being scaled using a common model and therefore can be calibrated, equated, and scaled together. It should be noted that the Rasch model assumes that all items have equal levels of discrimination and that there is no guessing on MC items. However, it is robust to violations of these assumptions, and items that violate these assumptions to a large degree are usually flagged for item-model misfit.

Item Calibration

When interpreting IRT item parameters, it is important to remember that they do not have an absolute scale—rather, their scale (in terms of mean and standard deviation) is purely arbitrary. It is conventional to set the mean of the item difficulties to zero when an assessment is scaled for the first time. Rasch IRT scales the theta measures in terms of *logits*, or "log-odds units." The length of a logit varies from test to test, but generally the standard deviation of the item difficulties of a test scaled for the first time will be somewhere in the area of 0.6–0.8. While the item difficulties are invariant with respect to one another, the absolute level of difficulty represented by their mean is dependent on the overall difficulty of the group of items with which it was tested. In addition, there is

no basis for assuming that the difficulty values are normally distributed around their mean—their distribution depends solely on the intrinsic difficulties of the items themselves. Thus, if a particularly difficult set of items (relative to the set of items originally calibrated) was field tested, their overall mean would most probably be greater than zero, and their standard deviation would be considerably less than one. In addition, they would most probably not be normally distributed.

Rasch item difficulties generally range from −3.0 to 3.0, although very easy or very difficult items can fall outside of this range. Items should not be discounted solely on the basis of their difficulty. A particular topic may require either a difficult or an easy item. Items are usually most useful if their difficulty is close to a cut score, as items provide the highest level of information at the ability level equal to their difficulty. Items with difficulties farther away from the cuts provide less information about students with abilities close to the cut scores (and, hence, are more susceptible to misclassification), but are still useful. In general, items should be selected for use based on their content, with their Rasch difficulty being only a secondary consideration.

Item Fit Evaluation

The INFIT statistic is used to assess how well items fit the Rasch model. Rasch theory models the probability of a student being able to answer an item correctly as a function of the student's level of ability and the item's difficulty, as stated previously. The Rasch model also assumes that items' discriminations do not differ, and that the items are not susceptible to guessing. If these assumptions do not hold (if, for example, an item has an extremely high or low level of discrimination), then the item's behavior will not be well modeled by Rasch IRT. Guidelines for interpretation of the INFIT statistic are taken from Linacre (2005) and can be found in Table 4 below.

Table 4. Criteria to Evaluate Mean-Square Fit Statistics

INFIT	Interpretation
>2.0	Distorts or degrades the measurement system
1.5–2.0	Unproductive for construction of measurement, but not degrading
0.5–1.5	Productive for measurement
<0.5	Unproductive for measurement, but not degrading. May produce misleadingly good reliabilities and separations

INFIT is an information-weighted fit statistic, which is more sensitive to unexpected behavior affecting responses to items near the person's measure (or ability) level. In general, values near 1.0 indicate little distortion of the measurement system, while values less than 1.0 indicate observations that are too predictable (redundancy, model overfit). Values greater than 1.0 indicate unpredictability (unmodeled noise, model underfit).

Table 5 contains a summary of the analysis for each of the field test forms. The first column from the left lists the form numbers. The next two columns list the number of students who participated and the number of items on each field test form, respectively. The following columns show the frequency of items at three levels of difficulty (easier

items with a Rasch difficulty <−2.0, moderate items with a Rasch difficulty between −2.0 and 2.0, and more difficult items with a Rasch difficulty >2.0), and frequencies of item misfits as classified in the preceding table. All but 39 items fell within the moderate −2.0 to +2.0 difficulty range, and there were no items with an INFIT statistic outside the range most productive for measurement. Item level results of the analysis can be found in Appendix D.

Table 5. Partial Credit Model Item Analysis Summary

Form	N-Count	No. of Items	Rasch			INFIT			
			<−2.0	−2.0 to 2.0	>2.0	<0.5	0.5 to 1.5	1.5 to 2.0	>2.0
845	949	21	0	20	1	0	21	0	0
846	919	21	0	15	0	0	15	0	0
847	857	21	0	19	2	0	21	0	0
848	952	21	0	20	1	0	21	0	0
849	956	21	0	19	2	0	21	0	0
850	964	21	0	19	2	0	21	0	0
851	956	21	0	16	4	0	20	0	0
852	924	21	0	20	0	0	20	0	0
853	946	21	0	18	2	0	20	0	0
854	966	21	0	18	2	0	20	0	0
855	965	21	0	16	3	0	19	0	0
856	929	21	1	17	2	0	20	0	0
857	948	21	1	17	3	0	21	0	0
858	932	21	0	20	1	0	21	0	0
859	967	21	0	21	0	0	21	0	0
860	956	21	0	17	4	0	21	0	0
861	959	21	0	17	4	0	21	0	0
862	965	21	0	16	4	0	20	0	0
863	934	20	0	20	0	0	20	0	0

For some forms, the item counts in the “Rasch” and “INFIT” columns may not sum to the value in the “No. of Items” column due to DNS (Do Not Score) items.

DIFFERENTIAL ITEM FUNCTIONING

Differential Item Functioning (DIF) occurs when members of a particular group have a different probability of success than members of another group with the same level of ability for reasons unrelated to the academic skill or construct being measured. For example, items testing English grammar skills may be more difficult for LEP students as opposed to non-LEP students, but such differences are likely due to the fact that the item measures an academic skill related to English language proficiency. Such items would not be considered to be functioning differentially.

The Mantel Chi-Square and Standardized Mean Difference

The Mantel χ^2 is a conditional mean comparison of the ordered response categories for reference and focal groups combined over values of the matching variable score. "Ordered" means that a response earning a score of "1" on an item is better than a response earning a score of "0," or "2" is better than "1," and so on. "Conditional," on the other hand, refers to the comparison of members from the two groups who received the same score on the matching variable, that is, the total test score in our analysis.

Group	Item Score				Total
	y_1	y_2	…	y_t	
Reference	n_{R1k}	n_{R2k}	…	n_{Rtk}	n_{R+k}
Focal	n_{F1k}	n_{F2k}	…	n_{Ftk}	n_{F+k}
Total	n_{+1k}	n_{+2k}	…	n_{+tk}	n_{++k}

Figure 1. 2 × *t* Contingency Table at the k^{th} of K Levels.

Figure 1 (from Zwick, Donoghue & Grima, 1993) shows a 2 × *t* contingency table at the k^{th} of *K* levels, where *t* represents the number of response categories and *k* represents the number of levels of the matching variable. The values $y_1, y_2, \ldots y_T$ represent the *t* scores that can be gained on the item. The values n_{Ftk} and n_{Rtk} represent the numbers of focal and reference groups who are at the k^{th} level of the matching variable and gain an item score of y_t. The "+" indicates the total number over a particular index (Zwick et al., 1993). The Mantel statistic is defined as the following formula:

$$Mantel\chi^2 = \frac{\left(\sum_k F_k - \sum_k E(F_k)\right)^2}{\sum_k Var(F_k)}$$

in which F_k represents the sum of scores for the focal group at the k^{th} level of the matching variable and is defined as follows:

$$F_k = \sum_t y_t n_{Ftk}$$

The expectation of F_k under the null hypothesis is

$$E(F_k) = \frac{n_{F+k}}{n_{++k}} \sum_t y_t n_{Ftk}$$

The variance of F_k under the null hypothesis is as follows:

$$Var(F_k) = \frac{n_{R+k} n_{F+k}}{n_{++k}^2 (n_{++k} - 1)} \left[(n_{++k} \sum_t y_t^2 n_{+tk}) - (\sum_t y_t n_{+tk})^2 \right]$$

Under *H0*, the Mantel statistic has a chi-square distribution with one degree of freedom. In DIF applications, rejecting *H0* suggests that the students of the reference and focal groups who are similar in overall test performance tend to differ in their mean performance on the item. For dichotomous items, the statistic is identical to the Mantel-Haenszel (MH) (1959) statistic without the continuity correction (Zwick et al., 1993).

A summary statistic to accompany the Mantel approach is the standardized mean difference (SMD) between the reference and focal groups proposed by Dorans and Schmitt (1991). This statistic compares the means of the reference and focal groups, adjusting for differences in the distribution of the reference and focal group members across the values of the matching variable. The SMD has the following form:

$$SMD = \sum_k p_{Fk} m_{Fk} - \sum_k p_{Fk} m_{Rk}$$

in which

$$p_{Fk} = \frac{n_{F+k}}{n_{F++}}$$

is the proportion of the focal group members who are at the k^{th} level of the matching variable;

$$m_{Fk} = \frac{1}{n_{F+k} \sum_t y_t n_{Ftk}}$$

is the mean item score of the focal group members at the k^{th} level; and m_{Rk} is the analogous value for the reference group. As can be seen from the equation above, the SMD is the difference between the unweighted item mean of the focal group and the weighted item mean of the reference group. The weights for the reference group are applied to make the weighted number of the reference-group students the same as in the focal group within the same level of ability. A negative SMD value implies that the focal group has a lower mean item score than the reference group, conditional on the matching variable.

Multiple-Choice Items

For the MC items, the MH odds ratio (converted to the ETS delta scale [D]) is used to classify items into one of three categories of DIF.

The Odds Ratio

The odds of a correct response (proportion passing divided by proportion failing) are *P/Q* or *P/(1−P)*. The *odds ratio* is the odds of a correct response of the reference group divided by the odds of a correct response of the focal group. For a given item, the odds ratio is defined as follows:

$$\alpha_{MH} = \frac{P_r / Q_r}{P_f / Q_f}$$

and the corresponding null hypothesis is that the odds of getting the item correct are equal for the two groups. Thus, the odds ratio is equal to 1:

$$\alpha_{MH} = \frac{P_r / Q_r}{P_f / Q_f} = 1$$

The Delta Scale

To make the odds ratio symmetrical around zero with its range being in the interval −∞ to +∞, the odds ratio is transformed into a log odds ratio according to this equation:

$$\beta_{MH} = \ln(\alpha_{MH})$$

This simple natural logarithm transformation of the odds ratio is symmetrical around zero. This DIF measure is a signed index. A positive value signifies DIF in favor of the reference group, a negative value indicates DIF in favor of the focal group, and zero has the interpretation of equal odds of success on the item. β_{MH} also has the advantage of a linear relationship to other interval scale metrics (Camilli & Shepard, 1994). β_{MH} is placed on the ETS delta scale (D), using the following equation:

$$D = -2.35\beta_{MH}.$$

DIF Classification for MC Items

Table 6 depicts DIF classifications for MC items. Classification depends on the delta (D) value and the significance of its difference from zero ($p < 0.05$). The criteria are derived from those used by the National Assessment of Educational Progress (Allen, Carlson & Zelenak, 1999) in the development of their assessments.

Table 6. DIF Classification for MC Items

Category	Description	Criterion
A	No DIF	D not significantly different from zero or $\|D\| < 1.0$
B	Moderate DIF	$1.0 \le \|D\| < 1.5$ or not otherwise A or C
C	High DIF	D is significantly different from zero and $\|D\| \ge 1.5$

DIF Classification for CR Items

The SMD is divided by the total group item standard deviation to obtain an effect-size value for the SMD (ES_{SMD}). The value of ES_{SMD} and the significance of the Mantel χ^2 statistic ($p < 0.05$) are then used to determine the DIF category of the item as depicted in Table 7 below.

Table 7. DIF Classification for CR Items

Category	Description	Criterion
AA	No DIF	Non-significant Mantel χ^2 or $\|ES_{SMD}\| \le 0.17$
BB	Moderate DIF	Significant Mantel χ^2 and $0.17 < \|ES_{SMD}\| \le 0.25$
CC	High DIF	Significant Mantel χ^2 and $0.25 < \|ES_{SMD}\|$

Reliable DIF results are dependent on the number of examinees in both the focal and reference groups. Clauser and Mazor (1998) stated that a minimum of 200 to 250 examinees per group is sufficient to provide reliable results. Some testing organizations require as many as 300 to 400 examinees per group (Zwick, 2012) in some applications. For the field testing of the Regents examinations, the sample sizes were such that only comparisons based on gender (males vs. females) were possible. Even for gender, sample sizes were only moderately large, and so the results should be interpreted with caution.

The DIF statistics for gender are shown in Appendix E. MC items in DIF categories “B” and “C” and CR items in categories “BB” and “CC” were flagged. These flags are shown in the “DIF Category” column (“A” and “AA” category items will have blank cells here). The “Favored Group” column indicates which gender is favored for items that are flagged.

Section III: Equating Procedure

Students particpating in the 2014 field test administration for the New York State Regents Examination in Earth Science received one of 19 test forms (numbered 845–863). Form 863 was the anchor form for the equating and was an intact form that had been administered in the prior year. Because the form had been previously administered, its items had known parameters on the operational scale. The remaining test forms were composed of items that had not been administered to New York State students. Test forms were spiraled within classrooms, so that students had an equal chance of receiving any of the 19 forms, depending solely on their ordinal position within the classroom. In essence, students were randomly assigned to test forms, forming randomly equivalent groups taking each of the forms. Appendices A and D (with the classical and Rasch IRT item level statistics) may be consulted to determine the characteristics of the items (e.g., item type and maximum number of points possible) that made up each form.

RANDOMLY EQUIVALENT GROUP EQUATING DESIGN

The equating analyses were based on the assumption that the groups taking the different forms had equivalent ability distributions and means. Given the random assignment of forms to examinees, this was a reasonable assumption. The initial step in the analyses was to calibrate all forms, both the anchor form and the remaining field test forms. All forms were calibrated using Winsteps, version 3.60 (Linacre, 2005).

The anchor form calibration began with all anchor item difficulty parameters fixed to their known values from the previous year. Because it is possible for item parameters to “drift” (shift their difficulties relative to one another), a stability check was integrated into the analysis.

Winsteps provides an item-level statistic, termed “displacement.” Linacre (2011, p. 545) describes this statistic as:

> …the size of the change in the parameter estimate that would be observed in the next estimation iteration if this parameter was free (unanchored) and all other parameter estimates were anchored at their current values. For a parameter (item or person) that is anchored in the main estimation, (the displacement value) indicates the size of disagreement between an estimate based on the current data and the anchor value.

This statistic was used to identify items with difficulties that had shifted, relative to the difficulties of the other items on the form. After the intial calibration run, the Winsteps displacement values for all anchor form items were examined for absolute values greater than 0.30. If present, the item with the largest absolute displacement value was removed from anchored status, but remained on the test form. Its difficulty value was subsequently reestimated relative to the difficulties of the remaining anchored items. The Winsteps calibration was then rerun with the reduced anchor set, after which the displacement values were again checked for absolute values in excess of 0.30. If another was found, it was also removed from anchored status and the calibration rerun. This iterative procedure continued until all anchored items had displacements of 0.30 or less. No items were identified as having drifted for the 2014 analyses.

After a stable anchor item set had been identified, the mean of the ability estimates of the students who took the anchor form was computed.[2] This mean ability was then used as the target ability for the forms with the field test items. Because the groups taking the different forms were randomly equivalent and thus had the same mean ability, adjustment of the parameters of the field test items on any form to values that produced an ability distribution for students who had taken the form with a mean equal to the target ability from the anchor form would result in the parameters for the field test items on that form being equated to the scale of the anchor form, which was also the operational scale.

The equated mean ability estimate for Form 863 was 0.53. This value became the target mean ability estimate for the field test forms.

At this point in the analyses, the calibration of the anchor form was complete. The next step was the initial calibration of the field test forms. This was a “free” calibration, meaning that the item parameters were not constrained in any way. This initial calibration produced a set of Rasch difficulty parameters for the items on each form. Also produced as a part of the Winsteps calibration was a set of person ability estimates for each form.

The next step was the computation of an equating constant for each form. Under Rasch IRT, if all of the difficulty parameters on a form have a constant added to them, the ability estimates for examinees will also be changed from their previous values by the amount represented by that constant. Therefore, to adjust the item difficulty parameters such that the mean of the ability distribution is set equal to the target mean ability from the anchor form, an equating constant was calculated for each field test form by subtracting the field test form mean ability from the target mean ability. This value was then added to the Rasch difficulty parameter of all items on the field test form. These adjusted values were then used as anchors for a second Winsteps calibration of the field test form. The mean of the person ability values from this second calibration

[2] Because under Rasch IRT the ability of students with extreme scores (either zero or perfect scores) cannot be exactly computed (they are equal to $-\infty$ and $+\infty$, respectively), they were excluded from this and all other analyses for both the anchor and other field test forms.

was computed and compared to the target mean. If the anchored field test mean ability differed from the target mean ability by 0.005 or more, then an additional equating constant was computed using the difference between the mean ability from the field test form anchored run and the target mean ability, and another anchored run was completed. This process continued until all adjusted field test form mean abilities were within the 0.005 tolerance limit around the targeted mean ability. The final equating constant for any field test form was the sum of the constants from each anchored round for that form. At this point, with the adjusted mean abilities for the field test forms all equal (within the specified limits) to the target abilities, all of the adjusted field test item parameters and the anchor item parameters were on the common operational scale, and thus could be used in any subsequent operational administration. The initial mean abilities and final equating constants for the field test forms can be found in Table 8.

Table 8. Initial Mean Abilities and Equating Constants

Form Number	Mean Ability	Constant
845	−0.17	0.67
846	−0.09	0.58
847	−0.09	0.60
848	0.05	0.47
849	0.07	0.44
850	−0.26	0.76
851	−0.07	0.57
852	−0.03	0.54
853	−0.18	0.68
854	−0.29	0.78
855	−0.35	0.84
856	0.13	0.38
857	0.19	0.33
858	0.15	0.37
859	0.18	0.34
860	−0.26	0.76
861	−0.22	0.72
862	−0.60	1.08

Section IV: Scaling of Operational Test Forms

Operational test items were selected based on content coverage, content accuracy, and statistical quality. The sets of items on each operational test conformed to the coverage determined by content experts working from the learning standards established by the New York State Education Department and explicated in the test blueprint. Each item's classical and Rasch statistics were used to assess item quality.

Items were selected to vary in difficulty to accurately measure students' abilities across the ability continuum. Appendix F contains the 2014 operational test maps for the January, June, and August administrations.

All Regents examinations have two cut scores, which are set at the scale scores of 65 and 85. One of the primary considerations during test construction was to select items so as to minimize changes in the raw scores corresponding to these two scale scores. Maintaining a consistent mean Rasch difficulty level from administration to administration facilitates this. For this assessment, the target value for the mean Rasch difficulty was set at 0.453. It should be noted that the raw scores corresponding to the scale score cut scores may still fluctuate, even if the mean Rasch difficulty level is maintained at the target value, due to differences in the distributions of the Rasch difficulty values among the items from administration to administration.

The relationship between raw and scale scores is explicated in the scoring tables for each administration. These tables can be found in Appendix G and cover the January, June, and August administrations. These tables are the end product of the following scaling procedure.

All Regents examinations are equated back to a base scale that is held constant from year to year. Specifically, the examinations are equated to the base scale through the use of a calibrated item pool. The Rasch difficulties from the items' initial administration in a previous year's field test are used to equate the scale for the current administration to the base administration. For this examination, the base administration was the June 2004 administration. Scale scores from the 2014 administrations are on the same scale, and can be directly compared to scale scores on all previous administrations back to and including the June 2004 administration.

When the base administration was concluded, the initial raw score-to-scale score relationship was established. Four raw scores were fixed at specific scale scores. Scale scores of 0 and 100 were fixed to correspond to the minimum and maximum possible raw scores. In addition, a standard setting had been held to determine the passing and passing with distinction cut scores in the raw score metric. The scale score points of 65 and 85 were set to correspond to those raw score cuts. A third-degree polynomial is required in order to fit a line exactly to four arbitrary points (e.g., the raw scores corresponding to the four critical scale scores of 0, 65, 85, and 100). The general form of this best-fitting line is:

$$SS = m_3*RS^3 + m_2*RS^2 + m_1*RS + m_0$$

where SS is the scaled score, RS is the raw score, and m_0 through m_3 are the transformation constants that convert the raw score into the scale score (please note that m_0 will always be equal to zero in this application, because a raw score of zero corresponds to a scale score of zero). The above relationship and the values of m_1 to m_3 specific to this subject were then used to determine the scale scores corresponding

to the remainder of the raw scores on the examination. This initial relationship between the raw and scale scores became the base scale.

The Rasch difficulty parameters for the items on the base form were used to derive a raw score to Rasch student ability (theta score) relationship. This allowed the relationship between the Rasch theta score and the scale score to be known, mediated through their common relationship with the raw scores.

In succeeding years, each test form was selected from the pool of items that had been tested in previous years' field tests, each of which had known Rasch item difficulty parameter(s). These known parameters were used to construct the relationship between the raw and Rasch theta scores for that particular form. Because the Rasch difficulty parameters are all on a common scale, the Rasch theta scores were also on a common scale with previously administered forms. The remaining step in the scaling process was to find the scale score equivalent for the Rasch theta score corresponding to each raw score point on the new form using the theta to scale score relationship established in the base year. This was done via linear interpolation.

This process results in a relationship between the raw scores on the form and the overall scale scores. The scale scores corresponding to each raw score are then rounded to the nearest integer for reporting on the conversion chart (posted at the close of each administration). The only exceptions are for the minimum and maximum raw scores and the raw scores that correspond to the scaled cut scores of 65 and 85.

The minimum (zero) and maximum possible raw scores are assigned scale scores of 0 and 100, respectively. In the event that there are raw scores less than the maximum with scale scores that round to 100, their scale scores are set equal to 99. A similar process is followed with the minimum score; if any raw scores other than zero have scale scores that round to zero, their scale scores are instead set equal to one.

With regard to the cuts, if two or more scale scores round to either 65 or 85, the lowest raw score's scale score is set equal to a 65 or 85 and the scale scores corresponding to the higher raw scores are set to 66 or 86 as appropriate. If no scale score rounds to either of these two critical cuts, then the raw score with the largest scale score that is less than the cut is set equal to the cut. The overarching principle when two raw scores both round to either scale score cut is that the lower of the raw scores is always assigned to be equal to the cut so that students are never penalized for this ambiguity.

The New York State Regents Examination in Earth Science contains both a written and a lab (or performance) component. The lab portion remains constant from year to year, while the written component is refreshed with each successive administration. Only the written component was addressed in the present report. Students taking the assessment receive two scale scores, one from each of the two components. The scale score from the performance component is similar to that from the written component in that it ranges from 0 to 100, and was subjected to a standard setting that determined

the raw score points that were fixed to the scale scores of 65 and 85. A student's final scale score on the assessment is a weighted sum of his or her written and performance scale scores and is determined via the following formula:

$$SS_{Total} = 0.15*SS_{Performance} + 0.85*SS_{Written}$$

where SS_{Total} is the total scale score and $SS_{Performance}$ and $SS_{Written}$ are the scale scores from the performance and written components of the test, respectively.

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Appendix A: Classical Item Analysis

In the following table, “Max” is the maximum number of possible points. “N-Count” refers to the number of student records in the analysis. “Alpha” contains Cronbach’s Coefficient α (since this is a test [form] level statistic, it has the same value for all items within each form). For MC items, “B” represents the proportion of students who left the item blank, and “M1” through “M4” are the proportions of students who selected each of the four answer choices. For CR items, “B” represents the proportion of students who left the item blank, and “M0” through “M4” are the proportions of students who received scores of 0 through 4. “Mean” is the average of the scores received by the students. The final (right) column contains the Point-Biserial correlation for each item. There may be some instances of items with missing statistics; this occurs when an item was not scored.

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	Mean	Point-Biserial
2014_ESCI	845	MC	01	1	949	0.78	0.01		0.26	0.24	0.21	0.27	0.27	0.34
2014_ESCI	845	MC	02	1	949	0.78	0.02		0.29	0.26	0.22	0.21	0.22	0.19
2014_ESCI	845	MC	03	1	949	0.78	0.01		0.17	0.58	0.12	0.12	0.58	0.26
2014_ESCI	845	MC	04	1	949	0.78	0.01		0.12	0.04	0.60	0.23	0.60	0.32
2014_ESCI	845	MC	05	1	949	0.78	0.01		0.06	0.70	0.19	0.04	0.70	0.42
2014_ESCI	845	MC	06	1	949	0.78	0.01		0.21	0.06	0.68	0.05	0.68	0.42
2014_ESCI	845	MC	07	1	949	0.78	0.00		0.06	0.05	0.05	0.84	0.84	0.40
2014_ESCI	845	MC	08	1	949	0.78	0.00		0.15	0.09	0.22	0.53	0.53	0.47
2014_ESCI	845	MC	09	1	949	0.78	0.01		0.35	0.30	0.09	0.24	0.30	0.24
2014_ESCI	845	MC	10	1	949	0.78	0.02		0.08	0.17	0.59	0.13	0.59	0.47
2014_ESCI	845	CR	41	1	949	0.78	0.05	0.51	0.44				0.44	0.42
2014_ESCI	845	CR	42	1	949	0.78	0.03	0.18	0.79				0.79	0.45
2014_ESCI	845	CR	43	1	949	0.78	0.21	0.50	0.29				0.29	0.50
2014_ESCI	845	CR	44	1	949	0.78	0.26	0.40	0.34				0.34	0.55
2014_ESCI	845	CR	45	1	949	0.78	0.18	0.28	0.54				0.54	0.60
2014_ESCI	845	CR	46	1	949	0.78	0.21	0.53	0.27				0.27	0.44
2014_ESCI	845	CR	47	1	949	0.78	0.22	0.29	0.48				0.48	0.45

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	Mean	Point-Biserial
2014_ESCI	845	CR	48	1	949	0.78	0.22	0.54	0.25				0.25	0.47
2014_ESCI	845	CR	49	1	949	0.78	0.27	0.23	0.51				0.51	0.59
2014_ESCI	845	CR	50	1	949	0.78	0.33	0.31	0.36				0.36	0.58
2014_ESCI	845	CR	51	1	949	0.78	0.33	0.46	0.21				0.21	0.43
2014_ESCI	846	MC	01	1	919	0.70	0.01		0.42	0.31	0.18	0.08	0.42	0.27
2014_ESCI	846	MC	02	1	919	0.70	0.01		0.59	0.07	0.16	0.18	0.59	0.34
2014_ESCI	846	MC	03	1	919	0.70	0.02		0.34	0.18	0.14	0.32	0.34	0.40
2014_ESCI	846	MC	04	1	919	0.70	0.00		0.49	0.13	0.11	0.26	0.49	0.33
2014_ESCI	846	MC	05	1	919	0.70	0.02		0.16	0.27	0.13	0.41	0.41	0.48
2014_ESCI	846	MC	06	1	919	0.70	0.00		0.11	0.05	0.73	0.11	0.73	0.47
2014_ESCI	846	MC	07	1	919	0.70	0.01		0.11	0.65	0.17	0.06	0.65	0.45
2014_ESCI	846	MC	08	1	919	0.70	0.01		0.51	0.17	0.21	0.11	0.51	0.49
2014_ESCI	846	MC	09	1	919	0.70	0.01		0.11	0.14	0.12	0.62	0.62	0.47
2014_ESCI	846	MC	10	1	919	0.70	0.01		0.17	0.10	0.55	0.17	0.55	0.46
2014_ESCI	846	CR	41	.										
2014_ESCI	846	CR	42	.										
2014_ESCI	846	CR	43	.										
2014_ESCI	846	CR	44	.										
2014_ESCI	846	CR	45	.										
2014_ESCI	846	CR	46	1	919	0.70	0.16	0.58	0.27				0.27	0.46
2014_ESCI	846	CR	47	1	919	0.70	0.12	0.15	0.72				0.72	0.50
2014_ESCI	846	CR	48	.										
2014_ESCI	846	CR	49	1	919	0.70	0.25	0.22	0.53				0.53	0.50
2014_ESCI	846	CR	50	1	919	0.70	0.24	0.52	0.24				0.24	0.49
2014_ESCI	846	CR	51	1	919	0.70	0.35	0.43	0.22				0.22	0.50
2014_ESCI	847	MC	01	1	857	0.75	0.01		0.11	0.09	0.59	0.21	0.59	0.43
2014_ESCI	847	MC	02	1	857	0.75	0.00		0.49	0.33	0.09	0.09	0.33	0.21
2014_ESCI	847	MC	03	1	857	0.75	0.02		0.21	0.34	0.30	0.14	0.21	0.39

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	Mean	Point-Biserial
2014_ESCI	847	MC	04	1	857	0.75	0.00		0.04	0.77	0.13	0.06	0.77	0.42
2014_ESCI	847	MC	05	1	857	0.75	0.01		0.67	0.03	0.12	0.17	0.12	0.36
2014_ESCI	847	MC	06	1	857	0.75	0.00		0.68	0.05	0.19	0.08	0.68	0.36
2014_ESCI	847	MC	07	1	857	0.75	0.01		0.67	0.05	0.18	0.09	0.67	0.35
2014_ESCI	847	MC	08	1	857	0.75	0.01		0.13	0.09	0.13	0.64	0.64	0.41
2014_ESCI	847	MC	09	1	857	0.75	0.00		0.09	0.09	0.75	0.07	0.75	0.32
2014_ESCI	847	MC	10	1	857	0.75	0.00		0.14	0.70	0.07	0.08	0.70	0.50
2014_ESCI	847	MC	11	1	857	0.75	0.01		0.66	0.04	0.24	0.06	0.66	0.41
2014_ESCI	847	MC	12	1	857	0.75	0.01		0.06	0.47	0.03	0.43	0.47	0.31
2014_ESCI	847	MC	13	1	857	0.75	0.01		0.42	0.13	0.25	0.19	0.42	0.41
2014_ESCI	847	MC	14	1	857	0.75	0.02		0.24	0.13	0.20	0.41	0.41	0.41
2014_ESCI	847	MC	15	1	857	0.75	0.02		0.24	0.29	0.09	0.37	0.37	0.43
2014_ESCI	847	MC	16	1	857	0.75	0.05		0.28	0.22	0.36	0.09	0.36	0.38
2014_ESCI	847	CR	41	1	857	0.75	0.07	0.66	0.27				0.27	0.50
2014_ESCI	847	CR	42	1	857	0.75	0.12	0.36	0.52				0.52	0.52
2014_ESCI	847	CR	43	1	857	0.75	0.15	0.32	0.53				0.53	0.47
2014_ESCI	847	CR	44	1	857	0.75	0.18	0.50	0.33				0.33	0.47
2014_ESCI	847	CR	45	1	857	0.75	0.24	0.44	0.32				0.32	0.49
2014_ESCI	848	MC	01	1	952	0.73	0.00		0.07	0.62	0.14	0.16	0.62	0.44
2014_ESCI	848	MC	02	1	952	0.73	0.00		0.11	0.19	0.54	0.15	0.54	0.37
2014_ESCI	848	MC	03	1	952	0.73	0.01		0.37	0.25	0.22	0.16	0.37	0.32
2014_ESCI	848	MC	04	1	952	0.73	0.01		0.44	0.09	0.27	0.19	0.44	0.34
2014_ESCI	848	MC	05	1	952	0.73	0.00		0.05	0.86	0.05	0.03	0.86	0.39
2014_ESCI	848	MC	06	1	952	0.73	0.00		0.14	0.13	0.09	0.63	0.63	0.26
2014_ESCI	848	MC	07	1	952	0.73	0.00		0.34	0.30	0.09	0.28	0.30	0.30
2014_ESCI	848	MC	08	1	952	0.73	0.00		0.19	0.22	0.06	0.52	0.52	0.34
2014_ESCI	848	MC	09	1	952	0.73	0.01		0.27	0.10	0.15	0.47	0.47	0.36
2014_ESCI	848	MC	10	1	952	0.73	0.01		0.70	0.09	0.15	0.06	0.70	0.41

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	Mean	Point-Biserial
2014_ESCI	848	MC	11	1	952	0.73	0.01		0.20	0.26	0.15	0.38	0.38	0.36
2014_ESCI	848	MC	12	1	952	0.73	0.01		0.07	0.05	0.84	0.02	0.84	0.46
2014_ESCI	848	MC	13	1	952	0.73	0.02		0.10	0.28	0.47	0.13	0.47	0.38
2014_ESCI	848	MC	14	1	952	0.73	0.02		0.61	0.09	0.15	0.13	0.61	0.50
2014_ESCI	848	MC	15	1	952	0.73	0.03		0.52	0.35	0.05	0.06	0.52	0.45
2014_ESCI	848	CR	41	1	952	0.73	0.01	0.22	0.77				0.77	0.30
2014_ESCI	848	CR	42	1	952	0.73	0.16	0.50	0.34				0.34	0.48
2014_ESCI	848	CR	43	1	952	0.73	0.18	0.68	0.14				0.14	0.50
2014_ESCI	848	CR	44	1	952	0.73	0.25	0.37	0.38				0.38	0.54
2014_ESCI	848	CR	45	1	952	0.73	0.26	0.46	0.28				0.28	0.48
2014_ESCI	848	CR	46	1	952	0.73	0.23	0.35	0.42				0.42	0.41
2014_ESCI	849	MC	01	1	956	0.75	0.01		0.10	0.11	0.56	0.22	0.56	0.41
2014_ESCI	849	MC	02	1	956	0.75	0.01		0.37	0.18	0.17	0.28	0.37	0.13
2014_ESCI	849	MC	03	1	956	0.75	0.00		0.08	0.26	0.57	0.09	0.57	0.41
2014_ESCI	849	MC	04	1	956	0.75	0.01		0.33	0.21	0.15	0.30	0.30	0.27
2014_ESCI	849	MC	05	1	956	0.75	0.01		0.49	0.24	0.15	0.11	0.49	0.36
2014_ESCI	849	MC	06	1	956	0.75	0.00		0.08	0.82	0.06	0.03	0.82	0.39
2014_ESCI	849	MC	07	1	956	0.75	0.01		0.11	0.23	0.54	0.12	0.54	0.40
2014_ESCI	849	MC	08	1	956	0.75	0.01		0.56	0.15	0.08	0.21	0.56	0.32
2014_ESCI	849	MC	09	1	956	0.75	0.01		0.09	0.81	0.05	0.05	0.81	0.40
2014_ESCI	849	MC	10	1	956	0.75	0.01		0.04	0.07	0.24	0.64	0.64	0.49
2014_ESCI	849	CR	41	1	956	0.75	0.02	0.66	0.32				0.32	0.41
2014_ESCI	849	CR	42	1	956	0.75	0.10	0.31	0.59				0.59	0.53
2014_ESCI	849	CR	43	1	956	0.75	0.07	0.38	0.55				0.55	0.40
2014_ESCI	849	CR	44	1	956	0.75	0.12	0.28	0.60				0.60	0.50
2014_ESCI	849	CR	45	1	956	0.75	0.12	0.49	0.38				0.38	0.42
2014_ESCI	849	CR	46	1	956	0.75	0.13	0.06	0.82				0.82	0.51
2014_ESCI	849	CR	47	1	956	0.75	0.13	0.22	0.65				0.65	0.53

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	Mean	Point-Biserial
2014_ESCI	849	CR	48	1	956	0.75	0.32	0.49	0.19				0.19	0.41
2014_ESCI	849	CR	49	1	956	0.75	0.26	0.51	0.23				0.23	0.43
2014_ESCI	849	CR	50	1	956	0.75	0.17	0.13	0.70				0.70	0.43
2014_ESCI	849	CR	51	1	956	0.75	0.29	0.57	0.14				0.14	0.45
2014_ESCI	850	MC	01	1	964	0.79	0.01		0.23	0.27	0.17	0.32	0.32	0.47
2014_ESCI	850	MC	02	1	964	0.79	0.01		0.09	0.77	0.08	0.06	0.77	0.37
2014_ESCI	850	MC	03	1	964	0.79	0.01		0.20	0.62	0.08	0.10	0.62	0.38
2014_ESCI	850	MC	04	1	964	0.79	0.00		0.06	0.69	0.05	0.21	0.69	0.41
2014_ESCI	850	MC	05	1	964	0.79	0.00		0.09	0.14	0.09	0.68	0.68	0.43
2014_ESCI	850	MC	06	1	964	0.79	0.01		0.16	0.12	0.18	0.52	0.52	0.50
2014_ESCI	850	MC	07	1	964	0.79	0.00		0.19	0.03	0.21	0.56	0.56	0.33
2014_ESCI	850	MC	08	1	964	0.79	0.01		0.38	0.11	0.41	0.10	0.38	0.26
2014_ESCI	850	MC	09	1	964	0.79	0.00		0.04	0.29	0.53	0.14	0.53	0.36
2014_ESCI	850	MC	10	1	964	0.79	0.01		0.68	0.19	0.05	0.07	0.68	0.38
2014_ESCI	850	CR	41	1	964	0.79	0.10	0.56	0.34				0.34	0.44
2014_ESCI	850	CR	42	1	964	0.79	0.06	0.84	0.10				0.10	0.32
2014_ESCI	850	CR	43	1	964	0.79	0.05	0.24	0.71				0.71	0.43
2014_ESCI	850	CR	44	1	964	0.79	0.09	0.53	0.38				0.38	0.58
2014_ESCI	850	CR	45	1	964	0.79	0.17	0.35	0.48				0.48	0.51
2014_ESCI	850	CR	46	1	964	0.79	0.26	0.54	0.21				0.21	0.52
2014_ESCI	850	CR	47	1	964	0.79	0.28	0.41	0.31				0.31	0.48
2014_ESCI	850	CR	48	1	964	0.79	0.27	0.41	0.31				0.31	0.47
2014_ESCI	850	CR	49	1	964	0.79	0.35	0.24	0.41				0.41	0.49
2014_ESCI	850	CR	50	1	964	0.79	0.32	0.37	0.31				0.31	0.58
2014_ESCI	850	CR	51	1	964	0.79	0.34	0.42	0.24				0.24	0.49
2014_ESCI	851	MC	01	1	956	0.75	0.01		0.13	0.64	0.15	0.08	0.64	0.40
2014_ESCI	851	MC	02	1	956	0.75	0.01		0.22	0.05	0.62	0.11	0.62	0.46
2014_ESCI	851	MC	03	1	956	0.75	0.01		0.23	0.48	0.16	0.12	0.48	0.41

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	Mean	Point-Biserial
2014_ESCI	851	MC	04	1	956	0.75	0.00		0.08	0.30	0.14	0.47	0.47	0.45
2014_ESCI	851	MC	05	1	956	0.75	0.00		0.10	0.76	0.06	0.08	0.76	0.51
2014_ESCI	851	MC	06	1	956	0.75	0.00		0.53	0.21	0.19	0.06	0.53	0.39
2014_ESCI	851	MC	07	1	956	0.75	0.01		0.51	0.22	0.17	0.10	0.51	0.39
2014_ESCI	851	MC	08	1	956	0.75	0.01		0.20	0.63	0.08	0.08	0.63	0.39
2014_ESCI	851	MC	09	1	956	0.75	0.01		0.11	0.05	0.73	0.11	0.73	0.45
2014_ESCI	851	MC	10	1	956	0.75	0.01		0.07	0.35	0.16	0.41	0.41	0.34
2014_ESCI	851	CR	41	1	956	0.75	0.09	0.72	0.19				0.19	0.39
2014_ESCI	851	CR	42	1	956	0.75	0.21	0.76	0.03				0.03	0.22
2014_ESCI	851	CR	43	1	956	0.75	0.06	0.19	0.75				0.75	0.52
2014_ESCI	851	CR	44	1	956	0.75	0.07	0.12	0.82				0.82	0.45
2014_ESCI	851	CR	45	1	956	0.75	0.09	0.25	0.66				0.66	0.50
2014_ESCI	851	CR	46	1	956	0.75	0.20	0.70	0.10				0.10	0.24
2014_ESCI	851	CR	47	1	956	0.75	0.17	0.22	0.61				0.61	0.46
2014_ESCI	851	CR	48	1	956	0.75	0.21	0.15	0.63				0.63	0.39
2014_ESCI	851	CR	49	1	956	0.75	0.21	0.39	0.40				0.40	0.47
2014_ESCI	851	CR	50	1	956	0.75	0.28	0.53	0.19				0.19	0.46
2014_ESCI	851	CR	51	.										
2014_ESCI	852	MC	01	1	924	0.80	0.00		0.27	0.12	0.57	0.04	0.57	0.37
2014_ESCI	852	MC	02	1	924	0.80	0.01		0.10	0.26	0.13	0.50	0.50	0.50
2014_ESCI	852	MC	03	1	924	0.80	0.01		0.12	0.31	0.17	0.39	0.39	0.31
2014_ESCI	852	MC	04	1	924	0.80	0.01		0.47	0.18	0.18	0.15	0.47	0.58
2014_ESCI	852	MC	05	1	924	0.80	0.01		0.31	0.08	0.13	0.47	0.47	0.45
2014_ESCI	852	MC	06	1	924	0.80	0.01		0.16	0.28	0.44	0.11	0.44	0.33
2014_ESCI	852	MC	07	1	924	0.80	0.00		0.08	0.68	0.17	0.06	0.68	0.49
2014_ESCI	852	MC	08	1	924	0.80	0.00		0.42	0.07	0.39	0.12	0.42	0.37
2014_ESCI	852	MC	09	1	924	0.80	0.01		0.24	0.08	0.56	0.12	0.56	0.51
2014_ESCI	852	MC	10	1	924	0.80	0.01		0.62	0.14	0.13	0.10	0.62	0.46

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	Mean	Point-Biserial
2014_ESCI	852	MC	11	1	924	0.80	0.01		0.54	0.09	0.22	0.13	0.54	0.52
2014_ESCI	852	MC	12	1	924	0.80	0.01		0.17	0.15	0.48	0.19	0.48	0.49
2014_ESCI	852	MC	13	1	924	0.80	0.03		0.43	0.09	0.25	0.20	0.43	0.34
2014_ESCI	852	CR	41	1	924	0.80	0.08	0.45	0.47				0.47	0.40
2014_ESCI	852	CR	42	1	924	0.80	0.06	0.61	0.33				0.33	0.39
2014_ESCI	852	CR	43	1	924	0.80	0.04	0.40	0.56				0.56	0.54
2014_ESCI	852	CR	44	.										
2014_ESCI	852	CR	45	1	924	0.80	0.13	0.27	0.60				0.60	0.52
2014_ESCI	852	CR	46	1	924	0.80	0.12	0.41	0.47				0.47	0.59
2014_ESCI	852	CR	47	1	924	0.80	0.16	0.43	0.41				0.41	0.41
2014_ESCI	852	CR	48	1	924	0.80	0.20	0.40	0.40				0.40	0.54
2014_ESCI	853	MC	01	1	946	0.74	0.01		0.07	0.08	0.44	0.39	0.39	0.31
2014_ESCI	853	MC	02	1	946	0.74	0.01		0.26	0.11	0.49	0.14	0.26	0.31
2014_ESCI	853	MC	03	1	946	0.74	0.01		0.47	0.27	0.12	0.13	0.47	0.35
2014_ESCI	853	MC	04	1	946	0.74	0.01		0.19	0.06	0.49	0.24	0.49	0.36
2014_ESCI	853	MC	05	1	946	0.74	0.01		0.25	0.29	0.24	0.22	0.29	0.34
2014_ESCI	853	MC	06	1	946	0.74	0.01		0.82	0.03	0.11	0.02	0.82	0.36
2014_ESCI	853	MC	07	1	946	0.74	0.01		0.11	0.67	0.05	0.16	0.67	0.48
2014_ESCI	853	MC	08	1	946	0.74	0.01		0.12	0.21	0.62	0.04	0.62	0.47
2014_ESCI	853	MC	09	1	946	0.74	0.01		0.17	0.09	0.06	0.67	0.67	0.48
2014_ESCI	853	MC	10	1	946	0.74	0.01		0.47	0.23	0.17	0.12	0.47	0.38
2014_ESCI	853	MC	11	1	946	0.74	0.02		0.27	0.13	0.49	0.09	0.49	0.37
2014_ESCI	853	MC	12	1	946	0.74	0.03		0.09	0.18	0.65	0.04	0.65	0.42
2014_ESCI	853	CR	41	1	946	0.74	0.02	0.27	0.71				0.71	0.40
2014_ESCI	853	CR	42	1	946	0.74	0.14	0.29	0.57				0.57	0.45
2014_ESCI	853	CR	43	1	946	0.74	0.09	0.67	0.24				0.24	0.32
2014_ESCI	853	CR	44	1	946	0.74	0.10	0.50	0.40				0.40	0.53
2014_ESCI	853	CR	45	1	946	0.74	0.11	0.63	0.27				0.27	0.32

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	Mean	Point-Biserial
2014_ESCI	853	CR	46	1	946	0.74	0.13	0.48	0.39				0.39	0.54
2014_ESCI	853	CR	47	1	946	0.74	0.30	0.49	0.21				0.21	0.55
2014_ESCI	853	CR	48	.										
2014_ESCI	853	CR	49	1	946	0.74	0.30	0.50	0.20				0.20	0.43
2014_ESCI	854	MC	01	1	966	0.76	0.02		0.36	0.08	0.12	0.43	0.43	0.40
2014_ESCI	854	MC	02	1	966	0.76	0.01		0.60	0.12	0.22	0.05	0.60	0.37
2014_ESCI	854	MC	03	1	966	0.76	0.02		0.27	0.30	0.34	0.07	0.34	0.36
2014_ESCI	854	MC	04	1	966	0.76	0.01		0.08	0.14	0.73	0.04	0.73	0.35
2014_ESCI	854	MC	05	1	966	0.76	0.01		0.04	0.49	0.15	0.30	0.49	0.36
2014_ESCI	854	MC	06	1	966	0.76	0.02		0.39	0.11	0.08	0.40	0.40	0.52
2014_ESCI	854	MC	07	1	966	0.76	0.01		0.17	0.71	0.06	0.05	0.71	0.38
2014_ESCI	854	MC	08	1	966	0.76	0.01		0.23	0.15	0.31	0.31	0.31	0.28
2014_ESCI	854	MC	09	1	966	0.76	0.01		0.12	0.09	0.14	0.64	0.64	0.43
2014_ESCI	854	MC	10	1	966	0.76	0.01		0.25	0.57	0.08	0.09	0.57	0.44
2014_ESCI	854	MC	11	1	966	0.76	0.01		0.62	0.10	0.16	0.12	0.62	0.45
2014_ESCI	854	MC	12	1	966	0.76	0.02		0.13	0.06	0.35	0.43	0.43	0.45
2014_ESCI	854	CR	41	1	966	0.76	0.05	0.77	0.19				0.19	0.27
2014_ESCI	854	CR	42	1	966	0.76	0.08	0.24	0.68				0.68	0.46
2014_ESCI	854	CR	43	1	966	0.76	0.11	0.36	0.53				0.53	0.53
2014_ESCI	854	CR	44	1	966	0.76	0.21	0.52	0.27				0.27	0.46
2014_ESCI	854	CR	45	1	966	0.76	0.18	0.50	0.31				0.31	0.51
2014_ESCI	854	CR	46	1	966	0.76	0.19	0.62	0.19				0.19	0.49
2014_ESCI	854	CR	47	.										
2014_ESCI	854	CR	48	1	966	0.76	0.25	0.50	0.25				0.25	0.51
2014_ESCI	854	CR	49	1	966	0.76	0.31	0.46	0.24				0.24	0.45
2014_ESCI	855	MC	01	1	965	0.66	0.01		0.30	0.44	0.11	0.15	0.44	0.38
2014_ESCI	855	MC	02	1	965	0.66	0.00		0.09	0.51	0.09	0.30	0.30	0.34
2014_ESCI	855	MC	03	1	965	0.66	0.01		0.24	0.21	0.40	0.13	0.40	0.17

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	Mean	Point-Biserial
2014_ESCI	855	MC	04	1	965	0.66	0.00		0.37	0.16	0.43	0.04	0.43	0.41
2014_ESCI	855	MC	05	1	965	0.66	0.01		0.05	0.43	0.16	0.35	0.43	0.25
2014_ESCI	855	MC	06	1	965	0.66	0.00		0.81	0.08	0.09	0.03	0.81	0.36
2014_ESCI	855	MC	07	1	965	0.66	0.00		0.08	0.02	0.74	0.15	0.74	0.42
2014_ESCI	855	MC	08	1	965	0.66	0.00		0.05	0.55	0.13	0.26	0.55	0.27
2014_ESCI	855	MC	09	1	965	0.66	0.00		0.43	0.17	0.17	0.22	0.43	0.41
2014_ESCI	855	MC	10	1	965	0.66	0.01		0.20	0.24	0.16	0.39	0.39	0.31
2014_ESCI	855	MC	11	1	965	0.66	0.00		0.10	0.14	0.27	0.49	0.49	0.43
2014_ESCI	855	MC	12	1	965	0.66	0.01		0.04	0.43	0.48	0.04	0.43	0.38
2014_ESCI	855	CR	41	1	965	0.66	0.04	0.46	0.50				0.50	0.50
2014_ESCI	855	CR	42	1	965	0.66	0.09	0.35	0.56				0.56	0.50
2014_ESCI	855	CR	43	1	965	0.66	0.12	0.73	0.15				0.15	0.27
2014_ESCI	855	CR	44	.										
2014_ESCI	855	CR	45	.										
2014_ESCI	855	CR	46	1	965	0.66	0.10	0.70	0.20				0.20	0.46
2014_ESCI	855	CR	47	1	965	0.66	0.19	0.36	0.45				0.45	0.43
2014_ESCI	855	CR	48	1	965	0.66	0.25	0.63	0.12				0.12	0.39
2014_ESCI	855	CR	49	1	965	0.66	0.26	0.33	0.42				0.42	0.46
2014_ESCI	856	MC	01	1	929	0.73	0.01		0.43	0.25	0.08	0.24	0.25	0.22
2014_ESCI	856	MC	02	1	929	0.73	0.01		0.05	0.24	0.61	0.09	0.61	0.32
2014_ESCI	856	MC	03	1	929	0.73	0.01		0.08	0.76	0.06	0.10	0.76	0.32
2014_ESCI	856	MC	04	1	929	0.73	0.00		0.03	0.91	0.04	0.02	0.91	0.39
2014_ESCI	856	MC	05	1	929	0.73	0.00		0.13	0.68	0.07	0.12	0.68	0.43
2014_ESCI	856	MC	06	1	929	0.73	0.01		0.28	0.04	0.08	0.59	0.59	0.09
2014_ESCI	856	MC	07	1	929	0.73	0.01		0.35	0.02	0.09	0.53	0.53	0.34
2014_ESCI	856	MC	08	1	929	0.73	0.00		0.03	0.08	0.07	0.81	0.81	0.35
2014_ESCI	856	MC	09	1	929	0.73	0.01		0.15	0.17	0.60	0.07	0.60	0.44
2014_ESCI	856	MC	10	1	929	0.73	0.01		0.65	0.07	0.07	0.20	0.65	0.37

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	Mean	Point-Biserial
2014_ESCI	856	MC	11	1	929	0.73	0.02		0.67	0.10	0.06	0.15	0.67	0.40
2014_ESCI	856	CR	41	1	929	0.73	0.04	0.36	0.60				0.60	0.39
2014_ESCI	856	CR	42	1	929	0.73	0.15	0.79	0.06				0.06	0.25
2014_ESCI	856	CR	43	.										
2014_ESCI	856	CR	44	1	929	0.73	0.28	0.50	0.22				0.22	0.46
2014_ESCI	856	CR	45	1	929	0.73	0.24	0.58	0.18				0.18	0.42
2014_ESCI	856	CR	46	1	929	0.73	0.24	0.40	0.36				0.36	0.57
2014_ESCI	856	CR	47	1	929	0.73	0.23	0.30	0.47				0.47	0.56
2014_ESCI	856	CR	48	1	929	0.73	0.26	0.24	0.49				0.49	0.53
2014_ESCI	856	CR	49	1	929	0.73	0.25	0.17	0.58				0.58	0.61
2014_ESCI	856	CR	50	1	929	0.73	0.26	0.16	0.58				0.58	0.52
2014_ESCI	857	MC	01	1	948	0.77	0.00		0.58	0.19	0.08	0.15	0.58	0.45
2014_ESCI	857	MC	02	1	948	0.77	0.00		0.06	0.82	0.08	0.04	0.82	0.38
2014_ESCI	857	MC	03	1	948	0.77	0.00		0.04	0.05	0.70	0.21	0.70	0.11
2014_ESCI	857	MC	04	1	948	0.77	0.00		0.06	0.09	0.79	0.07	0.79	0.30
2014_ESCI	857	MC	05	1	948	0.77	0.00		0.37	0.43	0.18	0.02	0.43	0.28
2014_ESCI	857	MC	06	1	948	0.77	0.00		0.41	0.20	0.17	0.22	0.17	0.20
2014_ESCI	857	MC	07	1	948	0.77	0.00		0.02	0.91	0.03	0.04	0.91	0.33
2014_ESCI	857	MC	08	1	948	0.77	0.01		0.30	0.11	0.09	0.50	0.50	0.44
2014_ESCI	857	MC	09	1	948	0.77	0.00		0.23	0.60	0.08	0.08	0.60	0.47
2014_ESCI	857	MC	10	1	948	0.77	0.01		0.62	0.11	0.08	0.18	0.62	0.48
2014_ESCI	857	MC	11	1	948	0.77	0.01		0.10	0.10	0.32	0.46	0.46	0.49
2014_ESCI	857	MC	12	1	948	0.77	0.01		0.09	0.70	0.15	0.04	0.70	0.47
2014_ESCI	857	MC	13	1	948	0.77	0.02		0.17	0.12	0.67	0.02	0.67	0.47
2014_ESCI	857	CR	41	1	948	0.77	0.05	0.29	0.66				0.66	0.42
2014_ESCI	857	CR	42	1	948	0.77	0.04	0.80	0.16				0.16	0.41
2014_ESCI	857	CR	43	1	948	0.77	0.08	0.44	0.48				0.48	0.56
2014_ESCI	857	CR	44	1	948	0.77	0.06	0.59	0.35				0.35	0.56

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	Mean	Point-Biserial
2014_ESCI	857	CR	45	1	948	0.77	0.09	0.19	0.72				0.72	0.45
2014_ESCI	857	CR	46	1	948	0.77	0.10	0.56	0.33				0.33	0.60
2014_ESCI	857	CR	47	1	948	0.77	0.33	0.30	0.38				0.38	0.52
2014_ESCI	857	CR	48	1	948	0.77	0.16	0.68	0.16				0.16	0.53
2014_ESCI	858	MC	01	1	932	0.76	0.01		0.21	0.53	0.09	0.16	0.53	0.32
2014_ESCI	858	MC	02	1	932	0.76	0.01		0.40	0.46	0.11	0.02	0.46	0.16
2014_ESCI	858	MC	03	1	932	0.76	0.00		0.16	0.70	0.08	0.05	0.70	0.47
2014_ESCI	858	MC	04	1	932	0.76	0.00		0.25	0.07	0.10	0.57	0.57	0.41
2014_ESCI	858	MC	05	1	932	0.76	0.01		0.56	0.10	0.14	0.18	0.56	0.44
2014_ESCI	858	MC	06	1	932	0.76	0.01		0.27	0.46	0.14	0.11	0.46	0.32
2014_ESCI	858	MC	07	1	932	0.76	0.01		0.13	0.21	0.41	0.24	0.41	0.35
2014_ESCI	858	MC	08	1	932	0.76	0.00		0.77	0.07	0.09	0.06	0.77	0.44
2014_ESCI	858	MC	09	1	932	0.76	0.01		0.08	0.54	0.21	0.16	0.54	0.31
2014_ESCI	858	MC	10	1	932	0.76	0.01		0.05	0.21	0.69	0.05	0.69	0.43
2014_ESCI	858	MC	11	1	932	0.76	0.01		0.72	0.08	0.02	0.17	0.72	0.43
2014_ESCI	858	MC	12	1	932	0.76	0.01		0.08	0.12	0.14	0.65	0.65	0.48
2014_ESCI	858	MC	13	1	932	0.76	0.01		0.18	0.13	0.10	0.58	0.58	0.49
2014_ESCI	858	MC	14	1	932	0.76	0.02		0.28	0.08	0.03	0.59	0.28	0.24
2014_ESCI	858	CR	41	1	932	0.76	0.09	0.49	0.42				0.42	0.42
2014_ESCI	858	CR	42	1	932	0.76	0.11	0.46	0.43				0.43	0.45
2014_ESCI	858	CR	43	1	932	0.76	0.07	0.16	0.77				0.77	0.51
2014_ESCI	858	CR	44	1	932	0.76	0.07	0.48	0.45				0.45	0.49
2014_ESCI	858	CR	45	1	932	0.76	0.13	0.42	0.45				0.45	0.52
2014_ESCI	858	CR	46	1	932	0.76	0.22	0.26	0.53				0.53	0.59
2014_ESCI	858	CR	47	1	932	0.76	0.41	0.43	0.16				0.16	0.43
2014_ESCI	859	MC	01	1	967	0.76	0.01		0.55	0.10	0.03	0.31	0.55	0.36
2014_ESCI	859	MC	02	1	967	0.76	0.01		0.57	0.22	0.08	0.13	0.57	0.40
2014_ESCI	859	MC	03	1	967	0.76	0.00		0.03	0.58	0.37	0.03	0.58	0.38

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	Mean	Point-Biserial
2014_ESCI	859	MC	04	1	967	0.76	0.00		0.16	0.02	0.51	0.31	0.31	0.25
2014_ESCI	859	MC	05	1	967	0.76	0.01		0.28	0.23	0.10	0.38	0.38	0.28
2014_ESCI	859	MC	06	1	967	0.76	0.00		0.71	0.10	0.06	0.13	0.71	0.48
2014_ESCI	859	MC	07	1	967	0.76	0.00		0.14	0.10	0.67	0.09	0.67	0.42
2014_ESCI	859	MC	08	1	967	0.76	0.01		0.43	0.26	0.16	0.14	0.43	0.46
2014_ESCI	859	MC	09	1	967	0.76	0.00		0.11	0.12	0.57	0.19	0.57	0.48
2014_ESCI	859	MC	10	1	967	0.76	0.01		0.16	0.58	0.11	0.14	0.58	0.42
2014_ESCI	859	MC	11	1	967	0.76	0.02		0.15	0.15	0.19	0.50	0.50	0.50
2014_ESCI	859	MC	12	1	967	0.76	0.01		0.44	0.18	0.27	0.10	0.44	0.30
2014_ESCI	859	MC	13	1	967	0.76	0.01		0.03	0.10	0.83	0.03	0.83	0.31
2014_ESCI	859	MC	14	1	967	0.76	0.02		0.11	0.14	0.48	0.25	0.48	0.34
2014_ESCI	859	CR	41	1	967	0.76	0.04	0.25	0.71				0.71	0.40
2014_ESCI	859	CR	42	1	967	0.76	0.04	0.67	0.29				0.29	0.46
2014_ESCI	859	CR	43	1	967	0.76	0.10	0.29	0.61				0.61	0.57
2014_ESCI	859	CR	44	1	967	0.76	0.14	0.52	0.34				0.34	0.53
2014_ESCI	859	CR	45	1	967	0.76	0.20	0.47	0.34				0.34	0.54
2014_ESCI	859	CR	46	1	967	0.76	0.16	0.26	0.57				0.57	0.42
2014_ESCI	859	CR	47	1	967	0.76	0.16	0.11	0.73				0.73	0.45
2014_ESCI	860	MC	01	1	956	0.76	0.00		0.05	0.55	0.06	0.33	0.33	0.34
2014_ESCI	860	MC	02	1	956	0.76	0.02		0.09	0.41	0.36	0.11	0.36	0.25
2014_ESCI	860	MC	03	1	956	0.76	0.02		0.18	0.16	0.52	0.12	0.52	0.32
2014_ESCI	860	MC	04	1	956	0.76	0.00		0.08	0.15	0.22	0.55	0.55	0.44
2014_ESCI	860	MC	05	1	956	0.76	0.02		0.19	0.30	0.46	0.03	0.46	0.46
2014_ESCI	860	MC	06	1	956	0.76	0.01		0.04	0.05	0.14	0.77	0.77	0.41
2014_ESCI	860	MC	07	1	956	0.76	0.01		0.12	0.05	0.03	0.80	0.80	0.42
2014_ESCI	860	MC	08	1	956	0.76	0.01		0.03	0.77	0.09	0.10	0.77	0.37
2014_ESCI	860	MC	09	1	956	0.76	0.01		0.05	0.15	0.72	0.07	0.72	0.48
2014_ESCI	860	MC	10	1	956	0.76	0.01		0.67	0.14	0.10	0.09	0.67	0.54

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	Mean	Point-Biserial
2014_ESCI	860	MC	11	1	956	0.76	0.05		0.56	0.14	0.13	0.13	0.56	0.33
2014_ESCI	860	CR	41	1	956	0.76	0.04	0.59	0.37				0.37	0.45
2014_ESCI	860	CR	42	1	956	0.76	0.07	0.67	0.25				0.25	0.45
2014_ESCI	860	CR	43	1	956	0.76	0.05	0.53	0.42				0.42	0.46
2014_ESCI	860	CR	44	1	956	0.76	0.11	0.41	0.47				0.47	0.56
2014_ESCI	860	CR	45	1	956	0.76	0.21	0.62	0.17				0.17	0.52
2014_ESCI	860	CR	46	1	956	0.76	0.19	0.59	0.21				0.21	0.43
2014_ESCI	860	CR	47	1	956	0.76	0.26	0.60	0.14				0.14	0.37
2014_ESCI	860	CR	48	1	956	0.76	0.24	0.30	0.46				0.46	0.34
2014_ESCI	860	CR	49	1	956	0.76	0.24	0.65	0.11				0.11	0.36
2014_ESCI	860	CR	50	1	956	0.76	0.28	0.28	0.45				0.45	0.50
2014_ESCI	861	MC	01	1	959	0.74	0.02		0.14	0.13	0.45	0.27	0.45	0.36
2014_ESCI	861	MC	02	1	959	0.74	0.00		0.08	0.07	0.10	0.76	0.76	0.14
2014_ESCI	861	MC	03	1	959	0.74	0.00		0.51	0.19	0.19	0.10	0.51	0.27
2014_ESCI	861	MC	04	1	959	0.74	0.01		0.16	0.73	0.04	0.07	0.73	0.45
2014_ESCI	861	MC	05	1	959	0.74	0.01		0.54	0.06	0.14	0.26	0.54	0.35
2014_ESCI	861	MC	06	1	959	0.74	0.01		0.10	0.14	0.13	0.62	0.62	0.42
2014_ESCI	861	MC	07	1	959	0.74	0.01		0.53	0.09	0.11	0.26	0.53	0.52
2014_ESCI	861	MC	08	1	959	0.74	0.01		0.20	0.09	0.52	0.19	0.52	0.40
2014_ESCI	861	MC	09	1	959	0.74	0.01		0.13	0.14	0.62	0.11	0.62	0.45
2014_ESCI	861	MC	10	1	959	0.74	0.01		0.14	0.23	0.48	0.13	0.14	0.11
2014_ESCI	861	MC	11	1	959	0.74	0.01		0.16	0.67	0.10	0.06	0.67	0.40
2014_ESCI	861	MC	12	1	959	0.74	0.01		0.15	0.04	0.11	0.68	0.68	0.48
2014_ESCI	861	CR	41	1	959	0.74	0.02	0.54	0.45				0.45	0.43
2014_ESCI	861	CR	42	1	959	0.74	0.07	0.74	0.19				0.19	0.44
2014_ESCI	861	CR	43	1	959	0.74	0.08	0.44	0.48				0.48	0.52
2014_ESCI	861	CR	44	1	959	0.74	0.09	0.30	0.61				0.61	0.44
2014_ESCI	861	CR	45	1	959	0.74	0.15	0.56	0.29				0.29	0.54

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	Mean	Point-Biserial
2014_ESCI	861	CR	46	1	959	0.74	0.20	0.25	0.54				0.54	0.41
2014_ESCI	861	CR	47	1	959	0.74	0.23	0.48	0.29				0.29	0.49
2014_ESCI	861	CR	48	1	959	0.74	0.35	0.60	0.05				0.05	0.33
2014_ESCI	861	CR	49	1	959	0.74	0.27	0.52	0.21				0.21	0.41
2014_ESCI	862	MC	01	1	965	0.71	0.01		0.26	0.12	0.42	0.19	0.26	0.39
2014_ESCI	862	MC	02	1	965	0.71	0.01		0.06	0.38	0.33	0.23	0.38	0.37
2014_ESCI	862	MC	03	1	965	0.71	0.01		0.19	0.25	0.13	0.42	0.19	0.28
2014_ESCI	862	MC	04	1	965	0.71	0.01		0.06	0.23	0.19	0.52	0.52	0.26
2014_ESCI	862	MC	05	1	965	0.71	0.01		0.13	0.42	0.14	0.30	0.42	0.33
2014_ESCI	862	MC	06	1	965	0.71	0.01		0.07	0.56	0.17	0.19	0.56	0.33
2014_ESCI	862	MC	07	1	965	0.71	0.01		0.37	0.26	0.20	0.17	0.17	0.34
2014_ESCI	862	MC	08	1	965	0.71	0.01		0.06	0.14	0.21	0.57	0.57	0.47
2014_ESCI	862	MC	09	1	965	0.71	0.02		0.24	0.25	0.37	0.12	0.37	0.38
2014_ESCI	862	MC	10	1	965	0.71	0.01		0.08	0.05	0.07	0.79	0.79	0.34
2014_ESCI	862	MC	11	1	965	0.71	0.02		0.05	0.06	0.82	0.04	0.82	0.39
2014_ESCI	862	CR	41	1	965	0.71	0.06	0.56	0.38				0.38	0.43
2014_ESCI	862	CR	42	1	965	0.71	0.05	0.53	0.42				0.42	0.42
2014_ESCI	862	CR	43	1	965	0.71	0.06	0.70	0.24				0.24	0.45
2014_ESCI	862	CR	44	1	965	0.71	0.18	0.44	0.38				0.38	0.52
2014_ESCI	862	CR	45	1	965	0.71	0.10	0.36	0.53				0.53	0.48
2014_ESCI	862	CR	46	1	965	0.71	0.16	0.73	0.11				0.11	0.27
2014_ESCI	862	CR	47	.										
2014_ESCI	862	CR	48	1	965	0.71	0.14	0.52	0.34				0.34	0.47
2014_ESCI	862	CR	49	1	965	0.71	0.27	0.51	0.22				0.22	0.44
2014_ESCI	862	CR	50	1	965	0.71	0.32	0.51	0.17				0.17	0.45
2014_ESCI	863	MC	01	1	934	0.75	0.01		0.56	0.28	0.11	0.04	0.56	0.34
2014_ESCI	863	MC	02	1	934	0.75	0.00		0.15	0.11	0.08	0.66	0.66	0.42
2014_ESCI	863	MC	03	1	934	0.75	0.01		0.27	0.55	0.13	0.05	0.55	0.36

Test	Form	Type	Item	Max	N-Count	Alpha	B	M0	M1	M2	M3	M4	Mean	Point-Biserial
2014_ESCI	863	MC	04	1	934	0.75	0.00		0.15	0.48	0.17	0.20	0.48	0.35
2014_ESCI	863	MC	05	1	934	0.75	0.01		0.11	0.07	0.22	0.59	0.59	0.47
2014_ESCI	863	MC	06	1	934	0.75	0.00		0.14	0.13	0.49	0.24	0.49	0.37
2014_ESCI	863	MC	07	1	934	0.75	0.00		0.32	0.29	0.18	0.21	0.32	0.26
2014_ESCI	863	MC	08	1	934	0.75	0.01		0.16	0.58	0.19	0.07	0.58	0.40
2014_ESCI	863	MC	09	1	934	0.75	0.00		0.60	0.13	0.18	0.08	0.60	0.32
2014_ESCI	863	MC	10	1	934	0.75	0.01		0.28	0.52	0.09	0.10	0.52	0.28
2014_ESCI	863	MC	11	1	934	0.75	0.01		0.23	0.34	0.12	0.30	0.34	0.37
2014_ESCI	863	MC	12	1	934	0.75	0.01		0.19	0.46	0.17	0.16	0.46	0.38
2014_ESCI	863	MC	13	1	934	0.75	0.01		0.04	0.10	0.16	0.70	0.70	0.47
2014_ESCI	863	MC	14	1	934	0.75	0.01		0.75	0.12	0.07	0.04	0.75	0.39
2014_ESCI	863	CR	41	1	934	0.75	0.03	0.48	0.50				0.50	0.47
2014_ESCI	863	CR	42	1	934	0.75	0.04	0.43	0.52				0.52	0.47
2014_ESCI	863	CR	43	2	934	0.75	0.06	0.07	0.12	0.75			1.63	0.56
2014_ESCI	863	CR	44	1	934	0.75	0.10	0.30	0.60				0.60	0.56
2014_ESCI	863	CR	45	1	934	0.75	0.34	0.16	0.51				0.51	0.48
2014_ESCI	863	CR	46	2	934	0.75	0.17	0.04	0.25	0.53			1.32	0.53

Appendix B: Inter-Rater Consistency – Point Differences Between First and Second Reads

The first three columns from the left contain the form ID, item sequence number, and number of score points for each item. The remaining columns contain the percentage of times each possible difference between the first and second raters' scores occurred. Blank cells indicate out-of-range differences (e.g., differences greater than the maximum possible, given the point value of that particular item).

Form	Item	Score Points	Difference (First Read Minus Second Read)				
			–2	–1	0	1	2
845	41	1		0%	98%	2%	
845	42	1		2%	97%	1%	
845	43	1		2%	95%	3%	
845	44	1		4%	93%	3%	
845	45	1		1%	98%	1%	
845	46	1		2%	95%	3%	
845	47	1		0%	100%	0%	
845	48	1		1%	98%	1%	
845	49	1		0%	100%	0%	
845	50	1		0%	100%	0%	
845	51	1		0%	98%	2%	
846	46	1		3%	94%	3%	
846	47	1		0%	100%	0%	
846	49	1		2%	93%	5%	
846	50	1		2%	96%	2%	
846	51	1		3%	90%	7%	
847	41	1		3%	96%	1%	
847	42	1		2%	98%	0%	
847	43	1		2%	93%	4%	
847	44	1		2%	96%	2%	
847	45	1		3%	97%	0%	
848	41	1		0%	100%	0%	
848	42	1		0%	100%	0%	
848	43	1		0%	100%	0%	
848	44	1		1%	96%	3%	
848	45	1		2%	96%	2%	
848	46	1		2%	94%	4%	
849	41	1		3%	96%	1%	
849	42	1		0%	100%	0%	
849	43	1		1%	99%	0%	

Form	Item	Score Points	Difference (First Read Minus Second Read)				
			−2	−1	0	1	2
849	44	1		0%	99%	1%	
849	45	1		2%	97%	1%	
849	46	1		0%	100%	0%	
849	47	1		0%	100%	0%	
849	48	1		0%	100%	0%	
849	49	1		1%	99%	0%	
849	50	1		1%	99%	0%	
849	51	1		1%	97%	2%	
850	41	1		3%	95%	2%	
850	42	1		0%	99%	1%	
850	43	1		2%	98%	0%	
850	44	1		1%	99%	0%	
850	45	1		5%	88%	7%	
850	46	1		2%	98%	0%	
850	47	1		13%	82%	5%	
850	48	1		0%	99%	1%	
850	49	1		3%	96%	1%	
850	50	1		4%	88%	8%	
850	51	1		10%	84%	6%	
851	41	1		0%	100%	0%	
851	42	1		3%	94%	3%	
851	43	1		1%	99%	0%	
851	44	1		0%	99%	1%	
851	45	1		2%	98%	0%	
851	46	1		0%	99%	1%	
851	47	1		2%	97%	1%	
851	48	1		1%	98%	1%	
851	49	1		2%	97%	1%	
851	50	1		2%	97%	1%	
852	41	1		1%	97%	2%	
852	42	1		1%	98%	1%	
852	43	1		2%	97%	1%	
852	45	1		8%	90%	2%	
852	46	1		0%	100%	0%	
852	47	1		3%	96%	1%	
852	48	1		2%	98%	0%	
853	41	1		4%	93%	3%	
853	42	1		4%	93%	3%	
853	43	1		0%	100%	0%	

Form	Item	Score Points	Difference (First Read Minus Second Read)				
			−2	−1	0	1	2
853	44	1		1%	97%	2%	
853	45	1		1%	95%	4%	
853	46	1		1%	97%	2%	
853	47	1		3%	96%	1%	
853	49	1		1%	99%	0%	
854	41	1		1%	94%	5%	
854	42	1		4%	91%	5%	
854	43	1		2%	97%	1%	
854	44	1		1%	98%	1%	
854	45	1		4%	91%	5%	
854	46	1		0%	99%	1%	
854	48	1		0%	98%	2%	
854	49	1		1%	96%	3%	
855	41	1		1%	97%	2%	
855	42	1		1%	98%	1%	
855	43	1		2%	96%	2%	
855	46	1		1%	98%	1%	
855	47	1		1%	98%	1%	
855	48	1		0%	100%	0%	
855	49	1		0%	100%	0%	
856	41	1		1%	97%	2%	
856	42	1		1%	99%	0%	
856	44	1		2%	91%	7%	
856	45	1		2%	93%	5%	
856	46	1		0%	99%	1%	
856	47	1		2%	96%	2%	
856	48	1		5%	87%	8%	
856	49	1		0%	98%	2%	
856	50	1		9%	89%	1%	
857	41	1		0%	99%	1%	
857	42	1		0%	100%	0%	
857	43	1		2%	98%	0%	
857	44	1		3%	97%	0%	
857	45	1		0%	100%	0%	
857	46	1		0%	100%	0%	
857	47	1		0%	99%	1%	
857	48	1		0%	100%	0%	
858	41	1		2%	98%	0%	
858	42	1		1%	98%	1%	

Form	Item	Score Points	Difference (First Read Minus Second Read)				
			−2	−1	0	1	2
858	43	1		1%	99%	0%	
858	44	1		3%	97%	0%	
858	45	1		1%	92%	7%	
858	46	1		1%	99%	0%	
858	47	1		0%	99%	1%	
859	41	1		0%	97%	3%	
859	42	1		0%	99%	1%	
859	43	1		1%	98%	1%	
859	44	1		0%	100%	0%	
859	45	1		7%	93%	0%	
859	46	1		3%	92%	4%	
859	47	1		0%	99%	1%	
860	41	1		1%	96%	3%	
860	42	1		2%	96%	2%	
860	43	1		0%	100%	0%	
860	44	1		1%	99%	0%	
860	45	1		0%	100%	0%	
860	46	1		0%	99%	1%	
860	47	1		5%	93%	1%	
860	48	1		0%	96%	4%	
860	49	1		1%	96%	3%	
860	50	1		3%	97%	0%	
861	41	1		0%	100%	0%	
861	42	1		1%	99%	0%	
861	43	1		2%	94%	4%	
861	44	1		2%	98%	0%	
861	45	1		2%	98%	0%	
861	46	1		0%	99%	1%	
861	47	1		7%	90%	3%	
861	48	1		1%	97%	1%	
861	49	1		1%	98%	1%	
862	41	1		4%	95%	1%	
862	42	1		5%	91%	3%	
862	43	1		4%	95%	1%	
862	44	1		1%	99%	0%	
862	45	1		1%	94%	4%	
862	46	1		1%	99%	0%	
862	48	1		0%	100%	0%	
862	49	1		2%	98%	0%	

Form	Item	Score Points	Difference (First Read Minus Second Read)				
			−2	−1	0	1	2
862	50	1		1%	97%	1%	
863	41	1		0%	100%	0%	
863	42	1		1%	96%	3%	
863	43	2	1%	3%	95%	1%	0%
863	44	1		3%	97%	0%	
863	45	1		0%	100%	0%	
863	46	2	0%	4%	91%	4%	0%

Appendix C: Additional Measures of Inter-rater Reliability and Agreement

The first four columns from the left contain the form ID, item sequence number, number of score points, and the total count of items receiving a first and second read. In the fifth column, the percent of exact matches between the first and second scores is provided. The following column ("Adj.") is the percentage of the first and second scores with a difference of −1 or 1. "Total" is the sum of Exact and Adjacent matches (e.g., the two prior columns).

Form	Item	Score Points	Total N-Count	Agreement (%)			Raw Score Mean		Raw Score Standard Deviation		Intraclass Corr.	Weighted Kappa
				Exact	Adj.	Total	First Read	Second Read	First Read	Second Read		
845	41	1	100	98.0%	2.0%	100.0%	0.5	0.5	0.50	0.50	0.96	0.96
845	42	1	100	97.0%	3.0%	100.0%	0.8	0.8	0.40	0.39	0.91	0.90
845	43	1	91	94.5%	5.5%	100.0%	0.4	0.4	0.50	0.50	0.89	0.89
845	44	1	98	92.9%	7.1%	100.0%	0.5	0.5	0.50	0.50	0.86	0.86
845	45	1	100	98.0%	2.0%	100.0%	0.7	0.7	0.46	0.46	0.95	0.95
845	46	1	107	95.3%	4.7%	100.0%	0.4	0.3	0.48	0.48	0.90	0.90
845	47	1	104	100.0%	0.0%	100.0%	0.6	0.6	0.50	0.50	1.00	1.00
845	48	1	102	98.0%	2.0%	100.0%	0.3	0.3	0.44	0.44	0.95	0.95
845	49	1	106	100.0%	0.0%	100.0%	0.8	0.8	0.43	0.43	1.00	1.00
845	50	1	103	100.0%	0.0%	100.0%	0.5	0.5	0.50	0.50	1.00	1.00
845	51	1	104	98.1%	1.9%	100.0%	0.2	0.2	0.43	0.42	0.95	0.95
846	46	1	97	93.8%	6.2%	100.0%	0.4	0.4	0.48	0.48	0.87	0.86
846	47	1	99	100.0%	0.0%	100.0%	0.8	0.8	0.40	0.40	1.00	1.00
846	49	1	97	92.8%	7.2%	100.0%	0.6	0.6	0.48	0.49	0.85	0.84
846	50	1	97	95.9%	4.1%	100.0%	0.3	0.3	0.46	0.46	0.90	0.90
846	51	1	88	89.8%	10.2%	100.0%	0.3	0.3	0.46	0.44	0.75	0.75
847	41	1	91	95.6%	4.4%	100.0%	0.3	0.4	0.48	0.48	0.90	0.90
847	42	1	91	97.8%	2.2%	100.0%	0.6	0.6	0.50	0.50	0.96	0.96
847	43	1	91	93.4%	6.6%	100.0%	0.6	0.6	0.48	0.49	0.86	0.86
847	44	1	90	95.6%	4.4%	100.0%	0.4	0.4	0.50	0.50	0.91	0.91

Form	Item	Score Points	Total N-Count	Agreement (%)			Raw Score Mean		Raw Score Standard Deviation		Intraclass Corr.	Weighted Kappa
				Exact	Adj.	Total	First Read	Second Read	First Read	Second Read		
847	45	1	90	96.7%	3.3%	100.0%	0.4	0.5	0.50	0.50	0.93	0.93
848	41	1	94	100.0%	0.0%	100.0%	0.8	0.8	0.41	0.41	1.00	1.00
848	42	1	93	100.0%	0.0%	100.0%	0.4	0.4	0.50	0.50	1.00	1.00
848	43	1	94	100.0%	0.0%	100.0%	0.2	0.2	0.39	0.39	1.00	1.00
848	44	1	93	95.7%	4.3%	100.0%	0.5	0.5	0.50	0.50	0.91	0.91
848	45	1	93	95.7%	4.3%	100.0%	0.4	0.4	0.48	0.48	0.91	0.91
848	46	1	93	93.5%	6.5%	100.0%	0.5	0.5	0.50	0.50	0.87	0.87
849	41	1	102	96.1%	3.9%	100.0%	0.3	0.4	0.48	0.48	0.91	0.91
849	42	1	99	100.0%	0.0%	100.0%	0.7	0.7	0.46	0.46	1.00	1.00
849	43	1	102	99.0%	1.0%	100.0%	0.6	0.6	0.48	0.48	0.98	0.98
849	44	1	102	99.0%	1.0%	100.0%	0.7	0.7	0.47	0.47	0.98	0.98
849	45	1	102	97.1%	2.9%	100.0%	0.5	0.5	0.50	0.50	0.94	0.94
849	46	1	96	100.0%	0.0%	100.0%	1.0	1.0	0.17	0.17	1.00	1.00
849	47	1	96	100.0%	0.0%	100.0%	0.8	0.8	0.39	0.39	1.00	1.00
849	48	1	86	100.0%	0.0%	100.0%	0.3	0.3	0.44	0.44	1.00	1.00
849	49	1	88	98.9%	1.1%	100.0%	0.4	0.4	0.48	0.49	0.98	0.98
849	50	1	96	99.0%	1.0%	100.0%	0.9	0.9	0.35	0.34	0.96	0.96
849	51	1	91	96.7%	3.3%	100.0%	0.2	0.2	0.42	0.42	0.91	0.91
850	41	1	103	95.1%	4.9%	100.0%	0.5	0.5	0.50	0.50	0.90	0.90
850	42	1	103	99.0%	1.0%	100.0%	0.2	0.2	0.37	0.36	0.96	0.96
850	43	1	104	98.1%	1.9%	100.0%	0.8	0.8	0.42	0.41	0.94	0.94
850	44	1	104	99.0%	1.0%	100.0%	0.5	0.5	0.50	0.50	0.98	0.98
850	45	1	103	88.3%	11.7%	100.0%	0.6	0.6	0.48	0.49	0.75	0.75
850	46	1	98	98.0%	2.0%	100.0%	0.2	0.2	0.42	0.43	0.94	0.94
850	47	1	99	81.8%	18.2%	100.0%	0.4	0.5	0.50	0.50	0.64	0.64
850	48	1	100	99.0%	1.0%	100.0%	0.5	0.5	0.50	0.50	0.98	0.98

Form	Item	Score Points	Total N-Count	Agreement (%)			Raw Score Mean		Raw Score Standard Deviation		Intraclass Corr.	Weighted Kappa
				Exact	Adj.	Total	First Read	Second Read	First Read	Second Read		
850	49	1	92	95.7%	4.3%	100.0%	0.7	0.7	0.47	0.46	0.90	0.90
850	50	1	99	87.9%	12.1%	100.0%	0.5	0.5	0.50	0.50	0.76	0.76
850	51	1	97	83.5%	16.5%	100.0%	0.4	0.4	0.49	0.50	0.66	0.66
851	41	1	98	100.0%	0.0%	100.0%	0.2	0.2	0.41	0.41	1.00	1.00
851	42	1	96	93.8%	6.3%	100.0%	0.1	0.1	0.24	0.24	0.47	0.47
851	43	1	98	99.0%	1.0%	100.0%	0.8	0.8	0.39	0.38	0.97	0.97
851	44	1	98	99.0%	1.0%	100.0%	0.9	0.9	0.30	0.32	0.95	0.95
851	45	1	97	97.9%	2.1%	100.0%	0.8	0.9	0.37	0.35	0.92	0.92
851	46	1	90	98.9%	1.1%	100.0%	0.1	0.1	0.34	0.33	0.95	0.95
851	47	1	94	96.8%	3.2%	100.0%	0.8	0.8	0.43	0.43	0.91	0.91
851	48	1	94	97.9%	2.1%	100.0%	0.8	0.8	0.39	0.39	0.93	0.93
851	49	1	94	96.8%	3.2%	100.0%	0.5	0.5	0.50	0.50	0.94	0.94
851	50	1	90	96.7%	3.3%	100.0%	0.3	0.3	0.45	0.46	0.92	0.92
852	41	1	96	96.9%	3.1%	100.0%	0.5	0.5	0.50	0.50	0.94	0.94
852	42	1	96	97.9%	2.1%	100.0%	0.4	0.4	0.48	0.48	0.95	0.95
852	43	1	96	96.9%	3.1%	100.0%	0.5	0.5	0.50	0.50	0.94	0.94
852	45	1	92	90.2%	9.8%	100.0%	0.6	0.7	0.49	0.47	0.78	0.78
852	46	1	93	100.0%	0.0%	100.0%	0.5	0.5	0.50	0.50	1.00	1.00
852	47	1	93	95.7%	4.3%	100.0%	0.5	0.6	0.50	0.50	0.91	0.91
852	48	1	89	97.8%	2.2%	100.0%	0.5	0.5	0.50	0.50	0.96	0.95
853	41	1	100	93.0%	7.0%	100.0%	0.7	0.7	0.46	0.46	0.83	0.83
853	42	1	95	92.6%	7.4%	100.0%	0.6	0.6	0.49	0.49	0.85	0.85
853	43	1	99	100.0%	0.0%	100.0%	0.3	0.3	0.46	0.46	1.00	1.00
853	44	1	99	97.0%	3.0%	100.0%	0.5	0.5	0.50	0.50	0.94	0.94
853	45	1	99	94.9%	5.1%	100.0%	0.4	0.4	0.49	0.49	0.89	0.89
853	46	1	96	96.9%	3.1%	100.0%	0.6	0.6	0.50	0.50	0.94	0.94

Form	Item	Score Points	Total N-Count	Agreement (%)			Raw Score Mean		Raw Score Standard Deviation		Intraclass Corr.	Weighted Kappa
				Exact	Adj.	Total	First Read	Second Read	First Read	Second Read		
853	47	1	94	95.7%	4.3%	100.0%	0.3	0.3	0.45	0.46	0.90	0.90
853	49	1	92	98.9%	1.1%	100.0%	0.3	0.3	0.46	0.47	0.97	0.97
854	41	1	100	94.0%	6.0%	100.0%	0.2	0.1	0.39	0.35	0.78	0.78
854	42	1	100	91.0%	9.0%	100.0%	0.7	0.7	0.46	0.46	0.79	0.78
854	43	1	98	96.9%	3.1%	100.0%	0.6	0.6	0.50	0.49	0.94	0.94
854	44	1	97	97.9%	2.1%	100.0%	0.3	0.3	0.46	0.46	0.95	0.95
854	45	1	98	90.8%	9.2%	100.0%	0.4	0.4	0.49	0.49	0.81	0.81
854	46	1	99	99.0%	1.0%	100.0%	0.2	0.2	0.43	0.42	0.97	0.97
854	48	1	100	98.0%	2.0%	100.0%	0.3	0.3	0.46	0.45	0.95	0.95
854	49	1	94	95.7%	4.3%	100.0%	0.4	0.4	0.50	0.50	0.91	0.91
855	41	1	102	97.1%	2.9%	100.0%	0.5	0.5	0.50	0.50	0.94	0.94
855	42	1	101	98.0%	2.0%	100.0%	0.6	0.6	0.49	0.49	0.96	0.96
855	43	1	100	96.0%	4.0%	100.0%	0.2	0.2	0.37	0.37	0.85	0.85
855	46	1	101	98.0%	2.0%	100.0%	0.2	0.2	0.43	0.43	0.95	0.95
855	47	1	97	97.9%	2.1%	100.0%	0.5	0.5	0.50	0.50	0.96	0.96
855	48	1	99	100.0%	0.0%	100.0%	0.2	0.2	0.37	0.37	1.00	1.00
855	49	1	100	100.0%	0.0%	100.0%	0.5	0.5	0.50	0.50	1.00	1.00
856	41	1	95	96.8%	3.2%	100.0%	0.7	0.7	0.48	0.48	0.93	0.93
856	42	1	89	98.9%	1.1%	100.0%	0.1	0.1	0.27	0.29	0.93	0.93
856	44	1	92	91.3%	8.7%	100.0%	0.4	0.3	0.48	0.47	0.81	0.81
856	45	1	94	92.6%	7.4%	100.0%	0.2	0.2	0.42	0.40	0.78	0.77
856	46	1	91	98.9%	1.1%	100.0%	0.5	0.4	0.50	0.50	0.98	0.98
856	47	1	94	95.7%	4.3%	100.0%	0.7	0.7	0.47	0.47	0.90	0.90
856	48	1	92	87.0%	13.0%	100.0%	0.7	0.7	0.47	0.48	0.71	0.71
856	49	1	94	97.9%	2.1%	100.0%	0.8	0.8	0.39	0.40	0.93	0.93
856	50	1	95	89.5%	10.5%	100.0%	0.6	0.7	0.49	0.46	0.77	0.77

Form	Item	Score Points	Total N-Count	Agreement (%)			Raw Score Mean		Raw Score Standard Deviation		Intraclass Corr.	Weighted Kappa
				Exact	Adj.	Total	First Read	Second Read	First Read	Second Read		
857	41	1	98	99.0%	1.0%	100.0%	0.7	0.7	0.46	0.47	0.98	0.98
857	42	1	99	100.0%	0.0%	100.0%	0.1	0.1	0.34	0.34	1.00	1.00
857	43	1	95	97.9%	2.1%	100.0%	0.5	0.5	0.50	0.50	0.96	0.96
857	44	1	98	96.9%	3.1%	100.0%	0.4	0.4	0.49	0.50	0.94	0.94
857	45	1	98	100.0%	0.0%	100.0%	0.8	0.8	0.39	0.39	1.00	1.00
857	46	1	97	100.0%	0.0%	100.0%	0.4	0.4	0.49	0.49	1.00	1.00
857	47	1	82	98.8%	1.2%	100.0%	0.5	0.5	0.50	0.50	0.98	0.98
857	48	1	91	100.0%	0.0%	100.0%	0.2	0.2	0.42	0.42	1.00	1.00
858	41	1	90	97.8%	2.2%	100.0%	0.5	0.5	0.50	0.50	0.96	0.96
858	42	1	91	97.8%	2.2%	100.0%	0.5	0.5	0.50	0.50	0.96	0.96
858	43	1	96	99.0%	1.0%	100.0%	0.8	0.8	0.40	0.39	0.97	0.97
858	44	1	97	96.9%	3.1%	100.0%	0.4	0.5	0.50	0.50	0.94	0.94
858	45	1	92	92.4%	7.6%	100.0%	0.6	0.5	0.50	0.50	0.85	0.85
858	46	1	84	98.8%	1.2%	100.0%	0.6	0.7	0.48	0.48	0.97	0.97
858	47	1	75	98.7%	1.3%	100.0%	0.2	0.2	0.43	0.42	0.96	0.96
859	41	1	97	96.9%	3.1%	100.0%	0.7	0.7	0.44	0.46	0.92	0.92
859	42	1	98	99.0%	1.0%	100.0%	0.2	0.2	0.43	0.42	0.97	0.97
859	43	1	95	97.9%	2.1%	100.0%	0.6	0.6	0.48	0.48	0.95	0.95
859	44	1	93	100.0%	0.0%	100.0%	0.4	0.4	0.48	0.48	1.00	1.00
859	45	1	91	93.4%	6.6%	100.0%	0.4	0.5	0.49	0.50	0.87	0.87
859	46	1	90	92.2%	7.8%	100.0%	0.7	0.7	0.46	0.46	0.81	0.81
859	47	1	91	98.9%	1.1%	100.0%	0.9	0.9	0.27	0.28	0.93	0.93
860	41	1	99	96.0%	4.0%	100.0%	0.4	0.4	0.49	0.48	0.91	0.91
860	42	1	96	95.8%	4.2%	100.0%	0.3	0.3	0.44	0.44	0.89	0.89
860	43	1	96	100.0%	0.0%	100.0%	0.4	0.4	0.49	0.49	1.00	1.00
860	44	1	94	98.9%	1.1%	100.0%	0.5	0.5	0.50	0.50	0.98	0.98

Form	Item	Score Points	Total N-Count	Agreement (%)			Raw Score Mean		Raw Score Standard Deviation		Intraclass Corr.	Weighted Kappa
				Exact	Adj.	Total	First Read	Second Read	First Read	Second Read		
860	45	1	91	100.0%	0.0%	100.0%	0.2	0.2	0.39	0.39	1.00	1.00
860	46	1	77	98.7%	1.3%	100.0%	0.3	0.3	0.47	0.46	0.97	0.97
860	47	1	74	93.2%	6.8%	100.0%	0.2	0.2	0.39	0.42	0.80	0.80
860	48	1	75	96.0%	4.0%	100.0%	0.5	0.5	0.50	0.50	0.92	0.92
860	49	1	75	96.0%	4.0%	100.0%	0.2	0.2	0.41	0.40	0.88	0.88
860	50	1	74	97.3%	2.7%	100.0%	0.6	0.6	0.50	0.49	0.94	0.94
861	41	1	96	100.0%	0.0%	100.0%	0.5	0.5	0.50	0.50	1.00	1.00
861	42	1	93	98.9%	1.1%	100.0%	0.2	0.2	0.39	0.40	0.97	0.96
861	43	1	96	93.8%	6.3%	100.0%	0.5	0.4	0.50	0.50	0.87	0.87
861	44	1	95	97.9%	2.1%	100.0%	0.7	0.7	0.47	0.46	0.95	0.95
861	45	1	92	97.8%	2.2%	100.0%	0.4	0.4	0.49	0.49	0.95	0.95
861	46	1	90	98.9%	1.1%	100.0%	0.7	0.7	0.45	0.46	0.97	0.97
861	47	1	91	90.1%	9.9%	100.0%	0.4	0.4	0.49	0.50	0.80	0.80
861	48	1	79	97.5%	2.5%	100.0%	0.1	0.1	0.22	0.22	0.74	0.74
861	49	1	86	97.7%	2.3%	100.0%	0.2	0.2	0.42	0.42	0.93	0.93
862	41	1	91	94.5%	5.5%	100.0%	0.5	0.5	0.50	0.50	0.89	0.89
862	42	1	92	91.3%	8.7%	100.0%	0.5	0.5	0.50	0.50	0.83	0.83
862	43	1	92	94.6%	5.4%	100.0%	0.2	0.3	0.41	0.44	0.85	0.85
862	44	1	89	98.9%	1.1%	100.0%	0.5	0.5	0.50	0.50	0.98	0.98
862	45	1	89	94.4%	5.6%	100.0%	0.6	0.6	0.48	0.49	0.88	0.88
862	46	1	93	98.9%	1.1%	100.0%	0.1	0.1	0.30	0.31	0.94	0.94
862	48	1	91	100.0%	0.0%	100.0%	0.4	0.4	0.49	0.49	1.00	1.00
862	49	1	82	97.6%	2.4%	100.0%	0.3	0.3	0.44	0.45	0.94	0.94
862	50	1	76	97.4%	2.6%	100.0%	0.3	0.3	0.45	0.45	0.94	0.93
863	41	1	91	100.0%	0.0%	100.0%	0.5	0.5	0.50	0.50	1.00	1.00
863	42	1	91	95.6%	4.4%	100.0%	0.6	0.6	0.49	0.50	0.91	0.91

Form	Item	Score Points	Total N-Count	Agreement (%)			Raw Score Mean		Raw Score Standard Deviation		Intraclass Corr.	Weighted Kappa
				Exact	Adj.	Total	First Read	Second Read	First Read	Second Read		
863	43	2	91	94.5%	4.4%	98.9%	1.7	1.7	0.65	0.60	0.89	0.87
863	44	1	88	96.6%	3.4%	100.0%	0.6	0.7	0.49	0.48	0.93	0.93
863	45	1	72	100.0%	0.0%	100.0%	0.8	0.8	0.39	0.39	1.00	1.00
863	46	2	91	91.2%	8.8%	100.0%	1.6	1.6	0.55	0.55	0.85	0.83

Appendix D: Partial-Credit Model Item Analysis

The first five columns from the left contain the test name, form name, item type, item number on the form, and maximum points possible for the item. The sixth column contains the number of students that the item was administered to. The remaining four columns contain the Rasch Item Difficulty, step difficulties (for multi-point items only), and the INFIT Rasch model fit statistic. Items without statistics are DNS (Do Not Score) status items.

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	INFIT
2014_ESCI	845	MC	01	1	949	1.6638			1.08
2014_ESCI	845	MC	02	1	949	1.9719			1.22
2014_ESCI	845	MC	03	1	949	0.1138			1.24
2014_ESCI	845	MC	04	1	949	0.0039			1.16
2014_ESCI	845	MC	05	1	949	−0.5179			1.00
2014_ESCI	845	MC	06	1	949	−0.4070			1.03
2014_ESCI	845	MC	07	1	949	−1.4651			0.94
2014_ESCI	845	MC	08	1	949	0.3504			0.99
2014_ESCI	845	MC	09	1	949	1.4949			1.21
2014_ESCI	845	MC	10	1	949	0.0459			0.98
2014_ESCI	845	CR	41	1	949	0.7787			1.05
2014_ESCI	845	CR	42	1	949	−1.0867			0.90
2014_ESCI	845	CR	43	1	949	1.5964			0.91
2014_ESCI	845	CR	44	1	949	1.3114			0.87
2014_ESCI	845	CR	45	1	949	0.3044			0.82
2014_ESCI	845	CR	46	1	949	1.7012			0.98
2014_ESCI	845	CR	47	1	949	0.5845			1.01
2014_ESCI	845	CR	48	1	949	1.8363			0.94
2014_ESCI	845	CR	49	1	949	0.4624			0.84
2014_ESCI	845	CR	50	1	949	1.2063			0.85
2014_ESCI	845	CR	51	1	949	2.0717			0.97
2014_ESCI	846	MC	01	1	919	0.8955			1.22
2014_ESCI	846	MC	02	1	919	0.0770			1.14
2014_ESCI	846	MC	03	1	919	1.3001			1.05
2014_ESCI	846	MC	04	1	919	0.5477			1.14
2014_ESCI	846	MC	05	1	919	0.9061			0.97
2014_ESCI	846	MC	06	1	919	−0.6810			0.92
2014_ESCI	846	MC	07	1	919	−0.2143			0.99
2014_ESCI	846	MC	08	1	919	0.4656			0.96
2014_ESCI	846	MC	09	1	919	−0.0829			0.97
2014_ESCI	846	MC	10	1	919	0.2337			0.99

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	INFIT
2014_ESCI	846	CR	41	.					
2014_ESCI	846	CR	42	.					
2014_ESCI	846	CR	43	.					
2014_ESCI	846	CR	44	.					
2014_ESCI	846	CR	45	.					
2014_ESCI	846	CR	46	1	919	1.6808			0.96
2014_ESCI	846	CR	47	1	919	−0.6367			0.90
2014_ESCI	846	CR	48	.					
2014_ESCI	846	CR	49	1	919	0.3679			0.94
2014_ESCI	846	CR	50	1	919	1.8677			0.90
2014_ESCI	846	CR	51	1	919	1.9453			0.89
2014_ESCI	847	MC	01	1	857	0.0668			0.98
2014_ESCI	847	MC	02	1	857	1.3074			1.23
2014_ESCI	847	MC	03	1	857	2.0582			0.97
2014_ESCI	847	MC	04	1	857	−0.9224			0.93
2014_ESCI	847	MC	05	1	857	2.7729			0.94
2014_ESCI	847	MC	06	1	857	−0.3721			1.03
2014_ESCI	847	MC	07	1	857	−0.3600			1.05
2014_ESCI	847	MC	08	1	857	−0.1826			1.00
2014_ESCI	847	MC	09	1	857	−0.7583			1.03
2014_ESCI	847	MC	10	1	857	−0.5208			0.87
2014_ESCI	847	MC	11	1	857	−0.2645			0.99
2014_ESCI	847	MC	12	1	857	0.6411			1.13
2014_ESCI	847	MC	13	1	857	0.8571			1.02
2014_ESCI	847	MC	14	1	857	0.8852			1.02
2014_ESCI	847	MC	15	1	857	1.1267			0.99
2014_ESCI	847	MC	16	1	857	1.1444			1.05
2014_ESCI	847	CR	41	1	857	1.6455			0.91
2014_ESCI	847	CR	42	1	857	0.3958			0.90
2014_ESCI	847	CR	43	1	857	0.3305			0.95
2014_ESCI	847	CR	44	1	857	1.3259			0.96
2014_ESCI	847	CR	45	1	857	1.3759			0.92
2014_ESCI	848	MC	01	1	952	−0.0825			0.95
2014_ESCI	848	MC	02	1	952	0.3046			1.04
2014_ESCI	848	MC	03	1	952	1.1203			1.10
2014_ESCI	848	MC	04	1	952	0.7914			1.08
2014_ESCI	848	MC	05	1	952	−1.5631			0.89
2014_ESCI	848	MC	06	1	952	−0.1287			1.14
2014_ESCI	848	MC	07	1	952	1.4990			1.11
2014_ESCI	848	MC	08	1	952	0.3969			1.07

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	INFIT
2014_ESCI	848	MC	09	1	952	0.6249			1.06
2014_ESCI	848	MC	10	1	952	−0.4672			0.97
2014_ESCI	848	MC	11	1	952	1.0684			1.07
2014_ESCI	848	MC	12	1	952	−1.3476			0.87
2014_ESCI	848	MC	13	1	952	0.6297			1.04
2014_ESCI	848	MC	14	1	952	−0.0215			0.90
2014_ESCI	848	MC	15	1	952	0.4114			0.96
2014_ESCI	848	CR	41	1	952	−0.8673			1.05
2014_ESCI	848	CR	42	1	952	1.2746			0.92
2014_ESCI	848	CR	43	1	952	2.6062			0.81
2014_ESCI	848	CR	44	1	952	1.0839			0.86
2014_ESCI	848	CR	45	1	952	1.5756			0.92
2014_ESCI	848	CR	46	1	952	0.8658			1.00
2014_ESCI	849	MC	01	1	956	0.2429			1.03
2014_ESCI	849	MC	02	1	956	1.1514			1.31
2014_ESCI	849	MC	03	1	956	0.1981			1.02
2014_ESCI	849	MC	04	1	956	1.5078			1.13
2014_ESCI	849	MC	05	1	956	0.5580			1.08
2014_ESCI	849	MC	06	1	956	−1.2691			0.97
2014_ESCI	849	MC	07	1	956	0.3369			1.04
2014_ESCI	849	MC	08	1	956	0.2230			1.13
2014_ESCI	849	MC	09	1	956	−1.1523			0.97
2014_ESCI	849	MC	10	1	956	−0.1646			0.93
2014_ESCI	849	CR	41	1	956	1.3888			0.99
2014_ESCI	849	CR	42	1	956	0.0878			0.89
2014_ESCI	849	CR	43	1	956	0.2825			1.03
2014_ESCI	849	CR	44	1	956	0.0219			0.93
2014_ESCI	849	CR	45	1	956	1.0629			1.00
2014_ESCI	849	CR	46	1	956	−1.2215			0.83
2014_ESCI	849	CR	47	1	956	−0.1911			0.87
2014_ESCI	849	CR	48	1	956	2.2127			0.96
2014_ESCI	849	CR	49	1	956	1.9374			0.94
2014_ESCI	849	CR	50	1	956	−0.4658			0.96
2014_ESCI	849	CR	51	1	956	2.5812			0.87
2014_ESCI	850	MC	01	1	964	1.4036			0.97
2014_ESCI	850	MC	02	1	964	−0.9228			1.02
2014_ESCI	850	MC	03	1	964	−0.0875			1.09
2014_ESCI	850	MC	04	1	964	−0.4455			1.01
2014_ESCI	850	MC	05	1	964	−0.4111			1.00
2014_ESCI	850	MC	06	1	964	0.3811			0.96

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	INFIT
2014_ESCI	850	MC	07	1	964	0.2086			1.14
2014_ESCI	850	MC	08	1	964	1.0705			1.23
2014_ESCI	850	MC	09	1	964	0.3559			1.12
2014_ESCI	850	MC	10	1	964	−0.4054			1.06
2014_ESCI	850	CR	41	1	964	1.3138			1.01
2014_ESCI	850	CR	42	1	964	3.0255			1.02
2014_ESCI	850	CR	43	1	964	−0.5744			1.00
2014_ESCI	850	CR	44	1	964	1.0969			0.84
2014_ESCI	850	CR	45	1	964	0.6131			0.94
2014_ESCI	850	CR	46	1	964	2.1024			0.87
2014_ESCI	850	CR	47	1	964	1.4898			0.97
2014_ESCI	850	CR	48	1	964	1.4493			0.98
2014_ESCI	850	CR	49	1	964	0.9397			0.96
2014_ESCI	850	CR	50	1	964	1.4436			0.84
2014_ESCI	850	CR	51	1	964	1.8930			0.91
2014_ESCI	851	MC	01	1	956	−0.1758			1.06
2014_ESCI	851	MC	02	1	956	−0.0642			0.98
2014_ESCI	851	MC	03	1	956	0.6034			1.05
2014_ESCI	851	MC	04	1	956	0.6186			1.01
2014_ESCI	851	MC	05	1	956	−0.8433			0.88
2014_ESCI	851	MC	06	1	956	0.3564			1.08
2014_ESCI	851	MC	07	1	956	0.4673			1.08
2014_ESCI	851	MC	08	1	956	−0.1544			1.06
2014_ESCI	851	MC	09	1	956	−0.6660			0.97
2014_ESCI	851	MC	10	1	956	0.9564			1.13
2014_ESCI	851	CR	41	1	956	2.2248			0.97
2014_ESCI	851	CR	42	1	956	4.4537			0.98
2014_ESCI	851	CR	43	1	956	−0.8107			0.87
2014_ESCI	851	CR	44	1	956	−1.2738			0.92
2014_ESCI	851	CR	45	1	956	−0.2899			0.92
2014_ESCI	851	CR	46	1	956	3.0435			1.06
2014_ESCI	851	CR	47	1	956	−0.0589			0.99
2014_ESCI	851	CR	48	1	956	−0.1651			1.06
2014_ESCI	851	CR	49	1	956	0.9616			0.97
2014_ESCI	851	CR	50	1	956	2.2405			0.90
2014_ESCI	851	CR	51	.					
2014_ESCI	852	MC	01	1	924	0.1492			1.11
2014_ESCI	852	MC	02	1	924	0.5065			0.96
2014_ESCI	852	MC	03	1	924	1.0093			1.16
2014_ESCI	852	MC	04	1	924	0.6162			0.86

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	INFIT
2014_ESCI	852	MC	05	1	924	0.6477			1.01
2014_ESCI	852	MC	06	1	924	0.7898			1.15
2014_ESCI	852	MC	07	1	924	−0.4187			0.93
2014_ESCI	852	MC	08	1	924	0.8801			1.10
2014_ESCI	852	MC	09	1	924	0.1970			0.95
2014_ESCI	852	MC	10	1	924	−0.0940			0.99
2014_ESCI	852	MC	11	1	924	0.2762			0.93
2014_ESCI	852	MC	12	1	924	0.6058			0.97
2014_ESCI	852	MC	13	1	924	0.8162			1.14
2014_ESCI	852	CR	41	1	924	0.6424			1.07
2014_ESCI	852	CR	42	1	924	1.3340			1.06
2014_ESCI	852	CR	43	1	924	0.2181			0.90
2014_ESCI	852	CR	44	.					
2014_ESCI	852	CR	45	1	924	−0.0065			0.92
2014_ESCI	852	CR	46	1	924	0.6215			0.85
2014_ESCI	852	CR	47	1	924	0.9390			1.06
2014_ESCI	852	CR	48	1	924	0.9822			0.90
2014_ESCI	853	MC	01	1	946	1.0220			1.13
2014_ESCI	853	MC	02	1	946	1.7106			1.09
2014_ESCI	853	MC	03	1	946	0.6197			1.08
2014_ESCI	853	MC	04	1	946	0.5308			1.07
2014_ESCI	853	MC	05	1	946	1.5646			1.06
2014_ESCI	853	MC	06	1	946	−1.2795			0.96
2014_ESCI	853	MC	07	1	946	−0.3235			0.92
2014_ESCI	853	MC	08	1	946	−0.0822			0.94
2014_ESCI	853	MC	09	1	946	−0.3345			0.92
2014_ESCI	853	MC	10	1	946	0.6445			1.05
2014_ESCI	853	MC	11	1	946	0.5358			1.06
2014_ESCI	853	MC	12	1	946	−0.2415			0.99
2014_ESCI	853	CR	41	1	946	−0.5521			0.99
2014_ESCI	853	CR	42	1	946	0.1685			0.97
2014_ESCI	853	CR	43	1	946	1.8387			1.06
2014_ESCI	853	CR	44	1	946	0.9706			0.89
2014_ESCI	853	CR	45	1	946	1.6672			1.08
2014_ESCI	853	CR	46	1	946	1.0065			0.88
2014_ESCI	853	CR	47	1	946	2.0022			0.82
2014_ESCI	853	CR	48	.					
2014_ESCI	853	CR	49	1	946	2.0741			0.95
2014_ESCI	854	MC	01	1	966	0.8286			1.05
2014_ESCI	854	MC	02	1	966	−0.0077			1.06

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	INFIT
2014_ESCI	854	MC	03	1	966	1.2525			1.08
2014_ESCI	854	MC	04	1	966	−0.6573			1.06
2014_ESCI	854	MC	05	1	966	0.5175			1.09
2014_ESCI	854	MC	06	1	966	0.9852			0.90
2014_ESCI	854	MC	07	1	966	−0.5803			1.01
2014_ESCI	854	MC	08	1	966	1.4462			1.17
2014_ESCI	854	MC	09	1	966	−0.1832			0.99
2014_ESCI	854	MC	10	1	966	0.1482			0.99
2014_ESCI	854	MC	11	1	966	−0.0690			0.98
2014_ESCI	854	MC	12	1	966	0.8086			0.99
2014_ESCI	854	CR	41	1	966	2.2032			1.13
2014_ESCI	854	CR	42	1	966	−0.3985			0.95
2014_ESCI	854	CR	43	1	966	0.3361			0.90
2014_ESCI	854	CR	44	1	966	1.6888			0.96
2014_ESCI	854	CR	45	1	966	1.4235			0.91
2014_ESCI	854	CR	46	1	966	2.1878			0.90
2014_ESCI	854	CR	47	.					
2014_ESCI	854	CR	48	1	966	1.7767			0.90
2014_ESCI	854	CR	49	1	966	1.8677			0.95
2014_ESCI	855	MC	01	1	965	0.7740			1.01
2014_ESCI	855	MC	02	1	965	1.4332			1.04
2014_ESCI	855	MC	03	1	965	0.9408			1.20
2014_ESCI	855	MC	04	1	965	0.8166			0.98
2014_ESCI	855	MC	05	1	965	0.7976			1.13
2014_ESCI	855	MC	06	1	965	−1.0700			0.96
2014_ESCI	855	MC	07	1	965	−0.6759			0.93
2014_ESCI	855	MC	08	1	965	0.2598			1.12
2014_ESCI	855	MC	09	1	965	0.8071			0.99
2014_ESCI	855	MC	10	1	965	0.9843			1.07
2014_ESCI	855	MC	11	1	965	0.5447			0.96
2014_ESCI	855	MC	12	1	965	0.8213			1.01
2014_ESCI	855	CR	41	1	965	0.5074			0.90
2014_ESCI	855	CR	42	1	965	0.2174			0.89
2014_ESCI	855	CR	43	1	965	2.4167			1.05
2014_ESCI	855	CR	44	.					
2014_ESCI	855	CR	45	.					
2014_ESCI	855	CR	46	1	965	2.0503			0.90
2014_ESCI	855	CR	47	1	965	0.7175			0.96
2014_ESCI	855	CR	48	1	965	2.6812			0.92
2014_ESCI	855	CR	49	1	965	0.8832			0.94

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	INFIT
2014_ESCI	856	MC	01	1	929	1.7597			1.16
2014_ESCI	856	MC	02	1	929	−0.0282			1.12
2014_ESCI	856	MC	03	1	929	−0.8122			1.05
2014_ESCI	856	MC	04	1	929	−2.1353			0.87
2014_ESCI	856	MC	05	1	929	−0.3918			1.00
2014_ESCI	856	MC	06	1	929	0.0717			1.37
2014_ESCI	856	MC	07	1	929	0.3840			1.10
2014_ESCI	856	MC	08	1	929	−1.1907			1.01
2014_ESCI	856	MC	09	1	929	0.0508			1.00
2014_ESCI	856	MC	10	1	929	−0.2392			1.06
2014_ESCI	856	MC	11	1	929	−0.3062			1.02
2014_ESCI	856	CR	41	1	929	0.0508			1.04
2014_ESCI	856	CR	42	1	929	3.6159			0.96
2014_ESCI	856	CR	43	.					
2014_ESCI	856	CR	44	1	929	1.9542			0.89
2014_ESCI	856	CR	45	1	929	2.2223			0.94
2014_ESCI	856	CR	46	1	929	1.1646			0.83
2014_ESCI	856	CR	47	1	929	0.6616			0.85
2014_ESCI	856	CR	48	1	929	0.5405			0.89
2014_ESCI	856	CR	49	1	929	0.1080			0.80
2014_ESCI	856	CR	50	1	929	0.1236			0.90
2014_ESCI	857	MC	01	1	948	0.0917			1.01
2014_ESCI	857	MC	02	1	948	−1.2488			0.98
2014_ESCI	857	MC	03	1	948	−0.5037			1.33
2014_ESCI	857	MC	04	1	948	−1.0543			1.07
2014_ESCI	857	MC	05	1	948	0.8348			1.24
2014_ESCI	857	MC	06	1	948	2.3960			1.24
2014_ESCI	857	MC	07	1	948	−2.1302			0.94
2014_ESCI	857	MC	08	1	948	0.5085			1.03
2014_ESCI	857	MC	09	1	948	−0.0026			0.98
2014_ESCI	857	MC	10	1	948	−0.1033			0.96
2014_ESCI	857	MC	11	1	948	0.6681			0.97
2014_ESCI	857	MC	12	1	948	−0.5389			0.94
2014_ESCI	857	MC	13	1	948	−0.3774			0.96
2014_ESCI	857	CR	41	1	948	−0.2935			1.02
2014_ESCI	857	CR	42	1	948	2.4856			0.94
2014_ESCI	857	CR	43	1	948	0.6010			0.88
2014_ESCI	857	CR	44	1	948	1.2418			0.88
2014_ESCI	857	CR	45	1	948	−0.6286			0.96
2014_ESCI	857	CR	46	1	948	1.3448			0.81

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	INFIT
2014_ESCI	857	CR	47	1	948	1.1137			0.94
2014_ESCI	857	CR	48	1	948	2.4764			0.82
2014_ESCI	858	MC	01	1	932	0.3864			1.12
2014_ESCI	858	MC	02	1	932	0.7130			1.28
2014_ESCI	858	MC	03	1	932	−0.4732			0.92
2014_ESCI	858	MC	04	1	932	0.1688			1.02
2014_ESCI	858	MC	05	1	932	0.2096			0.98
2014_ESCI	858	MC	06	1	932	0.6777			1.12
2014_ESCI	858	MC	07	1	932	0.9375			1.06
2014_ESCI	858	MC	08	1	932	−0.9004			0.92
2014_ESCI	858	MC	09	1	932	0.3109			1.13
2014_ESCI	858	MC	10	1	932	−0.4096			0.97
2014_ESCI	858	MC	11	1	932	−0.5861			0.96
2014_ESCI	858	MC	12	1	932	−0.1873			0.94
2014_ESCI	858	MC	13	1	932	0.1535			0.93
2014_ESCI	858	MC	14	1	932	1.6015			1.13
2014_ESCI	858	CR	41	1	932	0.8655			1.00
2014_ESCI	858	CR	42	1	932	0.8399			0.98
2014_ESCI	858	CR	43	1	932	−0.8597			0.86
2014_ESCI	858	CR	44	1	932	0.7484			0.93
2014_ESCI	858	CR	45	1	932	0.7281			0.90
2014_ESCI	858	CR	46	1	932	0.3864			0.83
2014_ESCI	858	CR	47	1	932	2.4278			0.89
2014_ESCI	859	MC	01	1	967	0.2623			1.08
2014_ESCI	859	MC	02	1	967	0.1789			1.03
2014_ESCI	859	MC	03	1	967	0.1395			1.05
2014_ESCI	859	MC	04	1	967	1.4661			1.17
2014_ESCI	859	MC	05	1	967	1.0720			1.17
2014_ESCI	859	MC	06	1	967	−0.5181			0.92
2014_ESCI	859	MC	07	1	967	−0.3470			0.98
2014_ESCI	859	MC	08	1	967	0.8143			0.97
2014_ESCI	859	MC	09	1	967	0.1839			0.95
2014_ESCI	859	MC	10	1	967	0.1346			1.01
2014_ESCI	859	MC	11	1	967	0.5105			0.92
2014_ESCI	859	MC	12	1	967	0.7796			1.15
2014_ESCI	859	MC	13	1	967	−1.3329			0.99
2014_ESCI	859	MC	14	1	967	0.6128			1.10
2014_ESCI	859	CR	41	1	967	−0.5181			0.99
2014_ESCI	859	CR	42	1	967	1.5702			0.93
2014_ESCI	859	CR	43	1	967	−0.0300			0.84

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	INFIT
2014_ESCI	859	CR	44	1	967	1.3048			0.87
2014_ESCI	859	CR	45	1	967	1.2940			0.88
2014_ESCI	859	CR	46	1	967	0.1642			1.01
2014_ESCI	859	CR	47	1	967	−0.6393			0.93
2014_ESCI	860	MC	01	1	956	1.3188			1.11
2014_ESCI	860	MC	02	1	956	1.1713			1.20
2014_ESCI	860	MC	03	1	956	0.4013			1.14
2014_ESCI	860	MC	04	1	956	0.2460			1.00
2014_ESCI	860	MC	05	1	956	0.6811			0.98
2014_ESCI	860	MC	06	1	956	−0.9082			0.97
2014_ESCI	860	MC	07	1	956	−1.1192			0.93
2014_ESCI	860	MC	08	1	956	−0.9082			1.01
2014_ESCI	860	MC	09	1	956	−0.6407			0.92
2014_ESCI	860	MC	10	1	956	−0.3234			0.85
2014_ESCI	860	MC	11	1	956	0.2056			1.13
2014_ESCI	860	CR	41	1	956	1.1552			0.99
2014_ESCI	860	CR	42	1	956	1.7772			0.96
2014_ESCI	860	CR	43	1	956	0.8581			0.99
2014_ESCI	860	CR	44	1	956	0.6159			0.87
2014_ESCI	860	CR	45	1	956	2.3449			0.84
2014_ESCI	860	CR	46	1	956	2.0355			0.96
2014_ESCI	860	CR	47	1	956	2.5958			0.99
2014_ESCI	860	CR	48	1	956	0.6711			1.12
2014_ESCI	860	CR	49	1	956	2.9611			0.96
2014_ESCI	860	CR	50	1	956	0.7515			0.95
2014_ESCI	861	MC	01	1	959	0.7106			1.08
2014_ESCI	861	MC	02	1	959	−0.8125			1.21
2014_ESCI	861	MC	03	1	959	0.4279			1.17
2014_ESCI	861	MC	04	1	959	−0.6283			0.94
2014_ESCI	861	MC	05	1	959	0.3256			1.08
2014_ESCI	861	MC	06	1	959	−0.0925			0.99
2014_ESCI	861	MC	07	1	959	0.3354			0.90
2014_ESCI	861	MC	08	1	959	0.4181			1.03
2014_ESCI	861	MC	09	1	959	−0.0517			0.97
2014_ESCI	861	MC	10	1	959	2.5268			1.17
2014_ESCI	861	MC	11	1	959	−0.3290			1.00
2014_ESCI	861	MC	12	1	959	−0.3945			0.91
2014_ESCI	861	CR	41	1	959	0.7499			0.99
2014_ESCI	861	CR	42	1	959	2.1810			0.92
2014_ESCI	861	CR	43	1	959	0.5933			0.90

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	INFIT
2014_ESCI	861	CR	44	1	959	−0.0313			0.97
2014_ESCI	861	CR	45	1	959	1.5572			0.86
2014_ESCI	861	CR	46	1	959	0.2865			1.02
2014_ESCI	861	CR	47	1	959	1.5164			0.91
2014_ESCI	861	CR	48	1	959	3.7225			0.93
2014_ESCI	861	CR	49	1	959	2.0473			0.95
2014_ESCI	862	MC	01	1	965	1.6980			0.98
2014_ESCI	862	MC	02	1	965	1.0910			1.05
2014_ESCI	862	MC	03	1	965	2.1769			1.06
2014_ESCI	862	MC	04	1	965	0.4166			1.17
2014_ESCI	862	MC	05	1	965	0.8766			1.09
2014_ESCI	862	MC	06	1	965	0.2420			1.09
2014_ESCI	862	MC	07	1	965	2.3323			0.99
2014_ESCI	862	MC	08	1	965	0.1783			0.94
2014_ESCI	862	MC	09	1	965	1.1164			1.04
2014_ESCI	862	MC	10	1	965	−1.0331			1.00
2014_ESCI	862	MC	11	1	965	−1.2265			0.93
2014_ESCI	862	CR	41	1	965	1.0758			0.99
2014_ESCI	862	CR	42	1	965	0.8815			1.00
2014_ESCI	862	CR	43	1	965	1.8340			0.94
2014_ESCI	862	CR	44	1	965	1.0961			0.89
2014_ESCI	862	CR	45	1	965	0.3489			0.94
2014_ESCI	862	CR	46	1	965	2.8849			1.02
2014_ESCI	862	CR	47	.					
2014_ESCI	862	CR	48	1	965	1.2878			0.94
2014_ESCI	862	CR	49	1	965	1.9647			0.92
2014_ESCI	862	CR	50	1	965	2.2922			0.89
2014_ESCI	863	MC	01	1	934	0.1600			1.07
2014_ESCI	863	MC	02	1	934	0.0100			0.94
2014_ESCI	863	MC	03	1	934	0.3500			1.04
2014_ESCI	863	MC	04	1	934	0.4700			1.06
2014_ESCI	863	MC	05	1	934	−0.0400			0.97
2014_ESCI	863	MC	06	1	934	0.4900			1.03
2014_ESCI	863	MC	07	1	934	1.3000			1.09
2014_ESCI	863	MC	08	1	934	0.2300			1.00
2014_ESCI	863	MC	09	1	934	0.1000			1.07
2014_ESCI	863	MC	10	1	934	0.4200			1.12
2014_ESCI	863	MC	11	1	934	1.3000			1.02
2014_ESCI	863	MC	12	1	934	0.4300			1.03
2014_ESCI	863	MC	13	1	934	−0.4300			0.91

Test	Form	Type	Item	Max	N-Count	RID	S1	S2	INFIT
2014_ESCI	863	MC	14	1	934	−0.6400			0.94
2014_ESCI	863	CR	41	1	934	0.3700			0.95
2014_ESCI	863	CR	42	1	934	0.3300			0.94
2014_ESCI	863	CR	43	2	934	−0.7500	0.3900	−0.3900	0.91
2014_ESCI	863	CR	44	1	934	0.2100			0.83
2014_ESCI	863	CR	45	1	934	0.6800			0.94
2014_ESCI	863	CR	46	2	934	−0.0700	0.2200	−0.2200	0.98

Appendix E: DIF Statistics

The first four columns from the left contain the test name, form ID, item type, and item sequence number within the form. The next three columns contain the Mantel-Haenszel DIF statistical values (note that the MH Delta statistic cannot be calculated for CR items). The final two columns will only have values if the item displays possible moderate or severe DIF; if so, the degree of DIF (B/BB = moderate; C/CC = severe) and the favored group will be shown. Items without statistics are DNS (Do Not Score) status items.

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2014_ESCI	845	MC	01	−0.53	2.02	−0.09		
2014_ESCI	845	MC	02	0.07	0.03	0.03		
2014_ESCI	845	MC	03	−0.65	3.67	−0.14		
2014_ESCI	845	MC	04	0.40	1.40	0.07		
2014_ESCI	845	MC	05	−1.49	14.43	−0.23	B	M
2014_ESCI	845	MC	06	−0.53	1.96	−0.08		
2014_ESCI	845	MC	07	0.15	0.09	0.01		
2014_ESCI	845	MC	08	0.14	0.15	0.02		
2014_ESCI	845	MC	09	−0.09	0.07	−0.02		
2014_ESCI	845	MC	10	−0.22	0.36	−0.03		
2014_ESCI	845	CR	41		0.38	−0.03		
2014_ESCI	845	CR	42		2.56	0.09		
2014_ESCI	845	CR	43		1.73	0.07		
2014_ESCI	845	CR	44		1.06	0.05		
2014_ESCI	845	CR	45		0.09	−0.01		
2014_ESCI	845	CR	46		0.50	0.05		
2014_ESCI	845	CR	47		0.07	0.02		
2014_ESCI	845	CR	48		2.12	0.08		
2014_ESCI	845	CR	49		12.66	0.20	BB	F
2014_ESCI	845	CR	50		1.84	−0.07		
2014_ESCI	845	CR	51		0.35	0.03		
2014_ESCI	846	MC	01	−0.47	1.92	−0.10		
2014_ESCI	846	MC	02	−0.68	3.73	−0.13		
2014_ESCI	846	MC	03	−0.32	0.74	−0.04		
2014_ESCI	846	MC	04	−0.32	0.84	−0.06		
2014_ESCI	846	MC	05	−0.06	0.02	−0.01		
2014_ESCI	846	MC	06	0.05	0.02	0.01		
2014_ESCI	846	MC	07	−0.31	0.70	−0.05		
2014_ESCI	846	MC	08	0.40	1.15	0.06		
2014_ESCI	846	MC	09	0.12	0.10	0.01		
2014_ESCI	846	MC	10	−0.32	0.76	−0.04		

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2014_ESCI	846	CR	41					
2014_ESCI	846	CR	42					
2014_ESCI	846	CR	43					
2014_ESCI	846	CR	44					
2014_ESCI	846	CR	45					
2014_ESCI	846	CR	46		1.98	0.07		
2014_ESCI	846	CR	47		12.39	0.22	BB	F
2014_ESCI	846	CR	48					
2014_ESCI	846	CR	49		0.76	0.05		
2014_ESCI	846	CR	50		1.90	0.07		
2014_ESCI	846	CR	51		0.15	−0.03		
2014_ESCI	847	MC	01	−1.56	17.05	−0.26	C	M
2014_ESCI	847	MC	02	0.25	0.50	0.05		
2014_ESCI	847	MC	03	−0.35	0.55	−0.03		
2014_ESCI	847	MC	04	−0.21	0.21	−0.01		
2014_ESCI	847	MC	05	−1.82	9.48	−0.19	C	M
2014_ESCI	847	MC	06	−0.06	0.03	−0.01		
2014_ESCI	847	MC	07	0.75	3.71	0.15		
2014_ESCI	847	MC	08	1.89	22.13	0.33	C	F
2014_ESCI	847	MC	09	0.63	2.24	0.07		
2014_ESCI	847	MC	10	−1.09	5.97	−0.16	B	M
2014_ESCI	847	MC	11	0.58	2.14	0.09		
2014_ESCI	847	MC	12	0.60	2.80	0.09		
2014_ESCI	847	MC	13	0.24	0.40	0.03		
2014_ESCI	847	MC	14	0.42	1.23	0.09		
2014_ESCI	847	MC	15	−0.10	0.06	0.00		
2014_ESCI	847	MC	16	0.82	4.65	0.16		
2014_ESCI	847	CR	41		0.23	0.01		
2014_ESCI	847	CR	42		1.58	−0.06		
2014_ESCI	847	CR	43		19.12	−0.29	CC	M
2014_ESCI	847	CR	44		0.25	−0.04		
2014_ESCI	847	CR	45		0.27	−0.07		
2014_ESCI	848	MC	01	−0.62	2.86	−0.11		
2014_ESCI	848	MC	02	0.80	5.37	0.15		
2014_ESCI	848	MC	03	0.13	0.15	0.02		
2014_ESCI	848	MC	04	0.06	0.03	0.01		
2014_ESCI	848	MC	05	−0.07	0.02	0.01		
2014_ESCI	848	MC	06	0.53	2.45	0.10		
2014_ESCI	848	MC	07	−0.04	0.01	−0.02		
2014_ESCI	848	MC	08	1.03	9.26	0.21	B	F

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2014_ESCI	848	MC	09	−0.93	7.55	−0.18		
2014_ESCI	848	MC	10	−0.34	0.80	−0.05		
2014_ESCI	848	MC	11	−0.39	1.25	−0.09		
2014_ESCI	848	MC	12	2.18	18.27	0.27	C	F
2014_ESCI	848	MC	13	−0.02	0.00	−0.01		
2014_ESCI	848	MC	14	−0.08	0.05	−0.02		
2014_ESCI	848	MC	15	−0.31	0.78	−0.07		
2014_ESCI	848	CR	41		1.08	−0.06		
2014_ESCI	848	CR	42		3.02	−0.10		
2014_ESCI	848	CR	43		1.20	−0.05		
2014_ESCI	848	CR	44		0.01	−0.01		
2014_ESCI	848	CR	45		0.23	0.03		
2014_ESCI	848	CR	46		0.02	0.00		
2014_ESCI	849	MC	01	−1.57	19.92	−0.27	C	M
2014_ESCI	849	MC	02	−0.02	0.00	−0.01		
2014_ESCI	849	MC	03	−0.35	1.00	−0.04		
2014_ESCI	849	MC	04	0.77	4.33	0.15		
2014_ESCI	849	MC	05	0.50	2.13	0.10		
2014_ESCI	849	MC	06	2.14	21.42	0.32	C	F
2014_ESCI	849	MC	07	−0.49	1.98	−0.08		
2014_ESCI	849	MC	08	−0.27	0.61	−0.05		
2014_ESCI	849	MC	09	0.80	3.14	0.13		
2014_ESCI	849	MC	10	−0.51	1.82	−0.06		
2014_ESCI	849	CR	41		0.46	−0.03		
2014_ESCI	849	CR	42		0.14	0.03		
2014_ESCI	849	CR	43		0.03	0.00		
2014_ESCI	849	CR	44		9.28	0.20	BB	F
2014_ESCI	849	CR	45		7.67	−0.18	BB	M
2014_ESCI	849	CR	46		0.21	0.04		
2014_ESCI	849	CR	47		1.14	−0.05		
2014_ESCI	849	CR	48		3.22	0.11		
2014_ESCI	849	CR	49		2.00	0.11		
2014_ESCI	849	CR	50		0.02	0.02		
2014_ESCI	849	CR	51		3.53	−0.07		
2014_ESCI	850	MC	01	−0.85	4.80	−0.14		
2014_ESCI	850	MC	02	0.91	4.70	0.12		
2014_ESCI	850	MC	03	−0.55	2.36	−0.12		
2014_ESCI	850	MC	04	0.79	4.22	0.14		
2014_ESCI	850	MC	05	1.82	20.90	0.29	C	F
2014_ESCI	850	MC	06	−0.25	0.43	−0.04		

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2014_ESCI	850	MC	07	0.00	0.00	0.00		
2014_ESCI	850	MC	08	−0.32	0.83	−0.06		
2014_ESCI	850	MC	09	0.59	2.85	0.09		
2014_ESCI	850	MC	10	−0.27	0.51	−0.04		
2014_ESCI	850	CR	41		0.50	−0.04		
2014_ESCI	850	CR	42		6.70	0.15		
2014_ESCI	850	CR	43		0.08	−0.02		
2014_ESCI	850	CR	44		0.19	0.03		
2014_ESCI	850	CR	45		0.25	0.03		
2014_ESCI	850	CR	46		0.70	0.04		
2014_ESCI	850	CR	47		1.38	−0.07		
2014_ESCI	850	CR	48		0.62	−0.03		
2014_ESCI	850	CR	49		1.54	−0.07		
2014_ESCI	850	CR	50		3.28	−0.09		
2014_ESCI	850	CR	51		4.12	−0.12		
2014_ESCI	851	MC	01	−0.03	0.01	−0.02		
2014_ESCI	851	MC	02	−0.92	6.16	−0.15		
2014_ESCI	851	MC	03	0.10	0.08	0.03		
2014_ESCI	851	MC	04	−0.79	4.71	−0.13		
2014_ESCI	851	MC	05	0.89	3.75	0.12		
2014_ESCI	851	MC	06	−0.32	0.80	−0.05		
2014_ESCI	851	MC	07	0.87	6.03	0.16		
2014_ESCI	851	MC	08	0.38	1.10	0.06		
2014_ESCI	851	MC	09	−0.35	0.72	−0.07		
2014_ESCI	851	MC	10	−1.16	11.00	−0.21	B	M
2014_ESCI	851	CR	41		2.07	0.08		
2014_ESCI	851	CR	42		3.45	0.11		
2014_ESCI	851	CR	43		6.73	0.14		
2014_ESCI	851	CR	44		0.60	0.05		
2014_ESCI	851	CR	45		9.81	0.19	BB	F
2014_ESCI	851	CR	46		0.52	−0.04		
2014_ESCI	851	CR	47		0.75	−0.06		
2014_ESCI	851	CR	48		0.39	−0.03		
2014_ESCI	851	CR	49		1.98	−0.08		
2014_ESCI	851	CR	50		0.14	0.01		
2014_ESCI	851	CR	51					
2014_ESCI	852	MC	01	−0.34	0.90	−0.07		
2014_ESCI	852	MC	02	−0.28	0.57	−0.05		
2014_ESCI	852	MC	03	0.14	0.16	0.03		
2014_ESCI	852	MC	04	−0.60	2.20	−0.08		

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2014_ESCI	852	MC	05	−0.61	2.75	−0.11		
2014_ESCI	852	MC	06	0.12	0.11	0.03		
2014_ESCI	852	MC	07	1.09	7.17	0.17	B	F
2014_ESCI	852	MC	08	−0.04	0.01	−0.01		
2014_ESCI	852	MC	09	0.19	0.25	0.04		
2014_ESCI	852	MC	10	0.81	4.53	0.13		
2014_ESCI	852	MC	11	−0.07	0.04	−0.01		
2014_ESCI	852	MC	12	0.05	0.01	0.00		
2014_ESCI	852	MC	13	−0.02	0.00	−0.01		
2014_ESCI	852	CR	41		3.92	−0.12		
2014_ESCI	852	CR	42		2.37	0.10		
2014_ESCI	852	CR	43		2.54	−0.10		
2014_ESCI	852	CR	44					
2014_ESCI	852	CR	45		0.23	−0.04		
2014_ESCI	852	CR	46		1.11	0.05		
2014_ESCI	852	CR	47		0.22	−0.03		
2014_ESCI	852	CR	48		1.49	0.09		
2014_ESCI	853	MC	01	0.55	2.65	0.10		
2014_ESCI	853	MC	02	−0.15	0.16	−0.03		
2014_ESCI	853	MC	03	0.01	0.00	0.00		
2014_ESCI	853	MC	04	0.11	0.10	0.01		
2014_ESCI	853	MC	05	0.46	1.45	0.08		
2014_ESCI	853	MC	06	0.11	0.06	0.01		
2014_ESCI	853	MC	07	−0.02	0.00	−0.03		
2014_ESCI	853	MC	08	0.07	0.04	0.02		
2014_ESCI	853	MC	09	−0.85	4.66	−0.12		
2014_ESCI	853	MC	10	0.23	0.45	0.05		
2014_ESCI	853	MC	11	1.13	11.11	0.21	B	F
2014_ESCI	853	MC	12	−0.17	0.21	−0.02		
2014_ESCI	853	CR	41		0.00	−0.01		
2014_ESCI	853	CR	42		0.61	0.04		
2014_ESCI	853	CR	43		1.00	−0.07		
2014_ESCI	853	CR	44		6.02	−0.14		
2014_ESCI	853	CR	45		0.10	0.03		
2014_ESCI	853	CR	46		1.25	−0.06		
2014_ESCI	853	CR	47		0.01	−0.02		
2014_ESCI	853	CR	48					
2014_ESCI	853	CR	49		3.89	−0.12		
2014_ESCI	854	MC	01	−0.63	3.27	−0.12		
2014_ESCI	854	MC	02	−0.51	2.15	−0.10		

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2014_ESCI	854	MC	03	−0.48	1.78	−0.09		
2014_ESCI	854	MC	04	0.85	5.01	0.14		
2014_ESCI	854	MC	05	−0.16	0.21	−0.04		
2014_ESCI	854	MC	06	−0.43	1.28	−0.07		
2014_ESCI	854	MC	07	−0.59	2.35	−0.09		
2014_ESCI	854	MC	08	−0.28	0.62	−0.06		
2014_ESCI	854	MC	09	0.23	0.37	0.05		
2014_ESCI	854	MC	10	0.28	0.62	0.04		
2014_ESCI	854	MC	11	0.13	0.13	0.03		
2014_ESCI	854	MC	12	−0.21	0.35	−0.04		
2014_ESCI	854	CR	41		2.65	0.11		
2014_ESCI	854	CR	42		14.06	0.23	BB	F
2014_ESCI	854	CR	43		0.11	0.02		
2014_ESCI	854	CR	44		0.08	0.02		
2014_ESCI	854	CR	45		8.27	0.17		
2014_ESCI	854	CR	46		1.13	−0.07		
2014_ESCI	854	CR	47					
2014_ESCI	854	CR	48		0.37	0.03		
2014_ESCI	854	CR	49		8.02	−0.16		
2014_ESCI	855	MC	01	−0.10	0.09	−0.02		
2014_ESCI	855	MC	02	−0.60	2.71	−0.10		
2014_ESCI	855	MC	03	−0.31	0.89	−0.04		
2014_ESCI	855	MC	04	0.31	0.76	0.06		
2014_ESCI	855	MC	05	−0.12	0.14	−0.04		
2014_ESCI	855	MC	06	0.21	0.22	0.03		
2014_ESCI	855	MC	07	−0.53	1.63	−0.09		
2014_ESCI	855	MC	08	0.17	0.24	0.03		
2014_ESCI	855	MC	09	0.06	0.03	0.01		
2014_ESCI	855	MC	10	0.02	0.00	0.01		
2014_ESCI	855	MC	11	0.50	1.89	0.09		
2014_ESCI	855	MC	12	−0.44	1.60	−0.08		
2014_ESCI	855	CR	41		5.91	0.15		
2014_ESCI	855	CR	42		3.28	0.12		
2014_ESCI	855	CR	43		3.55	−0.16		
2014_ESCI	855	CR	44					
2014_ESCI	855	CR	45					
2014_ESCI	855	CR	46		4.25	−0.13		
2014_ESCI	855	CR	47		0.01	0.02		
2014_ESCI	855	CR	48		1.51	0.07		
2014_ESCI	855	CR	49		0.60	0.05		

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2014_ESCI	856	MC	01	−0.59	2.32	−0.10		
2014_ESCI	856	MC	02	−0.38	1.14	−0.11		
2014_ESCI	856	MC	03	−0.22	0.31	−0.01		
2014_ESCI	856	MC	04	−1.58	4.93	−0.14		
2014_ESCI	856	MC	05	−0.36	0.87	−0.07		
2014_ESCI	856	MC	06	−0.02	0.01	0.01		
2014_ESCI	856	MC	07	0.12	0.12	0.03		
2014_ESCI	856	MC	08	0.27	0.35	0.04		
2014_ESCI	856	MC	09	0.83	5.06	0.16		
2014_ESCI	856	MC	10	0.71	3.68	0.13		
2014_ESCI	856	MC	11	−1.16	8.80	−0.19	B	M
2014_ESCI	856	CR	41		7.26	0.17		
2014_ESCI	856	CR	42		0.30	0.03		
2014_ESCI	856	CR	43					
2014_ESCI	856	CR	44		0.05	0.01		
2014_ESCI	856	CR	45		5.09	−0.14		
2014_ESCI	856	CR	46		5.23	−0.12		
2014_ESCI	856	CR	47		2.11	0.08		
2014_ESCI	856	CR	48		0.68	−0.04		
2014_ESCI	856	CR	49		2.25	0.09		
2014_ESCI	856	CR	50		4.32	0.11		
2014_ESCI	857	MC	01	−0.19	0.27	−0.04		
2014_ESCI	857	MC	02	0.17	0.15	0.03		
2014_ESCI	857	MC	03	−0.14	0.17	−0.02		
2014_ESCI	857	MC	04	0.96	5.18	0.16		
2014_ESCI	857	MC	05	−0.36	1.12	−0.06		
2014_ESCI	857	MC	06	0.04	0.01	−0.01		
2014_ESCI	857	MC	07	0.54	0.78	0.05		
2014_ESCI	857	MC	08	0.51	2.11	0.09		
2014_ESCI	857	MC	09	0.28	0.57	0.06		
2014_ESCI	857	MC	10	0.74	3.77	0.12		
2014_ESCI	857	MC	11	−0.34	0.90	−0.06		
2014_ESCI	857	MC	12	0.51	1.61	0.09		
2014_ESCI	857	MC	13	0.30	0.62	0.02		
2014_ESCI	857	CR	41		0.92	−0.08		
2014_ESCI	857	CR	42		2.93	−0.09		
2014_ESCI	857	CR	43		17.14	−0.24	BB	M
2014_ESCI	857	CR	44		2.55	−0.07		
2014_ESCI	857	CR	45		0.06	0.03		
2014_ESCI	857	CR	46		0.04	0.02		

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2014_ESCI	857	CR	47		1.19	0.05		
2014_ESCI	857	CR	48		0.20	0.02		
2014_ESCI	858	MC	01	−0.65	3.47	−0.12		
2014_ESCI	858	MC	02	0.32	0.92	0.06		
2014_ESCI	858	MC	03	0.29	0.50	0.03		
2014_ESCI	858	MC	04	−0.73	3.99	−0.11		
2014_ESCI	858	MC	05	1.00	7.50	0.18		
2014_ESCI	858	MC	06	0.29	0.75	0.04		
2014_ESCI	858	MC	07	−0.19	0.30	−0.05		
2014_ESCI	858	MC	08	1.19	7.12	0.16	B	F
2014_ESCI	858	MC	09	−0.31	0.86	−0.05		
2014_ESCI	858	MC	10	−0.34	0.75	−0.06		
2014_ESCI	858	MC	11	−0.27	0.46	−0.04		
2014_ESCI	858	MC	12	0.72	3.42	0.12		
2014_ESCI	858	MC	13	−0.23	0.36	−0.04		
2014_ESCI	858	MC	14	0.20	0.28	0.05		
2014_ESCI	858	CR	41		1.02	−0.06		
2014_ESCI	858	CR	42		3.43	−0.13		
2014_ESCI	858	CR	43		1.15	0.07		
2014_ESCI	858	CR	44		3.30	−0.12		
2014_ESCI	858	CR	45		2.01	0.09		
2014_ESCI	858	CR	46		4.62	0.12		
2014_ESCI	858	CR	47		5.74	−0.14		
2014_ESCI	859	MC	01	−0.77	5.33	−0.16		
2014_ESCI	859	MC	02	−1.28	12.88	−0.22	B	M
2014_ESCI	859	MC	03	−1.52	18.40	−0.26	C	M
2014_ESCI	859	MC	04	0.35	0.93	0.06		
2014_ESCI	859	MC	05	0.81	5.55	0.14		
2014_ESCI	859	MC	06	0.32	0.61	0.07		
2014_ESCI	859	MC	07	0.11	0.08	0.03		
2014_ESCI	859	MC	08	0.31	0.72	0.04		
2014_ESCI	859	MC	09	1.30	11.92	0.22	B	F
2014_ESCI	859	MC	10	0.58	2.68	0.12		
2014_ESCI	859	MC	11	1.95	26.27	0.32	C	F
2014_ESCI	859	MC	12	0.24	0.48	0.04		
2014_ESCI	859	MC	13	0.44	0.89	0.05		
2014_ESCI	859	MC	14	−0.50	2.21	−0.12		
2014_ESCI	859	CR	41		2.96	0.11		
2014_ESCI	859	CR	42		1.04	0.06		
2014_ESCI	859	CR	43		6.14	−0.12		

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2014_ESCI	859	CR	44		0.04	0.00		
2014_ESCI	859	CR	45		5.72	−0.11		
2014_ESCI	859	CR	46		0.94	−0.05		
2014_ESCI	859	CR	47		4.85	−0.12		
2014_ESCI	860	MC	01	−0.26	0.51	−0.04		
2014_ESCI	860	MC	02	−1.24	12.12	−0.21	B	M
2014_ESCI	860	MC	03	0.33	0.93	0.08		
2014_ESCI	860	MC	04	−0.91	6.14	−0.14		
2014_ESCI	860	MC	05	0.15	0.16	0.06		
2014_ESCI	860	MC	06	−0.25	0.31	−0.03		
2014_ESCI	860	MC	07	1.26	7.07	0.19	B	F
2014_ESCI	860	MC	08	0.04	0.01	0.02		
2014_ESCI	860	MC	09	0.86	4.02	0.14		
2014_ESCI	860	MC	10	0.82	3.78	0.14		
2014_ESCI	860	MC	11	0.39	1.24	0.09		
2014_ESCI	860	CR	41		1.88	−0.07		
2014_ESCI	860	CR	42		0.41	0.03		
2014_ESCI	860	CR	43		1.78	0.09		
2014_ESCI	860	CR	44		0.62	−0.02		
2014_ESCI	860	CR	45		0.80	0.05		
2014_ESCI	860	CR	46		0.64	−0.06		
2014_ESCI	860	CR	47		2.54	0.11		
2014_ESCI	860	CR	48		0.32	−0.02		
2014_ESCI	860	CR	49		0.09	0.04		
2014_ESCI	860	CR	50		2.12	−0.08		
2014_ESCI	861	MC	01	−0.32	0.86	−0.06		
2014_ESCI	861	MC	02	0.16	0.18	0.01		
2014_ESCI	861	MC	03	0.11	0.11	0.03		
2014_ESCI	861	MC	04	0.13	0.10	0.03		
2014_ESCI	861	MC	05	0.40	1.40	0.09		
2014_ESCI	861	MC	06	−0.38	1.05	−0.06		
2014_ESCI	861	MC	07	−0.18	0.23	−0.03		
2014_ESCI	861	MC	08	−0.18	0.25	−0.03		
2014_ESCI	861	MC	09	−0.43	1.34	−0.07		
2014_ESCI	861	MC	10	−0.07	0.02	0.01		
2014_ESCI	861	MC	11	0.84	4.95	0.13		
2014_ESCI	861	MC	12	0.88	4.59	0.12		
2014_ESCI	861	CR	41		2.97	−0.11		
2014_ESCI	861	CR	42		0.66	0.05		
2014_ESCI	861	CR	43		2.36	−0.09		

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2014_ESCI	861	CR	44		5.94	0.14		
2014_ESCI	861	CR	45		2.71	0.09		
2014_ESCI	861	CR	46		0.32	0.03		
2014_ESCI	861	CR	47		4.33	−0.11		
2014_ESCI	861	CR	48		1.32	−0.07		
2014_ESCI	861	CR	49		3.46	−0.10		
2014_ESCI	862	MC	01	0.33	0.65	0.05		
2014_ESCI	862	MC	02	−0.81	5.58	−0.14		
2014_ESCI	862	MC	03	−0.36	0.71	−0.07		
2014_ESCI	862	MC	04	0.26	0.62	0.05		
2014_ESCI	862	MC	05	−0.34	1.01	−0.06		
2014_ESCI	862	MC	06	0.04	0.02	0.00		
2014_ESCI	862	MC	07	0.60	1.81	0.09		
2014_ESCI	862	MC	08	−0.42	1.32	−0.06		
2014_ESCI	862	MC	09	0.09	0.06	0.02		
2014_ESCI	862	MC	10	−0.30	0.49	−0.04		
2014_ESCI	862	MC	11	1.61	11.54	0.21	C	F
2014_ESCI	862	CR	41		0.07	−0.02		
2014_ESCI	862	CR	42		0.39	−0.03		
2014_ESCI	862	CR	43		0.12	−0.03		
2014_ESCI	862	CR	44		1.66	−0.08		
2014_ESCI	862	CR	45		9.20	−0.18	BB	M
2014_ESCI	862	CR	46		1.83	0.10		
2014_ESCI	862	CR	47					
2014_ESCI	862	CR	48		6.32	0.15		
2014_ESCI	862	CR	49		0.72	0.06		
2014_ESCI	862	CR	50		4.70	0.13		
2014_ESCI	863	MC	01	−0.34	0.92	−0.05		
2014_ESCI	863	MC	02	0.28	0.54	0.07		
2014_ESCI	863	MC	03	0.20	0.32	0.05		
2014_ESCI	863	MC	04	0.25	0.49	0.06		
2014_ESCI	863	MC	05	0.17	0.20	0.02		
2014_ESCI	863	MC	06	−0.82	5.10	−0.15		
2014_ESCI	863	MC	07	−0.42	1.28	−0.09		
2014_ESCI	863	MC	08	0.62	2.94	0.10		
2014_ESCI	863	MC	09	1.08	9.16	0.21	B	F
2014_ESCI	863	MC	10	−0.51	2.15	−0.12		
2014_ESCI	863	MC	11	0.19	0.27	0.01		
2014_ESCI	863	MC	12	−0.54	2.20	−0.11		
2014_ESCI	863	MC	13	−0.47	1.27	−0.08		

Test	Form	Type	Item	MH Delta	MH Chi-Sq	Effect Size	DIF Category	Favored Group
2014_ESCI	863	MC	14	−0.32	0.59	−0.06		
2014_ESCI	863	CR	41		2.90	0.13		
2014_ESCI	863	CR	42		0.88	−0.07		
2014_ESCI	863	CR	43		0.84	0.06		
2014_ESCI	863	CR	44		1.26	0.08		
2014_ESCI	863	CR	45		1.10	−0.06		
2014_ESCI	863	CR	46		0.11	−0.02		

DIF category meanings: A/AA = negligible, B/BB = moderate, C/CC = severe.

Favored group meanings: F = Female, M = Male.

Appendix F: Operational Test Maps

January 2014

Position	Item Type	Max Points	Weight	Std	Key Idea	PI	Mean	Point-Biserial	RID	INFIT
1	MC	1	1	4		1.1c	0.59	0.35	0.0091	1.06
2	MC	1	1	4		1.1g	0.49	0.47	0.5132	0.95
3	MC	1	1	4		1.2a	0.68	0.34	-0.4748	1.11
4	MC	1	1	4		1.1e	0.68	0.44	-0.3669	1.01
5	MC	1	1	4		2.2a	0.58	0.41	0.0787	1.02
6	MC	1	1	4		2.1g	0.56	0.33	0.1449	1.08
7	MC	1	1	4		2.1d	0.49	0.22	0.4731	1.25
8	MC	1	1	4		2.1c	0.57	0.48	0.1324	0.98
9	MC	1	1	4		2.2c	0.47	0.37	0.5943	1.10
10	MC	1	1	4		2.2d	0.46	0.36	0.6361	1.12
11	MC	1	1	4		2.1h	0.48	0.38	0.5494	1.07
12	MC	1	1	4		2.1h	0.40	0.25	0.8819	1.18
13	MC	1	1	4		1.2h	0.40	0.34	0.9038	1.09
14	MC	1	1	4		1.2f	0.49	0.45	0.4593	0.99
15	MC	1	1	4		1.2j	0.72	0.41	-0.6867	1.00
16	MC	1	1	4		1.2j	0.64	0.30	-0.2486	1.14
17	MC	1	1	4		2.1u	0.39	0.47	0.9757	0.99
18	MC	1	1	4		2.1n	0.57	0.38	0.1187	1.07
19	MC	1	1	4		2.1j	0.64	0.44	-0.2269	1.02
20	MC	1	1	4		2.1j	0.49	0.40	0.4829	1.02
21	MC	1	1	4		1.2g	0.56	0.48	0.1688	0.97
22	MC	1	1	4		2.1v	0.63	0.53	-0.1860	0.91
23	MC	1	1	4		2.1r	0.50	0.28	0.4283	1.19
24	MC	1	1	4		3.1a	0.40	0.41	0.9312	1.05
25	MC	1	1	4		2.1f	0.76	0.41	-0.8843	0.95
26	MC	1	1	4		1.2g	0.58	0.34	0.0593	1.07
27	MC	1	1	4		1.1a	0.61	0.52	0.0459	0.92
28	MC	1	1	4		1.1f	0.54	0.41	0.3500	1.01
29	MC	1	1	4		1.1d	0.23	0.26	1.7864	1.11
30	MC	1	1	4		3.1a	0.63	0.59	-0.1968	0.82
31	MC	1	1	4		2.1l	0.63	0.37	-0.1860	1.09
32	MC	1	1	4		2.1j	0.53	0.41	0.3070	1.01
33	MC	1	1	4		2.1r	0.57	0.42	0.1180	1.04
34	MC	1	1	4		2.1s	0.59	0.38	0.0063	1.03
35	MC	1	1	4		2.1u	0.52	0.28	0.3208	1.19

Position	Item Type	Max Points	Weight	Std	Key Idea	PI	Mean	Point-Biserial	RID	INFIT
36	MC	1	1	4		2.1l	0.63	0.45	-0.1861	0.95
37	MC	1	1	4		2.1g	0.50	0.38	0.4412	1.05
38	MC	1	1	4		2.2d	0.31	0.36	1.3662	1.03
39	MC	1	1	4		1.2j	0.42	0.25	0.7950	1.17
40	MC	1	1	4		3.1c	0.47	0.41	0.5885	1.01
41	MC	1	1	4		3.1c	0.65	0.41	-0.2788	0.98
42	MC	1	1	4		3.1c	0.63	0.42	-0.1737	0.98
43	MC	1	1	4		1.2b	0.54	0.33	0.2541	1.16
44	MC	1	1	4		1.2b	0.70	0.47	-0.5554	0.95
45	MC	1	1	4		1.2b	0.58	0.49	0.0760	0.96
46	MC	1	1	4		1.1a	0.57	0.52	0.0965	0.93
47	MC	1	1	4		1.1i	0.70	0.36	-0.5393	1.08
48	MC	1	1	4		1.1a	0.49	0.20	0.4873	1.32
49	MC	1	1	4		intro KI 2 3rd paragrap h	0.51	0.47	0.3832	0.97
50	MC	1	1	4		2.2d	0.31	0.34	1.3582	1.08
51	CR	1	1	4		1.1c	0.63	0.38	-0.2157	1.07
52	CR	1	1	4		2.1h	0.69	0.48	-0.5074	0.94
53	CR	1	1	4		2.1e	0.48	0.59	0.5374	0.85
54	CR	1	1	4		1.2j	0.43	0.47	0.7679	0.94
55	CR	1	1	4		1.2j	0.38	0.41	0.9794	1.01
56	CR	1	1	4		1.2j	0.56	0.57	0.1662	0.84
57	CR	1	1	4		3.1c	0.38	0.56	1.0071	0.86
58	CR	1	1	4		1.2j	0.30	0.51	1.4222	0.90
59	CR	1	1	4		1.2j	0.36	0.58	1.1050	0.83
60	CR	1	1	4		1.2j	0.19	0.39	2.0929	0.97
61	CR	1	1	4		2.1u	0.67	0.57	-0.2880	0.83
62	CR	1	1	4		2.1u	0.62	0.58	0.0167	0.84
63	CR	1	1	4		2.1u	0.44	0.39	0.8762	1.09
64	CR	1	1	4		2.1n	0.58	0.47	0.0482	0.97
65	CR	1	1	4		2.1n	0.50	0.62	0.4455	0.81
66	CR	1	1	4		2.1q	0.41	0.54	0.9020	0.90
67	CR	1	1	4		2.1q	0.27	0.51	1.6394	0.92
68	CR	1	1	4		2.1q	0.54	0.58	0.2537	0.86
69	CR	1	1	4		2.1q	0.66	0.55	-0.3259	0.88
70	CR	1	1	4		2.1q	0.34	0.61	1.2314	0.81
71	CR	1	1	4		2.1q	0.16	0.48	2.4590	0.86
72	CR	1	1	4		2.2a	0.23	0.31	1.7864	1.06

Position	Item Type	Max Points	Weight	Std	Key Idea	PI	Mean	Point-Biserial	RID	INFIT
73	CR	1	1	4		1.1d	0.26	0.50	1.6389	0.89
74	CR	1	1	4		2.2a	0.34	0.52	1.1760	0.89
75	CR	1	1	4		1.2c	0.53	0.56	0.3070	0.87
76	CR	1	1	4		1.2c	0.48	0.59	0.5216	0.84
77	CR	1	1	4		1.1f	0.29	0.53	1.4875	0.87
78	CR	1	1	4		1.2b	0.55	0.52	0.3186	0.92
79	CR	1	1	4		1.2b	0.34	0.46	1.3591	0.98
80	CR	1	1	4		1.2b	0.61	0.59	0.0358	0.83
81	CR	1	1	4		3.1c	0.57	0.44	0.0975	1.02
82	CR	1	1	4		3.1c	0.50	0.61	0.4594	0.83
83	CR	1	1	4		3.1c	0.34	0.57	1.2634	0.85
84	CR	1	1	4		2.2a	0.32	0.48	1.3400	0.90
85	CR	1	1	4		2.2d	0.66	0.44	-0.3100	0.95

June 2014

Position	Item Type	Max Points	Weight	Std	Key Idea	PI	Mean	Point-Biserial	RID	INFIT
1	MC	1	1	4	1	1.1c	0.69	0.45	-0.3529	0.94
2	MC	1	1	4	1	1.1h	0.40	0.49	1.0634	0.94
3	MC	1	1	4	1	1.2a	0.52	0.36	0.4544	1.12
4	MC	1	1	4	2	2.2a	0.35	0.33	1.3051	1.13
5	MC	1	1	4	1	1.1d	0.57	0.49	0.2385	1.07
6	MC	1	1	4	1	1.2e	0.38	0.37	1.1644	1.04
7	MC	1	1	4	1	1.2j	0.39	0.38	0.9800	1.04
8	MC	1	1	4	1	1.2j	0.63	0.40	-0.0731	1.09
9	MC	1	1	4	1	1.2d	0.35	0.32	1.2689	0.97
10	MC	1	1	4	1	1.2j	0.50	0.44	0.5755	1.21
11	MC	1	1	4	1	1.2j	0.48	0.24	0.6614	1.01
12	MC	1	1	4	2	2.1d	0.47	0.42	0.6936	1.18
13	MC	1	1	4	2	2.1h	0.35	0.26	1.2905	0.96
14	MC	1	1	4	2	2.2a	0.73	0.43	-0.5552	1.02
15	MC	1	1	4	2	2.2a	0.51	0.44	0.5155	1.02
16	MC	1	1	4	2	2.2c	0.55	0.39	0.3626	0.94
17	MC	1	1	4	2	2.2d	0.74	0.43	-0.6569	0.96
18	MC	1	1	4	2	2.1l	0.54	0.44	0.2800	1.16
19	MC	1	1	4	2	2.1l	0.35	0.32	1.2422	0.94
20	MC	1	1	4	2	2.1n	0.57	0.41	0.2200	1.02
21	MC	1	1	4	2	2.1s	0.47	0.41	0.7256	1.10
22	MC	1	1	4	2	2.1u	0.62	0.30	-0.0221	1.19
23	MC	1	1	4	2	2.1u	0.30	0.22	1.5780	1.20
24	MC	1	1	4	2	2.1r	0.42	0.30	0.8701	0.90
25	MC	1	1	4	3	3.1a	0.78	0.47	-0.8536	1.24
26	MC	1	1	4	3	3.1c	0.59	0.24	0.1301	0.97
27	MC	1	1	4	3	3.1a	0.59	0.45	0.1550	1.07
28	MC	1	1	4	3	3.1c	0.69	0.36	-0.3966	1.03
29	MC	1	1	4	1	1.1g	0.57	0.39	0.2457	1.01
30	MC	1	1	4	1	1.2j	0.65	0.44	-0.1886	1.08
31	MC	1	1	4	1	1.2j	0.49	0.39	0.6331	0.96
32	MC	1	1	4	2	2.1n	0.60	0.45	0.0826	1.09
33	MC	1	1	4	2	2.1n	0.36	0.33	1.2245	1.12
34	MC	1	1	4	2	2.1r	0.43	0.32	0.8300	1.08
35	MC	1	1	4	2	2.1u	0.75	0.33	-0.7049	1.08
36	MC	1	1	4	1	1.2d	0.58	0.35	0.1792	0.99
37	MC	1	1	4	1	1.1b	0.48	0.44	0.6472	1.13

Position	Item Type	Max Points	Weight	Std	Key Idea	PI	Mean	Point-Biserial	RID	INFIT
38	MC	1	1	4	1	1.1b	0.33	0.30	1.3812	0.95
39	MC	1	1	4	1	KI1intro	0.64	0.46	-0.0874	1.07
40	MC	1	1	4	1	1.2c	0.40	0.37	1.0436	1.05
41	MC	1	1	4	2	2.1h	0.53	0.36	0.4461	1.02
42	MC	1	1	4	2	2.1c	0.73	0.36	-0.5437	0.96
43	MC	1	1	4	2	2.1f	0.58	0.45	0.1890	0.99
44	MC	1	1	4	2	2.1i	0.58	0.42	0.2174	0.95
45	MC	1	1	4	1	1.1a	0.61	0.49	0.0302	0.98
46	MC	1	1	4	1	1.1a	0.69	0.45	-0.3699	1.01
47	MC	1	1	4	1	1.1a	0.66	0.43	-0.2241	0.94
48	MC	1	1	4	3	3.1c	0.61	0.50	0.0609	1.00
49	MC	1	1	4	1	1.2j	0.74	0.42	-0.6768	1.07
50	MC	1	1	4	3	3.1b	0.62	0.39	0.0060	0.86
51	CR	1	1	4	2	2.2c	0.46	0.57	0.7905	0.85
52	CR	1	1	4	1	1.1e	0.56	0.58	0.2809	0.89
53	CR	1	1	4	2	2.2c	0.21	0.47	2.1630	0.91
54	CR	1	1	4	2	2.1q	0.42	0.53	0.9375	0.81
55	CR	1	1	4	2	2.1q	0.54	0.62	0.3602	0.89
56	CR	1	1	4	2	2.1u	0.40	0.55	1.0739	0.97
57	CR	1	1	4	2	2.1g	0.45	0.46	0.8174	0.96
58	CR	1	1	4	2	2.1c	0.42	0.46	0.9566	0.93
59	CR	1	1	4	2	2.1g	0.51	0.48	0.5022	0.96
60	CR	1	1	4	2	2.1h NOT2.1l	0.86	0.34	-1.5231	0.96
61	CR	1	1	4	1	1.2g	0.76	0.43	-0.8136	1.02
62	CR	1	1	4	1	1.2g	0.35	0.45	1.2897	0.91
63	CR	1	1	4	1	1.2g	0.59	0.52	0.1463	1.06
64	CR	1	1	4	2	2.1a	0.69	0.37	-0.4019	0.84
65	CR	1	1	4	2	2.1k	0.31	0.58	1.4012	1.01
66	CR	1	1	4	1	1.1a	0.74	0.37	-0.5898	0.95
67	CR	1	1	4	1	1.1i	0.47	0.46	0.7139	1.11
68	CR	1	1	4	1	1.1f	0.47	0.33	0.7091	0.88
69	CR	1	1	4	2	2.2a	0.30	0.53	1.5667	0.87
70	CR	1	1	4	2	2.2a	0.42	0.55	0.9404	0.93
71	CR	1	1	4	1	1.1f	0.45	0.50	0.8001	0.85
72	CR	1	1	4	1	1.2j	0.64	0.55	-0.0676	0.94
73	CR	1	1	4	1	1.2j	0.42	0.47	0.9660	0.94
74	CR	1	1	4	1	1.2i	0.70	0.45	-0.4153	0.96
75	CR	1	1	4	2	2.1u	0.28	0.43	1.6883	0.88

Position	Item Type	Max Points	Weight	Std	Key Idea	PI	Mean	Point-Biserial	RID	INFIT
76	CR	1	1	4	2	2.1v	0.42	0.55	0.9632	1.01
77	CR	1	1	4	2	2.1u	0.33	0.42	1.4307	0.86
78	CR	1	1	4	2	2.1w	0.76	0.52	-0.8211	0.83
79	CR	1	1	4	1	1.1f	0.27	0.54	1.6500	0.86
80	CR	1	1	4	1	1.1c	0.22	0.49	1.9600	0.99
81	CR	1	1	4	2	2.1j	0.41	0.45	0.9844	0.90
82	CR	1	1	4	2	2.1j	0.36	0.52	1.2401	0.81
83	CR	1	1	4	2	2.1j	0.29	0.60	1.6405	0.95
84	CR	1	1	4	1	1.2b	0.33	0.46	1.3845	0.88
85	CR	1	1	4	1	1.2b	0.55	0.52	0.3516	0.95

August 2014

Position	Item Type	Max Points	Weight	Std	Key Idea	PI	Mean	Point-Biserial	RID	INFIT
1	MC	1	1	4		1.2a	0.36	0.34	1.2512	1.08
2	MC	1	1	4		1.2b	0.64	0.41	-0.1329	1.05
3	MC	1	1	4		2.2a	0.73	0.41	-0.6056	0.99
4	MC	1	1	4		1.1a	0.52	0.25	0.4922	1.26
5	MC	1	1	4		1.1e	0.54	0.44	0.3676	0.97
6	MC	1	1	4		1.1h	0.64	0.43	-0.1389	1.02
7	MC	1	1	4		1.2g	0.7	0.4	-0.4197	0.97
8	MC	1	1	4		2.2a	0.37	0.34	1.1955	1.14
9	MC	1	1	4		2.1c	0.55	0.43	0.3115	0.98
10	MC	1	1	4		2.1f	0.45	0.27	0.8073	1.18
11	MC	1	1	4		2.1d	0.52	0.39	0.4870	1.10
12	MC	1	1	4		2.1c	0.51	0.45	0.5198	1.02
13	MC	1	1	4		2.2c	0.73	0.47	-0.5905	0.91
14	MC	1	1	4		2.2c	0.48	0.44	0.6457	0.99
15	MC	1	1	4		2.2d	0.44	0.4	0.8963	1.08
16	MC	1	1	4		2.1m	0.61	0.41	0.0313	1.01
17	MC	1	1	4		1.2j	0.66	0.31	-0.2200	1.01
18	MC	1	1	4		1.2i	0.79	0.41	-1.0075	0.97
19	MC	1	1	4		1.2j	0.61	0.33	0.0498	1.07
20	MC	1	1	4		2.1j	0.55	0.38	0.3536	1.02
21	MC	1	1	4		2.1l	0.69	0.48	-0.3219	0.92
22	MC	1	1	4		2.1r	0.55	0.25	0.3349	1.16
23	MC	1	1	4		3.1a	0.73	0.3	-0.9000	1.00
24	MC	1	1	4		2.1s	0.33	0.3	1.3786	1.10
25	MC	1	1	4		2.1u	0.72	0.5	-0.4812	0.88
26	MC	1	1	4		2.1u	0.67	0.36	-0.2937	1.10
27	MC	1	1	4		1.1a	0.63	0.34	-0.0633	1.13
28	MC	1	1	4		1.1a	0.36	0.38	1.2816	1.09
29	MC	1	1	4		1.1a	0.53	0.45	0.4502	0.96
30	MC	1	1	4		1.1d	0.45	0.29	0.7863	1.12
31	MC	1	1	4		2.1g	0.61	0.41	0.0212	1.06
32	MC	1	1	4		2.1q	0.68	0.44	-0.3071	0.97
33	MC	1	1	4		2.1i	0.56	0.3	0.3021	1.10
34	MC	1	1	4		2.1r	0.74	0.35	-0.7000	1.06
35	MC	1	1	4		2.1n	0.76	0.5	-0.8154	0.88
36	MC	1	1	4		1.2j	0.35	0.34	1.2656	1.07
37	MC	1	1	4		1.2d	0.65	0.39	-0.1578	0.99

Position	Item Type	Max Points	Weight	Std	Key Idea	PI	Mean	Point-Biserial	RID	INFIT
38	MC	1	1	4		2.1h	0.76	0.41	-0.7951	0.97
39	MC	1	1	4		2.1h	0.43	0.4	0.8678	1.03
40	MC	1	1	4		2.1h	0.53	0.39	0.4250	1.05
41	MC	1	1	4		2.1j	0.57	0.44	0.2325	1.03
42	MC	1	1	4		2.1j	0.48	0.42	0.6979	1.05
43	MC	1	1	4		1.2c	0.8	0.36	-1.0480	1.05
44	MC	1	1	4		1.2j	0.35	0.4	1.2802	0.99
45	MC	1	1	4		3.1c	0.86	0.35	-1.4896	0.97
46	MC	1	1	4		1.2j	0.66	0.33	-0.1648	1.07
47	MC	1	1	4		2.1w	0.55	0.36	0.3611	1.06
48	MC	1	1	4		2.1u	0.78	0.3	-0.8375	1.05
49	MC	1	1	4		1.2g	0.61	0.24	0.0796	1.17
50	MC	1	1	4		1.2g	0.58	0.48	0.1857	0.92
51	CR	1	1	4		1.2j	0.45	0.51	0.7887	0.92
52	CR	1	1	4		1.2j	0.75	0.44	-0.7164	0.94
53	CR	1	1	4		3.1c	0.37	0.56	1.1774	0.85
54	CR	1	1	4		1.2j	0.31	0.44	1.4705	0.97
55	CR	1	1	4		2.2d	0.87	0.33	-1.7027	0.98
56	CR	1	1	4		2.1t	0.39	0.45	1.1306	1.01
57	CR	1	1	4		2.1g	0.56	0.57	0.2639	0.87
58	CR	1	1	4		2.1v	0.28	0.42	1.7189	1.03
59	CR	1	1	4		2.1q	0.6	0.52	0.1184	0.89
60	CR	1	1	4		2.1q	0.25	0.46	1.8111	0.90
61	CR	1	1	4		2.1q	0.4	0.54	1.0382	0.86
62	CR	1	1	4		2.1q	0.19	0.43	2.2265	0.91
63	CR	1	1	4		1.1f	0.54	0.52	0.3837	0.94
64	CR	1	1	4		1.1f	0.31	0.5	1.5486	0.94
65	CR	1	1	4		1.1f	0.37	0.5	1.2222	0.96
66	CR	1	1	4		2.2a	0.57	0.48	0.2157	0.97
67	CR	1	1	4		1.1h	0.35	0.58	1.3187	0.85
68	CR	1	1	4		2.2a	0.34	0.58	1.3554	0.84
69	CR	1	1	4		2.2a	0.42	0.48	0.9192	0.95
70	CR	1	1	4		2.2a	0.31	0.43	1.5075	0.99
71	CR	1	1	4		2.2d	0.25	0.43	1.8445	0.95
72	CR	1	1	4		1.2d	0.54	0.55	0.3863	0.86
73	CR	1	1	4		1.2c	0.52	0.55	0.4933	0.86
74	CR	1	1	4		1.2c	0.31	0.47	1.4951	0.93
75	CR	1	1	4		1.2c	0.31	0.53	1.4736	0.87
76	CR	1	1	4		1.2b	0.16	0.46	2.4161	0.88

Position	Item Type	Max Points	Weight	Std	Key Idea	PI	Mean	Point-Biserial	RID	INFIT
77	CR	1	1	4		3.1c	0.8	0.56	-1.0159	0.79
78	CR	1	1	4		3.1a	0.48	0.5	0.7084	0.95
79	CR	1	1	4		3.1c	0.62	0.61	0.0115	0.81
80	CR	1	1	4		3.1c	0.32	0.44	1.4942	0.98
81	CR	1	1	4		2.1h	0.3	0.4	1.5549	0.99
82	CR	1	1	4		2.1l	0.4	0.31	1.0482	1.10
83	CR	1	1	4		2.1l	0.52	0.64	0.4827	0.79
84	CR	1	1	4		2.1j	0.62	0.54	-0.0333	0.90
85	CR	1	1	4		2.1j	0.37	0.51	1.2157	0.93

Appendix G: Scoring Tables

January 2014

Raw Score	Ability	Scale Score
0	−5.390	0.000
1	−4.175	2.069
2	−3.465	4.034
3	−3.044	5.974
4	−2.740	7.861
5	−2.500	9.663
6	−2.301	11.502
7	−2.130	13.329
8	−1.979	15.036
9	−1.844	16.749
10	−1.722	18.492
11	−1.609	20.157
12	−1.504	21.790
13	−1.406	23.414
14	−1.314	25.016
15	−1.226	26.627
16	−1.143	28.232
17	−1.064	29.753
18	−0.987	31.239
19	−0.914	32.714
20	−0.843	34.190
21	−0.775	35.666
22	−0.708	37.140
23	−0.643	38.543
24	−0.580	39.965
25	−0.518	41.370
26	−0.458	42.723
27	−0.399	44.072
28	−0.341	45.416
29	−0.283	46.721
30	−0.227	48.008
31	−0.171	49.318
32	−0.116	50.557
33	−0.062	51.802
34	−0.008	53.051
35	0.045	54.291
36	0.098	55.514
37	0.151	56.668
38	0.203	57.907
39	0.256	59.045
40	0.308	60.181
41	0.360	61.334
42	0.412	62.470
43	0.463	63.543
44	0.515	64.659
45	0.568	65.729
46	0.620	66.850
47	0.672	67.945
48	0.725	68.989
49	0.778	69.993
50	0.832	71.004
51	0.886	72.057
52	0.940	73.079
53	0.995	74.050
54	1.051	75.013
55	1.108	75.983
56	1.165	76.956
57	1.223	77.916
58	1.283	78.822
59	1.343	79.777
60	1.405	80.687
61	1.468	81.656
62	1.533	82.559
63	1.599	83.432
64	1.667	84.249
65	1.738	85.160
66	1.811	86.047
67	1.886	86.855
68	1.964	87.664
69	2.046	88.482
70	2.131	89.299
71	2.221	90.123
72	2.316	90.919
73	2.417	91.675
74	2.524	92.468
75	2.640	93.197
76	2.766	93.928
77	2.904	94.659
78	3.058	95.392
79	3.233	96.066
80	3.436	96.766
81	3.679	97.433
82	3.987	98.068
83	4.413	98.704
84	5.127	99.342
85	6.346	100.000

June 2014

Raw Score	Ability	Scale Score
0	−5.426	0.000
1	−4.208	1.985
2	−3.494	3.911
3	−3.069	5.829
4	−2.761	7.712
5	−2.517	9.516
6	−2.315	11.358
7	−2.140	13.214
8	−1.986	14.953
9	−1.848	16.697
10	−1.722	18.481
11	−1.606	20.192
12	−1.499	21.876
13	−1.398	23.553
14	−1.303	25.210
15	−1.212	26.885
16	−1.127	28.552
17	−1.045	30.113
18	−0.966	31.664
19	−0.890	33.201
20	−0.817	34.750
21	−0.746	36.294
22	−0.677	37.828
23	−0.610	39.265
24	−0.545	40.787
25	−0.481	42.209
26	−0.418	43.624
27	−0.357	45.032
28	−0.297	46.423
29	−0.238	47.748
30	−0.180	49.135
31	−0.122	50.427
32	−0.065	51.724
33	−0.009	53.025
34	0.046	54.312
35	0.101	55.578
36	0.156	56.782
37	0.210	58.049
38	0.264	59.225
39	0.317	60.395
40	0.371	61.580
41	0.424	62.739
42	0.477	63.823
43	0.530	64.983
44	0.583	66.046
45	0.637	67.222
46	0.690	68.296
47	0.743	69.347
48	0.797	70.335
49	0.851	71.382
50	0.905	72.434
51	0.960	73.432
52	1.015	74.393
53	1.071	75.354
54	1.127	76.315
55	1.184	77.282
56	1.242	78.198
57	1.301	79.114
58	1.361	80.029
59	1.421	80.942
60	1.483	81.868
61	1.546	82.742
62	1.611	83.572
63	1.678	84.381
64	1.746	85.259
65	1.816	86.104
66	1.888	86.881
67	1.963	87.655
68	2.041	88.438
69	2.122	89.215
70	2.207	90.000
71	2.296	90.776
72	2.391	91.467
73	2.490	92.247
74	2.597	92.936
75	2.712	93.626
76	2.836	94.317
77	2.973	95.005
78	3.126	95.699
79	3.299	96.292
80	3.500	96.989
81	3.742	97.586
82	4.048	98.186
83	4.471	98.785
84	5.183	99.389
85	6.400	100.000

August 2014

Raw Score	Ability	Scale Score
0	−5.577	0.000
1	−4.357	1.609
2	−3.640	3.417
3	−3.212	5.104
4	−2.902	6.806
5	−2.656	8.449
6	−2.450	10.078
7	−2.273	11.787
8	−2.117	13.472
9	−1.976	15.071
10	−1.848	16.700
11	−1.730	18.373
12	−1.620	19.996
13	−1.516	21.591
14	−1.419	23.193
15	−1.327	24.785
16	−1.239	26.391
17	−1.154	28.009
18	−1.074	29.563
19	−0.996	31.076
20	−0.920	32.587
21	−0.847	34.104
22	−0.776	35.627

Raw Score	Ability	Scale Score
23	−0.707	37.156
24	−0.640	38.613
25	−0.574	40.105
26	−0.510	41.564
27	−0.447	42.983
28	−0.384	44.402
29	−0.323	45.820
30	−0.263	47.167
31	−0.204	48.568
32	−0.145	49.905
33	−0.087	51.223
34	−0.030	52.551
35	0.027	53.870
36	0.084	55.181
37	0.140	56.416
38	0.195	57.719
39	0.251	58.943
40	0.306	60.149
41	0.361	61.371
42	0.416	62.575
43	0.471	63.703
44	0.526	64.896
45	0.581	66.005

Raw Score	Ability	Scale Score
46	0.637	67.221
47	0.692	68.336
48	0.747	69.429
49	0.803	70.450
50	0.860	71.550
51	0.916	72.644
52	0.973	73.668
53	1.031	74.664
54	1.089	75.669
55	1.148	76.669
56	1.208	77.682
57	1.269	78.593
58	1.330	79.586
59	1.393	80.498
60	1.457	81.496
61	1.522	82.413
62	1.589	83.308
63	1.657	84.113
64	1.727	85.028
65	1.800	85.927
66	1.874	86.731
67	1.951	87.531
68	2.031	88.339

Raw Score	Ability	Scale Score
69	2.114	89.140
70	2.201	89.947
71	2.293	90.748
72	2.389	91.454
73	2.491	92.251
74	2.600	92.952
75	2.717	93.654
76	2.844	94.353
77	2.983	95.049
78	3.138	95.740
79	3.313	96.342
80	3.517	97.033
81	3.761	97.627
82	4.070	98.220
83	4.496	98.812
84	5.210	99.412
85	6.429	100.000