MICHIGAN ENGLISH LANGUAGE PROFICIENCY ASSESSMENT (ELPA)

FINAL TECHNICAL REPORT 2013 ADMINISTRATION

KINDERGARTEN THROUGH GRADE 12

Michigan Department of Education
Bureau of Assessment and Accountability

TABLE OF CONTENTS

APPENDICES ..... **iv**
FIGURES AND TABLES ..... **vii**
OVERVIEW **1**
SECTION 1. INTRODUCTION **3**
1.1 Background 3
1.2 Rationale, Purpose, and Recommended Use 4

SECTION 2. TEST DESIGN AND DEVELOPMENT **6**
2.1 Overview 6
2.2 General Design 6
2.3 Test Blueprints According to Michigan English Language Proficiency (ELP) Standards by Assessment Level and Domain 7
2.4 Item Development and Review Processes 8
2.5 Differential Item Functioning (DIF) 11
DIF for Dichotomous Items 11
DIF for Polytomous Items 14
2.6 Test Construction 17
Content and Pyschometric Review for Operational Item Selection and Form Construction 17
Testing Written Language 18
Testing Oral Language 18
2.7 Test Accommodations 18

SECTION 3. SCORING CONSTRUCTED RESPONSE ITEMS IN WRITING **19**
3.1 ELPA Rangefinding 19
3.2 Reader Training 20
Scoring Guides 21
Training and Qualifying Sets 22
3.3 Inter-Rater Agreement 23
Review Sets for Monitoring Room Drift 24
3.4 Monitoring Reports 24
3.5 Retraining 24

SECTION 4. DESCRIPTIVE STATISTICS AT ITEM AND TEST LEVELS **26**
4.1 Item-Level Descriptive Statistics 26
4.2 Higher-Level Descriptive Statistics 27

SECTION 5. RELIABILITY **31**
5.1 Classical True Score Theory 31
Internal Consistency Reliability 31
Standard Error of Measurement (SEM) within CTT Framework 32
5.2 Conditional SEM within the IRT Framework 35
5.3 Inter-Rater Reliability 35
5.4 Quality (or Reliability) of Classification Decisions at Proficient Cuts 36

SECTION 6. CALIBRATION, EQUATING, AND SCALING **39**
6.1 The Unidimensional Rasch and Partial Credit Models 39
6.2 Calibration of the Spring 2013 ELPA 42
Stability of Anchor Items 43
6.3 Scale Scores for the ELPA 50
6.4 Test Characteristic Curves for the ELPA by Assessment Level 50

SECTION 7. IRT STATISTICS **52**
7.1 Rasch Statistics 52
7.2 Evidence of Model Fit 53
7.3 Item Information 55

SECTION 8. VALIDITY **56**
8.1 Validity Evidence of the ELPA Test Content 56
Relation between ELPA and Michigan English Language Proficiency (ELP) Standards 56
Validity of the Presentation of the Listening Stimulus 58
8.2 Validity Evidence of the Internal Structure of the ELPA 58
8.3 Validity Evidence of the External Structure of the ELPA 63
Relation between the ELPA and the MEAP Subject Tests 63
Relation between the ELPA and the MME Subject Tests 66
Distribution of Student Classification across Performence Levels 67
Summary 68

SECTION 9. SUMMARY OF OPERATIONAL TEST RESULTS **69**

REFERENCES **76**

APPENDICES

APPENDIX A: ELPA TEST BLUEPRINT BY ASSESSMENT LEVEL AND DOMAIN 79
A.1: Level I-Operational Items.....79
A.2: Level II-Operational Items.....80
A.3: Level III-Operational Items.....81
A.4: Level IV-Operational Items.....82
A.5: Level V-Operational Items.....83
A.6: Level I-Field Test Items.....84
A.7: Level II-Field Test Items.....85
A.8: Level III-Field Test Items.....86
A.9: Level IV-Field Test Items.....87
A.10: Level V-Field Test Items.....88

APPENDIX B: ELPA ITEM-LEVEL STATISTICS BY ASSESSMENT LEVEL.....89
B.1: Level I-Operational Items.....89
B.2: Level II-Operational Items.....91
B.3: Level III-Operational Items.....93
B.4: Level IV-Operational Items.....95
B.5: Level V-Operational Items.....97
B.6: Level I-Field Test Items.....99
B.7: Level II-Field Test Items.....100
B.8: Level III-Field Test Items.....101
B.9: Level IV-Field Test Items.....102
B.10: Level V-Field Test Items.....103
B.11.a: DIF Analysis for Level I Ethnicity Comparison (Asian vs. White).....104
B.11.b: DIF Analysis for Level I Ethnicity Comparison (Black vs. White).....106
B.11.c: DIF Analysis for Level I Ethnicity Comparison (Hispanic vs. White).....108
B.11.d: DIF Analysis for Level I Gender Comparison.....110
B.11.e: DIF Analysis for Level I Economically Disadvantaged vs. Non-Economically Disadvantaged.....112
B.11.f: DIF Analysis for Level I Native Language Comparison (Arabic vs. Spanish).....114
B.11.g: DIF Analysis for Level I Disabled vs. Non-Disabled.....116
B.11.h: DIF Analysis for Level I Accomodated vs. Non-Accomodated.....118
B.12.a: DIF Analysis for Level II Ethnicity Comparison (Asian vs. White).....120
B.12.b: DIF Analysis for Level II Ethnicity Comparison (Black vs. White).....123
B.12.c: DIF Analysis for Level II Ethnicity Comparison (Hispanic vs. White).....126
B.12.d: DIF Analysis for Level II Gender Comparison.....129
B.12.e: DIF Analysis for Level II Economically Disadvantaged vs. Non-Economically Disadvantaged.....132
B.12.f: DIF Analysis for Level II Native Language Comparison (Arabic vs. Spanish).....135
B.12.g: DIF Analysis for Level II Disabled vs. Non-Disabled.....138
B.12.h: DIF Analysis for Level II Accomodated vs. Non-Accomodated.....141
B.13.a: DIF Analysis for Level III Ethnicity Comparison (Asian vs. White).....144
B.13.b: DIF Analysis for Level III Ethnicity Comparison (Black vs. White).....147
B.13.c: DIF Analysis for Level III Ethnicity Comparison (Hispanic vs. White).....150
B.13.d: DIF Analysis for Level III Gender Comparison.....153
B.13.e: DIF Analysis for Level III Economically Disadvantaged vs. Non-Economically Disadvantaged.....156
B.13.f: DIF Analysis for Level III Native Language Comparison (Arabic vs. Spanish).....159
B.13.g: DIF Analysis for Level III Disabled vs. Non-Disabled.....162
B.13.h: DIF Analysis for Level III Accomodated vs. Non-Accomodated.....165
B.14.a: DIF Analysis for Level IV Ethnicity Comparison (Asian vs. White).....168
B.14.b: DIF Analysis for Level IV Ethnicity Comparison (Black vs. White).....171
B.14.c: DIF Analysis for Level IV Ethnicity Comparison (Hispanic vs. White).....174
B.14.d: DIF Analysis for Level IV Gender Comparison.....177
B.14.e: DIF Analysis for Level IV Economically Disadvantaged vs. Non-Economically Disadvantaged.....180

B.14.f: DIF Analysis for Level IV Native Language Comparison (Arabic vs. Spanish) *183*
B.14.g: DIF Analysis for Level IV Disabled vs. Non-Disabled *186*
B.14.h: DIF Analysis for Level IV Accomodated vs. Non-Accomodated *189*
B.15.a: DIF Analysis for Level V Ethnicity Comparison (Asian vs. White) *192*
B.15.b: DIF Analysis for Level V Ethnicity Comparison (Black vs. White) *195*
B.15.c: DIF Analysis for Level V Ethnicity Comparison (Hispanic vs. White) *198*
B.15.d: DIF Analysis for Level V Gender Comparison *201*
B.15.e: DIF Analysis for Level V Economically Disadvantaged vs. Non-Economically Disadvantaged *204*
B.15.f: DIF Analysis for Level V Native Language Comparison (Arabic vs. Spanish) *207*
B.15.g: DIF Analysis for Level V Disabled vs. Non-Disabled *210*
B.15.h: DIF Analysis for Level V Accomodated vs. Non-Accomodated *213*

APPENDIX C: READER AGREEMENT AND SCORE POINT DISTRIBUTION SUMMARY 216
C.1: Operational Items *216*
C.2: Field Test Items *217*

APPENDIX D: IRT STATISTICS 218
D.1: Level I Items *218*
D.2: Level II Items *221*
D.3: Level III Items *224*
D.4: Level IV Items *227*
D.5: Level V Items *230*

APPENDIX E: RAW SCORE TO SCALE SCORE CONVERSION TABLES FOR THE ELPA 233
E.1.a: Level I Total ELPA *233*
E.1.b: Level I ELPA by Domain-Listening *235*
E.1.c: Level I ELPA by Domain-Reading *236*
E.1.d: Level I ELPA by Domain-Writing *237*
E.1.e: Level I ELPA by Domain-Speaking *238*
E.1.f: Level I ELPA by Domain-Comprehension *239*
E.2.a: Level II Total ELPA *240*
E.2.b: Level II ELPA by Domain-Listening *242*
E.2.c: Level II ELPA by Domain-Reading *243*
E.2.d: Level II ELPA by Domain-Writing *244*
E.2.e: Level II ELPA by Domain-Speaking *245*
E.2.f: Level II ELPA by Domain-Comprehension *246*
E.3.a: Level III Total ELPA *247*
E.3.b: Level III ELPA by Domain-Listening *249*
E.3.c: Level III ELPA by Domain-Reading *250*
E.3.d: Level III ELPA by Domain-Writing *251*
E.3.e: Level III ELPA by Domain-Speaking *252*
E.3.f: Level III ELPA by Domain-Comprehension *253*
E.4.a: Level IV Total ELPA *254*
E.4.b: Level IV ELPA by Domain-Listening *256*
E.4.c: Level IV ELPA by Domain-Reading *257*
E.4.d: Level IV ELPA by Domain-Writing *258*
E.4.e: Level IV ELPA by Domain-Speaking *259*
E.4.f: Level IV ELPA by Domain-Comprehension *260*
E.5.a: Level V Total ELPA *261*
E.5.b: Level V ELPA by Domain-Listening *263*
E.5.c: Level V ELPA by Domain-Reading *264*
E.5.d: Level V ELPA by Domain-Writing *265*
E.5.e: Level V ELPA by Domain-Speaking *266*
E.5.f: Level V ELPA by Domain-Comprehension *267*

APPENDIX F: ITEM INFORMATION AT DIFFERENT CUT SCORES BY GRADE 268
F.1: Grade K 268
F.2: Grade 1 270
F.3: Grade 2 272
F.4: Grade 3 274
F.5: Grade 4 276
F.6: Grade 5 278
F.7: Grade 6 280
F.8: Grade 7 282
F.9: Grade 8 284
F.10: Grade 9 286
F.11: Grade 10 288
F.12: Grade 11 290
F.13: Grade 12 292

APPENDIX G: CLASSIFICATION DISTRIBUTION ACROSS PERFORMANCE LEVELS FOR THE ELPA, MEAP, AND MME.....294
G.1: Grade 3-Percentage of ELLs Scoring at Each MEAP Reading and Math Performance Level by Each ELPA Performance Level 294
G.2: Grade 4-Percentage of ELLs Scoring at Each MEAP Reading, Writing, and Math Performance Level by Each ELPA Performance Level 295
G.3: Grade 5-Percentage of ELLs Scoring at Each MEAP Reading, Math, and Science Performance Level by Each ELPA Performance Level 297
G.4: Grade 6-Percentage of ELLs Scoring at Each MEAP Reading, Math, and Social Studies Performance Level by Each ELPA Performance Level 299
G.5: Grade 7-Percentage of ELLs Scoring at Each MEAP Reading, Writing, and Math Performance Level by Each ELPA Performance Level 301
G.6: Grade 8-Percentage of ELLs Scoring at Each MEAP Reading, Math, and Science Performance Level by Each ELPA Performance Level 303
G.7: Grade 11-Percentage of ELLs Scoring at Each MME Reading, Writing, Math, Science, and Social Studies Performance Level by Each ELPA Performance Level 305

APPENDIX H: ITEM BANK PROCESS 308

APPENDIX I: ITEM DEVELOPMENT PROCESS FLOW 311

APPENDIX J: VERIFICATIONS OF PSYCHOMETRICS PROCEDURES 312

APPENDIX K: LIST OF ANCHOR ITEMS USED FOR STABILITY CHECK 316

FIGURES AND TABLES

Table 2.1: Test Design by Domain and Assessment Level 7
Table 2.2: Maximum Number of Points by Domain and Assessment Level 7
Table 2.3: Item Flagging Criterion List for ELPA Data Review 10
Table 2.4: DIF Classification for MC Items 13
Table 2.5: DIF Classification for Polytomous CR Items 16
Table 4.1: Summary Statistics of the ELPA Domains by Assessment Level 28
Table 4.2: Summary Statistics of the ELPA Domains by Grade 29
Table 5.1: Reliability and SEM within the CTT Framework by Grade and Domain 33
Figure 5.1: Classification Accuracy 36
Figure 5.2: Classification Consistency 37
Table 5.2: Decision Accuracy and Consistency on the Total ELPA Score by Grade 38
Figure 6.1: Category Response Curves for a Two-Step Item Using the PCM 41
Table 6.1: Number of Anchor Items by Domain and Assessment Level 44
Figure 6.2a: Level I 46
Figure 6.2b: Level II 46
Figure 6.2c: Level III 47
Figure 6.2d: Level IV 47
Figure 6.2e: Level V 48
Table 6.2: Evaluation of Equating Quality Using Linking Item Response Patterns 49
Table 6.3: Scale Score Transformation Equations for Total Test and Domains 50
Figure 6.3: ELPA Test Characteristic Curves (TCCs) by Assessment Level 51
Table 7.1: Summary of Rasch Difficulty Values by Assessment Level and Domain 52
Table 7.2: General Criteria to Evaluate Mean-Square Fit Statistics 54
Table 8.1: Correlations among the ELPA Domains and Total Test by Grade 61
Table 8.2: Correlations among the ELPA Total Scale Score and the MEAP Subject Test Scale Scores by Grade 65
Table 8.3: Correlations among the ELPA Total Scale Score and the MME Subject Test Scale Scores for Grade 11 66
Table 8.4: Percentage of Grade 3 ELLs Scoring at Each MEAP Reading Performance Level by Each ELPA Performance Level 67
Table 9.1: Raw Score Summary by Grade and Domain (or the Total Test) 69
Table 9.2a: Scale Score Summary by Grade and Domain 71
Table 9.2b: Scale Score Summary of the Total ELPA Test by Grade 73
Table 9.3: Percent of Students in Each Performance Level by Grade 73
Table 9.4: Percent of Students Meeting Achievement Target by Grade and Domain 74

OVERVIEW

This Michigan English Language Proficiency Assessment (ELPA) Technical Report for the 2013 administration is organized around nine major sections—Introduction; Test Design and Development; Scoring Constructed-Response Items in Writing; Descriptive Statistics at Item and Test Levels; Reliability; Calibration, Equating, and Scaling; Item Response Theory (IRT) Statistics; Validity; and Summary of Operational Test Results. A brief overview of this report is provided below.

Section 1: Introduction

This section presents the background, rationale, purpose, and recommended test use.

Section 2: Test Design and Development

This section describes the test development process of the ELPA. It includes the test design and specifications, the item development and review processes, the test construction, and the test accommodations of the ELPA.

Section 3: Scoring Constructed-Response Items in Writing

This section provides a description of the scoring process for constructed-response (i.e., open-ended) items. It includes a description of the rangefinding meetings that were held in Lansing, Michigan and information about reader training and monitoring.

Section 4: Descriptive Statistics at Item and Test Levels

This section provides item-level and test-level descriptive statistics based on Classical Test Theory (CTT).

Section 5: Reliability

This section explains internal consistency reliability, classical Standard Error of Measurement (SEM), and conditional SEM based on IRT. It also provides information on inter-rater reliability (or agreement), and the reliability of classification decisions at proficient cuts.

Section 6: Calibration, Equating, and Scaling

This section explains the unidimensional Rasch and Partial Credit models. It also includes a description of the calibration process and reports the evaluation results on anchor item stability for the Spring 2013 ELPA test items. The test characteristic curves (TCCs) are presented for each assessment level.

Section 7: IRT Statistics

This section presents the IRT statistics, including a summary of the minimum, maximum, and average Rasch difficulties by assessment level and domain. This section also includes a discussion of the IRT model fit statistics and the item information at each cut point[1].

Section 8: Validity

This section presents the evidence for the validity of the ELPA. It includes evidence of validity based on test content, internal structure, and external structure.

Section 9: Summary of Operational Test Results

This section presents the raw score summary, scale score summary, percentage of students in each performance level, and percentage of students meeting each domain achievement target by grade for the 2013 administration of the ELPA.

[1] Note that the cut scores are reported on the scale score scale. The item information, however, was evaluated at cut points on the underlying latent trait scale. There is a slight difference between the two due to the rounding error.

SECTION 1. INTRODUCTION

1.1 Background

Title III of the federal *No Child Left Behind* (*NCLB*) *Act* of 2001 requires annual assessment of the English language skills of limited English proficient (LEP) students. Section 3121(d)(1) explains that each state must use evaluation measures designed to assess "the progress of children in attaining English proficiency, including a child's level of comprehension, speaking, listening, reading, and writing skills in English."

Moreover, the *NCLB* act requires that the annual assessment of LEP students be based on specific student achievement objectives. Section 3122(a)(1) states that "Each State educational agency or specially qualified agency receiving a grant under subpart 1 shall develop annual measurable achievement objectives for limited English proficient children served under this part that relate to such children's development and attainment of English proficiency while meeting challenging State academic content and student academic achievement standards."

Annual Measurable Achievement Objectives (AMAOs) are described in the *NCLB* law to provide targets for performance and annual progress that these students must make in their acquisition of the English language. These AMAOs also describe targets for performance and annual progress on state content and achievement assessments that must be met by the English language learner (ELL) subgroup. For AMAO1 (progress), Michigan expects districts to show an average of a four point increase in students' overall scale score on the Michigan English Language Proficiency Assessment (ELPA) each year and the percentage of students achieving this per district is expected to increase every year. For AMAO2 (proficiency), the percentage of students per district who are classified as proficient or advanced proficient in Michigan is also expected to increase every year[2]. For AMAO3 (adequate yearly progress, or AYP), each district needs to meet their AYP targets for the LEP subgroup on the general assessment in Michigan.

Federal guidelines require that states develop assessments of English language proficiency (ELP) that are aligned to state-approved ELP curricular and instructional standards. In addition, these assessments must measure and report scores for five areas of language acquisition. These areas, also called domains, are as follows: Listening, Reading, Writing, Speaking, and Comprehension.

With these requirements guiding its development, the English Language Proficiency Assessment, or ELPA, was implemented beginning in the spring of 2006 by the Office of Educational Assessment and Accountability (OEAA) (currently the Bureau of Assessment and Accountability [BAA]) of Michigan's Department of Education (MDE). Beginning in the spring of 2007, the ELPA was designed for five assessment levels designated by the Roman numerals I through V and corresponding to the kindergarten (K), 1–2, 3–5, 6–8, and 9–12 grade levels. Each of these assessment levels feature domain subtests for Listening, Reading, Writing, and Speaking. The fifth domain, Comprehension, is assessed through a composite of test items selected from the Listening and Reading domains that contribute to comprehension. The ELPA is designed to be accessible for students with disabilities (SWD) at each assessment level along

[2] The detailed percentage targets for AMAO1 and AMAO2 each year are documented and approved by USED. Interested readers may contact BAA@michigan.gov for more information.

with federal testing requirements described in the *Individuals with Disabilities Act* (*IDEA*) of 2004 (see Section 2.7 for more information).

To design the Spring 2013 ELPA, BAA continued its supervision of the creation of test forms that featured embedded field test (FT) items. A minimum of 40 percent[3] of the score points at each assessment level were from items that also appeared as operational items on previous years' forms. These items are called "linking" or "anchor" items. The field test items that appeared on the Spring 2013 forms may be added into a pool from which operational items for future administrations of the ELPA can be drawn. This procedure ensures that anchor items can be cyclically retired. Only those field test items that pass the data review process, however, can be included in the operational item pool for future usage.

1.2 Rationale, Purpose, and Recommended Use

Besides being made to meet the measurement and reporting requirements of English acquisition and progress described in the *NCLB* law, the ELPA is also used to provide various reports to Michigan's schools, districts, and intermediate school districts (ISDs) that help those agencies determine academic placement policies and help with instructional interventions for Michigan's English language learner (ELL) subgroup. While creation of policy remains within the purview of individual Michigan districts and decisions governing classroom instruction rest with educators, ELPA raw and scale scores for each of its language domains as well as overall student performance are used as one set among several criteria that provide such direction at the district and school levels.

In addition, the Michigan ELPA is designed to assess students at all performance levels within each assessment level. This vertical development of the language tested allows the test to differentiate more finely among students at different stages of language acquisition. Because test results provide students, teachers, and parents with an objective report of each student's strengths and weaknesses in the English language skills of speaking, listening, reading, writing, and comprehension, the ELPA helps determine whether these students are making adequate progress towards English language proficiency.

Although it is not detailed within this report, BAA also developed the ELPA Initial Screening for use as a diagnostic tool of English acquisition at the time of enrollment for all K–12 students who are potential ELLs. Since its inception in the fall of 2006, the items selected for the ELPA Initial Screening have come from a pool of items that appeared as operational items on the previous Spring ELPA. Since the conversion constants from latent traits to scale scores and the performance level cut scores are the same between the ELPA Initial Screening and the Spring ELPA[4], the ELPA Initial Screening can be used by Michigan's educators as one factor to determine student placement into ELL services. The ELPA Initial Screening also aids the State

[3] This number is higher than Kolen and Brennan's (2004) recommendation of 20% due to the possibility that some items may be excluded from the anchor set later (see Section 6.2 for more information).
[4] Note that the ELPA Initial Screening only has 4 performance levels, while the Spring ELPA has five. The Low Intermediate and High Intermediate from the Spring ELPA were combined into one category for the ELPA Initial Screening.

in gathering a count of students who are eligible to receive ELL services for Title III funding purposes.

In 2007, a new performance level, Advanced Proficient, was added. Cut scores for Advanced Proficient on the ELPA scale at each grade were chosen to give so classified ELL students 90% probability of success (i.e., proficient or above) on the Michigan Educational Assessment Program (MEAP) English Language Arts (ELA) test. This performance level provides districts with an additional tool for making decisions for student placement in or exit from ELL services.

SECTION 2. TEST DESIGN AND DEVELOPMENT

2.1 Overview

This section describes the test design and development process in general. In the past, vendors' item bank systems were utilized for test design and development. When the Spring 2013 ELPA test forms were built, however, a newly developed state owned item bank was utilized. A description of how this item bank functions can be found in Appendix H, and a flow chart of item development process using this item bank system can be found in Appendix I.

The Spring 2013 ELPA forms were developed to be administered at one of the five assessment levels. Level I forms were designed to be administered to kindergarten students; Level II forms were designed for students in grades 1 and 2; Level III forms were designed for students in grades 3 to 5; Level IV forms were designed for students in grades 6 to 8; and Level V forms were designed for students in grades 9 to 12. Each assessment level featured domain subtests for Listening, Reading, Writing, and Speaking. The fifth domain, Comprehension, was assessed through a composite of test items from selected Listening and Reading standards that contribute to comprehension.

2.2 General Design

The ELPA was designed to assess four domains (Listening, Reading, Writing, and Speaking) and one composite domain (Comprehension) within each assessment level. The test forms included multiple choice (MC) and constructed response (CR) items that required either a short response or an extended response.

The total number of operational items per assessment level varied. Level I had 51 items; Level II had 60 items; Level III had 59 items; Level IV had 59 items; and Level V had 60 items.

The Listening and Reading domains were assessed with MC items only. The number of items for the Listening and Reading domains varied from 16 to 20 across the different assessment levels. The Speaking domain was assessed with CR items only, assessing students' skills in pronunciation, intonation, and comprehensibility. The number of items for the Speaking domain varied from 6 to 7 items across the different assessment levels. The number of items for the Writing domain ranged from 12 to 13 across the various assessment levels. The Writing domain was assessed with both MC and CR items and included the following three skill sets:

- MC items that assess ELLs' understanding of the principles of written English at the phoneme, word, and sentence levels
- Developmental writing items (Levels I and II only)
- Sentence-writing items, paragraph-writing items, and items requiring an extended response to a graphics-based prompt (numbers and types of items vary by assessment level)

The test design for the 2013 ELPA administration[5] is shown in Table 2.1, while Table 2.2 provides the maximum number of points by domain and assessment level.

Table 2.1: Test Design by Domain and Assessment Level

	Listening	Speaking	Reading	Writing		Comprehension	Total Number of Operational Items per Level
Level	**MC**	**CR**	**MC**	**MC**	**CR**	**MC**	**(MC + CR)**
I	16	6	16	5	8	20	51
II	20	7	20	8	5	30	60
III	20	7	20	8	4	28	59
IV	20	7	20	8	4	29	59
V	20	7	20	10	3	26	60

Note. Comprehension consists of items selected from the Listening and Reading domains and is not included in the column titled "Total Number of Operational Items per Level."

Table 2.2: Maximum Number of Points by Domain and Assessment Level

	Listening	Speaking	Reading	Writing		Comprehension	Total Number of Points for Operational Items per Level
Level	**MC**	**CR**	**MC**	**MC**	**CR**	**MC**	**(MC + CR)**
I	16	18	16	5	13	20	68
II	20	20	20	8	12	30	80
III	20	20	20	8	12	28	80
IV	20	20	20	8	12	29	80
V	20	20	20	10	10	26	80

Note. Comprehension consists of items selected from the Listening and Reading domains and is not included in the column titled "Total Number of Points for Operational Items per Level."

2.3 Test Blueprints According to Michigan English Language Proficiency (ELP) Standards by Assessment Level and Domain

Appendices A.1 to A.5 provide detailed test blueprints for the operational items (which appeared on all forms) administered at each assessment level. Appendices A.6 to A.10 provide a summary of the field test items administered at each assessment level and across all forms. Within each appendix, the table is sorted by domain and Michigan ELP Standard. The number of items and the points associated with each ELP standard and test form (for field test items) are also provided.

[5] About 20% of students from Levels III to V took the computer-based 2013 ELPA. The computer-based ELPA used form 1 in each assessment level. Preliminary comparability study results indicated feasibility of combining two modes to create a single set of raw-to-scale score conversion tables per assessment level. All statistics reported here are thus based on the total test population for Levels III to V (i.e., two modes combined). A comprehensive comparability study will be carried out separately and will be reported separately.

2.4 Item Development and Review Processes

The operational items on the 2013 ELPA forms were drawn from the ELPA operational item pool, which includes (1) operational items from 2012 and earlier and (2) field test items from 2012 and earlier that passed data review.

In accordance with the item specifications, Michigan educators and BAA and contractor assessment specialists emphasized the following criteria when they created and reviewed passages and items:

- Absence of bias and sensitivity topics in passages
- Absence of bias in items
- Appropriateness of topic, vocabulary, and language structure for each assessment level
- Alignment to the appropriate Michigan ELP standards
- Linkage to Michigan ELA GLCEs

The item development process for the ELPA included several steps. The details are described below.

New stand-alone MC and CR items, and MC items associated with passages, were developed. An Item Writing Committee, composed of Michigan educators who had experience with the ELL population, met for a three-day item writing session. Participants received item writing training and were provided with continuous feedback regarding the quality of the items that they wrote.

All items written by the Item Writing Committee went through a lengthy internal review process by Questar (the testing contractor) and the BAA development team. During this time, both teams analyzed, fact checked, and revised the items to prepare for the final review by both the Content Advisory Committee (CAC) and the Bias and Sensitivity Committee (BSC).

All items written were then reviewed by a CAC and BSC. Both committees were composed of Michigan Educators who had experience with the ELL population and were a different set of educators from those who had written the items. Following the initial training, the committee members rated the passages and items. The CAC members were provided with specific checklists related to item construction and test content to guide their ratings, and the BSC members reviewed the items to determine whether they should be flagged for bias and sensitivity issues.

After this initial review process, new field test items were selected to be embedded into the operational test forms for 2013. Following the administration of these field test items, responses to the new CR items were reviewed and sample student responses were selected to serve as training papers. Training papers were used to illustrate the range of student responses associated with each point on the corresponding scoring rubric for the item. For details, please see Section 3.

Following the scoring and analysis of the field test items, the items were submitted for the final data review. This review was conducted with panels of Michigan ELL educators. These

educators participated in a Content and Bias review of the items with the aid of field test item statistics. Specifically, these Data Review Committee members were presented with item statistics[6] and differential item functioning (DIF)[7] analysis results for field test items that had been flagged according to the item flagging criteria (see Table 2.3), and were asked to review the alignment to ELP standards and content, and absence of bias for each item. Only those field test items that were judged to be of acceptable quality and fair to students coming from all over the world were approved for inclusion in the item bank as possible operational items.

Although the final tests were challenging for students, the questions, graphics, and stories engaged students and reflected the kinds of activities in which they were involved on a daily basis. This helped ensure that the tests would measure the learning of each individual student and provide meaningful information about his or her English language proficiency.

[6]These item statistics are computed within the framework of Classical Test Theory (CTT), which is described in Section 4.
[7]DIF is described in detail below in Section 2.5.

Table 2.3 Item Flagging Criterion List for ELPA Data Review[8]

Statistics	Flag	Flag Definition	Flag Field
AdjPvalue[9]	PL PH	○ For MC 3 options, if AdjPvalue < .38 (PL) or > .9 (PH) ○ For MC 4 options, if AdjPvalue < .3 (PL) or >.9 (PH) ○ For CR items, if AdjPvalue < .10 (PL) or >.9 (PH)	Difficulty Flag
Pearson product moment item-total correlation or point-biserial correlation[10]	CL	If point-biserial or Pearson product moment item-total correlation < .20 (CL)	Item-Total Correlation Flag
MSQIN (INFIT mean-square) MSQOUT (OUTFIT mean-square)	MH MM TP	○ If MSQIN or MSQOUT > 2 (MH) ○ If 1.5 ≤ MSQIN ≤ 2 and MSQOUT < 2 (MM) ○ If 1.5 ≤ MSQOUT ≤ 2 and MSQIN < 2 (MM) ○ If MSQIN < 0.5 and MSQOUT < 1.5 (TP) ○ If MSQOUT < 0.5 and MSQIN < 1.5 (TP)	MSQIN flag MSQOUT flag
Percentage choosing each non-keyed options (and percentage of omitting), point-biserial correlation for each non-keyed options for MC items. Percentage at each score point for CR items	H L D P O N B	<u>For MC items:</u> ○ If the keyed option is not the highest percentage (H) ○ If any option < 2% (L) ○ If any non-keyed option percentage and key option percentage difference within 2% (D) ○ If any non-keyed option point-biserial correlation>0 (P), or if omit point-biserial correlation > 0.03 (O) ○ If the keyed option point-biserial < 0 (N) ○ If omit>3% (B) <u>For CR items:</u> ○ For CR, if omit point-biserial > 0.03 (O) ○ For CR, if any score point < 2% (L) ○ For CR, if omit > 5% (B)	Possible mis-key flag

[8] The flagging criteria for DIF are discussed in Section 2.5 and were excluded from this table to avoid presenting repetitive information.
[9] For MC items, AdjPvalue=*p*-value; and for CR items, AdjPvalue=Item Mean/Maximum Points.
[10] Only the operational items are included in the total score when each field test item is examined (i.e., field test items are not included in the total score).

2.5 Differential Item Functioning (DIF)

The 2013 ELPA had newly constructed field test items embedded within the operational forms. In addition to the bias-related judgments provided by Michigan educators as part of the item development review process (see previous discussion in Section 2.4), the field test items were also checked for statistical indicators of bias after the test administration. Differential Item Functioning (DIF) refers to "the differential impact of an item on the performance of one subgroup when compared to that of another subgroup" (Welch, 2006, p. 320).

All of the field test items were eligible for DIF testing. However, because of small N-counts, the DIF procedures only compared students for cases in which enough student responses (i.e., N $\geq$ 50 per subgroup) were available. For the 2013 ELPA administration, the DIF procedures were conducted between male and female students, White and Hispanic students, White and Asian students, White and Black students, Spanish and Arabic native language speakers, economically disadvantaged and non-economically disadvantaged students, disabled and non-disabled students, and students with standard accommodations and students without standard accommodations (non-accommodated). In these comparisons, the following were considered as the reference group: male, White, Spanish speakers, economically disadvantaged, non-disabled, and non-accommodated students. The DIF analysis for both the dichotomous and polytomous items was conducted with Penfield's (2005) DIFAS software.

DIF for Dichotomous Items

For dichotomous items, the Mantel-Haenszel (MH) procedure was used (Mantel & Haenszel, 1959). Specifically, the MH chi-square (χ^2) statistic was used in conjunction with the MH log-odds ratio. These two statistics are discussed in more detail below.

The MH χ^2 indicates "whether there is a relationship between performance on an item and group membership, after taking into account performance on the instrument" (de Ayala, 2009, p. 329). This statistic is calculated as follows (Camilli & Shepard, 1994, p. 120):

$$MH\chi^2 = \frac{\left\{\left|\sum_{j=1}^{S}[A_j - E(A_j)]\right| - 1/2\right\}^2}{\sum_{j=1}^{S} VAR(A_j)} \tag{2.1}$$

where $VAR(A_j) = \frac{n_{Rj} n_{Fj} m_{1j} m_{0j}}{T_j^2 (T_j - 1)}$

and $E(A_j) = \frac{n_{Rj} m_{1j}}{T_j}$.

In Equation (2.1), $A_j - E(A_j)$ represents the discrepancy between the observed number and the expected number of correct responses on the item by the reference group members who have the

*j*th score on the matching variable[11]; n_{Rj} and n_{Fj} represent the number of examinees in the reference and focal groups, respectively, for the *j*th score on the matching variable; m_{1j} represents the total number of examinees (both reference and focal) with the *j*th score on the matching variable and with a correct response on the current item; m_{0j} represents the total number of examinees with the *j*th score on the matching variable and with an incorrect response on the current item. The MH χ^2 is evaluated against the standard χ^2 critical values using one degree of freedom.

The MH χ^2 does not indicate the strength of association of the relationship between item performance and group membership. The MH odds ratio can be computed to estimate the strength of this association. The resulting estimate represents the relative likelihood of success on a particular item for members of two different groups of examinees (Camilli, 2006). This odds ratio thus provides an estimate of effect size with a value of 1.0 indicating no DIF. A value greater than 1.0 indicates that, on average, the reference group members performed better than comparable focal group members and a value less than 1.0 indicates that, on average, the reference group members performed worse than comparable focal group members.

The odds of a correct response (proportion passing divided by proportion failing) is *P/Q* (i.e., *P/[1-P])*. The MH odds ratio is simply the odds of a correct response of the reference group divided by the odds of a correct response of the focal group. The formula for its estimation is as follows (Camilli & Shepard, 1994, p. 116):

$$\hat{\alpha}_{MH} = \frac{\sum_{j=1}^{S} A_j D_j / T_j}{\sum_{j=1}^{S} B_j C_j / T_j} \tag{2.2}$$

where $S = K-1$ and represents the actual number of 2 x 2 contingency tables (assuming the tables have at least 1 person in each cell); *K* represents the number of items on the test; *j* signifies the *j*th score on the matching variable and runs from 0 to *K*[12]. For *j*th score category, A_j represents the number of reference group members with a correct response, B_j represents the number of reference group members with an incorrect response, C_j represents the number of focal group members with a correct response, and D_j represents the number of focal group members with an incorrect response. T_j represents the total number of examinees who have the *j*th score on the matching variable.

The corresponding null hypothesis is that the odds of getting the item correct are equal for the two groups (i.e., the odds ratio is equal to 1):

$$H_0\text{: } \alpha_{MH} = 1 \tag{2.3}$$

In order to make the odds ratio symmetrical around zero with its range located in the interval $-\infty$ to $+\infty$, the odds ratio is transformed into a log-odds ratio as follows (Camilli & Shepard, 1994, p.116):

[11] Total observed score is used as the matching variable for DIF analysis here.
[12] Although the value of the matching variable runs from 0 to *K*, the all correct (*K*) and all incorrect (0) score categories are not included in the DIF analysis in order to avoid having a denominator equal to 0.

$$\hat{\lambda}_{MH} = \log(\alpha_{MH}) \tag{2.4}$$

The natural logarithm transformation of this odds ratio is symmetrical around zero (where 0 indicates no DIF). This DIF measure is a signed index where a positive value represents DIF in favor of the reference group and a negative value indicates DIF in favor of the focal group.

The variance of the log-odds ratio estimate (V_λ) is computed as follows (Camilli & Shepard, 1994, p. 121):

$$V_\lambda = \frac{\sum_{j=1}^{S} T_j^{-2}(A_j D_j + \alpha_{MH} B_j C_j)[A_j + D_j + \alpha_{MH}(B_j + C_j)]}{2(\sum_{j=1}^{S} A_j D_j / T_j)^2}. \tag{2.5}$$

The terms included in Equation (2.5) correspond to those presented for Equation (2.2). In practice, a standardized MH log-odds ratio is computed by dividing the estimate $\hat{\lambda}_{MH}$ by the estimated standard error. According to Penfield (2007, p.16), "A value greater than 2.0 or less than -2.0 may be considered evidence of the presence of DIF."

Table 2.4 depicts the DIF classifications for the ELPA MC items[13].

Table 2.4 DIF Classification for MC Items

Category	Description	Criterion
A	Negligible DIF	If either MH common log-odds ratio ($\hat{\lambda}_{MH}$) is not significantly different from zero or $\lvert\hat{\lambda}_{MH}\rvert < 0.426$
B	Moderate DIF	If $\hat{\lambda}_{MH}$ is significantly different from zero and $\lvert\hat{\lambda}_{MH}\rvert \geq 0.426$, and either (a) $\lvert\hat{\lambda}_{MH}\rvert \leq 0.638$, or (b) $\lvert\hat{\lambda}_{MH}\rvert$ is not significantly greater than 0.426
C	Large DIF	If $\lvert\hat{\lambda}_{MH}\rvert$ is significantly greater than 0.426 and $\lvert\hat{\lambda}_{MH}\rvert > 0.638$

Note. Adapted from Penfield (2007).

[13] Note that these rules are implemented at the back end of the DIFAS program for computing the "ETS" categorization values.

DIF for Polytomous Items

Since the ELPA includes CR items that are polytomously scored, the MH procedure cannot be used for these items. Instead, an extension of the MH χ^2 procedure was computed (see Mantel, 1963) and a generalization of the MH odds ratio for ordered categories, the Liu-Agresti Cumulative Common Odds Ratio (Liu & Agresti, 1996), was used to assess DIF for the polytomous items.

Mantel (1963) proposed an extension of the MH procedure for ordered response categories that involved comparing the performance of the reference and focal groups, conditional on a matching variable. The statistic is computed as follows (Zwick, Donaghue, & Grima, 1993, p. 239):

$$Mantel\ \chi^2 = \frac{(\sum_k F_k - \sum_k E(F_k))^2}{\sum_k VAR(F_k)} \tag{2.6}$$

where F_k is the sum of scores for the focal group at the *k*th level of the matching variable and is defined as

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

and the expectation of F_k under the hypothesis of no association is

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

and the variance of F_k under the assumption of no association is

$$\mathrm{Var}(\mathrm{F_k}) = \frac{\mathrm{n_{R+k} n_{F+k}}}{\mathrm{n_{++k}^2(n_{++k} - 1)}} \left\{ \left(\mathrm{n_{++k}} \sum_{\mathrm{t}} \mathrm{y_t^2 n_{+tk}} \right) - \left(\sum_{\mathrm{t}} \mathrm{y_t\, n_{+tk}} \right)^2 \right\}. \tag{2.7}$$

Using the Mantel approach for ordered categories, the data are organized into a 2 x *T* x *K* contingency table, where *T* is the number of response categories and *K* is the number of levels of the matching variable. $y_1, y_2, \ldots, y_T$ represent the *T* scores that can be obtained on the item; n_{Rtk} and n_{Ftk} represent the number of examinees in the reference and focal groups, respectively, who are at the *k*th level of the matching variable and received an item score of y_t on the item. The "+" denotes summation over a particular index (e.g., n_{R+k} denotes the total number of reference group members at the *k*th level of the matching variable). Under the null hypothesis of no association, the Mantel statistic has a chi-square distribution with one degree of freedom. For dichotomous items, the Mantel statistic reduces to the MH statistic (without the continuity correction).

The Liu-Agresti estimator of the common odds ratio has the following mathematical formulation (Liu & Agresti, 1996; Penfield & Algina, 2003, p. 357):

$$\hat{\psi}_{LA} = \frac{\sum_{k=1}^{K}\sum_{j=1}^{J-1} A_{jk}D_{jk}/N_k}{\sum_{k=1}^{K}\sum_{j=1}^{J-1} B_{jk}C_{jk}/N_k}, \tag{2.8}$$

where each item has J levels of response scores ($j = 1, \ldots, J$, and thus $(J-1)$ dichotomizations), the matching variable has K levels ($k = 1, \ldots, K$), and N_k is the total number of individuals at level k. The cumulative frequency for response level j at stratum k for the reference group is denoted as $N^*_{Rjk} = N_{R1k} + \cdots + N_{Rjk}$ and that of the focal group is denoted as $N^*_{Fjk} = N_{F1k} + \ldots + N_{Fjk}$. Moreover, $A_{jk} = N^*_{Rjk}, B_{jk} = N_{Rk} - N^*_{Rjk}, C_{jk} = N^*_{Fjk}$, and $D_{jk} = N_{Fk} - N^*_{Fjk}$. These values are analogous to A_j, B_j, C_j and D_j in Equation (2.2), but it is important to note that in the dichotomous case A and C are associated with the correct responses but for the cumulative polytomous case A and C are associated with the lower portion of the response variable dichotomization. Thus, for dichotomous items, the Liu-Agresti statistic reduces to the inverse of $\hat{\alpha}_{MH}$. To match the scale of the Liu-Agresti estimator to the scale for dichotomous items, the following computation is necessary (Penfield & Algina, 2003, p. 357):

$$\hat{\alpha}_{LA} = \frac{1}{\hat{\psi}_{LA}} \tag{2.9}$$

Values equal to 1.0 indicate no DIF while values less than 1.0 indicate DIF in favor of the focal group. Similar to the MH procedure, the natural log of $\hat{\alpha}_{LA}$ can be computed, where $\log(\hat{\alpha}_{LA})$ of 0 indicates no DIF, $\log(\hat{\alpha}_{LA})$ greater than 0 indicates DIF against the focal group, and $\log(\hat{\alpha}_{LA})$ less than 0 indicates DIF against the reference group. In practice, a standardized Liu-Agresti cumulative common log-odds ratio is computed by dividing $\log(\hat{\alpha}_{LA})$ by the estimated standard error. According to Penfield (2007, p.18), "A value greater than 2.0 or less than -2.0 may be considered evidence of the presence of DIF."

The Liu-Agresti estimate of the variance of $\log(\hat{\psi}_{LA})$ is expressed as follows (Penfield & Algina, 2003, p. 357):

$$\mathrm{Var}\left[\log\left(\hat{\psi}_{LA}\right)\right] = \frac{\sum_{k=1}^{K}\hat{\xi}_k(\hat{\psi})}{\hat{\psi}_{LA}^2\left[\sum_{k=1}^{K}\sum_{j=1}^{J-1} B_{jk}C_{jk}/N_k\right]^2}, \tag{2.10}$$

where $$\hat{\xi}_k(\hat{\psi}) = \sum_{j=j'=1}^{J-1}\hat{\phi}_{jj'k}(\hat{\psi}) + 2\sum_{j<j'}^{J-1}\hat{\phi}_{jj'k}(\hat{\psi}),$$

and $$\hat{\phi}_{jj'k}(\hat{\psi}) = \frac{n_{Rk}n_{Fk}}{N_k^2}\left\{\frac{\hat{\psi}B_{jk}C_{j'k}}{n_{Rk}}\left[1 + \left(\hat{\psi} - 1\right)\frac{C_{j'k}}{n_{Rk}}\right] + \frac{A_{jk}D_{j'k}}{n_{Fk}}\left[\hat{\psi} - \left(\hat{\psi} - 1\right)\frac{A_{jk}}{n_{Rk}}\right]\right\}.$$

$$j \le j' = 1, \ldots, J-1$$

This variance is a generalization of the variance estimator for the MH estimate of the common log-odds ratio for dichotomous items. Because $\log(\hat{\alpha}_{LA}) = -\log\left(\hat{\psi}_{LA}\right)$, the statistics have the same asymptotic variance (Penfield & Algina, 2003).

Because the Liu-Agresti estimator is theoretically equivalent to the MH odds ratio, a classification scheme can be constructed that parallels the ETS scheme for dichotomous items (Penfield, 2007). Table 2.5 presents the DIF classification for the ELPA polytomous CR items[14]. Note that the rules used in Table 2.5 are identical to those used in Table 2.4, with the only exception being the statistics the rules are applied to.

Table 2.5 DIF Classification for Polytomous CR Items

Category	Description	Criterion
AA	Negligible DIF	If either the Liu-Agresti cumulative common log-odds ratio ($\log(\hat{\alpha}_{LA})$ is not significantly different from zero or $\lvert\log(\hat{\alpha}_{LA})\rvert < 0.426$
BB	Moderate DIF	If $\log(\hat{\alpha}_{LA})$ is significantly different from zero and $\lvert\log(\hat{\alpha}_{LA})\rvert \geq 0.426$, and either (a) $\lvert\log(\hat{\alpha}_{LA})\rvert \leq 0.638$ or (b)$\lvert\log(\hat{\alpha}_{LA})\rvert$ is not significantly greater than 0.426
CC	Large DIF	If $\lvert\log(\hat{\alpha}_{LA})\rvert$ is significantly greater than 0.426 and $\lvert\log(\hat{\alpha}_{LA})\rvert > 0.638$

Note. Adapted from Penfield (2007).

A list of all the operational and field test items with DIF classification appears in Appendices B.11.a through B.15.h. These appendices include the following information:

- Item ID
- Mantel Chi-Square (Note that this is the Mantel-Haenszel Chi-Square for dichotomous items or the Mantel Chi-Square for polytomous items)
- Mantel-Haenszel (for dichotomous items) or Liu-Agresti (for polytomous items) Log-Odds Ratio
- Log-Odds Ratio Standard Error (SE)
- Standardized Log-Odds Ratio (Note that this is the standardized Mantel-Haenszel common log-odds ratio for dichotomous items or the standardized Liu-Agresti cumulative common log-odds ratio for polytomous items)
- DIF Flag (for Classification of DIF)
- Favored Group (for DIF Flag of B, BB, C, or CC)

[14] There are 1-point CR items at Level I. In order to identify these as CR items, AA, BB, and CC are assigned and the analysis is conducted as if they were MC items (i.e., dichotomous items). For these items, the rules in Table 2.4 were applied instead.

2.6 Test Construction

A fundamental consideration in constructing the ELPA is the language that is being tested. Rigorous methods in language choice must be applied to provide consistency across the forms of the five assessment levels and to create an integrated structure within each form. The use of an integrated structure means that language ranges from the most simple, which is first acquired by non-native speakers, to advanced language that would indicate a level of English proficiency sufficient for participation in regular academic classes. Being able to accurately identify students at different levels of language development provides better information to classroom teachers who must find the most effective way to help their students reach English proficiency. It also provides very important evidence of students' progress toward English proficiency that is required by the *NCLB* legislation.

Items selected for the 2013 ELPA represent a range of language tasks at all grade levels. Items ranged from simple cognitive and linguistic tasks (e.g., repeating a dictated sentence orally) to higher order thinking and expressive language tasks (e.g., making inferences based on a reading passage).

Content and Psychometric Review for Operational Item Selection and Form Construction

To select operational items for the Spring 2013 ELPA, the ELPA blueprint (reconstructed in 2010) and the statistical profiles of the Spring 2012 ELPA operational items were used as the reference points at each assessment level.

The content review compared the proposed Spring 2013 operational items to the ELPA blueprint in terms of items per domain, items per standard (i.e., the Michigan English Language Proficiency [ELP] Standards), general complexity of presentation, sequencing of items, and other relevant factors as determined by ELPA content experts.

The psychometric review compared the statistical characteristics of the proposed Spring 2013 ELPA operational items to the statistical characteristics of the Spring 2012 ELPA operational items by overall test and domain for each assessment level across a number of dimensions including: 1) the mean, standard deviation, and range of adjusted *p*-values[15], 2) the mean, standard deviation, and range of adjusted item-total correlations[16], 3) the mean, standard deviation, and range of Rasch-based IRT item difficulties[17]), and 4) the comparison of test characteristic curves, test information curves, and test standard error curves (in relation to proficient cuts). In addition, in order to minimize scale drift across years (note that the ELPA uses the fixed parameter approach for equating [see Section 6.2 for more information]), the ELPA psychometrician also conducted various statistical analyses to check the content and statistical representativeness of "anchor" items against the whole set of operational items. Related results and corresponding concerns from these psychometric comparisons were then shared with the ELPA development team. All identified issues were then resolved internally by the ELPA development team by either selecting alternative items or providing supporting

[15] See Section 4.1 for a detailed discussion of *p*-value and adjusted *p*-value. Note that for dichotomously scored items (such as MC items), adjusted *p*-values are equivalent to *p*-values.
[16] See Section 4.1 for a detailed discussion of adjusted item-total correlations.
[17] See Section 6.1 for item difficulty in Rasch and Partial Credit Models.

documentation for current choices[18]. Field test items were selected and embedded into the test forms after the selection of operational items was finalized.

Testing Written Language

Readability measures are primarily based on factors such as the number of words per sentence and the number of letters or syllables per word. Additionally, English as a second language (ESL) assessment specialists from BAA and Questar evaluate the coherence of a passage, vocabulary difficulty, sentence and text structure, and concreteness and abstractness. It is the combination of these factors that determines the appropriateness of the language of a passage.

Testing Oral Language

Recognizing that oral language structure and vocabulary of English differ vastly from those of written language, issues of oral language assessment among ELL students in kindergarten through grade 12 have received special attention. Additionally, for the oral language components of the ELPA to be relevant, the Listening and Speaking domains must have predictive validity for academic achievement; therefore, academic language and social language are both included in the Listening and Speaking domains of the ELPA.

2.7 Test Accommodations

In accordance with the guidelines mandated by the *IDEA* of 2004, test items were developed for the Spring 2013 ELPA which adhered to standards of accessibility, reliability, and validity for the widest range of students possible. This range included student with disabilities (SWD) such as visual and auditory impairments. Specific to these populations, enlarged-print versions of the ELPA were available at all assessment levels, and Braille versions were available to students at Levels III through V. For students with auditory impairments, an accommodated CD was available; schools were also able to use amplification devices for administration. In addition to these design features, BAA also provided routine and consistent guidance to testing coordinators for the purpose of proper administration of the ELPA to SWDs with other kinds of impairments. A full list of available accommodations can be found in the Accommodations Summary Table at www.michigan.gov/elpa.

During form construction, Questar Assessment, Inc. (Questar), the primary assessment development contractor, utilized in-house content and fairness experts to ensure that general universal design concepts were preserved. These experts also reviewed the forms for fairness, reliability, and accessibility for this special population of students.

[18] Detailed procedures and results are documented internally. Interested readers may contact BAA@michigan.gov for more information.

SECTION 3. SCORING CONSTRUCTED-RESPONSE ITEMS IN WRITING

This section describes the scoring process for both operational and field test constructed response (CR) items in Writing for the Spring 2013 ELPA. The scoring team for the operational items included a scoring director, six team leaders, and seventy-one readers. The scoring team for the field test items included a scoring director, six team leaders, and fifty-four readers.

In preparation for scoring, Questar developed training materials which included: annotated scoring guides (i.e., responses that demonstrate the features of each score point), training sets and qualifying sets, and a review set. These materials were combined to form a training manual for each item.

The details of the scoring process for the operational and field test items are presented below.

3.1 ELPA Rangefinding

Questar facilitated a rangefinding session (for scoring field test items) on May 29th and 30th, 2013. To prepare for the rangefinding meeting, a team consisting of Questar's ELPA Performance Assessment manager, the scoring director, and expert team leaders pulled sample responses from several hundred randomly selected responses for each field test item. Questar selected a diverse assortment of responses for each of the items to score at the rangefinding session. These sample papers covered a range of score points and represented a variety of issues that might arise when scoring student responses.

The purpose of this rangefinding session was to score selected responses of field test items from the Spring 2013 administration. The participants included four Questar staff members, four BAA staff members, and eighteen Michigan teachers. The participants were divided into four groups, based on background and teaching experience. One group was assigned to work with and score student responses to CR items that appeared on the Levels I and II forms (grades K, and 1-2), a second group was responsible for Level III forms (grades 3-5), a third group was responsible for Level IV forms (grades 6-8), and the fourth group was responsible for Level V forms.

The rangefinding process for an individual item began with a review of the rubric. Following the presentation of the rubric, the Questar meeting facilitators reviewed the prompt and an existing anchor set for each item type. Next, participants were given packets of sample responses for each item. The sample responses for each item were ordered randomly within the set.

After reading each response, participants were asked to assign a score using the rubric and referring to anchor papers as reference points for additional support. Scores assigned by the participants were reviewed and discussed by the group. The facilitators worked to identify a consensus score for each sample response that was consistent with the rubric and the existing anchor papers. If questions arose during scoring, the problem was discussed by the group to identify the elements that led to the assignment of different scores. After discussion, the facilitators recorded the final score point assigned to each sample paper. Based on the committee

recommendations, the facilitators made note of papers that should be used as anchors (or reference points) for the 2013 field test scoring guides. Papers for which a score could not be agreed upon were noted as "do not use." Questar facilitators documented discussions and decisions that were made. The notes taken during the rangefinding session are used by the scoring director during future reader and team leader trainings.

From these scored responses, field test scoring guides were created to train readers to score the remainder of the field test responses. The scoring guides were carefully reviewed by the readers to ensure consistency while scoring.

If a field test item is chosen as an operational item for a future assessment, prompt-specific training, qualifying, and review sets will be prepared using papers selected from rangefinding sessions. These materials will be used to ensure that readers are well prepared for operational scoring.

3.2 Reader Training

All scoring staff had, at a minimum, a B.S. or B.A. degree and was experienced in scoring ELL or writing assessments. They had expertise in English Language Arts and were familiar with the nuances of rubric application and scoring.

Prior to scoring the student responses, the scoring director conducted team leader training. The team leaders were expert readers who had experience in all facets of scoring. They were responsible for carefully monitoring the scoring accuracy of readers on their team. Team leaders are the next level experts regarding the items and the requirements and procedures for the project.

Team leaders completed the same training received by the readers. They actually completed the training twice – once during their own session and then again with the readers. During the team leader training sessions, the logistics of the scoring sessions and scoring routines were discussed. This included the criterion by which readers would qualify, procedures for monitoring accuracy and reliability, and procedures for retraining and evaluating readers on their teams.

The training of readers was conducted by the scoring director for all prompts within each assessment level and was based on the scoring guides and training sets developed from materials scored during prior rangefinding sessions. After training, each reader was given a qualifying set to score in order to apply the criteria they had learned. Any reader who failed to meet the criterion of 70% exact agreement with the expert-provided/rangefinding committee score for a qualifying set was either retrained and given a second chance to meet the scoring criteria, or removed from the project.

The scoring director, in concert with the ELPA Performance Assessment manager, developed the training and qualifying sets for the 2013 forms. The training materials were grouped by assessment level and item type. Training materials were constructed to progress from Level I to Level V and from the simpler 0-1 point range rubrics to the most complex 0-4 point range

rubrics. The details for the operational training materials (scoring guide, training, and qualifying sets), along with item type and score point ranges, are reported below (For field test item scoring, no training or qualifying sets were created, thus the scoring guides were used to train the readers.).

Scoring Guides

There were 12 Scoring Guides (SGs) covering all 24 operational prompts across the 5 assessment levels as follows:

SG1: *Level I:*
Letter Writing (LW) [0-1 point range]

SG2: *Level I:*
Phrase Dictation (PD) [0-2 point range]

SG3: *Levels I & II:*
Word Writing with Aural Stimulus (WWA) [0-2 point range][19]

SG4: *Levels I & II:*
Sentence Writing with Visual stimulus (SWV) [0-2 point range]

SG5: *Level II:*
Sentence Dictation (SD) [0-2 point range]

SG6: *Level III:*
Sentence Writing with Textual Stimulus (SWT) [0-2 point range]

SG7: *Levels IV & V:*
Sentence Combination (SCo) [0-2 point range]

SG8: *Level II:*
Extended Response (ER) [0-4 point range]

SG9: *Level III:*
Extended Response (ER) [0-4 point range]

SG10: *Levels IV & V:*
Extended Response (ER) [0-4 point range]

SG11: *Level III:*
Paragraph Writing (PW) [0-4 point range]

SG12: *Levels IV & V:*
Paragraph Writing (PW) [0-4 point range]

[19] There were no OP or FT items with the type of Word Writing with Visual Stimulus (WWV) in the Writing section on the 2013 ELPA for Levels I and II.

Training and Qualifying Sets

There were a total of 18 Training (T) Sets and 18 Qualifying (Q) Sets. These covered all 24 operational prompts across the 5 assessment levels as follows:

Training Sets 1 & 2 - *Levels I & II:*
Letter Writing (LW) [0-1 point range]
Word Writing with Aural Stimulus (WWA) [0-2 point range]

Training Sets 3 & 4 - *Levels I & II:*
Phrase Dictation (PD) [0-2 point range]
Sentence Dictation (SD) [0-2 point range]

Training Sets 5 & 6 - *Levels I & II:*
Sentence Writing with Visual Stimulus (SWV) [0-2 point range]

Training Sets 7 & 8 - *Level II:*
Extended Response (ER) [0-4 point range]

Training Sets 9 & 10 - *Level III:*
Paragraph Writing (PW) [0-4 point range]
Extended Response (ER) [0-4 point range]

Training Sets 11 & 12 - *Level III:*
Sentence Writing with Textual Stimulus (SWT) [0-2 point range]

Training Sets 13 & 14 - *Levels IV & V:*
Sentence Combination (SCo) [0-2 point range]

Training Sets 15 & 16 - *Levels IV & V:*
Paragraph Writing (PW) [0-4 point range]

Training Sets 17 & 18 - *Levels IV & V:*
Extended Response (ER) [0-4 point range]

Qualifying Sets 1 & 2 - *Levels I & II:*
Letter Writing (LW) [0-1 point range]
Word Writing with Aural Stimulus (WWA) [0-2 point range]

Qualifying Sets 3 & 4 - *Levels I & II:*
Phrase Dictation (PD) [0-2 point range]
Sentence Dictation (SD) [0-2 point range]

Qualifying Sets 5 & 6 - *Levels I & II:*
Sentence Writing with Visual Stimulus (SWV) [0-2 point range]

Qualifying Sets 7 & 8 - *Level II:*
Extended Response (ER) [0-4 point range]

Qualifying Set 9 & 10 - *Level III:*
Paragraph Writing (PW) [0-4 point range]
Extended Response (ER) [0-4 point range]

Qualifying Sets 11 & 12 - *Level III:*
Sentence Writing with Textual Stimulus (SWT) [0-2 point range]

Qualifying Sets 13 & 14 - *Levels IV & V:*
Sentence Combination (SCo) [0-2 point range]

Qualifying Sets 15 & 16 - *Levels IV & V:*
Paragraph Writing (PW) [0-4 point range]

Qualifying Sets 17 & 18 - *Levels IV & V:*
Extended Response (ER) [0-4 point range]

3.3 Inter-Rater Agreement

All readers were trained to score according to the appropriate rubric to ensure accurate, consistent, reliable results. Questar adhered to stringent criteria in its general screening, training, and qualifying procedures as preliminary measures for obtaining high levels of consistency and reliability.

Each response was independently scored once. For reliability purposes, 20% of the responses received a second reading. The first reader's scores were used as the score of record as long as the second reader had more than 90% exact or adjacent agreement with the first reader. If the second reader's scores differed more than 10% (not within a one point difference) from those of the first reader, a third reader (expert) scored all of the first reader's responses and the scores assigned by the third reader became the score of record. This did not occur, however, because the scores of all readers were less than 10% non-adjacent.

Team leaders also conducted read-behinds as an additional monitoring method to ensure that individual readers continued to maintain their scoring accuracy and did not change the way they were scoring over time. When conducting read-behinds, a team leader reviewed a select number of student responses and the scores assigned by an individual reader. The team leader could agree with and confirm the score, or disagree with the reader's score and send the paper back for review, citing specific anchor papers as guides.

The evaluation of inter-rater agreement is described in Section 5.3. Papers receiving invalid codes[20] were initially reviewed by either a team leader or the scoring director.

[20] All papers receiving invalid codes are scored as 0 in the final data file. The invalid codes include the following: blank, illegible, only in foreign language, off topic, off task, or not appropriate to prompt, incomprehensible, refusal to respond, and copy of the prompt. Copy of the prompt does not apply for the Sentence Dictation item type.

Review Set for Monitoring Room Drift

In addition to scoring the student responses, readers also scored a review set during the scoring process. This process is used to detect room drift, and it is also used to ensure that individual readers are maintaining accuracy. A review set consists of student responses of mixed quality in a random order that were scored by the rangefinding committee. All readers met the 70% or higher exact agreement when compared to the master scores during the scoring of the 2013 ELPA responses.

3.4 Monitoring Reports

Questar's online scoring system generated many different types of internal monitoring reports that enabled Questar to monitor the accuracy of scoring. These reports, generated by individual reader and by team, listed all of a team's readers and provided the results of their scoring on an ongoing basis. The information in these reports included the number of responses read by the readers during a specific period, reader agreement (or reliability) rate, and score point distribution by prompt.

Reader Reliability Report: Every student response was read once by a randomly selected reader. Twenty percent of the responses received a second independent reading by a randomly selected reader. This provided data for reporting the number of instances and percent of exact agreement, adjacent agreement, and non-adjacent scores between two different readers. Adjacent agreement occurs when the second reader's score was a point higher or lower than the first reader's score. Non-adjacent scores occur when two readers' scores differ by more than one point.

Score Point Distribution Report: This report included the percentage of responses each reader awarded each score point and indicated whether the reader tended to distribute scores in a manner similar to other readers.

In addition to the reports described above, other reports, such as the Project Summary Report, were generated each day to monitor the progress of the project. This report indicated the number and the percent of responses for which two readings were required and completed. It also indicated the overall progress of the project.

Reader Reliability Reports and Score Point Distribution Reports were printed and posted in the scoring room daily. These reports were examined daily by the scoring director and team leaders. In addition, the readers were instructed on how to monitor themselves by reviewing these reports.

3.5 Retraining

Individual readers might receive retraining during the scoring process if deemed necessary by team leader observations and from the results of various reports. Specifically, the need for retraining was identified in the following different ways: a large number of non-adjacent scores

on the 20% selection that requires a second read (this scenario requires resolution by a team leader), low or irregular scores for the review set, or unsatisfactory exact agreement rates or anomalies detected via the read-behind monitoring.

Retraining involved several techniques:

- Discussion of student response(s) and the scores involved in a resolution
- Discussion of specific papers identified by the read-behind process
- Review of anchor responses

SECTION 4. DESCRIPTIVE STATISTICS AT ITEM AND TEST LEVELS

This section includes descriptive statistics at both the item and test levels. The statistics reported at the item level are different from those reported at the test (and domain) level. Therefore, these results are described below separately. Note, however, that some statistics reported at the item level (e.g., adjusted *p*-value and adjusted item-total correlation) are from the framework of Classical Test Theory (CTT). In this section, only the concepts relating to the (adjusted) *p*-value and the (adjusted) item-total correlation are introduced; other important concepts in the framework of CTT are introduced in Section 5.

4.1 Item-Level Descriptive Statistics

This section presents various item-level statistics for all items (both operational and field test) on the Spring 2013 ELPA. First, item difficulty in the framework of CTT is reported. For dichotomously scored items, the *p*-value is computed. It equals the proportion of students who answer an item correctly. A high *p*-value means that an item is easy and a low *p*-value means that an item is difficult. For polytomously scored items, an adjusted *p*-value is reported. It is computed by dividing the average score points of a CR item by the item's maximum possible points[21].

Besides item difficulty, an adjusted item-total correlation is also reported for each item. The adjusted item-total correlation is an index of the association between students' performance on the item and their performance on the test as a whole (but the item of interest is excluded from the total score). A high adjusted item-total correlation is desired, as high correlations indicate that students with high scores on all other test items (i.e., high ability) tend to get a particular MC item correct (or obtain higher score points for CR items), and the students with low scores on all other test items (i.e., low ability) tend to get this particular MC item incorrect (or obtain lower score points for CR items). Note that for dichotomously scored items, an adjusted point-biserial correlation is computed, and for polytomously scored items, an adjusted Pearson product-moment correlation is computed.

The item-level statistics for the operational items and the embedded field test items for the 2013 ELPA are presented in Appendix B for each assessment level. The statistics for the operational items are shown in B.1 to B.5, and the statistics for the field test items are presented in B.6 to B.10. The tables are grouped by domain (i.e., Listening, Reading, Speaking, and Writing). The following item information and statistics are presented for each item in Appendices B.1 to B.10:

- Item ID
- Domain (Listening, Reading, Writing, or Speaking)
- Type (item type: multiple-choice (MC) or constructed-response (CR))
- Points (maximum number of possible points)
- N (number of test takers)

[21] Note that the adjusted *p*-value equals *p*-value for dichotomously scored items.

- 0, 1/A, 2/B, 3/C, 4/D (percentage of students obtaining each response option for MC items or score point for CR items)
- Multiple Marks (percentage of students providing multiple markings for a MC item)[22]
- Omit /Invalid (percentage of students omitting an item or providing an invalid response)[23]
- Adjusted *p*-value
- Adjusted Item-Total Correlation (correlation between the item score and the adjusted total test score; for MC items, an adjusted point-biserial correlation is computed, and for CR items, an adjusted Pearson product-moment correlation is computed.)

4.2 Higher-Level Descriptive Statistics

Descriptive statistics for the ELPA scores are also reported by domain and for the total test. The test directly assesses the following domains: Listening, Reading, Writing, and Speaking. The sum of these four domain raw scores results in the total test raw score. The fifth domain, Comprehension, is composed of selected items from the Listening and Reading domains, and is not included in the computation of the total test score.

The measures of central tendency, variability, and score precision of raw scores are presented in Table 4.1 for each of the five domains as well as for the total test for each assessment level. Table 4.2 presents the same statistics by grade.

Specifically, the tables include the following information:

- Level or Grade
- Domain
- Number of items
- Max points (maximum number of possible points)
- N-Count
- Raw Score Mean
- Raw Score Standard Deviation (SD)
- Raw Score Standard Error of the Sample Mean (SE)

The standard error of the sample mean is an estimate of the magnitude of sampling error associated with the estimation of the population mean. It is mathematically defined as follows (Hays, 1994, p. 215):

$$SE(\bar{X}) = \frac{\sigma}{\sqrt{n}}, \tag{4.1}$$

where $SE(\bar{X})$ represents the standard error of the sample mean, σ represents the standard deviation of the population, and n represents the number of examinees in the sample.

[22] Note that multiple marks for speaking CR items are made by teachers not students.
[23] Invalid responses refer to CR responses scored with condition codes (including blanks). Note that multiple marks, omits, blanks, and invalids were scored as "0" and are included in the final N-count that appears in all subsequent tables and appendices.

Equation (4.1) expresses $SE(\bar{X})$ in terms of the population standard deviation σ . The practical version of this equation is expressed in terms of the sample standard deviation as follows (Hays, 1994, p. 218):

$$SE(\bar{X}) = \frac{S_X}{\sqrt{n}}, \tag{4.2}$$

where S_X represents the standard deviation of the sample, and n represents the number of examinees in the sample.

Table 4.1: Summary Statistics of the ELPA Domains by Assessment Level

Level	Domain	Number of Items	Max Points	N-Count	Raw Score		
					Mean	SD	SE
I	Listening	16	16	10299	9.17	3.45	0.03
	Reading	16	16	10299	10.00	3.60	0.04
	Writing	13	18	10299	9.07	4.51	0.04
	Speaking	6	18	10299	11.16	4.70	0.05
	Comprehension	20	20	10299	12.25	3.92	0.04
	Total Test	51	68	10299	39.40	13.46	0.13
II	Listening	20	20	17855	15.44	3.55	0.03
	Reading	20	20	17855	14.31	4.73	0.04
	Writing	13	20	17855	11.16	4.64	0.03
	Speaking	7	20	17855	14.25	4.63	0.03
	Comprehension	30	30	17855	22.20	5.64	0.04
	Total Test	60	80	17855	55.15	14.72	0.11
III	Listening	20	20	19656	13.19	4.19	0.03
	Reading	20	20	19656	12.37	4.67	0.03
	Writing	12	20	19656	10.91	3.86	0.03
	Speaking	7	20	19656	15.92	3.84	0.03
	Comprehension	28	28	19656	17.94	5.87	0.04
	Total Test	59	80	19656	52.38	13.78	0.10
IV	Listening	20	20	13185	12.58	3.96	0.03
	Reading	20	20	13185	11.38	4.48	0.04
	Writing	12	20	13185	10.62	3.80	0.03
	Speaking	7	20	13185	15.99	4.40	0.04
	Comprehension	29	29	13185	17.48	5.63	0.05
	Total Test	59	80	13185	50.57	13.73	0.12
V	Listening	20	20	13876	12.04	4.04	0.03
	Reading	20	20	13876	11.66	4.60	0.04
	Writing	13	20	13876	11.00	4.04	0.03
	Speaking	7	20	13876	16.26	4.64	0.04
	Comprehension	26	26	13876	15.69	5.27	0.04
	Total Test	60	80	13876	50.97	14.53	0.12

Note. 1. Total Test does not include the Comprehension composite.
2. Omits, blanks, and invalid responses were scored as "0."

Table 4.2: Summary Statistics of the ELPA Domains by Grade

Grade	Domain	Number of Items	Max Points	N-Count	Raw Score		
					Mean	SD	SE
K	Listening	16	16	10299	9.17	3.45	0.03
	Reading	16	16	10299	10.00	3.60	0.04
	Writing	13	18	10299	9.07	4.51	0.04
	Speaking	6	18	10299	11.16	4.70	0.05
	Comprehension	20	20	10299	12.25	3.92	0.04
	Total Test	51	68	10299	39.40	13.46	0.13
1	Listening	20	20	9370	14.28	3.62	0.04
	Reading	20	20	9370	12.43	4.72	0.05
	Writing	13	20	9370	9.31	4.19	0.04
	Speaking	7	20	9370	13.24	4.79	0.05
	Comprehension	30	30	9370	19.99	5.55	0.06
	Total Test	60	80	9370	49.27	14.07	0.15
2	Listening	20	20	8485	16.71	3.00	0.03
	Reading	20	20	8485	16.37	3.79	0.04
	Writing	13	20	8485	13.20	4.23	0.05
	Speaking	7	20	8485	15.37	4.16	0.05
	Comprehension	30	30	8485	24.64	4.64	0.05
	Total Test	60	80	8485	61.65	12.54	0.14
3	Listening	20	20	7493	11.86	4.14	0.05
	Reading	20	20	7493	10.89	4.48	0.05
	Writing	12	20	7493	9.63	3.60	0.04
	Speaking	7	20	7493	15.43	3.90	0.05
	Comprehension	28	28	7493	15.99	5.68	0.07
	Total Test	59	80	7493	47.81	13.11	0.15
4	Listening	20	20	6421	13.49	4.03	0.05
	Reading	20	20	6421	12.59	4.54	0.06
	Writing	12	20	6421	11.19	3.76	0.05
	Speaking	7	20	6421	16.02	3.81	0.05
	Comprehension	28	28	6421	18.32	5.68	0.07
	Total Test	59	80	6421	53.29	13.34	0.17
5	Listening	20	20	5742	14.58	3.91	0.05
	Reading	20	20	5742	14.05	4.42	0.06
	Writing	12	20	5742	12.28	3.76	0.05
	Speaking	7	20	5742	16.43	3.72	0.05
	Comprehension	28	28	5742	20.06	5.50	0.07
	Total Test	59	80	5742	57.34	13.20	0.17
6	Listening	20	20	4859	11.87	3.82	0.05
	Reading	20	20	4859	10.47	4.28	0.06
	Writing	12	20	4859	9.87	3.60	0.05
	Speaking	7	20	4859	15.77	4.33	0.06
	Comprehension	29	29	4859	16.34	5.36	0.08
	Total Test	59	80	4859	47.98	13.04	0.19

Table 4.2: Summary Statistics of the ELPA Domains by Grade (Continued)

Grade	Domain	Number of Items	Max Points	N-Count	Raw Score		
					Mean	SD	SE
7	Listening	20	20	4265	12.59	3.94	0.06
	Reading	20	20	4265	11.39	4.48	0.07
	Writing	12	20	4265	10.68	3.79	0.06
	Speaking	7	20	4265	15.93	4.47	0.07
	Comprehension	29	29	4265	17.51	5.58	0.09
	Total Test	59	80	4265	50.58	13.77	0.21
8	Listening	20	20	4061	13.40	3.98	0.06
	Reading	20	20	4061	12.46	4.47	0.07
	Writing	12	20	4061	11.45	3.86	0.06
	Speaking	7	20	4061	16.33	4.38	0.07
	Comprehension	29	29	4061	18.81	5.70	0.09
	Total Test	59	80	4061	53.65	13.86	0.22
9	Listening	20	20	4358	11.41	4.00	0.06
	Reading	20	20	4358	11.06	4.56	0.07
	Writing	13	20	4358	10.39	4.06	0.06
	Speaking	7	20	4358	15.75	5.16	0.08
	Comprehension	26	26	4358	14.93	5.25	0.08
	Total Test	60	80	4358	48.61	15.01	0.23
10	Listening	20	20	3993	12.11	4.03	0.06
	Reading	20	20	3993	11.68	4.57	0.07
	Writing	13	20	3993	10.94	3.97	0.06
	Speaking	7	20	3993	16.20	4.67	0.07
	Comprehension	26	26	3993	15.76	5.21	0.08
	Total Test	60	80	3993	50.92	14.46	0.23
11	Listening	20	20	2895	12.53	4.07	0.08
	Reading	20	20	2895	12.13	4.57	0.08
	Writing	13	20	2895	11.54	4.04	0.08
	Speaking	7	20	2895	16.64	4.16	0.08
	Comprehension	26	26	2895	16.27	5.28	0.10
	Total Test	60	80	2895	52.85	14.08	0.26
12	Listening	20	20	2630	12.44	3.95	0.08
	Reading	20	20	2630	12.14	4.64	0.09
	Writing	13	20	2630	11.50	3.94	0.08
	Speaking	7	20	2630	16.79	4.08	0.08
	Comprehension	26	26	2630	16.20	5.23	0.10
	Total Test	60	80	2630	52.86	13.73	0.27

Note. 1. Total Test does not include the Comprehension composite.
2. Omits, blanks, and invalid responses were scored as "0."

SECTION 5. RELIABILITY

In this section, the classical true score theory is introduced, along with two concepts that are directly derived from this theory: reliability and standard error of measurement (SEM). The concept of SEM can also be expressed within the framework of Item Response Theory (IRT), and it is briefly described and reported in this section.

In practical terms, reliability is understood as the degree of consistency over repeated administrations of the same or alternative tests (Crocker & Algina, 1986). Such consistency can also be extended to situations where the same test item is scored by different raters (Haertel, 2006). Therefore, the fourth topic covered in this section is inter-rater reliability.

In addition, students can be categorized into different performance levels based on their test scores. It is informative to examine the accuracy or consistency of such categorization, especially the cut score that separates students into proficient and non-proficient categories. The classification accuracy and classification consistency at the proficient level cut is presented at the end of this section.

5.1 Classical True Score Theory

According to the classical true score theory (which is a fundamental component of the Classical Test Theory or CTT), an observed score consists of the sum of two parts—a random component of true score (T) and a random component of error score (E), or mathematically, $X = T + E$ (McDonald, 1999). This model has the following properties (Lord & Novick, 1968): (1) the expected error score is zero, (2) the correlation between true and error scores is zero, and (3) the correlation between the error scores on different but parallel forms is zero.

According to the model presented above, a student's observed test score is an imprecise estimate of his or her actual ability because a portion of that score is attributable to random error. A fundamental theoretical quantity in test theory, the *reliability coefficient* of the observed scores, is defined as the ratio of the variance of true scores to the variance of observed scores. Tests are thus most reliable when the proportion of observed score variance that may be attributed to error variance is minimal. There are three main recognized methods for estimating the reliability coefficients (see McDonald, 1999), but only the internal consistency reliability approach is described here.

Internal Consistency Reliability

Estimates of internal consistency reliability involve "dividing the test into two or more constituent parts and in some way estimating reliability from the consistency of performance across these part-tests" (Haertel, 2006, p. 71).

Various internal consistency reliability estimates have been proposed, but the most widely used is Cronbach's (1951) coefficient alpha (Haertel, 2006). Using sample statistics, it is computed as follows (adapted from Haertel, 2006, p. 74):

$$\alpha = \frac{I}{I-1}\left(1 - \frac{\sum_i^I S_i^2}{S_X^2}\right), \tag{5.1}$$

where I represents the number of items on the test, S_i^2 represents the sample variance of item i, and S_X^2 represents the sample variance of the total test score.

The use of coefficient alpha has several theoretical advantages (Haertel, 2006). First, since it equals the mean of all possible split-half reliability coefficients (i.e., another estimate of internal consistency reliability which involves the division of the total test into two "parallel" sub-tests), the use of coefficient alpha avoids the arbitrary choice of a split or division. Second, it is mathematically equivalent to one of the lower bounds of the theoretical reliability coefficient. The implication of this is that the theoretical reliability coefficient is higher than the observed coefficient alpha.

Standard Error of Measurement (SEM) within the CTT Framework

As mentioned above, another related concept that is directly derived from the classical true score theory is SEM. It is calculated with sample statistics as follows (Hays, 1994, p. 617):

$$SEM(X) = S_X\sqrt{1 - r_{XX'}}\ , \tag{5.2}$$

where $SEM(X)$ represents the estimated standard error of measurement of the observed test score X, S_X denotes the estimated standard deviation (i.e., sample standard deviation) of the observed score, $r_{XX'}$ represents the estimated reliability coefficient of a test. In this document, the observed coefficient alpha is used as the estimated reliability coefficient.

According to Equation (5.2), the SEM is inversely related to the reliability of a test, as for any standard deviation of the observed score, the SEM decreases when the reliability coefficient increases. Thus, when the SEM is small, one has more confidence in the accuracy, or precision, of observed test scores.

Table 5.1 provides the raw score descriptive statistics, reliabilities, and SEM by grade and domain. It includes the following information:

- Grade
- Domain
- Number of items
- Max Points (maximum number of possible points)
- N-Count

- SD (Raw Score Standard Deviation)[24]
- Reliability (estimated Cronbach's coefficient alpha)
- Classical SEM (estimated SEM within the CTT framework)

Table 5.1: Reliability and SEM within the CTT Framework by Grade and Domain

Grade	Domain	Number of Items	Max Points	N-Count	SD	Reliability	Classical SEM
K	Listening	16	16	10299	3.45	0.73	1.78
	Reading	16	16	10299	3.60	0.78	1.68
	Writing	13	18	10299	4.51	0.82	1.93
	Speaking	6	18	10299	4.70	0.85	1.82
	Comprehension	20	20	10299	3.92	0.75	1.95
	Total Test	51	68	10299	13.46	0.92	3.92
1	Listening	20	20	9370	3.62	0.75	1.81
	Reading	20	20	9370	4.72	0.84	1.88
	Writing	13	20	9370	4.19	0.76	2.04
	Speaking	7	20	9370	4.79	0.87	1.72
	Comprehension	30	30	9370	5.55	0.83	2.30
	Total Test	60	80	9370	14.07	0.92	4.03
2	Listening	20	20	8485	3.00	0.75	1.49
	Reading	20	20	8485	3.79	0.84	1.49
	Writing	13	20	8485	4.23	0.79	1.94
	Speaking	7	20	8485	4.16	0.86	1.58
	Comprehension	30	30	8485	4.64	0.84	1.87
	Total Test	60	80	8485	12.54	0.92	3.53
3	Listening	20	20	7493	4.14	0.76	2.01
	Reading	20	20	7493	4.48	0.80	1.99
	Writing	12	20	7493	3.60	0.73	1.87
	Speaking	7	20	7493	3.90	0.84	1.58
	Comprehension	28	28	7493	5.68	0.82	2.38
	Total Test	59	80	7493	13.11	0.91	3.93
4	Listening	20	20	6421	4.03	0.78	1.91
	Reading	20	20	6421	4.54	0.82	1.90
	Writing	12	20	6421	3.76	0.75	1.88
	Speaking	7	20	6421	3.81	0.84	1.51
	Comprehension	28	28	6421	5.68	0.84	2.26
	Total Test	59	80	6421	13.34	0.92	3.80
5	Listening	20	20	5742	3.91	0.79	1.81
	Reading	20	20	5742	4.42	0.84	1.78
	Writing	12	20	5742	3.76	0.75	1.88
	Speaking	7	20	5742	3.72	0.85	1.43
	Comprehension	28	28	5742	5.50	0.85	2.14
	Total Test	59	80	5742	13.20	0.92	3.64

[24] Although the SD of raw scores at each grade level was previously reported in Section 4, these values are repeated here as the computation of SEM involves such values. Note that the Number of Items, Max Points, and N-Count are also repeated for easy reference.

Table 5.1: Reliability and SEM within the CTT Framework by Grade and Domain (Continued)

Grade	Domain	Number of Items	Max Points	N-Count	SD	Reliability	Classical SEM
6	Listening	20	20	4859	3.82	0.73	1.99
	Reading	20	20	4859	4.28	0.77	2.04
	Writing	12	20	4859	3.60	0.71	1.92
	Speaking	7	20	4859	4.33	0.89	1.47
	Comprehension	29	29	4859	5.36	0.79	2.44
	Total Test	59	80	4859	13.04	0.91	3.97
7	Listening	20	20	4265	3.94	0.76	1.95
	Reading	20	20	4265	4.48	0.80	1.99
	Writing	12	20	4265	3.79	0.74	1.95
	Speaking	7	20	4265	4.47	0.89	1.45
	Comprehension	29	29	4265	5.58	0.82	2.39
	Total Test	59	80	4265	13.77	0.92	3.94
8	Listening	20	20	4061	3.98	0.78	1.89
	Reading	20	20	4061	4.47	0.81	1.94
	Writing	12	20	4061	3.86	0.74	1.96
	Speaking	7	20	4061	4.38	0.90	1.39
	Comprehension	29	29	4061	5.70	0.83	2.32
	Total Test	59	80	4061	13.86	0.92	3.86
9	Listening	20	20	4358	4.00	0.75	2.01
	Reading	20	20	4358	4.56	0.81	1.97
	Writing	13	20	4358	4.06	0.76	1.98
	Speaking	7	20	4358	5.16	0.92	1.44
	Comprehension	26	26	4358	5.25	0.81	2.27
	Total Test	60	80	4358	15.01	0.93	4.05
10	Listening	20	20	3993	4.03	0.76	1.98
	Reading	20	20	3993	4.57	0.82	1.95
	Writing	13	20	3993	3.97	0.75	1.98
	Speaking	7	20	3993	4.67	0.91	1.39
	Comprehension	26	26	3993	5.21	0.81	2.25
	Total Test	60	80	3993	14.46	0.93	3.95
11	Listening	20	20	2895	4.07	0.77	1.95
	Reading	20	20	2895	4.57	0.82	1.92
	Writing	13	20	2895	4.04	0.76	1.99
	Speaking	7	20	2895	4.16	0.89	1.36
	Comprehension	26	26	2895	5.28	0.82	2.21
	Total Test	60	80	2895	14.08	0.92	3.86
12	Listening	20	20	2630	3.95	0.75	1.97
	Reading	20	20	2630	4.64	0.83	1.92
	Writing	13	20	2630	3.94	0.74	1.99
	Speaking	7	20	2630	4.08	0.90	1.32
	Comprehension	26	26	2630	5.23	0.82	2.22
	Total Test	60	80	2630	13.73	0.92	3.86

Note. 1. Total Test does not include the Comprehension domain.
2. Omits, blanks, and invalid responses were scored as "0."

5.2 Conditional SEM within the IRT Framework

Unlike the SEM based on CTT, the SEM based on IRT is not the same for all persons and is in fact conditional on person ability (thus the term conditional SEM). Some of the IRT related concepts are discussed in Sections 6 and 7, but a few are presented below. The conditional SEM for each person within the IRT framework is computed as follows (Embretson & Reise, 2000, p. 185):

$$SE(\theta) = \frac{1}{\sqrt{TI(\theta)}}, \tag{5.3}$$

where $TI(\theta)$ indicates the test information function, which is in turn expressed as follows (Embretson & Reise, 2000, p. 184):

$$TI(\theta) = \sum_{i=1}^{I} I(\theta). \tag{5.4}$$

In Equation (5.4), $I(\theta)$ indicates the item information function, θ represents the person ability (or latent trait), and I(above $\sum$) indicates the number of items on a test. For details about the item information function, please refer to Section 7.3.

The conditional SEM for the total test and each domain are presented in Appendix E. The detailed information for Appendix E is presented at the end of Section 6.3.

5.3 Inter-Rater Reliability

Another source of measurement error occurs during the evaluation of student work. As first discussed in Section 3.3, inter-rater reliability investigates the consistency of the evaluation given by different raters (Crocker & Algina, 1986). One way to obtain evidence of inter-rater reliability is to calculate the percent agreement between raters. If raters always agree in their assignment of scores, there is 100% agreement. If raters never agree in their assignment of scores, there is 0% agreement. Results of inter-rater agreement for the 2013 ELPA CR items are presented in Appendix C.

Appendix C provides the following information for each item per level:

- Item ID
- Item Name
- Prompt Type
- Reader Agreement % (including percentage of exact agreement, adjacent agreement, and non-adjacent agreement)
- Score Point Distribution %
- Invalid Code %

As shown in Appendix C, the exact agreement for operational CR items scored by two readers across all assessment levels ranged from 80% to 99%, and the exact agreement for field test CR items across all assessment levels ranged from 79% to 98%.

5.4 Quality (or Reliability) of Classification Decisions at Proficient Cuts

Based on the ELPA scale scores, student performance is classified into one of the five performance levels (i.e., Advanced Proficient, Proficient, High Intermediate, Low Intermediate, and Basic). While it is always important to know the reliability of student scores in any examination, it is also important to assess the quality of the decisions based on these scores. In this technical report, such evaluation is performed through estimation of the probabilities of accurate and consistent classification of student performance. Specifically, procedures from Livingston and Lewis (1995) were applied to derive corresponding measures. A brief description of the procedures used and the results obtained are presented below.

The *accuracy* of decisions is the extent to which decisions would agree with those that would be made if each student could somehow be tested with all possible forms of an examination (Young & Yoon, 1998). The *consistency* of decisions is the extent to which decisions would agree with the decisions that would be made if the students had taken a parallel form of the examination, equal in difficulty and covering the same content as the form they actually took (Young & Yoon, 1998). These ideas are shown schematically in Figures 5.1 and 5.2 using ELPA as an example. In both figures, "Achieves Proficient Status" refers to the proficient and above category on the total test score, and "Does Not Achieve Proficient Status" refers to all categories below the proficient cut.

Figure 5.1: Classification Accuracy

		Decision made on a form actually taken	
		Does Not Achieve Proficient Status	Achieves Proficient Status
"True status" based on all-forms average	Does Not Achieve Proficient Status	Correct Classification	Misclassification
	Achieves Proficient Status	Misclassification	Correct Classification

Note. Adapted from Young and Yoon (1998).

Figure 5.2: Classification Consistency

		Decision made on the 2nd form taken	
		Does Not Achieve Proficient Status	Achieves Proficient Status
Decision made on the 1st form taken	Does Not Achieve Proficient Status	Consistent Classification	Inconsistent Classification
	Achieves Proficient Status	Inconsistent Classification	Consistent Classification

Note. Adapted from Young and Yoon (1998).

In Figure 5.1, accurate classification occurs when the decision made on the basis of the form actually taken agrees with the decision made on the basis of the theoretical "all-forms" average. Misclassification occurs, for example, when a student who actually "Does Not Achieve Proficient Status" based on his or her "all-forms" average is classified incorrectly as "Achieves Proficient Status."

Consistent classification occurs (see Figure 5.2) when two possible alternate forms agree on the classification of a student as either "Achieves Proficient Status" or "Does Not Achieve Proficient Status," whereas inconsistent classification occurs when the decisions made by the forms differ.

These analyses make use of the techniques outlined and implemented by Hanson (1991), Livingston and Lewis (1995), and Brennan (2004). In this method, the reliability of the total test and the frequency distribution of the scores at each grade level are used to build models for the theoretical true score and alternate form classifications. The distribution of the proportional true scores is estimated by fitting a 4-parameter beta distribution. The conditional distribution of scores on an alternate form given the true score is estimated from a binomial distribution based on the estimated effective test length[25]. The BB-CLASS software (Version 1.1) was used to complete these analyses (Brennan, 2004)[26]. The reliability coefficients entered into the BB-CLASS control cards were those reported in Table 5.1 (but with 4 decimal places rather than 2).

Table 5.2 presents the analysis results of decision accuracy and consistency for classifying students at each grade level as "Achieves Proficient Status" or "Does Not Achieve Proficient Status" based on their total ELPA score. In addition, Table 5.2 provides information on the proportion of false positives and false negatives (i.e., the two types of misclassification). The false positive is the type of misclassification where students should be classified in the "Does Not Achieve Proficient Status" category based on their "all-forms" average but end up in the "Achieves Proficient Status" category based on the actual form. The false negative is just the opposite— students who should be in "Achieves Proficient Status" category based on their "all-

[25] For details about the computation of effective test length, please refer to Livingston and Lewis (1995).

[26] Similar to 2010, the observed whole number on the raw score that classifies students into proficient versus not proficient categories was entered as the observed cut in the third control card. Also, the true cut proportion was specified using the Livingston and Lewis (1995) formula $T_p = \frac{E(X)-X_{min}}{X_{max}-X_{min}}$ (p. 182) with the expectation computed from the test characteristic curve approach (i.e., the expected raw score corresponding to the theta cut value through the test characteristic curve).

forms" average end up in the "Does Not Achieve Proficient Status" category based on the actual form. The sum of the proportion values for accuracy, false positives, and false negatives should be equal to 1.00. Due to rounding, however, the sum of these values in the table may not be equal to 1.00.

Table 5.2: Decision Accuracy and Consistency on the Total ELPA Score by Grade

Grade	Accuracy	False Positives	False Negatives	Consistency
K	0.91	0.04	0.05	0.87
1	0.92	0.03	0.04	0.89
2	0.90	0.04	0.06	0.85
3	0.90	0.02	0.08	0.87
4	0.90	0.02	0.08	0.87
5	0.91	0.04	0.05	0.88
6	0.91	0.04	0.05	0.87
7	0.90	0.04	0.06	0.87
8	0.90	0.05	0.06	0.85
9	0.92	0.03	0.05	0.89
10	0.92	0.04	0.04	0.89
11	0.92	0.04	0.04	0.88
12	0.93	0.03	0.04	0.90

According to Table 5.2, across all grade levels, the accuracy value ranged from .90 (90%) at grades 2-4 and 7-8 to .93 (93%) at grade 12.

The proportion of false positives (i.e., labeling a student as proficient when he or she should be categorized as not proficient) ranged from .02 (2%) at grades 3-4 to .05 (5%) for grade 8. The proportion of false negatives (i.e., labeling a student as not proficient when he or she should be categorized as proficient) ranged from .04 (4%) at grades 1 and 10-12 to .08 (8%) at grades 3-4.

The last column in Table 5.2 reports the proportion of students predicted by the model that would be assigned to the same category (i.e., proficient or not proficient) if an alternate form of the ELPA (with similar content coverage and item difficulty as the actual form) had been administered. These values ranged from .85 (85%) at grades 2 and 8 to .90 (90%) at grade 12.

SECTION 6. CALIBRATION, EQUATING, AND SCALING

In addition to the reporting of raw score summary statistics and item-level statistics computed within the framework of CTT, the items on the ELPA were also analyzed within the framework of IRT. CTT is limited in that examinee characteristics cannot be separated from the test characteristics. Theoretically, IRT overcomes this limitation because of the following (Yen & Fitzpatrick, 2006): (1) *person-free item measurement* (i.e., the stability of an item's parameters across different groups of examinees) and (2) *item-free person measurement* (i.e., the stability of an examinee's trait level across different items for the same construct). These two terms are "exaggerations relative to what is found with real tests, but they do convey the ideals that motivate the use of IRT" (Yen & Fitzpatrick, 2006, p. 113).

The unidimensional Rasch model (Rasch, 1960) for dichotomous items and the unidimensional Partial Credit Model (PCM) (Masters, 1982) for polytomous items were used to calibrate, equate, and scale the Spring 2013 ELPA[27]. The related details are provided below.

6.1 The Unidimensional Rasch and Partial Credit Models

For the unidimensional Rasch model, P_{iv} (the probability that person *v* answers item *i* correctly) is defined as follows (adapted from Wright & Stone, 1979, p. 15):

$$P_{iv} = \frac{e^{\theta_v - \delta_i}}{1+e^{\theta_v - \delta_i}}, \tag{6.1}$$

where θ_v represents person *v*'s ability and δ_i represents item *i*'s difficulty.

Under the unidimensional PCM, the probability that a person *v* with ability θ obtains a score of *x* on item *i* is expressed as follows (adapted from Masters & Wright, 1997, p. 103):

$$P_{ivx}(\theta) = \frac{\exp \sum_{k=0}^{x}(\theta_v - \delta_{ik})}{\sum_{h=0}^{m_i} \exp \sum_{k=0}^{h}(\theta_v - \delta_{ik})}, x = 0, 1, \ldots, m_i, \tag{6.2}$$

where, for notational convenience,

$$\sum_{k=0}^{0}(\theta_v - \delta_{ik}) \equiv 0 \text{ and } \sum_{k=0}^{h}(\theta_v - \delta_{ik}) \equiv \sum_{k=1}^{h}(\theta_v - \delta_{ik}).$$

In Equation (6.2), θ_v is the ability of person *v*, and δ_{ik} is an item parameter governing the probability of scoring k rather than $k-1$ on item *i*. In other words, δ_{ik} parameters represent

[27] An analysis was conducted to confirm the unidimensionality assumption following the 2007 ELPA administration. The results of this analysis were reported in the 2007 ELPA Technical Report. For the purpose of scale consistency, the 2007 scale was maintained in subsequent years. Those interested in obtaining a copy of the 2007 ELPA Technical Report may contact BAA@michigan.gov.

"the relative difficulty of each step" (Embretson & Reise, 2000, p. 106). When $m_i = 1$ (i.e., an item with only two response categories), Equation (6.2) simplifies to Equation (6.1).

Equation (6.1) defines the unidimensional Rasch model, and it expresses the probability of obtaining a correct response given the examinee's ability. The expression of such item response probability is called the *item response function* (IRF). From this equation, it is clear that an item response in the unidimensional Rasch model is assumed to be "governed by the difference between the ability of the person and the difficulty of the item" (Wright & Stone, 1979, p. xiii).

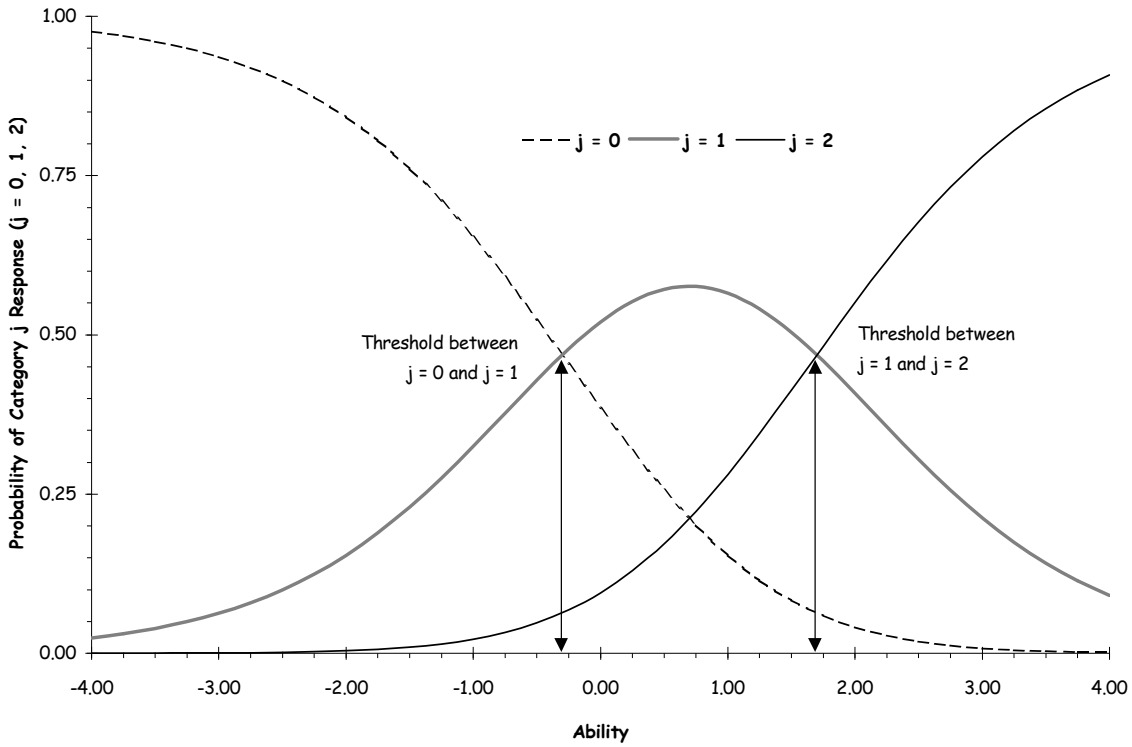
The graphical representation of the IRF is called the *item response curve* (IRC). While the IRF "describes the probability of a given response to an item, the *item characteristic function* (ICF), and its graphical representation, the *item characteristic curve* (ICC), define the expected item score as a function of ability" (Yen & Fitzpatrick, 2006, p. 113). The IRF and the ICF are equal (as are IRC and ICC) for dichotomous items, but are different (and thus cannot be used interchangeably) for polytomous items.

The probability of a correct response in an IRF is bounded by 1 (certainty of a correct response) and 0 (certainty of an incorrect response). The ability scale is, in theory, unbounded. In practice, however, the ability scale usually ranges from - 4 to + 4 logits (log odds) for heterogeneous ability groups.

The unidimensional PCM is a direct extension of the unidimensional Rasch model for ordered response categories (≥ 3 categories). Equation (6.2) defines the unidimensional PCM and expresses the probability of an examinee obtaining a particular score on a specific item.

Thissen and Steinberg (1986) referred to this model as a divide-by-total model because "the probability of responding in a particular category [is] written directly as an exponential divided by a sum of exponentials" (Embretson & Reise, 2000, p. 105). When there are only two response categories (i.e., 0 and 1), Equation (6.2) is equivalent to Equation (6.1). Therefore, the key difference between Equation (6.2) and Equation (6.1) is to assume one or more additional response categories. Suppose that, rather than scoring items as completely wrong or completely right, a category is added. This category represents answers that, though not totally correct, are still clearly not totally incorrect. These relationships are shown in Figure 6.1.

Figure 6.1: Category Response Curves for a Two-Step Item Using the PCM



As shown in Figure 6.1, the category response curve for j=0 represents the probability of observing a score of "0" (completely incorrect) on the item, given an examinee's ability. Those of very low ability (e.g., below -2) are very likely to be in this category and, in fact, are more likely to be in this category than the other two. Those receiving a "1" (partial credit) tend to fall in the middle range of abilities. The category response curve for j=2 represents the probability of observing a score of "2" (completely correct) on the item, given an examinee's ability. Very high-ability people are clearly more likely to be in this category, but there are still some examinees with average or low ability who get full credit on the item.

Similar to that of the unidimensional Rasch model, the separation of item parameters from person measures for the unidimensional PCM "results in sufficient statistics for person ability and step difficulty. For a person's ability the sufficient statistic is the count of the total number of steps the person completes, and for an item's step difficulties the sufficient statistics are counts of the number of persons completing each step" (Masters, 1982, p. 173).

It is important to note that WINSTEPS has a slightly different parameterization of the PCM (see Linacre, 2009, p. 456). Instead of estimating δ_{ik} directly (see Equation (6.2)), WINSTEPS estimates δ_i and F_{ik} where sum $F_{ik} = 0$ and $\delta_{ik} = \delta_i + F_{ik}$. Moreover, δ_i is the mean δ_{ik} of a particular item.

The item difficulty and step difficulty parameters estimated by the unidimensional Rasch model and PCM are provided in Appendix D. Specifically, Appendix D includes the following information for each operational and field test item by assessment level:

- Item ID
- Type (i.e., OP (operational) or FT (field test))
- N-Count (i.e., number of students)
- Rasch Difficulty
- SE of Rasch Difficulty (i.e., standard error of Rasch difficulty)
- INFIT (INFIT mean-square)
- OUTFIT (OUTFIT mean-square)
- Step 1 Value to Step 4 Value (for CR items only) and corresponding SE values

Note that the INFIT and OUTFIT columns report the fit statistics provided by WINSTEPS. Details of these two statistics are provided in Section 7.2.

6.2 Calibration of the Spring 2013 ELPA

A brief outline of the calibration, equating, and scaling procedure for the 2013 ELPA is presented below followed by a more detailed description:

- The 2013 operational items with known calibration values were used as anchor items to calibrate the remaining operational items onto the existing ELPA scale. Specifically, using the initial data file[28] (which included all assessment levels and test forms), operational items with known calibration values were checked for the appropriateness of these values and the remaining operational items (including those that did not qualify as anchor items in 2013 based on the check mentioned above) were calibrated based on these anchor values. The resulting set of item calibration values for all operational items was used to produce raw score to scale score conversion tables for the total test and all domains for each assessment level.

- For each assessment level, after repeating the above stated procedures with the operational items using the final data file, the embedded field test items were then calibrated to the same metric as the operational items with all operational items at that level used as anchor items.

The first step was to verify the anchor status of the specified anchor items in the Spring 2013 ELPA. Files containing the anchor values (or known calibration values) were created for each assessment level so that these items could serve as a reference point for the calibration of the non-anchored operational items. It should be noted that the non-anchored operational items were

[28] Note that starting from the Spring 2011 ELPA administration, the testing window was moved up a week in attempt to (a) standardize the 6-weeks testing window for all participating schools, and (b) include all student in the initial data file for making conversion tables. The initial data file only included public school students who took standard forms and had valid scores in all four domains. A final data file was delivered after the completion of the hand-scoring of field test items. Any students who satisfied the conditions specified above but were not processed in the initial data file were included in the final data file.

selected from previous field test administrations and met the content and statistical criteria for use as operational items.

The items were calibrated for each assessment level with the use of WINSTEPS 3.68.2 (Linacre, 2009). As mentioned above, the initial data file was used to make the conversion tables. In 2013, the initial data file contained more than 99% of the students in the final data file per assessment level[29]. In addition, in 2013 all operational items across forms for each assessment level are in the exact same positions.

All calibration results were verified by Assessment and Evaluation Services (AES) before reporting ro the public. Please refer to Appendix J for details of their verification procedures.

Stability of Anchor Items

There are various methods for evaluating anchor item stability. For the Spring 2013 ELPA, however, anchor item stability was checked in two ways. The first approach used the displacement values from WINSTEPS. Each displacement value indicates the difference between the anchor value and the estimation based on the current data for each item. According to Linacre (2009), if a displacement value is greater than or equal to |.50|, the item should be unanchored.

When conversion tables were created using initial data files, across all five assessment levels, no items were excluded based on the displacement value being greater than or equal to |.50| rule: Table 6.1 presents the number of anchor items included in the calibration (for raw to scale score conversation table creation) for each assessment level.

[29] Due to this fact, a comparison or verification of the raw score to scale score tables using the initial data file and the final data file is not necessary to be included here. In fact, a quick comparison at total test level indicated the same conversion relations for each assessment level.

Table 6.1: Number of Anchor Items by Domain and Assessment Level

Level	Domain	Number of Items		Number of Points		% of Total Points (Anchor/Total)
		Total	Anchor	Total	Anchor	
I	Listening	16	6	16	6	37.50
	Reading	16	8	16	8	50.00
	Writing	13	6	18	8	44.44
	Speaking	6	3	18	10	55.56
	Total	51	23	68	32	47.06
II	Listening	20	10	20	10	50.00
	Reading	20	10	20	10	50.00
	Writing	13	6	20	10	50.00
	Speaking	7	3	20	8	40.00
	Total	60	29	80	38	47.50
III	Listening	20	10	20	10	50.00
	Reading	20	10	20	10	50.00
	Writing	12	5	20	9	45.00
	Speaking	7	3	20	8	40.00
	Total	59	28	80	37	46.25
IV	Listening	20	10	20	10	50.00
	Reading	20	10	20	10	50.00
	Writing	12	5	20	8	40.00
	Speaking	7	3	20	8	40.00
	Total	59	28	80	36	45.00
V	Listening	20	9	20	9	45.00
	Reading	20	9	20	9	45.00
	Writing	13	6	20	9	45.00
	Speaking	7	3	20	8	40.00
	Total	60	27	80	35	43.75

The second approach is an evaluation of anchor (or equating) quality using anchor item response patterns. The rationale for the method described below is to use all possible information about student performance that is shared between the 2012 and 2013 administrations of the ELPA—namely, the item response patterns that appeared in both 2012 and 2013 on all anchor items present in the 2013 administration where the anchor values were from the 2012 administration. The list of anchor items used for these analyses is shown in Appendix K.

The steps used to evaluate the quality of anchor items were as follows:

1. Obtain the item response patterns in both 2012 and 2013 for the anchor items in 2013 where the anchor values were from 2012. Note that only the same response patterns appeared in both years were used for this evaluation.
2. Aggregate upon these item response patterns to obtain the number of unique item response patterns per assessment level as well as the mean scale score (see Section 6.3 for more information on scale scores) for each specific item response pattern in 2012 and 2013.
3. Plot the mean scale score in 2013 against the mean scale score in 2012 by assessment level for each anchor item response pattern.
4. Plot a 45 degree line on that scatter plot (i.e., as the observations plotted should cluster relatively tightly around that line as well as being randomly distributed around that line).

5. Plot the "proficient" cut score on both the vertical and horizontal axes to divide the graph into four quadrants (i.e., item response patterns that were scored proficient in both years, those that were scored proficient in 2012 but not 2013 and vice versa, and those that were scored not proficient in both years).

The final steps in the analysis were to evaluate the degree to which the scatterplot for each assessment level deviates from expectations for good equating (i.e., deviation from tight clustering and random distribution around the 45-degree line) and to evaluate the distribution of item score patterns in the four quadrants by grade[30].

The results of the anchor quality evaluation are presented in Figures 6.2a to 6.2e and in Table 6.2. As shown in Figures 6.2a to 6.2e, the points plotted on the scatterplot for each assessment level tend to lie along the 45-degree line, indicating that the majority of the students who shared the same item response patterns on the anchor set obtained similar mean scale scores (per item response pattern) across the two years. Therefore, these anchor items were considered to be stable across these two years.

The number and percentage of these anchor item response patterns that fell into each of the four quadrants by grade are summarized in Table 6.2. The percentage of response patterns that are associated with consistent performance categorization (based on the mean scale score for each item response pattern) across the two administrations ranged from 73% to 96%. According to this table, the Level I (i.e., kindergarten) had the highest consistency rate (96%), while grade 8 (at Level IV) had the lowest consistency rate of about 73%.

[30] Note that this method would work better if the anchor set under examination is more representative, from both content and psychometric perspectives, for the Spring 2012 and the Spring 2013 overall tests. However, among the five assessment levels, only the Level I anchor set under examination can be considered as somewhat representative across the two years, as only part of the real anchor set is from 2012 for each assessment level, and the rest are from other previous years.

Figure 6.2a: Level I

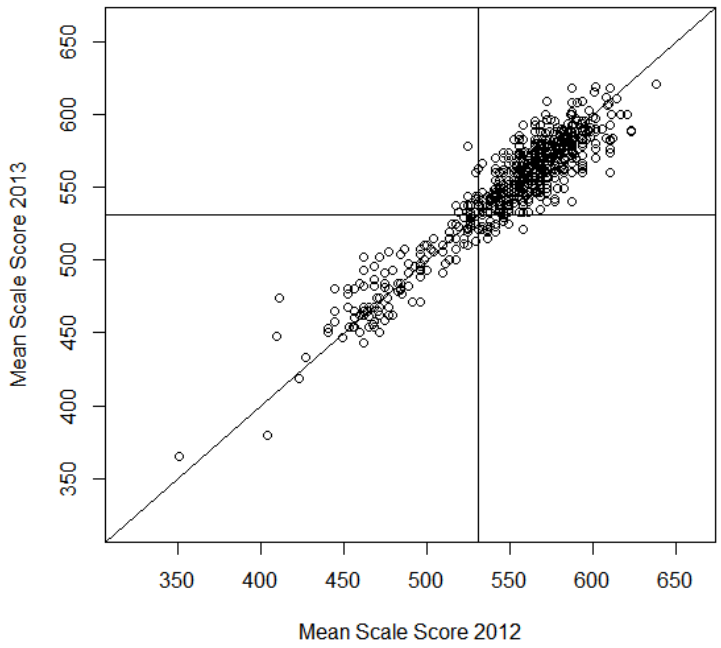


Figure 6.2b: Level II

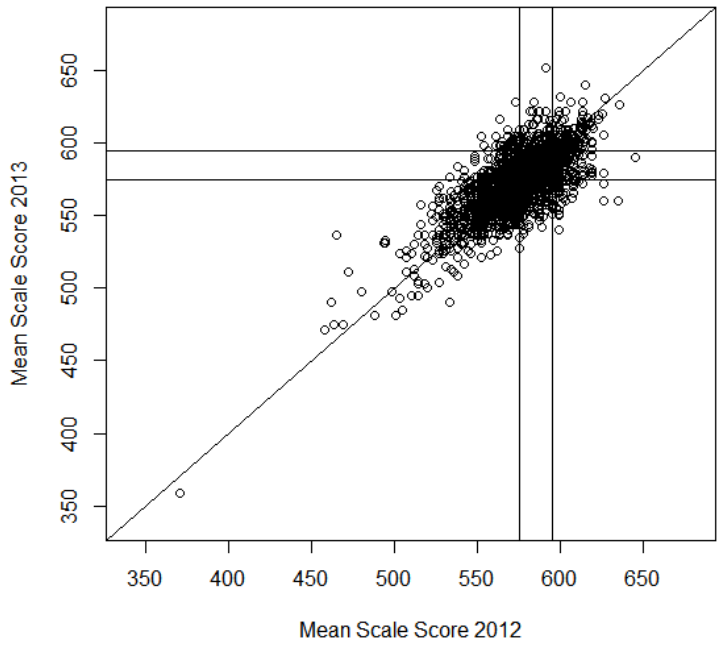


Figure 6.2c: Level III

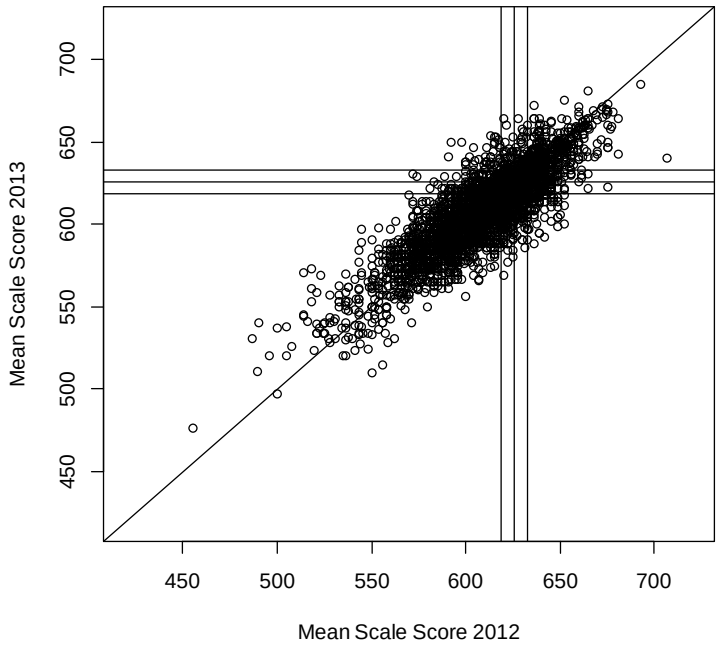


Figure 6.2d: Level IV

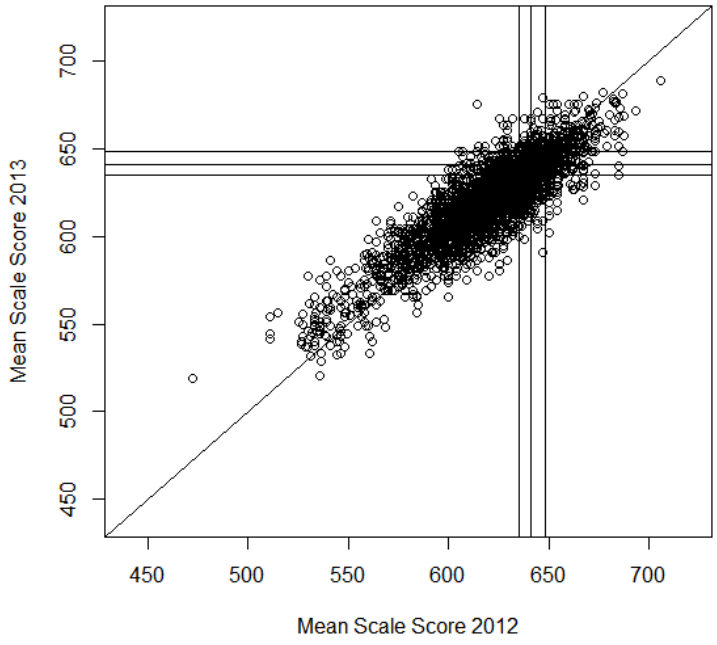


Figure 6.2e: Level V

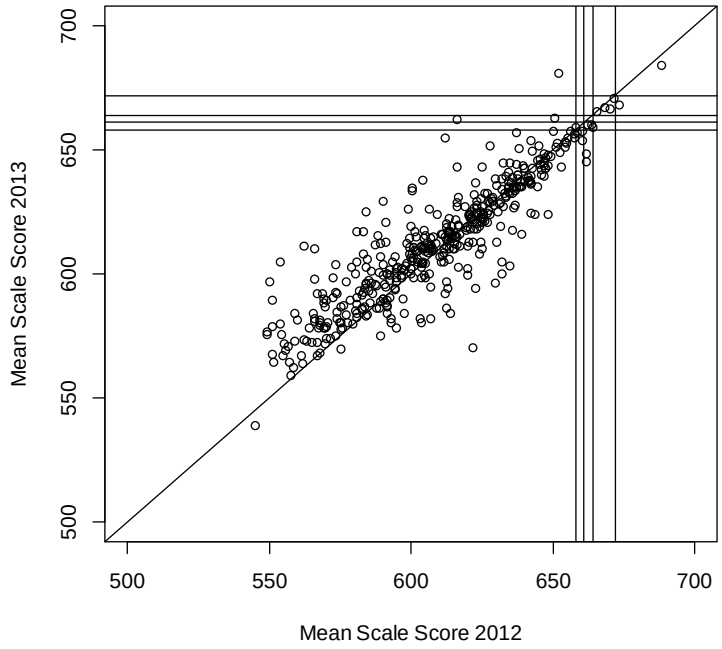


Table 6.2: Evaluation of Equating Quality Using Linking Item Response Patterns

Grade	Item Response Pattern	Proficient in Both Years	Non-Proficient in Both Years	Proficient in 12 Only	Proficient in 13 Only	Summary: Consistent Classification	Summary: Inconsistent Classification
K	count	486	122	19	16	608	35
	%	75.58	18.97	2.95	2.49	94.56	5.44
1	count	325	434	173	108	759	281
	%	31.25	41.73	16.63	10.38	72.98	27.02
2	count	177	441	146	95	618	241
	%	20.61	51.34	17.00	11.06	71.94	28.06
3	count	317	899	160	140	1216	300
	%	20.91	59.30	10.55	9.23	80.21	19.79
4	count	328	506	142	107	834	249
	%	30.29	46.72	13.11	9.88	77.01	22.99
5	count	274	330	102	80	604	182
	%	34.86	41.98	12.98	10.18	76.84	23.16
6	count	204	647	127	84	851	211
	%	19.21	60.92	11.96	7.91	80.13	19.87
7	count	193	529	90	61	722	151
	%	22.11	60.60	10.31	6.99	82.70	17.30
8	count	139	429	96	62	568	158
	%	19.15	59.09	13.22	8.54	78.24	21.76
9	count	7	315	6	5	322	11
	%	2.10	94.59	1.80	1.50	96.70	3.30
10	count	8	285	6	4	293	10
	%	2.64	94.06	1.98	1.32	96.70	3.30
11	count	7	233	2	2	240	4
	%	2.87	95.49	0.82	0.82	98.36	1.64
12	count	2	220	3	0	222	3
	%	0.89	97.78	1.33	0.00	98.67	1.33

6.3 Scale Scores for the ELPA

Once the Spring 2013 ELPA items were calibrated to the existing ELPA scale, the 2013 ELPA raw scores were transformed to scale scores that ranged from 300 to 801 on the total test, and from 30 to 81[31] on each of the domains (i.e., Listening, Reading, Writing, Speaking, and Comprehension).

The ELPA scaling procedure involves linear transformations of the theta (ability) values into scale score points. These transformations do not give more weight to particular domain subtests, and they do not change the rank ordering of students. The performance level classification is also unaffected because the cut scores are defined on the theta metric. Linear transformation constants are utilized[32]. The equations used to establish the total test and each domain scale scores are presented in Table 6.3.

Table 6.3: Scale Score Transformation Equations for Total Test and Domains

Domain	*Equation*
Total Test	31.25 * (theta) + 550
Listening	3.85 * (theta) + 57
Speaking	4.20 * (theta) + 57
Reading	3.75 * (theta) + 55
Writing	4.00 * (theta) + 52
Comprehension	3.55 * (theta) + 56

Appendices E.1.a–E.5.f provide the raw score to scale score conversion tables by assessment level for the total test as well as for the Listening, Reading, Writing, Speaking, and Comprehension domains. Appendix E includes the following information:

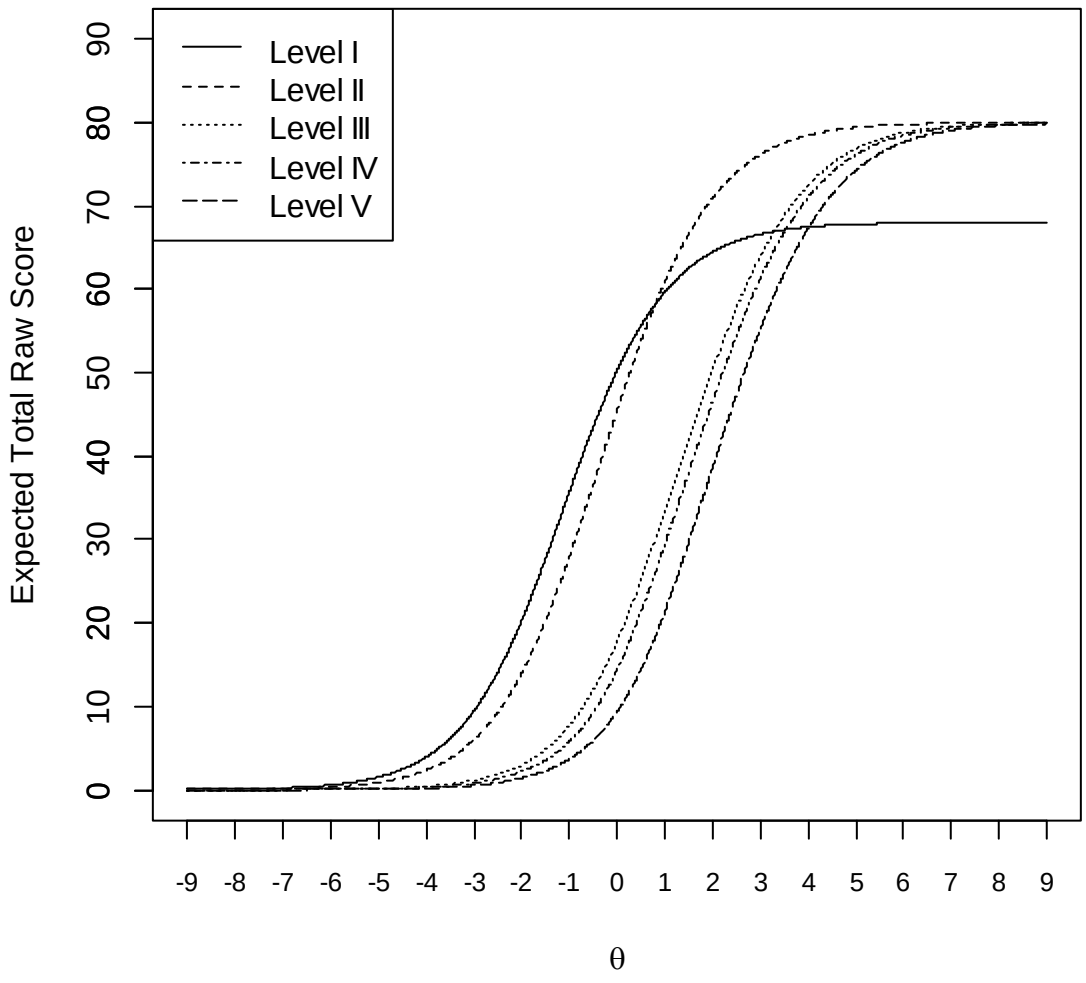
- Raw Score
- Theta (i.e., ability)
- SE (Theta) (i.e., Standard Error of Theta)
- Scale Score
- SE (Scale Score) (i.e., Standard Error of the Scale Score)

6.4 Test Characteristic Curves for the ELPA by Assessment Level

Figure 6.3 displays the test characteristic curves (TCCs) for the Spring 2013 ELPA by assessment level for all students. Each TCC is the graphical expression of the expected raw score on the total test conditioned on ability. Note that only the Rasch model and the PCM were used. Therefore, as shown in Figure 6.3, each score on the total score continuum maps to a unique estimate of a student's ability. Thus, an increase in ability estimates of the examinees corresponds to an increase in their expected total raw scores. Moreover, as shown in Figure 6.3, the relation between an examinee's score and his/her ability estimate is non-linear. In general, the TCCs shift to the right as one progresses to the next higher assessment level, indicating the relative increase in student ability required as one advances through the assessment levels.

[31] Any scale scores outside of these ranges will be truncated to the corresponding end point.
[32] Note that starting with the 2010 administration, a rounding rule was specified to make the theta cut consistently aligned with the scale score cut in classifying students into different performance levels. Interested readers may contact BAA@michigan.gov for more information.

Figure 6.3: ELPA Test Characteristic Curves (TCCs) by Assessment Level



SECTION 7. IRT STATISTICS

7.1 Rasch Statistics

As discussed in Section 6, the unidimensional Rasch model and the unidimensional PCM were used to calibrate the Spring 2013 ELPA items within the framework of IRT. IRT emphasizes the statistical properties of individual items and their unique contributions to a test and so yields statistics that differ from those produced within the framework of CTT (Yen & Fitzpatrick, 2006). A summary of the Rasch difficulty values (i.e., minimum, maximum, and mean) for operational items by assessment level and domain is presented in Table 7.1.

Table 7.1: Summary of Rasch Difficulty Values by Assessment Level and Domain

Level	Domain	Number of Items	Max Points	Minimum Rasch Difficulty	Maximum Rasch Difficulty	Mean Rasch Difficulty
I	Listening	16	16	-3.1602	-0.2516	-1.1706
	Reading	16	16	-2.5036	0.0987	-1.3541
	Writing	13	18	-1.5400	1.1221	-0.7811
	Speaking	6	18	-2.2622	-0.3042	-1.3906
	Comprehension	20	20	-3.1602	0.0987	-1.3565
	Total Test	51	68	-3.1602	1.1221	-1.1547
II	Listening	20	20	-1.8216	1.2241	-0.8639
	Reading	20	20	-1.5749	0.7024	-0.4359
	Writing	13	20	-0.0306	0.9895	0.4763
	Speaking	7	20	-1.3015	0.5011	-0.4026
	Comprehension	30	30	-1.8216	1.2241	-0.6406
	Total Test	60	80	-1.8216	1.2241	-0.3770
III	Listening	20	20	0.2381	2.1597	1.4157
	Reading	20	20	0.9588	2.7404	1.6317
	Writing	12	20	1.2796	2.6970	1.8549
	Speaking	7	20	-0.6534	1.5130	0.5564
	Comprehension	28	28	0.2381	2.7404	1.4864
	Total Test	59	80	-0.6534	2.7404	1.4763
IV	Listening	20	20	0.4993	2.7295	1.6587
	Reading	20	20	1.2341	2.8730	1.9980
	Writing	12	20	1.0250	3.5322	2.0808
	Speaking	7	20	0.1570	1.4265	0.8622
	Comprehension	29	29	0.4993	2.7295	1.8091
	Total Test	59	80	0.1570	3.5322	1.7651
V	Listening	20	20	1.1489	3.5018	2.3493
	Reading	20	20	1.2734	3.2577	2.3863
	Writing	13	20	1.4756	3.1958	2.4829
	Speaking	7	20	0.4338	1.6679	1.2050
	Comprehension	26	26	1.1489	3.2577	2.2894
	Total Test	60	80	0.4338	3.5018	2.2571

Note. Total Test does not include the Comprehension composite.

7.2 Evidence of Model Fit

The assessment of item fit, which is the micro-level model-data fit evaluation, typically involves the comparison of examinees' observed and model predicted performance at the item level (Yen & Fitzpatrick, 2006). WINSTEPS provides two mean-square fit statistics (OUTFIT and INFIT) which indicate the amount of distortion of the measurement system.

The estimation of these two fit statistics begins with the calculation of an expected (predicted) value $\mathrm{E}(\mathrm{X}_{vi})$ which is calculated as follows (adapted from Linacre, 2009, p. 446):

$$\mathrm{E}(\mathrm{X}_{vi}|\theta) = \sum_{j=1}^{m_i} x_{vij} P\left(X_{vi} = x_{vij}\middle|\theta\right) \tag{7.1}$$

and a model variance which is calculated as:

$$V(X_{vi}|\theta) = \sum_{j=1}^{m_i} \left[\left(x_{vij} - \mathrm{E}(X_{vi}|\theta)\right)^2 P(X_{vi} = x_{vij}|\theta)\right]. \tag{7.2}$$

For both Equation (7.1) and (7.2), $P(X_{vi} = x_{vij} \mid \theta)$ is equivalent to Equation (6.1) for dichotomous items and Equation (6.2) for polytomous items. Note that when there are only two response categories for an item, Equation (6.2) (i.e., the unidimensional PCM) simplifies to the unidimensional Rasch model.

Next, a response residual (Y_{vi}) for each person *v* for each item *i* is calculated. The residual indicates how far an observed response (X_{vi}) deviates from the model expectations ($\mathrm{E}(\mathrm{X}_{vi})$) and is computed as follows (adapted from Linacre, 2009, p. 446):

$$\mathrm{Y}_{vi} = \mathrm{X}_{vi} - \mathrm{E}(\mathrm{x}_{vi}) \tag{7.3}$$

The OUTFIT mean-square and INFIT mean-square are then computed as follows (adapted from Linacre, 2009, p. 446):

$$\text{OUTFIT mean-square} = \frac{\sum_{i=1}^{N} Y_{vi}^2 / V(X_{vi})}{N}, \tag{7.4}$$

and

$$\text{INFIT mean-square} = \frac{\sum_{i=1}^{N} Y_{vi}^2}{\sum_{i=1}^{N} V(X_{vi})} \tag{7.5}$$

The OUTFIT mean-square for each item is in fact the unweighted average of the sum of squared standardized residuals[33], and thus is more sensitive to outliers or unexpected observations on items far from a person's ability level (i.e., a large logit difference between item difficulty and person ability). Under the unidimensional Rasch model or PCM, such outlying responses can

[33] The concept of standardized residual is clear when Equation (7.3) is inserted into Equation (7.4): $\frac{Y_{vi}^2}{V(X_{vi})} = \frac{(X_{vi} - E(X_{vi}))^2}{V(X_{vi})} = \left(\frac{X_{vi} - E(X_{vi})}{\sqrt{V(X_{vi})}}\right)^2$.

often be "lucky guesses and careless mistakes, so these outlying characteristics of respondent behavior can make a 'good' item look 'bad'" (Linacre, 2009, p. 445). To diminish the effect of off-target responses, more attention is often directed towards evaluating the INFIT statistic (Bond & Fox, 2007).

INFIT is in fact a weighted standardized residual. The weights are applied to down-weight the outliers and put more emphasis on the "response string close to the item difficulty (or person ability)" (Linacre, 2009, p. 445). Specifically, the squared residuals are weighted by their model variance ($V(X_{vi})$) to reduce the influence of less informative, off-target responses.

In general, mean-squares are expected to be close to 1.0 when the data fit the model (Smith, 2004). According to Linacre (2009), values less than 1.0 indicate model over-fitting (i.e., predicts the data too well), while values greater than 1.0 indicate model under-fitting (i.e., cannot predict the data well). Linacre (2009) provides some general guidelines for evaluating mean-square fit statistics (see Table 7.2).

Table 7.2: General Criteria to Evaluate Mean-Square Fit Statistics

Mean-Square Value	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	Less productive for measurement, but not degrading. May produce misleadingly good reliabilities and separations

Note. Adapted from Linacre (2009, p. 444).

Besides INFIT and OUTFIT mean-square values, INFIT and OUTFIT can also be reported in a Z-Standardized format. The Z-standardized values are *t*-tests of the hypotheses about whether the data fit the model (perfectly). According to Linacre (2009), mean-squares are not sample size dependent but Z-standardized values are. Therefore, only the INFIT and OUTFIT mean-squares were examined and reported for the Spring 2013 ELPA administration.

Various IRT statistics for each item including OUTFIT and INFIT are presented in Appendix D. Details of Appendix D can be found at the end of Section 6.1.

As shown in Appendix D, the majority of the items were in the productive range (i.e., between 0.5 and 1.5) when judged on both INFIT and OUTFIT mean-square values. A few operational items (i.e., 1 at Level 1 and 1 at Level II) had OUTFIT mean-square values greater than 1.5. In addition, a few field test items (e.g., 4 at Level II, 2 at Level IV, and 2 at Level V) had OUTFIT mean-square values outside of the productive range of 0.5 to 1.5. Though unproductive for the construction of measurement, majority of these items were deemed to not degrade the measurement system. Across all assessment levels, only 2 field test item at Level II and 1 field test item at Level IV were flagged as distorting or degrading the measurement system (i.e., > 2.0 logits).

7.3 Item Information

The item information function, $I_i(\theta)$, represents the information provided by a specific item *i* across the range of θ. Items that provide the most information at the cuts should be considered for inclusion in form building. The information provided by item *i* at any point on the latent trait (theta) scale under the unidimensional Rasch model is defined mathematically as follows (Yen & Fitzpatrick, 2006, p. 127):

$$I_i(\theta) = Q_i(\theta)P_i(\theta), \tag{7.6}$$

where $P_i(\theta)$ is the probability of a correct response on item *i* (see Equation (6.1) for the mathematical formula), and $Q_i(\theta)$ is the probability of an incorrect response or $1 - P_i(\theta)$.

The information provided by item *i* under the unidimensional PCM is computed as follows (de Ayala, 2009, p. 200):

$$I_i(\theta) = \sum_{k=0}^{m_i} k^2 P_{xi} - \left[\sum_{k=0}^{m_i} kP_{xi}\right]^2, \tag{7.7}$$

where P_{xi} (see Equation (6.2) for the mathematical formula) is the probability that a person with ability θ will score x on item *i*, where x has possible score of each k value which ranges from 0 to m_i.

Appendix F provides the following item information for the operational items at each of the four cut scores[34] by grade:

- Item ID
- Item Information at Low Intermediate Cut
- Item Information at High Intermediate Cut
- Item Information at Proficient Cut
- Item Information at Advanced Proficient Cut

[34] For information on the standard setting and cut scores for each performance level, please contact BAA@michigan.gov.

SECTION 8. VALIDITY

In the broadest sense, a test or instrument is valid if it measures what it was intended to measure (Nunnally, 1978). As stated in *Standards for Educational and Psychological Testing*, "validation involves accumulating evidence to provide a sound scientific basis for the proposed score interpretations" (AERA, APA, NCME, 1999, p. 9). Validity is thus a property of the interpretations or uses of a particular test and not of the test itself. Test validation is a continuous process that begins during test construction and continues for the duration of a test's use.

The ELPA was constructed to adhere to the validity-related standards set forth in *Standards for Educational and Psychological Testing*. The following sources of evidence can be used to evaluate the validity of the proposed interpretations and use of the ELPA scores (AERA et al., 1999):

- Test content—"relationship between a test's content and the construct it is intended to measure" (p. 11)
- Internal structure—"the degree to which the relationships among test items and test components conform to the construct on which the proposed test score interpretations are based" (p. 13)
- Relationships to other variables—"relationship of test scores to variables external to the test" (p. 13)

8.1 Validity Evidence of the ELPA Test Content

Evidence of validity based on test content is revealed by the extent to which the test material represents an adequate sampling of the skills and knowledge underlying the overall construct being measured. The ELPA was developed to measure the level of English language proficiency demonstrated by ELL students and to gauge whether students possess the requisite English language skills needed to participate effectively in Michigan classrooms. The specific English language skills to be assessed by the test (i.e., Listening, Reading, Writing, Speaking, and Comprehension) are identified in the related Michigan English Language Proficiency Standards.

Relation between ELPA and Michigan English Language Proficiency (ELP) Standards

As discussed in *Standards for Educational and Psychological Testing* (AERA et al., 1999), expert judgments about the relationship between the test content and the intended assessment construct provide evidence of test content validity.

For the 2012-2013 administration cycle, BAA assembled an ELPA content committee referred to as the Content Advisory Committee (CAC). This committee was composed of Michigan educators and members of the Michigan ELL community to serve as content experts. These experts were selected based on a combination of the following criteria established by BAA:

- Information contained in the ELPA Educator Committee Application Form (e.g., gender, ethnicity, education, teaching experience, grade levels taught, location of school, and current role as an educator)
- Additional information provided by phone interviews with the applicants
- Recommendations made by experienced ELL administrators in the field
- Prior committee experience
- Knowledge gained from interactions with committee members both in the actual committee sessions as well as other ELL related meetings and conferences sponsored by BAA or meetings that BAA was invited to attend

BAA relied heavily on the first three criteria listed above when selecting new committee members to participate in the committee. The last two criteria were more important for selecting veteran committee members.

The CAC session was held in August after the items had been written. The CAC committee members were given two tasks. First, they were asked to review the content of the Michigan ELPA newly written stand-alone MC and CR items, as well as passage based MC items. Second, they were asked to verify that each item was aligned with the appropriate individual Michigan ELP standard.

In order to accomplish the first task, CAC members used their field expertise as well as other resources to guide them in their content review of items. These resources included:

- Michigan's K-8 Grade Level Content Expectations (GLCEs) and High School Content Expectations (HSCEs)
- Education Development Laboratory (EDL) Core Vocabularies in Reading, Mathematics, Science, and Social Studies
- Flesch-Kincaid Readability tests which were designed to indicate comprehension difficulty when reading a passage of contemporary academic English. (There are two tests involved: the Flesch Reading Ease, and the Flesch–Kincaid Grade Level Test.)
- ELPA Item Format Descriptions
- ELPA Style Guide
- ELPA Item Content Checklist designed by the BAA development team
- Copies of the previous year's spring ELPA materials including all test booklets and Test Administrator Manuals

In order to accomplish the second task, the CAC members systematically examined the items against the Michigan ELP Standards. Members examined each assessment level and verified that the ELPA items accurately measured or aligned to a specific ELP standard. Only those items that were appropriately aligned to a specific ELP standard (see the following URL: http://www.michigan.gov/documents/English_Language_Proficiency_K-12_Standards_103705_7.pdf for the "English Language Proficiency Standards for K-12 Schools") were considered as possible field test items.

Taken together, the rigorous scrutiny of the item development process and the alignment of items to particular ELP standards provide evidence for the content validity of the Spring 2013 ELPA.

Validity of the Presentation of the Listening Stimulus

Another important source of evidence for the content validity of the ELPA test concerns the extent to which the presentation of the stimulus to the test taker is appropriate for the construct being measured. This issue is particularly important for the Listening domain because items in the Listening domain are not exclusively presented in an oral format. In other words, the text of the question that the administrator reads to the students is also printed out in the test booklet.

The items for each Listening passage are printed in the test booklet in order to preserve the construct being measured. The purpose of each Listening item is to assess whether or not a student can accurately respond to the item based on what he or she hears when the prompt is read, not whether they can understand the individual item options. Stated differently, a barrier preventing an accurate response is removed when the answer options and item stems appear in the test booklet.

The Listening prompts, however, which are the true basis of the assessment, are not printed in the test booklet. If the Listening passages appeared in print, the domain being assessed would be transformed into Reading, as students would simply read while hearing an aural version of the passage in the background. Instead, a line-art graphic is included in the booklet to enhance the overall comprehension of the main topic of the passage without providing any clues for the Listening items. Such a design increases the chance that the students will respond to the item based on what they hear in the prompt. This is because they won't be distracted by the additional challenge of having to listen to the item stem and its options, and keeping all of these in short-term memory while simultaneously trying to recall information of the prompt. Thus, this design preserves the Listening construct being measured.

8.2 Validity Evidence of the Internal Structure of the ELPA

In order to investigate the ELPA's internal structure, Pearson product-moment correlations (*r*) were calculated among each of the five ELPA domains (i.e., Listening, Reading, Writing, Speaking, and Comprehension) and between the domains and the ELPA total score[35]. The purpose of calculating these correlations was to examine the degree to which the domains were related to each other and the degree to which each domain was related to the total score. The direction and magnitude of these correlations provide validity evidence for the internal structure of the test. In particular, strong positive correlations provide more evidence for the validity of the internal structure than weaker or negative correlations. In order to account for measurement error, the correction for attenuation ($\bar{r}$; see Nunnally, 1978) was also computed for each correlation. The correction for attenuation is computed as follows (Nunnally, 1978, p. 237):

$$\bar{r}_{12} = \frac{r_{12}}{\sqrt{r_{11}r_{22}}}, \tag{8.1}$$

where r_{12} represents the uncorrected correlation coefficient and r_{11} and r_{22} are the reliability coefficients (the Cronbach's alpha reliability coefficients as reported in this report). Table 8.1 reports both the Pearson product-moment correlation coefficients (below the diagonal) and the

[35] Note that raw scores were used for this calculation.

disattenuated correlation coefficients (above the diagonal), as well as the reliability coefficients for each domain and the total test (on the diagonal).

The correlations between Listening and the ELPA total score were relatively high across grades. These correlations ranged from 0.79 for grade 1 to 0.86 for grades 8, 10, and 11 ($\bar{r}s$ ranged from 0.95 for grade 2 to 1.02 for grades 6 and 9-12[36]). Similar correlations were observed between Reading and the ELPA total score; these correlations ranged from 0.84 for grade 6 to 0.88 at grade 5 ($\bar{r}s$ ranged from 0.97 for grades 1, 9, and 10, to 1.01 for kindergarten, grade 3 and grade 6). The correlations between Writing and the ELPA total score ranged from 0.82 for grades 3 and 6 to 0.88 at grade 9 ($\bar{r}s$ ranged from 0.99 for grade 2 to 1.05 for grades 9-11). For Speaking, the correlations with the ELPA total score ranged from 0.73 at grades 3 and 12 to 0.81 for grade 9 ($\bar{r}s$ ranged from 0.81 for grades 11 and 12 to 0.90 for kindergarten). The correlations between Comprehension and the ELPA total score ranged from 0.86 at kindergarten to 0.91 at grades 1, 3, 4, 5, and 8 ($\bar{r}s$ ranged from 1.02 for grades 9-12 to 1.05 for grade 6).

In looking at the correlations among the domains themselves[37], there is some evidence of a pattern across grade levels. For 7 of the 13 grades (i.e., K-4, 7 and 11), the highest correlations were observed between Reading and Writing. These correlations ranged from 0.65 for grade 3 to 0.77 for kindergarten ($\bar{r}s$ ranged from 0.85 for grade 3 to 0.96 for kindergarten). For grades 3 to 12, the highest correlations were observed between Listening and Reading[38] (rs ranged from 0.65 for grades 3 and 6 to 0.71 for grade 11; $\bar{r}s$ ranged from 0.83 for grade 3 to 0.90 for grades 9 and 11).

For 12 out of 13 grades, the lowest correlations were observed between Reading and Speaking (rs ranged from 0.44 for grades 6, 11, and 12 to 0.50 for kindergarten; $\bar{r}s$ ranged from 0.51 for grade 12 to 0.62 for kindergarten and grade 5). For 2 out of 13 grades, the lowest correlations were observed between Writing and Speaking[39] (rs ranged from 0.49 for grade 2 to 0.52 for grade 5; $\bar{r}s$ ranged from 0.60 for grade 2 to 0.65 for grade 5).

Because the Comprehension domain is a composite of selected Listening and Reading items, the correlations between Comprehension and Listening and between Comprehension and Reading are not informative with regard to internal structure. Therefore, these correlations are not discussed here. However, in looking at the correlations between Comprehension and Writing (rs ranged from 0.63 for grade 6 to 0.72 for grade 11; $\bar{r}$ ranged from 0.83 for grade 2 to 0.91 for grades 10-11) and Comprehension and Speaking (rs ranged from 0.46 for grade 12 to 0.60 for grade 2; $\bar{r}s$ ranged from 0.54 for grade 12 to 0.70 for grade 2), we see correlations similar in magnitude to those that were observed among the other domains.

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[36] Note that disattenuated correlations greater than 1.0 are theoretically impossible because it implies that valid variance would exceed obtained variance (Muchinsky, 1996). It is possible, however, to obtain a coefficient greater than 1.0 using the Equation (8.1) when the uncorrected correlation coefficient is high and the reliability coefficients are low.

[37] Comprehension was excluded from this investigation, as it is composed of selected items from the Listening and Reading domains. High correlations between Comprehension and each of those two domains are thus expected.

[38] For grades 3, 4, 7, and 11, the uncorrected correlations were the same (after rounding to the second decimal place) between Reading and Writing, as well as between Listening and Reading.

[39] For grade 5, the uncorrected correlations were the same (after rounding to the second decimal place) between Reading and Speaking, as well as between Writing and Reading.

Adjusted item-total correlations also provide validity evidence for the internal structure of an assessment. Because an English language proficiency test should be able to detect performance and proficiency differences among students, it is important to examine how well each item functions consistently with the overall intent of the test. As first introduced in Section 4.1, adjusted item-total correlation coefficients reveal how well an item discriminates between high- and low-achieving students. These statistics are presented in Appendices B.1 to B.10. As indicated in Table 2.3, items were flagged for further review if the correlation was less than 0.20. There were 2 OP items and 3 FT item at Level I, 2 OP items and 4 FT items at Level II, 4 FT item at Level III, 2 OP items and 3 FT items at Level IV, and 3 OP items and 3 FT item at Level V found to be below this criterion. There were no items below this criterion at Level III.

As previously mentioned, the unidimensional Rasch model and the unidimensional PCM were used to fit the data. The fit statistics reported in this technical report (i.e., INFIT and OUTFIT mean-squares) help to determine whether the data fit the model. According to Linacre (2009), high INFIT mean-squares are a bigger threat to validity than high OUTFIT mean-squares, as high INFIT mean-squares "indicate that the items are mis-performing for the people on whom the items are targeted" (p. 439). Based on the results shown in Appendix D, no such validity threat was found with the spring 2013 ELPA data.

Table 8.1: Correlations among the ELPA Domains and Total Test by Grade

		Correlation Coefficient					
Grade	**Domain**	**Listening**	**Reading**	**Writing**	**Speaking**	**Comprehension**	**Total Test**
K	Listening	(0.73)	0.80	0.74	0.67	1.23	0.97
	Reading	0.61	(0.78)	0.96	0.62	1.02	1.01
	Writing	0.57	0.77	(0.82)	0.61	0.85	1.00
	Speaking	0.53	0.50	0.51	(0.85)	0.69	0.90
	Comprehension	0.92	0.78	0.67	0.56	(0.75)	1.04
	Total Test	0.80	0.86	0.87	0.79	0.86	(0.92)
1	Listening	(0.75)	0.71	0.71	0.68	1.11	0.96
	Reading	0.56	(0.84)	0.90	0.53	1.03	0.97
	Writing	0.53	0.72	(0.76)	0.57	0.86	1.00
	Speaking	0.55	0.45	0.46	(0.87)	0.65	0.86
	Comprehension	0.87	0.86	0.68	0.55	(0.83)	1.04
	Total Test	0.79	0.85	0.83	0.77	0.91	(0.92)
2	Listening	(0.75)	0.75	0.70	0.72	1.12	0.95
	Reading	0.60	(0.84)	0.88	0.61	1.04	0.98
	Writing	0.54	0.72	(0.79)	0.60	0.83	0.99
	Speaking	0.57	0.52	0.49	(0.86)	0.70	0.89
	Comprehension	0.89	0.87	0.68	0.60	(0.84)	1.03
	Total Test	0.80	0.86	0.85	0.79	0.90	(0.92)
3	Listening	(0.76)	0.83	0.76	0.60	1.15	1.00
	Reading	0.65	(0.80)	0.85	0.55	1.05	1.01
	Writing	0.57	0.65	(0.73)	0.60	0.84	1.00
	Speaking	0.48	0.45	0.47	(0.84)	0.59	0.84
	Comprehension	0.91	0.86	0.65	0.49	(0.82)	1.04
	Total Test	0.84	0.86	0.82	0.73	0.91	(0.91)
4	Listening	(0.78)	0.85	0.77	0.64	1.14	1.00
	Reading	0.68	(0.83)	0.86	0.57	1.05	1.00
	Writing	0.59	0.68	(0.75)	0.62	0.85	1.00
	Speaking	0.52	0.48	0.49	(0.84)	0.62	0.84
	Comprehension	0.92	0.87	0.67	0.52	(0.84)	1.04
	Total Test	0.85	0.87	0.83	0.74	0.91	(0.92)
5	Listening	(0.79)	0.85	0.78	0.67	1.13	1.00
	Reading	0.69	(0.84)	0.85	0.62	1.04	1.00
	Writing	0.60	0.67	(0.75)	0.65	0.84	1.00
	Speaking	0.55	0.52	0.52	(0.85)	0.65	0.86
	Comprehension	0.92	0.87	0.67	0.55	(0.85)	1.03
	Total Test	0.85	0.88	0.84	0.77	0.91	(0.92)
6	Listening	(0.73)	0.87	0.78	0.63	1.20	1.02
	Reading	0.65	(0.77)	0.86	0.53	1.08	1.01
	Writing	0.56	0.64	(0.71)	0.64	0.84	1.02
	Speaking	0.50	0.44	0.51	(0.89)	0.60	0.85
	Comprehension	0.92	0.85	0.63	0.50	(0.79)	1.05
	Total Test	0.83	0.84	0.82	0.76	0.89	(0.91)

Table 8.1: Correlations among the ELPA Domains and Total Test by Grade (Continued)

		Correlation Coefficient					
Grade	**Domain**	**Listening**	**Reading**	**Writing**	**Speaking**	**Comprehension**	**Total Test**
7	Listening	(0.76)	0.86	0.81	0.65	1.17	1.01
	Reading	0.67	(0.80)	0.87	0.54	1.06	0.99
	Writing	0.60	0.67	(0.74)	0.65	0.86	1.02
	Speaking	0.53	0.46	0.53	(0.89)	0.62	0.85
	Comprehension	0.92	0.86	0.67	0.53	(0.82)	1.04
	Total Test	0.84	0.85	0.84	0.77	0.90	(0.92)
8	Listening	(0.78)	0.88	0.80	0.66	1.15	1.01
	Reading	0.70	(0.81)	0.86	0.55	1.06	0.99
	Writing	0.61	0.67	(0.74)	0.64	0.84	1.01
	Speaking	0.55	0.47	0.52	(0.90)	0.63	0.85
	Comprehension	0.93	0.88	0.66	0.54	(0.83)	1.03
	Total Test	0.86	0.86	0.83	0.77	0.91	(0.92)
9	Listening	(0.75)	0.90	0.89	0.66	1.16	1.02
	Reading	0.70	(0.81)	0.88	0.56	1.07	0.97
	Writing	0.68	0.69	(0.76)	0.76	0.90	1.05
	Speaking	0.55	0.48	0.63	(0.92)	0.63	0.87
	Comprehension	0.90	0.87	0.71	0.54	(0.81)	1.02
	Total Test	0.85	0.85	0.88	0.81	0.88	(0.93)
10	Listening	(0.76)	0.88	0.89	0.65	1.14	1.02
	Reading	0.70	(0.82)	0.87	0.53	1.07	0.97
	Writing	0.67	0.68	(0.75)	0.73	0.91	1.05
	Speaking	0.54	0.46	0.60	(0.91)	0.60	0.85
	Comprehension	0.90	0.87	0.71	0.52	(0.81)	1.02
	Total Test	0.86	0.85	0.87	0.78	0.89	(0.93)
11	Listening	(0.77)	0.90	0.88	0.59	1.14	1.02
	Reading	0.71	(0.82)	0.90	0.52	1.06	0.99
	Writing	0.67	0.71	(0.76)	0.67	0.91	1.05
	Speaking	0.49	0.44	0.55	(0.89)	0.56	0.81
	Comprehension	0.91	0.88	0.72	0.48	(0.82)	1.02
	Total Test	0.86	0.87	0.87	0.74	0.89	(0.92)
12	Listening	(0.75)	0.87	0.86	0.58	1.14	1.02
	Reading	0.69	(0.83)	0.86	0.51	1.06	0.99
	Writing	0.64	0.68	(0.74)	0.64	0.87	1.03
	Speaking	0.48	0.44	0.52	(0.90)	0.54	0.81
	Comprehension	0.90	0.88	0.68	0.46	(0.82)	1.02
	Total Test	0.85	0.86	0.86	0.73	0.89	(0.92)

Note. 1. Comprehension consists of items selected from the Listening and Reading domains.
2. Total Test does not include the Comprehension composite.
3. The disattenuated correlation coefficients are presented above the diagonal, and the Pearson product-moment correlations are presented below the diagonal.
4. The reliability coefficients for each test are presented on the diagonal.

8.3. Validity Evidence of the External Structure of the ELPA

An examination of the relationship of the ELPA total score to other external variables provides another source of validity evidence. As indicated in *Standards for Educational and Psychological Testing,* "evidence based on relationships with other variables addresses questions about the degree to which these relationships are consistent with the construct underlying the proposed test interpretations" (AERA et al., 1999, p. 13). Correlations between theoretically similar constructs should generally be "high" while correlations between theoretically dissimilar constructs should be relatively "low." Analyses that investigate the relation between theoretically similar constructs provide evidence of convergent validity while analyses of supposedly different constructs provide evidence of discriminant validity.

In order to ascertain the convergent and discriminant validity of the ELPA vis-à-vis an external criterion, grades 3–8 ELLs' performance on the Spring 2013 ELPA were compared to their performance on the Fall 2012 Michigan Educational Assessment Program (MEAP). Similarly, grade 11 ELLs' performance on the Spring 2013 ELPA were compared to their performance on the Spring 2013 Michigan Merit Examination (MME).

Relation between the ELPA and the MEAP Subject Tests

In Michigan, all ELL students, except those who have been in U.S. schools for 12 months or less[40], are required to take both the MEAP and the ELPA. The MEAP is a statewide assessment and the Fall 2012 MEAP is composed of the following subject tests: Mathematics, Reading, Writing, Science, and Social Studies. The MEAP assessment is an important measure of student learning and school success for the state of Michigan.

By contrast, the purpose of the ELPA is to measure ELLs' English language ability. Scores on the ELPA may be used to aid in placement decisions for students for whom English is a non-native language. It is expected that ELLs who score proficient on the ELPA will be able to function successfully in mainstream education programs and have the same chance as their English proficient counterparts to pass the required state examinations. Given that the ELPA and the MEAP Reading and Writing tests assess similar constructs, students who perform well on the ELPA should generally perform well on the MEAP Reading and Writing tests. The existence of such a relationship provides evidence of convergent validity.

Overall performance on the ELPA will also likely be related to students' performance on the other MEAP subject tests (i.e., Math, Science, and Social Studies) as students who are more proficient in English language are likely to be more successful in the classroom than their less proficient peers. However, given that the items assessing these subject areas assess different (but related) types of skills, the relationship may not be as strong as that between the ELPA and the MEAP Reading and Writing tests. The existence of such a pattern provides evidence of discriminant validity.

[40] Students who have been in U.S. schools for 12 months or less are exempt from the MEAP Reading and Writing tests, but are required to take all other subject tests. Students who have been in U.S. schools for more than 12 months are required to take all subject tests.

Table 8.2 provides the correlations between the ELPA total scale score and the individual scale scores across MEAP subject tests (e.g., Reading, Writing, Math, Science, and Social Studies) for grades 3 through 8. These analyses were conducted after removing all duplicate records from the final data file. Moreover, only cases that had valid data across all MEAP subject tests were included in the analyses. The Pearson product-moment correlation coefficients are presented below the diagonal in Table 8.2, the disattenuated correlation coefficients are presented above the diagonal, and the reliability coefficients are presented on the diagonal.

Table 8.2 indicates that the ELPA total scale score had a strong linear relationship with the MEAP Reading scale score (i.e., rs ranged from 0.65 to 0.72; $\bar{r}$s ranged from 0.74 to 0.82). These correlations were positive and moderately high across all grade levels. Thus, higher scores on the ELPA were associated with higher scores on the MEAP Reading test for each of the six grade levels. A similar relationship was observed between the ELPA total scale score and the MEAP Writing scale score (i.e., rs ranged from 0.63 to 0.67; $\bar{r}$s ranged from 0.71 to 0.76). The ELPA was also linearly related to the other MEAP subject tests (i.e., Math, Science, and Social Studies), although these correlations were not as strong as those between the ELPA and the MEAP Reading or Writing test. Specifically, correlations between the ELPA and the other MEAP subject tests were as follows: rs ranged from 0.48 to 0.66; $\bar{r}$s ranged from 0.53 to 0.73.

Table 8.2: Correlations among the ELPA Total Scale Score and the MEAP Subject Test Scale Scores by Grade

Grade	Test	Correlation Coefficient					
		ELPA	MEAP Reading	MEAP Writing	MEAP Math	MEAP Science	MEAP Social Studies
3	ELPA	(0.91)	0.82	NA	0.73	NA	NA
	MEAP Reading	0.72	(0.85)	NA	0.69	NA	NA
N = 6648	MEAP Math	0.66	0.61	NA	(0.91)	NA	NA
4	ELPA	(0.92)	0.76	0.71	0.69	NA	NA
	MEAP Reading	0.67	(0.85)	0.71	0.67	NA	NA
N = 5494	MEAP Writing	0.63	0.60	(0.86)	0.63	NA	NA
	MEAP Math	0.63	0.59	0.56	(0.91)	NA	NA
5	ELPA	(0.92)	0.74	NA	0.60	0.68	NA
	MEAP Reading	0.65	(0.86)	NA	0.57	0.73	NA
N = 4807	MEAP Math	0.55	0.51	NA	(0.92)	0.68	NA
	MEAP Science	0.61	0.63	NA	0.61	(0.86)	NA
6	ELPA	(0.91)	0.80	NA	0.55	NA	0.72
	MEAP Reading	0.71	(0.85)	NA	0.57	NA	0.74
N = 4064	MEAP Math	0.51	0.50	NA	(0.92)	NA	0.61
	MEAP Soc. Studies	0.63	0.62	NA	0.54	NA	(0.84)
7	ELPA	(0.92)	0.78	0.76	0.58	NA	NA
	MEAP Reading	0.69	(0.86)	0.73	0.60	NA	NA
N = 3588	MEAP Writing	0.67	0.62	(0.85)	0.60	NA	NA
	MEAP Math	0.53	0.53	0.53	(0.93)	NA	NA
8	ELPA	(0.92)	0.78	NA	0.53	0.64	NA
	MEAP Reading	0.68	(0.83)	NA	0.56	0.72	NA
	MEAP Math	0.48	0.49	NA	(0.90)	0.65	NA
N = 3474	MEAP Science	0.57	0.61	NA	0.57	(0.87)	NA

Note. 1. NA indicates that a particular subject test was not administered at that grade level.
2. The disattenuated correlation coefficients are presented above the diagonal, and the Pearson product-moment correlations are presented below the diagonal.
3. The reliability coefficients for each test are presented on the diagonal. The reliabilities for MEAP subject tests were reported by each form and the number that appeared most frequently across forms is reported and used for the computation of disattenuated correlation coefficients.

Relation between the ELPA and the MME Subject Tests

The MME is a statewide assessment for students in grade 11 and eligible students in grade 12[41]. In addition to the two ACT assessments, the ACT Plus Writing exam and WorkKeys job skills assessments, the MME also includes Michigan-developed component to assess standards not covered by the ACT assessments for mathematics, science, and social studies. Scores for the following subject tests are computed: Reading, Writing, Math, Science, and Social Studies. Because the ELPA and the MME Reading and MME Writing tests assess similar constructs, they should be more strongly related to each other than to other subject tests (i.e., Math, Science, and Social Studies).

Table 8.3 provides the correlations between the ELPA total scale score and the individual MME subject test scale scores for Reading, Writing, Math, Science, and Social Studies. Similar to Table 8.2, the Pearson product-moment correlation coefficients are presented below the diagonal in Table 8.3, the disattenuated correlation coefficients are presented above the diagonal, and the reliability coefficients are presented on the diagonal.

The ELPA total scale score was found to have the strongest linear relation with the MME Reading and Writing scale scores (*rs* = 0.65 and 0.66, respectively; $\bar{r}$s= 0.74 and 0.73, respectively), providing evidence for convergent validity. The ELPA scale score was only moderately related to the other MME subject test scale scores (i.e., Math, Science, and Social Studies), providing evidence of discriminant validity (*r*s ranged from 0.43 to 0.55; $\bar{r}$s ranged from 0.47 to 0.64).

Table 8.3: Correlations among the ELPA Total Scale Score and the MME Subject Test Scale Scores for Grade 11

Grade	Test	Correlation Coefficient					
		ELPA	MME Reading	MME Writing	MME Math	MME Science	MME Social Studies
11 N = 2498	ELPA	(0.92)	0.74	0.73	0.47	0.53	0.64
	MME Reading	0.65	(0.86)	0.69	0.48	0.53	0.61
	MME Writing	0.66	0.60	(0.89)	0.49	0.50	0.54
	MME Math	0.43	0.42	0.44	(0.92)	0.44	0.42
	MME Science	0.48	0.46	0.44	0.39	(0.88)	0.51
	MME Soc. Studies	0.55	0.51	0.47	0.37	0.44	(0.83)

Note. 1. The disattenuated correlation coefficients are presented above the diagonal, and the Pearson product-moment correlations are presented below the diagonal.
2. The reliability coefficients for each test are presented on the diagonal.

[41] Only those grade 12 students who did not take MME at grade 11 or got invalid scores when they took MME at grade 11 are eligible to take MME at grade 12. Therefore, there are only few grade 12 students who took MME and who are also eligible to take ELPA. Consequently, only grade 11 students' performance on both tests is examined here.

In general, the correlations between the theoretically similar constructs (e.g., the ELPA and the MEAP Reading, MME Reading, MEAP Writing, or MME Writing tests) were stronger than the correlations between theoretically dissimilar constructs (e.g., the ELPA and the MEAP or MME Mathematics, Science, and Social Studies tests). Such a pattern provides evidence for convergent and discriminant validity of the external structure of the Spring 2013 ELPA.

Distribution of Student Classification across Performance Levels

In addition to correlations, the distribution of student classification across performance levels on two related tests is another important piece of evidence for validity. Thus, the classification distribution for each of the MEAP (or MME)[42] subject tests given each performance level of the Spring 2013 ELPA was examined at each appropriate grade (i.e., grades 3-8 for MEAP and grade 11 for MME). Related results can be found in Appendices G.1 to G.7. The first table in Appendix G.1 is presented below as Table 8.4. The contents of this table are discussed below.

Table 8.4: Percentage of Grade 3 ELLs Scoring at Each MEAP Reading Performance Level by Each ELPA Performance Level

Reading			ELPA Performance Levels				
			1 Advanced Proficient (N=925)	2 Proficient (N=1637)	3 High Intermediate (N=3813)	4 Low Intermediate (N=271)	5 Basic (N=2)
MEAP Performance Levels	1 Advanced	%	10.49	1.59	0.21	0.00	0.00
	2 Proficient	%	81.41	64.14	20.43	1.85	0.00
	3 Partially Proficient	%	7.78	30.73	46.71	12.55	0.00
	4 Not Proficient	%	0.32	3.54	32.65	85.61	100.00

As shown in Table 8.4, the MEAP test has four performance levels: Advanced, Proficient, Partially Proficient, and Not Proficient, while the ELPA test has five performance levels: Advanced Proficient, Proficient, High Intermediate, Low Intermediate, and Basic. Note that the percentage values in each column add up to 100%. Therefore, a value of 10.49 means that among the grade 3 students who were categorized as Advanced Proficient based on the Spring 2013 ELPA (N=925), 10.49% of them were found to be in the Advanced category based on their performance on the Fall 2012 MEAP Reading. Other values in this table (and in other tables in Appendices G.1 to G.7) can be interpreted in the same fashion.

[42] Note that a new set of MEAP cut scores (except Writing) were applied starting from Fall 2011, and a new set of MME cut scores (except Writing) were applied starting from Spring 2012. Both of the new cut scores are more stringent than previous ones.

Summary

The positive correlations found between the ELPA and the MEAP Reading and MEAP Writing as well as between the ELPA and the MME Reading and MME Writing indicate that higher scores on the ELPA were associated with higher scores on the MEAP Reading, the MEAP Writing, the MME Reading, and the MME Writing tests. It is important to note, however, that these Reading or Writing tests and the ELPA were developed to serve different student populations. In addition, the Listening and Speaking domains were not tested as part of the MEAP Reading, the MEAP Writing, the MME Reading, or the MME Writing tests. Thus, it is not surprising that we see only a moderate to high positive correlations between the ELPA and one of these tests.

The analysis of the distribution of student classification across performance levels provides evidence to support the validity of the ELPA cut scores in that about 36% to 67% of grades 3 through 8 students who were classified as Proficient on the ELPA were also classified as Advanced or Proficient on the MEAP Reading test, and about 26% to 41% of those classified as Proficient on the ELPA were also classified as Advanced or Proficient on the MEAP Writing test. For grade 11 students, about 23% of those classified as Proficient on the ELPA were also classified as Advanced or Proficient on the MME Reading test, and about 17% of those classified as Proficient on the ELPA were also classified as Advanced or Proficient on the MME Writing test.

The majority of students in grades 3-8 (from 69%-95%) who were classified as Advanced Proficient on the ELPA were also classified as Advanced or Proficient on the MEAP Reading Test, and from 60% to 72% of those classified as Advanced Proficient on the ELPA were also classified as Advanced or Proficient on the MEAP Writing test. About 54% of those grade 11 students classified as Advanced Proficient on the ELPA were also classified as Advanced or Proficient on the MME Reading test, and about 53% of those grade 11 students classified as Advanced Proficient on the ELPA were also classified as Advanced or Proficient on the MME Writing test.

SECTION 9. SUMMARY OF OPERATIONAL TEST RESULTS

This section presents the raw score and scale score summaries by grade for the Spring 2013 ELPA total test and each domain subtest (for all operational items). Table 9.1 presents the raw score summary by grade and domain (or the total test).

Table 9.1: Raw Score Summary by Grade and Domain (or the Total Test)[43]

Grade	Domain (or the Total Test)	N-Count	Mean	Median	IQR	SD
K	Listening	10299	9.17	9	5	3.45
	Reading	10299	10.00	10	6	3.60
	Writing	10299	9.07	9	8	4.51
	Speaking	10299	11.16	12	7	4.70
	Comprehension	10299	12.25	12	6	3.92
	Total Test	10299	39.40	40	20	13.46
1	Listening	9370	14.28	15	5	3.62
	Reading	9370	12.43	12	8	4.72
	Writing	9370	9.31	9	6	4.19
	Speaking	9370	13.24	14	7	4.79
	Comprehension	9370	19.99	20	8	5.55
	Total Test	9370	49.27	50	21	14.07
2	Listening	8485	16.71	17	3	3.00
	Reading	8485	16.37	18	4	3.79
	Writing	8485	13.20	14	7	4.23
	Speaking	8485	15.37	16	6	4.16
	Comprehension	8485	24.64	26	5	4.64
	Total Test	8485	61.65	65	15	12.54
3	Listening	7493	11.86	12	6	4.14
	Reading	7493	10.89	11	7	4.48
	Writing	7493	9.63	10	5	3.60
	Speaking	7493	15.43	16	4	3.90
	Comprehension	7493	15.99	16	8	5.68
	Total Test	7493	47.81	49	18	13.11
4	Listening	6421	13.49	14	6	4.03
	Reading	6421	12.59	13	7	4.54
	Writing	6421	11.19	12	5	3.76
	Speaking	6421	16.02	17	5	3.81
	Comprehension	6421	18.32	19	9	5.68
	Total Test	6421	53.29	56	17	13.34
5	Listening	5742	14.58	16	6	3.91
	Reading	5742	14.05	15	7	4.42
	Writing	5742	12.28	13	5	3.76
	Speaking	5742	16.43	17	4	3.72
	Comprehension	5742	20.06	21	7	5.50
	Total Test	5742	57.34	60	16	13.20

[43] Note that the raw score Mean and SD were presented in Section 4. They are repeated here for easy comparison to the Median and IQR, respectively.

Table 9.1: Raw Score Summary by Grade and Domain (or the Total Test) (Continued)

Grade	Domain (or the Total Test)	N-Count	Mean	Median	IQR	SD
6	Listening	4859	11.87	12	6	3.82
	Reading	4859	10.47	10	7	4.28
	Writing	4859	9.87	10	5	3.60
	Speaking	4859	15.77	17	5	4.33
	Comprehension	4859	16.34	16	8	5.36
	Total Test	4859	47.98	49	17	13.04
7	Listening	4265	12.59	13	6	3.94
	Reading	4265	11.39	12	7	4.48
	Writing	4265	10.68	11	5	3.79
	Speaking	4265	15.93	17	5	4.47
	Comprehension	4265	17.51	18	8	5.58
	Total Test	4265	50.58	53	19	13.77
8	Listening	4061	13.40	14	5	3.98
	Reading	4061	12.46	13	7	4.47
	Writing	4061	11.45	12	5	3.86
	Speaking	4061	16.33	18	5	4.38
	Comprehension	4061	18.81	20	8	5.70
	Total Test	4061	53.65	56	18	13.86
9	Listening	4358	11.41	12	6	4.00
	Reading	4358	11.06	11	8	4.56
	Writing	4358	10.39	11	5	4.06
	Speaking	4358	15.75	18	6	5.16
	Comprehension	4358	14.93	15	8	5.25
	Total Test	4358	48.61	51	21	15.01
10	Listening	3993	12.11	12	6	4.03
	Reading	3993	11.68	12	7	4.57
	Writing	3993	10.94	11	6	3.97
	Speaking	3993	16.20	18	6	4.67
	Comprehension	3993	15.76	16	8	5.21
	Total Test	3993	50.92	53	21	14.46
11	Listening	2895	12.53	13	6	4.07
	Reading	2895	12.13	12	8	4.57
	Writing	2895	11.54	12	5	4.04
	Speaking	2895	16.64	18	5	4.16
	Comprehension	2895	16.27	17	9	5.28
	Total Test	2895	52.85	56	21	14.08
12	Listening	2630	12.44	13	5	3.95
	Reading	2630	12.14	12	8	4.64
	Writing	2630	11.50	12	5	3.94
	Speaking	2630	16.79	18	5	4.08
	Comprehension	2630	16.20	17	8	5.23
	Total Test	2630	52.86	55	20	13.73

Note.
1. Omits, blanks, and invalid responses were scored as “0”.
2. Total Test does not include Comprehension, as Comprehension is composed of selected items from Listening and Reading.

Table 9.2a presents the scale score summary by grade and domain, and Table 9.2b presents the scale score summary of the total test by grade. These tables include the N-Count, mean, median, interquartile range (IQR), and standard deviation (SD) of either the raw score or the scale score.

Table 9.2a: Scale Score Summary by Grade and Domain

Grade	Domain	N-Count	Mean	Median	IQR	SD
K	Listening	10299	54.37	54	5	4.92
	Reading	10299	52.84	52	7	5.33
	Writing	10299	49.17	49	8	5.59
	Speaking	10299	54.78	55	8	6.76
	Comprehension	10299	53.67	53	6	4.27
1	Listening	9370	58.40	58	6	4.70
	Reading	9370	56.35	55	7	5.57
	Writing	9370	53.14	53	5	4.58
	Speaking	9370	59.46	59	8	6.69
	Comprehension	9370	57.08	56	5	4.21
2	Listening	8485	62.08	61	6	4.99
	Reading	8485	61.41	62	7	5.66
	Writing	8485	57.41	57	7	5.23
	Speaking	8485	62.59	62	11	6.73
	Comprehension	8485	61.10	61	6	4.73
3	Listening	7493	64.34	64	5	4.29
	Reading	7493	62.20	62	5	4.58
	Writing	7493	59.48	60	5	4.37
	Speaking	7493	66.66	66	7	6.30
	Comprehension	7493	62.64	62	5	3.85
4	Listening	6421	66.07	66	6	4.51
	Reading	6421	63.96	64	7	4.96
	Writing	6421	61.32	62	5	4.64
	Speaking	6421	67.74	67	10	6.44
	Comprehension	6421	64.23	64	6	4.18
5	Listening	5742	67.36	68	7	4.73
	Reading	5742	65.70	65	8	5.27
	Writing	5742	62.71	63	6	4.85
	Speaking	5742	68.55	67	9	6.53
	Comprehension	5742	65.59	65	5	4.41
6	Listening	4859	65.29	65	5	3.90
	Reading	4859	63.00	62	6	4.28
	Writing	4859	60.49	61	6	4.43
	Speaking	4859	67.79	67	8	6.66
	Comprehension	4859	63.55	63	4	3.30
7	Listening	4265	66.06	66	6	4.22
	Reading	4265	63.94	64	6	4.62
	Writing	4265	61.48	62	6	4.74
	Speaking	4265	68.22	67	8	6.96
	Comprehension	4265	64.28	64	5	3.59

Table 9.2a: Scale Score Summary by Grade and Domain (Continued)

Grade	Domain	N-Count	Mean	Median	IQR	SD
8	Listening	4061	66.98	67	5	4.43
	Reading	4061	65.05	65	6	4.81
	Writing	4061	62.41	63	5	4.87
	Speaking	4061	69.06	69	13	7.02
	Comprehension	4061	65.16	65	4	3.88
9	Listening	4358	67.55	68	6	4.25
	Reading	4358	65.11	65	7	4.81
	Writing	4358	62.51	63	5	4.90
	Speaking	4358	69.54	70	13	7.36
	Comprehension	4358	65.65	65	5	3.91
10	Listening	3993	68.32	68	6	4.40
	Reading	3993	65.75	66	6	4.87
	Writing	3993	63.18	63	6	4.79
	Speaking	3993	70.17	70	13	6.76
	Comprehension	3993	66.28	66	5	3.98
11	Listening	2895	68.78	69	6	4.48
	Reading	2895	66.24	66	7	4.96
	Writing	2895	63.91	64	5	5.00
	Speaking	2895	70.66	70	12	6.35
	Comprehension	2895	66.67	67	6	4.06
12	Listening	2630	68.63	69	5	4.30
	Reading	2630	66.27	66	7	5.06
	Writing	2630	63.83	64	5	4.85
	Speaking	2630	70.89	70	12	6.29
	Comprehension	2630	66.60	67	5	4.02

Note. Omits, blanks, and invalid responses were scored as “0”.

Table 9.2b: Scale Score Summary of the Total ELPA Test by Grade

Grade	N-Count	Mean	Median	IQR	SD
K	10299	528.55	527	41	33.06
1	9370	559.89	558	41	31.29
2	8485	589.98	592	43	33.81
3	7493	609.39	610	35	28.17
4	6421	621.66	624	37	30.00
5	5742	631.86	633	39	31.94
6	4859	616.83	617	33	27.54
7	4265	622.73	625	39	29.87
8	4061	629.89	631	40	31.22
9	4358	633.37	635	42	32.35
10	3993	638.62	639	43	31.89
11	2895	642.93	645	45	31.92
12	2630	642.72	643	43	30.99

Note.
In general, it is expected that mean scale scores will increase by grade. However, there are times in which this might not be observed. Various reasons include (but are not limited to) different exiting criteria across districts and grades and observed test difficulties not meeting expectations, leading to unpredicted performance.

Table 9.3 presents the percentage of all students at each performance level by grade. Note that the performance level categorization is based on the total ELPA test score only.

Table 9.3: Percent of Students in Each Performance Level by Grade

Grade	N- Count	Performance Levels				
		1	2	3	4	5
K	10299	23.28	22.69	17.62	24.40	12.00
1	9370	14.09	13.92	44.67	20.34	6.98
2	8485	20.97	26.51	38.85	9.84	3.84
3	7493	12.99	22.93	56.13	7.45	0.51
4	6421	20.60	26.62	44.65	7.51	0.62
5	5742	26.85	26.28	39.48	6.32	1.06
6	4859	7.33	16.90	54.31	19.76	1.71
7	4265	8.18	18.05	46.26	24.85	2.65
8	4061	8.82	21.00	47.80	19.50	2.88
9	4358	6.75	14.11	47.84	23.61	7.69
10	3993	8.64	15.18	48.13	22.81	5.23
11	2895	9.02	16.75	37.55	32.23	4.46
12	2630	5.06	11.94	38.97	39.28	4.75

Note.
Performance levels are defined as follows:
1—advanced proficient
2—proficient
3—high intermediate
4—low intermediate
5—basic

Table 9.4 presents the percentage of all students meeting the achievement target in each domain by grade.

Table 9.4: Percent of Students Meeting Achievement Target by Grade and Domain

Grade	Domain	N-count	% of Students Meeting Achievement Target
K	Listening	10299	45.85
	Reading	10299	46.72
	Writing	10299	48.12
	Speaking	10299	53.35
	Comprehension	10299	47.37
1	Listening	9370	31.85
	Reading	9370	37.88
	Writing	9370	23.37
	Speaking	9370	38.11
	Comprehension	9370	30.49
2	Listening	8485	49.81
	Reading	8485	52.52
	Writing	8485	44.80
	Speaking	8485	48.54
	Comprehension	8485	44.29
3	Listening	7493	38.21
	Reading	7493	38.56
	Writing	7493	40.86
	Speaking	7493	47.11
	Comprehension	7493	35.66
4	Listening	6421	46.69
	Reading	6421	39.60
	Writing	6421	50.79
	Speaking	6421	42.89
	Comprehension	6421	47.69

Table 9.4: Percent of Students Meeting Achievement Target by Grade and Domain (Continued)

Grade	Domain	N-count	% of Students Meeting Achievement Target
5	Listening	5742	50.28
	Reading	5742	55.29
	Writing	5742	52.66
	Speaking	5742	48.89
	Comprehension	5742	49.23
6	Listening	4859	27.62
	Reading	4859	27.35
	Writing	4859	32.68
	Speaking	4859	44.49
	Comprehension	4859	24.16
7	Listening	4265	26.52
	Reading	4265	35.90
	Writing	4265	33.22
	Speaking	4265	35.43
	Comprehension	4265	26.89
8	Listening	4061	24.67
	Reading	4061	39.13
	Writing	4061	31.40
	Speaking	4061	41.54
	Comprehension	4061	23.44
9	Listening	4358	24.62
	Reading	4358	26.37
	Writing	4358	23.84
	Speaking	4358	41.23
	Comprehension	4358	22.51
10	Listening	3993	30.58
	Reading	3993	24.82
	Writing	3993	19.66
	Speaking	3993	43.88
	Comprehension	3993	27.45
11	Listening	2895	35.89
	Reading	2895	28.70
	Writing	2895	24.80
	Speaking	2895	44.77
	Comprehension	2895	31.85
12	Listening	2630	24.94
	Reading	2630	22.21
	Writing	2630	24.94
	Speaking	2630	33.19
	Comprehension	2630	24.45

Note. Omits, blanks, and invalid responses were scored as “0”.

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APPENDIX A: ELPA TEST BLUEPRINT BY ASSESSMENT LEVEL AND DOMAIN

A.1: Level I – Operational Items

DOMAIN	STANDARD		NO. OF ITEMS	NO. OF POINTS
Listening	L.1	Follow simple and complex directions	4	4
	L.2	Understand spoken English to participate in social contexts	3	3
	L.3	Identify main ideas and supporting details from spoken English	3	3
	L.4	Identify the meaning of vocabulary in the content areas	3	3
	L.5	Identify speaker attitude and point of view	2	2
	L.6	Make inferences and predictions	1	1
		SUBTOTAL	16	16
Reading	R.1	Recognize concepts of print literacy	4	4
	R.2	Demonstrate phonological awareness and the relationship of listen/speaking to decoding	4	4
	R.3	Build vocabulary to develop concepts	5	5
	R.5	Read and demonstrate comprehension of main ideas and supporting details	1	1
	R.6	Apply reading skills in social and academic contexts	1	1
	R.8	Make inferences, predictions, and conclusions from reading	1	1
		SUBTOTAL	16	16
Writing	W.1	Use conventions and formats of written English	10	14
	W.2	Use grammatical conventions of English	2	2
	W.6	Use various types of writing for specific purposes	1	2
		SUBTOTAL	13	18
Speaking	S.4	Use English to interact in the classroom	1	4
	S.5	Provide and obtain information; express and exchange opinions	1	2
	S.6	Demonstrate comprehensible pronunciation and intonation for clarity in oral communication	2	4
	S.7	Present information, concepts, and ideas to an audience of listeners on a variety of topics	1	4
	S.8	Use strategies to extend communicative competence	1	4
		SUBTOTAL	6	18
		TOTAL	51	68

A.2: Level II – Operational Items

DOMAIN	STANDARD		NO. OF ITEMS	NO. OF POINTS
Listening	L.1	Follow simple and complex directions	3	3
	L.2	Understand spoken English to participate in social contexts	3	3
	L.3	Identify main ideas and supporting details from spoken English	6	6
	L.4	Identify the meaning of vocabulary in the content areas	3	3
	L.5	Identify speaker attitude and point of view	3	3
	L.6	Make inferences and predictions	2	2
		SUBTOTAL	20	20
Reading	R.2	Demonstrate phonological awareness and the relationship of listening/speaking to decoding	4	4
	R.5	Read and demonstrate comprehension of main ideas and supporting details	6	6
	R.6	Apply reading skills in social and academic contexts	3	3
	R.8	Make inferences, predictions, and conclusions from reading	4	4
	R.9	Analyze style and form of various genre	3	3
		SUBTOTAL	20	20
Writing	W.1	Use conventions and formats of written English	3	6
	W.2	Use grammatical conventions of English	9	10
	W.6	Use various types of writing for specific purposes	1	4
		SUBTOTAL	13	20
Speaking	S.2	Engage in conversations for personal expression and enjoyment	1	2
	S.4	Use English to interact in the classroom	1	4
	S.5	Provide and obtain information; express and exchange opinions	1	2
	S.6	Demonstrate comprehensible pronunciation and intonation for clarity in oral communication	2	4
	S.7	Present information, concepts, and ideas to an audience of listeners on a variety of topics	1	4
	S.8	Use strategies to extend communicative competence	1	4
		SUBTOTAL	7	20
		TOTAL	60	80

A.3: Level III – Operational Items

DOMAIN	STANDARD		NO. OF ITEMS	NO. OF POINTS
Listening	L.1	Follow simple and complex directions	4	4
	L.2	Understand spoken English to participate in social contexts	2	2
	L.3	Identify main ideas and supporting details from spoken English	5	5
	L.4	Identify the meaning of vocabulary in the content areas	3	3
	L.5	Identify speaker attitude and point of view	4	4
	L.6	Make inferences and predictions	2	2
		SUBTOTAL	20	20
Reading	R.3	Build vocabulary to develop concepts	7	7
	R.4	Understand and use grammatical rules of English to improve comprehension	1	1
	R.5	Read and demonstrate comprehension of main ideas and supporting details	8	8
	R.8	Make inferences, predictions, and conclusions from reading	2	2
	R.9	Analyze style and form of various genre	1	1
	R.10	Identify author's voice, attitude, and point of view	1	1
		SUBTOTAL	20	20
Writing	W.2	Use grammatical conventions of English	8	8
	W.4	Construct sentences and develop paragraphs to organize writing supporting a central idea	1	4
	W.6	Use various types of writing for specific purposes	3	8
		SUBTOTAL	12	20
Speaking	S.2	Engage in conversations for personal expression and enjoyment	1	2
	S.4	Use English to interact in the classroom	1	4
	S.5	Provide and obtain information; express and exchange opinions	1	2
	S.6	Demonstrate comprehensible pronunciation and intonation for clarity in oral communication	2	4
	S.7	Present information, concepts, and ideas to an audience of listeners on a variety of topics	1	4
	S.8	Use strategies to extend communicative competence	1	4
		SUBTOTAL	7	20
		TOTAL	59	80

A.4: Level IV – Operational Items

DOMAIN	STANDARD		NO. OF ITEMS	NO. OF POINTS
Listening	L.1	Follow simple and complex directions	2	2
	L.2	Understand spoken English to participate in social contexts	3	3
	L.3	Identify main ideas and supporting details from spoken English	6	6
	L.4	Identify the meaning of vocabulary in the content areas	2	2
	L.5	Identify speaker attitude and point of view	5	5
	L.6	Make inferences and predictions	2	2
		SUBTOTAL	20	20
Reading	R.3	Build vocabulary to develop concepts	8	8
	R.5	Read and demonstrate comprehension of main ideas and supporting details	4	4
	R.7	Read for research purposes	1	1
	R.8	Make inferences, predictions, and conclusions from reading	4	4
	R.10	Identify author's voice, attitude and point of view	3	3
		SUBTOTAL	20	20
Writing	W.2	Use grammatical conventions of English	10	12
	W.4	Construct sentences and develop paragraphs to organize writing supporting a central idea	1	4
	W.8	Use tone and voice to engage specific audiences	1	4
		SUBTOTAL	12	20
Speaking	S.4	Use English to interact in the classroom	1	4
	S.5	Provide and obtain information; express and exchange opinions	2	4
	S.6	Demonstrate comprehensible pronunciation and intonation for clarity in oral communication	2	4
	S.7	Present information, concepts, and ideas to an audience of listeners on a variety of topics	1	4
	S.8	Use strategies to extend communicative competence	1	4
		SUBTOTAL	7	20
		TOTAL	59	80

A.5: Level V – Operational Items

DOMAIN	STANDARD		NO. OF ITEMS	NO. OF POINTS
Listening	L.1	Follow simple and complex directions	2	2
	L.2	Understand spoken English to participate in social contexts	3	3
	L.3	Identify main ideas and supporting details from spoken English	5	5
	L.4	Identify the meaning of vocabulary in the content areas	5	5
	L.5	Identify speaker attitude and point of view	3	3
	L.6	Make inferences and predictions	2	2
		SUBTOTAL	20	20
Reading	R.3	Build vocabulary to develop concepts	7	7
	R.4	Understand and use grammatical rules of English to improve comprehension	1	1
	R.5	Read and demonstrate comprehension of main ideas and supporting details	5	5
	R.6	Apply reading skills in social and academic contexts	1	1
	R.8	Make inferences, predictions, and conclusions from reading	3	3
	R.9	Analyze style and form of various genre	1	1
	R.10	Identify author's voice, attitude and point of view	2	2
		SUBTOTAL	20	20
Writing	W.2	Use grammatical conventions of English	11	12
	W.6	Use various types of writing for specific purposes	1	4
	W.8	Use tone and voice to engage specific audiences	1	4
		SUBTOTAL	13	20
Speaking	S.2	Engage in conversations for personal expression and enjoyment	1	2
	S.4	Use English to interact in the classroom	1	4
	S.5	Provide and obtain information; express and exchange opinions	1	2
	S.6	Demonstrate comprehensible pronunciation and intonation for clarity in oral communication	2	4
	S.7	Present information, concepts, and ideas to an audience of listeners on a variety of topics	1	4
	S.8	Use strategies to extend communicative competence	1	4
		SUBTOTAL	7	20
		TOTAL	60	80

A.6: Level I – Field Test Items

DOMAIN	STANDARD		NO. OF ITEMS		NO. OF POINTS	
			F1	F2	F1	F2
Listening	L.3	Identify main ideas and supporting details from spoken English	6	2	6	2
	L.4	Identify the meaning of vocabulary in the content areas	1	1	1	1
	L.5	Identify speaker attitude and point of view	1	5	1	5
		SUBTOTAL	8	8	8	8
Reading	R.1	Recognize concepts of print literacy	2	2	2	2
	R.3	Build vocabulary to develop concepts	3	2	3	2
	R.5	Read and demonstrate comprehension of main ideas and supporting details	1	2	1	2
	R.8	Make inferences, predictions, and conclusions from reading	1	1	1	1
		SUBTOTAL	7	7	7	7
Writing	W.1	Use conventions and formats of written English	4	4	6	6
	W.2	Use grammatical conventions of English	1	1	1	1
		SUBTOTAL	5	5	7	7
Speaking	S.4	Use English to interact in the classroom	1	1	4	4
	S.5	Provide and obtain information; express and exchange opinions	1	1	2	2
	S.6	Demonstrate comprehensible pronunciation and intonation for clarity in oral communication	1	1	2	2
	S.7	Present information, concepts, and ideas to an audience of listeners on a variety of topics	1	1	4	4
	S.8	Use strategies to extend communicative competence	1	1	4	4
		SUBTOTAL	5	5	16	16
		TOTAL*	25	25	38	38

* Some field test items were repeated across forms. The actual number of unique field test items by domain is: 14 Listening, 13 Reading, 9 Writing, and 10 Speaking.

F1 and F2 represent Form 1 and Form 2, respectively

A.7: Level II – Field Test Items

DOMAIN	STANDARD		NO. OF ITEMS		NO. OF POINTS	
			F1	F2	F1	F2
Listening	L.1	Follow simple and complex directions	1	0	1	0
	L.2	Understand spoken English to participate in social contexts	1	2	1	2
	L.3	Identify main ideas and supporting details from spoken English	2	2	2	2
	L.4	Identify the meaning of vocabulary in the content areas	1	0	1	0
	L.6	Make inferences and predictions	1	2	1	2
		SUBTOTAL	6	6	6	6
Reading	R.2	Demonstrate phonological awareness and the relationship of listening/speaking to decoding	3	3	3	3
	R.5	Read and demonstrate comprehension of main ideas and supporting details	1	1	1	1
	R.6	Apply reading skills in social and academic contexts	1	1	1	1
	R.8	Make inferences, predictions, and conclusions from reading	2	1	2	1
	R.9	Analyze style and form of various genre	1	2	1	2
		SUBTOTAL	8	8	8	8
Writing	W.1	Use conventions and formats of written English	2	2	4	4
	W.2	Use grammatical conventions of English	2	2	2	2
	W.6	Use various types of writing for specific purposes	1	1	4	4
		SUBTOTAL	5	5	10	10
Speaking	S.4	Use English to interact in the classroom	1	1	4	4
	S.5	Provide and obtain information; express and exchange opinions	1	1	2	2
	S.6	Demonstrate comprehensible pronunciation and intonation for clarity in oral communication	1	1	2	2
	S.7	Present information, concepts, and ideas to an audience of listeners on a variety of topics	2	2	8	8
		SUBTOTAL	5	5	16	16
		TOTAL	24	24	40	40

F1 and F2 represent Form 1 and Form 2, respectively

A.8: Level III – Field Test Items

DOMAIN	STANDARD		NO. OF ITEMS		NO. OF POINTS	
			F1	F2	F1	F2
Listening	L.1	Follow simple and complex directions	2	2	2	2
	L.2	Understand spoken English to participate in social contexts	1	1	1	1
	L.3	Identify main ideas and supporting details from spoken English	2	1	2	1
	L.4	Identify the meaning of vocabulary in the content areas	2	1	2	1
	L.6	Make inferences and predictions	0	2	0	2
		SUBTOTAL	7	7	7	7
Reading	R.3	Build vocabulary to develop concepts	3	3	3	3
	R.4	Understand and use grammatical rules of English to improve comprehension	1	1	1	1
	R.5	Read and demonstrate comprehension of main ideas and supporting details	1	1	1	1
	R.8	Make inferences, predictions, and conclusions from reading	1	1	1	1
	R.10	Identify author's voice, attitude, and point of view	1	1	1	1
		SUBTOTAL	7	7	7	7
Writing	W.2	Use grammatical conventions of English	2	3	2	4
	W.4	Construct sentences and develop paragraphs to organize writing supporting a central idea	1	1	4	4
	W.6	Use various types of writing for specific purposes	2	1	6	4
		SUBTOTAL	5	5	12	12
Speaking	S.4	Use English to interact in the classroom	1	1	4	4
	S.5	Provide and obtain information; express and exchange opinions	2	2	4	4
	S.6	Demonstrate comprehensible pronunciation and intonation for clarity in oral communication	1	1	2	2
	S.7	Present information, concepts, and ideas to an audience of listeners on a variety of topics	1	1	4	4
	S.8	Use strategies to extend communicative competence	1	1	4	4
		SUBTOTAL	6	6	18	18
		TOTAL	25	25	44	44

F1 and F2 represent Form 1 and Form 2, respectively.

A.9 Level IV – Field Test Items

DOMAIN		STANDARD	NO. OF ITEMS		NO. OF POINTS	
			F1	F2	F1	F2
Listening	L.3	Identify main ideas and supporting details from spoken English	3	3	3	3
	L.4	Identify the meaning of vocabulary in the content areas	1	0	1	0
	L.5	Identify speaker attitude and point of view	1	1	1	1
	L.6	Make inferences and predictions	0	1	0	1
		SUBTOTAL	5	5	5	5
Reading	R.3	Build vocabulary to develop concepts	4	4	4	4
	R.5	Read and demonstrate comprehension of main ideas and supporting details	1	1	1	1
	R.7	Read for research purposes	2	1	2	1
	R.8	Make inferences, predictions, and conclusions from reading	0	1	0	1
	R.10	Identify author's voice, attitude and point of view	1	1	1	1
		SUBTOTAL	8	8	8	8
Writing	W.2	Use grammatical conventions of English	3	3	4	4
	W.4	Construct sentences and develop paragraphs to organize writing supporting a central idea	1	1	4	4
	W.8	Use tone and voice to engage specific audiences	1	1	4	4
		SUBTOTAL	5	5	12	12
Speaking	S.4	Use English to interact in the classroom	1	1	4	4
	S.5	Provide and obtain information; express and exchange opinions	1	1	2	2
	S.6	Demonstrate comprehensible pronunciation and intonation for clarity in oral communication	1	1	2	2
	S.7	Present information, concepts, and ideas to an audience of listeners on a variety of topics	1	1	4	4
	S.8	Use strategies to extend communicative competence	1	1	4	4
		SUBTOTAL	5	5	16	16
		TOTAL	23	23	41	41

F1 and F2 represent Form 1 and Form 2, respectively.

A.10: Level V – Field Test Items

DOMAIN	STANDARD		NO. OF ITEMS		NO. OF POINTS	
			F1	F2	F1	F2
Listening	L.2	Understand spoken English to participate in social contexts	1	1	1	1
	L.3	Identify main ideas and supporting details from spoken English	1	2	1	2
	L.4	Identify the meaning of vocabulary in the content areas	2	1	2	1
	L.5	Identify speaker attitude and point of view	1	1	1	1
	L.6	Make inferences and predictions	1	1	1	1
		SUBTOTAL	6	6	6	6
Reading	R.3	Build vocabulary to develop concepts	4	3	4	3
	R.5	Read and demonstrate comprehension of main ideas and supporting details	1	0	1	0
	R.6	Apply reading skills in social and academic contexts	1	2	1	2
	R.8	Make inferences, predictions, and conclusions from reading	0	1	0	1
		SUBTOTAL	6	6	6	6
Writing	W.2	Use grammatical conventions of English	3	3	4	4
	W.6	Use various types of writing for specific purposes	2	2	8	8
		SUBTOTAL	5	5	12	12
Speaking	S.2	Engage in conversations for personal expression and enjoyment	1	1	2	2
	S.4	Use English to interact in the classroom	1	1	4	4
	S.6	Demonstrate comprehensible pronunciation and intonation for clarity in oral communication	1	1	2	2
	S.7	Present information, concepts, and ideas to an audience of listeners on a variety of topics	1	1	4	4
	S.8	Use strategies to extend communicative competence	1	1	4	4
		SUBTOTAL	5	5	16	16
		TOTAL	22	22	40	40

F1 and F2 represent Form 1 and Form 2, respectively.

APPENDIX B: ELPA ITEM-LEVEL STATISTICS BY ASSESSMENT LEVEL

B.1: Level I – Operational Items

ITEM ID	Domain	Type	Points	N	0	1/A	2/B	3/C	4/D	Multiple Marks	Omit/ Invalid	Adjusted p-Value	Adjusted Item-Total Correlation
19963	Listening	MC	1	10299		21.2836	7.7483	69.3174		0.301	1.3496	0.6932	0.3578
20287	Listening	MC	1	10299		51.1506	29.0125	17.691		0.4564	1.6895	0.5115	0.0344
20510	Listening	MC	1	10299		32.4595	45.7229	20.3612		0.2039	1.2525	0.4572	0.2718
20512	Listening	MC	1	10299		30.6243	43.3926	24.4198		0.1456	1.4176	0.4339	0.3076
20514	Listening	MC	1	10299		21.0603	18.9727	58.1998		0.1748	1.5924	0.582	0.4418
20677	Listening	MC	1	10299		35.9549	40.9069	21.4972		0.3398	1.3011	0.4091	0.2278
20834	Listening	MC	1	10299		28.3231	17.3124	53.0246		0.1554	1.1846	0.5302	0.3413
24245	Listening	MC	1	10299		26.4006	61.4623	11.0399		0.1651	0.9321	0.6146	0.4418
24259	Listening	MC	1	10299		22.9051	21.4778	54.0732		0.1942	1.3496	0.5407	0.4148
24261	Listening	MC	1	10299		28.9251	57.5881	11.2535		0.9515	1.2817	0.5759	0.4014
24262	Listening	MC	1	10299		5.0005	5.049	89.1057		0.1554	0.6894	0.8911	0.3953
24449	Listening	MC	1	10299		17.7299	58.9669	21.9245		0.1942	1.1846	0.5897	0.3327
24450	Listening	MC	1	10299		66.2492	17.0308	15.1277		0.068	1.5244	0.6625	0.2949
24451	Listening	MC	1	10299		23.2838	19.4291	55.5102		0.1554	1.6215	0.5551	0.4072
24545	Listening	MC	1	10299		36.1491	45.4899	16.7686		0.2233	1.3691	0.4549	0.2545
24683	Listening	MC	1	10299		12.9916	66.9385	18.1959		0.301	1.573	0.6694	0.3282
20291	Reading	MC	1	10299		34.8675	52.1701	10.8457		1.0001	1.1166	0.5217	0.4056
20504	Reading	MC	1	10299		46.7036	36.5764	12.2633		0.0777	4.3791	0.3658	0.1772
20506	Reading	MC	1	10299		34.9063	57.3551	4.2917		0.1165	3.3304	0.5736	0.2523
20695	Reading	MC	1	10299		28.3717	16.7104	53.6071		0.0874	1.2234	0.5361	0.5032
24264	Reading	MC	1	10299		42.6838	35.887	18.4096		0.3204	2.6993	0.4268	0.385
24452	Reading	MC	1	10299		28.4299	57.6755	12.8168		0.1651	0.9127	0.5768	0.3542
24468	Reading	MC	1	10299		21.9633	25.818	49.3931		0.1554	2.6702	0.4939	0.4635
24505	Reading	MC	1	10299		21.4681	74.7451	2.7284		0.6797	0.3787	0.7475	0.3222
24547	Reading	MC	1	10299		18.1959	16.2831	64.4334		0.1456	0.9418	0.6443	0.4931
24660	Reading	MC	1	10299		6.0297	13.7586	79.0659		0.1845	0.9613	0.7907	0.4688
24673	Reading	MC	1	10299		75.8326	21.6817	1.5438		0.301	0.6408	0.7583	0.3436
24692	Reading	MC	1	10299		65.8608	18.429	12.3022		0.2233	3.1848	0.6586	0.3573
28514	Reading	MC	1	10299		79.6291	18.7203	0.835		0.2525	0.5632	0.7963	0.3492
28516	Reading	MC	1	10299		85.5034	5.8549	7.6415		0.1554	0.8447	0.855	0.3613
28519	Reading	MC	1	10299		16.9531	12.8168	69.1038		0.2525	0.8739	0.691	0.4962
28604	Reading	MC	1	10299		20.6331	21.6623	56.5298		0.369	0.8059	0.5653	0.4745
19940	Speaking	CR	2	10299	18.3222	33.7023	47.9755			0.0291	0.0485	0.6483	0.5426
20192	Speaking	CR	4	10299	16.0404	11.37	23.2547	19.2931	30.0418	0	0.2622	0.5898	0.5785
20755	Speaking	CR	2	10299	7.5056	22.4197	70.0748			0.0194	0.0485	0.8128	0.5537
21174	Speaking	CR	2	10299	7.7289	25.3811	66.89			0.0194	0.0583	0.7958	0.5218
24463	Speaking	CR	4	10299	20.536	22.6721	25.2743	19.9534	11.5642	0.0485	0.068	0.4483	0.6048
24751	Speaking	CR	4	10299	9.0397	9.7388	24.6626	36.3336	20.2253	0.0194	0.0777	0.6224	0.6125
19975	Writing	CR	2	10299	22.7498	34.9451	40.7418				1.5632	0.5821	0.4662
19989	Writing	CR	2	10299	66.4629	24.8179	5.6025				3.1167	0.1801	0.5118
20535	Writing	MC	1	10299		26.4783	53.7916	16.186		0.2039	3.3401	0.5379	0.2982
20670	Writing	MC	1	10299		21.7011	18.5358	58.1221		0.1651	1.4759	0.5812	0.4879
24247	Writing	MC	1	10299		28.7407	22.9051	45.5384		0.1068	2.709	0.4554	0.517
24257	Writing	MC	1	10299		35.8384	57.491	5.3889		0.1262	1.1555	0.5749	0.2349
24498	Writing	MC	1	10299		27.2162	13.244	58.0251		0.1942	1.3205	0.5803	0.5159
24500	Writing	CR	1	10299	34.7801	63.8411					1.3788	0.6384	0.357

ITEM ID	Domain	Type	Points	N	0	1/A	2/B	3/C	4/D	Multiple Marks	Omit/ Invalid	Adjusted p-Value	Adjusted Item-Total Correlation
28521	Writing	CR	2	10299	21.6817	20.5942	56.588				1.136	0.6689	0.534
28522	Writing	CR	2	10299	41.7225	27.1774	28.4494				2.6507	0.4204	0.5393
28523	Writing	CR	2	10299	37.1687	29.43	31.4788				1.9225	0.4619	0.6677
28524	Writing	CR	1	10299	47.4609	51.2477					1.2914	0.5125	0.3246
28526	Writing	CR	1	10299	42.2177	56.5589					1.2234	0.5656	0.3375

B.2: Level II – Operational Items

ITEM ID	Domain	Type	Points	N	0	1/A	2/B	3/C	4/D	Multiple Marks	Omit/ Invalid	Adjusted p-Value	Adjusted Item-Total Correlation
19937	Listening	MC	1	17855		16.2027	7.8297	75.6147		0.0616	0.2912	0.7561	0.3662
19985	Listening	MC	1	17855		16.1691	82.0835	1.3218		0.0672	0.3584	0.8208	0.2018
20428	Listening	MC	1	17855		84.8502	3.6964	11.1341		0.0784	0.2408	0.8485	0.2698
20434	Listening	MC	1	17855		41.473	16.8468	41.0305		0.056	0.5937	0.4103	0.2136
20435	Listening	MC	1	17855		9.7004	79.7424	10.2436		0.084	0.2296	0.7974	0.395
20497	Listening	MC	1	17855		10.294	68.5354	20.7673		0.056	0.3472	0.6854	0.4792
20498	Listening	MC	1	17855		8.7987	88.4962	2.3859		0.056	0.2632	0.885	0.3678
20570	Listening	MC	1	17855		12.5791	75.105	11.8342		0.0616	0.4201	0.7511	0.3233
20571	Listening	MC	1	17855		7.7905	83.9205	7.9194		0.112	0.2576	0.8392	0.4545
20634	Listening	MC	1	17855		6.9	83.1812	9.5211		0.0616	0.336	0.8318	0.4481
20635	Listening	MC	1	17855		10.6693	7.7849	81.0977		0.0224	0.4257	0.811	0.4758
20835	Listening	MC	1	17855		10.8485	6.1215	82.6659		0.028	0.336	0.8267	0.3581
24281	Listening	MC	1	17855		10.6805	19.0759	69.7732		0.1568	0.3136	0.6977	0.3555
24440	Listening	MC	1	17855		64.2341	27.2921	8.0314		0.1344	0.308	0.6423	0.3406
24442	Listening	MC	1	17855		8.5354	87.9025	3.2428		0.028	0.2912	0.879	0.2827
24556	Listening	MC	1	17855		3.3772	7.4041	88.8771		0.084	0.2576	0.8888	0.2898
24558	Listening	MC	1	17855		11.1845	73.0552	15.2338		0.1008	0.4257	0.7306	0.256
24570	Listening	MC	1	17855		75.8387	15.7939	8.0594		0.0448	0.2632	0.7584	0.2427
24824	Listening	MC	1	17855		5.4158	89.4035	4.8334		0.0392	0.308	0.894	0.2454
25163	Listening	MC	1	17855		20.112	11.0949	68.1714		0.4088	0.2128	0.6817	0.3958
20543	Reading	MC	1	17855		15.385	6.4912	77.7485		0.0952	0.28	0.7775	0.5727
20625	Reading	MC	1	17855		26.7208	58.9751	12.9039		0.0336	1.3666	0.5898	0.3537
20627	Reading	MC	1	17855		18.7623	14.9706	64.4469		0.0112	1.809	0.6445	0.479
21162	Reading	MC	1	17855		7.4489	84.0493	7.6953		0.0616	0.7449	0.8405	0.4491
21163	Reading	MC	1	17855		5.3598	86.7376	7.2921		0.0392	0.5713	0.8674	0.4429
24202	Reading	MC	1	17855		15.8835	15.4859	66.9504		0.0168	1.6634	0.6695	0.3346
24219	Reading	MC	1	17855		15.6707	69.7284	13.5592		0.028	1.0137	0.6973	0.3871
24243	Reading	MC	1	17855		23.5732	10.2212	65.4046		0.0952	0.7057	0.654	0.3841
24398	Reading	MC	1	17855		10.5461	12.2935	75.7267		0.0112	1.4226	0.7573	0.5414
24400	Reading	MC	1	17855		52.5791	23.6404	21.9042		0.0336	1.8426	0.5258	0.4311
24420	Reading	MC	1	17855		17.9334	18.583	61.8202		0.028	1.6354	0.6182	0.44
24469	Reading	MC	1	17855		62.7219	14.6794	20.4481		0.0392	2.1115	0.6272	0.4296
25171	Reading	MC	1	17855		6.3344	20.3752	72.932		0.1904	0.168	0.7293	0.4224
25176	Reading	MC	1	17855		87.3425	4.2845	7.4209		0.0168	0.9353	0.8734	0.4252
28528	Reading	MC	1	17855		4.5477	80.8121	14.2929		0.1232	0.224	0.8081	0.3814
28532	Reading	MC	1	17855		18.611	79.3111	1.7698		0.1288	0.1792	0.7931	0.4103
29335	Reading	MC	1	17855		15.3514	15.8051	67.6729		0.028	1.1425	0.6767	0.5853
29338	Reading	MC	1	17855		15.8051	10.1204	72.4111		0.0504	1.613	0.7241	0.4184
29339	Reading	MC	1	17855		10.5237	12.9544	75.4803		0.028	1.0137	0.7548	0.5704
29340	Reading	MC	1	17855		67.7009	18.7567	12.2599		0.0224	1.2602	0.677	0.5392
19819	Speaking	CR	2	17855	11.3918	38.359	50.2492			0.0168	0.0224	0.6943	0.5216
20120	Speaking	CR	2	17855	11.6662	42.1619	46.1719			0.0056	0.2072	0.6725	0.5068
21170	Speaking	CR	2	17855	6.0935	32.0526	61.8538			0.0112	0.0336	0.7788	0.612
21171	Speaking	CR	2	17855	4.8838	21.613	73.5032			0.0056	0.0224	0.8431	0.5832
24207	Speaking	CR	4	17855	8.2554	15.5979	30.0364	27.5105	18.5998	0	0.2632	0.5815	0.6502
24754	Speaking	CR	4	17855	3.3604	5.1918	20.5657	41.2658	29.6164	0.0168	0.336	0.7215	0.5643
24871	Speaking	CR	4	17855	5.4719	5.7463	18.8967	16.9196	52.9656	0	0.0728	0.7654	0.5531
20009	Writing	MC	1	17855		21.5962	54.1697	23.3492		0.1232	0.7617	0.5417	0.3105
20122	Writing	CR	2	17855	24.0885	33.4192	41.9658				0.5265	0.5868	0.548
20244	Writing	CR	2	17855	18.8799	40.5097	39.4847				1.1257	0.5974	0.6057
20398	Writing	MC	1	17855		25.7183	12.6407	60.1568		0.0392	1.445	0.6016	0.3945

ITEM ID	Domain	Type	Points	N	0	1/A	2/B	3/C	4/D	Multiple Marks	Omit/ Invalid	Adjusted p-Value	Adjusted Item-Total Correlation
20399	Writing	MC	1	17855		18.9583	30.7981	49.1459		0.0448	1.0529	0.4915	0.3458
20837	Writing	MC	1	17855		17.8157	60.8009	19.6024		0.0336	1.7474	0.608	0.408
20859	Writing	CR	4	17855	5.1359	17.4965	45.4158	21.7306	8.429		1.7921	0.5181	0.6666
24552	Writing	MC	1	17855		48.7595	34.4609	15.8891		0.0504	0.8401	0.4876	0.1904
24842	Writing	MC	1	17855		22.2571	65.3822	11.2125		0.084	1.0641	0.6538	0.4066
24846	Writing	MC	1	17855		27.1297	17.4853	54.5169		0.0784	0.7897	0.5452	0.4004
24848	Writing	MC	1	17855		35.9787	48.6922	14.7634		0.1064	0.4593	0.4869	0.168
24856	Writing	CR	2	17855	24.9567	25.0126	49.5267				0.504	0.6203	0.5558
29030	Writing	CR	2	17855	25.6343	41.1089	32.6183				0.6385	0.5317	0.5848

B.3: Level III – Operational Items

ITEM ID	Domain	Type	Points	N	0	1/A	2/B	3/C	4/D	Multiple Marks	Omit/ Invalid	Adjusted p-Value	Adjusted Item-Total Correlation
19930	Listening	MC	1	19656		60.7143	15.2778	13.894	9.5289	0.2086	0.3765	0.6071	0.3319
20564	Listening	MC	1	19656		8.6233	9.3508	11.747	69.9735	0.0458	0.2595	0.6997	0.3206
20661	Listening	MC	1	19656		67.0279	19.7192	2.9253	10.0987	0.0458	0.1832	0.6703	0.3783
20662	Listening	MC	1	19656		6.8376	79.6144	7.0615	6.1203	0.056	0.3103	0.7961	0.4626
20664	Listening	MC	1	19656		9.8901	71.4184	10.6583	7.7127	0.1018	0.2188	0.7142	0.3982
21109	Listening	MC	1	19656		16.0307	8.6996	51.7755	22.8582	0.2595	0.3765	0.5178	0.3164
24329	Listening	MC	1	19656		7.3514	68.4778	9.5391	14.3315	0.0204	0.2798	0.6848	0.2403
24330	Listening	MC	1	19656		6.1101	3.1644	26.2566	63.9957	0.056	0.4172	0.64	0.4105
24343	Listening	MC	1	19656		15.4915	10.2513	15.2371	58.5724	0.1628	0.2849	0.5857	0.3918
24481	Listening	MC	1	19656		16.9414	66.2597	10.2971	6.1661	0.0967	0.2391	0.6626	0.3178
24515	Listening	MC	1	19656		6.802	2.9558	7.4074	82.5651	0.0611	0.2086	0.8257	0.4017
24516	Listening	MC	1	19656		2.0554	24.0639	63.1766	10.3175	0.0458	0.3409	0.6318	0.3562
24535	Listening	MC	1	19656		13.9652	67.5977	9.534	8.5877	0.0712	0.2442	0.676	0.2658
28939	Listening	MC	1	19656		13.9449	63.8278	15.9748	5.8913	0.1272	0.234	0.6383	0.2553
28940	Listening	MC	1	19656		5.3317	69.5309	21.1742	3.5918	0.117	0.2544	0.6953	0.3551
29219	Listening	MC	1	19656		68.2743	4.4872	20.9249	5.8608	0.0509	0.4019	0.6827	0.459
29222	Listening	MC	1	19656		17.1245	2.6608	13.7668	66.1477	0.0712	0.2289	0.6615	0.2856
29224	Listening	MC	1	19656		8.3232	16.3207	62.9223	12.0981	0.0865	0.2493	0.6292	0.4627
29372	Listening	MC	1	19656		19.6174	4.7212	62.1439	13.0902	0.2239	0.2035	0.6214	0.3563
29389	Listening	MC	1	19656		54.5431	20.0193	12.3321	12.7289	0.173	0.2035	0.5454	0.335
19929	Reading	MC	1	19656		64.6978	14.8046	10.0071	10.0122	0.1018	0.3765	0.647	0.4174
20202	Reading	MC	1	19656		72.6394	9.0659	9.4526	8.4961	0.1475	0.1984	0.7264	0.4131
21154	Reading	MC	1	19656		60.5362	6.1915	17.0533	15.7509	0.0356	0.4324	0.6054	0.3579
21156	Reading	MC	1	19656		11.9404	6.395	6.9699	73.9469	0.2035	0.5444	0.7395	0.5267
21157	Reading	MC	1	19656		13.8278	67.3179	8.0586	10.0173	0.0356	0.7428	0.6732	0.4908
21159	Reading	MC	1	19656		14.3417	55.1994	12.0676	17.791	0.0763	0.524	0.552	0.39
24421	Reading	MC	1	19656		20.3449	11.1416	65.293	2.9253	0.117	0.1781	0.6529	0.423
24435	Reading	MC	1	19656		11.7776	12.3474	20.7774	54.5686	0.1526	0.3765	0.5457	0.3338
24512	Reading	MC	1	19656		8.1146	7.3158	74.5726	9.417	0.0611	0.5189	0.7457	0.5087
24514	Reading	MC	1	19656		74.5269	6.2322	15.059	3.78	0.0458	0.3561	0.7453	0.3603
24518	Reading	MC	1	19656		16.3716	50.7631	19.9735	12.3779	0.0763	0.4375	0.5076	0.3468
25180	Reading	MC	1	19656		19.6276	65.6899	5.6624	8.5572	0.1221	0.3409	0.6569	0.407
29071	Reading	MC	1	19656		17.1602	10.9636	8.7658	62.7544	0.0712	0.2849	0.6275	0.4813
29073	Reading	MC	1	19656		21.688	10.7041	8.0891	59.0761	0.056	0.3867	0.5908	0.4221
29074	Reading	MC	1	19656		9.8138	68.0047	7.2243	14.6113	0.0967	0.2493	0.68	0.3663
29084	Reading	MC	1	19656		22.2527	36.1518	27.8846	13.1614	0.0611	0.4884	0.3615	0.3311
29085	Reading	MC	1	19656		10.9076	14.535	10.5922	63.2784	0.1323	0.5545	0.6328	0.4685
29086	Reading	MC	1	19656		10.521	23.9978	52.8795	11.8793	0.0967	0.6258	0.5288	0.3324
29087	Reading	MC	1	19656		20.3551	22.268	10.1801	46.5049	0.0611	0.6309	0.465	0.2727
29366	Reading	MC	1	19656		16.1325	7.5295	68.488	7.4074	0.1119	0.3307	0.6849	0.4568
20152	Speaking	CR	2	19656	11.6453	41.0358	47.3189			0.0051	0.056	0.6784	0.4756
20686	Speaking	CR	2	19656	1.165	6.7969	92.0381			0	0.0356	0.9544	0.4377
24728	Speaking	CR	4	19656	1.5975	2.8846	14.3264	41.5649	39.6266	0.0204	0.234	0.7868	0.5343
24921	Speaking	CR	2	19656	3.5562	28.6121	67.8317			0.0051	0.056	0.8214	0.5173
24925	Speaking	CR	4	19656	4.2989	3.2255	15.5067	20.5026	56.4662	0	0.1577	0.804	0.5404
24932	Speaking	CR	4	19656	2.9202	6.0541	22.7513	37.6425	30.6319	0.0051	0.0712	0.7175	0.6082
27916	Speaking	CR	2	19656	2.7167	17.0482	80.235			0.0051	0.0407	0.8876	0.4411
19946	Writing	MC	1	19656		3.2306	8.6386	66.4174	21.2505	0.0814	0.3816	0.6642	0.3112
19949	Writing	MC	1	19656		8.6131	16.7837	11.9912	62.3474	0.0814	0.1832	0.6235	0.327
19994	Writing	MC	1	19656		7.1429	7.7839	69.1036	15.4965	0.0254	0.4477	0.691	0.4657
20029	Writing	MC	1	19656		10.9839	10.4701	68.5083	9.6459	0.1374	0.2544	0.6851	0.3339

ITEM ID	Domain	Type	Points	N	0	1/A	2/B	3/C	4/D	Multiple Marks	Omit/ Invalid	Adjusted p-Value	Adjusted Item-Total Correlation
20206	Writing	CR	4	19656	1.4091	9.0405	53.836	26.0531	7.2192		2.4421	0.5594	0.5785
20369	Writing	MC	1	19656		21.5914	7.6465	9.3407	60.8822	0.1781	0.3612	0.6088	0.3998
20551	Writing	MC	1	19656		54.4007	11.0144	8.7098	25.4375	0.1526	0.2849	0.544	0.363
20553	Writing	CR	2	19656	38.3294	45.8588	14.6266				1.1853	0.3756	0.4066
24429	Writing	MC	1	19656		7.7076	54.9705	7.2293	29.7059	0.1119	0.2747	0.5497	0.2881
24525	Writing	CR	4	19656	2.3556	17.674	48.8757	22.4054	6.451		2.2384	0.5211	0.5923
24902	Writing	MC	1	19656		63.0698	10.5362	6.0796	19.7955	0.0916	0.4274	0.6307	0.2821
24937	Writing	CR	2	19656	37.4339	37.617	23.3415				1.6076	0.4215	0.4394

B.4: Level IV – Operational Items

ITEM ID	Domain	Type	Points	N	0	1/A	2/B	3/C	4/D	Multiple Marks	Omit/ Invalid	Adjusted p-Value	Adjusted Item-Total Correlation
19816	Listening	MC	1	13185		55.2598	25.1877	14.4027	4.6796	0.0607	0.4096	0.5526	0.2918
20334	Listening	MC	1	13185		6.0675	35.6466	2.7911	55.3129	0.0531	0.1289	0.5531	0.3203
20426	Listening	MC	1	13185		78.3769	5.2029	4.4596	11.7482	0.0683	0.1441	0.7838	0.4292
20784	Listening	MC	1	13185		13.5836	20.8495	3.0565	62.336	0.0228	0.1517	0.6234	0.4114
24194	Listening	MC	1	13185		10.0721	41.8127	45.4532	2.3587	0.0758	0.2275	0.4181	0.1296
24195	Listening	MC	1	13185		70.1479	9.3288	4.4975	15.6162	0.0531	0.3565	0.7015	0.3237
24235	Listening	MC	1	13185		13.0982	13.576	50.4285	22.7304	0.0152	0.1517	0.5043	0.233
24236	Listening	MC	1	13185		22.2526	54.3269	6.917	16.1547	0.0455	0.3034	0.5433	0.3769
24238	Listening	MC	1	13185		14.873	22.2677	51.1339	11.4676	0.0531	0.2048	0.5113	0.156
24239	Listening	MC	1	13185		12.537	9.7535	15.2522	61.9644	0.0607	0.4323	0.6196	0.2847
24350	Listening	MC	1	13185		10.8457	24.5279	9.7611	54.5013	0.0303	0.3337	0.545	0.3537
24352	Listening	MC	1	13185		69.3743	10.5954	8.4262	11.3614	0.0379	0.2048	0.6937	0.4043
24473	Listening	MC	1	13185		5.7035	7.592	63.7391	22.5787	0.0455	0.3413	0.6374	0.3398
24504	Listening	MC	1	13185		13.8946	56.1547	11.3386	18.4149	0.0834	0.1138	0.5615	0.3113
24536	Listening	MC	1	13185		12.3929	6.333	77.7474	3.2916	0.0303	0.2048	0.7775	0.3811
24602	Listening	MC	1	13185		31.7634	16.5339	46.7425	4.672	0.0531	0.2351	0.4674	0.3044
25033	Listening	MC	1	13185		7.4327	7.9484	6.0447	78.3542	0.091	0.1289	0.7835	0.4488
29139	Listening	MC	1	13185		74.1904	8.5173	3.7163	13.2878	0.0379	0.2503	0.7419	0.3639
29140	Listening	MC	1	13185		71.8392	22.3436	2.7152	2.9427	0.0379	0.1214	0.7184	0.4017
33061	Listening	MC	1	13185		5.6124	84.0273	7.7057	2.5332	0.0228	0.0986	0.8403	0.4022
20236	Reading	MC	1	13185		57.8915	12.4005	13.2878	16.1092	0.0228	0.2882	0.5789	0.249
20237	Reading	MC	1	13185		19.416	55.3129	9.5108	15.4494	0.0683	0.2427	0.5531	0.2625
20238	Reading	MC	1	13185		6.2723	26.2344	51.8544	15.0853	0.0228	0.5309	0.5185	0.3398
20239	Reading	MC	1	13185		13.03	10.4892	52.4232	23.6481	0.0379	0.3716	0.5242	0.258
20378	Reading	MC	1	13185		65.9462	15.3204	12.0667	6.4164	0.0076	0.2427	0.6595	0.4974
24229	Reading	MC	1	13185		26.8259	57.262	9.1468	6.333	0.0379	0.3944	0.5726	0.3107
24231	Reading	MC	1	13185		51.8923	13.0072	14.964	19.8711	0.0303	0.2351	0.5189	0.2907
24240	Reading	MC	1	13185		13.9249	11.8999	54.9109	19.0064	0.0076	0.2503	0.5491	0.3843
24241	Reading	MC	1	13185		10.8987	71.3538	6.9852	10.5271	0.0303	0.2048	0.7135	0.3569
24314	Reading	MC	1	13185		28.7751	63.2234	4.9147	2.9048	0.0303	0.1517	0.6322	0.4605
24387	Reading	MC	1	13185		56.7008	18.2101	9.2226	15.3659	0.0683	0.4323	0.567	0.3434
24388	Reading	MC	1	13185		10.1024	20.9784	16.4581	52.0971	0.0455	0.3185	0.521	0.3813
24389	Reading	MC	1	13185		20.0758	10.9063	8.8737	59.8786	0.0228	0.2427	0.5988	0.4571
24735	Reading	MC	1	13185		65.7186	6.9776	3.7467	23.3371	0.0379	0.182	0.6572	0.5014
24950	Reading	MC	1	13185		41.0239	7.5389	3.322	47.9333	0.0076	0.1744	0.4793	0.3228
25140	Reading	MC	1	13185		16.3671	71.7558	7.3948	4.2321	0.0379	0.2124	0.7176	0.3945
29242	Reading	MC	1	13185		23.7315	10.6788	53.3864	11.9757	0.0379	0.1896	0.5339	0.3548
29250	Reading	MC	1	13185		8.3049	45.9158	14.9943	30.4664	0.0531	0.2655	0.4592	0.3822
29265	Reading	MC	1	13185		10.3982	63.6253	19.9924	5.8551	0.0076	0.1214	0.6363	0.4102
29380	Reading	MC	1	13185		32.5673	13.4092	14.8275	38.8851	0.0303	0.2806	0.3889	0.2936
20123	Speaking	CR	2	13185	11.9606	34.0766	53.9628			0	0.1441	0.71	0.5578
21166	Speaking	CR	2	13185	3.3675	14.8957	81.7368			0.0152	0.091	0.8918	0.5415
24740	Speaking	CR	4	13185	2.5635	4.27	15.1308	35.9651	42.0705	0.0076	0.1896	0.7768	0.598
29394	Speaking	CR	2	13185	6.3102	34.6758	59.014			0.0076	0.1138	0.7635	0.5979
29395	Speaking	CR	4	13185	2.6166	3.6784	11.642	32.5218	49.5411	0.0303	0.1138	0.8067	0.6166
29397	Speaking	CR	4	13185	3.6026	3.3902	13.5305	16.132	63.3447	0	0.2199	0.8306	0.5643
29421	Speaking	CR	2	13185	8.7903	21.6837	69.526			0	0.0531	0.8037	0.5496
20014	Writing	MC	1	13185		64.7099	7.5465	18.0281	9.526	0.0607	0.1289	0.6471	0.3322
20024	Writing	MC	1	13185		15.1005	52.7114	10.1858	21.7596	0.0379	0.2048	0.5271	0.3298
20097	Writing	MC	1	13185		4.8768	75.237	2.3132	17.4289	0.0303	0.1138	0.7524	0.2886
20098	Writing	MC	1	13185		65.2105	5.1498	10.201	19.2795	0.0455	0.1138	0.6521	0.3314

ITEM ID	Domain	Type	Points	N	0	1/A	2/B	3/C	4/D	Multiple Marks	Omit/ Invalid	Adjusted p-Value	Adjusted Item-Total Correlation
20270	Writing	MC	1	13185		34.471	9.4805	12.3019	43.3826	0.0607	0.3034	0.4338	0.3209
20520	Writing	MC	1	13185		55.9575	11.4676	10.8836	21.4714	0.0303	0.1896	0.5596	0.2857
20521	Writing	MC	1	13185		63.1703	11.5283	17.1483	7.8119	0.0834	0.2579	0.6317	0.4015
20793	Writing	CR	2	13185	44.634	24.8388	29.6701				0.8571	0.4209	0.3278
24733	Writing	CR	4	13185	2.7455	13.8794	46.5832	26.022	7.9712		2.7987	0.5425	0.6302
25049	Writing	MC	1	13185		9.1392	10.9973	20.986	58.6955	0.0683	0.1138	0.587	0.3504
25059	Writing	CR	2	13185	47.5009	43.9666	7.6906				0.8419	0.2967	0.3385
25063	Writing	CR	4	13185	1.5472	11.2704	51.5283	25.2256	7.9939		2.4346	0.5549	0.607

B.5: Level V – Operational Items

ITEM ID	Domain	Type	Points	N	0	1/A	2/B	3/C	4/D	Multiple Marks	Omit/ Invalid	Adjusted p-Value	Adjusted Item-Total Correlation
20423	Listening	MC	1	13876		13.7648	21.9732	59.6137	4.4105	0.0432	0.1946	0.5961	0.2844
20425	Listening	MC	1	13876		3.4448	10.3704	45.7481	40.2205	0.0144	0.2018	0.4575	0.2943
20796	Listening	MC	1	13876		5.6284	82.2932	5.1167	6.7094	0.0288	0.2234	0.8229	0.4368
24197	Listening	MC	1	13876		22.9893	18.1897	6.0464	52.0683	0.0288	0.6774	0.5207	0.344
24272	Listening	MC	1	13876		10.5866	40.4944	27.6449	20.9354	0.0577	0.2811	0.4049	0.2803
24274	Listening	MC	1	13876		5.4627	65.8907	4.1727	24.0199	0.0216	0.4324	0.6589	0.4325
24278	Listening	MC	1	13876		75.3892	4.4826	16.9934	2.8394	0.0504	0.245	0.7539	0.3597
24414	Listening	MC	1	13876		67.5123	5.4627	19.213	7.1202	0.0288	0.663	0.6751	0.3833
24443	Listening	MC	1	13876		10.2767	61.7469	17.8582	9.8299	0.0432	0.245	0.6175	0.1649
24506	Listening	MC	1	13876		16.388	9.7723	23.4289	50.0721	0.036	0.3027	0.5007	0.3157
24507	Listening	MC	1	13876		14.4422	10.4785	11.9054	62.7126	0.0577	0.4036	0.6271	0.3277
24508	Listening	MC	1	13876		7.1707	10.0749	16.7051	65.8475	0.036	0.1658	0.6585	0.2976
24509	Listening	MC	1	13876		13.3252	70.4165	8.4751	7.5166	0.0216	0.245	0.7042	0.3187
24989	Listening	MC	1	13876		73.7677	5.3906	1.917	18.6725	0.0432	0.209	0.7377	0.3853
29093	Listening	MC	1	13876		21.0724	8.8066	46.6561	22.8812	0.0072	0.5765	0.4666	0.3241
29094	Listening	MC	1	13876		50.8648	11.9559	32.8048	4.0069	0.0432	0.3243	0.5086	0.2006
29095	Listening	MC	1	13876		54.0357	20.085	20.6255	4.8501	0.0649	0.3387	0.5404	0.3288
29422	Listening	MC	1	13876		25.2378	49.6397	23.2055	1.708	0.0288	0.1802	0.4964	0.4466
29423	Listening	MC	1	13876		12.1577	5.5203	70.3805	11.7037	0.0288	0.209	0.7038	0.4441
29755	Listening	MC	1	13876		4.0357	8.5688	28.1133	58.9579	0.0721	0.2522	0.5896	0.3584
20373	Reading	MC	1	13876		16.1069	65.4511	7.8625	10.3056	0.0432	0.2306	0.6545	0.4436
20479	Reading	MC	1	13876		10.2623	18.4275	50.4828	20.5607	0.036	0.2306	0.5048	0.3853
20817	Reading	MC	1	13876		7.9346	12.2658	73.6379	5.9816	0.0216	0.1585	0.7364	0.4708
21165	Reading	MC	1	13876		50.1874	14.4062	18.2545	16.5249	0.0288	0.5982	0.5019	0.419
24317	Reading	MC	1	13876		71.1156	10.392	15.2421	3.0556	0.0144	0.1802	0.7112	0.3511
24318	Reading	MC	1	13876		24.1712	55.8807	10.6515	9.0588	0.036	0.2018	0.5588	0.4186
24408	Reading	MC	1	13876		65.3575	11.473	15.516	7.3364	0.036	0.2811	0.6536	0.5597
24409	Reading	MC	1	13876		7.2139	21.8363	22.3191	48.328	0.0288	0.2739	0.4833	0.4015
24413	Reading	MC	1	13876		63.563	8.5832	20.676	6.94	0.0288	0.209	0.6356	0.4455
24417	Reading	MC	1	13876		56.1689	7.2283	17.7357	18.5428	0.0432	0.2811	0.5617	0.3372
24418	Reading	MC	1	13876		21.966	16.2223	56.9905	4.5979	0.0216	0.2018	0.5699	0.2994
29142	Reading	MC	1	13876		73.8397	10.1903	10.5866	5.0447	0.0144	0.3243	0.7384	0.3225
29143	Reading	MC	1	13876		74.3154	10.4425	6.7887	8.0643	0.036	0.3531	0.7432	0.4704
29144	Reading	MC	1	13876		5.8951	8.3886	22.3696	62.8423	0.0288	0.4756	0.6284	0.4035
29146	Reading	MC	1	13876		19.35	24.8487	13.1882	41.979	0.0288	0.6054	0.4198	0.272
29147	Reading	MC	1	13876		7.9778	62.5108	15.5088	13.527	0.0144	0.4612	0.6251	0.36
29149	Reading	MC	1	13876		17.2961	14.1611	17.6276	50.5045	0.0721	0.3387	0.505	0.3316
29151	Reading	MC	1	13876		22.5137	53.3151	19.1698	4.7636	0.0144	0.2234	0.5332	0.3301
29152	Reading	MC	1	13876		10.1254	29.8933	48.5226	11.156	0.0432	0.2594	0.4852	0.3341
33805	Reading	MC	1	13876		15.7899	41.4457	26.7584	15.6097	0.0144	0.382	0.4145	0.2597
20177	Speaking	CR	2	13876	7.0121	20.7985	72.1894			0	0.0649	0.8259	0.6265
20681	Speaking	CR	2	13876	3.4592	18.6869	77.8538			0	0.1874	0.872	0.5497
20806	Speaking	CR	2	13876	7.1202	17.7212	75.1585			0.0072	0.0432	0.8402	0.6139
24234	Speaking	CR	4	13876	3.8412	6.5653	15.8403	29.4681	44.2851	0.0144	0.1153	0.7595	0.6802
24738	Speaking	CR	4	13876	2.5872	3.9349	11.8766	31.4212	50.1802	0.0144	0.3315	0.8067	0.6163
25116	Speaking	CR	2	13876	5.5636	29.043	65.3935			0.0144	0.2018	0.7991	0.5703
29406	Speaking	CR	4	13876	4.4465	3.2502	13.7432	12.4532	66.1069	0.0072	0.2811	0.8313	0.6342
19862	Writing	MC	1	13876		9.4624	22.9965	39.7377	27.371	0.0504	0.382	0.3974	0.1839
20171	Writing	MC	1	13876		7.9129	3.661	73.328	14.7593	0.0144	0.3243	0.7333	0.5102
20219	Writing	MC	1	13876		21.9948	67.851	4.3528	5.5275	0	0.2739	0.6785	0.5675
20472	Writing	MC	1	13876		9.4984	11.3577	29.0069	49.7982	0.0216	0.3171	0.498	0.3675

ITEM ID	Domain	Type	Points	N	0	1/A	2/B	3/C	4/D	Multiple Marks	Omit/ Invalid	Adjusted p-Value	Adjusted Item-Total Correlation
24192	Writing	CR	4	13876	1.2467	11.5451	46.8074	27.4791	10.6299		2.2918	0.5753	0.6148
24227	Writing	MC	1	13876		59.5272	13.3035	16.4385	10.4209	0.0144	0.2955	0.5953	0.4764
24298	Writing	MC	1	13876		21.8074	21.5696	46.0507	10.1254	0.0288	0.418	0.4605	0.1389
24299	Writing	MC	1	13876		40.7106	51.0089	4.8861	3.0845	0.0504	0.2594	0.5101	0.2871
25093	Writing	MC	1	13876		3.4304	75.6414	7.0914	13.6278	0.0144	0.1946	0.7564	0.367
25102	Writing	MC	1	13876		6.4428	66.143	18.2617	8.9219	0	0.2306	0.6614	0.4458
25106	Writing	CR	2	13876	37.8136	37.2514	23.7821				1.153	0.4241	0.3607
25115	Writing	CR	4	13876	5.1744	16.5105	42.4618	22.1173	8.9579		4.778	0.509	0.6349
29364	Writing	MC	1	13876		52.0179	17.6492	14.3701	15.7034	0.036	0.2234	0.5202	0.3316

B.6: Level I – Field Test Items

ITEM ID	Domain	Type	Points	N	0	1/A	2/B	3/C	4/D	Multiple Marks	Omit/ Invalid	Adjusted p-Value	Adjusted Item-Total Correlation
31165	Listening	MC	1	5130		4.9123	89.7661	4.7368		0.039	0.5458	0.8977	0.382
31167	Listening	MC	1	5169		94.9894	2.8245	1.5283		0.0774	0.5804	0.9499	0.2978
31248	Listening	MC	1	5130		31.9688	49.883	16.8031		0.1754	1.1696	0.4988	0.266
31249	Listening	MC	1	10299		23.9441	24.9733	49.4902		0.1845	1.4079	0.4949	0.3835
31250	Listening	MC	1	5130		54.0741	19.2788	24.9903		0.1754	1.4815	0.5407	0.2247
31251	Listening	MC	1	5169		27.9358	18.8238	51.0737		0.0774	2.0894	0.5107	0.3958
31252	Listening	MC	1	5169		31.9985	28.6322	37.0478		0.1161	2.2055	0.3705	0.2322
31253	Listening	MC	1	10299		19.196	19.264	59.5786		0.068	1.8934	0.5958	0.4397
31254	Listening	MC	1	5130		35.848	47.8947	14.7173		0.2144	1.3255	0.4789	0.2972
31255	Listening	MC	1	5169		19.1139	70.6326	8.609		0.1161	1.5283	0.7063	0.4762
31256	Listening	MC	1	5169		34.3974	47.9396	16.0186		0.0387	1.6057	0.4794	0.2311
33064	Listening	MC	1	5130		28.3431	59.1228	11.423		0.117	0.9942	0.5912	0.4411
33065	Listening	MC	1	5169		20.6616	14.2581	63.4939		0.1548	1.4316	0.6349	0.4808
33101	Listening	MC	1	5130		46.2573	33.8012	18.694		0.2534	0.9942	0.338	0.2632
28477	Reading	MC	1	5130		67.232	9.8635	21.7739		0.1559	0.9747	0.6723	0.1683
28478	Reading	MC	1	5169		9.9439	8.2801	80.4604		0.0774	1.2382	0.8046	0.4804
28480	Reading	MC	1	5130		52.4951	31.9688	13.2749		0.2924	1.9688	0.525	0.3731
31175	Reading	MC	1	5169		14.084	64.674	18.1466		0.1548	2.9406	0.6467	0.4453
31196	Reading	MC	1	5130		2.2807	1.5984	95.4191		0.1559	0.5458	0.9542	0.2752
31197	Reading	MC	1	5169		2.5537	93.3062	2.7665		0.445	0.9286	0.9331	0.2333
31232	Reading	MC	1	5169		34.7069	25.1499	33.5655		0.0967	6.4809	0.3357	0.4579
31233	Reading	MC	1	5130		58.0507	19.8635	18.2066		0.078	3.8012	0.5805	0.2219
31235	Reading	MC	1	10299		30.1097	39.6446	25.1772		0.068	5.0005	0.3964	0.185
31477	Reading	MC	1	5130		89.2593	5.5166	4.269		0.1949	0.7602	0.8926	0.3286
31485	Reading	MC	1	5169		9.6731	18.3014	70.207		0.3869	1.4316	0.7021	0.5096
31497	Reading	MC	1	5169		32.2306	34.9971	27.5295		0.058	5.1848	0.2753	0.298
33126	Reading	MC	1	5130		39.7856	38.577	18.2456		0.078	3.3138	0.3858	0.17
25279	Speaking	CR	4	5130	16.2768	20.9942	28.2846	22.4756	12	0	0.0975	0.4822	0.6594
26807	Speaking	CR	4	5130	7.154	8.3431	24.8538	37.3879	22	0.0195	0.1949	0.6481	0.6392
28487	Speaking	CR	4	5169	21.8804	20.0426	26.0012	20.3714	12	0.0387	0.2322	0.4499	0.6448
28492	Speaking	CR	4	5169	24.0859	13.5423	19.5396	13.7164	29	0	0.3869	0.5256	0.6156
31205	Speaking	CR	2	5169	9.3829	25.4982	65.119			0.0387	0.0967	0.7787	0.5489
31206	Speaking	CR	2	5130	14.1326	32.6316	53.2359			0.0195	0.039	0.6955	0.5502
31214	Speaking	CR	2	5130	7.2125	22.8655	69.922			0.0195	0.0975	0.8135	0.5482
31216	Speaking	CR	2	5169	7.1581	22.1706	70.6713			0.0193	0.1548	0.8176	0.5546
31222	Speaking	CR	4	5130	9.5127	8.1287	22.1832	18.8304	41	0	0.1754	0.6859	0.6189
31246	Speaking	CR	4	5169	10.2921	12.188	25.0532	34.4554	18	0	0.1548	0.5943	0.64
28504	Writing	CR	2	5130	37.4659	19.2788	41.2476				2.0078	0.5089	0.5812
28505	Writing	CR	2	5169	46.7596	31.7663	17.8758				3.5983	0.3376	0.6067
28506	Writing	CR	2	5130	38.3626	16.8031	42.807				2.0273	0.5121	0.5683
28507	Writing	CR	2	5169	53.6081	9.3442	34.2039				2.8438	0.3888	0.5214
31040	Writing	MC	1	5169		81.0408	12.2461	5.4363		0.1354	1.1414	0.8104	0.3936
31065	Writing	MC	1	5130		16.7057	79.3957	3.0409		0.0975	0.7602	0.794	0.4544
31189	Writing	MC	1	5130		49.4737	28.1287	19.7661		0.117	2.5146	0.4947	0.2394
31190	Writing	MC	1	5169		24.7437	53.0664	17.8371		0.058	4.2948	0.5307	0.2785
33107	Writing	CR	1	10299	29.5756	69.4825					0.9419	0.6948	0.3891

B.7: Level II – Field Test Items

ITEM ID	Domain	Type	Points	N	0	1/A	2/B	3/C	4/D	Multiple Marks	Omit/ Invalid	Adjusted p-Value	Adjusted Item-Total Correlation
24826	Listening	MC	1	8943		82.8805	8.8002	8.0174		0.0895	0.2125	0.8288	0.4433
31005	Listening	MC	1	8912		20.5453	58.4044	20.478		0.0337	0.5386	0.584	0.3625
31009	Listening	MC	1	8912		7.9443	85.8057	5.8909		0.0337	0.3254	0.8581	0.4309
31019	Listening	MC	1	8943		19.4789	13.9774	65.9622		0.3578	0.2236	0.6596	0.3797
31067	Listening	MC	1	8912		20.9268	11.0189	67.6279		0.0898	0.3366	0.6763	0.3827
31070	Listening	MC	1	8912		8.6961	26.2455	64.4749		0.0673	0.5162	0.6447	0.2865
31073	Listening	MC	1	8943		7.7491	3.5782	88.3149		0.1118	0.246	0.8831	0.4056
31074	Listening	MC	1	8943		87.4315	4.3945	7.9504		0.0335	0.1901	0.8743	0.2607
31075	Listening	MC	1	8943		9.1021	84.2447	6.3625		0.0224	0.2684	0.8424	0.3588
31108	Listening	MC	1	8912		16.8649	11.6472	71.0615		0.1459	0.2805	0.7106	0.298
31109	Listening	MC	1	8912		16.4946	60.3007	22.6436		0.0785	0.4825	0.603	0.4121
33070	Listening	MC	1	8943		93.8611	3.6565	2.2923		0.0671	0.123	0.9386	0.2344
25172	Reading	MC	1	8912		2.3227	96.1625	1.1894		0.0449	0.2805	0.9616	0.3327
25173	Reading	MC	1	8912		68.649	12.2644	18.649		0.1122	0.3254	0.6865	0.4444
31002	Reading	MC	1	8912		3.0521	9.0664	87.5112		0.1122	0.2581	0.8751	0.3701
31006	Reading	MC	1	8943		5.1325	17.4997	77.0659		0.0895	0.2125	0.7707	0.4776
31010	Reading	MC	1	8943		3.0638	93.8723	2.8626		0.0224	0.1789	0.9387	0.2992
31016	Reading	MC	1	8943		2.9744	95.6055	1.1965		0	0.2236	0.9561	0.3094
31077	Reading	MC	1	8943		26.0986	12.848	59.4543		0.0671	1.5319	0.5945	0.4963
31082	Reading	MC	1	8912		21.9704	11.535	64.4075		0.0561	2.031	0.6441	0.4722
31085	Reading	MC	1	8912		59.4031	22.3968	15.6979		0.0337	2.4686	0.594	0.3934
31086	Reading	MC	1	8912		13.3416	11.4677	72.8456		0.0224	2.3227	0.7285	0.5905
31087	Reading	MC	1	8912		23.9452	24.6746	49.5063		0.0449	1.829	0.4951	0.4191
31381	Reading	MC	1	8912		5.0157	93.5144	0.8079		0.0449	0.6171	0.9351	0.3631
31382	Reading	MC	1	8943		93.7605	2.3929	3.2651		0.0447	0.5367	0.9376	0.326
31386	Reading	MC	1	8943		35.7039	39.9754	22.4757		0.0559	1.7891	0.3998	0.1778
31387	Reading	MC	1	8943		26.6577	18.2489	53.0694		0.0447	1.9792	0.2666	0.0017
31388	Reading	MC	1	8943		28.0107	20.3511	49.6478		0.0224	1.968	0.4965	0.378
24868	Speaking	CR	2	8943	6.1165	27.228	66.6555			0	0	0.8027	0.5181
30443	Speaking	CR	4	8943	3.3993	4.8977	21.6259	42.1671	27.9101	0.0224	0.2795	0.7157	0.5932
31018	Speaking	CR	2	8912	13.5323	32.3496	54.118			0.0224	0.0561	0.7029	0.5564
31023	Speaking	CR	4	8943	10.6117	7.9168	24.1082	15.1068	42.2565	0	0.7045	0.6762	0.5643
31025	Speaking	CR	4	8912	4.1741	3.0745	17.6055	15.3389	59.807	0.0112	0.662	0.8088	0.5635
31092	Speaking	CR	4	8912	4.1068	6.452	23.6086	39.43	26.4026	0.0112	0.5162	0.6939	0.5961
31563	Speaking	CR	2	8912	16.9322	46.7684	36.2994			0.0112	0.0561	0.5968	0.6226
31567	Speaking	CR	2	8943	7.7491	39.1368	53.1142			0	0.1118	0.7268	0.6187
33112	Speaking	CR	4	8912	5.3748	13.7792	34.0552	30.2513	16.5395	0.0112	0.1122	0.597	0.646
33113	Speaking	CR	4	8943	4.5063	9.158	30.3254	34.6528	21.3575	0	0.0559	0.648	0.6456
20271	Writing	MC	1	8912		36.0637	36.535	25.7518		0.101	1.5485	0.3606	0.0813
20397	Writing	MC	1	8912		55.2513	20.0067	23.1486		0.101	1.4924	0.5525	0.1985
24854	Writing	CR	2	8912	26.7281	6.553	66.0682				0.6507	0.6934	0.41
31011	Writing	MC	1	8943		19.0205	63.7146	16.1803		0.0335	1.0511	0.6371	0.3781
31021	Writing	MC	1	8943		23.5491	27.9884	47.0759		0.0671	1.3195	0.4708	0.3369
31100	Writing	CR	2	8943	43.3188	34.8317	20.7872				1.0623	0.382	0.5646
31102	Writing	CR	2	8912	34.8518	36.434	27.031				1.6832	0.4525	0.5756
31103	Writing	CR	4	8912	8.4381	20.9717	46.2186	17.0781	4.2751		3.0184	0.4544	0.6824
31104	Writing	CR	4	8943	4.73	13.5525	49.4018	24.6897	6.1053		1.5207	0.5271	0.6522
31551	Writing	CR	2	8943	21.3015	4.0814	74.1586				0.4585	0.762	0.5857

B.8: Level III – Field Test Items

ITEM ID	Domain	Type	Points	N	0	1/A	2/B	3/C	4/D	Multiple Marks	Omit/ Invalid	Adjusted p-Value	Adjusted Item-Total Correlation
25177	Listening	MC	1	10261		2.0271	90.995	5.0775	1.7835	0.0487	0.0682	0.91	0.4177
25178	Listening	MC	1	9044		1.4042	27.123	2.8859	68.222	0.1548	0.2101	0.6822	0.1309
25267	Listening	MC	1	10261		17.5616	21.9569	51.2718	9.0537	0.078	0.078	0.5127	0.361
30741	Listening	MC	1	9044		24.5467	6.9549	61.3777	6.6342	0.1327	0.3538	0.6138	0.3129
31284	Listening	MC	1	10261		21.7425	17.279	54.4781	6.1592	0.1169	0.2241	0.5448	0.2641
31285	Listening	MC	1	10261		6.2957	11.6753	68.4923	13.2053	0.039	0.2924	0.6849	0.3838
31286	Listening	MC	1	9044		8.2264	11.831	20.6656	58.5471	0.2433	0.4865	0.5855	0.256
31287	Listening	MC	1	9044		38.6555	40.7563	14.5732	5.1526	0.0774	0.7851	0.4076	0.2229
31327	Listening	MC	1	9044		6.8222	9.4759	1.9129	81.2915	0.188	0.3096	0.8129	0.3695
31328	Listening	MC	1	9044		90.0818	2.134	1.8576	5.5064	0.0885	0.3317	0.9008	0.3748
31330	Listening	MC	1	9044		2.7753	4.7988	76.559	15.2477	0.0221	0.5971	0.7656	0.405
31341	Listening	MC	1	10261		7.5334	73.5308	8.8393	9.7651	0.078	0.2534	0.7353	0.3479
31342	Listening	MC	1	10261		33.5737	3.908	54.0006	8.2156	0.0487	0.2534	0.54	0.29
31343	Listening	MC	1	10261		69.886	12.4842	10.652	6.5198	0.0487	0.4093	0.6989	0.4987
19951	Reading	MC	1	9044		75.4644	5.5175	7.7621	10.5484	0.0553	0.6524	0.7546	0.5162
20006	Reading	MC	1	10261		68.2	17.7955	8.3325	5.3991	0.0682	0.2047	0.682	0.25
24892	Reading	MC	1	9044		90.889	2.8969	2.6979	2.9191	0.0663	0.5307	0.9089	0.4492
25273	Reading	MC	1	10261		10.3304	24.7149	14.1214	50.5896	0.0585	0.1852	0.5059	0.3954
31289	Reading	MC	1	10261		20.5633	14.4041	18.0099	46.8278	0.039	0.1559	0.4683	0.3157
31290	Reading	MC	1	10261		24.1399	22.873	39.7037	12.9909	0.1169	0.1754	0.397	0.2498
31291	Reading	MC	1	10261		41.5749	15.4858	35.4741	7.241	0.0585	0.1657	0.3547	0.1916
31294	Reading	MC	1	10261		29.5683	39.002	16.7528	14.3943	0.0292	0.2534	0.39	0.2723
31295	Reading	MC	1	10261		55.1798	14.6185	8.7711	21.0603	0.1267	0.2436	0.5518	0.3663
31319	Reading	MC	1	9044		76.5369	7.4414	11.9416	3.5161	0.0442	0.5197	0.7654	0.4344
31320	Reading	MC	1	9044		17.3375	14.3299	36.4772	31.0372	0.199	0.6192	0.3648	0.1665
31321	Reading	MC	1	9044		6.5789	83.4918	5.7718	3.3282	0.1659	0.6634	0.8349	0.4177
31322	Reading	MC	1	9044		10.272	19.0734	6.6563	63.1579	0.0885	0.7519	0.6316	0.3758
31324	Reading	MC	1	9044		63.3016	8.1048	11.5436	15.9885	0.0885	0.973	0.633	0.4597
20694	Speaking	CR	2	10261	1.8907	12.7278	85.3815			0.0195	0.1364	0.9175	0.4809
21167	Speaking	CR	2	9044	3.7373	26.9239	69.3388			0.0111	0.1106	0.828	0.5081
24929	Speaking	CR	2	10261	7.6991	29.2467	63.0543			0	0.078	0.7768	0.532
24930	Speaking	CR	2	9044	4.6329	26.0836	69.2835			0	0.1437	0.8233	0.5133
25153	Speaking	CR	4	10261	2.4754	1.608	9.424	12.4062	74.0863	0	0.1559	0.8851	0.5227
29161	Speaking	CR	4	10261	2.4656	5.633	20.1247	36.1856	35.5911	0	0.0682	0.742	0.645
31315	Speaking	CR	2	10261	1.5983	11.3537	87.048			0	0.039	0.9272	0.4229
31316	Speaking	CR	2	9044	2.0124	12.6603	85.3273			0	0.0774	0.9166	0.4441
31374	Speaking	CR	4	9044	3.1844	1.5812	11.433	11.5546	72.2468	0	0.3649	0.8702	0.5305
31391	Speaking	CR	4	10261	1.5008	1.7835	9.96	36.8483	49.9074	0	0.3508	0.8297	0.5487
31392	Speaking	CR	4	9044	2.0566	2.6979	14.3963	39.9491	40.9	0.0111	0.5086	0.7873	0.5486
33110	Speaking	CR	4	9044	3.3724	5.7054	22.0699	37.4171	31.4352	0.0111	0.2211	0.7196	0.6521
24909	Writing	MC	1	10261		8.0402	26.8687	42.5397	22.3955	0.0682	0.0877	0.4254	0.1382
24913	Writing	MC	1	9044		22.4126	6.0261	9.5422	61.4662	0.0995	0.4533	0.6147	0.3637
24917	Writing	CR	4	10261	4.1517	21.7523	50.2388	16.9672	4.366		2.5241	0.4765	0.5997
25145	Writing	CR	2	9044	41.0437	41.3202	16.088				1.5481	0.3675	0.3858
29096	Writing	CR	2	10261	32.4627	39.3529	27.0734				1.111	0.4675	0.444
31306	Writing	MC	1	10261		12.4939	13.1956	9.3363	64.7208	0.0195	0.2339	0.6472	0.3974
31307	Writing	MC	1	9044		15.303	71.9593	5.8492	6.0814	0.0774	0.7298	0.7196	0.3986
31349	Writing	CR	4	9044	5.5396	24.3697	47.8881	16.2539	3.5493		2.3994	0.4578	0.5979
31350	Writing	CR	4	10261	4.9604	23.3603	49.235	15.7977	3.3817		3.2649	0.4569	0.5984
31351	Writing	CR	4	9044	4.622	19.0402	53.7373	15.2145	3.9253		3.4607	0.4696	0.585

B.9: Level IV – Field Test Items

ITEM ID	Domain	Type	Points	N	0	1/A	2/B	3/C	4/D	Multiple Marks	Omit/ Invalid	Adjusted p-Value	Adjusted Item-Total Correlation
24938	Listening	MC	1	7042		3.5075	83.7404	6.7736	5.7228	0.0142	0.2414	0.8374	0.3939
24939	Listening	MC	1	7042		6.4044	7.1855	7.5121	78.7276	0.0142	0.1562	0.7873	0.4015
31035	Listening	MC	1	5980		18.7793	5.7191	68.9799	6.3043	0.0167	0.2007	0.6898	0.2521
31110	Listening	MC	1	7042		8.6907	4.7856	4.956	81.4115	0.0426	0.1136	0.8141	0.4105
31112	Listening	MC	1	7042		52.3573	31.5251	9.4291	6.5322	0.0426	0.1136	0.5236	0.2737
31113	Listening	MC	1	7042		3.9761	83.0588	7.9949	4.6862	0.0284	0.2556	0.8306	0.4312
31117	Listening	MC	1	5980		25.0669	4.8829	60.2843	9.1973	0.0669	0.5017	0.6028	0.2854
31376	Listening	MC	1	5980		24.9164	6.6054	13.5953	54.5318	0	0.3512	0.5453	0.2202
31412	Listening	MC	1	5980		9.3144	53.3779	15.2174	21.8729	0.0334	0.1839	0.5338	0.2718
31414	Listening	MC	1	5980		13.0936	39.6656	30.0167	16.8729	0.0836	0.2676	0.3002	-0.0008
24948	Reading	MC	1	7042		4.3028	6.9725	6.5748	81.8375	0.0568	0.2556	0.8184	0.5394
24949	Reading	MC	1	7042		3.3513	3.4507	85.9131	7.1003	0.0142	0.1704	0.8591	0.3603
25042	Reading	MC	1	5980		73.7458	11.4548	3.5284	10.9699	0.0502	0.2508	0.7375	0.4679
31043	Reading	MC	1	5980		8.5786	79.4482	8.5452	3.1438	0.0167	0.2676	0.7945	0.3787
31046	Reading	MC	1	7042		18.5033	6.4754	67.3672	7.5263	0.0142	0.1136	0.6737	0.409
31047	Reading	MC	1	5980		6.8562	4.8997	79.5318	8.4281	0	0.2843	0.7953	0.4696
31118	Reading	MC	1	5980		10.0669	16.2876	63.6455	9.5987	0.0334	0.3679	0.6365	0.4494
31119	Reading	MC	1	5980		33.0769	7.9599	13.6288	45.0334	0.0502	0.2508	0.4503	0.279
31121	Reading	MC	1	5980		62.6087	12.5753	13.4448	11.0201	0.0334	0.3177	0.6261	0.3926
31122	Reading	MC	1	5980		69.6321	13.0602	8.4114	8.3946	0.0669	0.4348	0.6963	0.4434
31162	Reading	MC	1	7042		19.1991	36.8219	15.72	27.975	0.0284	0.2556	0.2798	0.2089
31163	Reading	MC	1	7042		16.4016	38.9662	34.3794	9.6279	0.0852	0.5396	0.3897	0.1687
31164	Reading	MC	1	7042		22.1812	22.3942	39.9886	14.7543	0.071	0.6106	0.3999	0.2393
31174	Reading	MC	1	7042		24.0273	17.921	39.0514	18.4181	0.0426	0.5396	0.1842	-0.0428
31181	Reading	MC	1	7042		52.7691	14.6691	11.0196	21.0594	0.0426	0.4402	0.5277	0.311
31191	Reading	MC	1	5980		7.5585	8.0936	73.4615	10.4849	0	0.4013	0.7346	0.4425
20688	Speaking	CR	2	7042	5.2258	21.6842	73.09			0	0.1704	0.8393	0.6062
20692	Speaking	CR	2	5980	3.0602	13.0769	83.8629			0.0167	0.2676	0.904	0.5457
24984	Speaking	CR	4	5980	2.5084	3.7793	13.7458	32.4415	47.5251	0	0.301	0.7967	0.6607
31089	Speaking	CR	2	5980	5.4515	23.9632	70.5853			0	0	0.8257	0.5748
31090	Speaking	CR	2	7042	5.5524	22.8486	71.599			0	0.0142	0.8302	0.5729
31091	Speaking	CR	4	7042	2.9111	4.7998	15.3082	35.6859	41.2951	0.0142	0.2272	0.7691	0.614
31095	Speaking	CR	4	5980	2.5418	3.2274	13.4281	34.7492	46.0535	0.0334	0.3512	0.7964	0.6206
31096	Speaking	CR	4	7042	3.7205	3.9477	13.4195	18.6027	60.3096	0	0.1846	0.8196	0.6016
31098	Speaking	CR	4	5980	2.0736	0.9532	7.6087	7.0234	82.3411	0	0.3512	0.9165	0.5324
33003	Speaking	CR	4	7042	4.956	7.8955	22.3374	34.0386	30.7725	0.0142	0.1136	0.6944	0.67
25065	Writing	CR	4	5980	3.562	18.2609	51.9398	18.2943	3.1773		4.7658	0.4743	0.5761
29387	Writing	CR	2	7042	56.1488	34.1238	9.0031				0.7242	0.2607	0.3702
29391	Writing	MC	1	7042		74.3681	10.054	6.8162	8.5913	0.0142	0.1562	0.7437	0.4354
31049	Writing	MC	1	7042		54.4874	27.8472	7.4411	9.8126	0.0568	0.355	0.5449	0.3549
31050	Writing	MC	1	5980		82.7592	6.7559	4.3813	5.5853	0.1003	0.4181	0.8276	0.4688
31054	Writing	MC	1	5980		10.4515	69.4147	4.7826	15.1171	0.0669	0.1672	0.6941	0.3931
31060	Writing	CR	2	5980	41.6054	34.699	22.8094				0.8862	0.4016	0.4318
31076	Writing	CR	4	7042	4.53	19.1139	54.885	16.6146	2.6413		2.2152	0.4732	0.6114
31079	Writing	CR	4	5980	2.7258	14.1806	55.3512	21.5552	3.4448		2.7424	0.5083	0.6041
31080	Writing	CR	4	7042	10.5936	20.6759	44.3766	15.649	3.1525		5.5524	0.4225	0.6182

B.10: Level V – Field Test Items

ITEM ID	Domain	Type	Points	N	0	1/A	2/B	3/C	4/D	Multiple Marks	Omit/ Invalid	Adjusted p-Value	Adjusted Item-Total Correlation
31227	Listening	MC	1	7516		11.3491	24.7472	55.0825	8.6349	0.0266	0.1597	0.5508	0.3411
31234	Listening	MC	1	6063		8.2797	85.7496	4.0244	1.6329	0.066	0.2474	0.8575	0.3327
31237	Listening	MC	1	7516		73.5764	6.852	10.5508	8.7946	0	0.2262	0.7358	0.3731
31238	Listening	MC	1	6063		6.1356	10.6548	3.7605	79.0533	0.033	0.3629	0.7905	0.4447
31296	Listening	MC	1	6063		16.2131	62.5433	13.838	6.9932	0	0.4123	0.6254	0.4134
31299	Listening	MC	1	6063		18.3572	9.4838	59.525	12.2052	0.033	0.3958	0.5952	0.3907
31339	Listening	MC	1	6063		75.2103	6.5479	8.1808	9.6157	0.0165	0.4288	0.7521	0.4124
31340	Listening	MC	1	7516		81.8254	7.4242	5.7211	4.7898	0.0266	0.2129	0.8183	0.3382
31354	Listening	MC	1	7516		72.2193	7.4242	15.5934	4.3906	0.0399	0.3326	0.7222	0.4364
31355	Listening	MC	1	7516		10.8701	6.3465	64.4359	17.7887	0.0665	0.4923	0.6444	0.3701
31357	Listening	MC	1	7516		65.3539	11.6684	15.487	6.9718	0.0266	0.4923	0.6535	0.5306
31394	Listening	MC	1	6063		10.8362	9.2693	58.0076	21.3261	0.0165	0.5443	0.5801	0.3502
24996	Reading	MC	1	7516		4.1378	23.3369	67.3896	4.9361	0.0133	0.1863	0.6739	0.3126
31239	Reading	MC	1	7516		9.3135	18.0415	61.4955	10.8568	0.0266	0.2661	0.615	0.4542
31240	Reading	MC	1	6063		3.8595	12.1062	76.1834	7.488	0.066	0.2969	0.7618	0.483
31241	Reading	MC	1	6063		16.3121	13.6236	65.3967	4.1729	0.0165	0.4783	0.654	0.3997
31358	Reading	MC	1	7516		18.2943	24.5476	32.6903	24.0287	0.0133	0.4258	0.2403	0.2194
31359	Reading	MC	1	7516		20.5162	25.9846	29.5237	23.4433	0.0266	0.5056	0.2952	0.1084
31360	Reading	MC	1	7516		11.0165	57.3576	13.3715	17.5758	0.0399	0.6386	0.5736	0.2735
31364	Reading	MC	1	6063		75.8206	11.4135	6.3005	5.9706	0.0495	0.4453	0.7582	0.4017
31365	Reading	MC	1	6063		7.2736	69.619	16.2461	6.2675	0.0495	0.5443	0.6962	0.4607
31366	Reading	MC	1	6063		10.6383	57.7437	20.5344	10.4899	0.0165	0.5773	0.5774	0.3891
31397	Reading	MC	1	7516		22.2725	22.2459	36.2959	18.4673	0.0399	0.6786	0.2227	0.1228
31399	Reading	MC	1	6063		13.3432	20.2705	39.4524	26.3401	0.0165	0.5773	0.3945	0.2782
25021	Speaking	CR	2	7516	6.5993	28.6722	64.7286			0	0.1996	0.7906	0.6196
25022	Speaking	CR	2	6063	5.2944	22.9259	71.7796			0	0.4453	0.8324	0.626
25124	Speaking	CR	4	7516	6.0271	2.8206	14.2629	11.0298	65.8595	0	0.1464	0.8197	0.6578
31272	Speaking	CR	2	7516	4.0048	17.4295	78.5657			0	0.1064	0.8728	0.5956
31273	Speaking	CR	2	6063	7.6365	21.0787	71.2848			0	0.1319	0.8182	0.6563
31274	Speaking	CR	4	7516	2.4747	3.4992	11.5354	28.925	53.5657	0.0133	0.2661	0.819	0.6376
31276	Speaking	CR	4	6063	2.54	3.5296	11.0341	27.1978	55.6985	0	0.5608	0.825	0.6674
31277	Speaking	CR	4	6063	4.9975	3.2327	13.7886	11.5619	66.4193	0	0.6597	0.8279	0.6704
33004	Speaking	CR	4	7516	4.1245	6.5327	15.4737	28.1932	45.6759	0	0.1197	0.7619	0.697
33005	Speaking	CR	4	6063	5.2944	8.0818	18.951	27.8905	39.7823	0.0165	0.4618	0.722	0.7237
20480	Writing	CR	4	6063	3.3811	8.956	39.8977	30.1831	11.2156		6.3665	0.5604	0.5616
25095	Writing	MC	1	6063		6.2345	5.9871	6.3665	80.2903	0.066	1.0556	0.8029	0.4258
25109	Writing	CR	4	6063	2.5564	11.0506	48.9857	27.2472	6.4984		3.6616	0.5419	0.6046
25110	Writing	CR	4	7516	2.9403	10.9367	49.3081	26.57	7.2113		3.0336	0.5453	0.5874
29369	Writing	CR	4	7516	8.156	18.2411	46.3544	17.7355	3.7254		5.7876	0.4476	0.6318
31258	Writing	MC	1	7516		5.4949	4.7499	85.0186	4.5503	0.0133	0.173	0.8502	0.428
31263	Writing	MC	1	6063		40.409	4.3048	52.5153	2.408	0.033	0.3299	0.5252	0.122
31264	Writing	CR	2	7516	59.7659	30.801	7.5572				1.8759	0.2296	0.4048
31265	Writing	CR	2	6063	39.7657	41.712	17.0543				1.468	0.3791	0.3615
31400	Writing	MC	1	7516		4.1245	9.5929	81.9053	3.6722	0.0133	0.6919	0.8191	0.3845

B.11.a: DIF Analysis for Level I Ethnicity Comparison (Asian vs. White)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19940	80.033	0.541	0.061	8.8689	BB	White
19963	4.0486	0.1365	0.067	2.0373	A	
19975	68.386	-0.473	0.057	-8.2982	BB	Asian
19989	1.909	-0.092	0.067	-1.3731	AA	
20192	101.22	0.553	0.055	10.0545	BB	White
20287	8.8031	0.1725	0.0575	3	A	
20291	4.077	-0.1339	0.0652	-2.0537	A	
20504	0.033	-0.0128	0.0605	-0.2116	A	
20506	0.7042	-0.0527	0.0606	-0.8696	A	
20510	0.6058	0.0494	0.061	0.8098	A	
20512	0.7625	-0.0561	0.0619	-0.9063	A	
20514	12.4771	-0.2391	0.067	-3.5687	A	
20535	1.2792	0.0724	0.0622	1.164	A	
20670	78.527	-0.6264	0.0715	-8.7608	B	Asian
20677	1.5159	0.0755	0.06	1.2583	A	
20695	20.4172	-0.3136	0.0691	-4.5384	A	
20755	8.067	0.214	0.076	2.8158	AA	
20834	0.5842	-0.049	0.0617	-0.7942	A	
21174	11.956	0.244	0.071	3.4366	AA	
24245	6.7484	-0.18	0.0686	-2.6239	A	
24247	10.8743	-0.2347	0.0704	-3.3338	A	
24257	1.9234	-0.0855	0.0604	-1.4156	A	
24259	6.0648	-0.1599	0.0645	-2.4791	A	
24261	35.9498	0.3968	0.066	6.0121	A	
24262	0.7657	-0.0989	0.1065	-0.9286	A	
24264	9.2906	-0.1994	0.0645	-3.0915	A	
24449	0.2072	0.0307	0.063	0.4873	A	
24450	1.4919	0.0837	0.0667	1.2549	A	
24451	0.0749	0.02	0.0652	0.3067	A	
24452	3.3815	-0.1214	0.0649	-1.8706	A	
24463	26.457	0.275	0.054	5.0926	AA	
24468	7.5816	-0.1859	0.0667	-2.7871	A	
24498	3.3114	-0.1334	0.072	-1.8528	A	
24500	0.1606	0.029	0.0667	0.4348	AA	
24505	5.3481	0.1774	0.0755	2.3497	A	
24545	18.4384	-0.2587	0.0598	-4.3261	A	
24547	22.5988	-0.3593	0.0752	-4.7779	A	
24660	1.6475	0.1166	0.088	1.325	A	
24673	2.1827	-0.1236	0.0813	-1.5203	A	
24683	0.0663	-0.02	0.0684	-0.2924	A	
24692	2.939	-0.1207	0.0689	-1.7518	A	
24751	71.924	0.461	0.055	8.3818	BB	White
25279	28.306	0.405	0.077	5.2597	AA	
26807	23.129	0.381	0.079	4.8228	AA	
28477	3.7938	-0.181	0.0916	-1.976	A	
28478	0.0418	-0.0346	0.1288	-0.2686	A	
28480	3.029	-0.1646	0.0916	-1.7969	A	
28487	11.05	0.248	0.075	3.3067	AA	
28492	91.88	0.746	0.079	9.443	CC	White
28504	29.489	-0.476	0.088	-5.4091	BB	Asian

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
28505	54.911	-0.618	0.084	-7.3571	BB	Asian
28506	12.901	-0.318	0.089	-3.573	AA	
28507	27.238	-0.455	0.088	-5.1705	BB	Asian
28514	0.3616	0.0558	0.0865	0.6451	A	
28516	0	-0.0048	0.0956	-0.0502	A	
28519	3.4685	-0.1496	0.0787	-1.9009	A	
28521	7.359	-0.181	0.067	-2.7015	AA	
28522	55.43	-0.432	0.058	-7.4483	BB	Asian
28523	42.554	-0.402	0.062	-6.4839	AA	
28524	0	-0.0015	0.0605	-0.0248	AA	
28526	4.4643	0.1318	0.0616	2.1396	AA	
28604	6.8186	-0.18	0.0683	-2.6354	A	
31040	0.8254	-0.1232	0.1271	-0.9693	A	
31065	7.9231	-0.3624	0.1266	-2.8626	A	
31165	0.2429	0.0877	0.1535	0.5713	A	
31167	0.0102	-0.0006	0.2087	-0.0029	A	
31175	3.7977	-0.2003	0.0999	-2.005	A	
31189	3.2831	-0.1609	0.0865	-1.8601	A	
31190	0.2315	-0.0448	0.0853	-0.5252	A	
31196	7.0105	-0.7097	0.2628	-2.7005	B	Asian
31197	1.4453	-0.2399	0.188	-1.2761	A	
31205	46.369	0.632	0.095	6.6526	BB	White
31206	24.02	0.427	0.087	4.908	BB	White
31214	12.982	0.371	0.103	3.6019	AA	
31216	8.94	0.314	0.106	2.9623	AA	
31222	34.15	0.473	0.082	5.7683	BB	White
31232	19.1497	-0.4279	0.0968	-4.4205	B	Asian
31233	0.0005	-0.0058	0.0877	-0.0661	A	
31235	11.3428	-0.2013	0.0592	-3.4003	A	
31246	9.593	0.233	0.077	3.026	AA	
31248	3.3943	-0.1585	0.0842	-1.8824	A	
31249	2.697	0.103	0.0617	1.6694	A	
31250	4.2015	-0.1782	0.0851	-2.094	A	
31251	0.0339	0.0201	0.0878	0.2289	A	
31252	1.2255	0.097	0.0845	1.1479	A	
31253	0.8295	-0.0617	0.0657	-0.9391	A	
31254	2.3631	-0.1355	0.0858	-1.5793	A	
31255	2.613	-0.1754	0.1056	-1.661	A	
31256	2.4244	0.1317	0.0821	1.6041	A	
31477	0.5565	-0.1333	0.1628	-0.8188	A	
31485	13.562	-0.4304	0.1149	-3.7459	B	Asian
31497	0.2226	-0.0486	0.0933	-0.5209	A	
33064	3.4442	-0.1817	0.0955	-1.9026	A	
33065	0.8005	-0.0922	0.098	-0.9408	A	
33101	0.0005	-0.0057	0.0877	-0.065	A	
33107	0.009	0.0094	0.0715	0.1315	AA	
33126	1.9734	-0.1221	0.0839	-1.4553	A	

B.11.b: DIF Analysis for Level I Ethnicity Comparison (Black vs. White)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19940	0.24	0.063	0.131	0.4809	AA	
19963	1.7871	-0.2165	0.1542	-1.404	A	
19975	0.181	0.053	0.122	0.4344	AA	
19989	0.026	-0.024	0.151	-0.1589	AA	
20192	0.541	-0.087	0.122	-0.7131	AA	
20287	0.0453	-0.0343	0.1248	-0.2748	A	
20291	5.015	-0.3423	0.146	-2.3445	A	
20504	5.2794	0.3257	0.1382	2.3567	A	
20506	3.4993	0.2513	0.1298	1.9361	A	
20510	0.031	-0.0318	0.1312	-0.2424	A	
20512	0.6741	0.1213	0.1353	0.8965	A	
20514	3.0663	-0.2619	0.144	-1.8188	A	
20535	5.1099	0.3138	0.1342	2.3383	A	
20670	0.0225	0.0336	0.149	0.2255	A	
20677	0.092	0.0501	0.1336	0.375	A	
20695	0.3253	-0.0934	0.1459	-0.6402	A	
20755	1.648	-0.222	0.173	-1.2832	AA	
20834	0.8198	-0.1331	0.136	-0.9787	A	
21174	0.989	-0.161	0.163	-0.9877	AA	
24245	0.1353	0.0645	0.1462	0.4412	A	
24247	0.0878	-0.053	0.1457	-0.3638	A	
24257	1.8266	0.1798	0.1287	1.397	A	
24259	0.0509	0.042	0.1412	0.2975	A	
24261	6.3772	0.3335	0.1342	2.4851	A	
24262	0.3238	-0.1608	0.2338	-0.6878	A	
24264	0.1396	0.0594	0.1358	0.4374	A	
24449	0.0172	0.028	0.138	0.2029	A	
24450	1.5163	-0.1926	0.1476	-1.3049	A	
24451	0.7001	-0.1258	0.14	-0.8986	A	
24452	0.4055	0.0977	0.1376	0.71	A	
24463	10.948	-0.401	0.119	-3.3697	AA	
24468	0.5489	0.1167	0.143	0.8161	A	
24498	0	-0.0126	0.1535	-0.0821	A	
24500	2.8905	0.2481	0.1403	1.7684	AA	
24505	10.5333	0.4916	0.1514	3.247	B	White
24545	0	0.0097	0.1332	0.0728	A	
24547	2.2611	0.2306	0.1483	1.555	A	
24660	2.4956	-0.3307	0.203	-1.6291	A	
24673	0.4606	0.1243	0.1649	0.7538	A	
24683	0	0.0117	0.1478	0.0792	A	
24692	4.2293	-0.3194	0.1505	-2.1223	A	
24751	4.086	-0.233	0.12	-1.9417	AA	
25279	1.108	-0.169	0.166	-1.0181	AA	
26807	2.196	-0.236	0.167	-1.4132	AA	
28477	3.778	-0.4116	0.2061	-1.9971	A	
28478	1.9204	0.4396	0.2808	1.5655	A	
28480	0.0072	-0.0354	0.1933	-0.1831	A	
28487	9.317	-0.52	0.168	-3.0952	BB	Black
28492	4.547	-0.371	0.175	-2.12	AA	
28504	0.868	-0.176	0.185	-0.9514	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
28505	0.792	0.161	0.184	0.875	AA	
28506	0.359	-0.108	0.183	-0.5902	AA	
28507	4.845	-0.43	0.194	-2.2165	BB	Black
28514	5.1854	0.4135	0.1735	2.3833	A	
28516	0.0844	-0.0806	0.2069	-0.3896	A	
28519	0.8241	0.1558	0.1605	0.9707	A	
28521	0.007	0.012	0.143	0.0839	AA	
28522	5.182	-0.291	0.128	-2.2734	AA	
28523	2.841	0.221	0.133	1.6617	AA	
28524	7.7269	0.3683	0.1311	2.8093	AA	
28526	0.2261	0.073	0.1343	0.5436	AA	
28604	0.8405	0.1474	0.1476	0.9986	A	
31040	0.0003	0.0349	0.2814	0.124	A	
31065	0.2389	0.147	0.2415	0.6087	A	
31165	0.0067	-0.0841	0.3367	-0.2498	A	
31167	0.0305	0.0319	0.4802	0.0664	A	
31175	0.0029	-0.0344	0.2142	-0.1606	A	
31189	1.7066	0.2608	0.1871	1.3939	A	
31190	1.9364	0.2821	0.1873	1.5061	A	
31196	0	-0.1134	0.4815	-0.2355	A	
31197	0.001	0.0758	0.4169	0.1818	A	
31205	0.168	0.089	0.216	0.412	AA	
31206	0.482	0.137	0.189	0.7249	AA	
31214	3.41	0.384	0.214	1.7944	AA	
31216	0.07	-0.066	0.25	-0.264	AA	
31222	0.047	0.039	0.179	0.2179	AA	
31232	1.0557	-0.2345	0.2075	-1.1301	A	
31233	0.0077	0.0344	0.1877	0.1833	A	
31235	1.3893	0.1633	0.132	1.2371	A	
31246	6.551	-0.447	0.174	-2.569	BB	Black
31248	0.0592	-0.0642	0.1875	-0.3424	A	
31249	1.5105	-0.1739	0.1348	-1.2901	A	
31250	4.6212	-0.4199	0.187	-2.2455	A	
31251	0.4674	-0.1518	0.1942	-0.7817	A	
31252	1.2911	0.2351	0.1905	1.2341	A	
31253	2.6942	-0.2562	0.1484	-1.7264	A	
31254	0.0274	-0.0492	0.1886	-0.2609	A	
31255	0.9192	-0.264	0.2452	-1.0767	A	
31256	0.125	0.0818	0.182	0.4495	A	
31477	0.2705	-0.2481	0.3605	-0.6882	A	
31485	0.7574	-0.2556	0.2572	-0.9938	A	
31497	0.002	0.031	0.2083	0.1488	A	
33064	1.534	0.2664	0.2	1.332	A	
33065	1.6471	-0.3142	0.2239	-1.4033	A	
33101	0.0297	0.0522	0.1933	0.27	A	
33107	0.556	0.1188	0.1477	0.8043	AA	
33126	2.3973	0.315	0.1926	1.6355	A	

B.11.c: DIF Analysis for Level I Ethnicity Comparison (Hispanic vs. White)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19940	0.992	-0.048	0.048	-1	AA	
19963	28.5968	-0.2924	0.0544	-5.375	A	
19975	0.042	-0.009	0.046	-0.1957	AA	
19989	0.641	-0.048	0.06	-0.8	AA	
20192	18.822	-0.194	0.045	-4.3111	AA	
20287	0.8412	0.0439	0.0466	0.9421	A	
20291	19.8467	0.2246	0.0502	4.4741	A	
20504	0.053	0.0126	0.0494	0.2551	A	
20506	0.2636	-0.0259	0.0481	-0.5385	A	
20510	0.9475	-0.0482	0.0484	-0.9959	A	
20512	0.0014	-0.003	0.0492	-0.061	A	
20514	55.8118	-0.3926	0.0525	-7.4781	A	
20535	0.4326	0.0331	0.0485	0.6825	A	
20670	10.0525	-0.1707	0.0535	-3.1907	A	
20677	2.8111	0.083	0.0488	1.7008	A	
20695	9.0174	-0.1626	0.0537	-3.0279	A	
20755	1.544	0.07	0.057	1.2281	AA	
20834	9.3834	-0.1519	0.0492	-3.0874	A	
21174	13.281	0.195	0.054	3.6111	AA	
24245	11.4204	-0.1781	0.0524	-3.3989	A	
24247	2.7131	0.0917	0.0547	1.6764	A	
24257	2.2881	-0.0739	0.0481	-1.5364	A	
24259	0.0267	0.0096	0.0509	0.1886	A	
24261	10.1144	0.1636	0.051	3.2078	A	
24262	153.2208	-1.0216	0.0843	-12.1186	C	Hispanic
24264	15.2264	0.2012	0.0513	3.922	A	
24449	1.4973	-0.0614	0.0492	-1.248	A	
24450	3.3696	0.0937	0.0505	1.8554	A	
24451	0.3865	-0.0328	0.0506	-0.6482	A	
24452	7.5053	0.1362	0.0493	2.7627	A	
24463	43.827	-0.291	0.044	-6.6136	AA	
24468	5.2825	0.1208	0.0519	2.3276	A	
24498	10.1536	-0.1737	0.0542	-3.2048	A	
24500	7.6485	0.1418	0.0509	2.7859	AA	
24505	55.3295	0.4148	0.0558	7.4337	A	
24545	0.0999	-0.0164	0.0482	-0.3402	A	
24547	0.001	0.0032	0.0544	0.0588	A	
24660	0.2914	0.0376	0.0656	0.5732	A	
24673	83.2327	0.5152	0.0566	9.1025	B	White
24683	52.1787	0.3715	0.0513	7.2417	A	
24692	1.6494	0.067	0.0512	1.3086	A	
24751	6.524	-0.114	0.045	-2.5333	AA	
25279	8.677	-0.182	0.062	-2.9355	AA	
26807	1.249	-0.07	0.063	-1.1111	AA	
28477	9.8007	0.2186	0.0693	3.1544	A	
28478	0.1077	0.0343	0.0915	0.3749	A	
28480	10.0207	0.222	0.0697	3.1851	A	
28487	18.965	-0.269	0.062	-4.3387	AA	
28492	8.377	0.181	0.063	2.873	AA	
28504	0.008	0.006	0.068	0.0882	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
28505	13.656	0.263	0.071	3.7042	AA	
28506	3.59	-0.13	0.068	-1.9118	AA	
28507	2.283	-0.111	0.074	-1.5	AA	
28514	86.8751	0.5649	0.061	9.2607	B	White
28516	1.5692	0.0895	0.0694	1.2896	A	
28519	0.7734	0.0514	0.0566	0.9081	A	
28521	22.329	0.236	0.05	4.72	AA	
28522	52.274	-0.354	0.049	-7.2245	AA	
28523	24.711	0.249	0.05	4.98	AA	
28524	20.0229	0.2209	0.0491	4.499	AA	
28526	24.4303	0.2457	0.0495	4.9636	AA	
28604	43.0275	-0.3508	0.0534	-6.5693	A	
31040	15.1013	0.3439	0.0877	3.9213	A	
31065	1.907	-0.126	0.0883	-1.427	A	
31165	6.4257	-0.3016	0.1174	-2.569	A	
31167	7.3933	-0.4295	0.1557	-2.7585	B	Hispanic
31175	0.4458	0.0516	0.0734	0.703	A	
31189	0.1084	0.0247	0.0679	0.3638	A	
31190	0.0229	0.0125	0.0672	0.186	A	
31196	0.0427	-0.0468	0.1619	-0.2891	A	
31197	0.2568	0.0748	0.1309	0.5714	A	
31205	1.662	-0.098	0.076	-1.2895	AA	
31206	0.51	-0.049	0.069	-0.7101	AA	
31214	0.744	0.068	0.08	0.85	AA	
31216	7.837	0.224	0.081	2.7654	AA	
31222	2.51	0.102	0.064	1.5938	AA	
31232	1.9061	-0.1138	0.0801	-1.4207	A	
31233	12.5201	0.2412	0.0676	3.568	A	
31235	5.5693	-0.1153	0.0483	-2.3872	A	
31246	2.518	-0.099	0.063	-1.5714	AA	
31248	1.7485	-0.0916	0.0675	-1.357	A	
31249	0.9256	-0.0488	0.0495	-0.9859	A	
31250	0.0399	0.0157	0.0672	0.2336	A	
31251	2.6125	-0.1161	0.0704	-1.6491	A	
31252	1.3532	0.0825	0.0689	1.1974	A	
31253	0.9533	-0.0513	0.0512	-1.002	A	
31254	0.071	0.0205	0.0682	0.3006	A	
31255	3.4161	-0.1509	0.08	-1.8863	A	
31256	2.4981	0.1077	0.0668	1.6123	A	
31477	11.4296	0.3748	0.11	3.4073	A	
31485	0.5016	-0.0599	0.0801	-0.7478	A	
31497	0.5352	-0.0595	0.0772	-0.7707	A	
33064	7.6671	-0.2052	0.0731	-2.8071	A	
33065	5.3002	-0.1773	0.0756	-2.3452	A	
33101	6.2573	0.1864	0.0732	2.5464	A	
33107	58.7763	0.4086	0.0533	7.666	AA	
33126	0.8648	0.0664	0.0689	0.9637	A	

B.11.d: DIF Analysis for Level I Gender Comparison

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19940	2.289	0.063	0.042	1.5	AA	
19963	3.0731	-0.0831	0.0468	-1.7756	A	
19975	8.746	-0.118	0.04	-2.95	AA	
19989	25.849	-0.256	0.05	-5.12	AA	
20192	0.037	-0.007	0.038	-0.1842	AA	
20287	3.8933	0.0803	0.0403	1.9926	A	
20291	0.499	0.0323	0.0444	0.7275	A	
20504	0.2774	-0.0234	0.0427	-0.548	A	
20506	9.8989	-0.1327	0.0419	-3.1671	A	
20510	3.3814	-0.0784	0.0421	-1.8622	A	
20512	0.8157	0.0398	0.0431	0.9234	A	
20514	1.9531	0.065	0.0457	1.4223	A	
20535	2.1919	-0.064	0.0426	-1.5023	A	
20670	0.0035	0.0039	0.047	0.083	A	
20677	0.0942	0.0139	0.0423	0.3286	A	
20695	3.9006	0.0945	0.0472	2.0021	A	
20755	0.358	-0.03	0.05	-0.6	AA	
20834	18.6224	0.1866	0.043	4.3395	A	
21174	4.004	-0.095	0.047	-2.0213	AA	
24245	4.2263	-0.096	0.0462	-2.0779	A	
24247	2.6411	0.0797	0.0483	1.6501	A	
24257	0.0814	-0.0127	0.0417	-0.3046	A	
24259	13.2356	0.1635	0.0447	3.6577	A	
24261	0.5064	-0.0326	0.0445	-0.7326	A	
24262	1.4725	-0.0913	0.073	-1.2507	A	
24264	2.6407	0.0746	0.0452	1.6504	A	
24449	8.6529	0.1284	0.0434	2.9585	A	
24450	2.0014	0.0646	0.0449	1.4388	A	
24451	1.0152	0.0458	0.0445	1.0292	A	
24452	0.6058	0.0349	0.0436	0.8005	A	
24463	2.375	0.058	0.038	1.5263	AA	
24468	0.7603	0.041	0.0459	0.8932	A	
24498	0.6462	0.0396	0.0479	0.8267	A	
24500	13.6634	-0.1668	0.0449	-3.7149	AA	
24505	6.8787	0.1297	0.049	2.6469	A	
24545	6.9946	0.112	0.042	2.6667	A	
24547	0.0765	-0.0146	0.0486	-0.3004	A	
24660	3.0766	-0.1035	0.058	-1.7845	A	
24673	0.0039	0.0044	0.05	0.088	A	
24683	3.8775	-0.0904	0.0453	-1.9956	A	
24692	16.4021	0.1863	0.0458	4.0677	A	
24751	0.702	-0.032	0.038	-0.8421	AA	
25279	2.366	-0.082	0.053	-1.5472	AA	
26807	0.833	-0.05	0.054	-0.9259	AA	
28477	2.0059	-0.0884	0.0611	-1.4468	A	
28478	2.7826	-0.1407	0.0824	-1.7075	A	
28480	16.3077	0.2507	0.0618	4.0566	A	
28487	0.31	-0.03	0.053	-0.566	AA	
28492	0.205	0.025	0.054	0.463	AA	
28504	6.737	-0.156	0.06	-2.6	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
28505	1.997	-0.086	0.061	-1.4098	AA	
28506	2.649	-0.098	0.06	-1.6333	AA	
28507	1.771	0.084	0.063	1.3333	AA	
28514	0.0361	0.0116	0.0535	0.2168	A	
28516	2.8604	-0.1073	0.0622	-1.7251	A	
28519	1.3806	-0.0607	0.0506	-1.1996	A	
28521	12.036	-0.154	0.044	-3.5	AA	
28522	1.719	0.055	0.042	1.3095	AA	
28523	9.787	-0.137	0.044	-3.1136	AA	
28524	0.7037	-0.0367	0.0426	-0.8615	AA	
28526	6.672	0.1125	0.0432	2.6042	AA	
28604	1.5673	0.0593	0.0465	1.2753	A	
31040	0.2935	-0.0457	0.0787	-0.5807	A	
31065	3.1018	-0.1431	0.0794	-1.8023	A	
31165	11.5338	-0.3683	0.1072	-3.4356	A	
31167	0.0755	0.0489	0.1411	0.3466	A	
31175	0.5073	-0.0492	0.066	-0.7455	A	
31189	0.1392	0.0238	0.0591	0.4027	A	
31190	0.9812	-0.0601	0.059	-1.0186	A	
31196	0.0173	0.0301	0.1467	0.2052	A	
31197	0.1652	-0.0556	0.1188	-0.468	A	
31205	6.645	0.17	0.066	2.5758	AA	
31206	0.002	0.003	0.06	0.05	AA	
31214	0	-0.001	0.07	-0.0143	AA	
31216	3.274	-0.129	0.071	-1.8169	AA	
31222	1.481	-0.068	0.056	-1.2143	AA	
31232	0.0038	-0.0066	0.0688	-0.0959	A	
31233	5.8151	0.1451	0.0594	2.4428	A	
31235	3.3039	-0.0765	0.0417	-1.8345	A	
31246	1.508	0.066	0.054	1.2222	AA	
31248	6.7722	0.154	0.0586	2.628	A	
31249	1.3568	-0.0511	0.043	-1.1884	A	
31250	4.3954	-0.1247	0.0586	-2.128	A	
31251	1.6926	0.0819	0.0615	1.3317	A	
31252	5.6691	0.145	0.0601	2.4126	A	
31253	0.371	0.0284	0.045	0.6311	A	
31254	3.1827	-0.1073	0.0592	-1.8125	A	
31255	0.187	-0.0331	0.0708	-0.4675	A	
31256	3.0358	-0.103	0.0581	-1.7728	A	
31477	2.386	-0.1558	0.0979	-1.5914	A	
31485	0.2018	0.0351	0.0723	0.4855	A	
31497	1.8925	-0.0945	0.067	-1.4104	A	
33064	2.1064	0.0947	0.0639	1.482	A	
33065	0.2832	-0.0377	0.0667	-0.5652	A	
33101	2.2613	0.096	0.0625	1.536	A	
33107	0.8925	-0.0453	0.0468	-0.9679	AA	
33126	0.3561	0.037	0.059	0.6271	A	

B.11.e: DIF Analysis for Level I Economically Disadvantaged vs. Non-Economically Disadvantaged

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[44]
19940	17.298	0.201	0.048	4.1875	AA	
19963	20.5219	0.2466	0.0542	4.5498	A	
19975	0.01	-0.005	0.046	-0.1087	AA	
19989	2.541	0.086	0.055	1.5636	AA	
20192	59.789	0.338	0.044	7.6818	AA	
20287	3.8462	0.0908	0.0458	1.9825	A	
20291	32.1326	-0.2888	0.0507	-5.6963	A	
20504	0.1641	-0.0207	0.0483	-0.4286	A	
20506	2.5661	0.0772	0.0477	1.6184	A	
20510	3.9452	-0.096	0.0477	-2.0126	A	
20512	13.2211	-0.178	0.0486	-3.6626	A	
20514	0.2331	-0.027	0.0529	-0.5104	A	
20535	0.0312	-0.0098	0.0489	-0.2004	A	
20670	23.8326	-0.2683	0.0547	-4.9049	A	
20677	0.7287	-0.042	0.0478	-0.8787	A	
20695	0.2243	-0.0272	0.0542	-0.5018	A	
20755	1.635	-0.077	0.06	-1.2833	AA	
20834	5.4758	-0.1154	0.0488	-2.3648	A	
21174	0.195	-0.025	0.056	-0.4464	AA	
24245	8.9394	-0.1635	0.0542	-3.0166	A	
24247	0.5301	0.042	0.0553	0.7595	A	
24257	0.3735	0.0302	0.0476	0.6345	A	
24259	5.5773	-0.1211	0.0509	-2.3792	A	
24261	0.9835	-0.0525	0.0515	-1.0194	A	
24262	5.9095	0.2166	0.0875	2.4754	A	
24264	14.2206	-0.1921	0.0505	-3.804	A	
24449	0.3693	0.0316	0.0499	0.6333	A	
24450	0.7331	-0.0461	0.0523	-0.8815	A	
24451	6.2671	-0.1288	0.051	-2.5255	A	
24452	4.4832	-0.1081	0.0504	-2.1448	A	
24463	13.578	0.158	0.043	3.6744	AA	
24468	4.6269	-0.114	0.0523	-2.1797	A	
24498	0.4089	0.0373	0.0558	0.6685	A	
24500	6.9995	0.1384	0.0518	2.6718	AA	
24505	12.056	-0.2054	0.0587	-3.4991	A	
24545	15.8629	-0.1897	0.0473	-4.0106	A	
24547	1.3872	-0.0696	0.0576	-1.2083	A	
24660	0.8442	-0.0674	0.0704	-0.9574	A	
24673	20.5718	-0.2777	0.0609	-4.5599	A	
24683	7.6254	-0.1475	0.0529	-2.7883	A	
24692	0.0076	-0.0061	0.0536	-0.1138	A	
24751	37.067	0.265	0.044	6.0227	AA	
25279	12.461	0.211	0.06	3.5167	AA	
26807	10.404	0.199	0.061	3.2623	AA	
28477	1.867	-0.096	0.0689	-1.3933	A	

[44] EconDis stands for economically disadvantaged students. Non-ED stands for students without economic disadvantage.

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[44]
28478	0.0054	0.0131	0.1038	0.1262	A	
28480	7.9	-0.197	0.0691	-2.8509	A	
28487	1.151	0.065	0.061	1.0656	AA	
28492	8.813	0.186	0.063	2.9524	AA	
28504	9.663	-0.206	0.067	-3.0746	AA	
28505	36.451	-0.408	0.068	-6	AA	
28506	0.189	0.03	0.068	0.4412	AA	
28507	18.039	-0.299	0.07	-4.2714	AA	
28514	19.8389	-0.298	0.0664	-4.488	A	
28516	2.0269	-0.1118	0.0765	-1.4614	A	
28519	2.0161	0.0876	0.0604	1.4503	A	
28521	0.022	0.008	0.052	0.1538	AA	
28522	0.112	0.016	0.047	0.3404	AA	
28523	12.284	-0.171	0.049	-3.4898	AA	
28524	0.3609	0.0299	0.0482	0.6203	AA	
28526	4.1413	0.1011	0.0492	2.0549	AA	
28604	0.6404	0.0445	0.0537	0.8287	A	
31040	4.5714	-0.2189	0.1002	-2.1846	A	
31065	0.4784	0.0682	0.0926	0.7365	A	
31165	0.5542	-0.1049	0.129	-0.8132	A	
31167	0.1055	-0.0766	0.1823	-0.4202	A	
31175	0.6403	-0.0667	0.0795	-0.839	A	
31189	0.1492	-0.0277	0.0661	-0.4191	A	
31190	0.1107	-0.0254	0.0691	-0.3676	A	
31196	8.0438	-0.578	0.199	-2.9045	B	Non-ED
31197	0.5606	-0.1217	0.1482	-0.8212	A	
31205	17.612	0.326	0.078	4.1795	AA	
31206	2.697	0.112	0.069	1.6232	AA	
31214	3.927	-0.163	0.082	-1.9878	AA	
31216	0.513	0.062	0.086	0.7209	AA	
31222	1.149	0.067	0.064	1.0469	AA	
31232	1.4325	-0.0957	0.0772	-1.2396	A	
31233	6.821	-0.1767	0.0669	-2.6413	A	
31235	4.2396	-0.0981	0.047	-2.0872	A	
31246	8.255	0.179	0.062	2.8871	AA	
31248	18.0129	-0.2805	0.0654	-4.289	A	
31249	0.3556	0.0304	0.0489	0.6217	A	
31250	5.4217	-0.1538	0.0654	-2.3517	A	
31251	0.0021	-0.0058	0.0713	-0.0813	A	
31252	0.8881	-0.0666	0.0681	-0.978	A	
31253	14.3595	-0.1983	0.0521	-3.8061	A	
31254	3.6771	-0.1276	0.0657	-1.9422	A	
31255	5.3993	-0.2069	0.0872	-2.3727	A	
31256	0.297	-0.0387	0.0669	-0.5785	A	
31477	2.6688	-0.202	0.1198	-1.6861	A	
31485	2.0127	-0.1311	0.0893	-1.4681	A	
31497	4.0725	0.1609	0.0777	2.0708	A	
33064	1.9632	-0.1041	0.0724	-1.4378	A	
33065	3.3024	-0.1487	0.0804	-1.8495	A	
33101	14.3316	-0.2615	0.0683	-3.8287	A	
33107	1.4925	-0.0687	0.055	-1.2491	AA	
33126	7.2395	-0.1782	0.0654	-2.7248	A	

B.11.f: DIF Analysis for Level I Native Language Comparison (Arabic vs. Spanish)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19940	5.408	0.134	0.058	2.3103	AA	
19963	47.0389	0.4479	0.0651	6.8802	B	Spanish
19975	0.253	-0.028	0.055	-0.5091	AA	
19989	6.051	-0.18	0.073	-2.4658	AA	
20192	19.585	0.238	0.054	4.4074	AA	
20287	2.7421	-0.0947	0.0562	-1.6851	A	
20291	14.2697	-0.2311	0.0607	-3.8072	A	
20504	0.1966	-0.0281	0.0594	-0.4731	A	
20506	1.0686	-0.0623	0.0586	-1.0631	A	
20510	8.9985	0.178	0.0587	3.0324	A	
20512	0.0946	0.0201	0.0596	0.3372	A	
20514	62.7606	0.4986	0.0632	7.8892	B	Spanish
20535	2.6037	-0.0959	0.0583	-1.6449	A	
20670	4.3409	0.1359	0.0641	2.1201	A	
20677	1.0098	0.0613	0.0592	1.0355	A	
20695	1.4861	0.0808	0.0646	1.2508	A	
20755	0.603	0.052	0.067	0.7761	AA	
20834	11.0681	0.1989	0.0593	3.3541	A	
21174	0.008	-0.006	0.064	-0.0938	AA	
24245	11.2587	0.2131	0.0629	3.3879	A	
24247	8.399	-0.1927	0.0658	-2.9286	A	
24257	0.3898	0.0379	0.0578	0.6557	A	
24259	2.5686	0.1011	0.0617	1.6386	A	
24261	0.2526	-0.033	0.0617	-0.5348	A	
24262	179.6336	1.2576	0.0966	13.0186	C	Spanish
24264	13.0835	-0.2237	0.0615	-3.6374	A	
24449	2.8674	0.1019	0.0593	1.7184	A	
24450	2.3825	-0.0954	0.0608	-1.5691	A	
24451	9.3081	0.1871	0.0608	3.0773	A	
24452	12.2057	-0.2103	0.0596	-3.5285	A	
24463	78.172	0.471	0.054	8.7222	BB	Spanish
24468	11.6823	-0.2161	0.0627	-3.4466	A	
24498	6.3607	0.1661	0.065	2.5554	A	
24500	14.4862	-0.2371	0.0618	-3.8366	AA	
24505	34.8104	-0.4048	0.0682	-5.9355	A	
24545	3.6184	0.1136	0.0587	1.9353	A	
24547	6.1109	-0.1648	0.0658	-2.5046	A	
24660	0.7745	-0.0719	0.0781	-0.9206	A	
24673	82.1481	-0.6342	0.0701	-9.0471	B	Arabic
24683	54.8215	-0.4682	0.0631	-7.42	B	Arabic
24692	3.4007	-0.1156	0.0617	-1.8736	A	
24751	17.647	0.226	0.054	4.1852	AA	
25279	5.67	0.178	0.075	2.3733	AA	
26807	2.296	0.115	0.076	1.5132	AA	
28477	15.7546	-0.3367	0.0846	-3.9799	A	
28478	0.1096	-0.0424	0.1091	-0.3886	A	
28480	14.5063	-0.3252	0.0847	-3.8394	A	
28487	35.016	0.445	0.075	5.9333	BB	Spanish

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
28492	0.303	-0.042	0.076	-0.5526	AA	
28504	0.114	-0.028	0.083	-0.3373	AA	
28505	34.072	-0.503	0.087	-5.7816	BB	Arabic
28506	0.054	0.019	0.083	0.2289	AA	
28507	0.033	-0.016	0.089	-0.1798	AA	
28514	81.1471	-0.6694	0.0749	-8.9372	C	Arabic
28516	3.0343	-0.1481	0.0831	-1.7822	A	
28519	6.6753	-0.1816	0.0691	-2.6281	A	
28521	56.131	-0.452	0.06	-7.5333	BB	Arabic
28522	36.048	0.36	0.059	6.1017	AA	
28523	35.141	-0.36	0.061	-5.9016	AA	
28524	38.8699	-0.3733	0.0598	-6.2425	AA	
28526	66.0865	-0.4916	0.0607	-8.0988	BB	Arabic
28604	24.1878	0.3176	0.0643	4.9393	A	
31040	12.4312	-0.3826	0.1071	-3.5724	A	
31065	0.0052	0.0132	0.1055	0.1251	A	
31165	26.225	0.6884	0.1347	5.1106	B	Spanish
31167	8.2335	0.529	0.1815	2.9146	B	Spanish
31175	2.9569	-0.1576	0.0894	-1.7629	A	
31189	2.1402	-0.123	0.0816	-1.5074	A	
31190	0.0031	0.0079	0.0815	0.0969	A	
31196	0.618	0.1636	0.1842	0.8882	A	
31197	1.2539	-0.193	0.1602	-1.2047	A	
31205	1.806	0.125	0.093	1.3441	AA	
31206	2.104	0.121	0.084	1.4405	AA	
31214	0.122	0.033	0.093	0.3548	AA	
31216	0.212	-0.044	0.096	-0.4583	AA	
31222	0.208	-0.036	0.078	-0.4615	AA	
31232	1.6463	0.129	0.0967	1.334	A	
31233	9.7811	-0.2595	0.0819	-3.1685	A	
31235	5.2697	0.1358	0.0584	2.3253	A	
31246	12.095	0.26	0.076	3.4211	AA	
31248	5.4423	0.1926	0.0813	2.369	A	
31249	2.2571	0.0916	0.0598	1.5318	A	
31250	0.0024	0.0073	0.0812	0.0899	A	
31251	2.0435	0.1253	0.085	1.4741	A	
31252	0.0003	0.002	0.0836	0.0239	A	
31253	12.6616	0.2218	0.0617	3.5948	A	
31254	0.0009	0.0057	0.0817	0.0698	A	
31255	2.0887	0.1458	0.0969	1.5046	A	
31256	0.9491	-0.0821	0.081	-1.0136	A	
31477	7.3021	-0.3668	0.1335	-2.7476	A	
31485	0.2647	-0.0546	0.0969	-0.5635	A	
31497	0.1344	-0.0384	0.0928	-0.4138	A	
33064	18.4228	0.3801	0.0879	4.3242	A	
33065	8.4392	0.269	0.091	2.956	A	
33101	0.001	-0.0068	0.0893	-0.0761	A	
33107	63.3213	-0.5138	0.0647	-7.9413	BB	Arabic
33126	4.7586	-0.1832	0.0825	-2.2206	A	

B.11.g: DIF Analysis for Level I Disabled vs. Non-Disabled

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[45]
19940	0.025	0.013	0.086	0.1512	AA	
19963	0.1847	-0.0437	0.0931	-0.4694	A	
19975	1.794	0.115	0.086	1.3372	AA	
19989	3.973	0.279	0.139	2.0072	AA	
20192	0.631	0.065	0.081	0.8025	AA	
20287	1.6432	0.1135	0.0857	1.3244	A	
20291	12.1423	-0.3208	0.0919	-3.4908	A	
20504	0.099	0.034	0.0938	0.3625	A	
20506	0.4527	-0.0652	0.0899	-0.7253	A	
20510	0.2814	-0.0517	0.0899	-0.5751	A	
20512	0.3248	-0.0566	0.0922	-0.6139	A	
20514	1.8892	-0.1346	0.0946	-1.4228	A	
20535	0.0058	-0.0106	0.0883	-0.12	A	
20670	2.1516	-0.1527	0.0991	-1.5409	A	
20677	0.3954	-0.0618	0.0913	-0.6769	A	
20695	6.5421	-0.2557	0.0981	-2.6065	A	
20755	54.402	0.667	0.091	7.3297	CC	Non-Dis
20834	2.522	-0.1496	0.0911	-1.6422	A	
21174	44.284	0.59	0.089	6.6292	BB	Non-Dis
24245	1.4055	-0.1157	0.0939	-1.2322	A	
24247	4.7293	-0.2315	0.1029	-2.2498	A	
24257	0.079	0.0287	0.088	0.3261	A	
24259	6.1272	-0.231	0.0925	-2.4973	A	
24261	5.2198	-0.2096	0.0913	-2.2957	A	
24262	11.4854	-0.48	0.1401	-3.4261	B	Disabled
24264	0.1387	0.0406	0.0971	0.4181	A	
24449	0.0277	-0.0193	0.0908	-0.2126	A	
24450	0.0154	0.0152	0.0897	0.1695	A	
24451	3.4592	-0.177	0.0929	-1.9053	A	
24452	0.5479	-0.0709	0.0903	-0.7852	A	
24463	0.631	0.066	0.081	0.8148	AA	
24468	1.5475	-0.126	0.0973	-1.295	A	
24498	4.535	-0.2143	0.0983	-2.1801	A	
24500	5.1875	0.2138	0.0918	2.329	AA	
24505	0.0207	-0.0183	0.0955	-0.1916	A	
24545	6.6711	-0.234	0.089	-2.6292	A	
24547	0.5247	0.0745	0.0966	0.7712	A	
24660	0.0903	0.0368	0.1056	0.3485	A	
24673	0.6926	-0.0878	0.0988	-0.8887	A	
24683	1.4175	-0.1137	0.0921	-1.2345	A	
24692	10.0132	-0.2918	0.0917	-3.1821	A	
24751	0.621	0.066	0.081	0.8148	AA	
25279	3.583	0.228	0.115	1.9826	AA	
26807	0	0.002	0.118	0.0169	AA	
28477	4.7625	-0.2989	0.1341	-2.2289	A	
28478	0	-0.0114	0.1462	-0.078	A	
28480	1.1883	-0.1493	0.1294	-1.1538	A	

[45] Non-Dis stands for non-disabled students.

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[45]
28487	0.318	0.066	0.113	0.5841	AA	
28492	0.03	-0.02	0.115	-0.1739	AA	
28504	0.003	-0.007	0.137	-0.0511	AA	
28505	2.06	0.204	0.149	1.3691	AA	
28506	0.014	-0.016	0.135	-0.1185	AA	
28507	1.815	-0.189	0.14	-1.35	AA	
28514	0.8195	-0.1005	0.1041	-0.9654	A	
28516	12.5001	0.3825	0.1064	3.5949	A	
28519	1.128	0.1067	0.0969	1.1011	A	
28521	2.74	0.144	0.088	1.6364	AA	
28522	0.775	-0.084	0.096	-0.875	AA	
28523	0.069	0.026	0.099	0.2626	AA	
28524	1.82	0.1292	0.0922	1.4013	AA	
28526	1.8239	0.1287	0.0917	1.4035	AA	
28604	1.1996	-0.1093	0.0957	-1.1421	A	
31040	0.9046	-0.1527	0.1479	-1.0325	A	
31065	0.6828	0.1331	0.1484	0.8969	A	
31165	3.0266	-0.3842	0.2065	-1.8605	A	
31167	0.001	0.0368	0.2401	0.1533	A	
31175	0.4544	-0.0951	0.1284	-0.7407	A	
31189	1.9312	-0.1848	0.1268	-1.4574	A	
31190	0.2572	-0.0691	0.1215	-0.5687	A	
31196	0.7977	0.2309	0.2309	1	A	
31197	0.0532	-0.0733	0.2168	-0.3381	A	
31205	0.688	-0.104	0.127	-0.8189	AA	
31206	0.938	0.125	0.126	0.9921	AA	
31214	26.792	0.656	0.128	5.125	BB	Non-Dis
31216	30.331	0.69	0.127	5.4331	CC	Non-Dis
31222	4.048	0.239	0.118	2.0254	AA	
31232	0.0158	-0.031	0.1526	-0.2031	A	
31233	0.87	-0.1285	0.1279	-1.0047	A	
31235	2.7345	0.1554	0.0918	1.6928	A	
31246	0.468	0.08	0.113	0.708	AA	
31248	0.6406	-0.1101	0.1278	-0.8615	A	
31249	0.1111	0.0351	0.0927	0.3786	A	
31250	4.2396	0.2701	0.1276	2.1168	A	
31251	1.94	-0.1806	0.1265	-1.4277	A	
31252	0.1336	0.0563	0.1309	0.4301	A	
31253	0.0627	0.0269	0.0921	0.2921	A	
31254	0.2313	-0.072	0.131	-0.5496	A	
31255	0.0065	0.02	0.1351	0.148	A	
31256	1.4844	0.1578	0.1237	1.2757	A	
31477	0.5087	0.1405	0.1729	0.8126	A	
31485	1.3268	0.1688	0.1371	1.2312	A	
31497	0.5985	-0.1202	0.1433	-0.8388	A	
33064	7.1764	-0.3712	0.1351	-2.7476	A	
33065	0.8308	0.1284	0.1315	0.9764	A	
33101	1.3081	0.1756	0.1454	1.2077	A	
33107	1.6823	0.1258	0.0932	1.3498	AA	
33126	1.9536	0.1981	0.1355	1.462	A	

B.11.h: DIF Analysis for Level I Accommodated vs. Non-Accommodated

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[46]
19940	2.687	0.235	0.144	1.6319	AA	
19963	0.015	-0.0131	0.0805	-0.1627	A	
19975						
19989						
20192	1.867	0.183	0.134	1.3657	AA	
20287	0.0843	-0.023	0.0706	-0.3258	A	
20291						
20504						
20506						
20510	5.7049	-0.1797	0.0739	-2.4317	A	
20512	6.764	-0.1986	0.0751	-2.6445	A	
20514	3.9386	-0.1563	0.0785	-1.9911	A	
20535						
20670						
20677	4.5179	-0.1576	0.0733	-2.1501	A	
20695						
20755	1.194	-0.19	0.175	-1.0857	AA	
20834	0.0693	-0.0223	0.0745	-0.2993	A	
21174	2.822	-0.294	0.171	-1.7193	AA	
24245	8.3353	-0.2323	0.08	-2.9038	A	
24247						
24257						
24259	0.5509	-0.0601	0.0774	-0.7765	A	
24261	4.5655	-0.1675	0.0774	-2.1641	A	
24262	0.5196	-0.0886	0.1164	-0.7612	A	
24264						
24449	10.6984	-0.2534	0.0766	-3.3081	A	
24450	0.1334	-0.0311	0.0771	-0.4034	A	
24451	2.2052	-0.1156	0.0768	-1.5052	A	
24452						
24463	2.589	0.221	0.133	1.6617	AA	
24468						
24498						
24500						
24505						
24545	1.9042	-0.103	0.073	-1.411	A	
24547						
24660						
24673						
24683	0.9899	-0.0819	0.0788	-1.0393	A	
24692						
24751	13.051	0.496	0.133	3.7293	BB	Non-Accom
25279	0.05	0.045	0.202	0.2228	AA	
26807	1.586	0.245	0.194	1.2629	AA	
28477						
28478						
28480						

[46] Accom stands for students with standard accommodations. Non-Accom stands for students without standard accommodations.

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[46]
28487	7.563	0.506	0.175	2.8914	BB	Non-Accom
28492	1.524	-0.24	0.185	-1.2973	AA	
28504						
28505						
28506						
28507						
28514						
28516						
28519						
28521						
28522						
28523						
28524						
28526						
28604						
31040						
31065						
31165	0.8947	-0.1501	0.1492	-1.006	A	
31167	1.0672	-0.3901	0.3324	-1.1736	A	
31175						
31189						
31190						
31196						
31197						
31205	0.706	0.163	0.209	0.7799	AA	
31206	0.021	0.033	0.222	0.1486	AA	
31214	1.383	0.272	0.233	1.1674	AA	
31216	0.002	-0.01	0.237	-0.0422	AA	
31222	3.079	0.372	0.2	1.86	AA	
31232						
31233						
31235						
31246	13.964	0.687	0.177	3.8814	BB	Non-Accom
31248	0.0189	0.0183	0.0981	0.1865	A	
31249	0.4102	0.0512	0.0756	0.6772	A	
31250	0.8953	0.096	0.0966	0.9938	A	
31251	0.4368	-0.0845	0.1169	-0.7228	A	
31252	1.7215	-0.1509	0.1104	-1.3668	A	
31253	1.8337	-0.1113	0.0793	-1.4035	A	
31254	0.0922	0.0348	0.099	0.3515	A	
31255	0.3789	-0.0954	0.1396	-0.6834	A	
31256	2.658	-0.1883	0.1107	-1.701	A	
31477						
31485						
31497						
33064	6.0423	-0.2539	0.1024	-2.4795	A	
33065	3.4934	-0.2564	0.1324	-1.9366	A	
33101	0.149	-0.046	0.1057	-0.4352	A	
33107						
33126						

B.12.a: DIF Analysis for Level II Ethnicity Comparison (Asian vs. White)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19819	44.218	0.315	0.047	6.7021	AA	
19937	10.6281	-0.2012	0.0612	-3.2876	A	
19985	0.0921	-0.0203	0.0608	-0.3339	A	
20009	18.9706	-0.2166	0.0496	-4.3669	A	
20120	11.843	0.159	0.046	3.4565	AA	
20122	12.713	-0.165	0.047	-3.5106	AA	
20244	2.912	-0.082	0.048	-1.7083	AA	
20271	7.5723	-0.1796	0.0644	-2.7888	A	
20397	1.6073	-0.0854	0.0656	-1.3018	A	
20398	25.4316	-0.2739	0.0538	-5.0911	A	
20399	0.2179	0.024	0.0489	0.4908	A	
20428	0.09	-0.0225	0.0676	-0.3328	A	
20434	11.9929	-0.164	0.047	-3.4894	A	
20435	0.8595	-0.061	0.0635	-0.9606	A	
20497	2.0976	0.0848	0.0576	1.4722	A	
20498	2.4227	-0.1314	0.0821	-1.6005	A	
20543	40.8261	-0.4825	0.0757	-6.3738	B	Asian
20570	1.4258	-0.0692	0.0564	-1.227	A	
20571	1.4932	-0.0943	0.0747	-1.2624	A	
20625	8.586	-0.1519	0.0515	-2.9495	A	
20627	1.9636	-0.0823	0.0575	-1.4313	A	
20634	0.0515	-0.0193	0.073	-0.2644	A	
20635	0.7625	-0.0648	0.0715	-0.9063	A	
20835	10.3739	0.2092	0.0646	3.2384	A	
20837	0.0381	0.0117	0.0531	0.2203	A	
20859	8.608	0.129	0.043	3	AA	
21162	6.5885	-0.2024	0.0776	-2.6082	A	
21163	3.145	-0.1516	0.0839	-1.8069	A	
21170	44.97	0.363	0.055	6.6	AA	
21171	37.799	0.378	0.062	6.0968	AA	
24202	1.2115	-0.0584	0.052	-1.1231	A	
24207	5.186	0.098	0.043	2.2791	AA	
24219	0.2862	0.0309	0.0549	0.5628	A	
24243	4.394	-0.1122	0.0529	-2.121	A	
24281	6.2691	0.1347	0.0533	2.5272	A	
24398	3.0591	-0.1236	0.0692	-1.7861	A	
24400	20.3155	-0.2412	0.053	-4.5509	A	
24420	6.4989	-0.1373	0.0536	-2.5616	A	
24440	1.5716	0.0652	0.051	1.2784	A	
24442	4.8189	-0.1694	0.076	-2.2289	A	
24469	0.547	-0.0415	0.054	-0.7685	A	
24552	142.5319	0.5606	0.0475	11.8021	B	White
24556	0.0012	-0.0056	0.0769	-0.0728	A	
24558	0.0479	-0.0133	0.054	-0.2463	A	
24570	0.4724	-0.0385	0.0538	-0.7156	A	
24754	6.211	0.108	0.043	2.5116	AA	
24824	0.6507	-0.0677	0.0799	-0.8473	A	
24826	5.6616	-0.2546	0.1059	-2.4042	A	
24842	30.7254	-0.3124	0.0562	-5.5587	A	
24846	82.1146	0.4689	0.0522	8.9828	B	White

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
24848	138.2289	0.5425	0.0467	11.6167	B	White
24854	7.369	-0.2	0.074	-2.7027	AA	
24856	75.901	-0.449	0.052	-8.6346	BB	Asian
24868	26.971	0.383	0.073	5.2466	AA	
24871	40.345	0.303	0.047	6.4468	AA	
25163	2.2673	0.082	0.054	1.5185	A	
25171	48.305	-0.4229	0.0607	-6.9671	A	
25172	3.4062	-0.391	0.2036	-1.9204	A	
25173	17.8412	-0.3552	0.0833	-4.2641	A	
25176	2.137	-0.1265	0.0839	-1.5077	A	
28528	0.008	0.0082	0.0664	0.1235	A	
28532	28.8047	-0.3796	0.0702	-5.4074	A	
29030	3.088	-0.082	0.046	-1.7826	AA	
29335	19.6187	-0.2833	0.0638	-4.4404	A	
29338	1.5623	-0.0749	0.0584	-1.2825	A	
29339	29.0945	-0.3844	0.0711	-5.4065	A	
29340	3.3848	-0.1181	0.0628	-1.8806	A	
30443	13.945	0.229	0.062	3.6935	AA	
31002	4.2861	-0.2385	0.1123	-2.1238	A	
31005	4.356	-0.1505	0.0706	-2.1317	A	
31006	25.4929	-0.4859	0.096	-5.0615	B	Asian
31009	0.4594	-0.0792	0.1076	-0.7361	A	
31010	2.8318	0.2518	0.1448	1.739	A	
31011	25.1213	-0.3753	0.0747	-5.0241	A	
31016	0.2423	-0.1052	0.1817	-0.579	A	
31018	1.707	0.089	0.068	1.3088	AA	
31019	7.2668	-0.2074	0.076	-2.7289	A	
31021	2.2071	-0.1052	0.0692	-1.5202	A	
31023	46.314	0.432	0.063	6.8571	BB	White
31025	10.65	0.228	0.07	3.2571	AA	
31067	0.0359	-0.0166	0.0735	-0.2259	A	
31070	0.2248	0.0344	0.0679	0.5066	A	
31073	0.0001	-0.0056	0.1151	-0.0487	A	
31074	3.7319	0.1871	0.095	1.9695	A	
31075	3.6069	-0.1867	0.0973	-1.9188	A	
31077	1.1214	-0.0861	0.0782	-1.101	A	
31082	2.6035	0.1266	0.077	1.6442	A	
31085	0.9199	-0.0696	0.0703	-0.99	A	
31086	5.6085	-0.2376	0.0974	-2.4394	A	
31087	0.2308	0.0368	0.071	0.5183	A	
31092	0.178	-0.026	0.061	-0.4262	AA	
31100	0.048	-0.014	0.064	-0.2188	AA	
31102	12.118	-0.221	0.063	-3.5079	AA	
31103	1.265	0.07	0.062	1.129	AA	
31104	2.149	0.091	0.062	1.4677	AA	
31108	1.3544	0.0896	0.0743	1.2059	A	
31109	0.0241	-0.0137	0.0714	-0.1919	A	
31381	0.0072	0.0252	0.1545	0.1631	A	
31382	3.2732	-0.3075	0.1637	-1.8784	A	
31386	4.8535	-0.1484	0.0665	-2.2316	A	
31387	1.3161	-0.0829	0.0701	-1.1826	A	
31388	3.8128	-0.1407	0.0706	-1.9929	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31551	16.925	-0.41	0.1	-4.1	AA	
31563	27.119	-0.348	0.066	-5.2727	AA	
31567	8.791	0.215	0.073	2.9452	AA	
33070	1.265	0.163	0.1367	1.1924	A	
33112	2.535	-0.095	0.06	-1.5833	AA	
33113	2.623	0.098	0.061	1.6066	AA	

B.12.b: DIF Analysis for Level II Ethnicity Comparison (Black vs. White)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19819	5.105	-0.215	0.097	-2.2165	AA	
19937	1.4068	0.1387	0.1131	1.2263	A	
19985	0.1183	-0.0508	0.1239	-0.41	A	
20009	0.0661	-0.0305	0.0997	-0.3059	A	
20120	1.81	-0.127	0.095	-1.3368	AA	
20122	4.267	0.195	0.094	2.0745	AA	
20244	10.159	0.309	0.096	3.2188	AA	
20271	0.1839	-0.0736	0.1463	-0.5031	A	
20397	2.0683	-0.2247	0.1482	-1.5162	A	
20398	0.5239	0.0803	0.1039	0.7729	A	
20399	11.4738	0.3399	0.0999	3.4024	A	
20428	4.8033	0.2762	0.1236	2.2346	A	
20434	0.2465	-0.0524	0.0962	-0.5447	A	
20435	1.9219	-0.189	0.1291	-1.464	A	
20497	0.6565	-0.099	0.1155	-0.8571	A	
20498	0.0008	0.0158	0.1516	0.1042	A	
20543	0.22	-0.08	0.1452	-0.551	A	
20570	0.5404	-0.0923	0.1146	-0.8054	A	
20571	0.571	0.1117	0.1369	0.8159	A	
20625	0.0001	-0.0041	0.1034	-0.0397	A	
20627	0.0007	-0.0035	0.1153	-0.0304	A	
20634	0.253	-0.0797	0.14	-0.5693	A	
20635	0.056	-0.043	0.1401	-0.3069	A	
20835	3.4346	0.2465	0.1275	1.9333	A	
20837	2.4293	0.167	0.1049	1.592	A	
20859	18.205	0.388	0.089	4.3596	AA	
21162	0.0008	-0.0144	0.1439	-0.1001	A	
21163	0.2557	-0.0929	0.1591	-0.5839	A	
21170	1.088	-0.115	0.112	-1.0268	AA	
21171	0.003	0.007	0.126	0.0556	AA	
24202	0.6487	0.0889	0.1042	0.8532	A	
24207	29.773	-0.473	0.089	-5.3146	BB	Black
24219	0.8163	0.1038	0.1087	0.9549	A	
24243	7.2557	0.2781	0.102	2.7265	A	
24281	2.3071	-0.1711	0.1095	-1.5626	A	
24398	2.5125	-0.2282	0.1376	-1.6584	A	
24400	0.2156	0.0567	0.1073	0.5284	A	
24420	1.339	-0.1363	0.1111	-1.2268	A	
24440	3.7514	-0.2201	0.1084	-2.0304	A	
24442	2.0197	0.1984	0.1346	1.474	A	
24469	0.2459	0.0583	0.1065	0.5474	A	
24552	0.4043	0.0652	0.0959	0.6799	A	
24556	0.0726	0.0511	0.1483	0.3446	A	
24558	2.5159	0.1726	0.105	1.6438	A	
24570	4.0932	-0.2359	0.1136	-2.0766	A	
24754	23.853	-0.429	0.09	-4.7667	BB	Black
24824	0.0793	0.0536	0.1505	0.3561	A	
24826	0.9009	0.1832	0.1763	1.0391	A	
24842	4.2894	0.2247	0.1064	2.1118	A	
24846	15.1049	0.4074	0.1049	3.8837	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
24848	5.5233	0.2208	0.0938	2.3539	A	
24854	0.505	0.113	0.158	0.7152	AA	
24856	9.386	-0.32	0.104	-3.0769	AA	
24868	0.008	-0.012	0.14	-0.0857	AA	
24871	1.715	-0.128	0.098	-1.3061	AA	
25163	0.218	0.0563	0.1091	0.516	A	
25171	8.5266	-0.3516	0.1196	-2.9398	A	
25172	1.7611	0.5674	0.3695	1.5356	A	
25173	2.7108	-0.3057	0.1791	-1.7069	A	
25176	0.004	-0.0024	0.1586	-0.0151	A	
28528	0.3946	-0.0914	0.131	-0.6977	A	
28532	0.2029	0.0662	0.1276	0.5188	A	
29030	9.101	0.292	0.094	3.1064	AA	
29335	0.1095	-0.0512	0.1283	-0.3991	A	
29338	0.0367	-0.0294	0.1167	-0.2519	A	
29339	0.1888	0.0682	0.1362	0.5007	A	
29340	1.1599	0.1369	0.1208	1.1333	A	
30443	11.369	-0.394	0.12	-3.2833	AA	
31002	0.0662	0.0862	0.2299	0.3749	A	
31005	0.3717	-0.1082	0.1563	-0.6923	A	
31006	2.9472	-0.3251	0.1762	-1.8451	A	
31009	1.2795	0.265	0.2136	1.2406	A	
31010	11.2583	0.7277	0.2159	3.3705	B	White
31011	0.181	-0.0705	0.1395	-0.5054	A	
31016	3.0755	0.5297	0.2725	1.9439	A	
31018	22.457	-0.819	0.175	-4.68	CC	Black
31019	2.2503	0.2118	0.1357	1.5608	A	
31021	0.0021	0.0145	0.1308	0.1109	A	
31023	1.963	-0.173	0.122	-1.418	AA	
31025	0.543	-0.119	0.161	-0.7391	AA	
31067	0.0022	-0.0205	0.1616	-0.1269	A	
31070	5.3919	-0.3923	0.1632	-2.4038	A	
31073	1.6294	-0.2897	0.2122	-1.3652	A	
31074	1.9158	-0.2869	0.1942	-1.4773	A	
31075	0.0047	-0.0254	0.1688	-0.1505	A	
31077	0.4007	-0.101	0.1436	-0.7033	A	
31082	0.704	-0.1556	0.173	-0.8994	A	
31085	0.0099	-0.0283	0.1581	-0.179	A	
31086	0.4259	-0.1388	0.1946	-0.7133	A	
31087	0.7546	0.1473	0.1563	0.9424	A	
31092	17.862	-0.546	0.135	-4.0444	BB	Black
31100	1.561	0.161	0.126	1.2778	AA	
31102	5.443	0.326	0.138	2.3623	AA	
31103	6.651	0.354	0.137	2.5839	AA	
31104	10.223	0.384	0.12	3.2	AA	
31108	0.288	0.0967	0.1583	0.6109	A	
31109	0.2463	-0.0891	0.1563	-0.5701	A	
31381	0.0014	0.0418	0.3281	0.1274	A	
31382	1.9203	0.3587	0.2379	1.5078	A	
31386	0.0427	-0.0335	0.1256	-0.2667	A	
31387	0.1378	-0.0588	0.1338	-0.4395	A	
31388	0.1596	-0.0613	0.1319	-0.4647	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31551	5.974	0.385	0.162	2.3765	AA	
31563	53.571	-1.126	0.16	-7.0375	CC	Black
31567	0.355	0.08	0.136	0.5882	AA	
33070	0.0636	0.0954	0.2505	0.3808	A	
33112	18.626	-0.554	0.134	-4.1343	BB	Black
33113	9.566	-0.358	0.118	-3.0339	AA	

B.12.c: DIF Analysis for Level II Ethnicity Comparison (Hispanic vs. White)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19819	12.422	-0.126	0.036	-3.5	AA	
19937	1.4763	0.0522	0.0423	1.234	A	
19985	8.476	-0.1321	0.0451	-2.929	A	
20009	4.6295	0.0791	0.0365	2.1671	A	
20120	0.563	-0.026	0.035	-0.7429	AA	
20122	50.312	0.248	0.035	7.0857	AA	
20244	60.312	0.275	0.035	7.8571	AA	
20271	1.1548	0.0556	0.0506	1.0988	A	
20397	1.984	0.071	0.0495	1.4343	A	
20398	4.5735	0.0823	0.0381	2.1601	A	
20399	23.1303	0.1784	0.037	4.8216	A	
20428	1.1141	-0.0534	0.0495	-1.0788	A	
20434	0.0477	0.0085	0.0361	0.2355	A	
20435	9.9475	-0.1455	0.0459	-3.1699	A	
20497	16.5111	-0.1724	0.0422	-4.0853	A	
20498	3.7707	-0.1136	0.0577	-1.9688	A	
20543	0.0078	0.0058	0.0507	0.1144	A	
20570	26.524	-0.2141	0.0414	-5.1715	A	
20571	13.0863	-0.1907	0.0524	-3.6393	A	
20625	0.725	-0.0326	0.0375	-0.8693	A	
20627	8.3183	0.1189	0.0409	2.9071	A	
20634	4.0657	-0.1045	0.0512	-2.041	A	
20635	0	0.001	0.0496	0.0202	A	
20835	6.4092	-0.1257	0.0492	-2.5549	A	
20837	25.5709	0.1968	0.0387	5.0853	A	
20859	77.057	0.294	0.033	8.9091	AA	
21162	0	-0.0013	0.0516	-0.0252	A	
21163	7.0253	0.1504	0.0562	2.6762	A	
21170	43.926	0.267	0.04	6.675	AA	
21171	39.041	0.284	0.045	6.3111	AA	
24202	0.2107	0.0185	0.0387	0.478	A	
24207	76.885	-0.288	0.033	-8.7273	AA	
24219	0.7381	0.0358	0.0406	0.8818	A	
24243	8.2742	-0.1126	0.0389	-2.8946	A	
24281	11.1551	-0.1341	0.0399	-3.3609	A	
24398	1.7597	0.0642	0.0475	1.3516	A	
24400	0.1872	-0.0177	0.0391	-0.4527	A	
24420	0.6028	-0.0314	0.0394	-0.797	A	
24440	0.7482	-0.0334	0.0378	-0.8836	A	
24442	16.0881	-0.2185	0.0543	-4.0239	A	
24469	0.0331	-0.0079	0.0394	-0.2005	A	
24552	66.0766	0.2906	0.0357	8.1401	A	
24556	9.1309	-0.1735	0.057	-3.0439	A	
24558	0.027	0.0073	0.0396	0.1843	A	
24570	42.4725	-0.2716	0.0416	-6.5288	A	
24754	15.199	-0.131	0.034	-3.8529	AA	
24824	0.5371	-0.043	0.0567	-0.7584	A	
24826	0.0988	0.0251	0.0714	0.3515	A	
24842	12.5524	0.1401	0.0393	3.5649	A	
24846	32.3478	0.22	0.0386	5.6995	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
24848	0.0805	-0.0106	0.0353	-0.3003	A	
24854	0.421	0.035	0.054	0.6481	AA	
24856	25.355	-0.183	0.037	-4.9459	AA	
24868	0.044	-0.012	0.057	-0.2105	AA	
24871	0.071	0.01	0.036	0.2778	AA	
25163	0.1312	-0.0153	0.0401	-0.3815	A	
25171	27.7206	-0.2221	0.042	-5.2881	A	
25172	1.5783	-0.1804	0.136	-1.3265	A	
25173	7.4433	0.1569	0.057	2.7526	A	
25176	1.4245	0.0687	0.0563	1.2202	A	
28528	0.5513	-0.0354	0.0463	-0.7646	A	
28532	5.5457	0.108	0.0454	2.3789	A	
29030	3.86	0.068	0.035	1.9429	AA	
29335	17.8705	-0.1944	0.0459	-4.2353	A	
29338	4.2459	-0.0873	0.042	-2.0786	A	
29339	37.2585	-0.2999	0.049	-6.1204	A	
29340	1.6572	0.0576	0.044	1.3091	A	
30443	4.565	-0.102	0.048	-2.125	AA	
31002	1.7555	-0.105	0.0771	-1.3619	A	
31005	0.254	-0.0276	0.052	-0.5308	A	
31006	39.6203	-0.4018	0.0639	-6.2879	A	
31009	5.0034	-0.1714	0.0755	-2.2702	A	
31010	0.0353	-0.0264	0.1089	-0.2424	A	
31011	0.3081	-0.0315	0.054	-0.5833	A	
31016	0.2047	-0.0665	0.1281	-0.5191	A	
31018	1.505	-0.063	0.051	-1.2353	AA	
31019	1.6007	0.0709	0.0547	1.2962	A	
31021	0.085	0.0165	0.052	0.3173	A	
31023	0.923	0.046	0.048	0.9583	AA	
31025	0.262	0.027	0.053	0.5094	AA	
31067	10.0785	-0.1778	0.0555	-3.2036	A	
31070	7.905	-0.148	0.0522	-2.8352	A	
31073	10.8861	-0.2777	0.0832	-3.3377	A	
31074	21.6877	-0.3618	0.0776	-4.6624	A	
31075	12.5335	-0.253	0.0707	-3.5785	A	
31077	2.4604	0.0896	0.0561	1.5971	A	
31082	5.8432	0.1391	0.057	2.4404	A	
31085	0.9446	-0.0531	0.0533	-0.9962	A	
31086	0.0703	-0.0198	0.0665	-0.2977	A	
31087	9.2846	0.1622	0.0528	3.072	A	
31092	30.599	-0.259	0.047	-5.5106	AA	
31100	33.456	0.289	0.05	5.78	AA	
31102	38.502	0.303	0.049	6.1837	AA	
31103	64.925	0.386	0.048	8.0417	AA	
31104	20.166	0.216	0.048	4.5	AA	
31108	0.0001	0.0022	0.0552	0.0399	A	
31109	31.5958	-0.3023	0.0538	-5.619	A	
31381	2.8664	0.1855	0.1064	1.7434	A	
31382	0.3982	0.0738	0.1074	0.6872	A	
31386	0.2427	-0.0264	0.0509	-0.5187	A	
31387	5.7329	0.1338	0.0552	2.4239	A	
31388	3.0736	-0.0933	0.0524	-1.7805	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31551	9.256	0.201	0.066	3.0455	AA	
31563	46.949	-0.346	0.051	-6.7843	AA	
31567	68.829	0.441	0.053	8.3208	BB	White
33070	2.4001	-0.169	0.1057	-1.5989	A	
33112	27.341	-0.241	0.046	-5.2391	AA	
33113	16.331	-0.189	0.047	-4.0213	AA	

B.12.d: DIF Analysis for Level II Gender Comparison

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19819	3.165	0.057	0.032	1.7813	AA	
19937	20.7281	0.1753	0.0384	4.5651	A	
19985	11.6385	0.1396	0.0406	3.4384	A	
20009	2.8172	-0.0552	0.0326	-1.6933	A	
20120	1.106	0.033	0.031	1.0645	AA	
20122	1.598	0.04	0.031	1.2903	AA	
20244	45.124	-0.213	0.032	-6.6563	AA	
20271	0.7728	-0.0403	0.0447	-0.9016	A	
20397	4.6124	-0.0959	0.0442	-2.1697	A	
20398	1.6368	-0.0447	0.0345	-1.2957	A	
20399	3.6517	-0.0636	0.033	-1.9273	A	
20428	3.3443	0.0819	0.0443	1.8488	A	
20434	12.6441	0.1147	0.0321	3.5732	A	
20435	2.0726	-0.0608	0.0416	-1.4615	A	
20497	0.5544	-0.0289	0.0378	-0.7646	A	
20498	9.7553	0.1649	0.0524	3.1469	A	
20543	11.2845	0.1564	0.0463	3.378	A	
20570	0.6824	-0.0315	0.0373	-0.8445	A	
20571	7.4697	0.1309	0.0475	2.7558	A	
20625	3.9515	0.0675	0.0337	2.003	A	
20627	0.7969	-0.0337	0.037	-0.9108	A	
20634	4.1664	-0.0958	0.0465	-2.0602	A	
20635	12.5175	0.1605	0.0451	3.5588	A	
20835	8.0485	-0.1249	0.0438	-2.8516	A	
20837	1.0372	-0.0359	0.0347	-1.0346	A	
20859	201.189	-0.424	0.03	-14.1333	AA	
21162	1.9588	0.0672	0.0472	1.4237	A	
21163	4.9588	-0.1156	0.0513	-2.2534	A	
21170	5.523	0.084	0.036	2.3333	AA	
21171	0.667	-0.033	0.04	-0.825	AA	
24202	1.8914	0.0482	0.0346	1.3931	A	
24207	6.475	-0.074	0.029	-2.5517	AA	
24219	0.5206	0.0268	0.0362	0.7403	A	
24243	2.8809	0.0597	0.0349	1.7106	A	
24281	0.0049	-0.0031	0.0356	-0.0871	A	
24398	0.0887	0.0138	0.0432	0.3194	A	
24400	7.9653	0.1001	0.0353	2.8357	A	
24420	11.6901	-0.1212	0.0353	-3.4334	A	
24440	1.3934	0.0407	0.034	1.1971	A	
24442	3.2007	0.0892	0.0491	1.8167	A	
24469	34.6423	0.2098	0.0356	5.8933	A	
24552	14.898	0.1228	0.0317	3.8738	A	
24556	6.8215	-0.1354	0.0514	-2.6342	A	
24558	1.0755	0.0376	0.0356	1.0562	A	
24570	0.0231	-0.0063	0.0369	-0.1707	A	
24754	0.57	-0.023	0.03	-0.7667	AA	
24824	10.4637	0.1676	0.0513	3.2671	A	
24826	3.9225	-0.1295	0.0643	-2.014	A	
24842	1.4961	0.0441	0.0355	1.2423	A	
24846	4.5022	-0.0731	0.0342	-2.1374	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
24848	0.8856	0.0297	0.0311	0.955	A	
24854	0.732	-0.042	0.049	-0.8571	AA	
24856	7.653	0.092	0.033	2.7879	AA	
24868	0.489	0.035	0.05	0.7	AA	
24871	11.753	-0.109	0.032	-3.4063	AA	
25163	1.8944	-0.0499	0.0358	-1.3939	A	
25171	27.3798	0.2008	0.0382	5.2565	A	
25172	0.0083	-0.0192	0.1252	-0.1534	A	
25173	4.3865	0.1103	0.0521	2.1171	A	
25176	1.9809	0.0737	0.0515	1.4311	A	
28528	10.0109	0.1344	0.0421	3.1924	A	
28532	11.0429	0.1391	0.0416	3.3438	A	
29030	4.787	-0.068	0.031	-2.1935	AA	
29335	0.6498	-0.0342	0.0413	-0.8281	A	
29338	0.3407	-0.0229	0.0379	-0.6042	A	
29339	0.1399	-0.0175	0.0443	-0.395	A	
29340	3.7129	0.0778	0.04	1.945	A	
30443	3.438	0.078	0.042	1.8571	AA	
31002	1.536	0.09	0.0706	1.2748	A	
31005	0.0388	-0.0104	0.0469	-0.2217	A	
31006	5.2179	0.1349	0.0583	2.3139	A	
31009	0.187	0.0321	0.069	0.4652	A	
31010	0.1647	0.0435	0.0954	0.456	A	
31011	0.0005	-0.0001	0.0483	-0.0021	A	
31016	2.594	0.1875	0.1126	1.6652	A	
31018	1.029	0.047	0.046	1.0217	AA	
31019	16.1816	0.1984	0.049	4.049	A	
31021	1.5173	-0.0579	0.0461	-1.256	A	
31023	0.086	-0.012	0.042	-0.2857	AA	
31025	1.267	0.054	0.048	1.125	AA	
31067	105.9187	0.5182	0.0504	10.2817	B	Male
31070	0.1134	0.0168	0.0466	0.3605	A	
31073	0.4597	0.0534	0.0746	0.7158	A	
31074	0.3711	-0.0438	0.068	-0.6441	A	
31075	0.1183	0.0237	0.0632	0.375	A	
31077	17.8663	0.2149	0.0506	4.247	A	
31082	4.7197	-0.1123	0.051	-2.202	A	
31085	21.3634	0.2223	0.0479	4.6409	A	
31086	2.227	0.0923	0.0607	1.5206	A	
31087	6.0561	-0.1175	0.0473	-2.4841	A	
31092	2.003	-0.059	0.042	-1.4048	AA	
31100	48.969	-0.31	0.044	-7.0455	AA	
31102	49.832	-0.307	0.043	-7.1395	AA	
31103	99.012	-0.425	0.042	-10.119	AA	
31104	87.521	-0.4	0.043	-9.3023	AA	
31108	0.7431	-0.044	0.0496	-0.8871	A	
31109	77.0639	0.4266	0.0487	8.7598	B	Male
31381	0.0295	0.0211	0.0963	0.2191	A	
31382	0.5154	-0.0736	0.0961	-0.7659	A	
31386	2.5361	0.0728	0.045	1.6178	A	
31387	7.0873	0.1309	0.0487	2.6879	A	
31388	6.2688	0.1181	0.0467	2.5289	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31551	0.647	-0.048	0.06	-0.8	AA	
31563	5.261	0.103	0.045	2.2889	AA	
31567	26.484	0.243	0.047	5.1702	AA	
33070	0.2401	0.0502	0.0932	0.5386	A	
33112	5.137	0.093	0.041	2.2683	AA	
33113	5.084	0.093	0.041	2.2683	AA	

B.12.e: DIF Analysis for Level II Economically Disadvantaged vs. Non-Economically Disadvantaged

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19819	17.69	0.158	0.038	4.1579	AA	
19937	0.8641	-0.045	0.0472	-0.9534	A	
19985	14.5198	-0.1948	0.0508	-3.8346	A	
20009	39.3254	-0.246	0.0391	-6.2916	A	
20120	1.123	0.04	0.037	1.0811	AA	
20122	0.022	0.006	0.038	0.1579	AA	
20244	0.013	-0.004	0.038	-0.1053	AA	
20271	0.317	0.0315	0.0534	0.5899	A	
20397	1.1836	0.0596	0.0533	1.1182	A	
20398	0.3059	-0.0239	0.0417	-0.5731	A	
20399	1.0216	-0.0399	0.0388	-1.0284	A	
20428	0.8758	0.0519	0.0538	0.9647	A	
20434	19.9325	-0.1676	0.0373	-4.4933	A	
20435	1.8255	-0.0711	0.0518	-1.3726	A	
20497	0.5675	-0.0358	0.0463	-0.7732	A	
20498	2.7538	-0.1138	0.0673	-1.6909	A	
20543	1.9427	-0.082	0.0583	-1.4065	A	
20570	0.0339	-0.0094	0.0454	-0.207	A	
20571	9.3592	-0.1899	0.0616	-3.0828	A	
20625	8.3966	-0.1189	0.0408	-2.9142	A	
20627	0.1323	-0.0175	0.0453	-0.3863	A	
20634	0.4112	-0.0395	0.0589	-0.6706	A	
20635	4.4818	-0.1229	0.0574	-2.1411	A	
20835	1.0915	0.0571	0.0533	1.0713	A	
20837	1.3923	-0.0502	0.0419	-1.1981	A	
20859	38.085	0.217	0.035	6.2	AA	
21162	0.6048	-0.0492	0.0608	-0.8092	A	
21163	1.6278	-0.0863	0.0662	-1.3036	A	
21170	4.237	-0.09	0.044	-2.0455	AA	
21171	2.014	-0.072	0.051	-1.4118	AA	
24202	0.2523	-0.0217	0.0415	-0.5229	A	
24207	3.506	0.064	0.034	1.8824	AA	
24219	7.8126	0.1221	0.0435	2.8069	A	
24243	2.6128	0.0694	0.0423	1.6407	A	
24281	14.2593	0.1624	0.0428	3.7944	A	
24398	0.0006	-0.0002	0.0543	-0.0037	A	
24400	4.2096	-0.0873	0.0421	-2.0736	A	
24420	0.1507	-0.0175	0.0427	-0.4098	A	
24440	19.2691	-0.182	0.0413	-4.4068	A	
24442	0.5361	-0.0466	0.0612	-0.7614	A	
24469	0.0202	-0.0071	0.0432	-0.1644	A	
24552	5.2809	-0.0869	0.0374	-2.3235	A	
24556	0.0793	0.0197	0.063	0.3127	A	
24558	4.2769	-0.0907	0.0434	-2.0899	A	
24570	12.7083	0.1563	0.0435	3.5931	A	
24754	9.614	0.109	0.035	3.1143	AA	
24824	0.8688	-0.0618	0.0642	-0.9626	A	
24826	4.0894	-0.1675	0.0809	-2.0705	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
24842	7.6687	-0.1211	0.0435	-2.7839	A	
24846	3.7179	0.0798	0.041	1.9463	A	
24848	9.6712	0.1149	0.0368	3.1223	A	
24854	0.826	-0.055	0.06	-0.9167	AA	
24856	1.516	0.049	0.04	1.225	AA	
24868	0.088	0.018	0.059	0.3051	AA	
24871	2.376	0.059	0.039	1.5128	AA	
25163	0.006	-0.0043	0.0434	-0.0991	A	
25171	0.6438	-0.0387	0.0469	-0.8252	A	
25172	0.0101	-0.03	0.1645	-0.1824	A	
25173	0.5384	-0.0498	0.0652	-0.7638	A	
25176	0.0908	0.022	0.0659	0.3338	A	
28528	0.017	0.0083	0.0527	0.1575	A	
28532	5.374	-0.1234	0.0527	-2.3416	A	
29030	7.902	0.103	0.037	2.7838	AA	
29335	0.512	0.0371	0.0506	0.7332	A	
29338	3.6056	0.0893	0.0465	1.9204	A	
29339	0.3136	-0.0327	0.0559	-0.585	A	
29340	6.7704	-0.13	0.0495	-2.6263	A	
30443	2.758	0.08	0.048	1.6667	AA	
31002	2.3702	0.1409	0.0887	1.5885	A	
31005	0.6712	0.0487	0.0571	0.8529	A	
31006	2.0712	-0.1061	0.0718	-1.4777	A	
31009	2.0957	-0.1359	0.091	-1.4934	A	
31010	2.9818	0.2014	0.1135	1.7744	A	
31011	3.9628	-0.1163	0.0576	-2.0191	A	
31016	3.0719	0.2494	0.1367	1.8244	A	
31018	0.095	-0.017	0.057	-0.2982	AA	
31019	5.3376	-0.135	0.0578	-2.3356	A	
31021	0.2909	-0.0302	0.0533	-0.5666	A	
31023	2.101	0.071	0.049	1.449	AA	
31025	0.038	0.011	0.059	0.1864	AA	
31067	2.1648	-0.0927	0.0617	-1.5024	A	
31070	2.635	-0.0935	0.0568	-1.6461	A	
31073	0.6546	0.0774	0.0909	0.8515	A	
31074	4.8958	0.1781	0.079	2.2544	A	
31075	1.2017	-0.0886	0.078	-1.1359	A	
31077	3.7575	-0.1185	0.06	-1.975	A	
31082	5.0279	0.1424	0.0629	2.2639	A	
31085	0.4958	0.0426	0.058	0.7345	A	
31086	0.24	-0.0413	0.0782	-0.5281	A	
31087	0.0153	-0.0088	0.0573	-0.1536	A	
31092	2.076	0.073	0.05	1.46	AA	
31100	2.035	-0.072	0.05	-1.44	AA	
31102	1.303	-0.059	0.052	-1.1346	AA	
31103	0.302	0.028	0.05	0.56	AA	
31104	23.603	0.238	0.049	4.8571	AA	
31108	1.5827	-0.079	0.0612	-1.2908	A	
31109	7.2079	-0.1601	0.0591	-2.709	A	
31381	0.997	0.1301	0.1231	1.0569	A	
31382	0.218	-0.0624	0.12	-0.52	A	
31386	5.5019	-0.122	0.0514	-2.3735	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31387	12.419	-0.1952	0.0549	-3.5556	A	
31388	0.0056	0.0055	0.0542	0.1015	A	
31551	0.89	-0.069	0.073	-0.9452	AA	
31563	18.589	-0.235	0.054	-4.3519	AA	
31567	16.296	-0.225	0.056	-4.0179	AA	
33070	0.8794	0.112	0.1119	1.0009	A	
33112	0.048	0.011	0.049	0.2245	AA	
33113	2.132	0.069	0.047	1.4681	AA	

B.12.f: DIF Analysis for Level II Native Language Comparison (Arabic vs. Spanish)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19819	68.429	0.352	0.043	8.186	AA	
19937	0.3779	-0.0326	0.0509	-0.6405	A	
19985	22.4052	0.2474	0.0521	4.7486	A	
20009	5.4707	-0.1033	0.0437	-2.3638	A	
20120	10.84	0.138	0.042	3.2857	AA	
20122	90.067	-0.404	0.043	-9.3953	AA	
20244	76.325	-0.374	0.043	-8.6977	AA	
20271	6.367	-0.1516	0.0595	-2.5479	A	
20397	4.2055	-0.1229	0.0589	-2.0866	A	
20398	3.5665	-0.0871	0.0456	-1.9101	A	
20399	29.3982	-0.2404	0.0443	-5.4266	A	
20428	0.5066	0.0436	0.0588	0.7415	A	
20434	0.3582	0.0268	0.0432	0.6204	A	
20435	13.1671	0.1981	0.0542	3.655	A	
20497	13.0011	0.1827	0.0503	3.6322	A	
20498	5.4706	0.1611	0.0681	2.3656	A	
20543	9.0303	-0.1859	0.0612	-3.0376	A	
20570	23.7934	0.2422	0.0494	4.9028	A	
20571	10.8393	0.2042	0.0615	3.3203	A	
20625	0.8907	0.0435	0.045	0.9667	A	
20627	18.8319	-0.2145	0.0491	-4.3686	A	
20634	0.2121	0.0302	0.0613	0.4927	A	
20635	0.7445	-0.0524	0.0587	-0.8927	A	
20835	2.3818	0.0923	0.0586	1.5751	A	
20837	26.8447	-0.2427	0.0466	-5.2082	A	
20859	205.142	-0.576	0.04	-14.4	BB	Arabic
21162	0.053	0.016	0.0613	0.261	A	
21163	5.7814	-0.1622	0.0665	-2.4391	A	
21170	2.62	-0.077	0.048	-1.6042	AA	
21171	7.934	-0.151	0.054	-2.7963	AA	
24202	0.3803	-0.0297	0.0464	-0.6401	A	
24207	98.986	0.392	0.039	10.0513	AA	
24219	1.474	-0.0606	0.0489	-1.2393	A	
24243	0.0366	-0.01	0.0466	-0.2146	A	
24281	1.1249	0.052	0.048	1.0833	A	
24398	17.8903	-0.2439	0.0572	-4.264	A	
24400	0.0408	0.0106	0.047	0.2255	A	
24420	2.9075	-0.0816	0.0472	-1.7288	A	
24440	53.8319	0.3269	0.0445	7.3461	A	
24442	12.6762	0.2281	0.0637	3.5808	A	
24469	0.5222	-0.0349	0.0469	-0.7441	A	
24552	24.5345	-0.2128	0.0428	-4.972	A	
24556	9.1381	0.2061	0.0675	3.0533	A	
24558	4.9257	0.1057	0.0471	2.2442	A	
24570	27.3862	0.2589	0.0493	5.2515	A	
24754	56.772	0.302	0.04	7.55	AA	
24824	0.4652	0.0488	0.0681	0.7166	A	
24826	0.2152	0.0442	0.0866	0.5104	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
24842	15.6769	-0.1881	0.0472	-3.9852	A	
24846	24.9131	-0.2321	0.0462	-5.0238	A	
24848	1.8745	0.0588	0.0423	1.3901	A	
24854	0.004	-0.004	0.063	-0.0635	AA	
24856	3.195	0.078	0.044	1.7727	AA	
24868	3.033	0.116	0.068	1.7059	AA	
24871	8.802	0.125	0.042	2.9762	AA	
25163	0.0957	0.016	0.048	0.3333	A	
25171	14.043	0.1887	0.05	3.774	A	
25172	0.1214	-0.069	0.1603	-0.4304	A	
25173	18.204	-0.2924	0.0683	-4.2811	A	
25176	3.1651	-0.1219	0.0675	-1.8059	A	
28528	2.5763	-0.0908	0.0555	-1.636	A	
28532	5.705	-0.1322	0.0547	-2.4168	A	
29030	12.452	-0.148	0.042	-3.5238	AA	
29335	1.6809	0.0724	0.0549	1.3188	A	
29338	0.2052	0.024	0.0503	0.4771	A	
29339	18.8434	0.2549	0.0583	4.3722	A	
29340	2.2587	-0.0809	0.0529	-1.5293	A	
30443	18.669	0.249	0.058	4.2931	AA	
31002	0.0198	-0.0167	0.09	-0.1856	A	
31005	0.0358	0.0135	0.0615	0.2195	A	
31006	37.4398	0.4742	0.0774	6.1266	B	Spanish
31009	7.2097	0.2425	0.089	2.7247	A	
31010	2.3841	-0.2165	0.134	-1.6157	A	
31011	1.4173	0.0798	0.0652	1.2239	A	
31016	0.0881	-0.0584	0.1557	-0.3751	A	
31018	48.239	0.41	0.06	6.8333	AA	
31019	0.4105	0.0444	0.0658	0.6748	A	
31021	1.5343	-0.081	0.0635	-1.2756	A	
31023	0.313	0.032	0.057	0.5614	AA	
31025	5.079	0.138	0.061	2.2623	AA	
31067	7.8248	0.1837	0.0649	2.8305	A	
31070	8.5737	0.182	0.0616	2.9545	A	
31073	6.268	0.2549	0.0999	2.5516	A	
31074	10.5962	0.3	0.0914	3.2823	A	
31075	6.6511	0.2197	0.0837	2.6249	A	
31077	3.653	-0.1329	0.0683	-1.9458	A	
31082	14.2826	-0.2582	0.0679	-3.8027	A	
31085	1.4487	0.0773	0.0627	1.2329	A	
31086	4.8267	-0.1746	0.0783	-2.2299	A	
31087	18.8822	-0.2745	0.0627	-4.378	A	
31092	60.363	0.43	0.056	7.6786	BB	Spanish
31100	42.917	-0.403	0.062	-6.5	AA	
31102	45.15	-0.39	0.058	-6.7241	AA	
31103	81.815	-0.512	0.057	-8.9825	BB	Arabic
31104	70.167	-0.49	0.059	-8.3051	BB	Arabic
31108	0.1909	0.0301	0.0641	0.4696	A	
31109	46.3697	0.4337	0.0637	6.8085	B	Spanish
31381	12.1245	-0.4453	0.1268	-3.5118	B	Arabic
31382	4.7099	-0.2973	0.1327	-2.2404	A	
31386	2.5161	0.1021	0.0629	1.6232	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31387	1.3	-0.0797	0.068	-1.1721	A	
31388	0.2909	0.0366	0.0639	0.5728	A	
31551	25.889	-0.414	0.081	-5.1111	AA	
31563	82.518	0.539	0.06	8.9833	BB	Spanish
31567	18.014	-0.277	0.065	-4.2615	AA	
33070	1.9504	0.1876	0.1282	1.4633	A	
33112	72.766	0.472	0.055	8.5818	BB	Spanish
33113	27.215	0.298	0.057	5.2281	AA	

B.12.g: DIF Analysis for Level II Disabled vs. Non-Disabled

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[47]
19819	3.871	-0.12	0.06	-2	AA	
19937	0.5419	-0.0528	0.0684	-0.7719	A	
19985	0.1623	0.0312	0.0716	0.4358	A	
20009	1.7943	0.0854	0.0622	1.373	A	
20120	2.914	-0.102	0.06	-1.7	AA	
20122	19.409	0.263	0.061	4.3115	AA	
20244	14.81	0.24	0.062	3.871	AA	
20271	0.5941	-0.0724	0.0887	-0.8162	A	
20397	1.2963	-0.1007	0.0855	-1.1778	A	
20398	0.5862	-0.051	0.0637	-0.8006	A	
20399	0.3699	0.0416	0.0647	0.643	A	
20428	0.0336	-0.0173	0.0774	-0.2235	A	
20434	2.3916	-0.0991	0.0627	-1.5805	A	
20435	0.0077	0.0085	0.0698	0.1218	A	
20497	0.0013	-0.0047	0.0673	-0.0698	A	
20498	0.4574	0.0611	0.0844	0.7239	A	
20543	17.7432	-0.3203	0.076	-4.2145	A	
20570	0.0669	0.0196	0.0668	0.2934	A	
20571	0.0843	0.0254	0.077	0.3299	A	
20625	2.0317	0.0906	0.0624	1.4519	A	
20627	0.0049	-0.0067	0.0656	-0.1021	A	
20634	0.0407	0.0182	0.0759	0.2398	A	
20635	0.0243	-0.0145	0.0749	-0.1936	A	
20835	0.0892	0.0249	0.0742	0.3356	A	
20837	1.2093	0.0711	0.0634	1.1215	A	
20859	51.947	0.418	0.059	7.0847	AA	
21162	0.5188	-0.058	0.0763	-0.7602	A	
21163	1.2501	0.0919	0.079	1.1633	A	
21170	2.026	0.089	0.063	1.4127	AA	
21171	14.516	0.252	0.067	3.7612	AA	
24202	3.9201	-0.1326	0.0653	-2.0306	A	
24207	0.084	0.016	0.056	0.2857	AA	
24219	0.1989	-0.032	0.0661	-0.4841	A	
24243	0.2865	-0.0362	0.0639	-0.5665	A	
24281	0.7963	-0.0603	0.065	-0.9277	A	
24398	1.1294	0.0799	0.0727	1.099	A	
24400	8.3235	-0.1899	0.0653	-2.9081	A	
24420	0.0208	-0.0116	0.0656	-0.1768	A	
24440	10.5854	-0.2058	0.0631	-3.2615	A	
24442	0.0004	-0.005	0.0814	-0.0614	A	
24469	7.7298	-0.1801	0.0644	-2.7966	A	
24552	0.0189	-0.0101	0.0604	-0.1672	A	
24556	1.4782	0.1053	0.0834	1.2626	A	
24558	1.1813	0.0713	0.064	1.1141	A	
24570	0.0075	0.0081	0.0677	0.1196	A	
24754	11.247	-0.194	0.058	-3.3448	AA	
24824	0.0006	0.0059	0.0863	0.0684	A	

[47] Non-Dis stands for non-disabled students.

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[47]
24826	0.6348	0.0879	0.1039	0.846	A	
24842	3.208	-0.1172	0.0643	-1.8227	A	
24846	0.4884	0.0472	0.0646	0.7307	A	
24848	0.0254	-0.0113	0.06	-0.1883	A	
24854	38.327	0.549	0.088	6.2386	BB	Non-Dis
24856	0.002	0.003	0.061	0.0492	AA	
24868	1.273	-0.103	0.09	-1.1444	AA	
24871	2.034	-0.082	0.058	-1.4138	AA	
25163	0.0993	-0.0228	0.0653	-0.3492	A	
25171	4.8055	-0.1525	0.0682	-2.2361	A	
25172	19.107	0.6881	0.1574	4.3717	B	Non-Dis
25173	0.2873	-0.054	0.0928	-0.5819	A	
25176	8.6794	0.2353	0.0785	2.9975	A	
28528	2.075	-0.1061	0.0718	-1.4777	A	
28532	0.8461	0.066	0.0692	0.9538	A	
29030	4.89	0.136	0.062	2.1935	AA	
29335	4.4467	-0.1556	0.0725	-2.1462	A	
29338	0.118	0.0243	0.0652	0.3727	A	
29339	6.5967	-0.1933	0.0741	-2.6086	A	
29340	1.7765	-0.0944	0.0693	-1.3622	A	
30443	6.925	-0.216	0.081	-2.6667	AA	
31002	0.6212	0.0989	0.1153	0.8578	A	
31005	0.1608	-0.0404	0.0899	-0.4494	A	
31006	2.024	0.1434	0.0977	1.4678	A	
31009	2.3275	0.1735	0.1101	1.5758	A	
31010	15.3903	0.528	0.1316	4.0122	B	Non-Dis
31011	1.5291	0.1137	0.0885	1.2847	A	
31016	2.6616	0.2776	0.1602	1.7328	A	
31018	3.966	-0.174	0.087	-2	AA	
31019	0.0141	0.0149	0.0904	0.1648	A	
31021	1.3882	-0.1085	0.0886	-1.2246	A	
31023	2.204	-0.116	0.079	-1.4684	AA	
31025	0.087	0.025	0.085	0.2941	AA	
31067	1.4055	-0.1109	0.091	-1.2187	A	
31070	0.1351	-0.0367	0.089	-0.4124	A	
31073	2.5295	-0.2023	0.1227	-1.6487	A	
31074	1.0113	0.1232	0.1144	1.0769	A	
31075	3.0522	0.1858	0.103	1.8039	A	
31077	0.4309	0.0667	0.0944	0.7066	A	
31082	5.8032	0.2211	0.092	2.4033	A	
31085	4.7586	-0.2057	0.0916	-2.2456	A	
31086	2.063	-0.1577	0.1049	-1.5033	A	
31087	3.8983	0.1909	0.0953	2.0031	A	
31092	1.34	-0.096	0.082	-1.1707	AA	
31100	12.95	0.336	0.095	3.5368	AA	
31102	0.888	0.087	0.092	0.9457	AA	
31103	13.134	0.303	0.084	3.6071	AA	
31104	36.616	0.495	0.082	6.0366	BB	Non-Dis
31108	0.9727	0.0942	0.0911	1.034	A	
31109	0.0019	-0.0002	0.0903	-0.0022	A	
31381	4.565	0.307	0.1383	2.2198	A	
31382	0.0526	0.0445	0.1451	0.3067	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[47]
31386	2.5897	0.1464	0.089	1.6449	A	
31387	1.4179	-0.1142	0.0921	-1.24	A	
31388	1.3255	-0.1068	0.0892	-1.1973	A	
31551	1.367	0.118	0.101	1.1683	AA	
31563	2.898	0.146	0.086	1.6977	AA	
31567	0.541	0.064	0.087	0.7356	AA	
33070	0.0294	0.0358	0.1466	0.2442	A	
33112	0.005	-0.006	0.081	-0.0741	AA	
33113	1.001	-0.08	0.079	-1.0127	AA	

B.12.h: DIF Analysis for Level II Accommodated vs. Non-Accommodated

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[48]
19819	4.527	-0.24	0.111	-2.1622	AA	
19937	4.628	-0.1445	0.0669	-2.1599	A	
19985	2.0108	-0.1026	0.0711	-1.443	A	
20009	0.2037	0.121	0.2127	0.5689	A	
20120	4.403	-0.228	0.108	-2.1111	AA	
20122	4.353	-0.445	0.214	-2.0794	BB	Accom
20244	0.673	-0.169	0.21	-0.8048	AA	
20271	1.4568	0.2892	0.2205	1.3116	A	
20397	0.0088	-0.0402	0.2053	-0.1958	A	
20398	0.9569	0.2131	0.2062	1.0335	A	
20399	0.5266	0.19	0.2213	0.8586	A	
20428	0.0068	0.009	0.0753	0.1195	A	
20434	6.8312	-0.1455	0.0553	-2.6311	A	
20435	4.4138	0.1439	0.0684	2.1038	A	
20497	0.0607	-0.0177	0.0642	-0.2757	A	
20498	0.3888	0.0581	0.087	0.6678	A	
20543	0.275	-0.1515	0.2421	-0.6258	A	
20570	6.6756	-0.1705	0.0656	-2.5991	A	
20571	0.0104	0.0113	0.0799	0.1414	A	
20625	0.5548	0.1744	0.2073	0.8413	A	
20627	0.624	-0.1911	0.2178	-0.8774	A	
20634	0.8177	-0.0756	0.0798	-0.9474	A	
20635	0.0017	-0.006	0.0761	-0.0788	A	
20835	0.0298	-0.0157	0.0749	-0.2096	A	
20837	0.0297	0.0555	0.2066	0.2686	A	
20859	0.332	-0.107	0.185	-0.5784	AA	
21162	0.6253	-0.2312	0.2567	-0.9007	A	
21163	0.0003	0.0321	0.2717	0.1181	A	
21170	4.134	-0.255	0.124	-2.0565	AA	
21171	0.018	0.019	0.135	0.1407	AA	
24202	0.6239	-0.1767	0.2044	-0.8645	A	
24207	2.631	0.162	0.099	1.6364	AA	
24219	3.2412	-0.4264	0.2237	-1.9061	A	
24243	0.3813	0.1499	0.2091	0.7169	A	
24281	0.8465	-0.0589	0.0618	-0.9531	A	
24398	0.5202	-0.1987	0.2401	-0.8276	A	
24400	0.0183	0.0612	0.2354	0.26	A	
24420	0.08	-0.0849	0.2174	-0.3905	A	
24440	20.1856	0.26	0.0577	4.5061	A	
24442	2.6348	0.1336	0.0804	1.6617	A	
24469	0.0229	-0.0544	0.2128	-0.2556	A	
24552	0.0064	0.0338	0.1936	0.1746	A	
24556	4.3763	-0.1918	0.0905	-2.1193	A	
24558	1.3453	0.0711	0.0602	1.1811	A	
24570	2.0474	0.0919	0.0628	1.4634	A	
24754	1.06	0.101	0.1	1.01	AA	
24824	1.1733	0.0943	0.0843	1.1186	A	

[48] Accom stands for students with standard accommodations. Non-Accom stands for students without standard accommodations.

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[48]
24826	3.2547	-0.1933	0.1048	-1.8445	A	
24842	1.3891	0.2622	0.2102	1.2474	A	
24846	0.508	-0.177	0.215	-0.8233	A	
24848	1.9484	0.3036	0.2021	1.5022	A	
24854	3.011	0.365	0.213	1.7136	AA	
24856	2.108	-0.307	0.21	-1.4619	AA	
24868	2.024	-0.249	0.169	-1.4734	AA	
24871	2.137	-0.16	0.109	-1.4679	AA	
25163	3.2542	-0.1133	0.0622	-1.8215	A	
25171	0.0021	0.0146	0.2235	0.0653	A	
25172	0.1744	0.2564	0.411	0.6238	A	
25173	1.3188	0.3086	0.2394	1.2891	A	
25176	0.0017	-0.0246	0.2675	-0.092	A	
28528	0.5527	-0.2046	0.242	-0.8455	A	
28532	5.1886	0.5263	0.2245	2.3443	B	Non-Accom
29030	2.247	-0.321	0.208	-1.5433	AA	
29335	3.3599	-0.5176	0.2539	-2.0386	A	
29338	1.9154	-0.3248	0.2233	-1.4545	A	
29339	0.001	0.0398	0.2514	0.1583	A	
29340	1.7454	-0.3174	0.2274	-1.3958	A	
30443	0	-0.002	0.136	-0.0147	AA	
31002	0.0117	0.0114	0.2966	0.0384	A	
31005	0.0681	0.0265	0.0872	0.3039	A	
31006						
31009	6.2033	0.3058	0.1204	2.5399	A	
31010						
31011						
31016						
31018	0.917	-0.156	0.164	-0.9512	AA	
31019	0.4233	-0.0558	0.0803	-0.6949	A	
31021						
31023	7.253	-0.39	0.142	-2.7465	AA	
31025	0.588	-0.127	0.17	-0.7471	AA	
31067	0.4299	-0.0634	0.0917	-0.6914	A	
31070	0.9057	-0.0879	0.0885	-0.9932	A	
31073	0.1365	0.0504	0.1166	0.4322	A	
31074	2.138	-0.1737	0.1134	-1.5317	A	
31075	0.0013	-0.0086	0.1004	-0.0857	A	
31077						
31082	4.0836	0.5167	0.2399	2.1538	B	Non-Accom
31085	2.1966	0.3563	0.2231	1.597	A	
31086	3.9685	-0.5933	0.2739	-2.1661	B	Accom
31087	1.1516	-0.2596	0.2217	-1.171	A	
31092	0.018	0.018	0.144	0.125	AA	
31100						
31102	0.346	0.12	0.219	0.5479	AA	
31103	0.009	0.02	0.198	0.101	AA	
31104						
31108	1.974	0.1346	0.0919	1.4646	A	
31109	4.8691	0.1996	0.0891	2.2402	A	
31381	0.794	0.3622	0.3369	1.0751	A	
31382						

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[48]
31386						
31387						
31388						
31551						
31563	0.003	-0.008	0.157	-0.051	AA	
31567	2.933	-0.248	0.15	-1.6533	AA	
33070	0.2887	0.0853	0.1412	0.6041	A	
33112	0.015	-0.018	0.146	-0.1233	AA	
33113	0.483	-0.092	0.136	-0.6765	AA	

B.13.a: DIF Analysis for Level III Ethnicity Comparison (Asian vs. White)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19929	9.443	0.1636	0.0528	3.0985	A	
19930	0.169	-0.0215	0.0494	-0.4352	A	
19946	128.9539	0.5574	0.05	11.148	B	White
19949	0.0002	0.002	0.0503	0.0398	A	
19951	0.44	0.0653	0.0922	0.7082	A	
19994	0.4038	0.039	0.0586	0.6655	A	
20006	0.6619	-0.0584	0.0688	-0.8488	A	
20029	16.5005	-0.2179	0.0535	-4.0729	A	
20152	18.292	0.193	0.046	4.1957	AA	
20202	16.1055	0.2233	0.0556	4.0162	A	
20206	5.495	0.105	0.045	2.3333	AA	
20369	20.7418	-0.24	0.0524	-4.5802	A	
20551	40.0473	-0.3201	0.0505	-6.3386	A	
20553	2.939	-0.077	0.044	-1.75	AA	
20564	1.4994	-0.0665	0.0532	-1.25	A	
20661	0	-0.0016	0.054	-0.0296	A	
20662	0.003	-0.0057	0.0655	-0.087	A	
20664	3.6018	-0.1101	0.0572	-1.9248	A	
20686	8.374	0.252	0.09	2.8	AA	
20694	2.758	0.148	0.093	1.5914	AA	
21109	47.1797	-0.3317	0.0482	-6.8817	A	
21154	3.6683	-0.0991	0.0507	-1.9546	A	
21156	12.3002	-0.2207	0.0629	-3.5087	A	
21157	24.675	-0.2896	0.0579	-5.0017	A	
21159	1.0466	-0.0526	0.0503	-1.0457	A	
21167	4.045	0.157	0.079	1.9873	AA	
24329	3.6254	-0.0974	0.0505	-1.9287	A	
24330	1.7357	0.0701	0.0521	1.3455	A	
24343	6.0183	-0.1271	0.0512	-2.4824	A	
24421	28.1833	0.2818	0.0529	5.327	A	
24429	73.2566	-0.4183	0.0488	-8.5717	A	
24435	0.9888	-0.0497	0.0489	-1.0164	A	
24481	0.0001	-0.0007	0.0497	-0.0141	A	
24512	0.3309	-0.0385	0.0632	-0.6092	A	
24514	22.2425	-0.2759	0.0582	-4.7405	A	
24515	3.4302	-0.1263	0.067	-1.8851	A	
24516	5.5168	0.1199	0.0504	2.379	A	
24518	1.3632	0.0585	0.049	1.1939	A	
24525	0.568	-0.033	0.044	-0.75	AA	
24535	25.6802	0.2558	0.0501	5.1058	A	
24728	16.34	0.178	0.044	4.0455	AA	
24892	0.3449	-0.0926	0.1405	-0.6591	A	
24902	143.2982	0.5587	0.0473	11.8118	B	White
24909	2.8271	0.1095	0.0637	1.719	A	
24913	20.8901	0.3327	0.0722	4.608	A	
24917	4.373	0.127	0.06	2.1167	AA	
24921	1.372	-0.061	0.053	-1.1509	AA	
24925	23.644	0.228	0.047	4.8511	AA	
24929	8.866	0.204	0.069	2.9565	AA	
24930	25.107	0.394	0.079	4.9873	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
24932	2.026	0.061	0.043	1.4186	AA	
24937	1.809	-0.059	0.044	-1.3409	AA	
25145	1.245	-0.072	0.065	-1.1077	AA	
25153	31.449	0.434	0.078	5.5641	BB	White
25177	1.5448	0.1547	0.1187	1.3033	A	
25178	0.9387	-0.0716	0.0714	-1.0028	A	
25180	0.7223	0.046	0.0525	0.8762	A	
25267	2.7215	-0.1132	0.0674	-1.6795	A	
25273	2.3868	-0.1092	0.069	-1.5826	A	
27916	82.378	0.527	0.059	8.9322	BB	White
28939	9.9629	-0.1549	0.0488	-3.1742	A	
28940	0.5021	-0.0392	0.0532	-0.7368	A	
29071	0.4182	0.0368	0.0546	0.674	A	
29073	0.9495	-0.0518	0.052	-0.9962	A	
29074	3.3803	-0.1038	0.0555	-1.8703	A	
29084	0.6121	0.0402	0.0498	0.8072	A	
29085	56.3783	-0.4136	0.0551	-7.5064	A	
29086	15.5093	-0.1941	0.0489	-3.9693	A	
29087	1.2817	-0.0547	0.0474	-1.154	A	
29096	5.687	-0.145	0.061	-2.377	AA	
29161	1.192	0.067	0.061	1.0984	AA	
29219	0.3614	-0.0356	0.0565	-0.6301	A	
29222	25.746	0.2451	0.0483	5.0745	A	
29224	21.9715	-0.2596	0.0551	-4.7114	A	
29366	1.7173	0.0747	0.0558	1.3387	A	
29372	3.3248	0.0915	0.0496	1.8448	A	
29389	33.022	-0.2822	0.0489	-5.771	A	
30741	0.1549	0.0306	0.0715	0.428	A	
31284	4.6443	-0.1443	0.0657	-2.1963	A	
31285	1.2275	-0.0883	0.0767	-1.1512	A	
31286	4.5747	-0.1518	0.0697	-2.1779	A	
31287	4.4237	-0.1464	0.0685	-2.1372	A	
31289	6.8888	-0.1753	0.066	-2.6561	A	
31290	5.9335	-0.1604	0.0651	-2.4639	A	
31291	3.5544	-0.1247	0.0649	-1.9214	A	
31294	5.4648	-0.1581	0.0663	-2.3846	A	
31295	0.2453	0.0363	0.0682	0.5323	A	
31306	45.5514	0.4901	0.0729	6.7229	B	White
31307	23.471	0.3858	0.0798	4.8346	A	
31315	79.301	0.811	0.094	8.6277	CC	White
31316	19.292	0.449	0.106	4.2358	BB	White
31319	0.0069	-0.0114	0.0895	-0.1274	A	
31320	9.8597	-0.2172	0.0685	-3.1708	A	
31321	3.605	-0.1989	0.1028	-1.9348	A	
31322	1.3539	-0.0886	0.0741	-1.1957	A	
31324	0.1185	-0.0298	0.0779	-0.3825	A	
31327	4.4062	0.1918	0.0894	2.1454	A	
31328	0.4019	0.0861	0.1235	0.6972	A	
31330	0.3618	-0.057	0.0877	-0.6499	A	
31341	1.2713	-0.0887	0.0763	-1.1625	A	
31342	5.7753	-0.1596	0.0656	-2.4329	A	
31343	4.7314	-0.1791	0.0803	-2.2304	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31349	0.092	0.02	0.065	0.3077	AA	
31350	20.467	0.276	0.061	4.5246	AA	
31351	5.01	-0.149	0.067	-2.2239	AA	
31374	15.324	0.327	0.083	3.9398	AA	
31391	11.547	0.215	0.064	3.3594	AA	
31392	22.408	0.311	0.066	4.7121	AA	
33110	8.261	0.185	0.065	2.8462	AA	

B.13.b: DIF Analysis for Level III Ethnicity Comparison (Black vs. White)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19929	0.0093	0.0142	0.0977	0.1453	A	
19930	0.9267	0.0926	0.0919	1.0076	A	
19946	7.2028	0.2632	0.0965	2.7275	A	
19949	9.5336	0.2931	0.0927	3.1618	A	
19951	0.0428	0.0432	0.1516	0.285	A	
19994	4.0275	0.2117	0.1035	2.0454	A	
20006	0.7693	-0.144	0.1515	-0.9505	A	
20029	1.483	0.1208	0.0958	1.261	A	
20152	2.147	-0.129	0.088	-1.4659	AA	
20202	1.7939	-0.1521	0.1083	-1.4044	A	
20206	7.66	0.245	0.088	2.7841	AA	
20369	2.2845	0.1455	0.094	1.5479	A	
20551	0.2206	0.0488	0.094	0.5191	A	
20553	0.896	0.082	0.086	0.9535	AA	
20564	0.1748	0.045	0.0968	0.4649	A	
20661	1.1915	0.1118	0.0983	1.1373	A	
20662	1.6524	0.1609	0.1184	1.359	A	
20664	6.7365	0.2668	0.1007	2.6495	A	
20686	1.681	0.204	0.168	1.2143	AA	
20694	1.52	-0.276	0.223	-1.2377	AA	
21109	2.2527	0.1382	0.0902	1.5322	A	
21154	12.6193	-0.347	0.0957	-3.6259	A	
21156	1.4824	0.1456	0.1132	1.2862	A	
21157	0.4973	-0.0791	0.1041	-0.7598	A	
21159	2.0417	-0.145	0.0965	-1.5026	A	
21167	0.014	0.016	0.134	0.1194	AA	
24329	1.4186	0.1141	0.0923	1.2362	A	
24330	1.8916	0.1323	0.0944	1.4015	A	
24343	0.4021	-0.0658	0.0957	-0.6876	A	
24421	1.1906	0.117	0.1008	1.1607	A	
24429	0.1416	0.0374	0.0892	0.4193	A	
24435	0.0062	-0.0115	0.0919	-0.1251	A	
24481	0.0618	-0.0275	0.0934	-0.2944	A	
24512	3.4866	0.2135	0.1105	1.9321	A	
24514	0.7728	-0.0958	0.1033	-0.9274	A	
24515	0.5802	-0.1025	0.1235	-0.83	A	
24516	0.0511	0.0261	0.0949	0.275	A	
24518	3.139	0.1682	0.0926	1.8164	A	
24525	1.255	0.093	0.085	1.0941	AA	
24535	0.0229	0.019	0.0957	0.1985	A	
24728	12.985	-0.309	0.086	-3.593	AA	
24892	0.0228	0.0543	0.2114	0.2569	A	
24902	1.5243	0.1189	0.0924	1.2868	A	
24909	5.0777	0.3326	0.1429	2.3275	A	
24913	0.4322	0.0908	0.1249	0.727	A	
24917	4.953	0.305	0.136	2.2426	AA	
24921	0.58	-0.073	0.098	-0.7449	AA	
24925	7.536	-0.248	0.091	-2.7253	AA	
24929	7.412	-0.407	0.153	-2.6601	AA	
24930	0.489	0.095	0.135	0.7037	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
24932	25.889	-0.414	0.083	-4.988	AA	
24937	2.7	0.14	0.086	1.6279	AA	
25145	1.966	0.158	0.115	1.3739	AA	
25153	2.516	0.246	0.162	1.5185	AA	
25177	0.0093	0.0098	0.2733	0.0359	A	
25178	1.3487	0.1494	0.122	1.2246	A	
25180	2.7051	-0.1672	0.0987	-1.694	A	
25267	1.224	0.1686	0.1443	1.1684	A	
25273	4.0408	-0.3083	0.1472	-2.0944	A	
27916	0.87	0.108	0.116	0.931	AA	
28939	0.435	-0.0642	0.0911	-0.7047	A	
28940	0.392	0.0658	0.0974	0.6756	A	
29071	0.0002	0.0035	0.1008	0.0347	A	
29073	0.4767	-0.07	0.0961	-0.7284	A	
29074	3.1928	0.1802	0.0987	1.8257	A	
29084	0.3163	0.0575	0.0953	0.6034	A	
29085	0.6247	-0.0832	0.0991	-0.8396	A	
29086	0.0189	0.0167	0.0912	0.1831	A	
29087	0.0749	-0.0284	0.0896	-0.317	A	
29096	5.48	0.313	0.133	2.3534	AA	
29161	29.137	-0.719	0.137	-5.2482	CC	Black
29219	3.6467	-0.2023	0.104	-1.9452	A	
29222	3.5898	-0.1933	0.0982	-1.9684	A	
29224	9.4776	-0.3157	0.1015	-3.1103	A	
29366	1.2721	0.1232	0.1034	1.1915	A	
29372	5.3562	-0.2216	0.0946	-2.3425	A	
29389	0.0373	0.0216	0.0907	0.2381	A	
30741	0.4314	0.0867	0.1213	0.7148	A	
31284	1.1889	0.1599	0.1381	1.1579	A	
31285	0.8236	0.1413	0.148	0.9547	A	
31286	0.0301	-0.028	0.1197	-0.2339	A	
31287	1.4619	0.1532	0.1219	1.2568	A	
31289	1.2813	-0.1662	0.1396	-1.1905	A	
31290	1.2574	-0.1687	0.1409	-1.1973	A	
31291	1.9758	0.2206	0.1494	1.4766	A	
31294	0.0603	-0.0448	0.142	-0.3155	A	
31295	1.4695	-0.1967	0.1502	-1.3096	A	
31306	4.7282	0.3508	0.1546	2.2691	A	
31307	5.636	0.3231	0.134	2.4112	A	
31315	0.68	0.185	0.221	0.8371	AA	
31316	0.744	-0.161	0.189	-0.8519	AA	
31319	1.1992	-0.1813	0.1533	-1.1826	A	
31320	1.2429	-0.141	0.1203	-1.1721	A	
31321	3.2126	-0.3195	0.1735	-1.8415	A	
31322	3.0926	-0.2399	0.1307	-1.8355	A	
31324	2.6531	-0.2304	0.1353	-1.7029	A	
31327	0.6053	0.1274	0.1495	0.8522	A	
31328	0.3006	-0.1413	0.2149	-0.6575	A	
31330	8.4819	-0.4546	0.1539	-2.9539	B	Black
31341	0.0223	-0.0354	0.1575	-0.2248	A	
31342	1.0961	0.1586	0.1416	1.1201	A	
31343	13.1834	-0.6229	0.1721	-3.6194	B	Black

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31349	1.773	0.152	0.113	1.3451	AA	
31350	6.177	0.345	0.136	2.5368	AA	
31351	2.475	0.182	0.115	1.5826	AA	
31374	0.103	-0.047	0.145	-0.3241	AA	
31391	22.858	-0.705	0.15	-4.7	BB	Black
31392	0.09	-0.035	0.115	-0.3043	AA	
33110	0.519	-0.08	0.112	-0.7143	AA	

B.13.c: DIF Analysis for Level III Ethnicity Comparison (Hispanic vs. White)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19929	9.3754	0.1146	0.0373	3.0724	A	
19930	0.042	0.0078	0.035	0.2229	A	
19946	95.8294	0.3612	0.0369	9.7886	A	
19949	30.5168	0.1946	0.0351	5.5442	A	
19951	0.2553	-0.0351	0.0651	-0.5392	A	
19994	72.5084	0.3385	0.0397	8.5264	A	
20006	2.5154	-0.0782	0.0486	-1.6091	A	
20029	0.0009	-0.0018	0.0366	-0.0492	A	
20152	14.379	-0.125	0.033	-3.7879	AA	
20202	9.6503	0.1247	0.0399	3.1253	A	
20206	12.975	0.117	0.033	3.5455	AA	
20369	2.8245	0.0611	0.036	1.6972	A	
20551	19.4052	0.1546	0.035	4.4171	A	
20553	0.165	0.013	0.032	0.4063	AA	
20564	7.1448	0.0996	0.037	2.6919	A	
20661	102.9174	0.3817	0.0377	10.1247	A	
20662	0.6804	0.0385	0.0455	0.8462	A	
20664	41.2778	0.2508	0.039	6.4308	A	
20686	1.455	-0.088	0.073	-1.2055	AA	
20694	41.551	-0.47	0.074	-6.3514	BB	Hispanic
21109	25.5994	-0.1726	0.034	-5.0765	A	
21154	4.9035	-0.0786	0.0352	-2.233	A	
21156	5.1448	-0.1002	0.0438	-2.2877	A	
21157	5.6451	-0.0946	0.0395	-2.3949	A	
21159	0.3956	0.0229	0.0354	0.6469	A	
21167	0.194	-0.025	0.057	-0.4386	AA	
24329	0.1922	-0.0163	0.0356	-0.4579	A	
24330	30.3688	-0.2047	0.0371	-5.5175	A	
24343	1.1863	0.0396	0.0358	1.1061	A	
24421	13.0739	0.1369	0.0376	3.641	A	
24429	3.0938	0.0598	0.0337	1.7745	A	
24435	3.7292	0.0673	0.0346	1.9451	A	
24481	50.1714	-0.2559	0.0361	-7.0886	A	
24512	3.4201	0.0809	0.0433	1.8684	A	
24514	1.9463	-0.0555	0.0392	-1.4158	A	
24515	1.8081	-0.0635	0.0465	-1.3656	A	
24516	1.0002	-0.0363	0.0356	-1.0197	A	
24518	14.1424	0.1306	0.0346	3.7746	A	
24525	1.515	0.039	0.032	1.2188	AA	
24535	18.6251	0.1552	0.0358	4.3352	A	
24728	36.83	-0.195	0.032	-6.0938	AA	
24892	1.4005	0.1197	0.0972	1.2315	A	
24902	1.3098	0.041	0.0353	1.1615	A	
24909	10.4212	0.1455	0.0448	3.2478	A	
24913	0.0106	0.0068	0.0526	0.1293	A	
24917	1.598	0.055	0.043	1.2791	AA	
24921	113.96	-0.409	0.038	-10.7632	AA	
24925	67.836	-0.282	0.034	-8.2941	AA	
24929	37.828	-0.304	0.049	-6.2041	AA	
24930	2.748	0.095	0.057	1.6667	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
24932	41.352	-0.2	0.031	-6.4516	AA	
24937	1.005	-0.032	0.031	-1.0323	AA	
25145	0.023	0.007	0.047	0.1489	AA	
25153	0.005	0.004	0.057	0.0702	AA	
25177	4.4112	-0.1901	0.0888	-2.1408	A	
25178	4.0353	-0.1049	0.0516	-2.0329	A	
25180	24.06	-0.1837	0.0373	-4.9249	A	
25267	5.28	0.1093	0.0471	2.3206	A	
25273	0.9807	-0.0486	0.0479	-1.0146	A	
27916	0.078	-0.013	0.046	-0.2826	AA	
28939	26.6162	-0.1787	0.0346	-5.1647	A	
28940	1.0806	-0.0396	0.0374	-1.0588	A	
29071	0.2113	0.0184	0.0384	0.4792	A	
29073	0.0864	-0.0115	0.0367	-0.3134	A	
29074	96.7818	0.3659	0.0372	9.836	A	
29084	66.1884	0.2964	0.0364	8.1429	A	
29085	50.7147	-0.2722	0.0382	-7.1257	A	
29086	0.0021	-0.0021	0.0344	-0.061	A	
29087	45.987	0.2291	0.0338	6.7781	A	
29096	2.453	-0.066	0.042	-1.5714	AA	
29161	122.779	-0.48	0.043	-11.1628	BB	Hispanic
29219	2.3824	0.0612	0.0391	1.5652	A	
29222	15.3402	-0.1408	0.0358	-3.933	A	
29224	10.5832	-0.1242	0.0379	-3.277	A	
29366	8.2544	0.1139	0.0393	2.8982	A	
29372	7.8746	-0.1007	0.0357	-2.8207	A	
29389	4.6123	-0.0747	0.0345	-2.1652	A	
30741	8.5979	0.1529	0.0517	2.9574	A	
31284	6.0672	0.1127	0.0453	2.4879	A	
31285	19.2429	0.2237	0.0508	4.4035	A	
31286	6.8595	-0.1313	0.0497	-2.6419	A	
31287	1.1663	-0.0553	0.05	-1.106	A	
31289	0.4401	-0.0318	0.0464	-0.6853	A	
31290	19.3548	0.2052	0.0464	4.4224	A	
31291	0.2792	0.0258	0.0468	0.5513	A	
31294	5.4115	0.1109	0.0472	2.3496	A	
31295	14.0918	0.178	0.0472	3.7712	A	
31306	113.4407	0.5357	0.0505	10.6079	B	White
31307	5.8362	0.1443	0.0589	2.4499	A	
31315	0.406	0.049	0.077	0.6364	AA	
31316	10.441	0.25	0.078	3.2051	AA	
31319	0.6449	-0.0519	0.0622	-0.8344	A	
31320	0.1837	0.0231	0.0509	0.4538	A	
31321	0.1317	-0.0285	0.0712	-0.4003	A	
31322	4.7544	-0.1179	0.0534	-2.2079	A	
31324	1.0528	-0.0594	0.0562	-1.0569	A	
31327	3.4326	-0.1255	0.0666	-1.8844	A	
31328	0.0255	0.0182	0.0889	0.2047	A	
31330	4.31	-0.1282	0.0609	-2.1051	A	
31341	7.9444	-0.1494	0.0527	-2.8349	A	
31342	1.9748	-0.0652	0.0457	-1.4267	A	
31343	49.8576	-0.3882	0.055	-7.0582	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31349	0.294	0.025	0.047	0.5319	AA	
31350	14.764	0.166	0.043	3.8605	AA	
31351	0.136	0.018	0.048	0.375	AA	
31374	2.044	0.086	0.06	1.4333	AA	
31391	67.99	-0.381	0.046	-8.2826	AA	
31392	12.724	0.171	0.048	3.5625	AA	
33110	0.197	0.021	0.046	0.4565	AA	

B.13.d: DIF Analysis for Level III Gender Comparison

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19929	12.9429	0.1222	0.0338	3.6154	A	
19930	2.406	-0.0496	0.0316	-1.5696	A	
19946	1.1489	-0.0354	0.0326	-1.0859	A	
19949	16.8611	-0.1311	0.0318	-4.1226	A	
19951	36.7623	0.3559	0.0587	6.063	A	
19994	3.0968	0.0636	0.0358	1.7765	A	
20006	8.2934	-0.1289	0.0444	-2.9032	A	
20029	14.2768	-0.1265	0.0333	-3.7988	A	
20152	3.597	0.056	0.03	1.8667	AA	
20202	6.175	0.0901	0.036	2.5028	A	
20206	493.569	-0.661	0.03	-22.0333	CC	Female
20369	207.9623	-0.4751	0.033	-14.397	B	Female
20551	10.0101	-0.1009	0.0317	-3.183	A	
20553	121.661	-0.318	0.029	-10.9655	AA	
20564	0.5038	-0.0244	0.0335	-0.7284	A	
20661	57.7395	0.2579	0.034	7.5853	A	
20662	50.0067	0.2923	0.0413	7.0775	A	
20664	40.4337	0.2245	0.0353	6.3598	A	
20686	4.43	0.132	0.062	2.129	AA	
20694	4.644	0.139	0.065	2.1385	AA	
21109	183.8298	0.4207	0.0311	13.5273	A	
21154	9.3938	0.0989	0.0321	3.081	A	
21156	40.088	-0.2537	0.04	-6.3425	A	
21157	1.4782	-0.0444	0.036	-1.2333	A	
21159	43.709	0.2133	0.0322	6.6242	A	
21167	7.397	0.137	0.051	2.6863	AA	
24329	13.1288	0.1173	0.0322	3.6429	A	
24330	21.541	0.156	0.0335	4.6567	A	
24343	5.6481	-0.0776	0.0325	-2.3877	A	
24421	82.7421	0.3098	0.0341	9.085	A	
24429	32.6631	-0.1751	0.0306	-5.7222	A	
24435	6.2539	0.0787	0.0313	2.5144	A	
24481	6.5323	0.0838	0.0325	2.5785	A	
24512	33.2865	-0.2291	0.0396	-5.7854	A	
24514	4.1844	-0.074	0.0359	-2.0613	A	
24515	3.6932	-0.0822	0.0424	-1.9387	A	
24516	1.4388	-0.0393	0.0323	-1.2167	A	
24518	2.5122	-0.0501	0.0313	-1.6006	A	
24525	487.775	-0.64	0.029	-22.069	CC	Female
24535	1.1086	-0.0345	0.0323	-1.0681	A	
24728	10.591	0.094	0.029	3.2414	AA	
24892	0.1281	-0.0351	0.0872	-0.4025	A	
24902	13.1552	-0.1146	0.0315	-3.6381	A	
24909	0	0.0008	0.0409	0.0196	A	
24913	8.175	-0.1353	0.047	-2.8787	A	
24917	241.951	-0.626	0.04	-15.65	BB	Female
24921	4.628	0.074	0.034	2.1765	AA	
24925	5.549	0.073	0.031	2.3548	AA	
24929	0.71	0.038	0.045	0.8444	AA	
24930	3.571	-0.096	0.051	-1.8824	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
24932	40.793	0.179	0.028	6.3929	AA	
24937	41.944	-0.184	0.028	-6.5714	AA	
25145	89.59	-0.397	0.042	-9.4524	AA	
25153	1.424	0.062	0.051	1.2157	AA	
25177	2.0003	0.1157	0.0799	1.4481	A	
25178	0.884	-0.0446	0.0463	-0.9633	A	
25180	4.4148	0.0714	0.0337	2.1187	A	
25267	1.8309	-0.059	0.0429	-1.3753	A	
25273	1.6757	-0.0574	0.0436	-1.3165	A	
27916	8.891	0.12	0.04	3	AA	
28939	25.4159	0.1581	0.0313	5.0511	A	
28940	2.2849	-0.0518	0.0339	-1.528	A	
29071	0.6539	0.0286	0.0348	0.8218	A	
29073	3.4906	0.0624	0.0331	1.8852	A	
29074	0.0236	0.0057	0.0336	0.1696	A	
29084	153.4604	0.4112	0.0332	12.3855	A	
29085	36.2992	0.2092	0.0347	6.0288	A	
29086	73.9037	0.2688	0.0313	8.5879	A	
29087	1.1124	-0.0326	0.0305	-1.0689	A	
29096	64.402	-0.311	0.039	-7.9744	AA	
29161	0.746	0.034	0.039	0.8718	AA	
29219	48.5569	0.2487	0.0356	6.986	A	
29222	0.9396	0.0317	0.0321	0.9875	A	
29224	103.4768	0.3531	0.0347	10.1758	A	
29366	5.1412	-0.0811	0.0355	-2.2845	A	
29372	0.668	-0.0268	0.0322	-0.8323	A	
29389	10.7892	0.1032	0.0313	3.2971	A	
30741	3.595	0.0886	0.0461	1.9219	A	
31284	4.6735	-0.0904	0.0415	-2.1783	A	
31285	12.5798	-0.1663	0.0466	-3.5687	A	
31286	0.3357	0.027	0.0447	0.604	A	
31287	4.2236	-0.0926	0.0445	-2.0809	A	
31289	0.7377	0.0372	0.0423	0.8794	A	
31290	1.6535	0.0553	0.0423	1.3073	A	
31291	1.7128	-0.0566	0.0425	-1.3318	A	
31294	93.1903	0.4195	0.0435	9.6437	A	
31295	10.6564	0.1421	0.0432	3.2894	A	
31306	23.6687	-0.2233	0.0457	-4.8862	A	
31307	3.468	-0.0982	0.052	-1.8885	A	
31315	0.254	0.034	0.066	0.5152	AA	
31316	0.124	0.024	0.067	0.3582	AA	
31319	1.8461	-0.0779	0.0562	-1.3861	A	
31320	2.9071	0.0784	0.0453	1.7307	A	
31321	5.9653	-0.1595	0.0645	-2.4729	A	
31322	22.248	-0.2273	0.048	-4.7354	A	
31324	16.3246	-0.2049	0.0504	-4.0655	A	
31327	0.4253	0.0405	0.0593	0.683	A	
31328	0.2416	0.0426	0.0799	0.5332	A	
31330	1.0289	0.0575	0.0552	1.0417	A	
31341	7.4367	0.1331	0.0484	2.75	A	
31342	4.4734	-0.0891	0.0417	-2.1367	A	
31343	174.6331	0.6761	0.0516	13.1027	C	Male

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31349	255.244	-0.681	0.043	-15.8372	CC	Female
31350	221.327	-0.594	0.04	-14.85	BB	Female
31351	295.925	-0.759	0.044	-17.25	CC	Female
31374	1.999	0.076	0.053	1.434	AA	
31391	0.673	-0.034	0.042	-0.8095	AA	
31392	1.543	0.053	0.043	1.2326	AA	
33110	21.793	0.194	0.041	4.7317	AA	

B.13.e: DIF Analysis for Level III Economically Disadvantaged vs. Non-Economically Disadvantaged

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19929	10.3745	0.1419	0.044	3.225	A	
19930	0.0528	-0.0103	0.0411	-0.2506	A	
19946	8.4931	0.1238	0.0423	2.9267	A	
19949	0.9741	-0.0416	0.0414	-1.0048	A	
19951	0.0122	-0.0108	0.0736	-0.1467	A	
19994	0.6854	-0.0415	0.0484	-0.8574	A	
20006	0.4069	-0.0421	0.0628	-0.6704	A	
20029	4.0141	-0.0884	0.0439	-2.0137	A	
20152	6.275	0.096	0.038	2.5263	AA	
20202	9.7391	0.1497	0.0476	3.145	A	
20206	14.429	0.14	0.037	3.7838	AA	
20369	3.4987	-0.081	0.043	-1.8837	A	
20551	13.7196	-0.1532	0.0413	-3.7094	A	
20553	2.853	0.062	0.037	1.6757	AA	
20564	1.619	-0.0571	0.0442	-1.2919	A	
20661	23.3568	-0.2181	0.0453	-4.8146	A	
20662	0.7833	-0.0505	0.0558	-0.905	A	
20664	6.339	-0.1207	0.0475	-2.5411	A	
20686	4.682	0.174	0.081	2.1481	AA	
20694	15.666	0.347	0.089	3.8989	AA	
21109	19.9439	-0.179	0.0399	-4.4862	A	
21154	2.5914	-0.0689	0.0423	-1.6288	A	
21156	9.0483	0.1574	0.0527	2.9867	A	
21157	0.0003	-0.002	0.048	-0.0417	A	
21159	10.3724	-0.137	0.0421	-3.2542	A	
21167	0.407	-0.039	0.062	-0.629	AA	
24329	0.1087	-0.0147	0.0419	-0.3508	A	
24330	9.4739	-0.1377	0.0445	-3.0944	A	
24343	3.7919	-0.0841	0.0427	-1.9696	A	
24421	0.5614	0.0344	0.0446	0.7713	A	
24429	28.6026	-0.2137	0.0399	-5.3559	A	
24435	0.0947	-0.0134	0.0407	-0.3292	A	
24481	0.8147	0.0391	0.0423	0.9243	A	
24512	0.2003	0.0253	0.0534	0.4738	A	
24514	4.5911	-0.1049	0.0484	-2.1674	A	
24515	0.7245	-0.0509	0.0577	-0.8821	A	
24516	0.0011	0.0023	0.0423	0.0544	A	
24518	2.3076	0.0629	0.0407	1.5455	A	
24525	6.206	0.09	0.037	2.4324	AA	
24535	0.0065	-0.0043	0.0422	-0.1019	A	
24728	14.35	0.14	0.037	3.7838	AA	
24892	0.0474	-0.0298	0.1098	-0.2714	A	
24902	26.8579	0.2079	0.0402	5.1716	A	
24909	0.0064	0.0062	0.0569	0.109	A	
24913	18.0131	0.2399	0.0564	4.2535	A	
24917	0.404	0.035	0.055	0.6364	AA	
24921	0.274	0.023	0.045	0.5111	AA	
24925	26.302	0.205	0.04	5.125	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
24929	5.269	0.148	0.064	2.3125	AA	
24930	14.466	0.232	0.061	3.8033	AA	
24932	2.561	0.057	0.036	1.5833	AA	
24937	0.387	0.022	0.036	0.6111	AA	
25145	0.86	-0.046	0.05	-0.92	AA	
25153	10.09	0.23	0.072	3.1944	AA	
25177	2.5784	-0.199	0.1208	-1.6474	A	
25178	2.6556	0.0912	0.055	1.6582	A	
25180	1.4965	-0.0558	0.0447	-1.2483	A	
25267	3.0824	-0.1068	0.0601	-1.777	A	
25273	3.1696	-0.1133	0.0622	-1.8215	A	
27916	37.315	0.309	0.051	6.0588	AA	
28939	0.9015	0.0394	0.0406	0.9704	A	
28940	0.122	0.0165	0.0445	0.3708	A	
29071	0.1276	0.0175	0.0461	0.3796	A	
29073	0.1392	-0.0171	0.0434	-0.394	A	
29074	17.7857	-0.1924	0.0452	-4.2566	A	
29084	4.179	-0.0842	0.041	-2.0537	A	
29085	3.7801	-0.0901	0.046	-1.9587	A	
29086	51.2525	-0.2958	0.041	-7.2146	A	
29087	24.9716	-0.1954	0.039	-5.0103	A	
29096	3.537	-0.102	0.054	-1.8889	AA	
29161	6.986	0.144	0.055	2.6182	AA	
29219	0.6063	-0.0377	0.0472	-0.7987	A	
29222	17.4526	0.1711	0.0409	4.1834	A	
29224	27.541	-0.2433	0.0463	-5.2549	A	
29366	6.2732	0.1192	0.0471	2.5308	A	
29372	17.5242	0.1753	0.0417	4.2038	A	
29389	13.5382	-0.1496	0.0406	-3.6847	A	
30741	1.5397	-0.0706	0.0558	-1.2652	A	
31284	2.751	-0.0996	0.0588	-1.6939	A	
31285	8.5478	-0.2062	0.0694	-2.9712	A	
31286	0.0176	-0.0086	0.0537	-0.1601	A	
31287	2.3038	-0.0816	0.0528	-1.5455	A	
31289	1.9067	-0.0835	0.0591	-1.4129	A	
31290	6.2183	-0.1463	0.0581	-2.5181	A	
31291	1.7485	-0.0791	0.0584	-1.3545	A	
31294	1.8939	-0.0837	0.0594	-1.4091	A	
31295	1.4492	-0.0754	0.0611	-1.234	A	
31306	3.0047	0.1146	0.0648	1.7685	A	
31307	2.974	0.1103	0.0629	1.7536	A	
31315	14.719	0.353	0.09	3.9222	AA	
31316	0.146	0.032	0.083	0.3855	AA	
31319	0.8506	-0.0679	0.0708	-0.959	A	
31320	1.0086	-0.0549	0.0533	-1.03	A	
31321	1.6634	-0.1096	0.0818	-1.3399	A	
31322	5.098	0.1311	0.0574	2.284	A	
31324	0.2248	-0.0308	0.0612	-0.5033	A	
31327	1.1389	0.0799	0.0724	1.1036	A	
31328	0	-0.0046	0.0991	-0.0464	A	
31330	0.104	0.0242	0.0679	0.3564	A	
31341	0.1107	-0.0257	0.0699	-0.3677	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31342	1.1744	0.0651	0.0585	1.1128	A	
31343	1.0063	-0.078	0.0747	-1.0442	A	
31349	9.303	0.155	0.05	3.1	AA	
31350	8.476	0.157	0.055	2.8545	AA	
31351	8.726	0.152	0.051	2.9804	AA	
31374	0.117	0.023	0.066	0.3485	AA	
31391	20.922	0.264	0.058	4.5517	AA	
31392	0.115	0.018	0.051	0.3529	AA	
33110	3.057	0.086	0.049	1.7551	AA	

B.13.f: DIF Analysis for Level III Native Language Comparison (Arabic vs. Spanish)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19929	22.6133	-0.2384	0.05	-4.768	A	
19930	0.3026	-0.0261	0.0456	-0.5724	A	
19946	60.5317	-0.3823	0.0489	-7.818	A	
19949	30.7008	-0.2598	0.0468	-5.5513	A	
19951	0.3125	-0.0487	0.0813	-0.599	A	
19994	43.4511	-0.3489	0.0527	-6.6205	A	
20006	5.5154	0.1562	0.0657	2.3775	A	
20029	0	-0.0009	0.0481	-0.0187	A	
20152	24.211	0.214	0.043	4.9767	AA	
20202	4.2034	-0.1081	0.0523	-2.0669	A	
20206	30.685	-0.238	0.043	-5.5349	AA	
20369	7.8241	-0.1346	0.0478	-2.8159	A	
20551	4.0516	-0.0936	0.0458	-2.0437	A	
20553	0.008	0.004	0.042	0.0952	AA	
20564	9.6172	-0.1529	0.049	-3.1204	A	
20661	56.86	-0.3789	0.0503	-7.5328	A	
20662	0.593	0.0477	0.0596	0.8003	A	
20664	17.069	-0.2111	0.0509	-4.1473	A	
20686	6.057	0.23	0.093	2.4731	AA	
20694	7.236	0.274	0.102	2.6863	AA	
21109	24.4747	0.2229	0.0449	4.9644	A	
21154	2.4218	0.0728	0.0462	1.5758	A	
21156	0.1388	0.0234	0.0584	0.4007	A	
21157	0.5328	-0.0398	0.0528	-0.7538	A	
21159	0.5184	0.0344	0.0463	0.743	A	
21167	6.741	0.185	0.071	2.6056	AA	
24329	3.3752	-0.0882	0.0474	-1.8608	A	
24330	26.0801	0.2487	0.0486	5.1173	A	
24343	1.0548	-0.0494	0.0471	-1.0488	A	
24421	0.7261	-0.0432	0.0494	-0.8745	A	
24429	1.2758	-0.051	0.0443	-1.1512	A	
24435	4.5401	-0.0979	0.0455	-2.1516	A	
24481	35.7248	0.2823	0.0473	5.9683	A	
24512	10.4875	-0.1909	0.0585	-3.2632	A	
24514	0.0133	0.0073	0.0518	0.1409	A	
24515	0.5818	-0.0501	0.063	-0.7952	A	
24516	0.8953	-0.0458	0.0472	-0.9703	A	
24518	16.7173	-0.1876	0.0457	-4.105	A	
24525	18.293	-0.178	0.042	-4.2381	AA	
24535	3.0276	-0.0827	0.0469	-1.7633	A	
24728	31.336	0.236	0.042	5.619	AA	
24892	3.9095	-0.2449	0.1206	-2.0307	A	
24902	0.6226	0.0372	0.046	0.8087	A	
24909	3.3243	-0.1133	0.0611	-1.8543	A	
24913	2.5964	-0.109	0.0668	-1.6317	A	
24917	45.27	-0.401	0.06	-6.6833	AA	
24921	58.631	0.386	0.05	7.72	AA	
24925	62.717	0.354	0.045	7.8667	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
24929	21.162	0.313	0.068	4.6029	AA	
24930	1.765	-0.097	0.073	-1.3288	AA	
24932	78.53	0.364	0.041	8.878	AA	
24937	0.761	0.036	0.041	0.878	AA	
25145	0.289	-0.032	0.06	-0.5333	AA	
25153	1.906	0.107	0.078	1.3718	AA	
25177	0.7256	0.1153	0.1253	0.9202	A	
25178	2.6158	0.1082	0.0655	1.6519	A	
25180	14.5229	0.1888	0.0492	3.8374	A	
25267	1.3582	-0.078	0.0651	-1.1982	A	
25273	0.1591	-0.0281	0.0652	-0.431	A	
27916	1.46	0.072	0.06	1.2	AA	
28939	28.8359	0.2428	0.0451	5.3836	A	
28940	0.0295	0.0097	0.0494	0.1964	A	
29071	3.0735	-0.0904	0.051	-1.7725	A	
29073	0.2918	-0.0274	0.0485	-0.5649	A	
29074	99.6452	-0.5017	0.0503	-9.9742	B	Arabic
29084	49.5332	-0.3354	0.0476	-7.0462	A	
29085	53.4345	0.3632	0.0498	7.2932	A	
29086	0.1634	0.0192	0.045	0.4267	A	
29087	37.9428	-0.2743	0.0444	-6.1779	A	
29096	0	-0.001	0.058	-0.0172	AA	
29161	152.619	0.747	0.06	12.45	CC	Spanish
29219	0.0828	0.016	0.0512	0.3125	A	
29222	20.0119	0.2106	0.0469	4.4904	A	
29224	18.5309	0.2152	0.0496	4.3387	A	
29366	12.3437	-0.1854	0.0524	-3.5382	A	
29372	1.3166	0.0549	0.0469	1.1706	A	
29389	13.6901	0.1666	0.045	3.7022	A	
30741	12.1852	-0.2311	0.0659	-3.5068	A	
31284	1.9338	-0.088	0.062	-1.4194	A	
31285	5.212	-0.1599	0.069	-2.3174	A	
31286	4.4801	0.1351	0.0631	2.141	A	
31287	0.8305	0.0599	0.0635	0.9433	A	
31289	0.0194	0.0108	0.0632	0.1709	A	
31290	12.7529	-0.228	0.0633	-3.6019	A	
31291	0.6359	-0.0529	0.0638	-0.8292	A	
31294	1.8913	-0.0907	0.0645	-1.4062	A	
31295	10.4182	-0.2106	0.0647	-3.255	A	
31306	84.6071	-0.6593	0.072	-9.1569	C	Arabic
31307	5.7363	-0.1832	0.0749	-2.4459	A	
31315	0.145	0.039	0.103	0.3786	AA	
31316	2.927	-0.167	0.099	-1.6869	AA	
31319	6.319	0.1967	0.0767	2.5645	A	
31320	0.5443	-0.0496	0.0645	-0.769	A	
31321	2.6423	0.1452	0.0867	1.6747	A	
31322	5.391	0.159	0.0676	2.3521	A	
31324	1.1125	0.0783	0.0715	1.0951	A	
31327	0.002	0.0073	0.0848	0.0861	A	
31328	0.4986	0.0824	0.1083	0.7608	A	
31330	0.3104	0.0459	0.077	0.5961	A	
31341	5.9923	0.185	0.0748	2.4733	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31342	1.5277	0.0789	0.0623	1.2665	A	
31343	33.5847	0.4441	0.0766	5.7977	B	Spanish
31349	2.936	-0.102	0.06	-1.7	AA	
31350	36.664	-0.357	0.059	-6.0508	AA	
31351	2.404	-0.096	0.061	-1.5738	AA	
31374	0.001	0.002	0.076	0.0263	AA	
31391	77.842	0.559	0.063	8.873	BB	Spanish
31392	4.023	-0.122	0.061	-2	AA	
33110	0.646	0.047	0.059	0.7966	AA	

B.13.g: DIF Analysis for Level III Disabled vs. Non-Disabled

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[49]
19929	5.7437	0.1211	0.0502	2.4124	A	
19930	0.0885	-0.0157	0.0488	-0.3217	A	
19946	7.8027	0.1357	0.0483	2.8095	A	
19949	24.5086	0.2448	0.049	4.9959	A	
19951	0.6102	0.065	0.0787	0.8259	A	
19994	13.5366	0.194	0.052	3.7308	A	
20006	2.056	0.1044	0.0707	1.4767	A	
20029	4.8886	0.1103	0.0494	2.2328	A	
20152	11.682	-0.161	0.047	-3.4255	AA	
20202	0.1327	0.0203	0.0517	0.3926	A	
20206	46.679	0.33	0.048	6.875	AA	
20369	17.7915	0.2139	0.0503	4.2525	A	
20551	12.3442	0.1775	0.0501	3.5429	A	
20553	0.176	-0.02	0.048	-0.4167	AA	
20564	0.7272	0.0435	0.0497	0.8753	A	
20661	0.0058	0.0051	0.0502	0.1016	A	
20662	27.2397	-0.3016	0.0578	-5.218	A	
20664	0.1058	0.018	0.0512	0.3516	A	
20686	0.051	0.018	0.078	0.2308	AA	
20694	0.528	-0.065	0.09	-0.7222	AA	
21109	0.734	-0.0437	0.0494	-0.8846	A	
21154	4.4525	-0.1056	0.0492	-2.1463	A	
21156	1.7844	0.0746	0.0547	1.3638	A	
21157	2.1831	0.0787	0.0524	1.5019	A	
21159	26.028	-0.257	0.0501	-5.1297	A	
21167	0.425	-0.047	0.073	-0.6438	AA	
24329	0.2231	0.0245	0.0493	0.497	A	
24330	24.7567	-0.2519	0.0505	-4.9881	A	
24343	0.3063	0.029	0.0499	0.5812	A	
24421	1.2679	-0.06	0.0518	-1.1583	A	
24429	1.8937	0.0677	0.0483	1.4017	A	
24435	6.072	0.123	0.0493	2.4949	A	
24481	1.6409	-0.065	0.0498	-1.3052	A	
24512	10.3648	0.1759	0.0541	3.2514	A	
24514	3.0792	0.0902	0.0509	1.7721	A	
24515	0.0027	0.0047	0.058	0.081	A	
24516	0.2749	-0.0271	0.0495	-0.5475	A	
24518	1.7943	0.0682	0.0501	1.3613	A	
24525	57.843	0.346	0.047	7.3617	AA	
24535	17.7582	-0.2118	0.0504	-4.2024	A	
24728	35.869	-0.274	0.046	-5.9565	AA	
24892	36.8674	0.5955	0.0982	6.0642	B	Non-Dis
24902	1.4191	0.0585	0.0482	1.2137	A	
24909	0.3134	0.0405	0.0684	0.5921	A	
24913	3.7983	0.1397	0.0703	1.9872	A	
24917	15.675	0.257	0.065	3.9538	AA	
24921	0.068	-0.013	0.05	-0.26	AA	

[49] Non-Dis stands for non-disabled students.

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[49]
24925	16.815	-0.19	0.046	-4.1304	AA	
24929	5.244	-0.161	0.07	-2.3	AA	
24930	3.638	-0.14	0.073	-1.9178	AA	
24932	34.486	-0.262	0.045	-5.8222	AA	
24937	6.549	0.122	0.048	2.5417	AA	
25145	11.354	0.233	0.07	3.3286	AA	
25153	0.287	-0.039	0.074	-0.527	AA	
25177	0.0013	-0.0092	0.1051	-0.0875	A	
25178	3.0585	0.1246	0.0698	1.7851	A	
25180	2.2206	-0.0781	0.0511	-1.5284	A	
25267	3.6112	0.1383	0.0717	1.9289	A	
25273	0.1423	0.0301	0.0727	0.414	A	
27916	24.634	-0.287	0.059	-4.8644	AA	
28939	0	-0.0009	0.0483	-0.0186	A	
28940	1.7253	-0.0687	0.0511	-1.3444	A	
29071	14.1096	0.1984	0.0524	3.7863	A	
29073	2.7781	0.0857	0.0508	1.687	A	
29074	20.7064	0.227	0.0498	4.5582	A	
29084	3.6052	0.1093	0.0568	1.9243	A	
29085	0.3981	-0.0344	0.0521	-0.6603	A	
29086	3.7469	-0.0966	0.0492	-1.9634	A	
29087	1.7217	0.0664	0.0497	1.336	A	
29096	1.436	0.079	0.065	1.2154	AA	
29161	0	0	0.063	0	AA	
29219	4.3081	-0.1103	0.0522	-2.113	A	
29222	20.6579	-0.2299	0.0505	-4.5525	A	
29224	19.307	-0.2291	0.0518	-4.4228	A	
29366	29.6256	0.2862	0.0519	5.5145	A	
29372	4.4267	-0.1057	0.0496	-2.131	A	
29389	1.6841	-0.0654	0.0492	-1.3293	A	
30741	3.5051	0.1339	0.0697	1.9211	A	
31284	8.4732	0.2026	0.0685	2.9577	A	
31285	4.2542	0.1473	0.0705	2.0894	A	
31286	0.9871	0.0702	0.0682	1.0293	A	
31287	0.0222	-0.0132	0.0713	-0.1851	A	
31289	3.717	0.1412	0.0718	1.9666	A	
31290	2.6479	0.1215	0.0732	1.6598	A	
31291	0.0143	-0.0115	0.0735	-0.1565	A	
31294	0.1143	-0.0277	0.0736	-0.3764	A	
31295	18.9925	0.3152	0.0717	4.3961	A	
31306	11.5838	0.2433	0.0708	3.4364	A	
31307	42.3126	0.464	0.0718	6.4624	B	Non-Dis
31315	10.249	-0.319	0.1	-3.19	AA	
31316	43.728	-0.627	0.097	-6.4639	BB	Disabled
31319	1.5122	0.0913	0.0736	1.2405	A	
31320	4.6406	-0.1554	0.0711	-2.1857	A	
31321	3.7926	0.1662	0.0832	1.9976	A	
31322	18.0812	0.3045	0.0712	4.2767	A	
31324	7.104	0.1928	0.0723	2.6667	A	
31327	1.2998	-0.098	0.0827	-1.185	A	
31328	2.4382	-0.1706	0.1057	-1.614	A	
31330	3.5356	-0.1499	0.078	-1.9218	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[49]
31341	0.2662	0.0411	0.0736	0.5584	A	
31342	0.5249	-0.0521	0.0686	-0.7595	A	
31343	6.9664	-0.2033	0.076	-2.675	A	
31349	32.107	0.369	0.065	5.6769	AA	
31350	33.009	0.369	0.065	5.6769	AA	
31351	32.902	0.379	0.067	5.6567	AA	
31374	4.401	-0.155	0.074	-2.0946	AA	
31391	14.515	-0.254	0.067	-3.791	AA	
31392	30.712	-0.363	0.065	-5.5846	AA	
33110	6.215	-0.16	0.063	-2.5397	AA	

B.13.h: DIF Analysis for Level III Accommodated vs. Non-Accommodated

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[50]
19929	0.3143	0.1423	0.2107	0.6754	A	
19930	3.7549	0.1069	0.0548	1.9507	A	
19946	1.1394	0.2377	0.2038	1.1663	A	
19949	0.0211	-0.0501	0.2045	-0.245	A	
19951	0.4265	0.2742	0.338	0.8112	A	
19994	0.785	0.238	0.2312	1.0294	A	
20006	0.0386	-0.0959	0.2839	-0.3378	A	
20029	2.1579	-0.3359	0.2153	-1.5601	A	
20152	0.322	-0.055	0.096	-0.5729	AA	
20202	0.1417	0.1027	0.2119	0.4847	A	
20206	2.059	0.271	0.2	1.355	AA	
20369	0.8388	0.217	0.2143	1.0126	A	
20551	0.0003	0.0266	0.2132	0.1248	A	
20553	1.332	0.228	0.199	1.1457	AA	
20564	0.0046	-0.0057	0.0589	-0.0968	A	
20661	0.0043	-0.0058	0.0599	-0.0968	A	
20662	1.3283	0.0846	0.0714	1.1849	A	
20664	1.7276	0.0828	0.0614	1.3485	A	
20686	1.289	0.219	0.18	1.2167	AA	
20694	0.061	-0.062	0.253	-0.2451	AA	
21109	3.4021	-0.1017	0.0543	-1.8729	A	
21154	2.1137	0.3215	0.2057	1.563	A	
21156	0.0779	-0.0946	0.2343	-0.4038	A	
21157	0.0052	0.0082	0.2204	0.0372	A	
21159	0.8758	-0.2142	0.2041	-1.0495	A	
21167	3.625	-0.264	0.139	-1.8993	AA	
24329	5.8846	-0.1417	0.0577	-2.4558	A	
24330	1.0151	-0.061	0.0589	-1.0357	A	
24343	3.8847	-0.1158	0.0576	-2.0104	A	
24421	0.0568	0.0735	0.2117	0.3472	A	
24429	0.5517	0.1736	0.2052	0.846	A	
24435	0	-0.0222	0.2038	-0.1089	A	
24481	5.0828	-0.1329	0.0581	-2.2874	A	
24512	0.0903	-0.0877	0.2189	-0.4006	A	
24514	0.0643	-0.0677	0.2002	-0.3382	A	
24515	0.3843	-0.05	0.0754	-0.6631	A	
24516	1.7548	0.0763	0.0564	1.3528	A	
24518	0.0102	0.0002	0.2066	0.001	A	
24525	0.001	0.007	0.185	0.0378	AA	
24535	7.629	0.1543	0.0555	2.7802	A	
24728	1.016	-0.091	0.092	-0.9891	AA	
24892	0.0017	0.0817	0.4428	0.1845	A	
24902	12.5826	0.7695	0.213	3.6127	B	Non-Accom
24909	1.5571	0.3974	0.2898	1.3713	A	
24913	5.8721	-0.7966	0.3281	-2.4279	B	Accom
24917	1.238	0.326	0.264	1.2348	AA	
24921	0.269	-0.056	0.109	-0.5138	AA	

[50] Accom stands for students with standard accommodations. Non-Accom stands for students without standard accommodations.

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[50]
24925	0.22	-0.046	0.099	-0.4646	AA	
24929	6.852	-0.485	0.188	-2.5798	BB	Accom
24930	1.568	0.162	0.132	1.2273	AA	
24932	0.066	0.024	0.091	0.2637	AA	
24937	2.162	0.305	0.205	1.4878	AA	
25145	0.025	0.042	0.281	0.1495	AA	
25153	0.067	-0.051	0.2	-0.255	AA	
25177	1.6827	0.2145	0.1572	1.3645	A	
25178	9.8915	-0.2335	0.0731	-3.1943	A	
25180	3.536	0.4292	0.2137	2.0084	A	
25267	0.0007	0.0017	0.0914	0.0186	A	
25273	0.0007	0.0502	0.2926	0.1716	A	
27916	1.262	-0.139	0.128	-1.0859	AA	
28939	0.0501	0.0138	0.0548	0.2518	A	
28940	2.5041	-0.0981	0.0606	-1.6188	A	
29071	0.3735	0.1572	0.2181	0.7208	A	
29073	2.1167	-0.3111	0.204	-1.525	A	
29074	0.3174	0.1394	0.2073	0.6725	A	
29084	0.2876	-0.1475	0.2237	-0.6594	A	
29085	1.7765	-0.2978	0.2106	-1.4141	A	
29086	2.6279	-0.3383	0.1979	-1.7094	A	
29087	1.2473	-0.2477	0.2004	-1.236	A	
29096	0.414	-0.168	0.264	-0.6364	AA	
29161	7.613	-0.449	0.162	-2.7716	BB	Accom
29219	0.0011	-0.004	0.0625	-0.064	A	
29222	0.4222	-0.0387	0.0569	-0.6801	A	
29224	0.2835	-0.034	0.0605	-0.562	A	
29366	3.5955	0.4674	0.2259	2.0691	A	
29372	0.2217	-0.0286	0.0569	-0.5026	A	
29389	0.0005	-0.0027	0.0547	-0.0494	A	
30741	0.0323	-0.0153	0.0705	-0.217	A	
31284	0.6108	-0.0757	0.0904	-0.8374	A	
31285	0.1872	0.048	0.099	0.4848	A	
31286	1.511	-0.0862	0.0682	-1.2639	A	
31287	4.4092	-0.1439	0.0673	-2.1382	A	
31289	0.3986	0.2311	0.2986	0.7739	A	
31290	0.2534	0.1928	0.3018	0.6388	A	
31291	0.1998	-0.177	0.2938	-0.6025	A	
31294	0.116	-0.1407	0.289	-0.4869	A	
31295	0.0707	0.1176	0.2872	0.4095	A	
31306	0.0842	0.1201	0.2813	0.4269	A	
31307	0.0066	0.0809	0.3296	0.2454	A	
31315	1.469	-0.321	0.275	-1.1673	AA	
31316	2.555	-0.297	0.186	-1.5968	AA	
31319	0.0004	0.062	0.3318	0.1869	A	
31320	0.5638	-0.2552	0.2821	-0.9046	A	
31321	0.0975	-0.1805	0.3717	-0.4856	A	
31322	0.0289	-0.0971	0.3019	-0.3216	A	
31324	0.228	0.2109	0.3206	0.6578	A	
31327	8.889	-0.2881	0.0955	-3.0168	A	
31328	0.1843	-0.0602	0.1223	-0.4922	A	
31330	0.1922	-0.0397	0.0834	-0.476	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[50]
31341	0.2413	-0.0566	0.1039	-0.5448	A	
31342	1.0345	-0.0953	0.0897	-1.0624	A	
31343	0.25	0.0612	0.1086	0.5635	A	
31349	0.144	-0.104	0.28	-0.3714	AA	
31350	0.002	-0.012	0.261	-0.046	AA	
31351	0.428	-0.196	0.287	-0.6829	AA	
31374	3.361	-0.266	0.148	-1.7973	AA	
31391	9.551	-0.503	0.17	-2.9588	BB	Accom
31392	0.206	0.053	0.116	0.4569	AA	
33110	0.252	-0.06	0.115	-0.5217	AA	

B.14.a: DIF Analysis for Level IV Ethnicity Comparison (Asian vs. White)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19816	0.0692	-0.0178	0.0604	-0.2947	A	
20014	11.2079	-0.2198	0.0648	-3.392	A	
20024	2.3826	0.0941	0.06	1.5683	A	
20097	0.1595	0.0327	0.0745	0.4389	A	
20098	1.863	-0.0886	0.0635	-1.3953	A	
20123	33.493	0.35	0.061	5.7377	AA	
20236	25.5832	-0.2986	0.0589	-5.0696	A	
20237	0.7885	-0.0528	0.0579	-0.9119	A	
20238	29.0423	-0.328	0.0605	-5.4215	A	
20239	0.651	-0.0481	0.0577	-0.8336	A	
20270	2.0503	-0.0873	0.06	-1.455	A	
20334	0.0009	0	0.06	0	A	
20378	0.0858	0.0233	0.0707	0.3296	A	
20426	0.6521	0.0641	0.0754	0.8501	A	
20520	2.376	-0.0944	0.0604	-1.5629	A	
20521	86.0129	0.5976	0.065	9.1938	B	White
20688	0.271	-0.051	0.097	-0.5258	AA	
20692	15.172	0.449	0.119	3.7731	BB	White
20784	1.1661	0.0706	0.0636	1.1101	A	
20793	81.212	-0.484	0.054	-8.963	BB	Asian
21166	0.928	0.073	0.076	0.9605	AA	
24194	0.0004	0.0005	0.058	0.0086	A	
24195	3.6558	0.1234	0.0635	1.9433	A	
24229	0.4997	0.044	0.0601	0.7321	A	
24231	5.0623	0.1346	0.0593	2.2698	A	
24235	0.0027	0.0047	0.0575	0.0817	A	
24236	0.5963	0.0485	0.0607	0.799	A	
24238	19.6802	-0.2512	0.0564	-4.4539	A	
24239	0.7054	-0.0522	0.0598	-0.8729	A	
24240	6.2698	-0.158	0.0625	-2.528	A	
24241	13.4497	-0.2574	0.0696	-3.6983	A	
24314	0.0391	0.0155	0.0671	0.231	A	
24350	25.67	-0.3124	0.0615	-5.0797	A	
24352	10.2556	-0.222	0.0689	-3.2221	A	
24387	0.1913	-0.0286	0.0612	-0.4673	A	
24388	4.1014	-0.1273	0.062	-2.0532	A	
24389	10.0175	-0.2136	0.0669	-3.1928	A	
24473	8.7662	0.1859	0.0622	2.9887	A	
24504	0.53	0.0458	0.0604	0.7583	A	
24536	0.247	0.0392	0.0729	0.5377	A	
24602	1.0095	0.0618	0.0598	1.0334	A	
24733	2.405	0.084	0.054	1.5556	AA	
24735	0.0002	0.0017	0.0714	0.0238	A	
24740	31.837	0.307	0.055	5.5818	AA	
24938	0.368	0.0742	0.1112	0.6673	A	
24939	5.7646	-0.2667	0.1076	-2.4786	A	
24948	0.0032	-0.0142	0.121	-0.1174	A	
24949	13.269	-0.4715	0.1286	-3.6664	B	Asian
24950	2.3567	-0.0934	0.0599	-1.5593	A	
24984	38.672	0.537	0.087	6.1724	BB	White

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
25033	6.551	0.1925	0.0744	2.5874	A	
25042	8.0676	-0.317	0.1102	-2.8766	A	
25049	46.5764	0.4126	0.0613	6.7308	A	
25059	60.305	-0.426	0.056	-7.6071	BB	Asian
25063	1.894	0.076	0.056	1.3571	AA	
25065	0.199	-0.038	0.084	-0.4524	AA	
25140	2.4553	-0.1117	0.0697	-1.6026	A	
29139	14.9375	0.259	0.0674	3.8427	A	
29140	21.1006	-0.3119	0.068	-4.5868	A	
29242	6.6211	-0.1594	0.0612	-2.6046	A	
29250	2.0965	-0.0918	0.0622	-1.4759	A	
29265	1.0043	0.0683	0.0658	1.038	A	
29380	0.5793	0.0493	0.0621	0.7939	A	
29387	3.193	-0.139	0.078	-1.7821	AA	
29391	9.1152	0.2929	0.0956	3.0638	A	
29394	2.508	-0.101	0.063	-1.6032	AA	
29395	39.481	0.352	0.056	6.2857	AA	
29397	22.13	0.285	0.061	4.6721	AA	
29421	28.913	0.351	0.066	5.3182	AA	
31035	0.8798	-0.093	0.0947	-0.982	A	
31043	1.7232	-0.1528	0.1118	-1.3667	A	
31046	1.5238	0.1165	0.0908	1.283	A	
31047	0.5286	0.0882	0.1129	0.7812	A	
31049	6.2306	0.2082	0.0825	2.5236	A	
31050	19.6024	0.5658	0.1269	4.4586	B	White
31054	10.4596	0.3175	0.0975	3.2564	A	
31060	26.458	-0.423	0.083	-5.0964	AA	
31076	3.364	0.142	0.076	1.8684	AA	
31079	7.121	-0.227	0.086	-2.6395	AA	
31080	38.615	0.463	0.075	6.1733	BB	White
31089	60.541	0.794	0.104	7.6346	CC	White
31090	0.268	0.048	0.091	0.5275	AA	
31091	3.902	-0.144	0.073	-1.9726	AA	
31095	75.662	0.736	0.086	8.5581	CC	White
31096	0.015	-0.01	0.08	-0.125	AA	
31098	25.488	0.598	0.121	4.9421	BB	White
31110	8.5886	-0.3227	0.1085	-2.9742	A	
31112	2.1515	0.1209	0.0801	1.5094	A	
31113	0.7977	0.1018	0.1079	0.9435	A	
31117	4.4842	-0.193	0.0903	-2.1373	A	
31118	13.1569	-0.3665	0.0999	-3.6687	A	
31119	7.0695	-0.2372	0.0879	-2.6985	A	
31121	16.9349	-0.4015	0.097	-4.1392	A	
31122	7.431	-0.2836	0.103	-2.7534	A	
31162	1.3547	-0.1018	0.0843	-1.2076	A	
31163	2.0451	-0.1149	0.0782	-1.4693	A	
31164	2.4223	-0.1273	0.0798	-1.5952	A	
31174	0.501	-0.0716	0.0949	-0.7545	A	
31181	2.9379	-0.1404	0.08	-1.755	A	
31191	24.7216	-0.5441	0.1097	-4.9599	B	Asian
31376	0	-0.004	0.0871	-0.0459	A	
31412	4.1603	-0.1848	0.0889	-2.0787	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31414	0.0579	0.0258	0.0901	0.2863	A	
33003	0.027	-0.012	0.071	-0.169	AA	
33061	2.2763	0.1249	0.0805	1.5516	A	

B.14.b: DIF Analysis for Level IV Ethnicity Comparison (Black vs. White)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19816	0.5852	-0.0863	0.1073	-0.8043	A	
20014	0.0772	0.039	0.1154	0.338	A	
20024	0.0189	-0.0211	0.1096	-0.1925	A	
20097	0.1127	-0.0568	0.139	-0.4086	A	
20098	0.0561	-0.0339	0.1154	-0.2938	A	
20123	3.606	-0.218	0.116	-1.8793	AA	
20236	0.7898	-0.1004	0.1067	-0.941	A	
20237	0.2244	-0.0577	0.1087	-0.5308	A	
20238	0.1366	-0.048	0.1115	-0.4305	A	
20239	1.7762	0.1478	0.1069	1.3826	A	
20270	2.7479	0.2019	0.1155	1.7481	A	
20334	0.0717	-0.0349	0.109	-0.3202	A	
20378	1.856	0.1891	0.1301	1.4535	A	
20426	9.0379	0.393	0.1292	3.0418	A	
20520	1.6987	0.1487	0.1095	1.358	A	
20521	29.8337	0.6163	0.1159	5.3175	B	White
20688	0.541	0.142	0.186	0.7634	AA	
20692	0.04	-0.046	0.236	-0.1949	AA	
20784	5.0709	-0.2867	0.1226	-2.3385	A	
20793	1.855	0.139	0.101	1.3762	AA	
21166	5.975	-0.392	0.161	-2.4348	AA	
24194	0.59	-0.0853	0.1045	-0.8163	A	
24195	6.3642	0.2942	0.1138	2.5852	A	
24229	1.2632	0.1303	0.1108	1.176	A	
24231	13.3687	0.3887	0.1069	3.6361	A	
24235	1.9638	-0.1537	0.1056	-1.4555	A	
24236	1.245	0.1359	0.1141	1.1911	A	
24238	7.797	-0.2935	0.1037	-2.8303	A	
24239	2.2906	-0.172	0.1095	-1.5708	A	
24240	0.008	-0.0162	0.1121	-0.1445	A	
24241	0.3602	0.0811	0.1226	0.6615	A	
24314	5.5012	0.2894	0.1205	2.4017	A	
24350	0.0058	-0.0147	0.1116	-0.1317	A	
24352	0.0606	0.0372	0.1221	0.3047	A	
24387	5.2481	0.2536	0.1094	2.3181	A	
24388	1.357	-0.1406	0.1142	-1.2312	A	
24389	0.1944	0.0625	0.1227	0.5094	A	
24473	0.4004	0.0816	0.1165	0.7004	A	
24504	1.4821	-0.1356	0.1081	-1.2544	A	
24536	0.0402	-0.0362	0.1349	-0.2683	A	
24602	0.3933	0.0759	0.1107	0.6856	A	
24733	0.236	-0.049	0.1	-0.49	AA	
24735	0.0052	0.0185	0.1329	0.1392	A	
24740	7.945	-0.29	0.103	-2.8155	AA	
24938	0.3219	0.1275	0.197	0.6472	A	
24939	3.8349	-0.4262	0.2093	-2.0363	A	
24948	0.0015	-0.0342	0.2258	-0.1515	A	
24949	1.826	0.307	0.2102	1.4605	A	
24950	3.8144	0.2225	0.1109	2.0063	A	
24984	1.223	0.157	0.15	1.0467	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
25033	1.67	0.1831	0.1358	1.3483	A	
25042	1.2946	-0.2255	0.1882	-1.1982	A	
25049	0.0813	0.0395	0.1156	0.3417	A	
25059	6.762	0.274	0.109	2.5138	AA	
25063	6.379	0.258	0.102	2.5294	AA	
25065	0	0.002	0.143	0.014	AA	
25140	0.1732	0.0591	0.1237	0.4778	A	
29139	0.608	0.106	0.1274	0.832	A	
29140	6.0445	-0.3488	0.1341	-2.601	A	
29242	0.3449	-0.073	0.1125	-0.6489	A	
29250	3.9433	0.2358	0.1158	2.0363	A	
29265	4.8085	0.2627	0.117	2.2453	A	
29380	0.6443	0.0953	0.1119	0.8517	A	
29387	5.52	0.385	0.165	2.3333	AA	
29391	4.6529	-0.4599	0.206	-2.2325	B	Black
29394	3.478	-0.221	0.118	-1.8729	AA	
29395	24.098	-0.526	0.11	-4.7818	BB	Black
29397	15.584	-0.491	0.126	-3.8968	BB	Black
29421	10.82	-0.447	0.136	-3.2868	BB	Black
31035	0.224	0.0931	0.1652	0.5636	A	
31043	2.9274	-0.3808	0.212	-1.7962	A	
31046	0.1579	-0.088	0.1779	-0.4947	A	
31047	0.391	-0.1541	0.2119	-0.7272	A	
31049	0.0342	-0.0434	0.1629	-0.2664	A	
31050	9.4658	0.6644	0.2169	3.0632	B	White
31054	0.0554	0.0611	0.1831	0.3337	A	
31060	2.087	0.21	0.147	1.4286	AA	
31076	6.305	0.369	0.148	2.4932	AA	
31079	2.936	0.243	0.147	1.6531	AA	
31080	17.321	0.592	0.144	4.1111	BB	White
31089	1.231	0.206	0.19	1.0842	AA	
31090	11.19	-0.655	0.198	-3.3081	BB	Black
31091	18.727	-0.643	0.152	-4.2303	BB	Black
31095	3.556	0.269	0.148	1.8176	AA	
31096	18.993	-0.751	0.176	-4.267	BB	Black
31098	0.937	0.229	0.233	0.9828	AA	
31110	4.8543	-0.4445	0.2039	-2.18	B	Black
31112	3.6765	0.3096	0.1554	1.9923	A	
31113	6.6334	-0.6318	0.2405	-2.627	B	Black
31117	7.4531	-0.4758	0.1698	-2.8021	B	Black
31118	4.8306	-0.3826	0.1716	-2.2296	A	
31119	1.3217	-0.1949	0.1553	-1.255	A	
31121	0.5597	-0.1401	0.1671	-0.8384	A	
31122	2.2514	-0.2888	0.1838	-1.5713	A	
31162	0.0452	0.0516	0.173	0.2983	A	
31163	0.4649	-0.1202	0.1557	-0.772	A	
31164	2.7788	-0.2681	0.1543	-1.7375	A	
31174	0.0319	-0.0525	0.1904	-0.2757	A	
31181	0.5167	-0.1234	0.1555	-0.7936	A	
31191	2.9854	-0.3658	0.1979	-1.8484	A	
31376	0.4651	-0.1158	0.1522	-0.7608	A	
31412	0.0413	-0.0422	0.1517	-0.2782	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31414	0.7725	0.1519	0.1601	0.9488	A	
33003	42.868	-0.977	0.154	-6.3442	CC	Black
33061	0.2601	-0.0923	0.156	-0.5917	A	

B.14.c: DIF Analysis for Level IV Ethnicity Comparison (Hispanic vs. White)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19816	0.0369	0.0089	0.0416	0.2139	A	
20014	6.639	0.1134	0.0437	2.595	A	
20024	10.165	0.1361	0.0424	3.2099	A	
20097	162.9599	0.6288	0.0495	12.703	B	White
20098	5.7849	0.1073	0.0442	2.4276	A	
20123	8.251	-0.122	0.043	-2.8372	AA	
20236	14.4422	-0.158	0.0414	-3.8164	A	
20237	1.1502	-0.0452	0.0414	-1.0918	A	
20238	10.4042	-0.1377	0.0425	-3.24	A	
20239	38.622	-0.2567	0.0412	-6.2306	A	
20270	6.9921	0.1148	0.043	2.6698	A	
20334	0.0163	0.0062	0.042	0.1476	A	
20378	6.8745	0.1296	0.049	2.6449	A	
20426	1.2328	-0.0615	0.054	-1.1389	A	
20520	141.0405	0.5015	0.0424	11.8278	B	White
20521	103.4739	0.4722	0.0465	10.1548	B	White
20688	21.897	-0.33	0.071	-4.6479	AA	
20692	8.08	-0.283	0.1	-2.83	AA	
20784	3.1488	-0.0808	0.045	-1.7956	A	
20793	12.759	0.138	0.038	3.6316	AA	
21166	42.051	-0.394	0.061	-6.459	AA	
24194	80.9579	-0.3645	0.0405	-9	A	
24195	18.5984	-0.1995	0.046	-4.337	A	
24229	28.2527	0.2278	0.0427	5.3349	A	
24231	51.4895	0.3005	0.0419	7.1718	A	
24235	1.4728	-0.0503	0.0408	-1.2328	A	
24236	12.4189	-0.1536	0.0434	-3.5392	A	
24238	0.6164	-0.0322	0.04	-0.805	A	
24239	52.867	-0.3099	0.0425	-7.2918	A	
24240	17.3008	-0.1811	0.0433	-4.1824	A	
24241	26.7291	0.244	0.0471	5.1805	A	
24314	3.7018	0.0916	0.0471	1.9448	A	
24350	0.2142	-0.0209	0.0432	-0.4838	A	
24352	20.1864	0.2145	0.0475	4.5158	A	
24387	10.058	0.137	0.043	3.186	A	
24388	3.9278	0.0868	0.0434	2	A	
24389	49.4957	0.3276	0.0464	7.0603	A	
24473	0.2824	0.0243	0.0439	0.5535	A	
24504	1.668	0.055	0.042	1.3095	A	
24536	1.7493	0.0697	0.0517	1.3482	A	
24602	5.5501	-0.0999	0.042	-2.3786	A	
24733	10.088	0.124	0.039	3.1795	AA	
24735	8.4528	0.144	0.0491	2.9328	A	
24740	104.424	-0.403	0.039	-10.3333	AA	
24938	5.2415	-0.1893	0.0814	-2.3256	A	
24939	6.5625	0.1841	0.0709	2.5966	A	
24948	3.9351	0.1715	0.0847	2.0248	A	
24949	7.4999	0.2344	0.0846	2.7707	A	
24950	47.7646	-0.2911	0.042	-6.931	A	
24984	5.955	0.15	0.062	2.4194	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
25033	8.0046	-0.1575	0.0551	-2.8584	A	
25042	11.6449	-0.2644	0.0763	-3.4653	A	
25049	66.6003	0.3584	0.0438	8.1826	A	
25059	18.981	0.176	0.04	4.4	AA	
25063	20.867	0.182	0.04	4.55	AA	
25065	1.64	0.075	0.059	1.2712	AA	
25140	11.7933	0.1662	0.048	3.4625	A	
29139	15.1587	0.1947	0.0498	3.9096	A	
29140	35.7062	-0.2873	0.0479	-5.9979	A	
29242	6.4179	-0.1096	0.0429	-2.5548	A	
29250	5.8487	-0.1073	0.044	-2.4386	A	
29265	25.8515	0.231	0.0453	5.0993	A	
29380	0.4919	-0.0313	0.0434	-0.7212	A	
29387	21.373	0.258	0.056	4.6071	AA	
29391	3.3716	0.1282	0.0686	1.8688	A	
29394	94.998	-0.439	0.045	-9.7556	BB	Hispanic
29395	27.337	-0.214	0.041	-5.2195	AA	
29397	64.861	-0.361	0.045	-8.0222	AA	
29421	7.199	-0.131	0.049	-2.6735	AA	
31035	0.7887	0.0603	0.0655	0.9206	A	
31043	0.0575	0.022	0.079	0.2785	A	
31046	46.3039	0.425	0.0625	6.8	A	
31047	7.0392	-0.2231	0.083	-2.688	A	
31049	44.2085	0.3858	0.0579	6.6632	A	
31050	21.6731	0.4387	0.0938	4.677	B	White
31054	11.2196	0.2412	0.0712	3.3876	A	
31060	0.508	-0.041	0.058	-0.7069	AA	
31076	0.415	0.035	0.055	0.6364	AA	
31079	0.927	0.059	0.061	0.9672	AA	
31080	12.444	0.183	0.052	3.5192	AA	
31089	18.383	0.325	0.076	4.2763	AA	
31090	15.039	-0.262	0.067	-3.9104	AA	
31091	248.776	-0.861	0.055	-15.6545	CC	Hispanic
31095	8.004	0.173	0.062	2.7903	AA	
31096	74.855	-0.511	0.059	-8.661	BB	Hispanic
31098	1.773	0.13	0.098	1.3265	AA	
31110	4.7176	-0.1679	0.076	-2.2092	A	
31112	0.4538	0.0388	0.0553	0.7016	A	
31113	0.2375	-0.0425	0.0807	-0.5266	A	
31117	1.0655	0.0666	0.0627	1.0622	A	
31118	0.6655	-0.0585	0.0689	-0.8491	A	
31119	6.8153	-0.1637	0.062	-2.6403	A	
31121	0.0227	-0.0122	0.0663	-0.184	A	
31122	4.631	-0.1558	0.0712	-2.1882	A	
31162	2.2272	0.0948	0.0621	1.5266	A	
31163	8.234	-0.1637	0.0564	-2.9025	A	
31164	0.0341	0.0122	0.057	0.214	A	
31174	0.0402	-0.0166	0.0703	-0.2361	A	
31181	1.1928	0.0631	0.0563	1.1208	A	
31191	4.3589	-0.1549	0.0733	-2.1132	A	
31376	1.4815	0.0763	0.0611	1.2488	A	
31412	0.5354	-0.0469	0.0616	-0.7614	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31414	17.7333	0.2729	0.0643	4.2442	A	
33003	179.325	-0.704	0.052	-13.5385	CC	Hispanic
33061	0.7587	-0.0544	0.0603	-0.9022	A	

B.14.d: DIF Analysis for Level IV Gender Comparison

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19816	73.1366	0.3227	0.0377	8.5597	A	
20014	23.8603	-0.1942	0.0396	-4.904	A	
20024	13.9435	-0.1426	0.038	-3.7526	A	
20097	9.086	-0.1313	0.0432	-3.0394	A	
20098	18.129	-0.1698	0.0397	-4.2771	A	
20123	9.013	0.115	0.038	3.0263	AA	
20236	7.9107	-0.1056	0.0373	-2.8311	A	
20237	2.2748	0.0565	0.037	1.527	A	
20238	12.367	-0.135	0.0382	-3.534	A	
20239	23.7944	-0.1803	0.0369	-4.8862	A	
20270	0.0922	-0.0123	0.0383	-0.3211	A	
20334	0.0344	0.0077	0.0378	0.2037	A	
20378	4.5313	0.0951	0.0442	2.1516	A	
20426	2.4005	0.0766	0.0486	1.5761	A	
20520	18.0117	0.1597	0.0375	4.2587	A	
20521	0.081	-0.0124	0.0405	-0.3062	A	
20688	0.247	0.032	0.063	0.5079	AA	
20692	0.002	0.004	0.084	0.0476	AA	
20784	49.6917	0.2869	0.0407	7.0491	A	
20793	105.188	-0.353	0.034	-10.3824	AA	
21166	2.813	-0.09	0.054	-1.6667	AA	
24194	46.0347	0.2462	0.0362	6.8011	A	
24195	7.0195	0.1095	0.0411	2.6642	A	
24229	0.3161	-0.0221	0.038	-0.5816	A	
24231	23.6049	-0.1817	0.0373	-4.8713	A	
24235	97.2299	0.3624	0.0368	9.8478	A	
24236	36.0124	0.2355	0.0391	6.023	A	
24238	0.4567	-0.0248	0.0357	-0.6947	A	
24239	5.3723	0.0893	0.0383	2.3316	A	
24240	13.8636	0.1464	0.0391	3.7442	A	
24241	1.3617	-0.0501	0.0422	-1.1872	A	
24314	9.1507	0.129	0.0424	3.0425	A	
24350	4.8123	0.0857	0.0388	2.2088	A	
24352	0.0996	0.0143	0.0425	0.3365	A	
24387	5.115	-0.0876	0.0384	-2.2813	A	
24388	6.0272	-0.0965	0.039	-2.4744	A	
24389	34.1136	-0.2431	0.0415	-5.8578	A	
24473	0.5682	-0.0304	0.0393	-0.7735	A	
24504	24.2801	0.1872	0.0379	4.9393	A	
24536	219.6138	0.6925	0.0473	14.6406	C	Male
24602	0.8917	0.0364	0.0377	0.9655	A	
24733	443.836	-0.747	0.036	-20.75	CC	Female
24735	2.6216	-0.0726	0.0442	-1.6425	A	
24740	38.664	0.221	0.035	6.3143	AA	
24938	1.9288	-0.1039	0.0729	-1.4252	A	
24939	2.101	-0.0961	0.0648	-1.483	A	
24948	1.445	-0.0951	0.0766	-1.2415	A	
24949	2.9647	-0.1344	0.0763	-1.7615	A	
24950	30.72	0.2104	0.0379	5.5515	A	
24984	5.004	0.121	0.054	2.2407	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
25033	135.5838	0.5777	0.0499	11.5772	B	Male
25042	0.0002	0.0015	0.0683	0.022	A	
25049	8.1118	-0.1108	0.0386	-2.8705	A	
25059	24.299	-0.178	0.036	-4.9444	AA	
25063	452.075	-0.772	0.036	-21.4444	CC	Female
25065	142.407	-0.636	0.053	-12	BB	Female
25140	0.1722	-0.0189	0.0432	-0.4375	A	
29139	2.1501	-0.0653	0.0439	-1.4875	A	
29140	1.0495	-0.0454	0.0434	-1.0461	A	
29242	29.7586	0.2111	0.0387	5.4548	A	
29250	55.2839	0.2948	0.0397	7.4257	A	
29265	9.0659	0.1236	0.0408	3.0294	A	
29380	6.709	0.1014	0.0389	2.6067	A	
29387	53.25	-0.367	0.05	-7.34	AA	
29391	2.0953	-0.0909	0.0616	-1.4756	A	
29394	1.782	0.054	0.041	1.3171	AA	
29395	0.017	0.005	0.037	0.1351	AA	
29397	39.537	0.254	0.04	6.35	AA	
29421	3.69	-0.084	0.044	-1.9091	AA	
31035	4.0322	0.119	0.0585	2.0342	A	
31043	16.378	0.288	0.0708	4.0678	A	
31046	0.107	0.02	0.0563	0.3552	A	
31047	5.1948	0.1712	0.0742	2.3073	A	
31049	5.3119	-0.1204	0.0517	-2.3288	A	
31050	23.0143	-0.3957	0.0819	-4.8315	A	
31054	6.8602	-0.1635	0.0619	-2.6414	A	
31060	73.766	-0.443	0.052	-8.5192	BB	Female
31076	148.886	-0.611	0.05	-12.22	BB	Female
31079	133.579	-0.633	0.055	-11.5091	BB	Female
31080	102.659	-0.482	0.048	-10.0417	BB	Female
31089	2.353	0.1	0.065	1.5385	AA	
31090	2.107	0.088	0.06	1.4667	AA	
31091	0.227	0.023	0.048	0.4792	AA	
31095	4.166	0.11	0.053	2.0755	AA	
31096	14.661	0.203	0.053	3.8302	AA	
31098	0.847	0.075	0.082	0.9146	AA	
31110	2.1953	-0.104	0.0686	-1.516	A	
31112	13.064	-0.1828	0.0502	-3.6414	A	
31113	0.0001	0.0019	0.0722	0.0263	A	
31117	21.235	0.2598	0.0561	4.631	A	
31118	1.7713	-0.0839	0.0616	-1.362	A	
31119	5.6038	-0.1316	0.0549	-2.3971	A	
31121	14.8795	-0.2306	0.0594	-3.8822	A	
31122	12.78	-0.2323	0.0644	-3.6071	A	
31162	3.6648	0.1079	0.0556	1.9406	A	
31163	7.1866	-0.1364	0.0504	-2.7063	A	
31164	0.5079	-0.0377	0.0511	-0.7378	A	
31174	0.1392	0.0252	0.0624	0.4038	A	
31181	0.7825	-0.0461	0.0507	-0.9093	A	
31191	28.253	-0.359	0.0672	-5.3423	A	
31376	4.1239	-0.1116	0.0542	-2.059	A	
31412	65.1615	0.4467	0.0555	8.0486	B	Male

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31414	4.6457	0.1253	0.0574	2.1829	A	
33003	9.497	0.145	0.047	3.0851	AA	
33061	47.6154	0.3721	0.0538	6.9164	A	

B.14.e: DIF Analysis for Level IV Economically Disadvantaged vs. Non-Economically Disadvantaged

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19816	0.1516	-0.0206	0.0497	-0.4145	A	
20014	0.0674	-0.0151	0.0529	-0.2854	A	
20024	0.0186	0.0081	0.0503	0.161	A	
20097	1.5047	-0.0742	0.0587	-1.2641	A	
20098	0.0094	0.0066	0.0535	0.1234	A	
20123	0.234	0.025	0.052	0.4808	AA	
20236	0.0006	-0.0025	0.0495	-0.0505	A	
20237	5.8368	0.1174	0.0484	2.4256	A	
20238	0.9696	0.0506	0.0505	1.002	A	
20239	7.4941	0.1337	0.0486	2.751	A	
20270	2.3699	-0.0784	0.0504	-1.5556	A	
20334	2.1827	0.0751	0.05	1.502	A	
20378	4.2744	0.1251	0.0598	2.092	A	
20426	0.0447	0.0162	0.0661	0.2451	A	
20520	8.4086	-0.1473	0.0503	-2.9284	A	
20521	23.2804	0.2565	0.0535	4.7944	A	
20688	1.049	-0.096	0.093	-1.0323	AA	
20692	3.72	0.197	0.105	1.8762	AA	
20784	0.8051	0.0502	0.0544	0.9228	A	
20793	1.108	-0.047	0.045	-1.0444	AA	
21166	13.792	0.254	0.07	3.6286	AA	
24194	0.0004	0.0002	0.0474	0.0042	A	
24195	8.6073	-0.1658	0.0561	-2.9554	A	
24229	0.2284	0.0252	0.0503	0.501	A	
24231	1.7821	-0.0668	0.0492	-1.3577	A	
24235	2.5517	-0.0783	0.0483	-1.6211	A	
24236	4.5045	-0.1108	0.0519	-2.1349	A	
24238	0.04	0.0106	0.0471	0.2251	A	
24239	0.6101	-0.0411	0.0511	-0.8043	A	
24240	14.809	-0.2034	0.0526	-3.8669	A	
24241	14.6703	-0.2227	0.0582	-3.8265	A	
24314	0.195	-0.0267	0.0571	-0.4676	A	
24350	27.6945	-0.2742	0.0521	-5.263	A	
24352	8.7297	-0.1743	0.0586	-2.9744	A	
24387	6.7213	-0.1349	0.0516	-2.6143	A	
24388	2.0803	-0.0772	0.0523	-1.4761	A	
24389	0.6016	-0.0451	0.0562	-0.8025	A	
24473	3.5559	0.1004	0.0524	1.916	A	
24504	0.2712	0.0275	0.0503	0.5467	A	
24536	1.0017	-0.066	0.0638	-1.0345	A	
24602	2.4716	-0.0785	0.0494	-1.5891	A	
24733	1.863	0.062	0.045	1.3778	AA	
24735	2.4997	-0.0967	0.0604	-1.601	A	
24740	1.554	0.059	0.047	1.2553	AA	
24938	1.0736	-0.114	0.1052	-1.0837	A	
24939	0.6984	0.0812	0.0919	0.8836	A	
24948	0.6928	0.0981	0.1102	0.8902	A	
24949	0.874	0.1039	0.1052	0.9876	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
24950	3.9405	0.1003	0.0499	2.01	A	
24984	1.279	0.077	0.068	1.1324	AA	
25033	3.0628	0.1173	0.0659	1.78	A	
25042	4.2356	-0.1881	0.0895	-2.1017	A	
25049	5.4683	0.1211	0.0514	2.356	A	
25059	16.481	-0.186	0.047	-3.9574	AA	
25063	6.742	0.121	0.046	2.6304	AA	
25065	4.944	0.145	0.065	2.2308	AA	
25140	0.6216	0.0483	0.0586	0.8242	A	
29139	0.3492	0.0362	0.0586	0.6177	A	
29140	0.0063	0.0063	0.0583	0.1081	A	
29242	1.5582	-0.0655	0.0516	-1.2694	A	
29250	3.5021	-0.0982	0.0519	-1.8921	A	
29265	0.0014	-0.0036	0.0551	-0.0653	A	
29380	0.0166	0.0079	0.0511	0.1546	A	
29387	0.045	-0.015	0.07	-0.2143	AA	
29391	0.8384	0.085	0.0883	0.9626	A	
29394	0.223	-0.026	0.055	-0.4727	AA	
29395	2.725	0.082	0.049	1.6735	AA	
29397	7.214	0.144	0.054	2.6667	AA	
29421	8.834	0.175	0.058	3.0172	AA	
31035	4.2746	-0.1584	0.0752	-2.1064	A	
31043	0.1296	0.0361	0.0895	0.4034	A	
31046	2.5034	0.1291	0.0798	1.6178	A	
31047	0.5389	0.0745	0.0955	0.7801	A	
31049	0.0463	0.0185	0.0733	0.2524	A	
31050	3.568	0.193	0.1004	1.9223	A	
31054	2.1374	0.1145	0.077	1.487	A	
31060	2.179	-0.092	0.064	-1.4375	AA	
31076	0.485	0.048	0.068	0.7059	AA	
31079	0.1	0.021	0.067	0.3134	AA	
31080	9.209	0.201	0.066	3.0455	AA	
31089	3.824	0.161	0.082	1.9634	AA	
31090	0.025	0.014	0.089	0.1573	AA	
31091	2.368	-0.106	0.069	-1.5362	AA	
31095	9.696	0.207	0.066	3.1364	AA	
31096	0.132	-0.028	0.077	-0.3636	AA	
31098	4.579	0.22	0.102	2.1569	AA	
31110	0.0002	-0.0063	0.0999	-0.0631	A	
31112	0.0002	-0.0015	0.0704	-0.0213	A	
31113	0.1216	-0.0427	0.1054	-0.4051	A	
31117	7.5944	-0.1972	0.0709	-2.7814	A	
31118	8.1312	-0.2296	0.0796	-2.8844	A	
31119	10.139	-0.2183	0.0681	-3.2056	A	
31121	14.1429	-0.2901	0.0766	-3.7872	A	
31122	3.7363	-0.1661	0.0835	-1.9892	A	
31162	16.1282	-0.3005	0.074	-4.0608	A	
31163	0.4051	-0.0469	0.0698	-0.6719	A	
31164	0	-0.0025	0.0713	-0.0351	A	
31174	0.0044	0.0093	0.0859	0.1083	A	
31181	0.3268	-0.0433	0.0714	-0.6064	A	
31191	5.7763	-0.212	0.0871	-2.434	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31376	2.5799	0.1106	0.0675	1.6385	A	
31412	12.0003	-0.2434	0.0695	-3.5022	A	
31414	2.9113	-0.1231	0.0705	-1.7461	A	
33003	0.029	-0.011	0.067	-0.1642	AA	
33061	14.0345	0.2667	0.0705	3.783	A	

B.14.f: DIF Analysis for Level IV Native Language Comparison (Arabic vs. Spanish)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19816	0.0094	0.0073	0.0579	0.1261	A	
20014	5.7721	-0.1461	0.0603	-2.4229	A	
20024	6.5303	-0.1525	0.059	-2.5847	A	
20097	96.437	-0.6751	0.0689	-9.7983	C	Arabic
20098	7.1271	-0.1649	0.0612	-2.6944	A	
20123	57.616	0.438	0.058	7.5517	BB	Spanish
20236	14.1724	0.215	0.0569	3.7786	A	
20237	0.2486	-0.0307	0.0581	-0.5284	A	
20238	0.2524	0.0314	0.0592	0.5304	A	
20239	22.4749	0.2714	0.0571	4.7531	A	
20270	6.7699	-0.1568	0.0598	-2.6221	A	
20334	1.7709	-0.0792	0.0585	-1.3538	A	
20378	8.9236	-0.2087	0.0689	-3.029	A	
20426	0.4675	-0.0537	0.0746	-0.7198	A	
20520	56.2548	-0.4415	0.0589	-7.4958	B	Arabic
20521	49.2643	-0.453	0.0644	-7.0342	B	Arabic
20688	49.39	0.667	0.096	6.9479	CC	Spanish
20692	3.105	0.226	0.128	1.7656	AA	
20784	0.815	0.0582	0.0623	0.9342	A	
20793	12.921	-0.193	0.053	-3.6415	AA	
21166	74.993	0.678	0.08	8.475	CC	Spanish
24194	51.269	0.4024	0.0563	7.1474	A	
24195	8.2364	0.1837	0.0631	2.9113	A	
24229	59.9196	-0.4668	0.0603	-7.7413	B	Arabic
24231	46.5881	-0.3995	0.0585	-6.8291	A	
24235	0.3322	0.0341	0.0565	0.6035	A	
24236	0.403	0.0395	0.0597	0.6616	A	
24238	4.2399	-0.1161	0.0557	-2.0844	A	
24239	22.7732	0.2819	0.0588	4.7942	A	
24240	19.2358	0.2646	0.0599	4.4174	A	
24241	22.1342	-0.31	0.0658	-4.7112	A	
24314	1.0921	-0.0696	0.0649	-1.0724	A	
24350	2.8811	-0.1042	0.0603	-1.728	A	
24352	18.9369	-0.2933	0.0668	-4.3907	A	
24387	8.9156	-0.1808	0.06	-3.0133	A	
24388	3.2871	-0.1103	0.0601	-1.8353	A	
24389	64.7482	-0.5221	0.0651	-8.02	B	Arabic
24473	2.6512	-0.1015	0.061	-1.6639	A	
24504	4.8806	-0.1314	0.0587	-2.2385	A	
24536	6.7889	-0.1952	0.0744	-2.6237	A	
24602	0.3126	0.0346	0.0586	0.5904	A	
24733	3.383	-0.1	0.054	-1.8519	AA	
24735	10.2427	-0.2197	0.0678	-3.2404	A	
24740	97.675	0.534	0.054	9.8889	BB	Spanish
24938	3.3464	0.2252	0.1192	1.8893	A	
24939	16.8323	-0.4339	0.1056	-4.1089	B	Arabic
24948	5.4085	-0.2897	0.1217	-2.3804	A	
24949	5.2767	-0.2917	0.1241	-2.3505	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
24950	17.526	0.2468	0.0586	4.2116	A	
24984	4.872	-0.183	0.083	-2.2048	AA	
25033	3.2049	0.1355	0.0739	1.8336	A	
25042	17.3027	0.4234	0.0999	4.2382	A	
25049	30.1977	-0.337	0.0609	-5.5337	A	
25059	2.281	-0.086	0.057	-1.5088	AA	
25063	30.922	-0.306	0.056	-5.4643	AA	
25065	1.634	-0.099	0.078	-1.2692	AA	
25140	9.4459	-0.2076	0.0669	-3.1031	A	
29139	7.8424	-0.1954	0.0689	-2.836	A	
29140	9.2384	0.2057	0.0669	3.0747	A	
29242	0	-0.0015	0.0601	-0.025	A	
29250	6.3022	0.1562	0.0615	2.5398	A	
29265	18.9234	-0.2771	0.0635	-4.3638	A	
29380	0	-0.002	0.06	-0.0333	A	
29387	6.955	-0.21	0.08	-2.625	AA	
29391	4.6163	-0.2189	0.0995	-2.2	A	
29394	114.93	0.661	0.062	10.6613	CC	Spanish
29395	50.838	0.394	0.055	7.1636	AA	
29397	119.975	0.65	0.06	10.8333	CC	Spanish
29421	46.029	0.437	0.064	6.8281	BB	Spanish
31035	0	0.0033	0.0863	0.0382	A	
31043	0.6353	-0.0867	0.1031	-0.8409	A	
31046	28.6787	-0.5049	0.0941	-5.3656	B	Arabic
31047	11.8805	0.3661	0.105	3.4867	A	
31049	15.255	-0.3305	0.0835	-3.9581	A	
31050	19.7154	-0.566	0.1263	-4.4814	B	Arabic
31054	12.4938	-0.3447	0.0965	-3.572	A	
31060	0	0.001	0.078	0.0128	AA	
31076	10.172	-0.251	0.081	-3.0988	AA	
31079	0.053	-0.018	0.08	-0.225	AA	
31080	12.506	-0.267	0.077	-3.4675	AA	
31089	10.921	-0.34	0.103	-3.301	AA	
31090	77.278	0.799	0.092	8.6848	CC	Spanish
31091	329.079	1.432	0.081	17.679	CC	Spanish
31095	12.487	-0.294	0.084	-3.5	AA	
31096	163.513	1.047	0.082	12.7683	CC	Spanish
31098	0.067	0.032	0.123	0.2602	AA	
31110	2.0601	-0.1736	0.1168	-1.4863	A	
31112	0.5274	0.0615	0.08	0.7688	A	
31113	3.804	-0.2412	0.12	-2.01	A	
31117	0.0048	-0.0092	0.083	-0.1108	A	
31118	0.2627	0.0497	0.09	0.5522	A	
31119	8.1387	0.2433	0.0842	2.8895	A	
31121	0	0.004	0.0875	0.0457	A	
31122	3.4501	0.1747	0.0922	1.8948	A	
31162	1.8995	-0.1271	0.0894	-1.4217	A	
31163	2.2651	0.1248	0.081	1.5407	A	
31164	1.3808	-0.0993	0.0816	-1.2169	A	
31174	0.704	-0.0897	0.1007	-0.8908	A	
31181	12.2655	-0.2863	0.0812	-3.5259	A	
31191	6.3739	0.2409	0.0947	2.5438	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31376	2.2539	-0.1251	0.0813	-1.5387	A	
31412	10.6299	0.2723	0.0826	3.2966	A	
31414	15.1319	-0.3319	0.0844	-3.9325	A	
33003	207.544	1.101	0.077	14.2987	CC	Spanish
33061	1.2581	-0.1005	0.0864	-1.1632	A	

B.14.g: DIF Analysis for Level IV Disabled vs. Non-Disabled

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[51]
19816	1.5152	-0.0689	0.0548	-1.2573	A	
20014	35.1423	0.3238	0.0549	5.898	A	
20024	19.9964	0.25	0.0559	4.4723	A	
20097	0.126	0.0231	0.0598	0.3863	A	
20098	14.5981	0.2128	0.0551	3.8621	A	
20123	48.308	-0.381	0.055	-6.9273	AA	
20236	3.1415	0.0968	0.0538	1.7993	A	
20237	1.6953	0.073	0.0548	1.3321	A	
20238	0.0012	0.0035	0.0559	0.0626	A	
20239	0.514	-0.0407	0.0546	-0.7454	A	
20270	5.8985	0.1434	0.0586	2.4471	A	
20334	3.022	-0.0974	0.0553	-1.7613	A	
20378	47.1409	0.403	0.0591	6.819	A	
20426	2.3163	-0.1008	0.0646	-1.5604	A	
20520	8.7077	0.1632	0.0546	2.989	A	
20521	10.046	0.1786	0.0562	3.1779	A	
20688	6.931	0.213	0.082	2.5976	AA	
20692	12.711	-0.388	0.109	-3.5596	AA	
20784	0	-0.0016	0.0574	-0.0279	A	
20793	19.813	0.239	0.054	4.4259	AA	
21166	5.155	-0.155	0.069	-2.2464	AA	
24194	50.827	-0.3864	0.0541	-7.1423	A	
24195	13.6304	-0.2184	0.0585	-3.7333	A	
24229	8.9138	0.1679	0.0552	3.0417	A	
24231	9.6125	0.1736	0.0555	3.1279	A	
24235	4.4385	-0.1164	0.0543	-2.1436	A	
24236	1.6435	-0.0736	0.0562	-1.3096	A	
24238	0.6288	0.0443	0.0537	0.825	A	
24239	0.0261	-0.0103	0.0547	-0.1883	A	
24240	1.2666	0.0651	0.0564	1.1543	A	
24241	15.1995	0.2252	0.0569	3.9578	A	
24314	12.1905	0.2089	0.059	3.5407	A	
24350	11.2193	0.1911	0.0565	3.3823	A	
24352	15.8387	0.2273	0.0568	4.0018	A	
24387	17.0051	0.2323	0.0559	4.1556	A	
24388	0.5647	0.0442	0.0569	0.7768	A	
24389	45.2739	0.3954	0.0586	6.7474	A	
24473	1.2692	-0.0645	0.0559	-1.1538	A	
24504	8.6751	0.1641	0.0551	2.9782	A	
24536	7.2528	-0.1731	0.0632	-2.7389	A	
24602	0.0006	0.003	0.0571	0.0525	A	
24733	46.497	0.36	0.052	6.9231	AA	
24735	3.4217	0.1093	0.0586	1.8652	A	
24740	96.71	-0.517	0.053	-9.7547	BB	Disabled
24938	0.4414	-0.0686	0.0971	-0.7065	A	
24939	12.9101	0.3081	0.0844	3.6505	A	
24948	1.2508	0.1067	0.0928	1.1498	A	

[51] Non-Dis stands for non-disabled students.

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[51]
24949	17.4227	0.3974	0.0955	4.1613	A	
24950	7.2649	-0.1535	0.0565	-2.7168	A	
24984	12.679	-0.276	0.078	-3.5385	AA	
25033	42.2565	-0.4311	0.0666	-6.473	B	Disabled
25042	3.9928	0.1778	0.0876	2.0297	A	
25049	1.0102	0.0573	0.0554	1.0343	A	
25059	20.49	0.259	0.056	4.625	AA	
25063	76.911	0.482	0.055	8.7636	BB	Non-Dis
25065	63.046	0.622	0.078	7.9744	BB	Non-Dis
25140	0.9789	0.0596	0.0583	1.0223	A	
29139	25.2469	-0.3159	0.0622	-5.0788	A	
29140	4.8702	-0.1342	0.0597	-2.2479	A	
29242	0.0001	0.0021	0.0561	0.0374	A	
29250	2.9667	-0.1029	0.0587	-1.753	A	
29265	2.8511	0.0971	0.0565	1.7186	A	
29380	0.0061	-0.0065	0.0599	-0.1085	A	
29387	23.073	0.401	0.084	4.7738	AA	
29391	5.0837	-0.1966	0.0856	-2.2967	A	
29394	0.557	0.042	0.056	0.75	AA	
29395	45.727	-0.367	0.054	-6.7963	AA	
29397	157.033	-0.742	0.06	-12.3667	CC	Disabled
29421	37.482	-0.365	0.06	-6.0833	AA	
31035	8.9979	0.2492	0.0818	3.0465	A	
31043	9.7804	0.2849	0.0899	3.1691	A	
31046	15.8695	0.3146	0.0778	4.0437	A	
31047	9.3456	0.2853	0.0918	3.1078	A	
31049	0.8586	0.0733	0.076	0.9645	A	
31050	9.3638	0.2945	0.0958	3.0741	A	
31054	5.5622	0.2023	0.0843	2.3998	A	
31060	35.414	0.496	0.082	6.0488	BB	Non-Dis
31076	33.887	0.432	0.073	5.9178	BB	Non-Dis
31079	37.842	0.5	0.079	6.3291	BB	Non-Dis
31080	21.541	0.333	0.07	4.7571	AA	
31089	19.59	-0.398	0.09	-4.4222	AA	
31090	7.101	-0.221	0.084	-2.631	AA	
31091	35.454	-0.433	0.073	-5.9315	BB	Disabled
31095	27.123	-0.412	0.079	-5.2152	AA	
31096	46.733	-0.526	0.077	-6.8312	BB	Disabled
31098	42.778	-0.749	0.116	-6.4569	CC	Disabled
31110	0.241	-0.0482	0.09	-0.5356	A	
31112	3.3096	-0.136	0.074	-1.8378	A	
31113	0.3188	-0.0572	0.0939	-0.6092	A	
31117	2.3292	0.1262	0.0807	1.5638	A	
31118	1.694	0.1122	0.0836	1.3421	A	
31119	4.6353	0.1884	0.0855	2.2035	A	
31121	1.0218	0.0885	0.0834	1.0612	A	
31122	0.0947	0.0304	0.0863	0.3523	A	
31162	1.0392	0.0939	0.0884	1.0622	A	
31163	0.1101	0.0285	0.077	0.3701	A	
31164	1.3464	0.0952	0.0789	1.2066	A	
31174	0.0254	-0.0188	0.0916	-0.2052	A	
31181	1.2127	0.0861	0.0753	1.1434	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[51]
31191	1.2643	0.0993	0.0856	1.16	A	
31376	0.0102	0.0113	0.0802	0.1409	A	
31412	0.9277	0.0812	0.0809	1.0037	A	
31414	1.3758	0.1052	0.0866	1.2148	A	
33003	28.677	-0.379	0.07	-5.4143	AA	
33061	7.874	-0.2005	0.0705	-2.844	A	

B.14.h: DIF Analysis for Level IV Accommodated vs. Non-Accommodated

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[52]
19816	4.4342	-0.1704	0.0797	-2.138	A	
20014						
20024						
20097						
20098						
20123	13.316	0.611	0.173	3.5318	BB	Non-Accom
20236						
20237						
20238						
20239						
20270						
20334	3.0842	0.1401	0.0789	1.7757	A	
20378						
20426	0.0003	-0.0072	0.1032	-0.0698	A	
20520						
20521						
20688						
20692	0.042	-0.057	0.281	-0.2028	AA	
20784	0.8453	-0.0821	0.0861	-0.9535	A	
20793						
21166	0.846	0.212	0.226	0.9381	AA	
24194	2.9776	-0.1328	0.0754	-1.7613	A	
24195	0.3029	-0.0519	0.0875	-0.5931	A	
24229						
24231						
24235	2.0728	-0.1152	0.0777	-1.4826	A	
24236	0.3483	0.0515	0.0822	0.6265	A	
24238	0.7695	0.068	0.0749	0.9079	A	
24239	5.7806	-0.2003	0.0824	-2.4308	A	
24240						
24241						
24314						
24350	0.0191	-0.0145	0.0815	-0.1779	A	
24352	0.1397	0.0372	0.0893	0.4166	A	
24387						
24388						
24389						
24473	0.5516	0.0647	0.0828	0.7814	A	
24504	0.1505	-0.0347	0.0808	-0.4295	A	
24536	0.0903	-0.0351	0.0997	-0.3521	A	
24602	1.7501	-0.1067	0.0788	-1.3541	A	
24733						
24735						
24740	4.977	0.353	0.159	2.2201	AA	
24938	0.3515	0.1784	0.2429	0.7345	A	
24939	0.016	-0.0562	0.2308	-0.2435	A	
24948						

[52] Accom stands for students with standard accommodations. Non-Accom stands for students without standard accommodations.

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[52]
24949						
24950						
24984	20.16	0.731	0.175	4.1771	BB	Non-Accom
25033	0.0423	-0.0272	0.105	-0.259	A	
25042						
25049						
25059						
25063						
25065						
25140						
29139	0.2289	0.0476	0.0913	0.5214	A	
29140	0.0493	-0.0251	0.0931	-0.2696	A	
29242						
29250						
29265						
29380						
29387						
29391						
29394	0.724	0.158	0.185	0.8541	AA	
29395	3.778	0.314	0.166	1.8916	AA	
29397	13.372	0.605	0.174	3.477	BB	Non-Accom
29421	15.757	0.662	0.188	3.5213	BB	Non-Accom
31035	0.0907	-0.0325	0.0935	-0.3476	A	
31043						
31046						
31047						
31049						
31050						
31054						
31060						
31076						
31079						
31080						
31089	16.213	0.754	0.203	3.7143	BB	Non-Accom
31090						
31091						
31095	5.066	0.391	0.179	2.1844	AA	
31096						
31098	6.3	0.502	0.23	2.1826	BB	Non-Accom
31110	1.2039	-0.2724	0.2319	-1.1746	A	
31112	0.5316	0.1588	0.192	0.8271	A	
31113	0.0045	0.0438	0.236	0.1856	A	
31117	0.4959	-0.0665	0.0892	-0.7455	A	
31118						
31119						
31121						
31122						
31162						
31163						
31164						
31174						
31181						

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[52]
31191						
31376	0.1346	0.0352	0.0859	0.4098	A	
31412	1.4437	0.1077	0.087	1.2379	A	
31414	0.0597	-0.0265	0.091	-0.2912	A	
33003						
33061	5.5315	-0.2905	0.1204	-2.4128	A	

B.15.a: DIF Analysis for Level V Ethnicity Comparison (Asian vs. White)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19862	7.9818	0.1537	0.0539	2.8516	A	
20171	8.0847	0.1865	0.0647	2.8825	A	
20177	132.619	0.732	0.065	11.2615	CC	White
20219	10.4924	-0.2231	0.0685	-3.2569	A	
20373	2.4448	-0.0951	0.0597	-1.593	A	
20423	15.2724	-0.2114	0.0541	-3.9076	A	
20425	0.7377	-0.0485	0.0546	-0.8883	A	
20472	2.4044	-0.0895	0.0564	-1.5869	A	
20479	0.0486	-0.0141	0.0567	-0.2487	A	
20480	33.436	-0.428	0.075	-5.7067	BB	Asian
20681	31.805	0.356	0.066	5.3939	AA	
20796	2.5222	-0.121	0.0741	-1.6329	A	
20806	114.439	0.711	0.067	10.6119	CC	White
20817	1.0376	0.0661	0.0627	1.0542	A	
21165	11.2999	-0.1987	0.0583	-3.4082	A	
24192	27.166	-0.266	0.05	-5.32	AA	
24197	10.4605	-0.1824	0.0559	-3.263	A	
24227	11.5557	-0.2078	0.0602	-3.4518	A	
24234	88.031	0.492	0.051	9.6471	BB	White
24272	0.5371	0.0419	0.0551	0.7604	A	
24274	0.3023	-0.0342	0.059	-0.5797	A	
24278	4.6103	0.132	0.0608	2.1711	A	
24298	7.9786	-0.1457	0.0512	-2.8457	A	
24299	5.9679	0.1336	0.0539	2.4787	A	
24317	0.0977	-0.0196	0.0581	-0.3373	A	
24318	4.7435	0.1279	0.0577	2.2166	A	
24408	0.2815	-0.0376	0.0663	-0.5671	A	
24409	7.7803	-0.1619	0.0573	-2.8255	A	
24413	22.7493	0.2778	0.0586	4.7406	A	
24414	7.3024	-0.161	0.0589	-2.7334	A	
24417	18.8744	0.2372	0.0546	4.3443	A	
24418	38.0193	-0.3385	0.055	-6.1545	A	
24443	0.0048	0.005	0.0523	0.0956	A	
24506	8.4223	0.1592	0.0545	2.9211	A	
24507	1.8695	-0.0768	0.0554	-1.3863	A	
24508	9.7753	-0.1792	0.0568	-3.1549	A	
24509	2.3264	0.0865	0.0559	1.5474	A	
24738	102.582	0.534	0.052	10.2692	BB	White
24989	43.6222	-0.4277	0.0648	-6.6003	B	Asian
24996	37.1672	-0.4873	0.0806	-6.0459	B	Asian
25021	16.472	0.315	0.078	4.0385	AA	
25022	31.968	0.505	0.093	5.4301	BB	White
25093	17.3068	0.2571	0.0613	4.1941	A	
25095	20.2605	-0.524	0.1158	-4.525	B	Asian
25102	11.4691	0.1988	0.0587	3.3867	A	
25106	58.245	-0.368	0.049	-7.5102	AA	
25109	21.252	-0.354	0.076	-4.6579	AA	
25110	17.53	-0.29	0.07	-4.1429	AA	
25115	87.85	-0.468	0.05	-9.36	BB	Asian
25116	50.573	0.395	0.057	6.9298	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
25124	91.603	0.754	0.08	9.425	CC	White
29093	2.4396	0.0878	0.0552	1.5906	A	
29094	14.6472	-0.2002	0.0522	-3.8352	A	
29095	0.0034	0.0047	0.0547	0.0859	A	
29142	109.7533	-0.6808	0.0654	-10.4098	C	Asian
29143	118.5407	-0.7903	0.0725	-10.9007	C	Asian
29144	64.6468	-0.4779	0.0597	-8.005	B	Asian
29146	0.8275	0.0519	0.0554	0.9368	A	
29147	6.8472	-0.1493	0.0563	-2.6519	A	
29149	41.6336	-0.3575	0.0553	-6.4647	A	
29151	12.145	-0.1931	0.055	-3.5109	A	
29152	7.2737	-0.1506	0.0552	-2.7283	A	
29364	190.5751	0.7629	0.0562	13.5747	C	White
29369	0.001	-0.003	0.068	-0.0441	AA	
29406	124.558	0.665	0.059	11.2712	CC	White
29422	4.0576	-0.1207	0.0592	-2.0389	A	
29423	1.7002	-0.0828	0.0622	-1.3312	A	
29755	8.37	0.1609	0.0552	2.9149	A	
31227	1.679	-0.0994	0.0747	-1.3307	A	
31234	5.5453	-0.2943	0.1226	-2.4005	A	
31237	0.8132	-0.0757	0.0807	-0.938	A	
31238	7.9803	-0.3049	0.1058	-2.8819	A	
31239	11.8518	-0.2844	0.0813	-3.4982	A	
31240	13.034	0.3648	0.1001	3.6444	A	
31241	1.1834	-0.1001	0.0887	-1.1285	A	
31258	10.9012	-0.3543	0.1058	-3.3488	A	
31263	0.0301	-0.0166	0.0781	-0.2125	A	
31264	10.781	0.268	0.082	3.2683	AA	
31265	19.391	-0.32	0.074	-4.3243	AA	
31272	35.06	0.539	0.094	5.734	BB	White
31273	64.942	0.789	0.1	7.89	CC	White
31274	56.425	0.551	0.073	7.5479	BB	White
31276	58.754	0.63	0.082	7.6829	BB	White
31277	57.739	0.694	0.09	7.7111	CC	White
31296	1.0801	-0.0993	0.0906	-1.096	A	
31299	8.8144	-0.2583	0.0854	-3.0246	A	
31339	0.9697	-0.1016	0.0984	-1.0325	A	
31340	38.9435	-0.603	0.0972	-6.2037	B	Asian
31354	12.6526	-0.3095	0.086	-3.5988	A	
31355	32.437	-0.4484	0.0787	-5.6976	B	Asian
31357	24.026	-0.4272	0.0863	-4.9502	B	Asian
31358	1.6784	-0.113	0.0845	-1.3373	A	
31359	4.1839	-0.1586	0.0763	-2.0786	A	
31360	3.5115	-0.1396	0.0732	-1.9071	A	
31364	23.7905	-0.5276	0.1076	-4.9033	B	Asian
31365	13.6026	-0.3601	0.0967	-3.7239	A	
31366	23.6548	-0.4297	0.0876	-4.9053	B	Asian
31394	0.6686	0.0705	0.082	0.8598	A	
31397	23.6598	0.4483	0.0915	4.8995	B	White
31399	3.4949	-0.1571	0.0819	-1.9182	A	
31400	5.5344	-0.2164	0.0906	-2.3885	A	
33004	46.245	0.488	0.071	6.8732	BB	White

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
33005	9.546	0.244	0.078	3.1282	AA	
33805	6.3749	-0.1373	0.0538	-2.552	A	

B.15.b: DIF Analysis for Level V Ethnicity Comparison (Black vs. White)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19862	0.0436	0.0249	0.0971	0.2564	A	
20171	0.6479	-0.1033	0.1188	-0.8695	A	
20177	1.151	-0.132	0.125	-1.056	AA	
20219	0.0079	0.0187	0.1235	0.1514	A	
20373	1.7653	-0.1476	0.1075	-1.373	A	
20423	0.4561	-0.0698	0.0978	-0.7137	A	
20425	0.3768	-0.066	0.0992	-0.6653	A	
20472	0.6948	-0.0896	0.1014	-0.8836	A	
20479	0.001	0.0022	0.1038	0.0212	A	
20480	3.726	0.257	0.132	1.947	AA	
20681	0.176	0.055	0.132	0.4167	AA	
20796	1.3354	-0.1611	0.1331	-1.2104	A	
20806	0.614	-0.102	0.132	-0.7727	AA	
20817	2.6426	0.1894	0.1117	1.6956	A	
21165	1.4844	-0.1358	0.1059	-1.2823	A	
24192	1.756	0.122	0.092	1.3261	AA	
24197	15.5344	0.4115	0.1029	3.999	A	
24227	8.4818	-0.3314	0.1101	-3.01	A	
24234	1.844	0.129	0.094	1.3723	AA	
24272	0.0304	-0.0228	0.1011	-0.2255	A	
24274	3.2761	0.1976	0.106	1.8642	A	
24278	0.0202	0.0221	0.1117	0.1979	A	
24298	0.7681	-0.0874	0.0944	-0.9258	A	
24299	19.9694	0.4454	0.0992	4.4899	B	White
24317	0.4873	-0.0785	0.1065	-0.7371	A	
24318	0.0104	-0.0162	0.1044	-0.1552	A	
24408	0.5545	-0.0938	0.1167	-0.8038	A	
24409	1.2311	-0.1237	0.1053	-1.1747	A	
24413	0.2127	0.0566	0.1093	0.5178	A	
24414	23.5629	0.499	0.1031	4.84	B	White
24417	6.5849	-0.2697	0.1025	-2.6312	A	
24418	2.5193	-0.1601	0.0989	-1.6188	A	
24443	0.0843	0.0326	0.0962	0.3389	A	
24506	18.6407	-0.4356	0.0999	-4.3604	B	Black
24507	3.6131	0.1919	0.0994	1.9306	A	
24508	0.7547	-0.0946	0.1029	-0.9193	A	
24509	2.7797	-0.1762	0.104	-1.6942	A	
24738	1.135	0.101	0.096	1.0521	AA	
24989	1.1286	0.1215	0.1091	1.1137	A	
24996	0.1587	-0.0724	0.1515	-0.4779	A	
25021	2.176	-0.236	0.165	-1.4303	AA	
25022	3.132	-0.343	0.194	-1.768	AA	
25093	1.9091	-0.1734	0.1194	-1.4523	A	
25095	1.1683	-0.2257	0.1944	-1.161	A	
25102	0.5982	-0.0919	0.1102	-0.8339	A	
25106	0.816	0.082	0.092	0.8913	AA	
25109	0.094	0.041	0.136	0.3015	AA	
25110	6.444	0.325	0.13	2.5	AA	
25115	7.233	0.245	0.091	2.6923	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
25116	0.035	-0.021	0.111	-0.1892	AA	
25124	0.141	-0.058	0.161	-0.3602	AA	
29093	0.0562	-0.0281	0.0988	-0.2844	A	
29094	2.0288	-0.1422	0.0965	-1.4736	A	
29095	0.1168	-0.0387	0.0993	-0.3897	A	
29142	2.8984	-0.1975	0.1111	-1.7777	A	
29143	0.6848	-0.1085	0.1198	-0.9057	A	
29144	1.0444	-0.1107	0.1044	-1.0603	A	
29146	10.4147	-0.329	0.1	-3.29	A	
29147	5.7776	-0.2543	0.103	-2.4689	A	
29149	0.0453	0.0258	0.0991	0.2603	A	
29151	1.9196	-0.1424	0.0994	-1.4326	A	
29152	0.0925	-0.0359	0.1007	-0.3565	A	
29364	4.1907	0.2097	0.1002	2.0928	A	
29369	12.843	0.484	0.135	3.5852	BB	White
29406	0.826	0.099	0.109	0.9083	AA	
29422	5.9072	0.2896	0.1144	2.5315	A	
29423	1.6294	0.1481	0.1111	1.333	A	
29755	0.2095	0.052	0.1016	0.5118	A	
31227	0.473	0.1101	0.1445	0.7619	A	
31234	0.0009	-0.0291	0.2137	-0.1362	A	
31237	0.9242	-0.163	0.1567	-1.0402	A	
31238	13.4963	-0.7723	0.2097	-3.6829	B	Black
31239	1.3255	0.1974	0.1573	1.2549	A	
31240	0.0264	0.0475	0.185	0.2568	A	
31241	1.6076	-0.2098	0.1585	-1.3237	A	
31258	0.2117	-0.1031	0.1889	-0.5458	A	
31263	8.4688	0.4086	0.1387	2.9459	A	
31264	0.769	-0.137	0.151	-0.9073	AA	
31265	4.057	0.282	0.137	2.0584	AA	
31272	9.543	-0.638	0.21	-3.0381	BB	Black
31273	0.09	0.055	0.186	0.2957	AA	
31274	0.746	0.122	0.142	0.8592	AA	
31276	0.845	0.143	0.155	0.9226	AA	
31277	0.02	-0.023	0.169	-0.1361	AA	
31296	0	0.0112	0.1559	0.0718	A	
31299	1.2789	-0.1804	0.1508	-1.1963	A	
31339	1.6945	-0.2451	0.1784	-1.3739	A	
31340	10.7509	-0.5956	0.1838	-3.2405	B	Black
31354	1.1562	-0.1728	0.1545	-1.1184	A	
31355	2.9942	-0.2641	0.1471	-1.7954	A	
31357	1.1608	-0.1905	0.162	-1.1759	A	
31358	3.5131	0.3669	0.1874	1.9578	A	
31359	0.0001	0.0134	0.153	0.0876	A	
31360	0.0232	0.0313	0.1407	0.2225	A	
31364	0.0011	-0.0098	0.178	-0.0551	A	
31365	0.0007	-0.0179	0.1654	-0.1082	A	
31366	3.6586	0.3066	0.1542	1.9883	A	
31394	3.59	-0.29	0.1487	-1.9502	A	
31397	6.6687	0.4917	0.184	2.6723	B	White
31399	0.6276	0.1218	0.1439	0.8464	A	
31400	5.4784	-0.4254	0.1794	-2.3712	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
33004	0.011	-0.014	0.135	-0.1037	AA	
33005	0.012	-0.016	0.141	-0.1135	AA	
33805	0.0355	0.0239	0.1	0.239	A	

B.15.c: DIF Analysis for Level V Ethnicity Comparison (Hispanic vs. White)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19862	22.3265	0.1935	0.0408	4.7426	A	
20171	37.2417	-0.3268	0.0534	-6.1199	A	
20177	39.627	0.344	0.055	6.2545	AA	
20219	2.8147	-0.0888	0.0522	-1.7011	A	
20373	20.4993	-0.2108	0.0464	-4.5431	A	
20423	0.1219	0.0156	0.0421	0.3705	A	
20425	2.2614	-0.062	0.0408	-1.5196	A	
20472	8.4907	0.1242	0.0423	2.9362	A	
20479	5.1085	-0.0983	0.0431	-2.2807	A	
20480	3.504	0.107	0.057	1.8772	AA	
20681	32.982	0.336	0.059	5.6949	AA	
20796	4.8066	0.1311	0.0589	2.2258	A	
20806	36.833	0.348	0.058	6	AA	
20817	156.8099	-0.6594	0.053	-12.4415	C	Hispanic
21165	1.7725	-0.0589	0.0435	-1.354	A	
24192	10.592	0.125	0.038	3.2895	AA	
24197	10.3086	0.1343	0.0416	3.2284	A	
24227	0.1698	-0.02	0.046	-0.4348	A	
24234	25.143	0.201	0.04	5.025	AA	
24272	0.209	0.02	0.0418	0.4785	A	
24274	47.4352	-0.3193	0.0463	-6.8963	A	
24278	7.0416	-0.1341	0.0501	-2.6766	A	
24298	0.9147	0.0387	0.0396	0.9773	A	
24299	15.6691	0.1632	0.041	3.9805	A	
24317	26.2081	-0.2412	0.047	-5.1319	A	
24318	9.633	-0.1366	0.0437	-3.1259	A	
24408	3.3549	-0.0942	0.0507	-1.858	A	
24409	1.0981	0.0472	0.0442	1.0679	A	
24413	4.31	0.0986	0.0471	2.0934	A	
24414	34.3809	-0.2693	0.0458	-5.8799	A	
24417	0.9312	0.0418	0.0424	0.9858	A	
24418	25.6049	0.2139	0.0421	5.0808	A	
24443	2.7086	-0.0683	0.041	-1.6659	A	
24506	32.7698	-0.2378	0.0414	-5.744	A	
24507	0.1745	0.019	0.0432	0.4398	A	
24508	1.1254	0.0469	0.0433	1.0831	A	
24509	95.2651	-0.4535	0.0466	-9.7318	B	Hispanic
24738	49.919	0.294	0.042	7	AA	
24989	3.8767	-0.0972	0.0487	-1.9959	A	
24996	7.3098	0.1634	0.0598	2.7324	A	
25021	3.874	0.127	0.065	1.9538	AA	
25022	25.806	-0.418	0.082	-5.0976	AA	
25093	0.0021	0.0036	0.0503	0.0716	A	
25095	4.7127	0.1803	0.0818	2.2042	A	
25102	40.5349	-0.3018	0.0473	-6.3805	A	
25106	17.203	0.157	0.038	4.1316	AA	
25109	9.895	0.186	0.059	3.1525	AA	
25110	5.974	-0.127	0.052	-2.4423	AA	
25115	4.822	0.083	0.038	2.1842	AA	
25116	28.404	0.253	0.048	5.2708	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
25124	68.665	0.556	0.067	8.2985	BB	White
29093	0.1189	0.0153	0.0418	0.366	A	
29094	0.7725	-0.0361	0.0402	-0.898	A	
29095	5.6059	0.1001	0.0419	2.389	A	
29142	2.1358	-0.07	0.0472	-1.4831	A	
29143	1.1813	0.0568	0.051	1.1137	A	
29144	0.9728	0.0453	0.0449	1.0089	A	
29146	14.2736	-0.1579	0.0415	-3.8048	A	
29147	40.7405	-0.2797	0.0437	-6.4005	A	
29149	30.7028	0.2354	0.0423	5.565	A	
29151	28.5337	-0.2257	0.0422	-5.3483	A	
29152	6.9165	0.1123	0.0424	2.6486	A	
29364	51.3379	-0.3009	0.042	-7.1643	A	
29369	0.183	-0.022	0.052	-0.4231	AA	
29406	21.058	0.225	0.049	4.5918	AA	
29422	10.3064	-0.1445	0.0448	-3.2254	A	
29423	0.882	-0.0468	0.0486	-0.963	A	
29755	6.7077	-0.1118	0.0428	-2.6121	A	
31227	6.04	-0.1404	0.0564	-2.4894	A	
31234	0.1411	0.0372	0.0893	0.4166	A	
31237	10.5307	-0.2158	0.066	-3.2697	A	
31238	17.5866	-0.3441	0.0814	-4.2273	A	
31239	10.7776	-0.2032	0.0613	-3.3148	A	
31240	0.2745	0.0455	0.0807	0.5638	A	
31241	0.0463	0.0169	0.0681	0.2482	A	
31258	1.323	0.1024	0.0858	1.1935	A	
31263	83.435	0.5521	0.0604	9.1407	B	White
31264	0.02	-0.008	0.056	-0.1429	AA	
31265	9.469	0.179	0.058	3.0862	AA	
31272	25.244	0.422	0.084	5.0238	AA	
31273	2.169	0.121	0.083	1.4578	AA	
31274	82.749	0.528	0.059	8.9492	BB	White
31276	0.644	-0.053	0.066	-0.803	AA	
31277	0.05	0.017	0.075	0.2267	AA	
31296	16.0929	0.2715	0.067	4.0522	A	
31299	6.2717	-0.1639	0.0647	-2.5332	A	
31339	0.0088	0.0098	0.0749	0.1308	A	
31340	6.3039	-0.1889	0.0741	-2.5493	A	
31354	0.0192	-0.0113	0.0659	-0.1715	A	
31355	9.6201	-0.1873	0.0598	-3.1321	A	
31357	22.225	-0.3117	0.0657	-4.7443	A	
31358	2.4999	0.102	0.0633	1.6114	A	
31359	0.0529	0.0152	0.0586	0.2594	A	
31360	18.1756	-0.2377	0.0554	-4.2906	A	
31364	16.2107	0.3043	0.0751	4.0519	A	
31365	0.1251	0.0281	0.0721	0.3897	A	
31366	0.001	0.0041	0.065	0.0631	A	
31394	1.7768	-0.0873	0.0639	-1.3662	A	
31397	7.8343	0.1823	0.0643	2.8351	A	
31399	20.8485	0.2953	0.0642	4.5997	A	
31400	41.349	-0.5116	0.0796	-6.4271	B	Hispanic
33004	29.711	0.296	0.055	5.3818	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
33005	5.444	-0.139	0.06	-2.3167	AA	
33805	2.207	0.0621	0.0412	1.5073	A	

B.15.d: DIF Analysis for Level V Gender Comparison

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19862	3.3843	-0.0671	0.0361	-1.8587	A	
20171	4.289	0.0973	0.0464	2.097	A	
20177	0.968	-0.046	0.046	-1	AA	
20219	13.3223	-0.1708	0.0464	-3.681	A	
20373	0.0747	0.0121	0.0411	0.2944	A	
20423	56.5031	0.2769	0.037	7.4838	A	
20425	69.6213	0.3059	0.0367	8.3351	A	
20472	6.6739	0.0979	0.0376	2.6037	A	
20479	59.1116	0.2958	0.0385	7.6831	A	
20480	274.68	-0.851	0.052	-16.3654	CC	Female
20681	3.365	-0.089	0.049	-1.8163	AA	
20796	12.1672	-0.1814	0.0517	-3.5087	A	
20806	1.902	-0.068	0.049	-1.3878	AA	
20817	95.6116	0.4422	0.0455	9.7187	B	Male
21165	24.3805	-0.1925	0.0388	-4.9613	A	
24192	303.116	-0.602	0.035	-17.2	BB	Female
24197	0.9136	-0.036	0.037	-0.973	A	
24227	4.1197	-0.0838	0.0408	-2.0539	A	
24234	31.006	0.196	0.035	5.6	AA	
24272	2.8509	0.0633	0.0371	1.7062	A	
24274	27.334	-0.215	0.0409	-5.2567	A	
24278	0.625	0.0352	0.0434	0.8111	A	
24298	1.7489	-0.0468	0.0349	-1.341	A	
24299	2.1079	-0.0534	0.0363	-1.4711	A	
24317	0.1202	0.015	0.0409	0.3667	A	
24318	10.3619	0.1266	0.0391	3.2379	A	
24408	14.4719	0.1728	0.0452	3.823	A	
24409	59.2744	0.2995	0.0391	7.6598	A	
24413	34.3919	0.2407	0.0411	5.8564	A	
24414	2.7728	0.0676	0.0402	1.6816	A	
24417	10.8969	-0.1243	0.0374	-3.3235	A	
24418	1.6559	-0.0481	0.0369	-1.3035	A	
24443	17.541	0.1517	0.036	4.2139	A	
24506	24.4672	0.1824	0.0368	4.9565	A	
24507	27.8124	0.2007	0.038	5.2816	A	
24508	0.3694	0.0239	0.0382	0.6257	A	
24509	15.3734	0.158	0.0401	3.9401	A	
24738	42.029	0.236	0.036	6.5556	AA	
24989	2.4528	-0.0683	0.043	-1.5884	A	
24996	0.2032	0.025	0.0525	0.4762	A	
25021	25.597	0.283	0.056	5.0536	AA	
25022	3.195	0.123	0.069	1.7826	AA	
25093	69.2588	-0.3701	0.0445	-8.3169	A	
25095	23.9967	-0.3676	0.0744	-4.9409	A	
25102	0.7046	0.0355	0.0413	0.8596	A	
25106	64.665	-0.268	0.033	-8.1212	AA	
25109	147.911	-0.641	0.053	-12.0943	CC	Female
25110	197.252	-0.661	0.047	-14.0638	CC	Female
25115	92.051	-0.322	0.034	-9.4706	AA	
25116	21.916	0.191	0.041	4.6585	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
25124	18.065	0.242	0.057	4.2456	AA	
29093	5.2317	-0.0854	0.037	-2.3081	A	
29094	0.6645	0.0296	0.0356	0.8315	A	
29095	12.1219	-0.1292	0.0369	-3.5014	A	
29142	38.7968	-0.2636	0.0422	-6.2464	A	
29143	44.99	-0.3079	0.0458	-6.7227	A	
29144	2.0419	-0.0573	0.0396	-1.447	A	
29146	0.394	0.0238	0.0368	0.6467	A	
29147	2.9053	-0.0667	0.0387	-1.7235	A	
29149	46.5409	-0.2533	0.0371	-6.8275	A	
29151	66.8687	0.3074	0.0376	8.1755	A	
29152	25.7206	0.1905	0.0375	5.08	A	
29364	9.344	-0.1135	0.0369	-3.0759	A	
29369	64.848	-0.371	0.046	-8.0652	AA	
29406	12.048	0.146	0.042	3.4762	AA	
29422	89.1352	0.3796	0.0403	9.4194	A	
29423	16.6898	-0.176	0.0429	-4.1026	A	
29755	0.0646	0.0103	0.0378	0.2725	A	
31227	8.7098	-0.1492	0.0501	-2.978	A	
31234	3.9183	-0.1617	0.0804	-2.0112	A	
31237	54.4089	0.4221	0.0574	7.3537	A	
31238	8.8663	-0.2188	0.0725	-3.0179	A	
31239	12.2202	0.1911	0.0545	3.5064	A	
31240	0.3239	0.0423	0.0702	0.6026	A	
31241	2.2977	0.0926	0.06	1.5433	A	
31258	27.6085	-0.3982	0.0754	-5.2812	A	
31263	4.7063	-0.1153	0.0525	-2.1962	A	
31264	62.529	-0.403	0.051	-7.902	AA	
31265	53.467	-0.371	0.051	-7.2745	AA	
31272	16.127	0.278	0.069	4.029	AA	
31273	0.002	-0.003	0.07	-0.0429	AA	
31274	65.789	0.406	0.05	8.12	AA	
31276	0.24	0.028	0.057	0.4912	AA	
31277	1.06	0.066	0.064	1.0313	AA	
31296	15.5955	-0.2357	0.0592	-3.9814	A	
31299	19.9688	-0.2607	0.0578	-4.5104	A	
31339	19.6989	-0.2988	0.0669	-4.4664	A	
31340	3.2625	-0.1196	0.065	-1.84	A	
31354	1.3903	-0.0706	0.0583	-1.211	A	
31355	73.5388	0.4539	0.0531	8.548	B	Male
31357	0.3871	0.0381	0.0584	0.6524	A	
31358	3.6781	-0.1098	0.0563	-1.9503	A	
31359	2.7634	-0.0872	0.0516	-1.6899	A	
31360	4.0784	-0.1003	0.0491	-2.0428	A	
31364	24.0696	-0.3306	0.0672	-4.9196	A	
31365	1.1801	0.0714	0.0639	1.1174	A	
31366	2.6924	-0.0957	0.0575	-1.6643	A	
31394	2.2097	-0.0856	0.0564	-1.5177	A	
31397	6.648	0.1513	0.058	2.6086	A	
31399	1.1777	-0.062	0.0558	-1.1111	A	
31400	24.7182	-0.3367	0.0674	-4.9955	A	
33004	54.501	0.353	0.048	7.3542	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
33005	9.426	0.162	0.053	3.0566	AA	
33805	9.4022	-0.1124	0.0364	-3.0879	A	

B.15.e: DIF Analysis for Level V Economically Disadvantaged vs. Non-Economically Disadvantaged

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[53]
19862	1.2155	0.0489	0.0434	1.1267	A	
20171	18.0579	0.2442	0.0571	4.2767	A	
20177	29.683	0.305	0.056	5.4464	AA	
20219	0.0776	0.0174	0.0571	0.3047	A	
20373	3.046	-0.0903	0.051	-1.7706	A	
20423	15.1118	-0.1779	0.0455	-3.9099	A	
20425	2.3406	0.0677	0.0437	1.5492	A	
20472	7.1459	-0.123	0.0455	-2.7033	A	
20479	26.087	-0.2389	0.0465	-5.1376	A	
20480	3.22	0.105	0.059	1.7797	AA	
20681	28.802	0.306	0.059	5.1864	AA	
20796	4.9431	0.1455	0.064	2.2734	A	
20806	41.563	0.378	0.059	6.4068	AA	
20817	0.1547	0.0236	0.0562	0.4199	A	
21165	5.8168	-0.1153	0.0472	-2.4428	A	
24192	0.584	-0.031	0.041	-0.7561	AA	
24197	15.9286	-0.18	0.0448	-4.0179	A	
24227	8.3766	-0.1483	0.0506	-2.9308	A	
24234	44.453	0.282	0.042	6.7143	AA	
24272	0.0422	0.01	0.044	0.2273	A	
24274	12.4921	-0.1803	0.0508	-3.5492	A	
24278	15.4571	0.2049	0.0521	3.9328	A	
24298	20.3876	-0.1885	0.0417	-4.5204	A	
24299	0.1439	0.0175	0.0436	0.4014	A	
24317	0.1567	-0.0212	0.0504	-0.4206	A	
24318	0.7875	0.0428	0.0473	0.9049	A	
24408	0.1935	-0.0259	0.0559	-0.4633	A	
24409	10.4148	-0.1533	0.0471	-3.2548	A	
24413	4.0223	0.0999	0.0499	2.002	A	
24414	1.3666	-0.0591	0.0496	-1.1915	A	
24417	4.5586	0.0978	0.0454	2.1542	A	
24418	12.4528	-0.16	0.0451	-3.5477	A	
24443	0.6255	-0.0355	0.0436	-0.8142	A	
24506	0.2455	0.0228	0.0441	0.517	A	
24507	1.578	-0.0587	0.0462	-1.2706	A	
24508	1.3603	0.0552	0.0464	1.1897	A	
24509	0.0436	-0.0115	0.0492	-0.2337	A	
24738	107.362	0.443	0.043	10.3023	BB	EconDis
24989	7.637	-0.1508	0.0541	-2.7874	A	
24996	0.0559	0.0175	0.0652	0.2684	A	
25021	7.903	0.195	0.07	2.7857	AA	
25022	24.067	0.377	0.081	4.6543	AA	
25093	12.2143	0.1858	0.0529	3.5123	A	
25095	1.107	-0.0988	0.0901	-1.0966	A	
25102	10.5139	0.1632	0.0502	3.251	A	

[53] EconDis stands for economically disadvantaged students. Non-ED stands for students without economic disadvantage.

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[53]
25106	2.237	-0.059	0.04	-1.475	AA	
25109	1.759	-0.08	0.06	-1.3333	AA	
25110	2.808	-0.093	0.056	-1.6607	AA	
25115	6.545	-0.102	0.04	-2.55	AA	
25116	27.522	0.255	0.049	5.2041	AA	
25124	3.622	0.136	0.071	1.9155	AA	
29093	5.1707	-0.1031	0.0447	-2.3065	A	
29094	38.1917	-0.2656	0.043	-6.1767	A	
29095	0.2301	0.0225	0.0447	0.5034	A	
29142	4.7776	-0.1171	0.0529	-2.2136	A	
29143	3.7061	-0.1121	0.0575	-1.9496	A	
29144	7.5006	-0.1373	0.0495	-2.7737	A	
29146	8.9991	-0.1328	0.044	-3.0182	A	
29147	14.2421	-0.181	0.0478	-3.7866	A	
29149	3.7072	-0.0876	0.0449	-1.951	A	
29151	6.0568	-0.1118	0.0452	-2.4735	A	
29152	4.0491	-0.0911	0.045	-2.0244	A	
29364	45.2662	0.2997	0.0446	6.7197	A	
29369	0.298	0.03	0.056	0.5357	AA	
29406	16.321	0.207	0.051	4.0588	AA	
29422	33.5522	-0.2796	0.0483	-5.7888	A	
29423	0.1271	0.0199	0.0524	0.3798	A	
29755	7.1344	0.1224	0.0456	2.6842	A	
31227	0.4896	0.0449	0.0615	0.7301	A	
31234	0.0753	-0.0314	0.0973	-0.3227	A	
31237	0.7849	-0.0672	0.0728	-0.9231	A	
31238	3.7042	-0.1788	0.0904	-1.9779	A	
31239	5.1978	-0.1572	0.0683	-2.3016	A	
31240	0.0719	0.0264	0.0854	0.3091	A	
31241	1.8357	-0.1011	0.0725	-1.3945	A	
31258	0.1004	0.0349	0.0954	0.3658	A	
31263	8.9879	-0.1877	0.062	-3.0274	A	
31264	0.01	0.006	0.061	0.0984	AA	
31265	0.03	0.01	0.06	0.1667	AA	
31272	9.721	0.265	0.086	3.0814	AA	
31273	24.096	0.398	0.082	4.8537	AA	
31274	22.7	0.285	0.061	4.6721	AA	
31276	69.408	0.557	0.068	8.1912	BB	EconDis
31277	17.654	0.316	0.076	4.1579	AA	
31296	2.1701	-0.1075	0.0712	-1.5098	A	
31299	1.3339	0.0809	0.068	1.1897	A	
31339	0.263	-0.0447	0.0808	-0.5532	A	
31340	1.8916	-0.1185	0.0839	-1.4124	A	
31354	0.1331	-0.0298	0.0741	-0.4022	A	
31355	7.8576	-0.1888	0.0667	-2.8306	A	
31357	0.1919	0.0352	0.0738	0.477	A	
31358	0.0774	-0.021	0.0672	-0.3125	A	
31359	0.0012	0.0042	0.0625	0.0672	A	
31360	1.1148	0.0649	0.06	1.0817	A	
31364	0.3808	-0.0534	0.0813	-0.6568	A	
31365	1.1399	-0.0861	0.078	-1.1038	A	
31366	1.067	-0.0732	0.0687	-1.0655	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[53]
31394	0.3086	0.0393	0.0666	0.5901	A	
31397	0.4371	0.0487	0.0699	0.6967	A	
31399	1.3672	-0.0791	0.0655	-1.2076	A	
31400	0.1299	-0.0346	0.0857	-0.4037	A	
33004	11.496	0.199	0.059	3.3729	AA	
33005	10.496	0.2	0.062	3.2258	AA	
33805	1.3432	-0.0517	0.0436	-1.1858	A	

B.15.f: DIF Analysis for Level V Native Language Comparison (Arabic vs. Spanish)

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
19862	15.6459	-0.2202	0.0553	-3.9819	A	
20171	32.1515	0.3966	0.0698	5.6819	A	
20177	15.392	-0.295	0.076	-3.8816	AA	
20219	5.2897	0.1639	0.07	2.3414	A	
20373	9.7372	0.1954	0.0622	3.1415	A	
20423	0.1259	0.0215	0.0562	0.3826	A	
20425	0	-0.0015	0.0552	-0.0272	A	
20472	2.6221	-0.0945	0.0573	-1.6492	A	
20479	18.5173	0.2515	0.058	4.3362	A	
20480	34.27	-0.437	0.075	-5.8267	BB	Arabic
20681	21.572	-0.373	0.082	-4.5488	AA	
20796	4.2436	-0.164	0.0781	-2.0999	A	
20806	22.24	-0.373	0.08	-4.6625	AA	
20817	95.6251	0.6709	0.069	9.7232	C	Spanish
21165	2.9599	0.1018	0.0582	1.7491	A	
24192	15.081	-0.203	0.052	-3.9038	AA	
24197	8.6658	-0.1664	0.0561	-2.9661	A	
24227	8.8002	0.1849	0.0618	2.9919	A	
24234	42.245	-0.355	0.055	-6.4545	AA	
24272	1.0112	0.0585	0.0565	1.0354	A	
24274	32.5176	0.3476	0.0608	5.7171	A	
24278	0.2823	-0.0382	0.0675	-0.5659	A	
24298	3.2721	0.0983	0.0535	1.8374	A	
24299	3.1178	-0.0998	0.0557	-1.7917	A	
24317	33.1074	0.3594	0.0621	5.7874	A	
24318	25.8828	0.3008	0.0588	5.1156	A	
24408	0.3065	0.0401	0.0681	0.5888	A	
24409	0.0522	-0.0152	0.0588	-0.2585	A	
24413	5.3548	-0.1465	0.0626	-2.3403	A	
24414	22.4447	0.2883	0.0605	4.7653	A	
24417	2.9078	-0.0996	0.0575	-1.7322	A	
24418	12.4069	-0.2006	0.0564	-3.5567	A	
24443	1.0971	0.059	0.0549	1.0747	A	
24506	43.0812	0.3684	0.056	6.5786	A	
24507	0.9149	-0.0578	0.0586	-0.9863	A	
24508	4.2217	-0.1236	0.0593	-2.0843	A	
24509	72.8634	0.5187	0.0611	8.4894	B	Spanish
24738	90.873	-0.546	0.058	-9.4138	BB	Arabic
24989	2.1512	0.0982	0.0654	1.5015	A	
24996	0.0115	-0.0127	0.0847	-0.1499	A	
25021	4.718	-0.208	0.097	-2.1443	AA	
25022	52.611	0.733	0.102	7.1863	CC	Spanish
25093	2.0144	-0.0993	0.0682	-1.456	A	
25095	12.2695	-0.3755	0.1068	-3.5159	A	
25102	38.876	0.3923	0.0626	6.2668	A	
25106	11.722	-0.173	0.05	-3.46	AA	
25109	46.003	-0.524	0.077	-6.8052	BB	Arabic
25110	3.762	0.142	0.072	1.9722	AA	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
25115	41.366	-0.331	0.051	-6.4902	AA	
25116	14.002	-0.243	0.066	-3.6818	AA	
25124	32.316	-0.557	0.1	-5.57	BB	Arabic
29093	1.8302	-0.0776	0.0562	-1.3808	A	
29094	0.5271	0.041	0.0543	0.7551	A	
29095	1.5025	-0.0707	0.0563	-1.2558	A	
29142	1.3616	0.074	0.062	1.1935	A	
29143	4.0117	-0.1358	0.0668	-2.0329	A	
29144	0.0127	-0.0085	0.0597	-0.1424	A	
29146	13.0436	0.2035	0.0559	3.6404	A	
29147	38.9878	0.3623	0.0581	6.2358	A	
29149	18.2921	-0.2433	0.0567	-4.291	A	
29151	23.9684	0.275	0.0561	4.902	A	
29152	5.4878	-0.1331	0.0564	-2.3599	A	
29364	32.643	0.3249	0.0568	5.7201	A	
29369	2.707	-0.122	0.073	-1.6712	AA	
29406	16.604	-0.276	0.068	-4.0588	AA	
29422	15.9939	0.2445	0.0607	4.028	A	
29423	9.7847	0.2022	0.0639	3.1643	A	
29755	4.4443	0.1224	0.0572	2.1399	A	
31227	4.8565	0.1787	0.0796	2.245	A	
31234	0.4034	-0.0769	0.1125	-0.6836	A	
31237	20.5308	0.4174	0.0915	4.5617	A	
31238	16.2671	0.4103	0.1009	4.0664	A	
31239	10.0513	0.274	0.0851	3.2197	A	
31240	0.5458	-0.079	0.1007	-0.7845	A	
31241	0.0052	0.0101	0.0874	0.1156	A	
31258	0.1109	0.0455	0.1164	0.3909	A	
31263	73.026	-0.6776	0.0795	-8.5233	C	Arabic
31264	10.523	0.257	0.079	3.2532	AA	
31265	16.465	-0.309	0.076	-4.0658	AA	
31272	30.964	-0.679	0.127	-5.3465	CC	Arabic
31273	0.197	0.047	0.106	0.4434	AA	
31274	146.459	-1.009	0.088	-11.4659	CC	Arabic
31276	1.533	-0.107	0.086	-1.2442	AA	
31277	0.173	-0.041	0.099	-0.4141	AA	
31296	21.8953	-0.4183	0.0886	-4.7212	A	
31299	0.0027	0.0079	0.0844	0.0936	A	
31339	0.1527	-0.0422	0.0963	-0.4382	A	
31340	1.9226	0.1427	0.0993	1.4371	A	
31354	2.6477	0.1538	0.0922	1.6681	A	
31355	8.0054	0.24	0.0838	2.864	A	
31357	10.0291	0.292	0.091	3.2088	A	
31358	0.7975	-0.0828	0.0885	-0.9356	A	
31359	0.0099	-0.0113	0.0806	-0.1402	A	
31360	7.5702	0.2163	0.0777	2.7838	A	
31364	22.4913	-0.4809	0.1004	-4.7898	B	Arabic
31365	1.4355	-0.1153	0.0929	-1.2411	A	
31366	0.7349	-0.0764	0.0845	-0.9041	A	
31394	5.3107	0.1931	0.0825	2.3406	A	
31397	0.923	-0.0868	0.0865	-1.0035	A	
31399	25.2612	-0.4234	0.0836	-5.0646	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group
31400	37.514	0.6542	0.1073	6.0969	C	Spanish
33004	51.388	-0.551	0.08	-6.8875	BB	Arabic
33005	9.464	0.239	0.078	3.0641	AA	
33805	0.5805	-0.0441	0.0558	-0.7903	A	

B.15.g: DIF Analysis for Level V Disabled vs. Non-Disabled

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[54]
19862	4.1051	-0.1227	0.0596	-2.0587	A	
20171	1.6661	-0.0881	0.0671	-1.313	A	
20177	72.967	-0.606	0.072	-8.4167	BB	Disabled
20219	0.1666	0.0296	0.0673	0.4398	A	
20373	0.3262	0.0376	0.062	0.6065	A	
20423	0.5645	0.0462	0.0587	0.7871	A	
20425	20.6185	-0.2714	0.0595	-4.5613	A	
20472	21.9739	0.2912	0.062	4.6968	A	
20479	7.1983	0.167	0.0617	2.7066	A	
20480	56.023	0.619	0.082	7.5488	BB	Non-Dis
20681	12.811	-0.267	0.075	-3.56	AA	
20796	0.4867	0.0539	0.0733	0.7353	A	
20806	46.317	-0.49	0.074	-6.6216	BB	Disabled
20817	4.7566	-0.1476	0.0664	-2.2229	A	
21165	9.5313	0.1923	0.0624	3.0817	A	
24192	61.397	0.452	0.058	7.7931	BB	Non-Dis
24197	0.1227	0.0232	0.0604	0.3841	A	
24227	19.6112	0.28	0.0629	4.4515	A	
24234	32.702	-0.321	0.056	-5.7321	AA	
24272	1.168	-0.0692	0.062	-1.1161	A	
24274	5.3829	0.1451	0.0617	2.3517	A	
24278	13.8389	-0.2517	0.0679	-3.7069	A	
24298	9.3561	0.1804	0.0584	3.089	A	
24299	0.9152	0.0583	0.059	0.9881	A	
24317	0.2047	-0.0311	0.0636	-0.489	A	
24318	27.6207	-0.3217	0.061	-5.2738	A	
24408	0.0635	0.019	0.0661	0.2874	A	
24409	23.9295	0.325	0.0656	4.9543	A	
24413	3.8173	0.1243	0.0623	1.9952	A	
24414	1.6815	0.0809	0.0609	1.3284	A	
24417	6.8603	-0.1573	0.0593	-2.6526	A	
24418	7.0601	0.159	0.0589	2.6995	A	
24443	5.2987	-0.137	0.0587	-2.3339	A	
24506	0.0002	0.0009	0.0596	0.0151	A	
24507	6.3712	0.1532	0.0596	2.5705	A	
24508	6.69	0.158	0.06	2.6333	A	
24509	0.4785	-0.0458	0.0627	-0.7305	A	
24738	104.845	-0.606	0.06	-10.1	BB	Disabled
24989	0.549	-0.0498	0.0646	-0.7709	A	
24996	13.3882	0.3079	0.0828	3.7186	A	
25021	5.883	-0.208	0.087	-2.3908	AA	
25022	58.707	-0.849	0.113	-7.5133	CC	Disabled
25093	14.4294	-0.2619	0.0687	-3.8122	A	
25095	30.2096	0.5597	0.1	5.597	B	Non-Dis
25102	71.9608	-0.5621	0.0661	-8.5038	B	Disabled
25106	47.374	0.397	0.057	6.9649	AA	
25109	22.722	0.414	0.086	4.814	AA	

[54] Non-Dis stands for non-disabled students.

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[54]
25110	56.976	0.599	0.081	7.3951	BB	Non-Dis
25115	91.826	0.532	0.056	9.5	BB	Non-Dis
25116	0.037	0.012	0.062	0.1935	AA	
25124	13.358	-0.319	0.089	-3.5843	AA	
29093	0.5099	0.0452	0.0608	0.7434	A	
29094	2.4215	0.092	0.0579	1.5889	A	
29095	1.009	0.0605	0.0588	1.0289	A	
29142	18.9337	0.2747	0.0619	4.4378	A	
29143	19.7046	0.293	0.0651	4.5008	A	
29144	2.9568	0.1066	0.0605	1.762	A	
29146	0.2595	-0.0333	0.0615	-0.5415	A	
29147	5.2933	0.139	0.0595	2.3361	A	
29149	23.2081	0.2954	0.061	4.8426	A	
29151	0.0878	0.0193	0.0593	0.3255	A	
29152	0.4198	0.0413	0.0609	0.6782	A	
29364	21.0676	-0.2711	0.0592	-4.5794	A	
29369	29.639	0.418	0.077	5.4286	AA	
29406	53.346	-0.474	0.066	-7.1818	BB	Disabled
29422	11.5487	0.2228	0.0649	3.433	A	
29423	2.5572	-0.1036	0.064	-1.6188	A	
29755	0.1624	-0.0257	0.0596	-0.4312	A	
31227	1.8046	-0.1111	0.0809	-1.3733	A	
31234	0.0004	0.0046	0.1188	0.0387	A	
31237	2.0294	-0.1309	0.0894	-1.4642	A	
31238	1.6134	-0.1345	0.1028	-1.3084	A	
31239	0.0719	0.0267	0.0855	0.3123	A	
31240	0.1893	0.05	0.1011	0.4946	A	
31241	19.4394	0.3917	0.0891	4.3962	A	
31258	42.105	0.637	0.0987	6.4539	B	Non-Dis
31263	93.3869	0.8549	0.0899	9.5095	C	Non-Dis
31264	27.242	0.519	0.1	5.19	BB	Non-Dis
31265	18.691	0.379	0.085	4.4588	AA	
31272	24.377	-0.544	0.112	-4.8571	BB	Disabled
31273	29.832	-0.591	0.109	-5.422	BB	Disabled
31274	65.986	-0.683	0.086	-7.9419	CC	Disabled
31276	49.882	-0.649	0.093	-6.9785	CC	Disabled
31277	39.908	-0.622	0.101	-6.1584	BB	Disabled
31296	0	0.0044	0.0907	0.0485	A	
31299	0.0001	-0.0032	0.0901	-0.0355	A	
31339	1.1225	0.1057	0.0961	1.0999	A	
31340	1.7244	0.1277	0.0942	1.3556	A	
31354	13.0903	0.316	0.0865	3.6532	A	
31355	1.1192	0.0908	0.0825	1.1006	A	
31357	2.713	0.1502	0.0886	1.6953	A	
31358	0.0552	0.0284	0.1001	0.2837	A	
31359	0.5553	0.0707	0.0898	0.7873	A	
31360	28.5672	-0.44	0.0822	-5.3528	B	Disabled
31364	9.3401	0.2884	0.0936	3.0812	A	
31365	5.972	0.228	0.0919	2.481	A	
31366	1.7068	0.1183	0.0883	1.3398	A	
31394	0.3947	-0.0592	0.0882	-0.6712	A	
31397	0.5551	-0.0791	0.0989	-0.7998	A	

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[54]
31399	14.0149	0.3635	0.097	3.7474	A	
31400	2.2263	0.1507	0.097	1.5536	A	
33004	30.17	-0.428	0.079	-5.4177	BB	Disabled
33005	1.952	-0.116	0.082	-1.4146	AA	
33805	0.0261	0.0117	0.0611	0.1915	A	

B.15.h: DIF Analysis for Level V Accommodated vs. Non-Accommodated

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[55]
19862						
20171						
20177	0.008	-0.025	0.324	-0.0772	AA	
20219						
20373						
20423	2.8534	0.1172	0.0676	1.7337	A	
20425	3.8728	0.1292	0.065	1.9877	A	
20472						
20479						
20480						
20681	0.021	0.045	0.338	0.1331	AA	
20796	3.9151	0.1901	0.0946	2.0095	A	
20806	0.046	-0.076	0.355	-0.2141	AA	
20817						
21165						
24192						
24197	0.8625	0.0628	0.066	0.9515	A	
24227						
24234	1.534	-0.331	0.281	-1.1779	AA	
24272	1.0797	-0.0708	0.066	-1.0727	A	
24274	0.7878	-0.0727	0.0775	-0.9381	A	
24278	3.9112	0.1572	0.0783	2.0077	A	
24298						
24299						
24317						
24318						
24408						
24409						
24413						
24414	0.8096	-0.0704	0.0753	-0.9349	A	
24417						
24418						
24443	10.1318	0.2082	0.0646	3.2229	A	
24506	27.2464	-0.3584	0.068	-5.2706	A	
24507	2.7553	-0.122	0.0713	-1.7111	A	
24508	1.9791	0.1001	0.0694	1.4424	A	
24509	9.2977	-0.2393	0.0776	-3.0838	A	
24738	0.638	-0.228	0.293	-0.7782	AA	
24989	4.8508	0.1787	0.0789	2.2649	A	
24996						
25021						
25022						
25093						
25095						
25102						
25106						
25109						

[55] Accom stands for students with standard accommodations. Non-Accom stands for students without standard accommodations.

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[55]
25110						
25115						
25116	0.483	0.209	0.304	0.6875	AA	
25124						
29093	5.4115	-0.158	0.0669	-2.3617	A	
29094	8.6303	0.1917	0.0646	2.9675	A	
29095	1.75	0.0907	0.0669	1.3558	A	
29142						
29143						
29144						
29146						
29147						
29149						
29151						
29152						
29364						
29369						
29406	1.778	-0.438	0.338	-1.2959	AA	
29422	1.4008	-0.0919	0.0741	-1.2402	A	
29423	0.4375	-0.0547	0.0792	-0.6907	A	
29755	0.2111	0.0332	0.068	0.4882	A	
31227	0.4778	-0.054	0.0743	-0.7268	A	
31234	0.1226	-0.1181	0.2476	-0.477	A	
31237	2.2819	-0.1426	0.0913	-1.5619	A	
31238	5.3244	0.4935	0.2073	2.3806	B	Non-Accom
31239						
31240						
31241						
31258						
31263						
31264						
31265						
31272						
31273						
31274						
31276						
31277						
31296	0.6483	0.1725	0.1941	0.8887	A	
31299	0.0572	-0.0629	0.1914	-0.3286	A	
31339	0.01	0.0432	0.2095	0.2062	A	
31340	66.8782	0.7371	0.092	8.012	C	Non-Accom
31354	30.0403	0.4778	0.0872	5.4794	B	Non-Accom
31355	0.5271	0.0619	0.0804	0.7699	A	
31357	17.9534	0.3682	0.0873	4.2176	A	
31358						
31359						
31360						
31364						
31365						
31366						
31394	0.0037	-0.029	0.1882	-0.1541	A	
31397						

Item ID	Mantel Chi-Square	Mantel-Haenszel/Liu-Agresti Log-Odds Ratio	Log-Odds Ratio SE	Standardized Log-Odds Ratio	DIF Flag	Favored Group[55]
31399						
31400						
33004						
33005						
33805						

APPENDIX C: READER AGREEMENT AND SCORE POINT DISTRIBUTION SUMMARY

C.1: Operational Items

Item ID	Item Name	Prompt Type	Reader Agreement %			Score Point Distribution %					Invalid Code %						
			Exact	Adjacent	Non-Adjacent	0	1	2	3	4	C	I	B	A	P	N	R
Level I																	
24500	lowercase f	LW-A	97	3	0	35	64	**NA**	**NA**	**NA**	2						
28524	Uppercase G	LW-A	96	4	0	47	51	**NA**	**NA**	**NA**	2						
28526	Uppercase E	LW-A	99	1	0	42	56	**NA**	**NA**	**NA**	2						
19975	"Jar"	WW- A	95	5	0	22	35	41	**NA**	**NA**	2						
19989	Running Girl	SW- V	89	11	0	66	25	6	**NA**	**NA**	3	1					
28521	"See"	WW- A	96	4	0	21	21	56	**NA**	**NA**	1						
28522	"Cut"	WW- A	97	3	0	41	27	28	**NA**	**NA**	3						
28523	A Red Hat	PD	92	8	0	37	29	31	**NA**	**NA**	2						
Level II																	
20122	"Table"	WW- A	94	6	0	24	33	42	**NA**	**NA**	1						
20244	Snack Time	SW-V	82	18	0	19	40	39	**NA**	**NA**	1						
24856	"Walk"	WW- A	95	5	0	25	25	49	**NA**	**NA**	1						
29030	Feed Ducks	SD	86	14	0	26	41	32	**NA**	**NA**	1				**NA**		
20859	Share Report	ER	81	19	0	5	18	45	22	8	1						
Level III																	
20553	Chung	SW- T	81	19	0	38	46	15	**NA**	**NA**	1						
24937	Jafet	SW- T	80	20	0	37	37	23	**NA**	**NA**	1						
20206	Favorite Season	PW	81	19	0	1	9	53	26	7	1			1	1		
24525	Game Directions	ER	81	19	0	2	17	49	22	6	2						
Level IV																	
20793	Min	SCo	86	14	0	44	25	29	**NA**	**NA**	1						
25059	Museum	SCo	85	15	0	47	44	8	**NA**	**NA**	1						
24733	Leader you Admire	PW	80	20	0	3	14	46	26	8	2				1		
25063	Trip	ER	80	20	0	2	11	51	25	8	2				1		
Level V																	
25106	Cartoons	SCo	82	18	0	37	37	24	**NA**	**NA**	2						
24192	Driving Phone	PW	80	20	0	1	11	46	28	10	2				1		
25115	Space Exploration	ER	80	20	0	5	16	42	22	9	3				1		

Note: 1. Prompt Type: LW = Letter Writing, WW = Word Writing, SW = Sentence Writing, PD = Phrase Dictation, PW = Paragraph Writing, ER = Extended Response, SCo = Sentence Combination, SD = Sentence Dictation, A = Aural Stimulus V = Visual Stimulus, T = Textual Stimulus

2. Invalid Codes: C=Blank, I=Illegible, B=Only in foreign language, A=Off topic, off task, or not appropriate to prompt, P=Copy of prompt, N=Incomprehensible, R=refusal to respond.

3. Due to rounding and invalid codes, the score point distribution may not add up to 100%. Also, blank cells do not mean the invalid code was never given, but rather the percentage was less than 0.5%.

C.2: Field Test Items

Item ID	Item Name	Prompt Type	Reader Agreement %			Score Point Distribution %					Invalid Code %						
			Exact	Adjacent	Non-Adjacent	0	1	2	3	4	C	I	B	A	P	N	R
Level I																	
33107	"R"	LW-A	98	2	0	29	69	**NA**	**NA**	**NA**	2						
28504	"cap"	WW-A	95	5	0	37	19	41	**NA**	**NA**	3						
28505	"good"	WW-A	95	5	0	47	32	18	**NA**	**NA**	4						
28506	"Run"	WW-A	95	5	0	38	16	42	**NA**	**NA**	3						
28507	"Bed"	WW-A	96	4	0	53	10	34	**NA**	**NA**	3	1					
Level II																	
24854	"Snap"	WW-A	94	6	0	27	6	66	**NA**	**NA**	1						
31100	Mom, Brave	SD	83	17	0	43	35	21	**NA**	**NA**	1				**NA**		
31102	Math Games	SD	87	13	0	35	36	27	**NA**	**NA**	2				**NA**		
31551	"Time"	WW-A	97	3	0	21	4	74	**NA**	**NA**	1						
31103	100 Days!	ER	80	20	0	9	21	46	17	4	2		1				
31104	Rainy Day	ER	81	19	0	5	13	49	25	6	1						
Level III																	
25145	Gabriella & Grandmother	SWT	85	15	0	41	41	16	**NA**	**NA**	1						
29096	Julia	SWT	85	15	0	32	39	27	**NA**	**NA**	1						
24917	Fun Activity	ER	80	20	0	4	22	50	17	4	2				1		
31349	Grows	PW	81	19	0	5	24	48	16	3	2				1		
31350	Special Visitor	PW	81	19	0	5	23	49	16	3	2			1	1		
31351	Make Something	ER	79	21	0	5	19	54	15	4	3				1		
Level IV																	
29387	Janie	SCo	82	18	0	56	34	9	**NA**	**NA**	1						
31060	Bus Driver	SCo	85	15	0	41	34	23	**NA**	**NA**	1						
25065	Speech	ER	80	20	0	4	18	51	19	3	4				1		
31076	Indoors vs Outdoors	PW	81	19	0	5	19	54	17	3	1				1		
31079	Attend Event	PW	82	18	0	3	14	55	22	3	2			1	1		
31080	Courage	ER	81	19	0	11	21	44	16	3	3			1	2		1
Level V																	
31264	Committee	SCo	85	15	0	59	30	8	**NA**	**NA**	2						
31265	Hotel Reservations	SCo	83	17	0	39	41	17	**NA**	**NA**	2						
20480	Traditions	ER	84	16	0	3	9	39	30	11	5				1		
25109	Backpacks	PW	81	19	0	3	11	48	27	6	3				1		
25110	Advice	PW	81	19	0	3	11	49	26	7	2				1		
29369	Salaries	ER	81	19	0	8	18	46	18	4	4			1	2		1

Note: 1. Prompt Type: LW = Letter Writing, WW = Word Writing, SW = Sentence Writing, PD = Phrase Dictation, PW = Paragraph Writing, ER = Extended Response, SCo = Sentence Combination, SD = Sentence Dictation, A = Aural Stimulus V = Visual Stimulus, T = Textual Stimulus

2. Invalid Codes: C=Blank, I=Illegible, B=Only in foreign language, A=Off topic, off task, or not appropriate to prompt, P=Copy of prompt, N=Incomprehensible, R=refusal to respond.

3. Due to rounding and invalid codes, the score point distribution may not add up to 100%. Also, blank cells do not mean the invalid code was never given, but rather the percentage was less than 0.5%.

APPENDIX D: IRT STATISTICS

D.1: Level I Items

Item ID	Type	N-Count	Rasch Difficulty	SE of Rasch Difficulty	INFIT	OUTFIT	Step 1 Value	SE of Step 1 Value	Step 2 Value	SE of Step 2 Value	Step 3 Value	SE of Step 3 Value	Step 4 Value	SE of Step 4 Value
19940	OP	10299	-1.3987	0.0155	0.93	0.94	-0.4776	0.0286	0.4776	0.0226				
19963	OP	10299	-1.6832	0.0233	1.00	1.10								
19975	OP	10299	-1.0795	0.0150	1.07	1.10	-0.4538	0.0261	0.4538	0.0232				
19989	OP	10299	1.1221	0.0197	0.90	0.78	-0.6739	0.0241	0.6739	0.0476				
20192	OP	10299	-1.0450	0.0099	1.19	1.29	-0.1950	0.0324	-0.8121	0.0280	0.5434	0.0253	0.4637	0.0264
20287	OP	10299	-0.7566	0.0218	1.35	1.51								
20291	OP	10299	-1.0801	0.0220	1.02	1.03								
20504	OP	10299	0.0987	0.0229	1.22	1.40								
20506	OP	10299	-1.2753	0.0222	1.17	1.26								
20510	OP	10299	-0.4992	0.0218	1.11	1.15								
20512	OP	10299	-0.4473	0.0219	1.06	1.09								
20514	OP	10299	-1.1027	0.0220	0.94	0.92								
20535	OP	10299	-0.8855	0.0218	1.09	1.09								
20670	OP	10299	-1.0988	0.0220	0.90	0.87								
20677	OP	10299	-0.2516	0.0221	1.15	1.23								
20695	OP	10299	-0.8764	0.0218	0.89	0.84								
20755	OP	10299	-2.2622	0.0182	0.81	0.73	-0.4211	0.0408	0.4211	0.0237				
20834	OP	10299	-0.8702	0.0218	1.05	1.06								
21174	OP	10299	-2.2274	0.0180	0.87	0.86	-0.4720	0.0403	0.4720	0.0235				
24245	OP	10299	-1.2667	0.0222	0.94	0.90								
24247	OP	10299	-0.4885	0.0219	0.86	0.83								
24257	OP	10299	-1.2055	0.0221	1.17	1.31								
24259	OP	10299	-0.8992	0.0218	0.97	0.97								
24261	OP	10299	-1.0722	0.0219	0.98	0.97								
24262	OP	10299	-3.1602	0.0333	0.89	0.63								
24264	OP	10299	-0.5507	0.0218	0.98	1.01								
24449	OP	10299	-1.1409	0.0220	1.05	1.04								
24450	OP	10299	-1.8145	0.0238	1.20	1.18								
24451	OP	10299	-1.4506	0.0226	1.10	1.14								
24452	OP	10299	-1.0766	0.0219	1.03	1.02								
24463	OP	10299	-0.3042	0.0108	1.13	1.10	-1.1033	0.0276	-0.5350	0.0246	0.2830	0.0272	1.3552	0.0392
24468	OP	10299	-0.6709	0.0218	0.92	0.90								
24498	OP	10299	-1.0756	0.0219	0.87	0.81								
24500	OP	10299	-1.5400	0.0228	1.06	1.11								

Item ID	Type	N-Count	Rasch Difficulty	SE of Rasch Difficulty	INFIT	OUTFIT	Step 1 Value	SE of Step 1 Value	Step 2 Value	SE of Step 2 Value	Step 3 Value	SE of Step 3 Value	Step 4 Value	SE of Step 4 Value
24505	OP	10299	-2.0596	0.0248	1.05	1.04								
24545	OP	10299	-0.4798	0.0219	1.13	1.17								
24547	OP	10299	-1.0912	0.0220	0.86	0.81								
24660	OP	10299	-1.9978	0.0245	0.77	0.70								
24673	OP	10299	-2.0703	0.0249	1.01	0.95								
24683	OP	10299	-1.8339	0.0238	1.15	1.17								
24692	OP	10299	-1.4952	0.0227	1.02	0.96								
24751	OP	10299	-1.1061	0.0113	0.99	0.99	-0.9002	0.0399	-0.8840	0.0295	0.0149	0.0240	1.7693	0.0295
25279	FT	5130	-0.5491	0.0152	0.92	0.91	-1.1069	0.0437	-0.6550	0.0352	0.3741	0.0360	1.3878	0.0501
26807	FT	5130	-1.2732	0.0162	0.87	0.90	-0.6471	0.0626	-1.0886	0.0461	0.0983	0.0339	1.6375	0.0385
28477	FT	5130	-1.5332	0.0324	1.20	1.28								
28478	FT	5169	-2.4146	0.0377	0.88	0.69								
28480	FT	5130	-0.7936	0.0307	1.02	1.03								
28487	FT	5169	-0.4693	0.0147	0.99	0.96	-0.8373	0.0399	-0.6743	0.0352	0.3253	0.0368	1.1863	0.0500
28492	FT	5169	-0.8323	0.0132	1.19	1.26	-0.0383	0.0403	-0.5364	0.0377	0.6051	0.0372	-0.0305	0.0384
28504	FT	5130	-0.7148	0.0192	0.97	0.99	0.4264	0.0338	-0.4264	0.0338				
28505	FT	5169	0.0167	0.0219	0.86	0.83	-0.4082	0.0318	0.4082	0.0413				
28506	FT	5130	-0.7266	0.0190	1.01	1.07	0.5971	0.0339	-0.5971	0.0338				
28507	FT	5169	-0.3398	0.0189	1.10	1.19	1.2368	0.0343	-1.2368	0.0360				
28514	OP	10299	-2.3253	0.0263	0.98	0.93								
28516	OP	10299	-2.5036	0.0274	0.82	0.68								
28519	OP	10299	-1.6713	0.0232	0.88	0.78								
28521	OP	10299	-1.3968	0.0145	0.98	0.98	0.2259	0.0273	-0.2259	0.0233				
28522	OP	10299	-0.2550	0.0149	1.07	1.03	-0.2580	0.0229	0.2580	0.0267				
28523	OP	10299	-0.4685	0.0146	0.81	0.76	-0.2485	0.0233	0.2485	0.0253				
28524	OP	10299	-0.7613	0.0218	1.07	1.08								
28526	OP	10299	-1.0213	0.0219	1.05	1.07								
28604	OP	10299	-1.0199	0.0219	0.91	0.88								
31040	FT	5169	-2.4576	0.0381	0.97	0.81								
31065	FT	5130	-2.2682	0.0370	0.90	0.79								
31165	FT	5130	-3.1924	0.0483	0.90	0.67								
31167	FT	5169	-4.1177	0.0665	0.94	0.58								
31175	FT	5169	-1.4614	0.0318	0.96	0.91								
31189	FT	5130	-0.6478	0.0307	1.14	1.20								
31190	FT	5169	-0.8819	0.0306	1.11	1.12								
31196	FT	5130	-4.1267	0.0689	0.93	0.68								
31197	FT	5169	-3.7823	0.0582	0.99	0.97								
31205	FT	5169	-2.1147	0.0246	0.84	0.79	-0.3911	0.0529	0.3911	0.0329				
31206	FT	5130	-1.6102	0.0227	0.86	0.91	-0.5112	0.0445	0.5112	0.0317				
31214	FT	5130	-2.2652	0.0260	0.81	0.73	-0.3685	0.0589	0.3685	0.0339				

Item ID	Type	N-Count	Rasch Difficulty	SE of Rasch Difficulty	INFIT	OUTFIT	Step 1 Value	SE of Step 1 Value	Step 2 Value	SE of Step 2 Value	Step 3 Value	SE of Step 3 Value	Step 4 Value	SE of Step 4 Value
31216	FT	5169	-2.3597	0.0262	0.82	0.79	-0.3550	0.0595	0.3550	0.0341				
31222	FT	5130	-1.4133	0.0146	0.99	1.07	-0.1562	0.0564	-0.8750	0.0452	0.7289	0.0358	0.3023	0.0345
31232	FT	5169	0.0895	0.0322	0.90	0.92								
31233	FT	5130	-1.0640	0.0310	1.16	1.17								
31235	FT	10299	-0.1958	0.0221	1.19	1.31								
31246	FT	5169	-1.0759	0.0155	0.93	0.93	-0.8190	0.0536	-0.8553	0.0408	0.0604	0.0338	1.6138	0.0412
31248	FT	5130	-0.6675	0.0307	1.12	1.15								
31249	FT	10299	-0.6788	0.0217	1.01	1.02								
31250	FT	5130	-0.8700	0.0307	1.15	1.22								
31251	FT	5169	-0.7854	0.0306	0.99	1.03								
31252	FT	5169	-0.0936	0.0316	1.15	1.21								
31253	FT	10299	-1.1706	0.0220	0.95	0.93								
31254	FT	5130	-0.5715	0.0307	1.09	1.13								
31255	FT	5169	-1.7859	0.0332	0.89	0.82								
31256	FT	5169	-0.6338	0.0306	1.16	1.22								
31477	FT	5130	-3.1328	0.0474	0.97	0.75								
31485	FT	5169	-1.7618	0.0331	0.88	0.81								
31497	FT	5169	0.4295	0.0339	1.03	1.14								
33064	FT	5130	-1.1169	0.0311	0.95	0.91								
33065	FT	5169	-1.4000	0.0316	0.90	0.84								
33101	FT	5130	0.1381	0.0324	1.09	1.21								
33107	FT	10299	-1.6887	0.0233	0.99	0.98								
33126	FT	5130	-0.1115	0.0315	1.21	1.32								

D.2: Level II Items

Item ID	Type	N-Count	Rasch Difficulty	SE of Rasch Difficulty	INFIT	OUTFIT	Step 1 Value	SE of Step 1 Value	Step 2 Value	SE of Step 2 Value	Step 3 Value	SE of Step 3 Value	Step 4 Value	SE of Step 4 Value
19819	OP	17855	-0.3198	0.0131	0.99	0.99	-0.9008	0.0261	0.9008	0.0173				
19937	OP	17855	-0.6370	0.0191	1.02	1.05								
19985	OP	17855	-1.1010	0.0211	1.14	1.41								
20009	OP	17855	0.4992	0.0169	1.11	1.14								
20120	OP	17855	0.0402	0.0125	0.94	0.94	-0.8300	0.0227	0.8300	0.0175				
20122	OP	17855	0.3771	0.0115	0.98	1.01	-0.3100	0.0199	0.3100	0.0180				
20244	OP	17855	0.2570	0.0122	0.89	0.90	-0.7886	0.0212	0.7886	0.0178				
20271	FT	8912	1.4262	0.0245	1.34	1.63								
20397	FT	8912	0.4544	0.0237	1.23	1.32								
20398	OP	17855	0.2481	0.0171	1.02	1.00								
20399	OP	17855	0.8960	0.0168	1.07	1.13								
20428	OP	17855	-1.2337	0.0219	1.00	1.15								
20434	OP	17855	1.2241	0.0171	1.20	1.35								
20435	OP	17855	-0.9221	0.0203	0.97	0.95								
20497	OP	17855	-0.2069	0.0179	0.92	0.85								
20498	OP	17855	-1.6981	0.0250	0.94	0.86								
20543	OP	17855	-0.7781	0.0197	0.81	0.63								
20570	OP	17855	-0.6038	0.0190	1.06	1.13								
20571	OP	17855	-1.1282	0.0213	0.84	0.71								
20625	OP	17855	0.3097	0.0170	1.06	1.04								
20627	OP	17855	0.0202	0.0174	0.93	0.86								
20634	OP	17855	-1.1314	0.0213	0.88	0.74								
20635	OP	17855	-0.9650	0.0205	0.87	0.73								
20835	OP	17855	-1.1479	0.0214	0.98	1.11								
20837	OP	17855	0.1961	0.0172	1.01	0.98								
20859	OP	17855	0.5581	0.0102	0.97	0.97	-1.9128	0.0366	-1.5344	0.0220	1.0557	0.0188	2.3916	0.0308
21162	OP	17855	-1.3241	0.0224	0.95	0.71								
21163	OP	17855	-1.5134	0.0236	0.91	0.64								
21170	OP	17855	-0.8997	0.0144	0.81	0.79	-0.9377	0.0339	0.9377	0.0175				
21171	OP	17855	-1.3015	0.0157	0.85	0.75	-0.7463	0.0405	0.7463	0.0188				
24202	OP	17855	-0.1085	0.0177	1.08	1.24								
24207	OP	17855	0.5011	0.0084	0.93	0.92	-1.1100	0.0269	-0.6600	0.0208	0.4600	0.0193	1.3000	0.0225
24219	OP	17855	-0.1010	0.0176	0.98	1.02								
24243	OP	17855	-0.4618	0.0186	1.19	1.24								
24281	OP	17855	-0.5783	0.0189	1.17	1.24								
24398	OP	17855	-0.4699	0.0186	0.79	0.68								
24400	OP	17855	0.7024	0.0168	0.96	0.99								
24420	OP	17855	0.2906	0.0171	0.96	0.95								

Item ID	Type	N-Count	Rasch Difficulty	SE of Rasch Difficulty	INFIT	OUTFIT	Step 1 Value	SE of Step 1 Value	Step 2 Value	SE of Step 2 Value	Step 3 Value	SE of Step 3 Value	Step 4 Value	SE of Step 4 Value
24440	OP	17855	-0.0630	0.0176	1.10	1.13								
24442	OP	17855	-1.7296	0.0252	1.08	1.21								
24469	OP	17855	-0.0760	0.0176	1.03	1.00								
24552	OP	17855	0.9895	0.0169	1.24	1.40								
24556	OP	17855	-1.8216	0.0260	1.06	1.16								
24558	OP	17855	-0.6675	0.0192	1.22	1.42								
24570	OP	17855	-0.8779	0.0201	1.24	1.77								
24754	OP	17855	-0.3763	0.0099	1.07	1.11	-0.8273	0.0471	-1.2067	0.0313	0.1151	0.0198	1.9189	0.0191
24824	OP	17855	-1.8023	0.0258	1.04	1.21								
24826	FT	8943	-1.1222	0.0304	0.92	0.82								
24842	OP	17855	-0.0306	0.0175	1.00	0.96								
24846	OP	17855	0.5380	0.0169	1.00	1.02								
24848	OP	17855	0.8325	0.0168	1.27	1.39								
24854	FT	8912	-0.0262	0.0153	1.36	2.06	1.5186	0.0297	-1.5186	0.0279				
24856	OP	17855	0.2281	0.0113	1.02	1.01	-0.0449	0.0204	0.0449	0.0180				
24868	FT	8943	-0.9353	0.0205	0.91	0.89	-0.7311	0.0483	0.7311	0.0254				
24871	OP	17855	-0.4622	0.0088	1.25	1.38	-0.2740	0.0384	-0.9382	0.0290	0.8954	0.0210	0.3168	0.0188
25163	OP	17855	-0.1862	0.0178	1.01	1.02								
25171	OP	17855	-0.4670	0.0186	0.97	0.98								
25172	FT	8912	-3.0236	0.0572	0.92	0.44								
25173	FT	8912	-0.2505	0.0252	0.97	0.90								
25176	OP	17855	-1.5749	0.0240	0.92	0.66								
28528	OP	17855	-0.8946	0.0202	0.95	0.81								
28532	OP	17855	-0.8908	0.0201	0.97	0.85								
29030	OP	17855	0.6033	0.0120	0.93	0.92	-0.7630	0.0195	0.7630	0.0186				
29335	OP	17855	-0.1579	0.0178	0.81	0.73								
29338	OP	17855	-0.4350	0.0185	0.98	0.92								
29339	OP	17855	-0.6284	0.0191	0.82	0.65								
29340	OP	17855	-0.1595	0.0178	0.86	0.77								
30443	FT	8943	-0.3158	0.0140	0.99	1.02	-0.8141	0.0671	-1.3137	0.0453	0.1616	0.0276	1.9662	0.0270
31002	FT	8912	-1.6196	0.0342	0.96	0.84								
31005	FT	8912	0.2952	0.0239	1.06	1.09								
31006	FT	8943	-0.6902	0.0275	0.92	0.82								
31009	FT	8912	-1.4511	0.0325	0.91	0.76								
31010	FT	8943	-2.4243	0.0461	0.98	0.78								
31011	FT	8943	0.0994	0.0244	1.05	1.05								
31016	FT	8943	-2.8057	0.0536	0.94	0.59								
31018	FT	8912	-0.3118	0.0178	0.93	0.91	-0.5752	0.0348	0.5752	0.0245				
31019	FT	8943	-0.0220	0.0247	1.04	1.09								
31021	FT	8943	0.9435	0.0236	1.07	1.13								

Item ID	Type	N-Count	Rasch Difficulty	SE of Rasch Difficulty	INFIT	OUTFIT	Step 1 Value	SE of Step 1 Value	Step 2 Value	SE of Step 2 Value	Step 3 Value	SE of Step 3 Value	Step 4 Value	SE of Step 4 Value
31023	FT	8943	0.0451	0.0114	1.35	1.43	-0.1571	0.0419	-1.0480	0.0347	1.0577	0.0281	0.1474	0.0270
31025	FT	8912	-0.7042	0.0132	1.13	1.22	0.1810	0.0624	-1.3814	0.0492	1.0237	0.0308	0.1766	0.0265
31067	FT	8912	-0.1932	0.0250	1.02	1.01								
31070	FT	8912	-0.0211	0.0245	1.13	1.22								
31073	FT	8943	-1.6365	0.0351	0.92	0.80								
31074	FT	8943	-1.5414	0.0341	1.04	1.31								
31075	FT	8943	-1.2381	0.0313	0.99	0.96								
31077	FT	8943	0.3222	0.0240	0.92	0.88								
31082	FT	8912	-0.0175	0.0245	0.94	0.90								
31085	FT	8912	0.2442	0.0240	1.02	1.07								
31086	FT	8912	-0.4963	0.0261	0.82	0.67								
31087	FT	8912	0.7409	0.0236	1.00	1.03								
31092	FT	8912	-0.2484	0.0135	1.01	1.04	-0.9041	0.0609	-1.1767	0.0406	0.2275	0.0269	1.8533	0.0277
31100	FT	8943	1.3693	0.0167	0.94	0.90	-0.5298	0.0248	0.5298	0.0299				
31102	FT	8912	0.9434	0.0164	0.96	0.94	-0.5395	0.0255	0.5395	0.0276				
31103	FT	8912	1.0984	0.0139	0.85	0.85	-1.8914	0.0379	-1.4030	0.0269	1.0913	0.0299	2.2031	0.0574
31104	FT	8943	0.7247	0.0145	0.90	0.90	-1.8662	0.0494	-1.6696	0.0309	1.0495	0.0266	2.4862	0.0484
31108	FT	8912	-0.3895	0.0257	1.10	1.22								
31109	FT	8912	0.1981	0.0241	1.00	0.99								
31381	FT	8912	-2.4240	0.0450	0.92	0.61								
31382	FT	8943	-2.4030	0.0458	0.95	0.77								
31386	FT	8943	1.3025	0.0240	1.22	1.42								
31387	FT	8943	2.0429	0.0263	1.36	2.02								
31388	FT	8943	0.8153	0.0236	1.03	1.06								
31551	FT	8943	-0.2325	0.0162	0.99	1.17	1.9213	0.0321	-1.9213	0.0301				
31563	FT	8912	0.1741	0.0179	0.83	0.82	-1.0459	0.0314	1.0459	0.0251				
31567	FT	8943	-0.5635	0.0195	0.81	0.82	-1.0889	0.0431	1.0889	0.0241				
33070	FT	8943	-2.4222	0.0461	1.00	1.14								
33112	FT	8912	0.1875	0.0131	0.93	0.93	-1.6166	0.0525	-0.9648	0.0318	0.7039	0.0258	1.8776	0.0328
33113	FT	8943	0.0139	0.0133	0.93	0.92	-1.2985	0.0579	-1.1487	0.0364	0.5698	0.0258	1.8774	0.0297

D.3: Level III Items

Item ID	Type	N-Count	Rasch Difficulty	SE of Rasch Difficulty	INFIT	OUTFIT	Step 1 Value	SE of Step 1 Value	Step 2 Value	SE of Step 2 Value	Step 3 Value	SE of Step 3 Value	Step 4 Value	SE of Step 4 Value
19929	OP	19656	1.5172	0.0163	0.96	0.93								
19930	OP	19656	1.7215	0.0160	1.04	1.06								
19946	OP	19656	1.4263	0.0165	1.06	1.06								
19949	OP	19656	1.6387	0.0161	1.05	1.07								
19951	FT	9044	0.9246	0.0266	0.88	0.77								
19994	OP	19656	1.2796	0.0168	0.91	0.85								
20006	FT	10261	1.3186	0.0230	1.11	1.23								
20029	OP	19656	1.3333	0.0167	1.03	1.04								
20152	OP	19656	1.5130	0.0116	0.92	0.92	-0.7200	0.0218	0.7200	0.0162				
20202	OP	19656	1.3385	0.0167	0.89	0.83								
20206	OP	19656	1.9725	0.0097	0.84	0.84	-1.7115	0.0377	-1.6963	0.0223	1.1425	0.0172	2.2653	0.0290
20369	OP	19656	1.4872	0.0164	1.03	1.03								
20551	OP	19656	2.1194	0.0157	1.00	1.02								
20553	OP	19656	2.6970	0.0118	1.06	1.05	-0.9981	0.0168	0.9981	0.0205				
20564	OP	19656	1.2636	0.0169	1.03	1.07								
20661	OP	19656	1.3812	0.0166	1.00	0.96								
20662	OP	19656	0.6893	0.0188	0.87	0.76								
20664	OP	19656	1.1480	0.0172	0.97	0.93								
20686	OP	19656	-0.6534	0.0223	0.68	0.53	-0.0563	0.0643	0.0563	0.0267				
20694	FT	10261	-0.4019	0.0261	0.80	0.76	-0.4509	0.0780	0.4509	0.0303				
21109	OP	19656	2.1597	0.0157	1.05	1.08								
21154	OP	19656	1.7305	0.0160	1.01	1.01								
21156	OP	19656	1.0015	0.0176	0.85	0.74								
21157	OP	19656	1.3776	0.0166	0.89	0.83								
21159	OP	19656	1.9940	0.0157	0.98	0.98								
21167	FT	9044	0.2492	0.0218	0.89	0.89	-0.9536	0.0606	0.9536	0.0252				
24329	OP	19656	1.4179	0.0165	1.10	1.16								
24330	OP	19656	1.3021	0.0168	1.05	1.02								
24343	OP	19656	1.8794	0.0158	0.97	0.97								
24421	OP	19656	1.5189	0.0163	0.95	0.94								
24429	OP	19656	2.0051	0.0157	1.08	1.12								
24435	OP	19656	2.0246	0.0157	1.03	1.05								
24481	OP	19656	1.4347	0.0165	1.05	1.11								
24512	OP	19656	0.9588	0.0178	0.87	0.75								
24514	OP	19656	0.9616	0.0178	1.00	0.97								
24515	OP	19656	0.2381	0.0211	1.03	0.95								
24516	OP	19656	1.5728	0.0162	1.02	1.04								
24518	OP	19656	2.2083	0.0157	1.02	1.04								

Item ID	Type	N-Count	Rasch Difficulty	SE of Rasch Difficulty	INFIT	OUTFIT	Step 1 Value	SE of Step 1 Value	Step 2 Value	SE of Step 2 Value	Step 3 Value	SE of Step 3 Value	Step 4 Value	SE of Step 4 Value
24525	OP	19656	2.0874	0.0097	0.92	0.91	-2.2543	0.0376	-1.2235	0.0196	1.2024	0.0179	2.2755	0.0316
24535	OP	19656	1.3625	0.0166	1.10	1.20								
24728	OP	19656	0.8630	0.0098	0.95	0.97	-0.9283	0.0578	-1.0283	0.0351	0.0984	0.0198	1.8583	0.0169
24892	FT	9044	-0.4358	0.0388	0.87	0.66								
24902	OP	19656	1.6018	0.0162	1.09	1.13								
24909	FT	10261	2.5807	0.0217	1.20	1.37								
24913	FT	9044	1.7063	0.0236	1.02	1.03								
24917	FT	10261	2.3578	0.0133	0.89	0.89	-2.2194	0.0440	-1.1994	0.0250	1.3037	0.0269	2.1152	0.0516
24921	OP	19656	0.2456	0.0147	0.87	0.88	-1.0222	0.0412	1.0222	0.0169				
24925	OP	19656	0.9113	0.0088	1.09	1.23	0.1187	0.0424	-1.1930	0.0333	0.6197	0.0208	0.4545	0.0170
24929	FT	10261	0.7699	0.0180	0.87	0.89	-0.6501	0.0408	0.6501	0.0228				
24930	FT	9044	0.3785	0.0213	0.87	0.86	-0.8025	0.0552	0.8025	0.0253				
24932	OP	19656	1.1227	0.0091	0.93	0.95	-1.0666	0.0482	-1.0190	0.0292	0.3894	0.0181	1.6962	0.0176
24937	OP	19656	2.6110	0.0110	1.07	1.06	-0.5550	0.0167	0.5550	0.0190				
25145	FT	9044	2.9281	0.0170	1.11	1.13	-0.7820	0.0239	0.7820	0.0313				
25153	FT	10261	0.4548	0.0144	0.98	1.18	0.4047	0.0781	-1.1973	0.0623	0.8594	0.0353	-0.0668	0.0263
25177	FT	10261	-0.4600	0.0363	0.88	0.66								
25178	FT	9044	1.3515	0.0247	1.24	1.41								
25180	OP	19656	1.4650	0.0164	0.97	0.96								
25267	FT	10261	2.1638	0.0215	1.01	1.05								
25273	FT	10261	2.1963	0.0215	0.97	0.99								
27916	OP	19656	-0.1073	0.0167	0.90	0.98	-0.5738	0.0473	0.5738	0.0196				
28939	OP	19656	1.5685	0.0162	1.11	1.16								
28940	OP	19656	1.1242	0.0173	1.06	1.10								
29071	OP	19656	1.6330	0.0161	0.89	0.86								
29073	OP	19656	1.7507	0.0160	0.96	0.95								
29074	OP	19656	1.5918	0.0162	0.96	0.97								
29084	OP	19656	2.7404	0.0159	0.97	1.03								
29085	OP	19656	1.2880	0.0168	1.01	0.97								
29086	OP	19656	1.8105	0.0159	1.08	1.10								
29087	OP	19656	2.4085	0.0157	1.08	1.15								
29096	FT	10261	2.3745	0.0150	1.08	1.08	-0.5801	0.0236	0.5801	0.0248				
29161	FT	10261	0.9757	0.0126	0.85	0.86	-1.0888	0.0726	-0.8657	0.0425	0.3976	0.0258	1.5569	0.0233
29219	OP	19656	1.3255	0.0167	0.92	0.86								
29222	OP	19656	1.4406	0.0165	1.08	1.20								
29224	OP	19656	1.6093	0.0162	0.91	0.87								
29366	OP	19656	1.3137	0.0168	0.92	0.86								
29372	OP	19656	1.6492	0.0161	1.02	1.03								
29389	OP	19656	2.0259	0.0157	1.03	1.06								
30741	FT	9044	1.7107	0.0236	1.07	1.12								

Item ID	Type	N-Count	Rasch Difficulty	SE of Rasch Difficulty	INFIT	OUTFIT	Step 1 Value	SE of Step 1 Value	Step 2 Value	SE of Step 2 Value	Step 3 Value	SE of Step 3 Value	Step 4 Value	SE of Step 4 Value
31284	FT	10261	2.0108	0.0216	1.10	1.15								
31285	FT	10261	1.3026	0.0231	0.99	0.97								
31286	FT	9044	1.8518	0.0234	1.12	1.19								
31287	FT	9044	2.7103	0.0233	1.13	1.27								
31289	FT	10261	2.3752	0.0215	1.04	1.08								
31290	FT	10261	2.7189	0.0219	1.09	1.20								
31291	FT	10261	2.9308	0.0223	1.14	1.32								
31294	FT	10261	2.7535	0.0220	1.06	1.19								
31295	FT	10261	1.9771	0.0216	1.01	1.05								
31306	FT	10261	1.5034	0.0225	0.98	0.97								
31307	FT	9044	1.1391	0.0255	0.98	0.96								
31315	FT	10261	-0.5279	0.0275	0.83	0.84	-0.4221	0.0844	0.4221	0.0317				
31316	FT	9044	-0.3954	0.0280	0.86	0.87	-0.4693	0.0826	0.4693	0.0325				
31319	FT	9044	0.8552	0.0269	0.95	0.85								
31320	FT	9044	2.9238	0.0237	1.16	1.39								
31321	FT	9044	0.3419	0.0305	0.94	0.87								
31322	FT	9044	1.6201	0.0238	1.01	1.04								
31324	FT	9044	1.6127	0.0239	0.93	0.90								
31327	FT	9044	0.5187	0.0291	0.98	1.00								
31328	FT	9044	-0.3299	0.0375	0.92	0.87								
31330	FT	9044	0.8538	0.0270	0.97	0.93								
31341	FT	10261	1.0141	0.0242	1.01	1.01								
31342	FT	10261	2.0337	0.0216	1.08	1.12								
31343	FT	10261	1.2255	0.0234	0.89	0.82								
31349	FT	9044	2.5380	0.0142	0.91	0.90	-2.2895	0.0440	-1.1302	0.0259	1.2076	0.0294	2.2120	0.0606
31350	FT	10261	2.5228	0.0133	0.90	0.89	-2.1838	0.0402	-1.2249	0.0243	1.2319	0.0278	2.1768	0.0579
31351	FT	9044	2.4889	0.0145	0.93	0.93	-2.0149	0.0442	-1.4775	0.0272	1.4140	0.0297	2.0784	0.0580
31374	FT	9044	0.5771	0.0148	1.08	1.38	0.5466	0.0766	-1.4723	0.0637	1.0826	0.0355	-0.1569	0.0279
31391	FT	10261	0.4827	0.0147	0.92	1.00	-0.3108	0.0953	-1.1478	0.0659	-0.0836	0.0336	1.5423	0.0221
31392	FT	9044	0.7340	0.0148	0.99	1.06	-0.6106	0.0890	-1.2154	0.0599	0.1101	0.0312	1.7159	0.0240
33110	FT	9044	1.1535	0.0134	0.85	0.87	-0.9578	0.0691	-1.0474	0.0441	0.3729	0.0269	1.6323	0.0256

D.4: Level IV Items

Item ID	Type	N-Count	Rasch Difficulty	SE of Rasch Difficulty	INFIT	OUTFIT	Step 1 Value	SE of Step 1 Value	Step 2 Value	SE of Step 2 Value	Step 3 Value	SE of Step 3 Value	Step 4 Value	SE of Step 4 Value
19816	OP	13185	2.0870	0.0191	1.06	1.10								
20014	OP	13185	1.6183	0.0198	1.03	1.04								
20024	OP	13185	2.2551	0.0190	1.02	1.04								
20097	OP	13185	1.0250	0.0218	1.05	1.10								
20098	OP	13185	1.5449	0.0200	1.04	1.02								
20123	OP	13185	1.4265	0.0143	0.85	0.85	-0.6600	0.0283	0.6600	0.0195				
20236	OP	13185	1.9598	0.0192	1.10	1.14								
20237	OP	13185	2.2255	0.0190	1.09	1.15								
20238	OP	13185	2.4005	0.0190	1.01	1.05								
20239	OP	13185	2.3104	0.0190	1.09	1.15								
20270	OP	13185	2.6538	0.0191	1.01	1.06								
20334	OP	13185	2.0325	0.0191	1.05	1.07								
20378	OP	13185	1.5538	0.0200	0.88	0.82								
20426	OP	13185	1.1349	0.0213	0.81	0.77								
20520	OP	13185	2.0046	0.0192	1.08	1.09								
20521	OP	13185	1.6973	0.0196	0.96	0.95								
20688	FT	7042	0.4186	0.0241	0.74	0.68	-0.4982	0.0591	0.4982	0.0297				
20692	FT	5980	0.0972	0.0315	0.76	0.72	-0.2386	0.0824	0.2386	0.0386				
20784	OP	13185	1.7397	0.0196	0.96	0.94								
20793	OP	13185	2.6518	0.0123	1.28	1.41	0.0964	0.0202	-0.0964	0.0219				
21166	OP	13185	0.1570	0.0195	0.73	0.65	-0.5009	0.0524	0.5009	0.0233				
24194	OP	13185	2.7295	0.0192	1.21	1.33								
24195	OP	13185	1.2002	0.0211	1.08	1.12								
24229	OP	13185	1.9116	0.0193	1.06	1.08								
24231	OP	13185	2.2147	0.0190	1.07	1.10								
24235	OP	13185	2.2197	0.0190	1.12	1.17								
24236	OP	13185	2.2658	0.0190	0.98	0.98								
24238	OP	13185	2.2456	0.0190	1.20	1.28								
24239	OP	13185	1.6746	0.0197	1.09	1.13								
24240	OP	13185	2.2074	0.0190	0.97	0.97								
24241	OP	13185	1.2573	0.0209	1.00	0.97								
24314	OP	13185	1.4364	0.0203	0.99	0.95								
24350	OP	13185	2.1235	0.0191	1.00	1.02								
24352	OP	13185	1.3690	0.0205	0.96	0.90								
24387	OP	13185	2.0175	0.0192	1.02	1.03								
24388	OP	13185	2.1827	0.0190	0.98	0.98								
24389	OP	13185	1.9399	0.0192	0.90	0.87								
24473	OP	13185	1.6922	0.0197	1.02	1.03								

Item ID	Type	N-Count	Rasch Difficulty	SE of Rasch Difficulty	INFIT	OUTFIT	Step 1 Value	SE of Step 1 Value	Step 2 Value	SE of Step 2 Value	Step 3 Value	SE of Step 3 Value	Step 4 Value	SE of Step 4 Value
24504	OP	13185	2.0439	0.0191	1.05	1.06								
24536	OP	13185	0.8625	0.0225	0.96	0.93								
24602	OP	13185	2.1138	0.0191	1.08	1.12								
24733	OP	13185	2.0616	0.0118	0.93	0.93	-1.7248	0.0462	-1.6091	0.0270	1.0748	0.0208	2.2590	0.0354
24735	OP	13185	1.4166	0.0204	0.92	0.84								
24740	OP	13185	0.9684	0.0115	0.93	0.97	-0.9591	0.0671	-0.7425	0.0404	0.1311	0.0245	1.5704	0.0201
24938	FT	7042	0.3332	0.0346	0.93	0.91								
24939	FT	7042	0.7145	0.0314	0.95	0.90								
24948	FT	7042	0.4867	0.0332	0.83	0.64								
24949	FT	7042	0.1401	0.0365	0.95	0.94								
24950	OP	13185	2.4360	0.0190	1.03	1.05								
24984	FT	5980	0.9759	0.0172	0.79	0.87	-0.6272	0.0968	-0.8342	0.0646	0.2091	0.0385	1.2522	0.0294
25033	OP	13185	0.8215	0.0228	0.90	0.82								
25042	FT	5980	1.2144	0.0319	0.91	0.83								
25049	OP	13185	1.9206	0.0193	1.01	1.01								
25059	OP	13185	3.5322	0.0157	1.09	1.11	-1.1591	0.0193	1.1591	0.0347				
25063	OP	13185	2.0041	0.0119	0.87	0.87	-1.8320	0.0494	-1.6181	0.0274	1.2186	0.0209	2.2316	0.0350
25065	FT	5980	2.7109	0.0176	0.94	0.94	-1.9622	0.0534	-1.5378	0.0338	1.1236	0.0348	2.3763	0.0776
25140	OP	13185	1.2341	0.0210	0.96	0.93								
29139	OP	13185	1.0896	0.0215	0.98	0.99								
29140	OP	13185	1.2293	0.0210	0.96	0.95								
29242	OP	13185	2.1767	0.0190	1.00	1.01								
29250	OP	13185	2.5321	0.0190	0.96	0.99								
29265	OP	13185	1.6741	0.0197	0.96	0.92								
29380	OP	13185	2.8730	0.0194	1.02	1.13								
29387	FT	7042	3.4754	0.0206	1.07	1.09	-0.7152	0.0266	0.7152	0.0447				
29391	FT	7042	0.9981	0.0295	0.93	0.89								
29394	OP	13185	0.8330	0.0162	0.80	0.79	-0.9548	0.0387	0.9548	0.0196				
29395	OP	13185	0.8833	0.0116	0.84	0.92	-0.4775	0.0631	-0.6992	0.0432	0.0004	0.0270	1.1763	0.0198
29397	OP	13185	0.8944	0.0110	0.99	1.15	-0.0268	0.0556	-0.9280	0.0420	0.8053	0.0266	0.1495	0.0213
29421	OP	13185	0.8727	0.0158	0.84	0.88	-0.2249	0.0344	0.2249	0.0212				
31035	FT	5980	1.4900	0.0304	1.11	1.15								
31043	FT	5980	0.8407	0.0345	0.98	0.96								
31046	FT	7042	1.3979	0.0276	0.97	0.93								
31047	FT	5980	0.8347	0.0346	0.90	0.77								
31049	FT	7042	2.0415	0.0260	1.01	1.03								
31050	FT	5980	0.5899	0.0368	0.88	0.74								
31054	FT	5980	1.4659	0.0305	0.98	0.97								
31060	FT	5980	2.8759	0.0194	1.08	1.09	-0.4115	0.0297	0.4115	0.0344				
31076	FT	7042	2.5185	0.0170	0.86	0.86	-2.2286	0.0535	-1.5375	0.0310	1.2803	0.0331	2.4857	0.0782

Item ID	Type	N-Count	Rasch Difficulty	SE of Rasch Difficulty	INFIT	OUTFIT	Step 1 Value	SE of Step 1 Value	Step 2 Value	SE of Step 2 Value	Step 3 Value	SE of Step 3 Value	Step 4 Value	SE of Step 4 Value
31079	FT	5980	2.4934	0.0186	0.86	0.87	-2.0641	0.0643	-1.7376	0.0371	1.1736	0.0330	2.6281	0.0745
31080	FT	7042	2.8162	0.0147	0.91	0.89	-1.4757	0.0378	-1.4019	0.0290	0.9012	0.0339	1.9764	0.0724
31089	FT	5980	0.6540	0.0256	0.80	0.78	-0.5980	0.0627	0.5980	0.0315				
31090	FT	7042	0.4777	0.0236	0.78	0.74	-0.5262	0.0574	0.5262	0.0293				
31091	FT	7042	0.9524	0.0154	0.88	0.92	-0.7709	0.0826	-0.7566	0.0543	0.1489	0.0336	1.3786	0.0273
31095	FT	5980	0.9783	0.0175	0.87	0.95	-0.4773	0.0970	-0.9859	0.0674	0.1099	0.0389	1.3532	0.0293
31096	FT	7042	0.8492	0.0150	0.92	1.03	-0.2270	0.0760	-0.7777	0.0563	0.6710	0.0361	0.3337	0.0285
31098	FT	5980	0.4456	0.0212	0.93	1.32	0.7738	0.1123	-1.4866	0.0954	1.3076	0.0522	-0.5949	0.0402
31110	FT	7042	0.5195	0.0329	0.94	0.84								
31112	FT	7042	2.1426	0.0259	1.08	1.13								
31113	FT	7042	0.3897	0.0340	0.91	0.80								
31117	FT	5980	1.9432	0.0288	1.09	1.14								
31118	FT	5980	1.7735	0.0293	0.93	0.88								
31119	FT	5980	2.6755	0.0283	1.07	1.14								
31121	FT	5980	1.8265	0.0291	0.98	0.96								
31122	FT	5980	1.4538	0.0306	0.93	0.87								
31162	FT	7042	3.3561	0.0284	1.07	1.31								
31163	FT	7042	2.7809	0.0264	1.14	1.35								
31164	FT	7042	2.7309	0.0263	1.08	1.23								
31174	FT	7042	3.9703	0.0325	1.23	2.06								
31181	FT	7042	2.1231	0.0259	1.05	1.08								
31191	FT	5980	1.2315	0.0318	0.93	0.83								
31376	FT	5980	2.2233	0.0283	1.14	1.23								
31412	FT	5980	2.2785	0.0283	1.09	1.15								
31414	FT	5980	3.4332	0.0303	1.28	1.73								
33003	FT	7042	1.3657	0.0141	0.83	0.84	-0.8769	0.0646	-0.8081	0.0433	0.3380	0.0297	1.3470	0.0291
33061	OP	13185	0.4993	0.0246	0.87	0.77								

D.5: Level V Items

Item ID	Type	N-Count	Rasch Difficulty	SE of Rasch Difficulty	INFIT	OUTFIT	Step 1 Value	SE of Step 1 Value	Step 2 Value	SE of Step 2 Value	Step 3 Value	SE of Step 3 Value	Step 4 Value	SE of Step 4 Value
19862	OP	13876	3.1740	0.0189	1.16	1.26								
20171	OP	13876	1.7965	0.0203	0.82	0.75								
20177	OP	13876	1.3415	0.0154	0.64	0.60	-0.2100	0.0332	0.2100	0.0210				
20219	OP	13876	1.8561	0.0201	0.84	0.77								
20373	OP	13876	2.0650	0.0196	0.94	0.88								
20423	OP	13876	2.3589	0.0191	1.10	1.14								
20425	OP	13876	2.8985	0.0187	1.09	1.13								
20472	OP	13876	2.6478	0.0188	1.03	1.04								
20479	OP	13876	2.8155	0.0187	0.99	1.00								
20480	FT	6063	2.7086	0.0157	1.10	1.11	-0.8266	0.0522	-1.7406	0.0402	0.6357	0.0305	1.9314	0.0450
20681	OP	13876	0.4338	0.0198	0.90	0.86	-0.7616	0.0592	0.7616	0.0226				
20796	OP	13876	1.1489	0.0231	0.84	0.74								
20806	OP	13876	1.1178	0.0165	0.73	0.67	-0.1203	0.0367	0.1203	0.0221				
20817	OP	13876	1.6007	0.0210	0.91	0.81								
21165	OP	13876	2.8298	0.0187	0.96	0.95								
24192	OP	13876	2.3953	0.0122	1.04	1.08	-2.3800	0.0581	-1.3400	0.0273	0.5800	0.0196	3.1400	0.0386
24197	OP	13876	3.2350	0.0189	1.12	1.18								
24227	OP	13876	2.3707	0.0190	0.91	0.87								
24234	OP	13876	1.6679	0.0102	0.78	0.84	-0.5600	0.0477	-0.7400	0.0336	0.3300	0.0234	0.9700	0.0201
24272	OP	13876	3.5018	0.0193	1.12	1.25								
24274	OP	13876	2.3057	0.0191	0.91	0.89								
24278	OP	13876	1.4916	0.0214	1.00	1.06								
24298	OP	13876	2.9696	0.0187	1.24	1.36								
24299	OP	13876	2.7899	0.0187	1.10	1.13								
24317	OP	13876	1.9834	0.0198	0.97	0.96								
24318	OP	13876	2.8621	0.0187	0.96	0.99								
24408	OP	13876	1.9684	0.0198	0.86	0.77								
24409	OP	13876	2.9201	0.0187	0.96	0.99								
24413	OP	13876	2.0795	0.0196	0.96	0.91								
24414	OP	13876	1.9538	0.0199	1.00	0.99								
24417	OP	13876	2.4971	0.0189	1.05	1.06								
24418	OP	13876	2.3766	0.0190	1.10	1.13								
24443	OP	13876	2.1216	0.0195	1.25	1.39								
24506	OP	13876	2.8353	0.0187	1.07	1.10								
24507	OP	13876	2.2085	0.0193	1.06	1.09								
24508	OP	13876	2.0437	0.0196	1.08	1.17								
24509	OP	13876	1.7912	0.0203	1.05	1.10								
24738	OP	13876	1.3450	0.0113	0.85	0.98	-0.5241	0.0608	-0.6805	0.0408	0.0290	0.0263	1.1756	0.0196

Item ID	Type	N-Count	Rasch Difficulty	SE of Rasch Difficulty	INFIT	OUTFIT	Step 1 Value	SE of Step 1 Value	Step 2 Value	SE of Step 2 Value	Step 3 Value	SE of Step 3 Value	Step 4 Value	SE of Step 4 Value
24989	OP	13876	1.5928	0.0210	0.98	0.97								
24996	FT	7516	1.9136	0.0269	1.08	1.12								
25021	FT	7516	1.1861	0.0217	0.76	0.75	-0.7211	0.0507	0.7211	0.0270				
25022	FT	6063	1.0270	0.0260	0.76	0.70	-0.5990	0.0634	0.5990	0.0320				
25093	OP	13876	1.4756	0.0215	0.99	1.06								
25095	FT	6063	1.2123	0.0351	0.95	0.84								
25102	OP	13876	2.0279	0.0197	0.94	0.93								
25106	OP	13876	3.1958	0.0131	1.23	1.29	-0.5527	0.0199	0.5527	0.0226				
25109	FT	6063	2.7571	0.0175	0.92	0.93	-1.6131	0.0614	-1.7824	0.0398	0.9589	0.0310	2.4367	0.0564
25110	FT	7516	2.6032	0.0155	0.96	0.96	-1.5404	0.0551	-1.7593	0.0356	1.0104	0.0278	2.2893	0.0482
25115	OP	13876	2.8381	0.0104	0.92	0.92	-1.4479	0.0325	-1.2652	0.0229	0.9302	0.0215	1.7830	0.0332
25116	OP	13876	1.1246	0.0164	0.83	0.81	-0.8170	0.0400	0.8170	0.0199				
25124	FT	7516	1.4795	0.0139	0.84	0.93	0.6057	0.0601	-1.2975	0.0518	1.0858	0.0352	-0.3941	0.0300
29093	OP	13876	3.0015	0.0187	1.05	1.09								
29094	OP	13876	2.8049	0.0187	1.18	1.25								
29095	OP	13876	2.6433	0.0188	1.06	1.07								
29142	OP	13876	1.2734	0.0224	1.21	1.18								
29143	OP	13876	1.5590	0.0211	0.91	0.80								
29144	OP	13876	1.8851	0.0200	1.09	1.04								
29146	OP	13876	3.1302	0.0188	1.08	1.16								
29147	OP	13876	2.2188	0.0193	1.02	1.00								
29149	OP	13876	2.8144	0.0187	1.04	1.07								
29151	OP	13876	2.6776	0.0188	1.04	1.06								
29152	OP	13876	2.9107	0.0187	1.03	1.08								
29364	OP	13876	2.7409	0.0187	1.05	1.09								
29369	FT	7516	3.2272	0.0146	0.91	0.91	-1.5154	0.0388	-1.5372	0.0294	0.9460	0.0316	2.1066	0.0650
29406	OP	13876	1.4044	0.0106	0.85	1.01	0.2331	0.0490	-1.0542	0.0393	0.9979	0.0262	-0.1768	0.0218
29422	OP	13876	2.8564	0.0187	0.92	0.92								
29423	OP	13876	1.7932	0.0203	0.93	0.92								
29755	OP	13876	2.3994	0.0190	1.03	1.05								
31227	FT	7516	2.5423	0.0255	1.05	1.07								
31234	FT	6063	0.7561	0.0395	1.00	1.04								
31237	FT	7516	1.5580	0.0285	1.00	0.98								
31238	FT	6063	1.3026	0.0344	0.94	0.83								
31239	FT	7516	2.2234	0.0260	0.94	0.92								
31240	FT	6063	1.4993	0.0329	0.91	0.80								
31241	FT	6063	2.1335	0.0297	1.01	0.98								
31258	FT	7516	0.7281	0.0346	0.91	0.74								
31263	FT	6063	2.7857	0.0284	1.28	1.41								
31264	FT	7516	4.2249	0.0208	1.04	1.04	-0.6990	0.0264	0.6990	0.0469				

Item ID	Type	N-Count	Rasch Difficulty	SE of Rasch Difficulty	INFIT	OUTFIT	Step 1 Value	SE of Step 1 Value	Step 2 Value	SE of Step 2 Value	Step 3 Value	SE of Step 3 Value	Step 4 Value	SE of Step 4 Value
31265	FT	6063	3.5264	0.0209	1.21	1.22	-0.8107	0.0296	0.8107	0.0378				
31272	FT	7516	0.6767	0.0252	0.70	0.64	-0.3964	0.0638	0.3964	0.0311				
31273	FT	6063	1.2590	0.0245	0.70	0.64	-0.3163	0.0546	0.3163	0.0322				
31274	FT	7516	1.2295	0.0156	0.79	0.89	-0.4468	0.0848	-0.7438	0.0582	0.1274	0.0366	1.0632	0.0267
31276	FT	6063	1.2814	0.0177	0.79	0.86	-0.5040	0.0957	-0.6945	0.0658	0.1792	0.0417	1.0193	0.0300
31277	FT	6063	1.4785	0.0161	0.84	1.00	0.2478	0.0730	-1.0929	0.0599	1.0882	0.0400	-0.2431	0.0335
31296	FT	6063	2.2840	0.0293	0.99	0.97								
31299	FT	6063	2.4385	0.0289	1.01	1.03								
31339	FT	6063	1.5625	0.0325	0.97	0.95								
31340	FT	7516	0.9946	0.0322	1.02	0.91								
31354	FT	7516	1.6395	0.0281	0.95	0.87								
31355	FT	7516	2.0715	0.0264	1.02	0.99								
31357	FT	7516	2.0231	0.0266	0.86	0.80								
31358	FT	7516	4.1537	0.0290	1.08	1.28								
31359	FT	7516	3.8266	0.0274	1.21	1.53								
31360	FT	7516	2.4307	0.0256	1.12	1.19								
31364	FT	6063	1.5231	0.0328	0.98	0.89								
31365	FT	6063	1.9001	0.0307	0.94	0.86								
31366	FT	6063	2.5280	0.0287	1.00	1.00								
31394	FT	6063	2.5148	0.0287	1.05	1.08								
31397	FT	7516	4.2675	0.0297	1.13	1.64								
31399	FT	6063	3.4270	0.0288	1.08	1.20								
31400	FT	7516	0.9883	0.0322	0.97	0.89								
33004	FT	7516	1.5791	0.0140	0.75	0.82	-0.6921	0.0669	-0.5494	0.0457	0.2721	0.0324	0.9695	0.0271
33005	FT	6063	1.8726	0.0151	0.78	0.81	-0.8101	0.0676	-0.6243	0.0470	0.4172	0.0342	1.0172	0.0308
33805	OP	13876	3.2577	0.0189	1.11	1.19								

APPENDIX E: RAW SCORE TO SCALE SCORE CONVERSION TABLES FOR THE ELPA

E.1.a: Level I

Total ELPA

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-6.6561	1.8323	342	57.3
1	-5.4355	1.0117	380	31.6
2	-4.7192	0.7231	403	22.6
3	-4.2911	0.5964	416	18.6
4	-3.9812	0.5216	426	16.3
5	-3.7361	0.4709	433	14.7
6	-3.5321	0.4339	440	13.6
7	-3.3565	0.4053	445	12.7
8	-3.2016	0.3825	450	12.0
9	-3.0625	0.3639	454	11.4
10	-2.9358	0.3483	458	10.9
11	-2.8192	0.3351	462	10.5
12	-2.7108	0.3237	465	10.1
13	-2.6092	0.3138	468	9.8
14	-2.5135	0.3052	471	9.5
15	-2.4227	0.2976	474	9.3
16	-2.3361	0.2909	477	9.1
17	-2.2532	0.285	480	8.9
18	-2.1735	0.2798	482	8.7
19	-2.0965	0.2751	484	8.6
20	-2.022	0.2709	487	8.5
21	-1.9496	0.2672	489	8.4
22	-1.8791	0.264	491	8.3
23	-1.8102	0.2611	493	8.2
24	-1.7427	0.2586	496	8.1
25	-1.6764	0.2564	498	8.0
26	-1.6112	0.2545	500	8.0
27	-1.5468	0.2529	502	7.9
28	-1.4833	0.2515	504	7.9
29	-1.4203	0.2505	506	7.8
30	-1.3578	0.2496	508	7.8
31	-1.2956	0.249	510	7.8
32	-1.2337	0.2487	511	7.8
33	-1.1719	0.2485	513	7.8

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
34	-1.1101	0.2486	515	7.8
35	-1.0483	0.2489	517	7.8
36	-0.9862	0.2494	519	7.8
37	-0.9238	0.2501	521	7.8
38	-0.861	0.2511	523	7.8
39	-0.7977	0.2523	525	7.9
40	-0.7337	0.2537	527	7.9
41	-0.6689	0.2554	529	8.0
42	-0.6032	0.2573	531	8.0
43	-0.5364	0.2596	533	8.1
44	-0.4684	0.2621	535	8.2
45	-0.399	0.2649	538	8.3
46	-0.328	0.268	540	8.4
47	-0.2552	0.2716	542	8.5
48	-0.1804	0.2755	544	8.6
49	-0.1033	0.28	547	8.8
50	-0.0235	0.2849	549	8.9
51	0.0592	0.2904	552	9.1
52	0.1452	0.2965	555	9.3
53	0.2352	0.3035	557	9.5
54	0.3297	0.3113	560	9.7
55	0.4293	0.3201	563	10.0
56	0.5349	0.3302	567	10.3
57	0.6478	0.3418	570	10.7
58	0.7691	0.3553	574	11.1
59	0.9009	0.3711	578	11.6
60	1.0455	0.3899	583	12.2
61	1.2063	0.4128	588	12.9
62	1.3884	0.4415	593	13.8
63	1.5993	0.4785	600	15.0
64	1.8518	0.529	608	16.5
65	2.1698	0.6035	618	18.9
66	2.6067	0.7293	631	22.8
67	3.3324	1.0164	654	31.8
68	4.5598	1.835	692	57.3

E.1.b: Level I ELPA by Domain- Listening

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-5.4276	1.8644	36	7.2
1	-4.1267	1.0652	41	4.1
2	-3.3035	0.7914	44	3.0
3	-2.7742	0.6749	46	2.6
4	-2.3649	0.6096	48	2.3
5	-2.019	0.5695	49	2.2
6	-1.7099	0.5445	50	2.1
7	-1.422	0.5301	52	2.0
8	-1.1447	0.5244	53	2.0
9	-0.8692	0.5266	54	2.0
10	-0.5871	0.5373	55	2.1
11	-0.288	0.5584	56	2.1
12	0.0427	0.5944	57	2.3
13	0.43	0.6554	59	2.5
14	0.9285	0.7681	61	3.0
15	1.7089	1.0415	64	4.0
16	2.971	1.8479	68	7.1

E.1.c: Level I ELPA by Domain- Reading

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-5.5282	1.8505	34	6.9
1	-4.2593	1.0461	39	3.9
2	-3.4695	0.7741	42	2.9
3	-2.9621	0.6619	44	2.5
4	-2.5665	0.601	45	2.3
5	-2.2284	0.5646	47	2.1
6	-1.9229	0.5427	48	2.0
7	-1.6355	0.5309	49	2.0
8	-1.3562	0.5272	50	2.0
9	-1.0769	0.5311	51	2.0
10	-0.7892	0.5431	52	2.0
11	-0.4831	0.5654	53	2.1
12	-0.1439	0.6022	54	2.3
13	0.2536	0.6637	56	2.5
14	0.7641	0.7765	58	2.9
15	1.5585	1.0487	61	3.9
16	2.8318	1.8525	66	6.9

E.1.d: Level I ELPA by Domain- Writing

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-4.7487	1.8374	33	7.3
1	-3.5142	1.022	38	4.1
2	-2.7745	0.7409	41	3.0
3	-2.3173	0.623	43	2.5
4	-1.9715	0.5584	44	2.2
5	-1.6825	0.5197	45	2.1
6	-1.4255	0.496	46	2.0
7	-1.1869	0.4824	47	1.9
8	-0.9576	0.4763	48	1.9
9	-0.7311	0.4765	49	1.9
10	-0.5016	0.4826	50	1.9
11	-0.2631	0.4952	51	2.0
12	-0.0084	0.5156	52	2.1
13	0.2725	0.5464	53	2.2
14	0.5953	0.5926	54	2.4
15	0.9869	0.6639	56	2.7
16	1.5044	0.7856	58	3.1
17	2.3205	1.0624	61	4.2
18	3.6169	1.8624	66	7.4

E.1.e: Level I ELPA by Domain- Speaking

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-5.1342	1.8278	35	7.7
1	-3.92	1.0102	41	4.2
2	-3.1999	0.7298	44	3.1
3	-2.7573	0.6122	45	2.6
4	-2.4241	0.5472	47	2.3
5	-2.1476	0.5074	48	2.1
6	-1.9035	0.4825	49	2.0
7	-1.6784	0.4678	50	2.0
8	-1.4633	0.461	51	1.9
9	-1.2514	0.4608	52	1.9
10	-1.0366	0.4671	53	2.0
11	-0.8129	0.4802	54	2.0
12	-0.5728	0.5013	55	2.1
13	-0.3063	0.533	56	2.2
14	0.0019	0.5801	57	2.4
15	0.3789	0.6528	59	2.7
16	0.8821	0.7766	61	3.3
17	1.6847	1.0564	64	4.4
18	2.973	1.8595	69	7.8

E.1.f: Level I ELPA by Domain- Comprehension

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-5.8366	1.8509	35	6.6
1	-4.5683	1.0447	40	3.7
2	-3.7839	0.7689	43	2.7
3	-3.287	0.6521	44	2.3
4	-2.9067	0.5862	46	2.1
5	-2.5886	0.5444	47	1.9
6	-2.3081	0.5165	48	1.8
7	-2.0516	0.4976	49	1.8
8	-1.8105	0.4854	50	1.7
9	-1.5786	0.4785	50	1.7
10	-1.3512	0.4761	51	1.7
11	-1.124	0.478	52	1.7
12	-0.8927	0.4845	53	1.7
13	-0.6527	0.4962	54	1.8
14	-0.398	0.5144	55	1.8
15	-0.12	0.5417	56	1.9
16	0.1945	0.5826	57	2.1
17	0.5699	0.6476	58	2.3
18	1.06	0.7637	60	2.7
19	1.8352	1.0396	63	3.7
20	3.0952	1.8473	67	6.6

E.2.a: Level II

Total ELPA

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-6.1058	1.8311	359	57.2
1	-4.8883	1.0096	397	31.6
2	-4.1758	0.7206	420	22.5
3	-3.7511	0.5938	433	18.6
4	-3.4442	0.5188	442	16.2
5	-3.202	0.4681	450	14.6
6	-3.0005	0.431	456	13.5
7	-2.8273	0.4024	462	12.6
8	-2.6747	0.3796	466	11.9
9	-2.5378	0.3609	471	11.3
10	-2.4133	0.3452	475	10.8
11	-2.2988	0.332	478	10.4
12	-2.1924	0.3205	481	10.0
13	-2.0929	0.3106	485	9.7
14	-1.9991	0.3019	488	9.4
15	-1.9103	0.2943	490	9.2
16	-1.8258	0.2875	493	9.0
17	-1.7449	0.2814	495	8.8
18	-1.6672	0.2761	498	8.6
19	-1.5923	0.2713	500	8.5
20	-1.5199	0.267	503	8.3
21	-1.4497	0.2631	505	8.2
22	-1.3814	0.2596	507	8.1
23	-1.3148	0.2565	509	8.0
24	-1.2498	0.2537	511	7.9
25	-1.186	0.2512	513	7.9
26	-1.1235	0.249	515	7.8
27	-1.062	0.247	517	7.7
28	-1.0014	0.2452	519	7.7
29	-0.9417	0.2437	521	7.6
30	-0.8826	0.2423	522	7.6
31	-0.8242	0.2411	524	7.5
32	-0.7663	0.2401	526	7.5
33	-0.7089	0.2392	528	7.5
34	-0.6519	0.2385	530	7.5
35	-0.5951	0.2379	531	7.4
36	-0.5387	0.2375	533	7.4
37	-0.4824	0.2371	535	7.4
38	-0.4262	0.237	537	7.4
39	-0.37	0.2369	538	7.4
40	-0.3139	0.237	540	7.4

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
41	-0.2577	0.2372	542	7.4
42	-0.2013	0.2376	544	7.4
43	-0.1448	0.238	545	7.4
44	-0.088	0.2386	547	7.5
45	-0.0309	0.2394	549	7.5
46	0.0267	0.2403	551	7.5
47	0.0847	0.2414	553	7.5
48	0.1432	0.2426	554	7.6
49	0.2024	0.2439	556	7.6
50	0.2622	0.2455	558	7.7
51	0.3229	0.2473	560	7.7
52	0.3846	0.2492	562	7.8
53	0.4472	0.2514	564	7.9
54	0.511	0.2538	566	7.9
55	0.576	0.2564	568	8.0
56	0.6425	0.2593	570	8.1
57	0.7106	0.2625	572	8.2
58	0.7804	0.266	574	8.3
59	0.8522	0.2699	577	8.4
60	0.9262	0.2742	579	8.6
61	1.0026	0.2789	581	8.7
62	1.0818	0.284	584	8.9
63	1.1641	0.2898	586	9.1
64	1.2499	0.2962	589	9.3
65	1.3397	0.3033	592	9.5
66	1.434	0.3112	595	9.7
67	1.5336	0.3202	598	10.0
68	1.6394	0.3304	601	10.3
69	1.7523	0.342	605	10.7
70	1.8739	0.3555	609	11.1
71	2.0058	0.3713	613	11.6
72	2.1506	0.3902	617	12.2
73	2.3117	0.4131	622	12.9
74	2.4939	0.4417	628	13.8
75	2.705	0.4787	635	15.0
76	2.9577	0.5292	642	16.5
77	3.2759	0.6036	652	18.9
78	3.713	0.7295	666	22.8
79	4.4389	1.0166	689	31.8
80	5.6667	1.8352	727	57.4

E.2.b: Level II ELPA by Domain- Listening

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-5.2428	1.8441	37	7.1
1	-3.9909	1.0341	42	4.0
2	-3.2268	0.7566	45	2.9
3	-2.7471	0.6398	46	2.5
4	-2.3816	0.5743	48	2.2
5	-2.0765	0.5331	49	2.1
6	-1.8074	0.5059	50	1.9
7	-1.5611	0.4879	51	1.9
8	-1.3291	0.4765	52	1.8
9	-1.1052	0.4705	53	1.8
10	-0.8849	0.4692	54	1.8
11	-0.6636	0.4724	54	1.8
12	-0.4371	0.4803	55	1.8
13	-0.2004	0.4938	56	1.9
14	0.053	0.5141	57	2.0
15	0.3319	0.5439	58	2.1
16	0.6505	0.5879	60	2.3
17	1.0345	0.6563	61	2.5
18	1.5392	0.7756	63	3.0
19	2.3374	1.053	66	4.1
20	3.6199	1.8572	71	7.2

E.2.c: Level II ELPA by Domain- Reading

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-4.7934	1.8452	37	6.9
1	-3.5388	1.0358	42	3.9
2	-2.7715	0.7585	45	2.8
3	-2.2894	0.6414	46	2.4
4	-1.9221	0.5755	48	2.2
5	-1.6159	0.5338	49	2.0
6	-1.3466	0.5058	50	1.9
7	-1.1007	0.487	51	1.8
8	-0.87	0.4746	52	1.8
9	-0.6485	0.4676	53	1.8
10	-0.4313	0.4651	53	1.7
11	-0.2145	0.467	54	1.8
12	0.0062	0.4735	55	1.8
13	0.2355	0.4852	56	1.8
14	0.4794	0.5037	57	1.9
15	0.7463	0.5312	58	2.0
16	1.0495	0.5727	59	2.1
17	1.4133	0.6385	60	2.4
18	1.8916	0.7558	62	2.8
19	2.6546	1.0337	65	3.9
20	3.9059	1.8439	70	6.9

E.2.d: Level II ELPA by Domain- Writing

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-3.8094	1.8286	37	7.3
1	-2.5906	1.0152	42	4.1
2	-1.8564	0.7417	45	3.0
3	-1.3938	0.6297	46	2.5
4	-1.0382	0.5677	48	2.3
5	-0.7393	0.5282	49	2.1
6	-0.475	0.5015	50	2.0
7	-0.233	0.4834	51	1.9
8	-0.0055	0.4717	52	1.9
9	0.2138	0.4656	53	1.9
10	0.4297	0.4646	54	1.9
11	0.647	0.4686	55	1.9
12	0.8705	0.4777	55	1.9
13	1.1054	0.4927	56	2.0
14	1.3584	0.5147	57	2.1
15	1.6389	0.5461	59	2.2
16	1.9608	0.5913	60	2.4
17	2.3494	0.66	61	2.6
18	2.8589	0.7784	63	3.1
19	3.6599	1.0535	67	4.2
20	4.9416	1.8562	72	7.4

E.2.e: Level II ELPA by Domain- Speaking

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-4.4803	1.8383	38	7.7
1	-3.2466	1.0197	43	4.3
2	-2.5152	0.7332	46	3.1
3	-2.0709	0.6117	48	2.6
4	-1.7393	0.5452	50	2.3
5	-1.465	0.5053	51	2.1
6	-1.2228	0.4808	52	2.0
7	-0.9993	0.4661	53	2.0
8	-0.7862	0.4581	54	1.9
9	-0.5781	0.4551	55	1.9
10	-0.3707	0.4563	55	1.9
11	-0.1604	0.4615	56	1.9
12	0.0567	0.4711	57	2.0
13	0.2853	0.4861	58	2.0
14	0.5317	0.5079	59	2.1
15	0.8047	0.5389	60	2.3
16	1.1183	0.5835	62	2.5
17	1.4964	0.6509	63	2.7
18	1.9917	0.7675	65	3.2
19	2.7723	1.042	69	4.4
20	4.0351	1.8481	74	7.8

E.2.f: Level II ELPA by Domain- Comprehension

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-5.4704	1.8389	37	6.5
1	-4.2324	1.0243	41	3.6
2	-3.4895	0.7419	44	2.6
3	-3.0329	0.6206	45	2.2
4	-2.6926	0.5508	46	2.0
5	-2.4153	0.505	47	1.8
6	-2.1771	0.4726	48	1.7
7	-1.9653	0.4489	49	1.6
8	-1.7721	0.4309	50	1.5
9	-1.5925	0.4172	50	1.5
10	-1.423	0.4068	51	1.4
11	-1.2608	0.3989	52	1.4
12	-1.1041	0.3932	52	1.4
13	-0.9511	0.3894	53	1.4
14	-0.8004	0.3873	53	1.4
15	-0.6507	0.3868	54	1.4
16	-0.5007	0.3878	54	1.4
17	-0.3494	0.3905	55	1.4
18	-0.1953	0.3949	55	1.4
19	-0.037	0.4012	56	1.4
20	0.1272	0.4096	56	1.5
21	0.2993	0.4207	57	1.5
22	0.4822	0.435	58	1.5
23	0.6792	0.4536	58	1.6
24	0.8957	0.478	59	1.7
25	1.1394	0.5109	60	1.8
26	1.4232	0.5572	61	2.0
27	1.7712	0.6274	62	2.2
28	2.237	0.7486	64	2.7
29	2.9907	1.0299	67	3.7
30	4.2373	1.8425	71	6.5

E.3.a: Level III

Total ELPA

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-4.3208	1.8269	415	57.1
1	-3.1134	1.0027	453	31.3
2	-2.414	0.712	475	22.3
3	-2.0008	0.5846	487	18.3
4	-1.7041	0.5095	497	15.9
5	-1.4708	0.459	504	14.3
6	-1.2773	0.4223	510	13.2
7	-1.111	0.3942	515	12.3
8	-0.9646	0.3719	520	11.6
9	-0.8332	0.3537	524	11.1
10	-0.7135	0.3386	528	10.6
11	-0.6033	0.3258	531	10.2
12	-0.5007	0.3149	534	9.8
13	-0.4045	0.3055	537	9.5
14	-0.3138	0.2973	540	9.3
15	-0.2275	0.2902	543	9.1
16	-0.1452	0.2839	545	8.9
17	-0.0662	0.2783	548	8.7
18	0.0099	0.2734	550	8.5
19	0.0834	0.269	553	8.4
20	0.1547	0.2651	555	8.3
21	0.224	0.2617	557	8.2
22	0.2917	0.2586	559	8.1
23	0.3579	0.2559	561	8.0
24	0.4227	0.2535	563	7.9
25	0.4864	0.2514	565	7.9
26	0.5491	0.2495	567	7.8
27	0.6109	0.2478	569	7.7
28	0.672	0.2464	571	7.7
29	0.7324	0.2451	573	7.7
30	0.7922	0.244	575	7.6
31	0.8515	0.2431	577	7.6
32	0.9104	0.2424	578	7.6
33	0.969	0.2417	580	7.6
34	1.0273	0.2413	582	7.5
35	1.0855	0.2409	584	7.5
36	1.1434	0.2407	586	7.5
37	1.2013	0.2406	588	7.5
38	1.2592	0.2406	589	7.5
39	1.3171	0.2407	591	7.5
40	1.3751	0.241	593	7.5

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
41	1.4333	0.2413	595	7.5
42	1.4917	0.2418	597	7.6
43	1.5503	0.2425	598	7.6
44	1.6093	0.2432	600	7.6
45	1.6686	0.2441	602	7.6
46	1.7284	0.2451	604	7.7
47	1.7888	0.2463	606	7.7
48	1.8498	0.2476	608	7.7
49	1.9114	0.2491	610	7.8
50	1.9738	0.2507	612	7.8
51	2.0371	0.2525	614	7.9
52	2.1014	0.2545	616	8.0
53	2.1668	0.2567	618	8.0
54	2.2333	0.2592	620	8.1
55	2.3011	0.2618	622	8.2
56	2.3705	0.2648	624	8.3
57	2.4414	0.268	626	8.4
58	2.5141	0.2715	629	8.5
59	2.5889	0.2753	631	8.6
60	2.6658	0.2796	633	8.7
61	2.7453	0.2842	636	8.9
62	2.8275	0.2893	638	9.0
63	2.9128	0.295	641	9.2
64	3.0016	0.3012	644	9.4
65	3.0944	0.3082	647	9.6
66	3.1918	0.3159	650	9.9
67	3.2943	0.3247	653	10.1
68	3.4029	0.3346	656	10.5
69	3.5186	0.3459	660	10.8
70	3.6427	0.3589	664	11.2
71	3.777	0.3743	668	11.7
72	3.9237	0.3925	673	12.3
73	4.0863	0.4147	678	13.0
74	4.2696	0.4424	683	13.8
75	4.481	0.4785	690	15.0
76	4.733	0.528	698	16.5
77	5.0494	0.6016	708	18.8
78	5.4832	0.7267	721	22.7
79	6.2041	1.0136	744	31.7
80	7.427	1.833	782	57.3

E.3.b: Level III ELPA by Domain- Listening

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-2.8642	1.8434	46	7.1
1	-1.6145	1.0324	51	4.0
2	-0.8545	0.7535	54	2.9
3	-0.3801	0.6353	56	2.4
4	-0.0208	0.5685	57	2.2
5	0.2773	0.526	58	2.0
6	0.5384	0.4976	59	1.9
7	0.7759	0.4784	60	1.8
8	0.9983	0.4658	61	1.8
9	1.2116	0.4586	62	1.8
10	1.4205	0.4561	62	1.8
11	1.6291	0.4581	63	1.8
12	1.8416	0.4647	64	1.8
13	2.0628	0.4767	65	1.8
14	2.2985	0.4954	66	1.9
15	2.5571	0.5234	67	2.0
16	2.852	0.5654	68	2.2
17	3.2075	0.6319	69	2.4
18	3.6773	0.7501	71	2.9
19	4.4316	1.0295	74	4.0
20	5.6768	1.8415	79	7.1

E.3.c: Level III ELPA by Domain- Reading

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-2.6464	1.8419	45	6.9
1	-1.4002	1.0302	50	3.9
2	-0.6443	0.7512	53	2.8
3	-0.1729	0.6333	54	2.4
4	0.1843	0.567	56	2.1
5	0.481	0.5251	57	2.0
6	0.7415	0.4974	58	1.9
7	0.9791	0.4788	59	1.8
8	1.2022	0.4669	60	1.8
9	1.4168	0.4603	60	1.7
10	1.6274	0.4583	61	1.7
11	1.8383	0.4608	62	1.7
12	2.0536	0.468	63	1.8
13	2.2779	0.4804	64	1.8
14	2.5174	0.4994	64	1.9
15	2.7802	0.5277	65	2.0
16	3.0799	0.5698	67	2.1
17	3.4406	0.6363	68	2.4
18	3.9162	0.7542	70	2.8
19	4.677	1.0327	73	3.9
20	5.927	1.8435	77	6.9

E.3.d: Level III ELPA by Domain- Writing

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-2.5646	1.8318	42	7.3
1	-1.3395	1.0188	47	4.1
2	-0.5983	0.7468	50	3.0
3	-0.1262	0.6392	51	2.6
4	0.2449	0.5843	53	2.3
5	0.5669	0.5533	54	2.2
6	0.8621	0.5349	55	2.1
7	1.1418	0.5239	57	2.1
8	1.4127	0.5177	58	2.1
9	1.679	0.515	59	2.1
10	1.9442	0.5155	60	2.1
11	2.2116	0.5191	61	2.1
12	2.4844	0.5261	62	2.1
13	2.7666	0.537	63	2.1
14	3.0632	0.553	64	2.2
15	3.3812	0.5763	66	2.3
16	3.7325	0.6117	67	2.4
17	4.1399	0.6696	69	2.7
18	4.6555	0.7777	71	3.1
19	5.448	1.0458	74	4.2
20	6.7146	1.8489	79	7.4

E.3.e: Level III ELPA by Domain- Speaking

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-3.4058	1.8238	43	7.7
1	-2.2012	1.0041	48	4.2
2	-1.4915	0.7237	51	3.0
3	-1.0565	0.6067	53	2.5
4	-0.7296	0.5416	54	2.3
5	-0.4592	0.5009	55	2.1
6	-0.2223	0.4744	56	2.0
7	-0.0057	0.4576	57	1.9
8	0.1988	0.4481	58	1.9
9	0.3978	0.4449	59	1.9
10	0.5964	0.4473	60	1.9
11	0.7996	0.4551	60	1.9
12	1.0124	0.4683	61	2.0
13	1.2402	0.4872	62	2.0
14	1.4895	0.5126	63	2.2
15	1.7692	0.5467	64	2.3
16	2.093	0.5938	66	2.5
17	2.4856	0.6639	67	2.8
18	3.0012	0.7829	70	3.3
19	3.8099	1.0574	73	4.4
20	5.0975	1.8586	78	7.8

E.3.f: Level III ELPA by Domain- Comprehension

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-3.1417	1.8381	45	6.5
1	-1.9057	1.0227	49	3.6
2	-1.1661	0.7396	52	2.6
3	-0.7131	0.6176	53	2.2
4	-0.3766	0.5473	55	1.9
5	-0.1032	0.501	56	1.8
6	0.131	0.4685	56	1.7
7	0.3389	0.4446	57	1.6
8	0.5283	0.4266	58	1.5
9	0.7044	0.4131	59	1.5
10	0.8707	0.403	59	1.4
11	1.03	0.3956	60	1.4
12	1.1844	0.3906	60	1.4
13	1.3357	0.3877	61	1.4
14	1.4856	0.3868	61	1.4
15	1.6354	0.3878	62	1.4
16	1.7869	0.3908	62	1.4
17	1.9414	0.3958	63	1.4
18	2.1009	0.4033	63	1.4
19	2.2675	0.4135	64	1.5
20	2.4438	0.4271	65	1.5
21	2.6336	0.445	65	1.6
22	2.842	0.469	66	1.7
23	3.0767	0.5016	67	1.8
24	3.3507	0.5478	68	1.9
25	3.6877	0.6181	69	2.2
26	4.1414	0.74	71	2.6
27	4.8817	1.0231	73	3.6
28	6.1182	1.8383	78	6.5

E.4.a: Level IV

Total ELPA

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-3.991	1.8267	425	57.1
1	-2.7844	1.002	463	31.3
2	-2.0869	0.7104	485	22.2
3	-1.6765	0.5819	498	18.2
4	-1.3832	0.5059	507	15.8
5	-1.1538	0.4545	514	14.2
6	-0.9646	0.417	520	13.0
7	-0.8028	0.3883	525	12.1
8	-0.661	0.3655	529	11.4
9	-0.5343	0.347	533	10.8
10	-0.4193	0.3317	537	10.4
11	-0.3136	0.3188	540	10.0
12	-0.2154	0.3079	543	9.6
13	-0.1236	0.2985	546	9.3
14	-0.0369	0.2905	549	9.1
15	0.0454	0.2835	551	8.9
16	0.124	0.2774	554	8.7
17	0.1995	0.272	556	8.5
18	0.2722	0.2674	559	8.4
19	0.3425	0.2633	561	8.2
20	0.4109	0.2597	563	8.1
21	0.4775	0.2566	565	8.0
22	0.5426	0.2538	567	7.9
23	0.6064	0.2514	569	7.9
24	0.6691	0.2493	571	7.8
25	0.7308	0.2475	573	7.7
26	0.7916	0.2459	575	7.7
27	0.8518	0.2446	577	7.6
28	0.9113	0.2434	578	7.6
29	0.9703	0.2424	580	7.6
30	1.0289	0.2416	582	7.6
31	1.0871	0.241	584	7.5
32	1.1451	0.2405	586	7.5
33	1.2028	0.2401	588	7.5
34	1.2604	0.2399	589	7.5
35	1.3179	0.2397	591	7.5
36	1.3754	0.2397	593	7.5
37	1.4328	0.2398	595	7.5
38	1.4904	0.24	597	7.5
39	1.5481	0.2403	598	7.5
40	1.6059	0.2407	600	7.5

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
41	1.664	0.2412	602	7.5
42	1.7223	0.2418	604	7.6
43	1.7809	0.2425	606	7.6
44	1.8399	0.2433	607	7.6
45	1.8993	0.2443	609	7.6
46	1.9593	0.2453	611	7.7
47	2.0197	0.2465	613	7.7
48	2.0808	0.2478	615	7.7
49	2.1425	0.2492	617	7.8
50	2.205	0.2508	619	7.8
51	2.2683	0.2525	621	7.9
52	2.3326	0.2544	623	8.0
53	2.3978	0.2565	625	8.0
54	2.4642	0.2589	627	8.1
55	2.5319	0.2614	629	8.2
56	2.6009	0.2642	631	8.3
57	2.6715	0.2672	633	8.4
58	2.7438	0.2706	636	8.5
59	2.818	0.2743	638	8.6
60	2.8944	0.2784	640	8.7
61	2.9731	0.2829	643	8.8
62	3.0546	0.2879	645	9.0
63	3.139	0.2934	648	9.2
64	3.2269	0.2996	651	9.4
65	3.3187	0.3065	654	9.6
66	3.415	0.3143	657	9.8
67	3.5165	0.3231	660	10.1
68	3.6241	0.333	663	10.4
69	3.7387	0.3445	667	10.8
70	3.8619	0.3578	671	11.2
71	3.9955	0.3734	675	11.7
72	4.1417	0.392	679	12.3
73	4.3042	0.4147	685	13.0
74	4.4877	0.4431	690	13.8
75	4.7001	0.48	697	15.0
76	4.954	0.5303	705	16.6
77	5.2734	0.6047	715	18.9
78	5.7119	0.7305	728	22.8
79	6.4396	1.0176	751	31.8
80	7.6689	1.8358	790	57.4

E.4.b: Level IV ELPA by Domain- Listening

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-2.6939	1.8447	47	7.1
1	-1.4407	1.035	51	4.0
2	-0.6749	0.7576	54	2.9
3	-0.194	0.6406	56	2.5
4	0.1724	0.5749	58	2.2
5	0.478	0.5333	59	2.1
6	0.7469	0.5056	60	1.9
7	0.9926	0.4869	61	1.9
8	1.2234	0.4748	62	1.8
9	1.4452	0.4678	63	1.8
10	1.6625	0.4654	63	1.8
11	1.8797	0.4673	64	1.8
12	2.1007	0.4738	65	1.8
13	2.3303	0.4854	66	1.9
14	2.5743	0.5037	67	1.9
15	2.8412	0.5311	68	2.0
16	3.1442	0.5725	69	2.2
17	3.5077	0.6382	71	2.5
18	3.9853	0.7553	72	2.9
19	4.7475	1.0332	75	4.0
20	5.9981	1.8436	80	7.1

E.4.c: Level IV ELPA by Domain- Reading

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-2.2801	1.8424	46	6.9
1	-1.0328	1.0309	51	3.9
2	-0.2754	0.7521	54	2.8
3	0.1972	0.6342	56	2.4
4	0.5555	0.5678	57	2.1
5	0.853	0.5258	58	2.0
6	1.1141	0.4978	59	1.9
7	1.352	0.4789	60	1.8
8	1.5751	0.4667	61	1.8
9	1.7893	0.4598	62	1.7
10	1.9993	0.4575	62	1.7
11	2.2093	0.4596	63	1.7
12	2.4233	0.4664	64	1.7
13	2.646	0.4784	65	1.8
14	2.8833	0.4971	66	1.9
15	3.1436	0.525	67	2.0
16	3.4403	0.567	68	2.1
17	3.7976	0.6334	69	2.4
18	4.2692	0.7514	71	2.8
19	5.0254	1.0304	74	3.9
20	6.2719	1.842	79	6.9

E.4.d: Level IV ELPA by Domain- Writing

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-2.3554	1.8174	43	7.3
1	-1.1584	1.004	47	4.0
2	-0.4379	0.7378	50	3.0
3	0.0262	0.6366	52	2.5
4	0.3976	0.5873	54	2.3
5	0.7258	0.561	55	2.2
6	1.0312	0.5454	56	2.2
7	1.3226	0.5348	57	2.1
8	1.6041	0.5265	58	2.1
9	1.8776	0.5199	60	2.1
10	2.1454	0.5156	61	2.1
11	2.4105	0.5148	62	2.1
12	2.677	0.5186	63	2.1
13	2.9504	0.5283	64	2.1
14	3.2378	0.5452	65	2.2
15	3.5486	0.5716	66	2.3
16	3.897	0.6115	68	2.4
17	4.3076	0.6749	69	2.7
18	4.8348	0.7884	71	3.2
19	5.6501	1.0598	75	4.2
20	6.9413	1.86	80	7.4

E.4.e: Level IV ELPA by Domain- Speaking

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-2.9331	1.8219	45	7.7
1	-1.737	0.9956	50	4.2
2	-1.0487	0.7065	53	3.0
3	-0.6403	0.5833	54	2.4
4	-0.3417	0.5146	56	2.2
5	-0.0998	0.472	57	2.0
6	0.1094	0.4447	57	1.9
7	0.2989	0.4274	58	1.8
8	0.477	0.4176	59	1.8
9	0.6493	0.4136	60	1.7
10	0.8205	0.4147	60	1.7
11	0.9947	0.4207	61	1.8
12	1.176	0.4317	62	1.8
13	1.3692	0.4484	63	1.9
14	1.5805	0.4723	64	2.0
15	1.8188	0.5058	65	2.1
16	2.0982	0.5539	66	2.3
17	2.4439	0.6268	67	2.6
18	2.911	0.7511	69	3.2
19	3.6712	1.0345	72	4.3
20	4.9261	1.8463	78	7.8

E.4.f: Level IV ELPA by Domain- Comprehension

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-2.9162	1.8393	46	6.5
1	-1.6773	1.0248	50	3.6
2	-0.9336	0.7424	53	2.6
3	-0.4765	0.6209	54	2.2
4	-0.1361	0.5507	56	2.0
5	0.141	0.5046	57	1.8
6	0.3787	0.472	57	1.7
7	0.5897	0.4479	58	1.6
8	0.7819	0.4296	59	1.5
9	0.9602	0.4156	59	1.5
10	1.1284	0.4049	60	1.4
11	1.2889	0.3968	61	1.4
12	1.4439	0.391	61	1.4
13	1.5952	0.3871	62	1.4
14	1.7441	0.385	62	1.4
15	1.8921	0.3847	63	1.4
16	2.0405	0.3861	63	1.4
17	2.1907	0.3893	64	1.4
18	2.3442	0.3945	64	1.4
19	2.5026	0.402	65	1.4
20	2.6682	0.4122	65	1.5
21	2.8434	0.4257	66	1.5
22	3.0319	0.4435	67	1.6
23	3.2388	0.4673	67	1.7
24	3.4719	0.4997	68	1.8
25	3.7438	0.5458	69	1.9
26	4.0786	0.6161	70	2.2
27	4.5295	0.738	72	2.6
28	5.2666	1.0214	75	3.6
29	6.5005	1.8373	79	6.5

E.5.a: Level V

Total ELPA

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-3.5589	1.8299	439	57.2
1	-2.3446	1.0072	477	31.5
2	-1.6373	0.7168	499	22.4
3	-1.2184	0.5887	512	18.4
4	-0.9177	0.5126	521	16.0
5	-0.682	0.461	529	14.4
6	-0.4872	0.4231	535	13.2
7	-0.3208	0.3938	540	12.3
8	-0.175	0.3705	545	11.6
9	-0.0449	0.3514	549	11.0
10	0.0729	0.3354	552	10.5
11	0.1808	0.322	556	10.1
12	0.2807	0.3104	559	9.7
13	0.374	0.3005	562	9.4
14	0.4616	0.2919	564	9.1
15	0.5446	0.2843	567	8.9
16	0.6235	0.2777	569	8.7
17	0.699	0.2719	572	8.5
18	0.7715	0.2668	574	8.3
19	0.8415	0.2623	576	8.2
20	0.9092	0.2583	578	8.1
21	0.975	0.2548	580	8.0
22	1.0391	0.2517	582	7.9
23	1.1018	0.249	584	7.8
24	1.1631	0.2466	586	7.7
25	1.2234	0.2445	588	7.6
26	1.2827	0.2427	590	7.6
27	1.3413	0.2412	592	7.5
28	1.3991	0.2398	594	7.5
29	1.4563	0.2387	596	7.5
30	1.5131	0.2378	597	7.4
31	1.5695	0.2371	599	7.4
32	1.6256	0.2366	601	7.4
33	1.6815	0.2362	603	7.4
34	1.7372	0.236	604	7.4
35	1.7928	0.2359	606	7.4
36	1.8485	0.2359	608	7.4
37	1.9042	0.2361	610	7.4
38	1.96	0.2364	611	7.4
39	2.0159	0.2368	613	7.4
40	2.0721	0.2373	615	7.4

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
41	2.1286	0.238	617	7.4
42	2.1854	0.2387	618	7.5
43	2.2426	0.2396	620	7.5
44	2.3003	0.2406	622	7.5
45	2.3584	0.2417	624	7.6
46	2.4171	0.2429	626	7.6
47	2.4765	0.2443	627	7.6
48	2.5365	0.2458	629	7.7
49	2.5973	0.2474	631	7.7
50	2.659	0.2492	633	7.8
51	2.7216	0.2511	635	7.8
52	2.7851	0.2532	637	7.9
53	2.8498	0.2555	639	8.0
54	2.9157	0.2579	641	8.1
55	2.9829	0.2606	643	8.1
56	3.0516	0.2636	645	8.2
57	3.1219	0.2668	648	8.3
58	3.194	0.2702	650	8.4
59	3.268	0.274	652	8.6
60	3.3442	0.2782	655	8.7
61	3.4229	0.2828	657	8.8
62	3.5043	0.2879	660	9.0
63	3.5888	0.2935	662	9.2
64	3.6767	0.2997	665	9.4
65	3.7685	0.3066	668	9.6
66	3.8649	0.3144	671	9.8
67	3.9665	0.3232	674	10.1
68	4.0742	0.3333	677	10.4
69	4.1891	0.3448	681	10.8
70	4.3126	0.3583	685	11.2
71	4.4465	0.3741	689	11.7
72	4.5934	0.393	694	12.3
73	4.7568	0.4161	699	13.0
74	4.9418	0.4451	704	13.9
75	5.1563	0.4828	711	15.1
76	5.4136	0.5341	719	16.7
77	5.738	0.6097	729	19.1
78	6.1839	0.7368	743	23.0
79	6.9229	1.0243	766	32.0
80	8.1633	1.8407	801	57.5

E.5.b: Level V ELPA by Domain- Listening

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-2.01	1.8448	49	7.1
1	-0.7565	1.0351	54	4.0
2	0.0094	0.7577	57	2.9
3	0.4905	0.6407	59	2.5
4	0.8571	0.5751	60	2.2
5	1.1629	0.5336	61	2.1
6	1.4322	0.5059	63	1.9
7	1.6783	0.4874	63	1.9
8	1.9096	0.4754	64	1.8
9	2.132	0.4686	65	1.8
10	2.3503	0.4664	66	1.8
11	2.5685	0.4686	67	1.8
12	2.7908	0.4752	68	1.8
13	3.0219	0.4871	69	1.9
14	3.2676	0.5056	70	1.9
15	3.5365	0.5331	71	2.1
16	3.8418	0.5746	72	2.2
17	4.2078	0.6402	73	2.5
18	4.6881	0.7572	75	2.9
19	5.4532	1.0347	78	4.0
20	6.706	1.8445	81	7.1

E.5.c: Level V ELPA by Domain- Reading

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-1.9499	1.8443	48	6.9
1	-0.6978	1.0342	52	3.9
2	0.0663	0.7565	55	2.8
3	0.5456	0.6393	57	2.4
4	0.9104	0.5734	58	2.2
5	1.2142	0.5317	60	2.0
6	1.4815	0.5039	61	1.9
7	1.7255	0.4852	61	1.8
8	1.9546	0.473	62	1.8
9	2.1747	0.466	63	1.7
10	2.3904	0.4636	64	1.7
11	2.6059	0.4655	65	1.7
12	2.8252	0.472	66	1.8
13	3.0532	0.4837	66	1.8
14	3.2955	0.5021	67	1.9
15	3.5607	0.5295	68	2.0
16	3.862	0.571	69	2.1
17	4.2237	0.6367	71	2.4
18	4.6994	0.754	73	2.8
19	5.4595	1.0322	75	3.9
20	6.7086	1.843	80	6.9

E.5.d: Level V ELPA by Domain- Writing

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-2.0457	1.8458	44	7.4
1	-0.7874	1.0397	49	4.2
2	-0.0097	0.7666	52	3.1
3	0.4861	0.6529	54	2.6
4	0.8692	0.59	55	2.4
5	1.1934	0.5515	57	2.2
6	1.4833	0.5272	58	2.1
7	1.7528	0.5122	59	2.0
8	2.0103	0.5037	60	2.0
9	2.2618	0.5	61	2.0
10	2.5117	0.5004	62	2.0
11	2.7638	0.5045	63	2.0
12	3.022	0.5126	64	2.1
13	3.291	0.5256	65	2.1
14	3.577	0.545	66	2.2
15	3.8888	0.5736	68	2.3
16	4.2413	0.6165	69	2.5
17	4.6612	0.6846	71	2.7
18	5.2079	0.8056	73	3.2
19	6.0623	1.0845	76	4.3
20	7.3988	1.8805	81	7.5

E.5.e: Level V ELPA by Domain- Speaking

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-2.5203	1.8363	46	7.7
1	-1.2938	1.0131	52	4.3
2	-0.5793	0.7196	55	3.0
3	-0.1573	0.5912	56	2.5
4	0.1473	0.5179	58	2.2
5	0.3907	0.4717	59	2.0
6	0.5981	0.4411	60	1.9
7	0.7834	0.421	60	1.8
8	0.9549	0.4084	61	1.7
9	1.1186	0.4016	62	1.7
10	1.2789	0.4	62	1.7
11	1.4399	0.4033	63	1.7
12	1.6055	0.4115	64	1.7
13	1.7803	0.4255	64	1.8
14	1.9699	0.4467	65	1.9
15	2.1827	0.4776	66	2.0
16	2.4318	0.5233	67	2.2
17	2.7413	0.5942	69	2.5
18	3.1644	0.718	70	3.0
19	3.8705	1.005	73	4.2
20	5.0798	1.827	78	7.7

E.5.f: Level V ELPA by Domain- Comprehension

Raw Score	Theta	SE(Theta)	Scale Score	SE(Scale Score)
0	-2.3343	1.8402	48	6.5
1	-1.0928	1.0267	52	3.6
2	-0.3448	0.7454	55	2.6
3	0.1172	0.6251	56	2.2
4	0.4633	0.5562	58	2.0
5	0.7467	0.5113	59	1.8
6	0.9916	0.48	60	1.7
7	1.2108	0.4573	60	1.6
8	1.412	0.4407	61	1.6
9	1.6006	0.4284	62	1.5
10	1.7801	0.4196	62	1.5
11	1.9535	0.4136	63	1.5
12	2.123	0.4102	64	1.5
13	2.2906	0.409	64	1.5
14	2.4581	0.4101	65	1.5
15	2.6275	0.4135	65	1.5
16	2.8008	0.4193	66	1.5
17	2.9801	0.4281	67	1.5
18	3.1683	0.4403	67	1.6
19	3.3692	0.4569	68	1.6
20	3.5878	0.4794	69	1.7
21	3.8321	0.5106	70	1.8
22	4.1148	0.5555	71	2.0
23	4.46	0.6244	72	2.2
24	4.921	0.7447	73	2.6
25	5.6679	1.0261	76	3.6
26	6.9084	1.8398	81	6.5

APPENDIX F: ITEM INFORMATION AT DIFFERENT CUT SCORES BY GRADE

F.1: Grade K

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
19940	0.5196	0.5346	0.4578	0.3093
19963	0.2485	0.2280	0.1912	0.1307
19975	0.4636	0.5595	0.5221	0.3847
19989	0.0922	0.1789	0.2518	0.3744
20192	1.0971	1.4339	1.2484	0.7798
20287	0.1889	0.2439	0.2489	0.2161
20291	0.2171	0.2500	0.2374	0.1877
20504	0.1100	0.1807	0.2200	0.2496
20506	0.2311	0.2474	0.2253	0.1691
20510	0.1644	0.2306	0.2490	0.2341
20512	0.1594	0.2271	0.2481	0.2371
20514	0.2189	0.2499	0.2362	0.1856
20535	0.2007	0.2478	0.2458	0.2054
20670	0.2186	0.2500	0.2364	0.1860
20677	0.1408	0.2122	0.2415	0.2456
20695	0.1999	0.2476	0.2461	0.2062
20755	0.5336	0.3620	0.2576	0.1468
20834	0.1993	0.2475	0.2462	0.2067
21174	0.5283	0.3699	0.2678	0.1555
24245	0.2305	0.2476	0.2259	0.1700
24247	0.1633	0.2299	0.2489	0.2347
24257	0.2264	0.2489	0.2300	0.1758
24259	0.2019	0.2481	0.2453	0.2042
24261	0.2165	0.2500	0.2379	0.1885
24262	0.1664	0.0981	0.0680	0.0385
24264	0.1693	0.2338	0.2497	0.2310
24449	0.2218	0.2497	0.2340	0.1820
24450	0.2500	0.2185	0.1788	0.1191
24451	0.2408	0.2413	0.2117	0.1523
24452	0.2168	0.2500	0.2376	0.1881
24463	0.6091	0.9669	1.0677	0.9885
24468	0.1808	0.2402	0.2499	0.2227
24498	0.2168	0.2500	0.2377	0.1882
24500	0.2445	0.2368	0.2041	0.1439
24505	0.2470	0.1977	0.1553	0.0991
24545	0.1625	0.2293	0.2487	0.2352
24547	0.2180	0.2500	0.2368	0.1867
24660	0.2485	0.2032	0.1612	0.1039
24673	0.2467	0.1968	0.1543	0.0982
24683	0.2500	0.2170	0.1769	0.1174
24692	0.2427	0.2391	0.2080	0.1481
24751	1.0950	0.9452	0.7638	0.5676
28514	0.2358	0.1728	0.1305	0.0801

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
28516	0.2244	0.1557	0.1149	0.0689
28519	0.2482	0.2288	0.1923	0.1318
28521	0.6405	0.6735	0.5196	0.2818
28522	0.2601	0.4689	0.5745	0.5892
28523	0.3126	0.5267	0.6033	0.5541
28524	0.1894	0.2441	0.2488	0.2157
28526	0.2124	0.2498	0.2404	0.1932
28604	0.2123	0.2498	0.2405	0.1933

F.2: Grade 1

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
19819	0.4130	0.4483	0.3627	0.2651
19937	0.2416	0.2432	0.1567	0.1002
19985	0.2495	0.2142	0.1144	0.0686
20009	0.1485	0.2136	0.2450	0.2033
20120	0.3756	0.4550	0.4176	0.3215
20122	0.3111	0.4993	0.5578	0.4016
20244	0.3420	0.4453	0.4488	0.3587
20398	0.1725	0.2319	0.2329	0.1802
20399	0.1128	0.1779	0.2492	0.2334
20428	0.2468	0.2029	0.1036	0.0612
20434	0.0875	0.1465	0.2383	0.2475
20435	0.2495	0.2276	0.1301	0.0797
20497	0.2138	0.2494	0.1974	0.1369
20498	0.2224	0.1593	0.0712	0.0404
20543	0.2467	0.2365	0.1433	0.0896
20570	0.2401	0.2445	0.1599	0.1028
20571	0.2491	0.2119	0.1122	0.0671
20625	0.1666	0.2279	0.2365	0.1860
20627	0.1940	0.2435	0.2168	0.1583
20634	0.2491	0.2117	0.1119	0.0669
20635	0.2499	0.2246	0.1262	0.0770
20835	0.2488	0.2103	0.1105	0.0659
20837	0.1775	0.2350	0.2296	0.1752
20859	0.6949	0.6087	0.4926	0.5231
21162	0.2439	0.1948	0.0966	0.0566
21163	0.2347	0.1770	0.0830	0.0478
21170	0.4383	0.4149	0.2761	0.1833
21171	0.4772	0.3898	0.2009	0.1195
24202	0.2055	0.2476	0.2061	0.1461
24207	0.6365	0.9295	0.9684	0.7958
24219	0.2049	0.2474	0.2068	0.1468
24243	0.2322	0.2485	0.1735	0.1144
24281	0.2388	0.2454	0.1623	0.1048
24398	0.2327	0.2483	0.1727	0.1137
24400	0.1297	0.1960	0.2496	0.2201
24420	0.1684	0.2291	0.2354	0.1842
24440	0.2016	0.2464	0.2100	0.1504
24442	0.2201	0.1562	0.0693	0.0393
24469	0.2027	0.2468	0.2089	0.1491
24552	0.1052	0.1689	0.2474	0.2386
24556	0.2128	0.1475	0.0640	0.0361
24558	0.2429	0.2419	0.1538	0.0978
24570	0.2489	0.2305	0.1341	0.0827
24754	1.0593	0.8259	0.5339	0.4285
24824	0.2144	0.1493	0.0651	0.0367
24842	0.1987	0.2454	0.2127	0.1535
24846	0.1448	0.2104	0.2463	0.2067

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
24848	0.1182	0.1839	0.2499	0.2293
24856	0.3461	0.5747	0.5680	0.3588
24871	1.1940	1.3123	0.7166	0.3533
25163	0.2121	0.2491	0.1993	0.1388
25171	0.2326	0.2483	0.1730	0.1139
25176	0.2309	0.1711	0.0789	0.0452
28528	0.2492	0.2294	0.1325	0.0816
28532	0.2491	0.2297	0.1329	0.0818
29030	0.2806	0.4030	0.4790	0.4162
29335	0.2098	0.2487	0.2018	0.1414
29338	0.2306	0.2489	0.1761	0.1166
29339	0.2412	0.2435	0.1575	0.1009
29340	0.2099	0.2487	0.2017	0.1413

F.3: Grade 2

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
19819	0.4340	0.4319	0.2651	0.1722
19937	0.2492	0.2154	0.1002	0.0590
19985	0.2425	0.1736	0.0686	0.0389
20009	0.1730	0.2423	0.2033	0.1430
20120	0.4116	0.4648	0.3215	0.2169
20122	0.3790	0.5822	0.4016	0.2405
20244	0.3847	0.4749	0.3587	0.2484
20398	0.1966	0.2493	0.1802	0.1203
20399	0.1353	0.2177	0.2334	0.1809
20428	0.2360	0.1608	0.0612	0.0344
20434	0.1069	0.1892	0.2475	0.2106
20435	0.2482	0.1905	0.0797	0.0457
20497	0.2323	0.2425	0.1369	0.0848
20498	0.2015	0.1181	0.0404	0.0222
20543	0.2500	0.2036	0.0896	0.0521
20570	0.2486	0.2181	0.1028	0.0607
20571	0.2414	0.1710	0.0671	0.0379
20625	0.1909	0.2483	0.1860	0.1257
20627	0.2161	0.2490	0.1583	0.1015
20634	0.2412	0.1707	0.0669	0.0378
20635	0.2472	0.1865	0.0770	0.0440
20835	0.2405	0.1691	0.0659	0.0372
20837	0.2013	0.2498	0.1752	0.1159
20859	0.6807	0.5328	0.5231	0.5480
21162	0.2306	0.1522	0.0566	0.0316
21163	0.2170	0.1345	0.0478	0.0264
21170	0.4376	0.3681	0.1833	0.1110
21171	0.4543	0.3098	0.1195	0.0674
24202	0.2258	0.2461	0.1461	0.0918
24207	0.7548	1.0139	0.7958	0.5625
24219	0.2253	0.2463	0.1468	0.0923
24243	0.2448	0.2284	0.1144	0.0686
24281	0.2481	0.2200	0.1048	0.0620
24398	0.2451	0.2278	0.1137	0.0681
24400	0.1535	0.2315	0.2201	0.1624
24420	0.1927	0.2487	0.1842	0.1241
24440	0.2225	0.2473	0.1504	0.0952
24442	0.1986	0.1154	0.0393	0.0215
24469	0.2235	0.2470	0.1491	0.0942
24552	0.1269	0.2102	0.2386	0.1898
24556	0.1902	0.1078	0.0361	0.0197
24558	0.2496	0.2130	0.0978	0.0574
24570	0.2490	0.1946	0.0827	0.0476
24754	0.9958	0.6752	0.4285	0.3215
24824	0.1920	0.1093	0.0367	0.0201
24842	0.2201	0.2481	0.1535	0.0976
24846	0.1693	0.2405	0.2067	0.1467

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
24848	0.1412	0.2226	0.2293	0.1749
24856	0.4301	0.6544	0.3588	0.1919
24871	1.2926	1.1450	0.3533	0.1601
25163	0.2310	0.2433	0.1388	0.0862
25171	0.2450	0.2280	0.1139	0.0683
25176	0.2120	0.1289	0.0452	0.0250
28528	0.2487	0.1931	0.0816	0.0469
28532	0.2488	0.1934	0.0818	0.0471
29030	0.3263	0.4604	0.4162	0.3074
29335	0.2292	0.2444	0.1414	0.0882
29338	0.2438	0.2302	0.1166	0.0702
29339	0.2490	0.2161	0.1009	0.0594
29340	0.2293	0.2443	0.1413	0.0881

F.4: Grade 3

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
19929	0.0941	0.2115	0.2236	0.1669
19930	0.0798	0.1935	0.2367	0.1864
19946	0.1010	0.2188	0.2167	0.1581
19949	0.0854	0.2010	0.2318	0.1785
19994	0.1129	0.2293	0.2044	0.1442
20029	0.1084	0.2257	0.2090	0.1493
20152	0.1910	0.4206	0.4424	0.3329
20202	0.1080	0.2253	0.2095	0.1498
20206	0.4767	0.7090	0.4798	0.5270
20369	0.0963	0.2140	0.2214	0.1640
20551	0.0568	0.1557	0.2497	0.2208
20553	0.0855	0.2317	0.4096	0.4233
20564	0.1142	0.2304	0.2030	0.1427
20661	0.1046	0.2222	0.2130	0.1538
20662	0.1670	0.2500	0.1489	0.0940
20664	0.1242	0.2372	0.1926	0.1321
20686	0.6538	0.3145	0.0663	0.0339
21109	0.0548	0.1518	0.2499	0.2238
21154	0.0792	0.1927	0.2371	0.1872
21156	0.1374	0.2440	0.1788	0.1191
21157	0.1049	0.2225	0.2127	0.1535
21159	0.0634	0.1677	0.2476	0.2108
24329	0.1017	0.2195	0.2160	0.1573
24330	0.1110	0.2278	0.2064	0.1463
24343	0.0699	0.1787	0.2440	0.2009
24421	0.0940	0.2114	0.2237	0.1670
24429	0.0628	0.1667	0.2478	0.2117
24435	0.0617	0.1648	0.2483	0.2133
24481	0.1004	0.2182	0.2173	0.1589
24512	0.1414	0.2455	0.1747	0.1154
24514	0.1411	0.2454	0.1750	0.1157
24515	0.2088	0.2378	0.1087	0.0647
24516	0.0900	0.2068	0.2275	0.1722
24518	0.0525	0.1472	0.2500	0.2272
24525	0.4200	0.6017	0.5089	0.5490
24535	0.1061	0.2236	0.2115	0.1520
24728	0.7788	0.9571	0.5176	0.4005
24902	0.0880	0.2043	0.2294	0.1750
24921	0.3783	0.4080	0.2422	0.1579
24925	0.5284	1.4395	0.6221	0.3169
24932	0.6163	0.9522	0.6404	0.4968
24937	0.0654	0.2122	0.5072	0.5267
25180	0.0980	0.2158	0.2197	0.1619
27916	0.4903	0.4427	0.1559	0.0876
28939	0.0903	0.2072	0.2272	0.1718
28940	0.1263	0.2385	0.1904	0.1299
29071	0.0858	0.2016	0.2314	0.1780

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
29073	0.0779	0.1909	0.2382	0.1891
29074	0.0887	0.2052	0.2288	0.1740
29084	0.0323	0.1009	0.2321	0.2495
29085	0.1122	0.2288	0.2052	0.1450
29086	0.0741	0.1853	0.2411	0.1947
29087	0.0439	0.1288	0.2471	0.2391
29219	0.1091	0.2262	0.2084	0.1485
29222	0.0999	0.2177	0.2178	0.1595
29224	0.0874	0.2036	0.2299	0.1757
29366	0.1100	0.2270	0.2074	0.1474
29372	0.0846	0.2001	0.2325	0.1795
29389	0.0616	0.1647	0.2483	0.2134

F.5: Grade 4

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
19929	0.1039	0.2284	0.2056	0.1455
19930	0.0885	0.2131	0.2221	0.1650
19946	0.1113	0.2342	0.1975	0.1370
19949	0.0946	0.2197	0.2157	0.1570
19994	0.1239	0.2417	0.1839	0.1238
20029	0.1192	0.2392	0.1890	0.1286
20152	0.2106	0.4528	0.4079	0.2912
20202	0.1187	0.2390	0.1895	0.1290
20206	0.5254	0.6651	0.4898	0.5483
20369	0.1063	0.2304	0.2030	0.1427
20551	0.0635	0.1772	0.2446	0.2023
20553	0.0955	0.2639	0.4198	0.4169
20564	0.1253	0.2424	0.1824	0.1224
20661	0.1151	0.2367	0.1934	0.1329
20662	0.1793	0.2469	0.1282	0.0784
20664	0.1357	0.2466	0.1714	0.1125
20686	0.6463	0.2535	0.0524	0.0269
21109	0.0613	0.1733	0.2459	0.2058
21154	0.0879	0.2124	0.2228	0.1658
21156	0.1494	0.2495	0.1573	0.1007
21157	0.1154	0.2369	0.1931	0.1326
21159	0.0707	0.1891	0.2392	0.1909
24329	0.1120	0.2347	0.1968	0.1362
24330	0.1219	0.2407	0.1861	0.1258
24343	0.0778	0.1996	0.2328	0.1801
24421	0.1038	0.2283	0.2058	0.1456
24429	0.0700	0.1880	0.2397	0.1919
24435	0.0689	0.1862	0.2407	0.1937
24481	0.1106	0.2337	0.1983	0.1378
24512	0.1534	0.2499	0.1532	0.0974
24514	0.1532	0.2498	0.1535	0.0976
24515	0.2191	0.2236	0.0914	0.0532
24516	0.0996	0.2246	0.2103	0.1507
24518	0.0588	0.1687	0.2473	0.2100
24525	0.4510	0.5910	0.5169	0.5694
24535	0.1167	0.2377	0.1917	0.1312
24728	0.8520	0.8756	0.4757	0.3602
24902	0.0974	0.2225	0.2127	0.1535
24921	0.3891	0.3948	0.2110	0.1330
24925	0.6236	1.4068	0.4973	0.2459
24932	0.6804	0.9148	0.5922	0.4433
24937	0.0738	0.2533	0.5284	0.5039
25180	0.1081	0.2318	0.2010	0.1406
27916	0.5069	0.3970	0.1280	0.0710
28939	0.0999	0.2249	0.2100	0.1503
28940	0.1379	0.2472	0.1691	0.1105
29071	0.0950	0.2201	0.2153	0.1565

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
29073	0.0865	0.2107	0.2243	0.1678
29074	0.0981	0.2232	0.2119	0.1525
29084	0.0364	0.1193	0.2435	0.2439
29085	0.1231	0.2414	0.1847	0.1245
29086	0.0824	0.2056	0.2284	0.1735
29087	0.0492	0.1495	0.2500	0.2255
29219	0.1199	0.2396	0.1883	0.1279
29222	0.1101	0.2333	0.1988	0.1383
29224	0.0968	0.2219	0.2134	0.1542
29366	0.1209	0.2402	0.1872	0.1268
29372	0.0938	0.2189	0.2166	0.1580
29389	0.0688	0.1861	0.2407	0.1939

F.6: Grade 5

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
19929	0.1283	0.2396	0.1852	0.1250
19930	0.1107	0.2276	0.2039	0.1436
19946	0.1366	0.2436	0.1766	0.1171
19949	0.1177	0.2329	0.1965	0.1360
19994	0.1503	0.2481	0.1625	0.1050
20029	0.1452	0.2467	0.1677	0.1093
20152	0.2590	0.4740	0.3685	0.2509
20202	0.1448	0.2466	0.1682	0.1097
20206	0.6285	0.6199	0.5081	0.5639
20369	0.1310	0.2410	0.1824	0.1224
20551	0.0810	0.1952	0.2338	0.1816
20553	0.1214	0.2915	0.4242	0.4048
20564	0.1518	0.2484	0.1610	0.1037
20661	0.1408	0.2453	0.1723	0.1133
20662	0.2057	0.2396	0.1090	0.0649
20664	0.1629	0.2499	0.1499	0.0948
20686	0.5957	0.2089	0.0414	0.0213
21109	0.0783	0.1915	0.2361	0.1855
21154	0.1100	0.2270	0.2047	0.1445
21156	0.1770	0.2493	0.1362	0.0843
21157	0.1411	0.2454	0.1719	0.1130
21159	0.0897	0.2064	0.2256	0.1696
24329	0.1374	0.2439	0.1758	0.1164
24330	0.1482	0.2476	0.1647	0.1068
24343	0.0982	0.2159	0.2171	0.1586
24421	0.1282	0.2395	0.1854	0.1251
24429	0.0889	0.2054	0.2264	0.1707
24435	0.0875	0.2037	0.2277	0.1726
24481	0.1358	0.2433	0.1774	0.1178
24512	0.1811	0.2487	0.1323	0.0814
24514	0.1808	0.2487	0.1326	0.0816
24515	0.2380	0.2084	0.0761	0.0435
24516	0.1234	0.2368	0.1904	0.1300
24518	0.0752	0.1870	0.2387	0.1900
24525	0.5155	0.5754	0.5322	0.5865
24535	0.1425	0.2459	0.1705	0.1117
24728	0.9887	0.8048	0.4350	0.3203
24902	0.1209	0.2351	0.1931	0.1326
24921	0.4075	0.3793	0.1815	0.1110
24925	0.8730	1.3287	0.3919	0.1903
24932	0.8165	0.8737	0.5417	0.3902
24937	0.0966	0.2920	0.5343	0.4687
25180	0.1331	0.2420	0.1803	0.1204
27916	0.5282	0.3556	0.1046	0.0574
28939	0.1238	0.2370	0.1900	0.1296
28940	0.1652	0.2500	0.1477	0.0930
29071	0.1182	0.2333	0.1960	0.1354
29073	0.1083	0.2256	0.2064	0.1464

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
29074	0.1217	0.2357	0.1922	0.1317
29084	0.0473	0.1364	0.2494	0.2327
29085	0.1495	0.2479	0.1633	0.1056
29086	0.1035	0.2212	0.2115	0.1520
29087	0.0634	0.1679	0.2467	0.2080
29219	0.1460	0.2470	0.1669	0.1087
29222	0.1353	0.2431	0.1780	0.1183
29224	0.1202	0.2347	0.1938	0.1333
29366	0.1471	0.2473	0.1658	0.1077
29372	0.1168	0.2323	0.1974	0.1369
29389	0.0874	0.2036	0.2278	0.1727

F.7: Grade 6

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
19816	0.1070	0.2309	0.2276	0.1724
20014	0.1485	0.2494	0.1887	0.1283
20024	0.0940	0.2191	0.2378	0.1884
20097	0.2044	0.2353	0.1325	0.0815
20098	0.1555	0.2500	0.1818	0.1218
20123	0.3338	0.5071	0.3411	0.2210
20236	0.1176	0.2383	0.2183	0.1602
20237	0.0962	0.2213	0.2362	0.1856
20238	0.0836	0.2072	0.2443	0.2017
20239	0.0899	0.2147	0.2406	0.1935
20270	0.0677	0.1842	0.2498	0.2224
20334	0.1115	0.2343	0.2238	0.1672
20378	0.1547	0.2499	0.1826	0.1226
20426	0.1945	0.2410	0.1426	0.0891
20520	0.1138	0.2359	0.2218	0.1645
20521	0.1411	0.2480	0.1960	0.1355
20784	0.1372	0.2470	0.1998	0.1394
20793	0.0835	0.3789	0.6867	0.5402
21166	0.5476	0.3216	0.1199	0.0656
24194	0.0634	0.1770	0.2500	0.2278
24195	0.1885	0.2437	0.1488	0.0939
24229	0.1218	0.2407	0.2145	0.1556
24231	0.0970	0.2221	0.2356	0.1846
24235	0.0966	0.2217	0.2359	0.1851
24236	0.0932	0.2182	0.2384	0.1894
24238	0.0947	0.2198	0.2373	0.1875
24239	0.1433	0.2485	0.1939	0.1334
24240	0.0975	0.2226	0.2352	0.1839
24241	0.1831	0.2457	0.1542	0.0982
24314	0.1660	0.2496	0.1714	0.1125
24350	0.1041	0.2286	0.2301	0.1759
24352	0.1724	0.2486	0.1649	0.1070
24387	0.1127	0.2351	0.2227	0.1657
24388	0.0994	0.2244	0.2338	0.1816
24389	0.1193	0.2393	0.2168	0.1583
24473	0.1416	0.2482	0.1955	0.1350
24504	0.1105	0.2336	0.2246	0.1683
24536	0.2179	0.2248	0.1181	0.0712
24602	0.1048	0.2292	0.2294	0.1750
24733	0.6779	0.5698	0.5210	0.5646
24735	0.1679	0.2493	0.1695	0.1109
24740	1.0181	0.8166	0.4539	0.3045
24950	0.0812	0.2041	0.2456	0.2048
25033	0.2210	0.2218	0.1147	0.0688
25049	0.1210	0.2402	0.2153	0.1564
25059	0.0889	0.2423	0.3629	0.3845
25063	0.6805	0.5230	0.5146	0.5789

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
25140	0.1853	0.2450	0.1520	0.0964
29139	0.1986	0.2388	0.1384	0.0860
29140	0.1857	0.2448	0.1515	0.0961
29242	0.0999	0.2249	0.2334	0.1810
29250	0.0750	0.1955	0.2482	0.2129
29265	0.1433	0.2485	0.1939	0.1333
29380	0.0559	0.1632	0.2482	0.2366
29394	0.4013	0.4043	0.2488	0.1610
29395	1.1792	0.8807	0.3825	0.2297
29397	1.0961	1.1806	0.3369	0.1488
29421	0.4877	0.5187	0.2051	0.1091
33061	0.2409	0.1947	0.0895	0.0519

F.8: Grade 7

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
19816	0.1149	0.2452	0.2132	0.1540
20014	0.1577	0.2478	0.1704	0.1117
20024	0.1013	0.2379	0.2260	0.1701
20097	0.2125	0.2153	0.1156	0.0695
20098	0.1647	0.2457	0.1634	0.1057
20123	0.3529	0.4894	0.3032	0.1903
20236	0.1260	0.2486	0.2023	0.1420
20237	0.1036	0.2394	0.2239	0.1673
20238	0.0903	0.2293	0.2353	0.1840
20239	0.0970	0.2349	0.2297	0.1754
20270	0.0734	0.2101	0.2464	0.2070
20334	0.1196	0.2469	0.2086	0.1488
20378	0.1639	0.2460	0.1642	0.1064
20426	0.2032	0.2237	0.1251	0.0762
20520	0.1220	0.2476	0.2062	0.1462
20521	0.1502	0.2492	0.1780	0.1184
20784	0.1462	0.2497	0.1821	0.1221
20793	0.0929	0.4845	0.6664	0.4694
21166	0.5475	0.2596	0.1003	0.0545
24194	0.0688	0.2036	0.2483	0.2134
24195	0.1973	0.2283	0.1310	0.0804
24229	0.1303	0.2493	0.1980	0.1375
24231	0.1045	0.2399	0.2231	0.1662
24235	0.1041	0.2397	0.2235	0.1667
24236	0.1004	0.2373	0.2267	0.1712
24238	0.1020	0.2384	0.2253	0.1692
24239	0.1523	0.2489	0.1758	0.1164
24240	0.1050	0.2403	0.2226	0.1655
24241	0.1921	0.2320	0.1362	0.0843
24314	0.1752	0.2416	0.1530	0.0972
24350	0.1119	0.2439	0.2161	0.1575
24352	0.1816	0.2383	0.1466	0.0922
24387	0.1209	0.2473	0.2074	0.1474
24388	0.1070	0.2414	0.2207	0.1632
24389	0.1277	0.2489	0.2006	0.1401
24473	0.1506	0.2492	0.1775	0.1179
24504	0.1186	0.2466	0.2096	0.1499
24536	0.2250	0.2015	0.1023	0.0604
24602	0.1127	0.2442	0.2153	0.1566
24733	0.6986	0.5255	0.5361	0.5674
24735	0.1771	0.2407	0.1511	0.0957
24740	1.0488	0.7153	0.4060	0.2659
24950	0.0878	0.2269	0.2372	0.1874
25033	0.2279	0.1978	0.0991	0.0583
25049	0.1295	0.2492	0.1988	0.1383
25059	0.0964	0.2787	0.3726	0.3856
25063	0.6935	0.4871	0.5366	0.5853

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
25140	0.1942	0.2305	0.1341	0.0827
29139	0.2071	0.2203	0.1212	0.0733
29140	0.1947	0.2302	0.1336	0.0824
29242	0.1075	0.2417	0.2203	0.1626
29250	0.0812	0.2199	0.2419	0.1963
29265	0.1524	0.2489	0.1758	0.1164
29380	0.0608	0.1906	0.2500	0.2244
29394	0.4095	0.3749	0.2207	0.1388
29395	1.2359	0.7255	0.3300	0.1952
29397	1.1809	0.9342	0.2638	0.1169
29421	0.5141	0.4370	0.1703	0.0898
33061	0.2448	0.1675	0.0765	0.0437

F.9: Grade 8

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
19816	0.1347	0.2471	0.1936	0.1331
20014	0.1792	0.2460	0.1490	0.0941
20024	0.1197	0.2410	0.2085	0.1487
20097	0.2292	0.2100	0.0976	0.0572
20098	0.1862	0.2434	0.1421	0.0887
20123	0.3966	0.4827	0.2605	0.1584
20236	0.1465	0.2495	0.1817	0.1217
20237	0.1223	0.2423	0.2060	0.1459
20238	0.1075	0.2333	0.2202	0.1626
20239	0.1150	0.2384	0.2131	0.1539
20270	0.0882	0.2154	0.2369	0.1868
20334	0.1397	0.2484	0.1885	0.1281
20378	0.1853	0.2438	0.1429	0.0894
20426	0.2215	0.2189	0.1062	0.0630
20520	0.1423	0.2489	0.1859	0.1257
20521	0.1716	0.2481	0.1565	0.1001
20784	0.1676	0.2489	0.1606	0.1034
20793	0.1192	0.5083	0.6138	0.3872
21166	0.5348	0.2468	0.0812	0.0439
24194	0.0830	0.2091	0.2407	0.1938
24195	0.2165	0.2238	0.1115	0.0666
24229	0.1511	0.2499	0.1771	0.1175
24231	0.1232	0.2428	0.2050	0.1449
24235	0.1228	0.2426	0.2055	0.1453
24236	0.1188	0.2406	0.2094	0.1497
24238	0.1205	0.2415	0.2077	0.1478
24239	0.1738	0.2476	0.1543	0.0983
24240	0.1239	0.2431	0.2044	0.1442
24241	0.2118	0.2278	0.1163	0.0699
24314	0.1962	0.2385	0.1321	0.0812
24350	0.1314	0.2461	0.1969	0.1364
24352	0.2023	0.2348	0.1260	0.0768
24387	0.1411	0.2487	0.1871	0.1268
24388	0.1261	0.2441	0.2022	0.1419
24389	0.1484	0.2497	0.1798	0.1200
24473	0.1721	0.2480	0.1560	0.0997
24504	0.1387	0.2482	0.1896	0.1292
24536	0.2388	0.1957	0.0857	0.0495
24602	0.1323	0.2464	0.1960	0.1355
24733	0.7270	0.5186	0.5530	0.5600
24735	0.1980	0.2375	0.1303	0.0799
24740	1.0885	0.6940	0.3533	0.2251
24950	0.1047	0.2311	0.2229	0.1660
25033	0.2408	0.1920	0.0829	0.0478
25049	0.1502	0.2499	0.1780	0.1183
25059	0.1158	0.2864	0.3803	0.3840
25063	0.7040	0.4824	0.5610	0.5798

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
25140	0.2137	0.2262	0.1144	0.0686
29139	0.2248	0.2153	0.1026	0.0606
29140	0.2141	0.2259	0.1140	0.0683
29242	0.1266	0.2443	0.2017	0.1413
29250	0.0972	0.2246	0.2296	0.1752
29265	0.1739	0.2476	0.1543	0.0983
29380	0.0737	0.1965	0.2462	0.2066
29394	0.4244	0.3673	0.1896	0.1158
29395	1.3180	0.6943	0.2762	0.1606
29397	1.3542	0.8795	0.1980	0.0886
29421	0.5674	0.4181	0.1365	0.0716
33061	0.2497	0.1613	0.0632	0.0356

F.10: Grade 9

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
19862	0.0995	0.1982	0.2456	0.2050
20171	0.2223	0.2405	0.1357	0.0839
20177	0.6038	0.4630	0.1571	0.0824
20219	0.2177	0.2431	0.1413	0.0881
20373	0.2001	0.2490	0.1611	0.1038
20423	0.1726	0.2483	0.1891	0.1287
20425	0.1222	0.2212	0.2325	0.1797
20472	0.1450	0.2375	0.2145	0.1556
20479	0.1296	0.2272	0.2271	0.1717
20681	0.4371	0.2550	0.0944	0.0525
20796	0.2499	0.1927	0.0834	0.0481
20806	0.6394	0.3976	0.1196	0.0614
20817	0.2352	0.2294	0.1183	0.0713
21165	0.1283	0.2262	0.2281	0.1731
24192	0.6370	0.5370	0.4323	0.3926
24197	0.0949	0.1927	0.2474	0.2102
24227	0.1715	0.2480	0.1902	0.1298
24234	1.1919	1.0164	0.4215	0.2335
24272	0.0764	0.1674	0.2498	0.2302
24274	0.1777	0.2492	0.1841	0.1240
24278	0.2408	0.2217	0.1092	0.0650
24298	0.1161	0.2157	0.2367	0.1864
24299	0.1319	0.2289	0.2253	0.1693
24317	0.2073	0.2473	0.1533	0.0975
24318	0.1254	0.2239	0.2302	0.1762
24408	0.2086	0.2469	0.1518	0.0963
24409	0.1203	0.2196	0.2338	0.1817
24413	0.1988	0.2492	0.1625	0.1050
24414	0.2098	0.2465	0.1505	0.0952
24417	0.1593	0.2443	0.2017	0.1414
24418	0.1709	0.2479	0.1908	0.1303
24443	0.1950	0.2497	0.1665	0.1084
24506	0.1278	0.2258	0.2285	0.1736
24507	0.1869	0.2500	0.1749	0.1156
24508	0.2020	0.2486	0.1590	0.1021
24509	0.2227	0.2402	0.1353	0.0836
24738	1.3042	0.7729	0.3123	0.1828
24989	0.2356	0.2288	0.1177	0.0709
25093	0.2416	0.2205	0.1079	0.0641
25102	0.2034	0.2483	0.1575	0.1009
25106	0.1843	0.4015	0.5255	0.4270
25115	0.6720	0.7392	0.6597	0.6544
25116	0.4690	0.3735	0.1740	0.1027
29093	0.1134	0.2131	0.2384	0.1894
29094	0.1305	0.2279	0.2264	0.1707
29095	0.1454	0.2377	0.2142	0.1552
29142	0.2482	0.2039	0.0922	0.0537

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
29143	0.2375	0.2265	0.1148	0.0689
29144	0.2154	0.2442	0.1440	0.0902
29146	0.1029	0.2022	0.2441	0.2011
29147	0.1860	0.2500	0.1759	0.1165
29149	0.1297	0.2273	0.2271	0.1716
29151	0.1422	0.2358	0.2169	0.1585
29152	0.1211	0.2203	0.2333	0.1808
29364	0.1364	0.2321	0.2218	0.1645
29406	1.5403	1.0777	0.2195	0.0912
29422	0.1259	0.2243	0.2299	0.1756
29423	0.2225	0.2403	0.1354	0.0837
29755	0.1687	0.2473	0.1929	0.1324
33805	0.0932	0.1906	0.2479	0.2121

F.11: Grade 10

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
19862	0.1071	0.2039	0.2420	0.1964
20171	0.2290	0.2373	0.1271	0.0776
20177	0.6132	0.4440	0.1428	0.0747
20219	0.2249	0.2403	0.1324	0.0815
20373	0.2085	0.2477	0.1519	0.0964
20423	0.1818	0.2493	0.1801	0.1202
20425	0.1307	0.2259	0.2262	0.1705
20472	0.1541	0.2406	0.2065	0.1465
20479	0.1383	0.2314	0.2202	0.1625
20681	0.4242	0.2442	0.0867	0.0480
20796	0.2498	0.1867	0.0771	0.0441
20806	0.6374	0.3775	0.1083	0.0556
20817	0.2402	0.2250	0.1102	0.0657
21165	0.1370	0.2305	0.2212	0.1639
24192	0.6321	0.5308	0.4255	0.3879
24197	0.1022	0.1985	0.2444	0.2019
24227	0.1807	0.2492	0.1812	0.1213
24234	1.2227	0.9841	0.3872	0.2129
24272	0.0827	0.1735	0.2499	0.2236
24274	0.1868	0.2498	0.1750	0.1157
24278	0.2448	0.2168	0.1015	0.0598
24298	0.1244	0.2207	0.2310	0.1773
24299	0.1407	0.2330	0.2182	0.1600
24317	0.2153	0.2454	0.1442	0.0903
24318	0.1340	0.2284	0.2236	0.1670
24408	0.2164	0.2449	0.1428	0.0893
24409	0.1288	0.2243	0.2277	0.1725
24413	0.2073	0.2481	0.1533	0.0975
24414	0.2176	0.2444	0.1414	0.0882
24417	0.1686	0.2464	0.1931	0.1325
24418	0.1801	0.2491	0.1818	0.1218
24443	0.2036	0.2489	0.1573	0.1007
24506	0.1365	0.2301	0.2217	0.1644
24507	0.1958	0.2499	0.1657	0.1076
24508	0.2103	0.2472	0.1499	0.0948
24509	0.2294	0.2370	0.1266	0.0772
24738	1.2858	0.7404	0.2891	0.1681
24989	0.2406	0.2244	0.1096	0.0653
25093	0.2453	0.2155	0.1002	0.0590
25102	0.2116	0.2468	0.1484	0.0936
25106	0.1997	0.4153	0.5168	0.4066
25115	0.7004	0.7302	0.6622	0.6458
25116	0.4685	0.3633	0.1615	0.0945
29093	0.1216	0.2182	0.2330	0.1803
29094	0.1393	0.2321	0.2194	0.1615
29095	0.1545	0.2409	0.2061	0.1461
29142	0.2497	0.1982	0.0854	0.0493

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
29143	0.2421	0.2219	0.1068	0.0634
29144	0.2228	0.2416	0.1351	0.0834
29146	0.1107	0.2077	0.2400	0.1924
29147	0.1949	0.2499	0.1666	0.1085
29149	0.1384	0.2315	0.2201	0.1624
29151	0.1513	0.2392	0.2091	0.1493
29152	0.1296	0.2250	0.2271	0.1716
29364	0.1453	0.2359	0.2143	0.1553
29406	1.5903	1.0115	0.1920	0.0803
29422	0.1346	0.2288	0.2232	0.1664
29423	0.2292	0.2371	0.1268	0.0774
29755	0.1780	0.2487	0.1839	0.1238
33805	0.1004	0.1965	0.2452	0.2039

F.12: Grade 11

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
19862	0.1123	0.2310	0.2373	0.1876
20171	0.2331	0.2130	0.1187	0.0716
20177	0.6169	0.3403	0.1297	0.0678
20219	0.2293	0.2177	0.1238	0.0752
20373	0.2138	0.2324	0.1428	0.0893
20423	0.1878	0.2462	0.1709	0.1121
20425	0.1366	0.2448	0.2192	0.1612
20472	0.1602	0.2499	0.1980	0.1375
20479	0.1443	0.2473	0.2126	0.1533
20681	0.4149	0.1890	0.0795	0.0438
20796	0.2492	0.1530	0.0711	0.0404
20806	0.6332	0.2761	0.0980	0.0503
20817	0.2430	0.1959	0.1025	0.0605
21165	0.1430	0.2470	0.2137	0.1546
24192	0.6279	0.4987	0.4189	0.3837
24197	0.1073	0.2270	0.2404	0.1932
24227	0.1867	0.2465	0.1720	0.1131
24234	1.2374	0.8010	0.3552	0.1940
24272	0.0871	0.2060	0.2489	0.2163
24274	0.1928	0.2444	0.1658	0.1077
24278	0.2468	0.1858	0.0942	0.0550
24298	0.1301	0.2420	0.2245	0.1681
24299	0.1467	0.2479	0.2104	0.1508
24317	0.2203	0.2271	0.1353	0.0836
24318	0.1399	0.2460	0.2163	0.1577
24408	0.2214	0.2261	0.1339	0.0826
24409	0.1346	0.2440	0.2208	0.1633
24413	0.2126	0.2333	0.1442	0.0903
24414	0.2225	0.2250	0.1326	0.0816
24417	0.1747	0.2492	0.1841	0.1239
24418	0.1862	0.2467	0.1726	0.1136
24443	0.2091	0.2358	0.1482	0.0934
24506	0.1424	0.2468	0.2142	0.1552
24507	0.2016	0.2403	0.1564	0.1000
24508	0.2155	0.2311	0.1409	0.0878
24509	0.2334	0.2125	0.1182	0.0713
24738	1.2670	0.5812	0.2674	0.1543
24989	0.2434	0.1952	0.1019	0.0601
25093	0.2472	0.1843	0.0930	0.0542
25102	0.2168	0.2301	0.1394	0.0867
25106	0.2105	0.4830	0.5055	0.3857
25115	0.7172	0.6834	0.6643	0.6345
25116	0.4672	0.3045	0.1496	0.0868
29093	0.1272	0.2406	0.2267	0.1711
29094	0.1453	0.2476	0.2117	0.1523
29095	0.1607	0.2499	0.1976	0.1371
29142	0.2500	0.1650	0.0789	0.0452

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
29143	0.2446	0.1921	0.0993	0.0583
29144	0.2274	0.2200	0.1264	0.0771
29146	0.1160	0.2337	0.2349	0.1834
29147	0.2007	0.2408	0.1574	0.1008
29149	0.1444	0.2474	0.2125	0.1532
29151	0.1574	0.2497	0.2007	0.1403
29152	0.1355	0.2444	0.2201	0.1624
29364	0.1513	0.2489	0.2063	0.1462
29406	1.6131	0.6775	0.1680	0.0708
29422	0.1405	0.2462	0.2159	0.1572
29423	0.2333	0.2127	0.1184	0.0714
29755	0.1840	0.2473	0.1748	0.1155
33805	0.1055	0.2254	0.2414	0.1953

F.13: Grade 12

Item ID	Item Information at Low Intermediate Cut	Item Information at High Intermediate Cut	Item Information at Proficient Cut	Item Information at Advanced Proficient Cut
19862	0.1205	0.2415	0.2207	0.1631
20171	0.2385	0.1963	0.0978	0.0574
20177	0.6184	0.2885	0.1002	0.0522
20219	0.2352	0.2016	0.1025	0.0605
20373	0.2213	0.2191	0.1197	0.0723
20423	0.1967	0.2382	0.1464	0.0920
20425	0.1455	0.2494	0.1976	0.1370
20472	0.1695	0.2486	0.1740	0.1148
20479	0.1534	0.2500	0.1899	0.1295
20681	0.4001	0.1626	0.0628	0.0343
20796	0.2472	0.1351	0.0570	0.0319
20806	0.6225	0.2295	0.0750	0.0386
20817	0.2464	0.1780	0.0837	0.0482
21165	0.1520	0.2499	0.1913	0.1308
24192	0.6206	0.4824	0.4029	0.3735
24197	0.1153	0.2385	0.2251	0.1690
24227	0.1956	0.2388	0.1475	0.0929
24234	1.2504	0.7029	0.2803	0.1510
24272	0.0941	0.2216	0.2409	0.1942
24274	0.2015	0.2353	0.1414	0.0882
24278	0.2489	0.1675	0.0765	0.0437
24298	0.1389	0.2482	0.2039	0.1436
24299	0.1558	0.2500	0.1875	0.1272
24317	0.2272	0.2126	0.1128	0.0675
24318	0.1489	0.2498	0.1942	0.1337
24408	0.2282	0.2113	0.1115	0.0666
24409	0.1435	0.2491	0.1995	0.1390
24413	0.2202	0.2202	0.1210	0.0732
24414	0.2292	0.2101	0.1103	0.0658
24417	0.1839	0.2444	0.1596	0.1025
24418	0.1951	0.2391	0.1481	0.0933
24443	0.2170	0.2233	0.1247	0.0758
24506	0.1515	0.2499	0.1918	0.1313
24507	0.2099	0.2293	0.1325	0.0815
24508	0.2229	0.2174	0.1179	0.0710
24509	0.2387	0.1958	0.0974	0.0571
24738	1.2305	0.5070	0.2158	0.1225
24989	0.2466	0.1772	0.0831	0.0479
25093	0.2492	0.1660	0.0755	0.0431
25102	0.2241	0.2162	0.1165	0.0701
25106	0.2275	0.5105	0.4648	0.3293
25115	0.7388	0.6659	0.6640	0.5915
25116	0.4638	0.2720	0.1211	0.0689
29093	0.1359	0.2475	0.2067	0.1466
29094	0.1544	0.2500	0.1890	0.1285
29095	0.1699	0.2485	0.1736	0.1145
29142	0.2495	0.1466	0.0636	0.0358

29143	0.2475	0.1740	0.0809	0.0465
29144	0.2335	0.2042	0.1048	0.0620
29146	0.1243	0.2433	0.2173	0.1589
29147	0.2090	0.2300	0.1334	0.0822
29149	0.1535	0.2500	0.1898	0.1294
29151	0.1666	0.2491	0.1769	0.1174
29152	0.1444	0.2492	0.1987	0.1382
29364	0.1605	0.2498	0.1829	0.1229
29406	1.6304	0.5296	0.1182	0.0510
29422	0.1495	0.2498	0.1937	0.1332
29423	0.2386	0.1960	0.0976	0.0572
29755	0.1930	0.2402	0.1502	0.0950
33805	0.1134	0.2374	0.2267	0.1712

APPENDIX G: CLASSIFICATION DISTRIBUTION ACROSS PERFORMANCE LEVELS FOR THE ELPA, MEAP, AND MME

G.1: Grade 3- Percentage of ELLs Scoring at Each MEAP Reading and Math Performance Level by Each ELPA Performance Level

Reading			ELPA Performance Levels				
			1 Advanced Proficient (N=925)	2 Proficient (N=1637)	3 High Intermediate (N=3813)	4 Low Intermediate (N=271)	5 Basic (N=2)
MEAP Performance Levels	1 Advanced	%	10.49	1.59	0.21	0.00	0.00
	2 Proficient	%	81.41	64.14	20.43	1.85	0.00
	3 Partially Proficient	%	7.78	30.73	46.71	12.55	0.00
	4 Not Proficient	%	0.32	3.54	32.65	85.61	100.00

Math			ELPA Performance Levels				
			1 Advanced Proficient (N=925)	2 Proficient (N=1637)	3 High Intermediate (N=3813)	4 Low Intermediate (N=271)	5 Basic (N=2)
MEAP Performance Levels	1 Advanced	%	9.62	1.04	0.08	0.00	0.00
	2 Proficient	%	61.62	34.76	7.37	2.21	0.00
	3 Partially Proficient	%	20.65	33.41	20.82	3.69	0.00
	4 Not Proficient	%	8.11	30.79	71.73	94.10	100.00

G.2: Grade 4- Percentage of ELLs Scoring at Each MEAP Reading, Writing, and Math Performance Level by Each ELPA Performance Level

Reading			ELPA Performance Levels				
			1 Advanced Proficient (N=1261)	2 Proficient (N=1611)	3 High Intermediate (N=2441)	4 Low Intermediate (N=180)	5 Basic (N=1)
MEAP Performance Levels	1 Advanced	%	1.35	0.00	0.04	0.56	0.00
	2 Proficient	%	79.22	47.55	15.20	1.67	0.00
	3 Partially Proficient	%	18.48	47.61	58.54	35.56	0.00
	4 Not Proficient	%	0.95	4.84	26.22	62.22	100.00

Writing			ELPA Performance Levels				
			1 Advanced Proficient (N=1261)	2 Proficient (N=1611)	3 High Intermediate (N=2441)	4 Low Intermediate (N=180)	5 Basic (N=1)
MEAP Performance Levels	1 Advanced	%	11.58	2.30	0.12	0.56	0.00
	2 Proficient	%	48.06	24.02	9.59	0.00	0.00
	3 Partially Proficient	%	39.97	72.13	77.96	50.56	0.00
	4 Not Proficient	%	0.40	1.55	12.33	48.89	100.00

(G.2 continued)

Math			ELPA Performance Levels				
			1 Advanced Proficient (N=1261)	2 Proficient (N=1611)	3 High Intermediate (N=2441)	4 Low Intermediate (N=180)	5 Basic (N=1)
MEAP Performance Levels	1 Advanced	%	5.87	1.12	0.12	0.56	0.00
	2 Proficient	%	53.05	24.83	7.41	2.78	0.00
	3 Partially Proficient	%	19.43	22.78	10.41	3.33	0.00
	4 Not Proficient	%	21.65	51.27	82.06	93.33	100.00

G.3: Grade 5- Percentage of ELLs Scoring at Each MEAP Reading, Math, and Science Performance Level by Each ELPA Performance Level

Reading			ELPA Performance Levels				
			1 Advanced Proficient (N=1449)	2 Proficient (N=1400)	3 High Intermediate (N=1817)	4 Low Intermediate (N=139)	5 Basic (N=2)
MEAP Performance Levels	1 Advanced	%	4.14	0.43	0.00	0.00	0.00
	2 Proficient	%	65.08	35.50	10.68	3.60	0.00
	3 Partially Proficient	%	24.78	45.57	33.57	13.67	0.00
	4 Not Proficient	%	6.00	18.50	55.75	82.73	100.00

Math			ELPA Performance Levels				
			1 Advanced Proficient (N=1449)	2 Proficient (N=1400)	3 High Intermediate (N=1817)	4 Low Intermediate (N=139)	5 Basic (N=2)
MEAP Performance Levels	1 Advanced	%	3.38	0.43	0.06	0.72	0.00
	2 Proficient	%	41.96	19.21	7.32	1.44	0.00
	3 Partially Proficient	%	23.26	20.93	10.84	4.32	0.00
	4 Not Proficient	%	31.40	59.43	81.78	93.53	100.00

(G.3 continued)

Science			ELPA Performance Levels				
			1 Advanced Proficient (N=1449)	2 Proficient (N=1400)	3 High Intermediate (N=1817)	4 Low Intermediate (N=139)	5 Basic (N=2)
MEAP Performance Levels	1 Advanced	%	0.90	0.14	0.06	0.00	0.00
	2 Proficient	%	2.83	0.64	0.17	0.00	0.00
	3 Partially Proficient	%	30.02	10.14	3.19	1.44	0.00
	4 Not Proficient	%	66.25	89.07	96.59	98.56	100.00

G.4: Grade 6- Percentage of ELLs Scoring at Each MEAP Reading, Math, and Social Studies Performance Level by Each ELPA Performance Level

Reading			ELPA Performance Levels				
			1 Advanced Proficient (N=328)	2 Proficient (N=776)	3 High Intermediate (N=2366)	4 Low Intermediate (N=576)	5 Basic (N=18)
MEAP Performance Levels	1 Advanced	%	34.45	7.35	1.01	0.00	0.00
	2 Proficient	%	60.37	59.41	24.51	4.34	0.00
	3 Partially Proficient	%	4.27	25.26	35.93	11.81	5.56
	4 Not Proficient	%	0.91	7.99	38.55	83.85	94.44

Math			ELPA Performance Levels				
			1 Advanced Proficient (N=328)	2 Proficient (N=776)	3 High Intermediate (N=2366)	4 Low Intermediate (N=576)	5 Basic (N=18)
MEAP Performance Levels	1 Advanced	%	7.62	1.68	0.42	0.17	0.00
	2 Proficient	%	49.09	27.06	10.86	5.21	0.00
	3 Partially Proficient	%	21.34	28.48	17.84	5.21	5.56
	4 Not Proficient	%	21.95	42.78	70.88	89.41	94.44

(G.4 continued)

Social Studies			ELPA Performance Levels				
			1 Advanced Proficient (N=328)	2 Proficient (N=776)	3 High Intermediate (N=2366)	4 Low Intermediate (N=576)	5 Basic (N=18)
MEAP Performance Levels	1 Advanced	%	3.35	0.26	0.08	0.00	0.00
	2 Proficient	%	32.62	9.02	1.69	0.35	0.00
	3 Partially Proficient	%	60.67	74.10	46.15	15.63	16.67
	4 Not Proficient	%	3.35	16.62	52.07	84.03	83.33

G.5: Grade 7- Percentage of ELLs Scoring at Each MEAP Reading, Writing, and Math Performance Level by Each ELPA Performance Level

Reading			ELPA Performance Levels				
			1 Advanced Proficient (N=331)	2 Proficient (N=726)	3 High Intermediate (N=1789)	4 Low Intermediate (N=719)	5 Basic (N=23)
MEAP Performance Levels	1 Advanced	%	8.76	0.69	0.06	0.00	0.00
	2 Proficient	%	67.07	40.63	9.89	3.62	4.35
	3 Partially Proficient	%	20.24	43.25	38.12	7.93	8.70
	4 Not Proficient	%	3.93	15.43	51.93	88.46	86.96

Writing			ELPA Performance Levels				
			1 Advanced Proficient (N=331)	2 Proficient (N=726)	3 High Intermediate (N=1789)	4 Low Intermediate (N=719)	5 Basic (N=23)
MEAP Performance Levels	1 Advanced	%	9.97	2.34	0.28	0.00	0.00
	2 Proficient	%	61.63	38.84	17.55	2.09	0.00
	3 Partially Proficient	%	27.79	55.51	67.36	42.70	8.70
	4 Not Proficient	%	0.60	3.31	14.81	55.22	91.30

(G.5 continued)

Math			ELPA Performance Levels				
			1 Advanced Proficient (N=331)	2 Proficient (N=726)	3 High Intermediate (N=1789)	4 Low Intermediate (N=719)	5 Basic (N=23)
MEAP Performance Levels	1 Advanced	%	5.74	1.79	0.39	0.00	0.00
	2 Proficient	%	42.30	19.56	7.60	4.03	0.00
	3 Partially Proficient	%	31.12	34.30	19.79	6.68	8.70
	4 Not Proficient	%	20.85	44.35	72.22	89.29	91.30

G.6: Grade 8- Percentage of ELLs Scoring at Each MEAP Reading, Math, and Science Performance Level by Each ELPA Performance Level

Reading			ELPA Performance Levels				
			1 Advanced Proficient (N=331)	2 Proficient (N=810)	3 High Intermediate (N=1747)	4 Low Intermediate (N=558)	5 Basic (N=28)
MEAP Performance Levels	1 Advanced	%	17.52	2.10	0.17	0.00	0.00
	2 Proficient	%	65.26	51.85	20.49	3.76	0.00
	3 Partially Proficient	%	16.01	40.62	52.49	24.91	7.14
	4 Not Proficient	%	1.21	5.43	26.85	71.33	92.86

Math			ELPA Performance Levels				
			1 Advanced Proficient (N=331)	2 Proficient (N=810)	3 High Intermediate (N=1747)	4 Low Intermediate (N=558)	5 Basic (N=28)
MEAP Performance Levels	1 Advanced	%	11.18	1.73	0.63	0.00	0.00
	2 Proficient	%	29.00	14.57	4.41	3.41	0.00
	3 Partially Proficient	%	38.67	32.72	19.46	6.63	14.29
	4 Not Proficient	%	21.15	50.99	75.50	89.96	85.71

(G.6 continued)

Science			ELPA Performance Levels				
			1 Advanced Proficient (N=331)	2 Proficient (N=810)	3 High Intermediate (N=1747)	4 Low Intermediate (N=558)	5 Basic (N=28)
MEAP Performance Levels	1 Advanced	%	0.91	0.12	0.06	0.00	0.00
	2 Proficient	%	12.69	2.22	0.23	0.54	0.00
	3 Partially Proficient	%	35.65	14.81	4.58	1.43	0.00
	4 Not Proficient	%	50.76	82.84	95.13	98.03	100.00

G.7: Grade 11- Percentage of ELLs Scoring at Each MME Reading, Writing, Math, Science, and Social Studies Performance Level by Each ELPA Performance Level

Reading			ELPA Performance Levels				
			1 Advanced Proficient (N=250)	2 Proficient (N=457)	3 High Intermediate (N=971)	4 Low Intermediate (N=766)	5 Basic (N=54)
MME Performance Levels	1 Advanced	%	6.40	0.66	0.10	0.00	0.00
	2 Proficient	%	47.60	21.88	6.80	0.39	0.00
	3 Partially Proficient	%	35.60	52.95	41.30	11.88	3.70
	4 Not Proficient	%	10.40	24.51	51.80	87.73	96.30

Writing			ELPA Performance Levels				
			1 Advanced Proficient (N=250)	2 Proficient (N=457)	3 High Intermediate (N=971)	4 Low Intermediate (N=766)	5 Basic (N=54)
MME Performance Levels	1 Advanced	%	2.00	0.00	0.00	0.00	0.00
	2 Proficient	%	50.80	17.29	4.12	0.65	0.00
	3 Partially Proficient	%	46.40	79.43	83.63	44.39	11.11
	4 Not Proficient	%	0.80	3.28	12.26	54.96	88.89

(G.7 continued)

Math			ELPA Performance Levels				
			1 Advanced Proficient (N=250)	2 Proficient (N=457)	3 High Intermediate (N=971)	4 Low Intermediate (N=766)	5 Basic (N=54)
MME Performance Levels	1 Advanced	%	4.00	1.53	1.03	0.00	0.00
	2 Proficient	%	19.60	7.88	4.74	1.57	0.00
	3 Partially Proficient	%	52.40	42.89	29.97	14.62	3.70
	4 Not Proficient	%	24.00	47.70	64.26	83.81	96.30

Science			ELPA Performance Levels				
			1 Advanced Proficient (N=250)	2 Proficient (N=457)	3 High Intermediate (N=971)	4 Low Intermediate (N=766)	5 Basic (N=54)
MME Performance Levels	1 Advanced	%	1.60	0.66	0.00	0.00	0.00
	2 Proficient	%	13.60	1.75	0.51	0.00	0.00
	3 Partially Proficient	%	38.00	22.98	8.03	1.83	1.85
	4 Not Proficient	%	46.80	74.62	91.45	98.17	98.15

(G.7 continued)

Social Studies			ELPA Performance Levels				
			1 Advanced Proficient (N=250)	2 Proficient (N=457)	3 High Intermediate (N=971)	4 Low Intermediate (N=766)	5 Basic (N=54)
MME Performance Levels	1 Advanced	%	3.20	0.44	0.10	0.00	0.00
	2 Proficient	%	29.60	10.94	2.78	0.78	0.00
	3 Partially Proficient	%	60.00	76.59	68.28	41.25	29.63
	4 Not Proficient	%	7.20	12.04	28.84	57.96	70.37

APPENDIX H: ITEM BANK PROCESS

The Michigan Item Banking System is a secure web-based application that dynamically supports in one system:

1) all item development processes throughout the entire life cycle of an item from assignment through retirement;

2) all test development processes from blueprint design through test map generation and approval, and subsequent uploading of item statistics for a test administration;

3) item maturity and version control throughout the item development and maturation cycles, controlling item availability within specific item pools (pilot testing, field testing, or operational)

4) all state-level summative assessment programs.

Access - Access to the Item Banking System (IBS) is controlled by Tivoli Single Sign On authentication. Access to items within the IBS is based on user role permissions, item maturity, and specified assessment program (e.g. ELPA), content area (e.g. Listening) and grade level span permissions.

Item Assignment - The item development process begins in the IBS with the assignment of an item to a specific item writer. Item assignments are based on item inventory and blueprint design. The item assignment specifications include the content expectation being measured, item type, taxonomy level (Linguistic Difficulty Level for ELPA items), and due date. When the item assignment is submitted, the system assigns a unique Item ID to the item. The item will retain this unique ID through its life cycle. The maturity of the item will be updated as it progresses through its life cycle, and the version of the item will be updated with each change to the item. Each version of the item is retained and viewable within the IBS history. The item writer can only access items assigned to them, and only in the item's submitted state.

Item Development – When the Item Writer submits the item, the Content Lead can accept the item, request further revision by the Item Writer, or reject the item. Once the Content Lead accepts the submitted item, they can make further revisions to the item text. If there is a graphic request the item will be routed to the Composition Team to create the item graphic(s). When the graphic requests are fulfilled, the item will be routed back to the Content Lead to review the item and graphics. If revisions to the graphic are needed, this graphic revision and review process will continue until the Content Lead accepts the item for Committee Review.
Committee Members work within the Item Banking System to preview each item and provide their feedback with recommendation for acceptance, revision, or rejection. Committee Members are only able to view the items assigned to their committee, and only their own feedback. A Committee Facilitator is able to review all committee member feedback and initiate discussion on any item where there is not agreement. The Committee Facilitator will enter the consensus comment into the IBS. All committee feedback is also retained and viewable in IBS.
Following the Initial Committee reviews for BSC and CAC, the Content Lead can accept the item as is; reject the item, flagging as Do Not Use (DNU), which will prevent it from progressing through the system; or edit the item based on committee feedback, and route for graphic

revisions if needed. Once the Content Lead has accepted the item, it is routed to a Composition Editor who reviews the item in the IBS for proofing and ensuring that the item meets the Style Guide specifications. The Editor can approve the item or suggest revision, but cannot alter the item. The Content Lead will determine whether to make the suggested revisions or not, but the Editor feedback is retained in the IBS.

Item Banking - Once the Content Lead and the Editor have approved the item content (there is no layout at this point), the Content Lead "banks" the item by routing it to the appropriate item pool, updating the maturity as Ready for Pilot Test or Ready for Field Test. The item never leaves the IBS. This process maintains maturity and version control of the item, while removing the item editing and revision process from the critical path of test development and form production.
The item is available for use in the applicable inventory pool based on its maturity. Item statistical data upload into the IBS will advance the maturity of the item to Pilot Tested or Field Tested and route the item for Data Review. The data review process is similar to the Initial Item Review process defined above with the addition of the statistical data being available in the item bank for committee member review. An item may be routed to the Operational pool by the Content Lead following Data Review; the item may undergo suggested revision and be routed for Re-Field Testing; or the item may be rejected and flagged as DNU which removes it from any item pool availability.

Test Development – The IBS provides the functionality for a Content Lead to build a test blueprint inside the item bank, specifying the number of forms, quantity and type of items by content expectation, item function (common, matrix, or field test), and identify equating or linking items for the test map. For context based programs (Reading and Listening), the Content Lead also specifies the type of context, and number and type of items associated with each context. The item bank will display an inventory of all contexts meeting the desired item specifications. The Content Lead then selects the desired context(s) and the individual items associated with that context.
The IBS will generate a test layout showing the content expectation, item type, and item function in each test position. The Content Lead can rearrange the item positions based on the preceding criteria. Once the Content Lead approves the test layout, the system will select the items to fill the test map based on the blueprint criteria and the selection algorithm.
The test map is then available for review and approval by the Content Lead. The Content Lead can rearrange or replace items during their review process. The most recent item statistics based on the administration type (standard, accommodated, make-up) will be displayed in the test map, and the system will generate for each form:

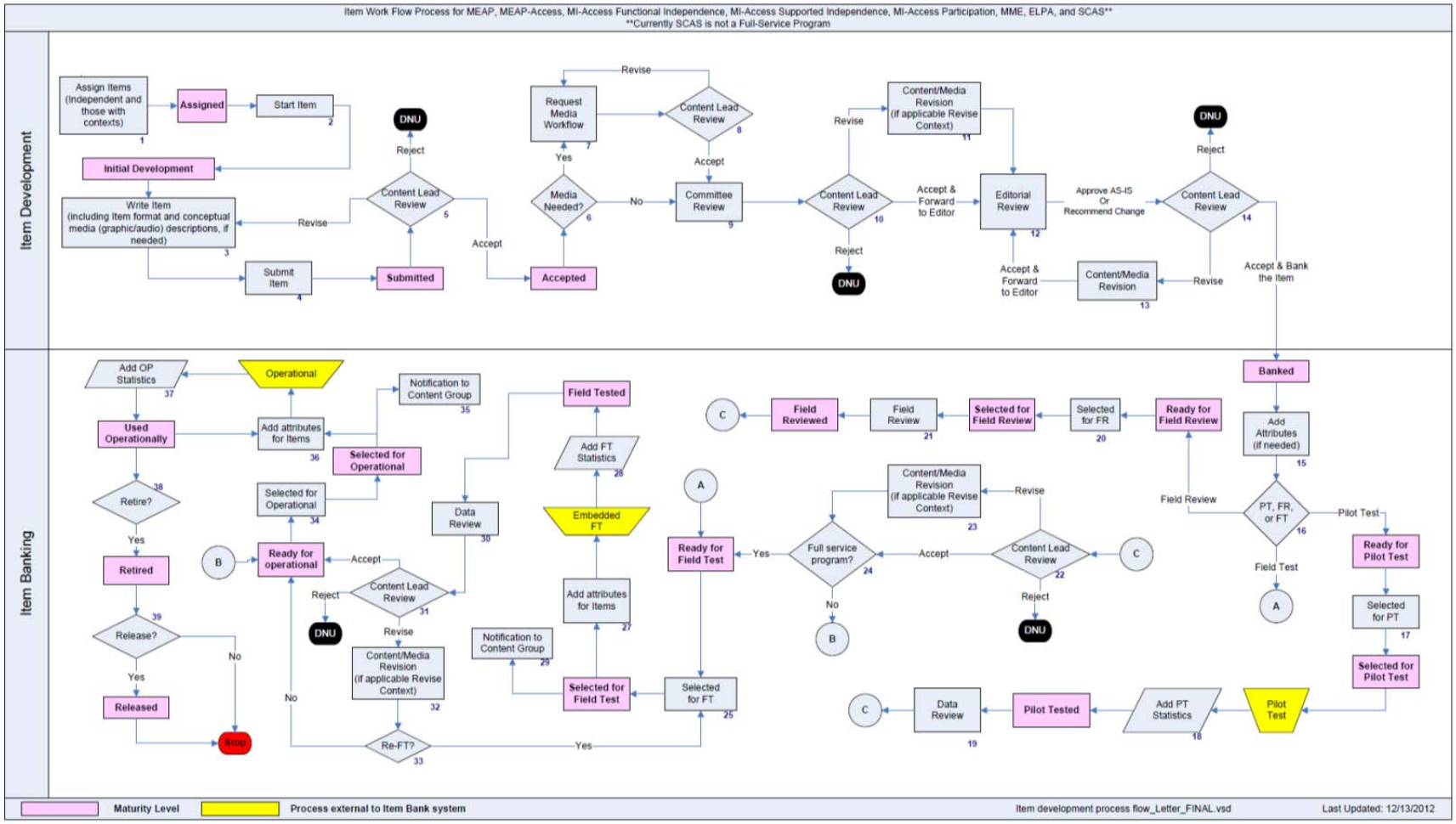
- a statistical summary for each test form including summary statistics for the adjusted p-value, item-total correlation, the three parameters and their standard errors, if available;
- Summary Frequency for Scoring keys, DIF ranges, and item types;
- Item Statistics Detail including Adjusted p-value, Item-Total Correlation, each of the three parameters and their standard error, if available;

- Test Characteristic Curve, Test Information Curve, and Test Standard Error Curve compared to the Base Curves selected by the Psychometrician.

Psychometric Approval of Test Map – Once the Content Lead has approved the items in the test map; the Psychometrician will receive notification from the IBS that there is a test map pending their review and approval. The Psychometrician can approve the test map as is, or recommend revision. The Content Lead or Psychometrician can search the item bank to identify items that match the criteria to improve the test map. The Content Lead can replace items in the test map until both the Content Lead and Psychometrician have approved the test map. At that time the test map is "locked down" and no additional changes may be made to the test map.

Creation of Test Forms – Once the test map has received both the Content Lead and Psychometric approval, the system will generate an export of the item elements (stem, options, and graphics) for each unique item in the test map.
The Composition Team will create a OnePer for each item. The OnePer is a single page layout presentation for each item (one item per page) to represent how that item will be displayed each time it appears in a test form. Each unique item in the test map will only be formatted once. This ensures consistency of item presentation across forms and test cycles.
The OnePers for the test map are uploaded into the IBS. The Content Lead will then compare the OnePer against the IBS to ensure content accuracy. Following Content Lead approval, the Editor will then review the OnePers to ensure item integrity with the Item Bank content. When the IBS system receives both OnePer approvals for the test map, the system will export the pre-composition materials (approved OnePers) in sequence for each form in the test map, for creation of the printed test booklets from the sequenced OnePers.
At this point in the process, the review of the individual test forms becomes external to the IBS. The cycle resumes in the IBS with the upload of Item Statistics after test administration, continuing the cycle of data review, items advancing in maturity, and being selected for appearance in a test map at the appropriate maturity level.

APPENDIX I: ITEM DEVELOPMENT PROCESS FLOW



APPENDIX J: VERIFICATIONS OF PSYCHOMETRICS PROCEDURES

Assessment and Evaluation Services (AES) served as subcontractor for the Independent Psychometric Quality Assurance Review. AES reviewed and replicated all psychometric procedures connected to the item analysis, scaling and equating of the assessments.

AES has experience in performing quality control services in testing programs in Ohio, New Jersey, New York, Virginia and Washington. In those states AES verifies similar psychometric analyses as described in the Michigan program. AES has verified analyses involving Item Response Theory (IRT) equating, scaling, and item analysis. AES staff has expertise in IRT models including but not limited to one-parameter IRT model, Partial Credit Model, and three-parameter IRT model.

AES also has experience in coordinating this work with various contractors. In the past we have found that working with the psychometric staff of another company and/or state department requires extensive planning and coordinated scheduling. It is essential that the quality control work be extensive and accurate, but it is equally important that it be completed in a timely fashion so that overall project schedules can be met. This requires that both AES and the psychometric staff of the prime contractor and/or state department work closely in planning for the transfer of data and analysis results to AES. Likewise, it is important for AES to complete the checking and transfer our results to the state office for verification.

AES met with ELPA staff to discuss the plans and schedules regarding the implementation of this contract. The intent was to co-ordinate the activities between the contractor, state and AES to ensure that the verification procedures were implemented in a smooth and accurate manner.

Assessment and Evaluation Services provided the verification of item analysis scaling and equating activities for the ELPA 2013 analyses. Verifications were done for post-equating, and field test item analysis. The primary scaling of the assessment was done with the Rasch model using the partial credit model.

This section provides a description of the steps AES undertook to provide replication of the ELPA 2013 analyses. The workflow was organized so that Bureau of Assessment and Accountability (BAA) psychometrician and Assessment and Evaluation staff worked independently on each step. Once major portions of the analysis were completed, Assessment and Evaluation Services compiled the two sets of results into a comparison spreadsheet. These spreadsheets were then examined by BAA psychometrician and Assessment and Evaluation Services staff to determine if the replication was successful. When discrepancies between BAA and AES results occurred during the steps they were often resolved before the comparison spreadsheets were completed.

The major analyses for the project are detailed below in steps from the Assessment and Evaluation Services perspective.

The project has been partitioned into two Analysis Sets for description.

Analysis Set 1- Post Equating Scaling for ELPA Levels 1-5

The Post Equating analysis took place after student work had been scored and was based on a data set which included almost all students. The Post Equating analysis checked for the stability of the item

difficulty parameters. Differences from the Pre Equated values from the bank and the Post Equated values from the assessment were examined.

Step 1-Check Data File for Unreasonable Values

In large data files item response values which are implausible are often found. This is particularly true in scored data files. AES examined the item score fields for values which were not plausible given the form designation and the item key. When values were found, AES notified BAA psychometrician so these instances could be investigated.

Step 2-Initial WINSTEPS Run

The data was analyzed by the WINSTEPS program to develop initial unanchored Rasch difficulties.

Step 3-Develop an Initial Comparison Spreadsheet

The initial Rasch Difficulties, n-counts, p-values, and point-biserials were compared.

Step 4- Determine the Scaling Values

Initial Rasch Difficulties from Step 3 were compared to item difficulties from the item bank. Equated Rasch difficulties were derived and compared for differences between the two sets of values.

Step 5- Develop Post Equating Comparison Spreadsheet

Raw to Scale Score tables from BAA and AES were compared to determine if the scale scores, error term, and performance level were equivalent.

AES Verification Files for Analysis Set 1

The steps detailed above yield three AES Verification Files. A verification file consists of three spreadsheets and is used to evaluate the verification analysis.

Primary Spreadsheet - This is provided by the primary technical analysis. In the case of ELPA the BAA psychometrician does the primary analysis. This spreadsheet provides values for variables for each item or each score point depending on the comparison.

AES Spreadsheet-This is provided by AES. It provides the same variables that are in the Primary Spreadsheet and contains the AES values for each variable or each score point depending on the comparison.

Verification Spreadsheet-This spreadsheet is simply a comparison of the Primary and AES spreadsheets to see if any differences exist. With numerical variables it is usually a simple subtraction of the Primary value minus the AES value. When alpha numeric codes or flag values are compared differences are noted by the display of the values.

The three AES Verification files for the Post-Equating ELPA are focused on checking for data equivalency and verification or equating and scaling results.

Verification File One- Total Classical Statistic Verification
This file is based on the initial item analysis and provides a row in the spreadsheets for each item. The key variables compared are n-counts, p-values, item discrimination indices, and Rasch difficulty values. A verification file was developed for each of the five ELPA levels.

Verification File Two- Rasch Scaling Verification
This file is based on the WINSTEPS analysis and provides a row in the spreadsheets for raw score. The key variables compared are Rasch theta, parameter estimation error, and cumulative score percentages.

Verification File Three- Raw to Scale Tables
This file is based on the Rasch scaling and provides a row in the spreadsheets for each score point. The key variables compared are the Rasch ability, error of the ability estimate and the derived scale scores.

Analysis Set 2-Field Test Item Analysis

Field test items were analyzed to provide item data for committee review and parameter values for future form scaling and equating. All subject forms contained field test items. The analysis consisted of information about the performance of the item for the total population and item performance for ethnic and gender groups which yielded differential item performance statistics.

Step 1-Check Data File for Unreasonable Values

In large data files item response values which are implausible are often found. This is particularly true in scored data files. AES examined the item score fields for values which were not plausible given the form designation and the item key. When values were found, AES notified BAA psychometrician so these instances could be investigated.

Step 2-Item Statistics for the Total Group

Analysis was run by grade/subject on all forms to develop Rasch item parameters, p-values, and point-biserials. The operational items were used as base values and their difficulty parameters fixed so that field test item parameters were placed on the same scale. This method was also used for the writing field test items.

Step 3-Item Statistics for Ethnic and Gender Group and calculation of Differential Performance Indicators

The data was analyzed by ethnic, gender, and other groupings.

AES Verification Files for Analysis Set 2

The steps detailed above yield four AES Verification Files. A verification file consists of three spreadsheets and is used to evaluate the verification analysis.
Primary Spreadsheet - This is provided by the primary technical analysis. In the case of ELPA the BAA psychometrician does the primary analysis . This spreadsheet provides values for variables for each item or each score point depending on the comparison.

AES Spreadsheet-This is provided by AES. It takes the identical form to the Primary Spreadsheet and contains the AES values for each variable or each score point depending on the comparison.

Verification Spreadsheet-This spreadsheet is simply a comparison of the Primary and AES spreadsheets to see if any differences exist. With numerical variables it is usually a simple subtraction of the Primary value minus the AES value. When alpha numeric codes or flag values are compared differences are noted by the display of the values.

The four AES Verification files for the Field Test Analysis of ELPA are focused on checking for data equivalency, verification of equating and scaling results, and the equivalency of differential item functioning across gender, ethnicity, or other groupings.

Verification File One- Total Classical Statistic Verification
This file is based on the initial item analysis and provides a row in the spreadsheets for each item. The key variables compared are n-counts, p-values, item discrimination indices, and distractor percentages. This was created separately for both operational and field test items.

Verification File Two- Item Structure File Verification
This file is based on the WINSTEPS analysis and provides a row in the spreadsheets for each item. The key variables compared are Rasch item difficulty, parameter estimation error, and polychotomous item structure.

Verification File Three- Item Step Value Verification
This file is based on the initial item analysis and provides a row in the spreadsheets for each item. The key variables compared are the Rasch step values for each item point level.

Verification File Four- Group Performance Difference Analysis Verification
This file is based on analysis of ethnic, gender and other groupings. Item performance was analyzed for each group. Rasch values, classical item stats were compared.

APPENDIX K: LIST OF ANCHOR ITEMS USED FOR STABILITY CHECK

LEVEL I	LEVEL II	LEVEL III	LEVEL IV	LEVEL V
24683	24556	28939	20334	20796
20834	24440	28940	24602	24272
20510	24558	20564	24735	29094
20512	20428	20661	24389	29095
24450	24570	20662	24388	24413
24451	20571	24515	20520	20472
24505	20634	24516	20024	20681
24660	20635	24421	20270	20177
28516	28528	20202	20098	
24547	20543	21156	24733	
20506	21162	20029	21166	
20504	24219	20553	20123	
24498	24202	20206	24740	
24500	24398	20686		
28522	24420			
28523	24469			
20755	24400			
24751	20009			
24463	21171			