

Technical Manual Update Integrated Model 2015-16

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LIST OF TERMS

ACHIEVEMENT AND ASSESSMENT INSTITUTE (AAI) – The unit within the University of Kansas which includes Agile Technology Solutions, the Center for Educational Opportunity Programs, the Center for Educational Testing and Evaluation and the Center for Public Partnerships and Research.

AGILE TECHNOLOGY SOLUTIONS – The organization that develops and maintains the KITE System and provides DLM Service Desk support to educators in the field.

ALTERNATE ACHIEVEMENT STANDARDS - Alternate or extended content standards that link to college and career readiness standards in general education that reflect the highest academic expectations for students with significant cognitive disabilities.

ALIGNMENT – The relationships between the content structures in the DLM assessment system and assessment items. The content of assessment items measure the student’s knowledge, skills, and understandings reflected in the content standards which they are intended to measure.

ALTERNATE PATHWAY - an alternate route toward a learning target that a student can travel in order to demonstrate a type knowledge or skill, regardless of physical or sensory disability.

ANSWER OPTIONS – response choices in assessment items.

ASSESSMENT COORDINATOR – A role, designed by DLM, to describe the state or district person who supports assessment implementation and test administrators.

CENTER FOR EDUCATIONAL TESTING AND EVALUATION (CETE) – Part of the University of Kansas' Achievement and Assessment Institute. CETE develops and administers educational testing programs including DLM.

CLAIM – A broad statement about what the DLM consortium expects students to learn and to be able to demonstrate within each content area. Each claim is subdivided into two or more conceptual areas.

COLLEGE- AND CAREER-READINESS STANDARDS– A set of grade-level academic content standards for grades K-12 that DLM Essential Elements link to at a reduced depth, breadth, and complexity.

COMPUTER-DELIVERED TESTLET – A test designed to emphasize student interaction with the content of the testlet, regardless of the means of physical access to the computer. The contents of the testlets are presented directly to the student.

CONCEPTUAL AREA – A region within the learning map that contains nodes directly related to Essential Elements and nodes that represent concepts and skills that support the learning of the Essential Elements. Conceptual areas are comprised of clusters of connected concepts and skills and serve as models of how students may acquire and organize their content knowledge. Conceptual areas are considered subparts of the overall claims.

CONNECTION – Directional relationship between two nodes. A connection is illustrated with arrows in the map.

DATA STEWARD – A role, designed by DLM, to describe the state or district person who manages student and enrollment data, and Educator Portal user accounts.

DATE/TIME SUPPLEMENTAL FILE – A system delivered data file that provided date/time stamps for the start and end times of each student test session for each EE assessed.

DLM MAPS – A learning map model consisting of numerous nodes and connections representing the multiple learning progressions that cover the development of the cognitive and content-area skills from birth to high-school graduation. DLM Maps also provide access to multiple and alternate routes to achieving the learning targets, making it more inclusive for learners with various disabilities.

DIAGNOSTIC CLASSIFICATION MODEL (DCM) – Response model with discrete latent attributes (skills) that are used classify students into one latent class (where each latent class is defined by an attribute profile).

DISTRICT TEST COORDINATOR (DTC) – A role in Educator Portal which has the ability to manage user, enrollment, and roster data within the organizational unit.

DYNAMIC LEARNING MAPS ALTERNATE ASSESSMENT SYSTEM– An assessment system designed to be accessible by students with the most significant cognitive disabilities, including those who also have hearing or visual disabilities, and/or neuromuscular, orthopedic, or other motor disabilities. The assessment includes computer-based assessments and a web-based dashboard for educators to manage student information. The assessment system also includes professional development to support instruction aligned to the Essential Elements and promote student progress in a learning maps-based environment.

DYNAMIC LEARNING MAPS CONSORTIUM – A multi-state consortium that developed the DLM Alternate Assessment System.

EDUCATOR PORTAL– An administrative application in KITE where staff and educators manage student data, complete required test administration training, assign instructionally embedded assessments, retrieve resources needed for each assigned testlet, and retrieve reports.

ENGAGEMENT ACTIVITY - An activity that precedes a testlet that describes a scenario, taps prior knowledge or experience, and/or introduces the concept to be addressed. In English language arts, the text being read often serves as the engagement activity. In math, the engagement activity provides context for the items.

ESSENTIAL ELEMENT – Specific statements of knowledge and skills linked to the grade-level expectations identified in college and career readiness standards. Essential Elements build a bridge from the content in the grade-level standards to academic expectations for students with the most significant cognitive disabilities.

ESSENTIAL ELEMENT CONCEPT MAP (EECM) – A graphic organizer using principles of Evidence Centered Design to define ELA and mathematics content specifications for assessment. The EECM uses principles of evidence-centered design and provides information about evidence of EE mastery, key vocabulary and concepts, associated nodes in the learning map, and potential non-cognitive and accessibility barriers when assessing the target behaviors.

ESSENTIAL ELEMENT LINKAGE LEVEL – A small section of the learning map that contains one or more nodes that represent critical concepts or skills related to the Essential Element. Linkage levels are always related directly to grade level Essential Elements but extend back to foundational skills at the initial precursor level. There are typically five levels: initial precursor, distal precursor, proximal precursor, target, and

successor. The nodes at the target level are most closely related to the expectation in the Essential Element.

FIRST CONTACT (FC) – A survey used to collect background information about students who are eligible for DLM assessments. The survey goes beyond basic demographic information and includes questions on topics such as communication, assistive technology devices, motor and sensory impairments, academic performance. Some questions from the First Contact survey are used to determine a student’s entry point, or initialization, into the assessment.

FOUNDATIONAL SKILLS – common set of basic skills that precede academic knowledge, including attention, self-regulation, and organization, and provide an understructure for the academic skills.

FUNGIBLE – exchangeable, able to be replaced by another identical item. In DLM, all items were assumed to be fungible, or exchangeable, within a linkage level.

GENERAL RESEARCH FILE (GRF) – The data file provided to states at the end of each year. It contains student demographic information and assessment results.

INITIALIZATION – The process by which existing information about a student is used to determine the point in the map where the student enters the assessment for the first time.

INSTRUCTIONAL PLAN – A plan, created through the Educator Portal instructional Tools Interface, which includes a choice of Essential Element and linkage level and leads to assignment of an instructionally embedded assessment.

INSTRUCTIONALLY EMBEDDED ASSESSMENT – An assessment that occurs after instruction throughout the year so that testing informs teaching and benefits students' learning.

INSTRUCTIONAL TOOLS INTERFACE (ITI) – An interface in Educator Portal which allows a Test Administrator to select an Essential Element and linkage level for a student with the goal of providing instruction and instructionally embedded assessment.

KANSAS INTERACTIVE TESTING ENGINE (KITE) - The platform which includes KITE Client and KITE Educator Portal. Two additional applications not seen by students and teachers include platforms for hosting test content and building technology-enhanced items.

KITE CLIENT - An online testing interface for students. The KITE Client is available for use on PCs, Macs, Chromebooks, and iPads.

LEARNING MAP MODEL – A visual representation of the acquisition of knowledge, skills and understandings. A learning map model visually depicts a networks of sequenced learning targets and may also delineate alternate paths to a learning objective.

LEARNING PROFILE – Part of the individual student score report provided at the end of the year. Provides information about student mastery of linkage levels for every Essential Element assessed.

LINKAGE LEVEL – A small section of the learning map that contains one or more nodes that represent critical concepts or skills needed to learn the Essential Element. Linkage levels are always related directly to grade level Essential Elements but extend back to foundational skills at the initial precursor level. There are five levels: initial precursor, distal precursor, proximal precursor, target, and successor. The nodes at the target level are most closely related to the expectation in the Essential Element.

NODE NEIGHBORHOOD– Consists of the nodes around which a set of testlets is developed.

NODE – A node that specifies individual skills and understandings that were drawn from the research in Mathematics and English Language Arts.

PATHWAY – The relationship between nodes in the learning map. Synonym for connection.

PERFORMANCE PROFILE – Part of the individual student score report provided at the end of the year. The Performance Profile provides information about student mastery of linkage levels mastered across EEs within a conceptual area and overall in the subject.

PERSONAL NEEDS AND PREFERENCES (PNP) PROFILE – Student-specific information that tells the DLM test delivery system what the needs are for individual users. The PNP includes information the system needs to make the student’s user interface compatible with his or her accessibility needs. In DLM, the PNP profile includes information about display enhancements, language and braille, assistive technology, and audio and environment supports. Educators who know the student provide the information in the profile.

PROPOSITION – Propositions (or in some validity research “claims”) relate directly to the ultimate program goals and specific score purposes of the assessment system, providing the framework within which validity evidence can be judged.

STUDENT WITH THE MOST SIGNIFICANT COGNITIVE DISABILITIES – A student who falls within one of the existing categories of disability under IDEA (autism, deaf-blindness, hearing impairment, mental retardation, orthopedic impairment, deafness, emotional disturbance, multiple disability, traumatic brain injury, visual impairment, learning disability, speech and language impairment, other health impaired) whose cognitive impairments may prevent them from attaining grade-level achievement standards, even with the very best instruction.

TEACHER-ADMINISTERED TESTLET – A test designed to be administered directly by the Test Administrator outside of the KITE system. The KITE system still delivers the test, but the Test Administrator plays a more direct role than in computer-delivered testlets.

TECHNICAL LIAISON – A role, designed by DLM, to describe the state or district person who manages DLM technology requirements for a school or district.

TEST ADMINISTRATOR – The person who administers the assessments to students.

TEST DELIVERY ENGINE (TDE) – the portal that allows students to log in and complete assigned testlets. See KITE Client.

TESTLET – A set of 3–8 items and an engagement activity. Combining multiple items and beginning with an engagement activity increases the instructional relevance of the assessment, and provides a better estimate of the students’ knowledge, skills and abilities than can be achieved by a single test item. Thus, testlets are more reliable and valid indicators of the student’s performance.

TESTLET SET – A group of testlets (generally 3-5 testlets) that spans the knowledge, skills, and abilities covered in an Essential Element concept map from initial precursor linkage level through successor linkage level.

TESTLET INFORMATION PAGE (TIP) – A secure PDF document which is unique to each testlet and provides specific information to guide the test administrator in preparing for and administering the testlet.

THEORY OF ACTION – Summary statement of values that guided the design of the DLM Alternate Assessment System. The DLM Theory of Action was initiated in 2011 and revised and finalized in December 2013. It expresses the belief that high expectations for students with significant cognitive disabilities (SWSCD), combined with appropriate educational supports and diagnostic tools for teachers, result in improved academic experiences and outcomes for students, teachers, and parents.

TRAINING MODULE - A training module, available in both self-directed and facilitated formats. Modules cover topics such as instruction, the use of assessment results, and required skills for test administrators.

VIRTUAL COMMUNITY OF PRACTICE – An online community for teachers of students with the most significant cognitive disabilities. The community is self-moderated with oversight from faculty and staff at the Center for Literacy and Disability Studies. The community provides instructional resources and supports as well as discussion forums and groups.

LIST OF ACRONYMS

AA-AAS – Alternate Assessment of Alternate Achievement Standards
AAI – Achievement and Assessment Institute
ASL – American Sign Language
ATS – Agile Technology Solutions
BRF – Braille-ready files
BN – Bayes Net
CA – Conceptual Area
CCSS – Common Core State Standards
CCRS – College and Career Readiness Standards
CETE – Center for Educational Testing and Evaluation
CLDS – Center for Literacy and Disability Studies
CPD – Cognitive Process Dimension
DCM – Diagnostic Classification Model
DTC – District Test Coordinator
DIF – Differential Item Functioning
DLM – Dynamic Learning Maps Alternate Assessment System
DUA – Data Use Agreement
ECD – Evidence-centered design
EE – Essential Element
EECM – Essential Element Concept Map
ELA – English Language Arts
ELL – English language learner
EP – Educator Portal
FC – First Contact
FERPA – Family Educational Rights and Privacy Act
HOH – Hard of hearing
IDEA – Individuals with Disabilities Education Act
IEP – Individualized Education Program
IM – Integrated Model
ITI – Instructional Tools Interface
KITE – Kansas Interactive Testing Engine
LEA – Local Education Agency
OSEP – Office of Special Education Programs
OTL – Opportunity to learn
PAS – Partner-assisted scanning
PLD – Performance level descriptor
PNP – Personal Needs and Preferences Profile
SEA – State Education Agency

SWSCD – Students with significant cognitive disabilities

TAC – Technical Advisory Committee

TAM – Test Administration Manual

TDE – Test Delivery Engine

TIP – Testlet Information Page

TTS – Text to speech

UD – Universal design

UDL – Universal design for learning

YE – Year-end Model

DLM ELA Text Photograph Guidelines

Criterion	Guidelines
P1.a Photo Appearance – Photographic Effects	<p>All photos are in focus. Photos do not include photographic effects such as</p> <ul style="list-style-type: none"> • Blurring • Pixilation • Distortion • color manipulation
P1.b Photo Appearance – Dimensions and Perspective	<p>Elements of photographs such as perspective or dimension do not conflict with information in the text or other photos used in the text.</p>
P2. Photo Diversity	<p>Photos in informational texts should include depictions of gender, racial, disability and ethnic diversity where appropriate and possible. If it is impossible to show diversity in a single image, diversity should be demonstrated across images within and across texts.</p>
P3. Stereotypes	<p>Photos do not support racial stereotypes.</p>
P4. Religious Content	<p>Photos do not depict specifically religious content.</p>
P5. Sensitive or Disturbing Content	<p>Photos should not depict inappropriate or potentially inappropriate content such as:</p> <ul style="list-style-type: none"> • Alcohol or tobacco use • Advertisements for alcohol or tobacco • Inappropriate book titles in pictures of books on a shelf • Gruesome images of injuries • Lewd gestures • Pictures of people with enraged facial expressions • People in sexually suggestive poses • People engaged in sexually suggestive bodily contact
P6.a. Representation of Text Elements - Characters	<p>Use photos of the same person to represent a character consistently within stories and across story collections.</p>
P6.b. Representation of Text Elements – Alignment to Source Characteristics	<p>Photos of characters in story texts should align with the characterization in the source texts (age, race, historical context)</p>

Criterion	Guidelines
P6.c Representation of Text Elements – Objects and Settings	Photos of the same objects and settings are used consistently within stories. Photos used to illustrate objects should, whenever possible, focus on a single item and not illustrate any element that conflicts with how the objects are described in the text.
P7. Copyrights/Watermarks	Photos do not have visible watermarks, trademarks or copyright symbols. Photographer names and creative commons license tags are acceptable if they are small, unobtrusive and do not interfere with the photo's use as a support for the text.
P8. Representation of the Text	<ul style="list-style-type: none"> • Photos provide engagement and representation of some elements from the text. • Photos do not convey all information necessary for comprehension of the text. • Photos do not represent the entire meaning of the text. • Photos do not contain elements that contradict elements in the text or other photos in the text.
P9. Symbolic representation of complex concepts	Photos may be used to illustrate complex concepts (example: Statue of blind lady justice) provided that the photographic elements do not conflict with the text.

Appendix A.3 DIF Plots

1.1.1 Uniform DIF for IM

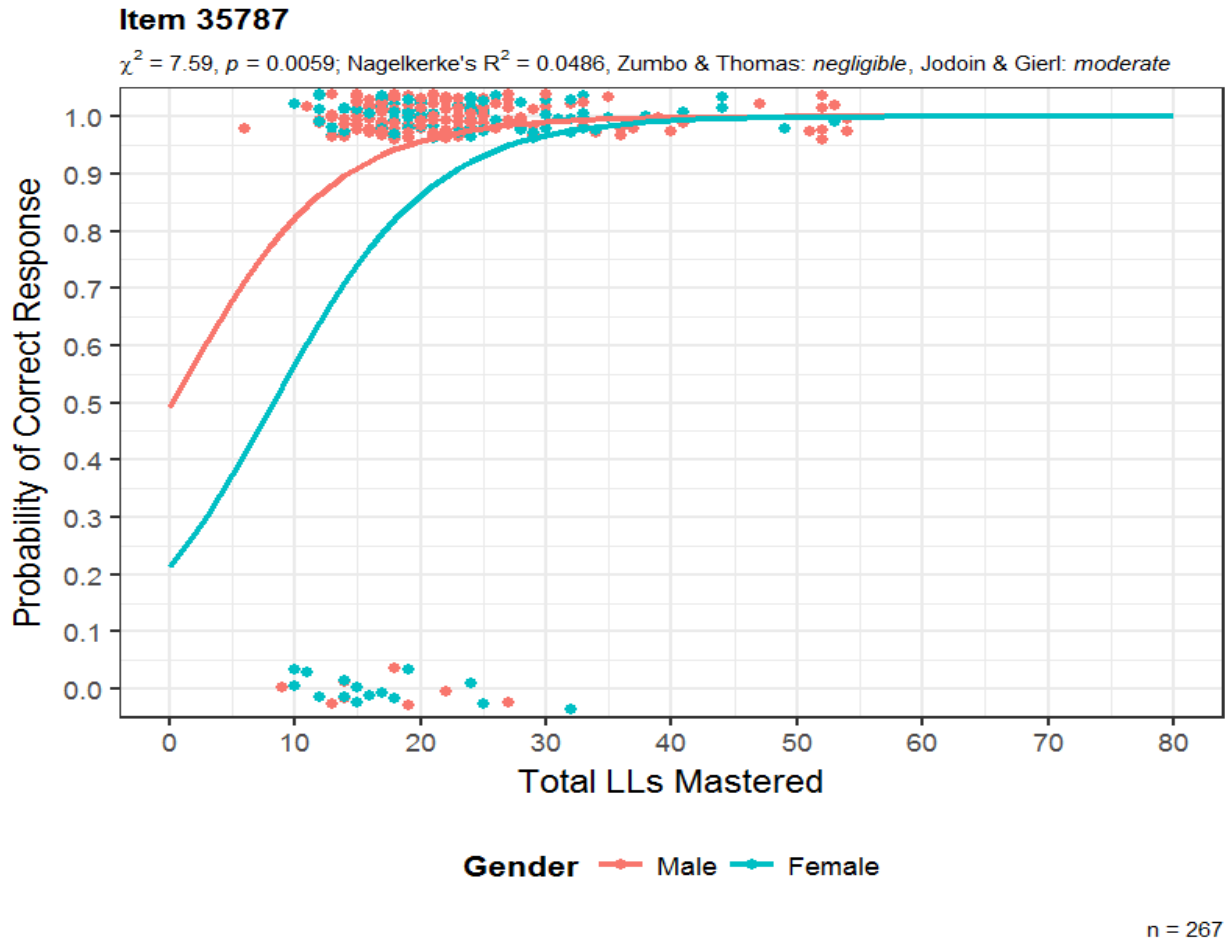
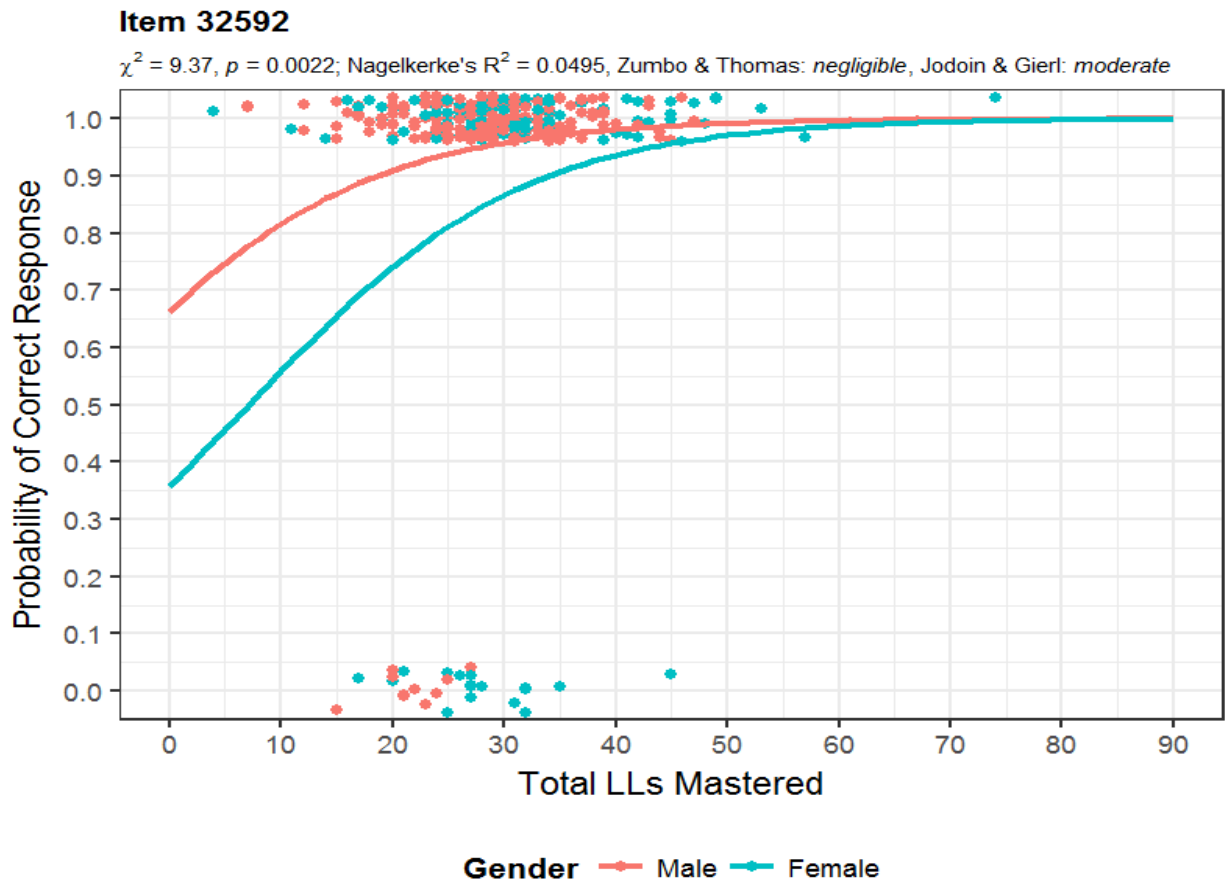
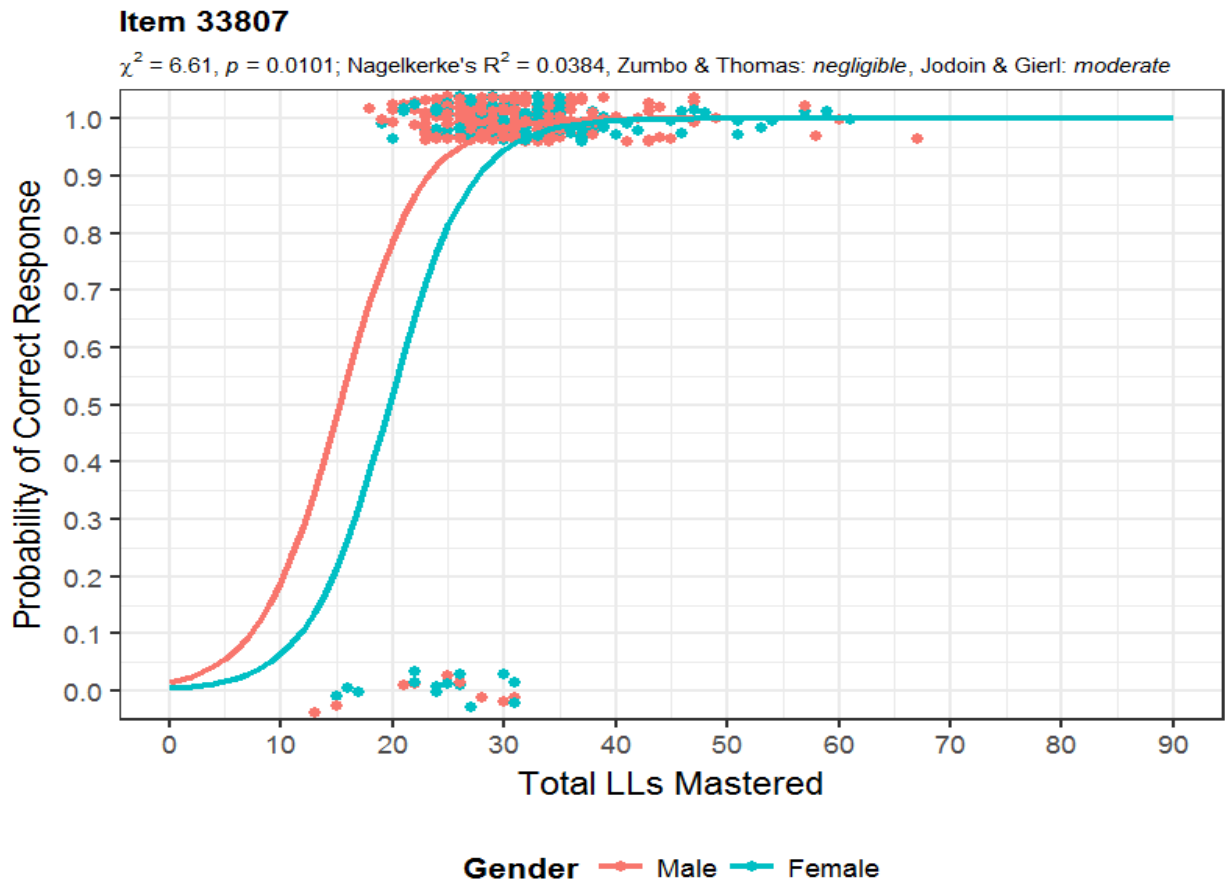


Figure A1. Uniform logistic regression plot for ELA grade 3 item 35787



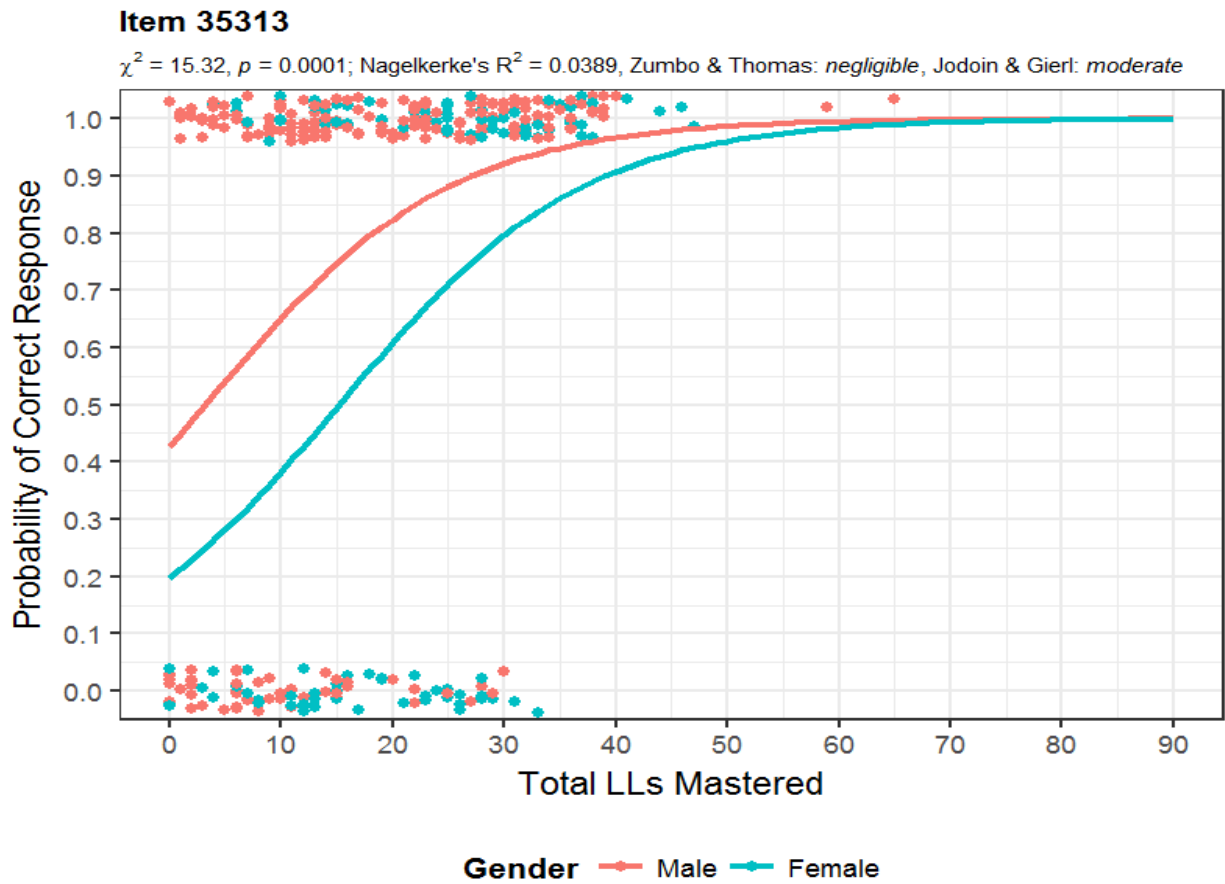
n = 321

Figure A2. Uniform logistic regression plot for ELA grade 5 item 32592



n = 370

Figure A3. Uniform logistic regression plot for ELA grade 5 item 33807



n = 323

Figure A4. Uniform logistic regression plot for ELA grade 7 item 35313

Appendix A.3 Combined Model DIF Plots

1.1.2 Combined Model DIF for IM

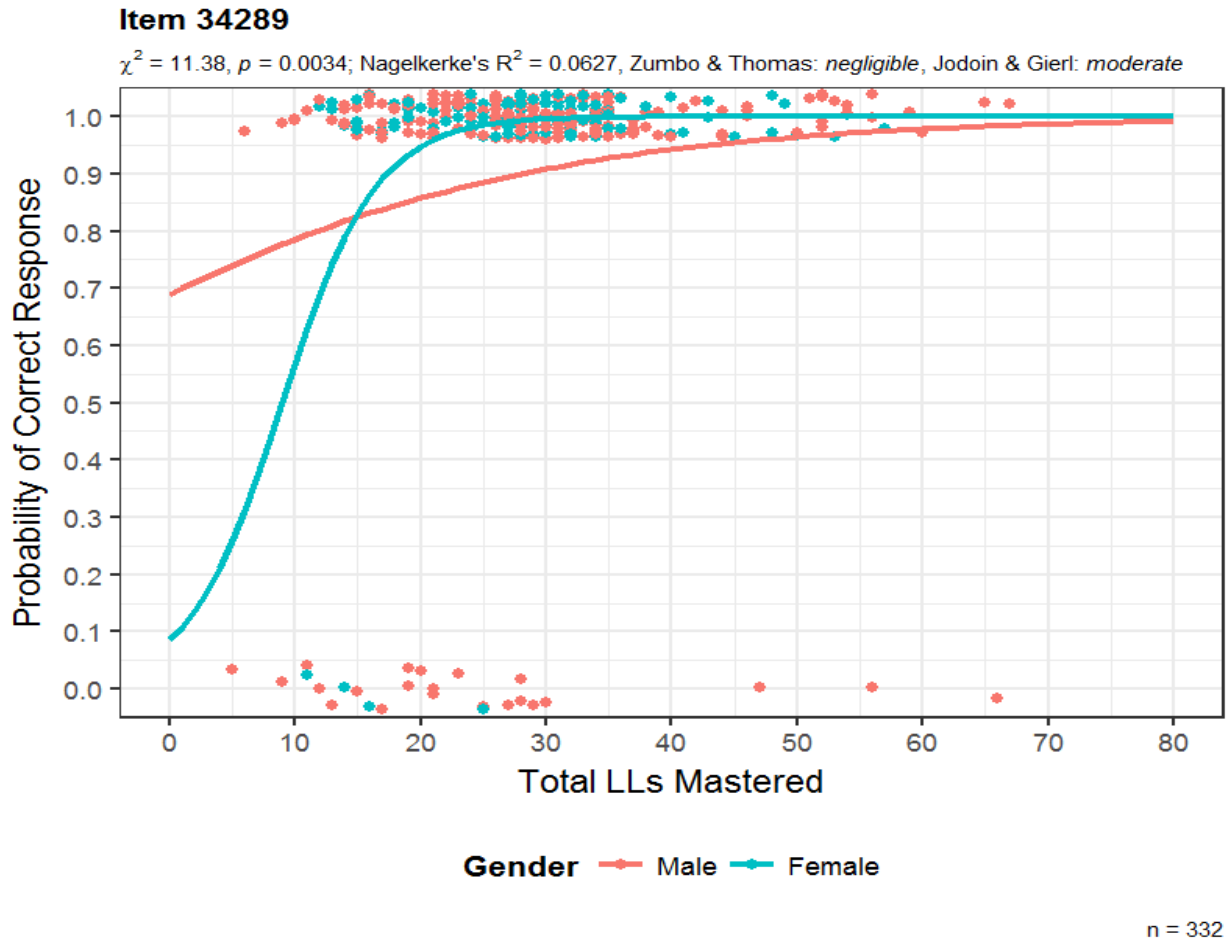
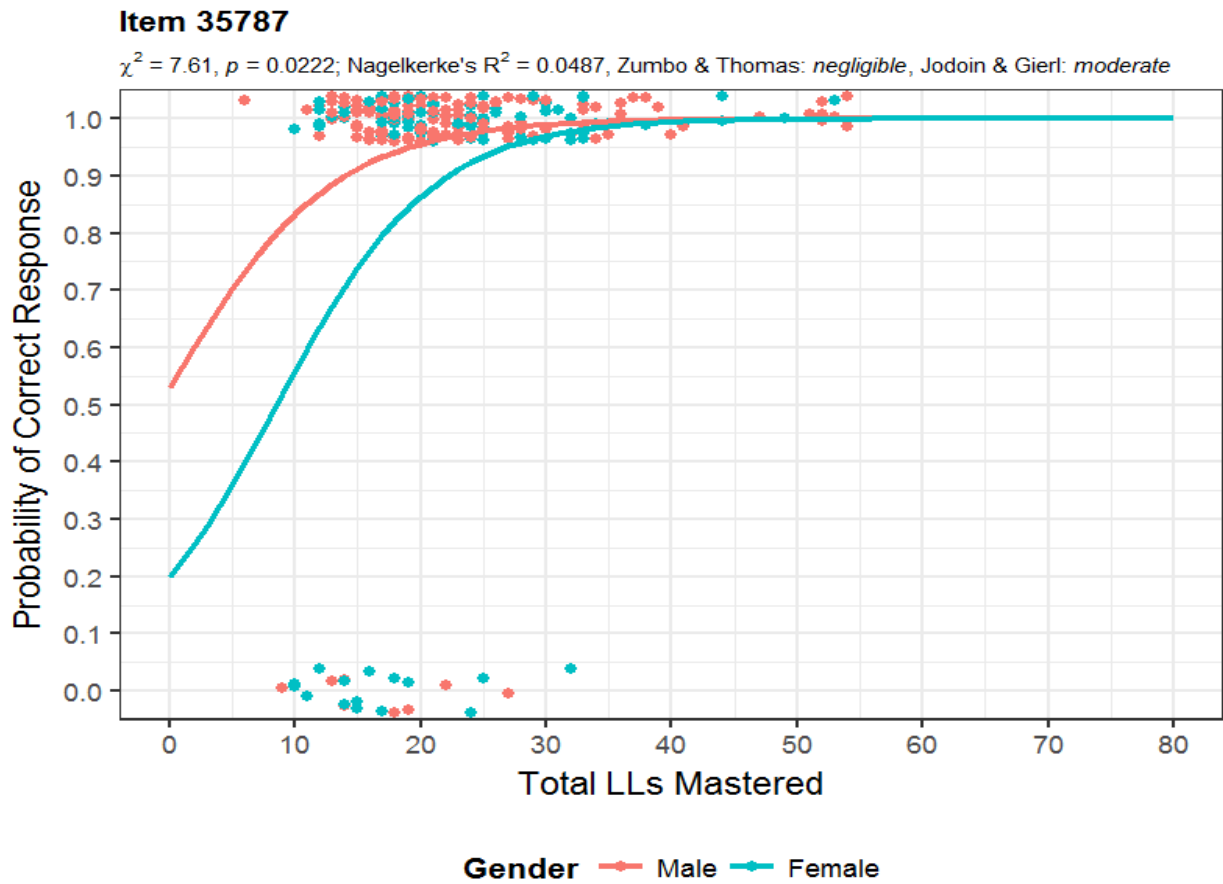
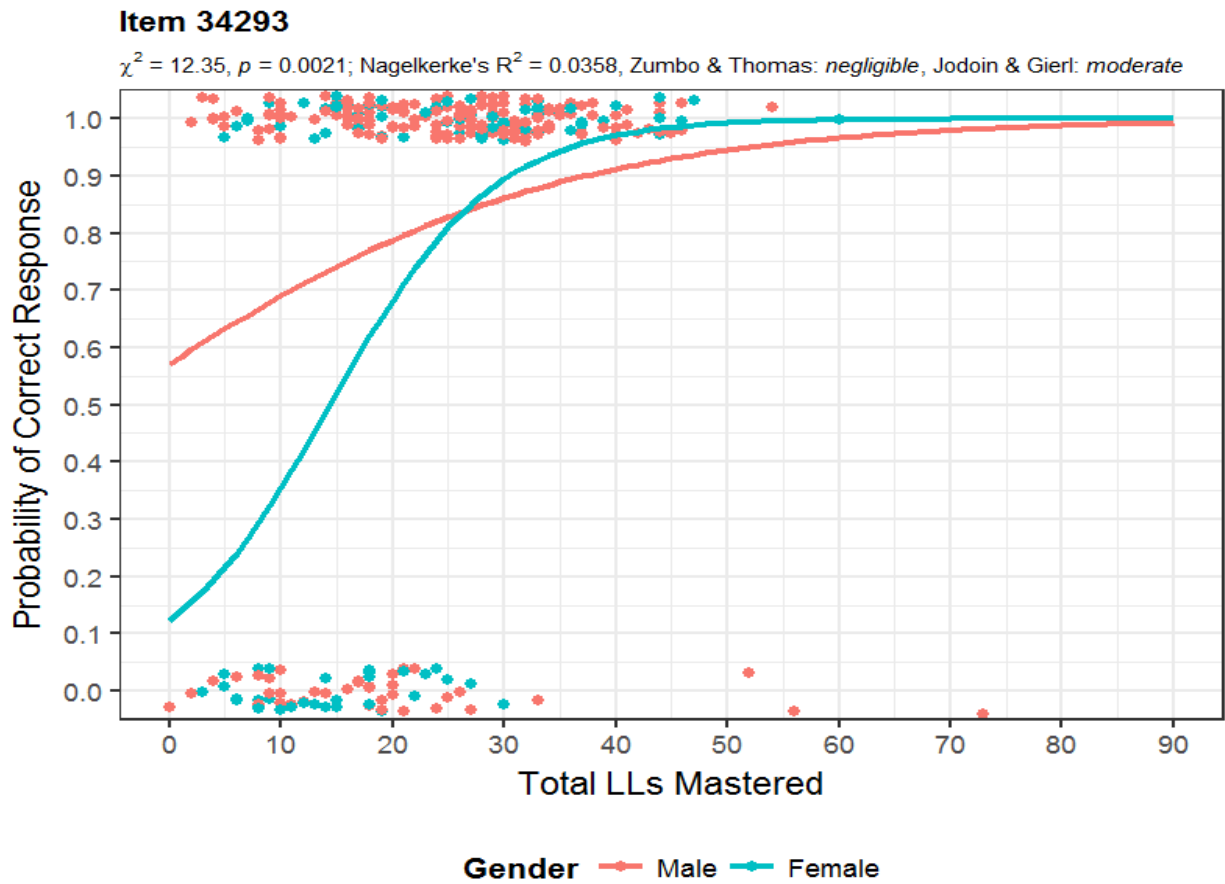


Figure B1. Combined model logistic regression plot for ELA grade 3 item 34289



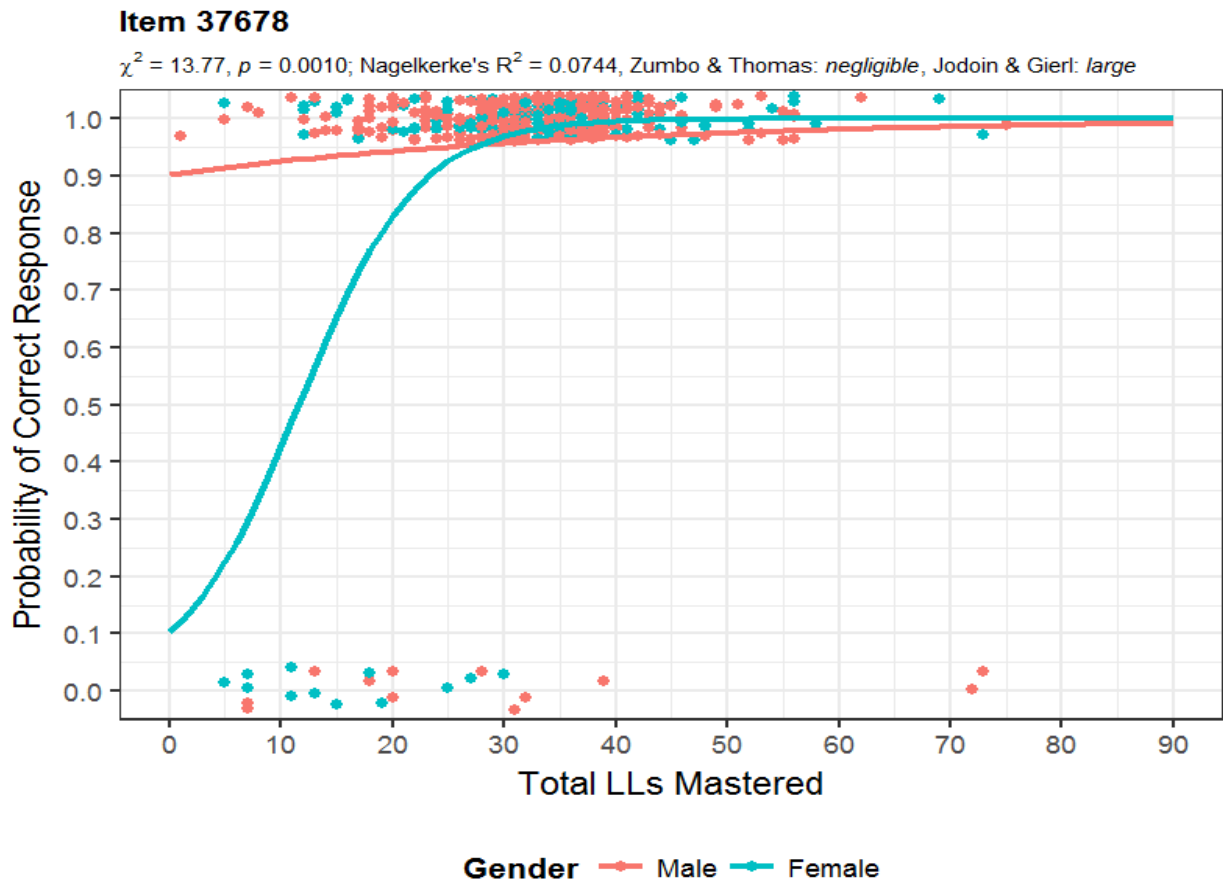
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Figure B2. Combined model logistic regression plot for ELA grade 3 item 35787



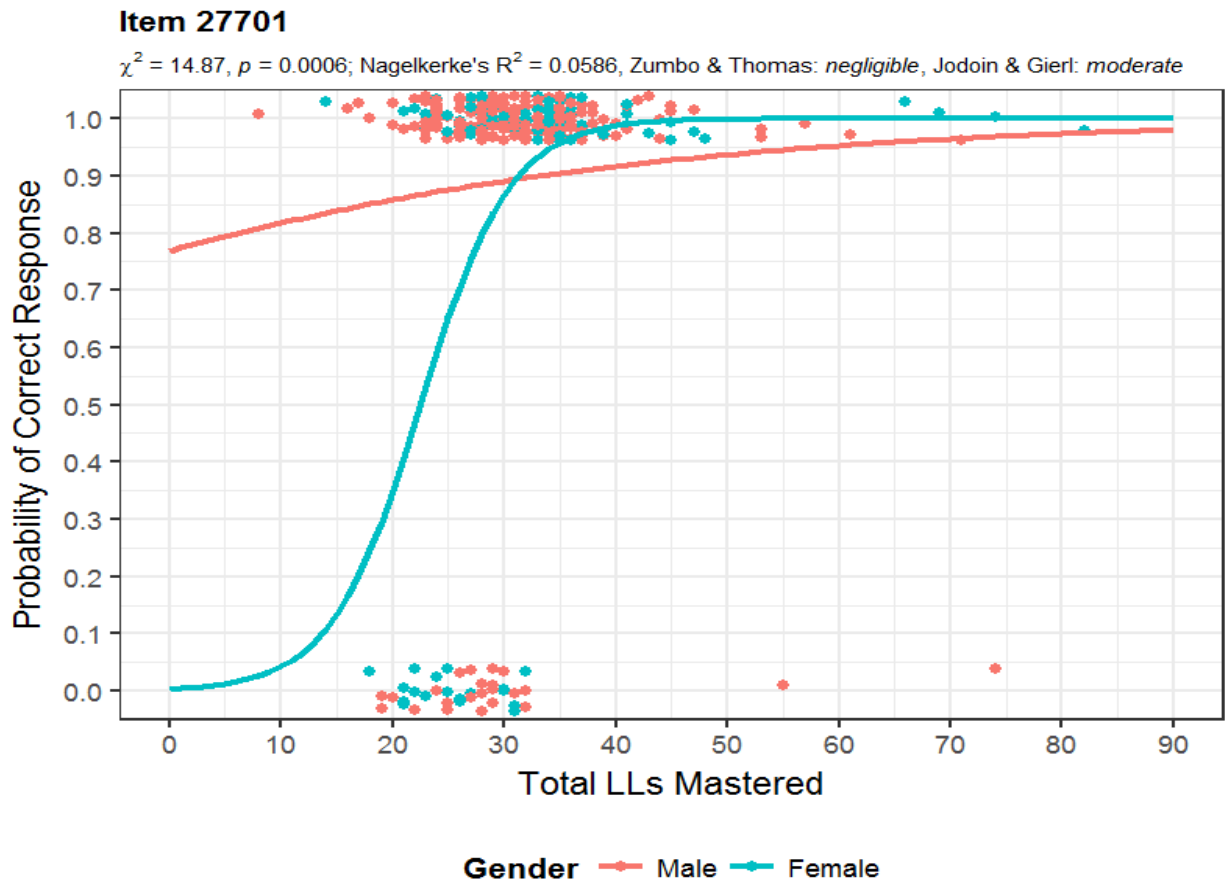
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Figure B3. Combined model logistic regression plot for ELA grade 4 item 34293



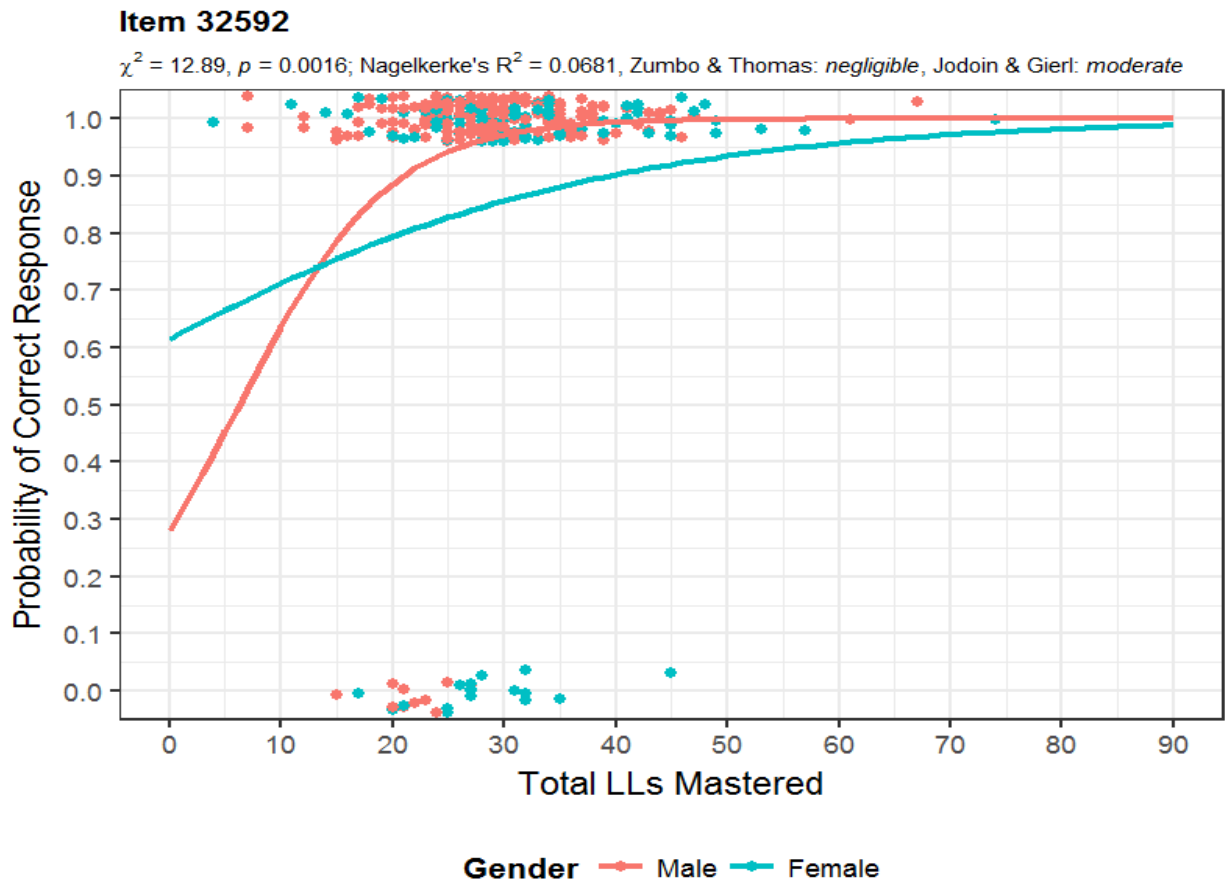
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Figure B4. Combined model logistic regression plot for ELA grade 4 item 37678



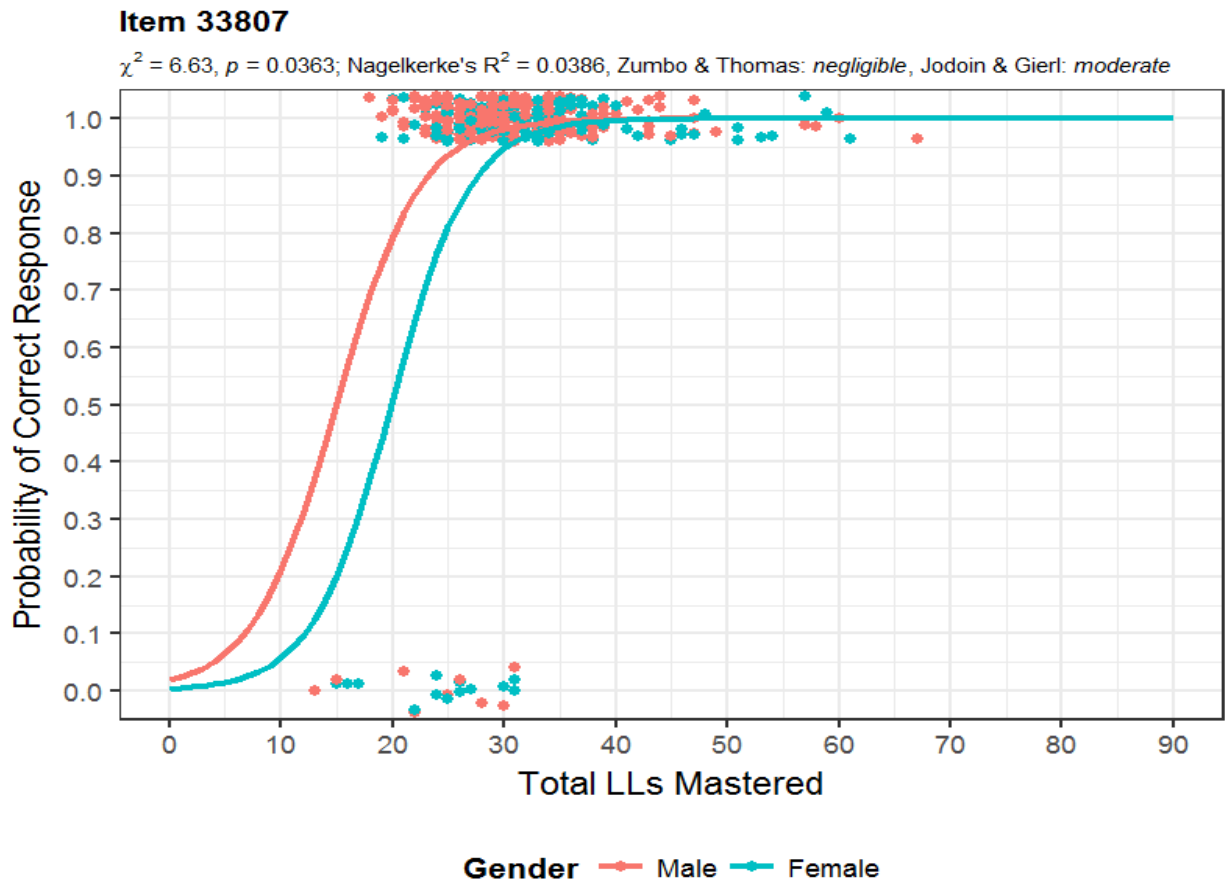
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Figure B5. Combined model logistic regression plot for ELA grade 5 item 27701



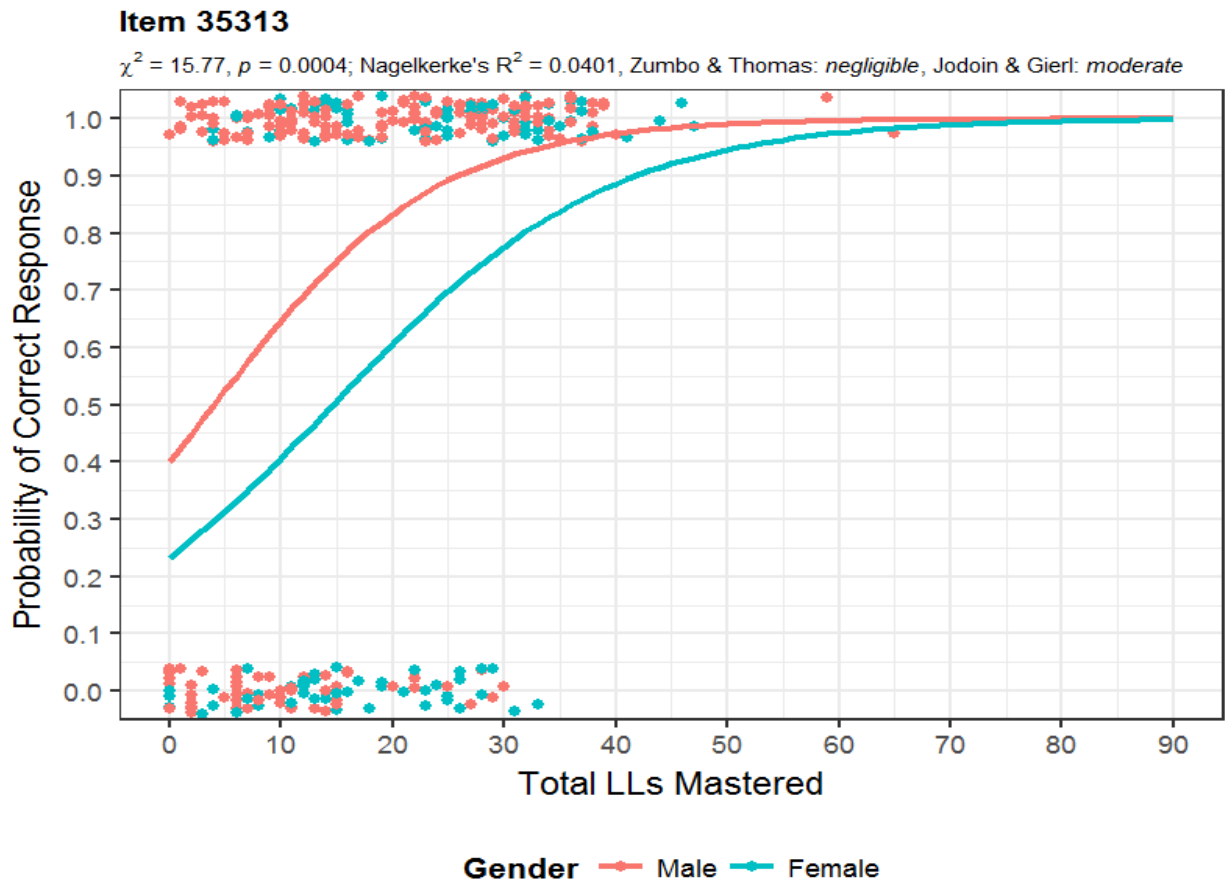
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Figure B6. Combined model logistic regression plot for ELA grade 5 item 32592



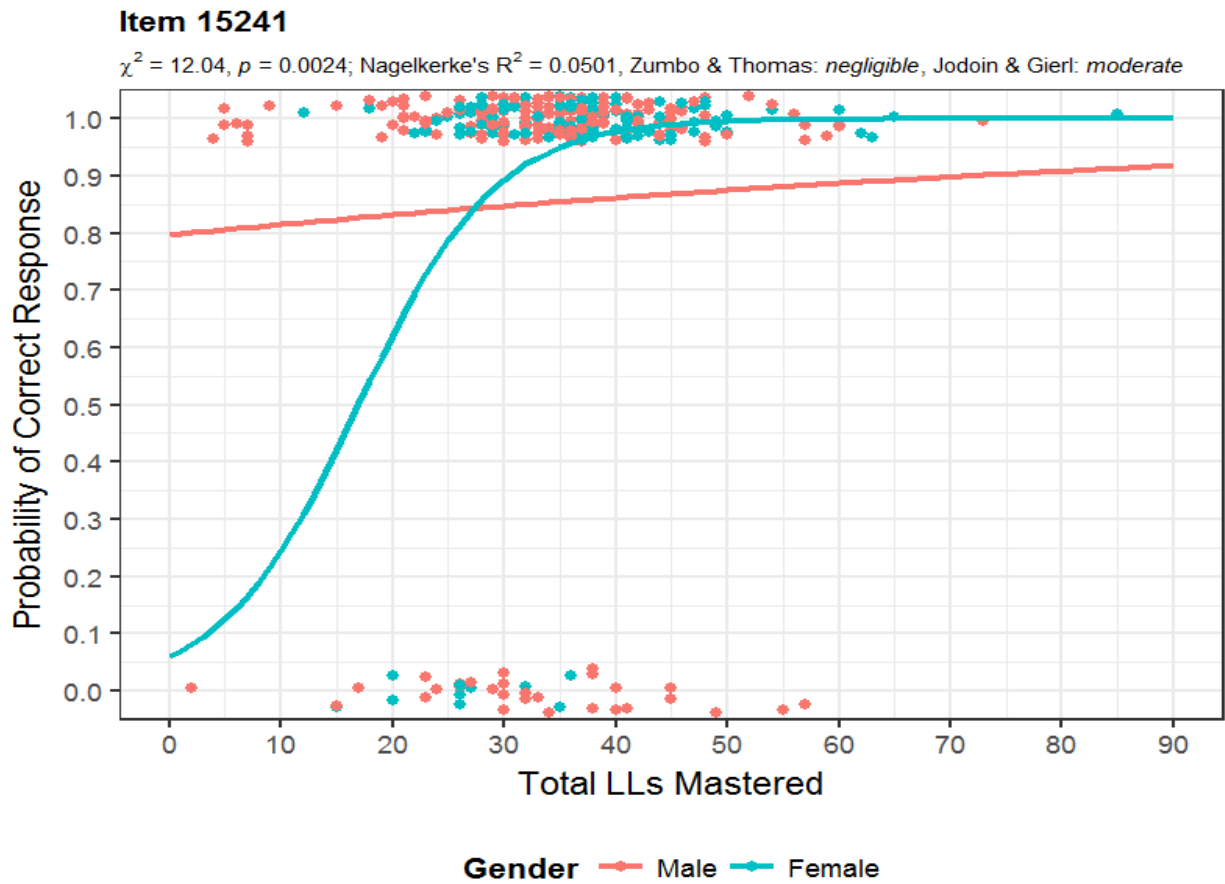
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Figure B7. Combined model logistic regression plot for ELA grade 5 item 33807



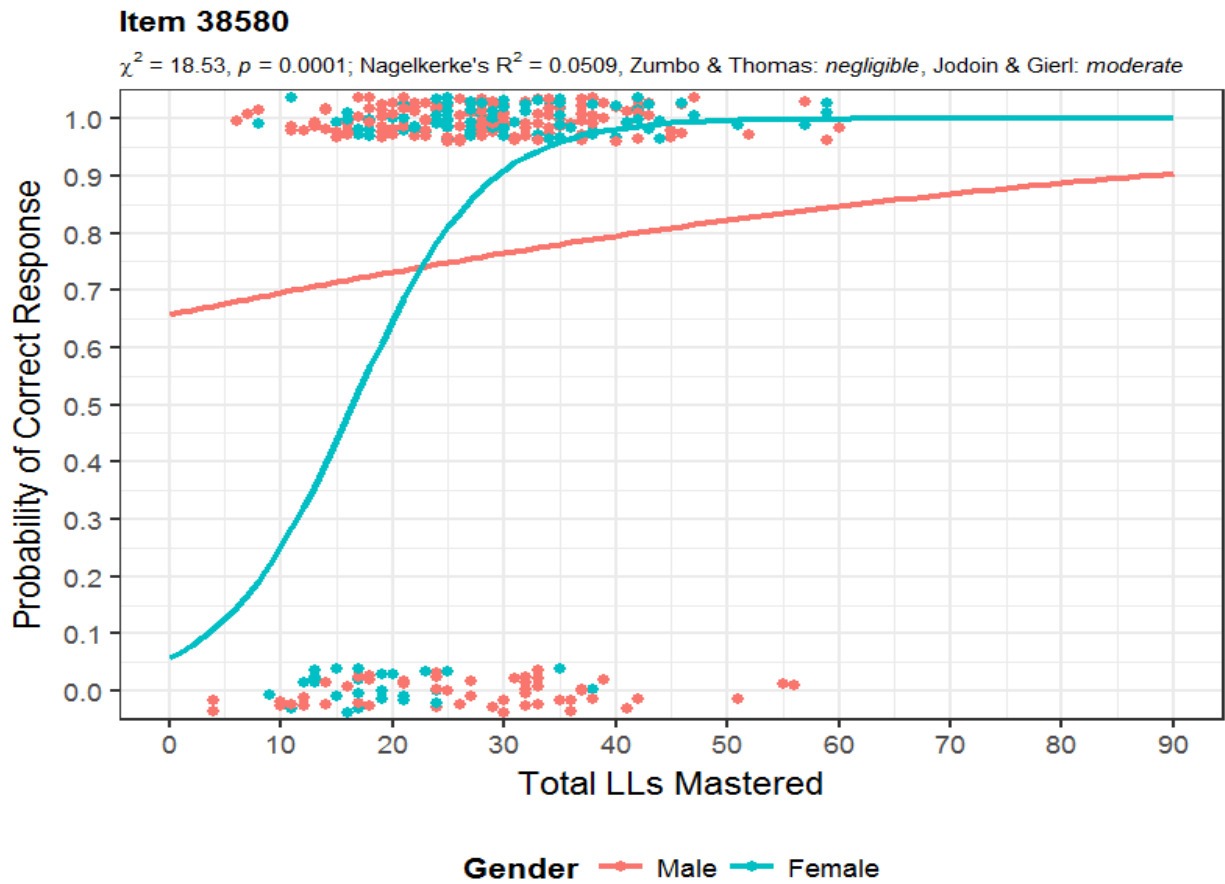
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Figure B8. Combined model logistic regression plot for ELA grade 7 item 35313



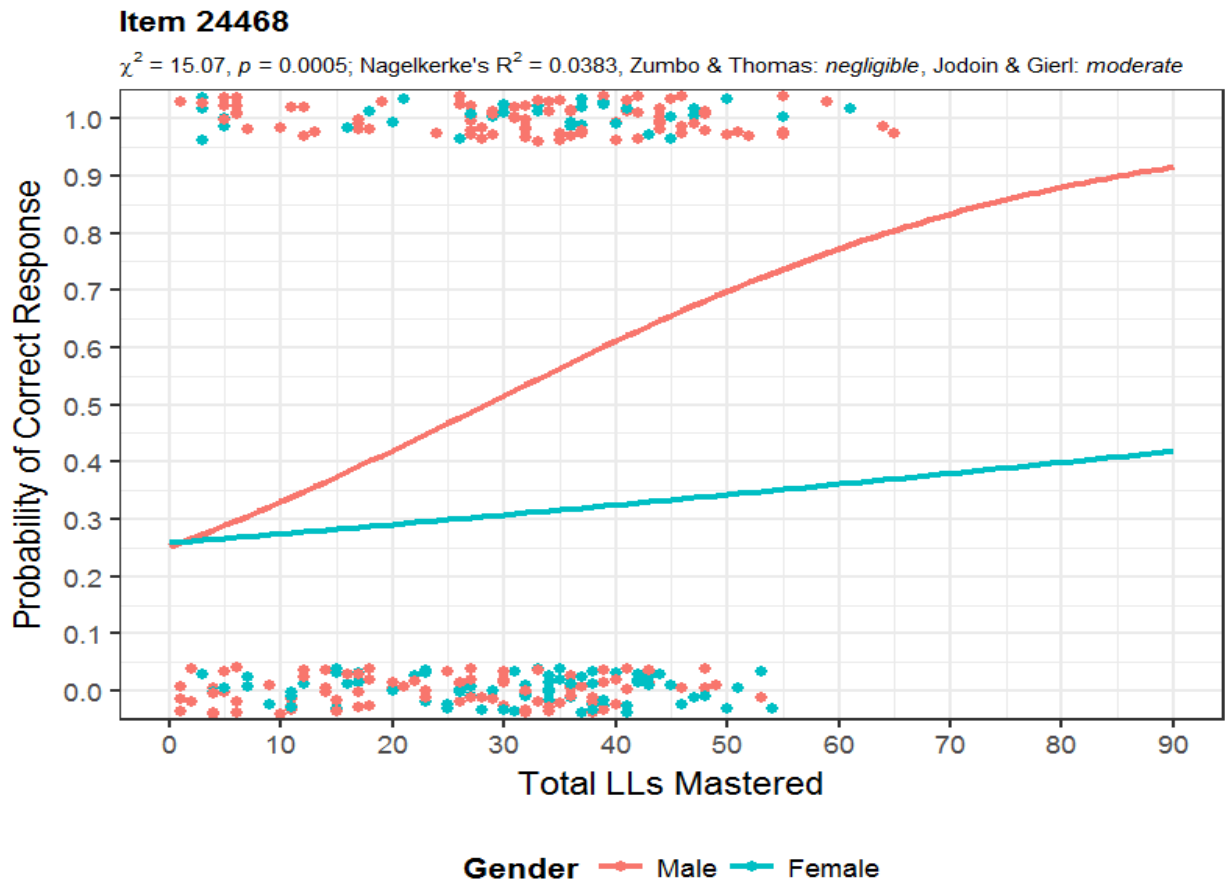
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Figure B9. Combined model logistic regression plot for ELA grade 8 item 15241



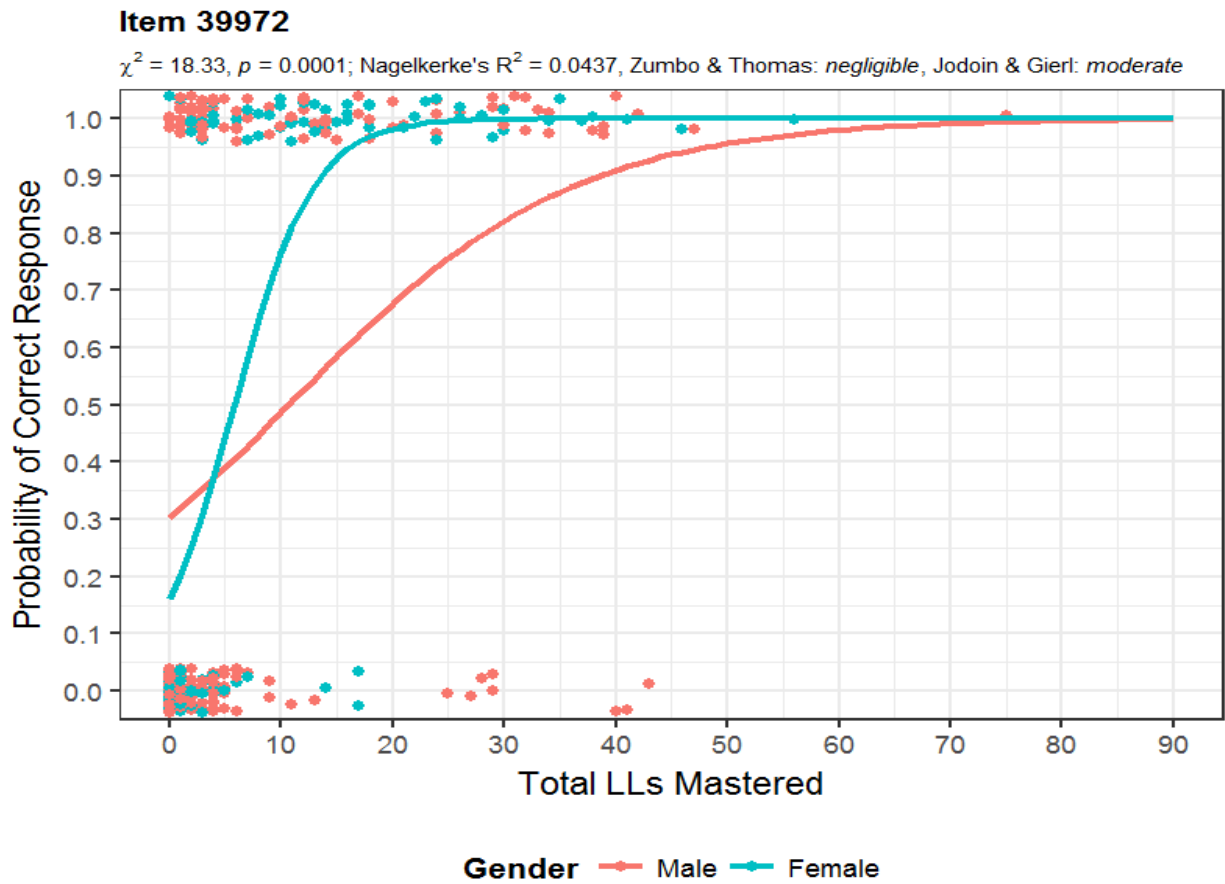
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Figure B10. Combined model logistic regression plot for ELA grade 8 item 38580



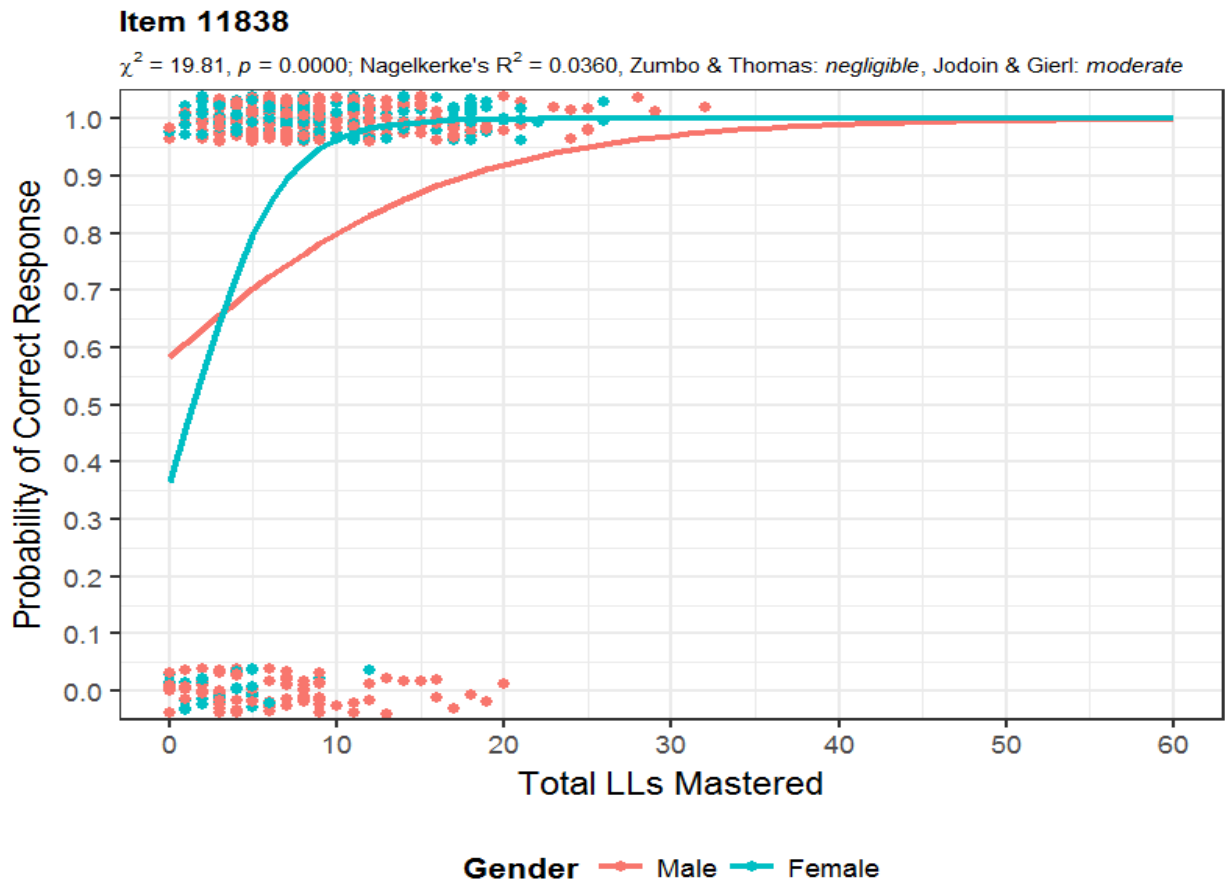
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Figure B11. Combined model logistic regression plot for ELA grade 11-12 item 24468



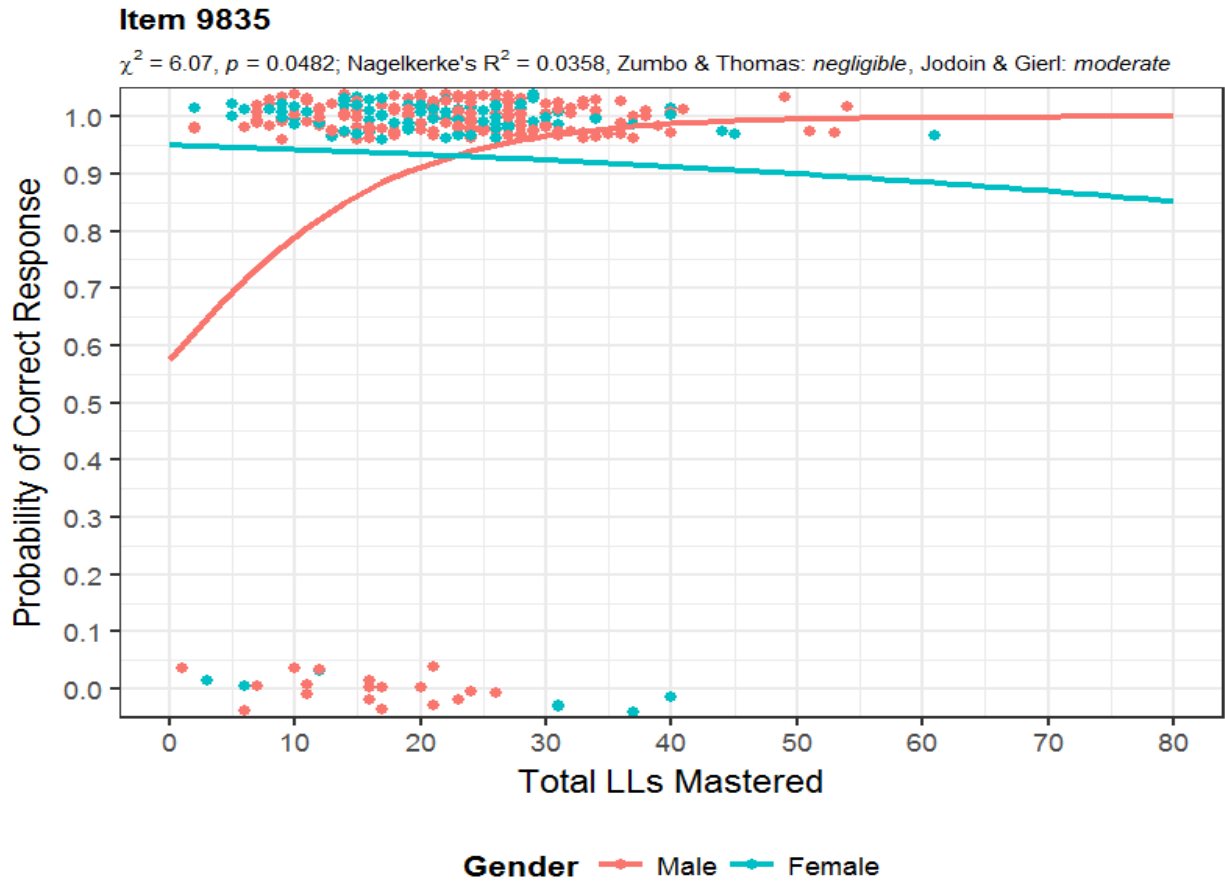
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Figure B12. Combined model logistic regression plot for ELA grade 11-12 item 39972



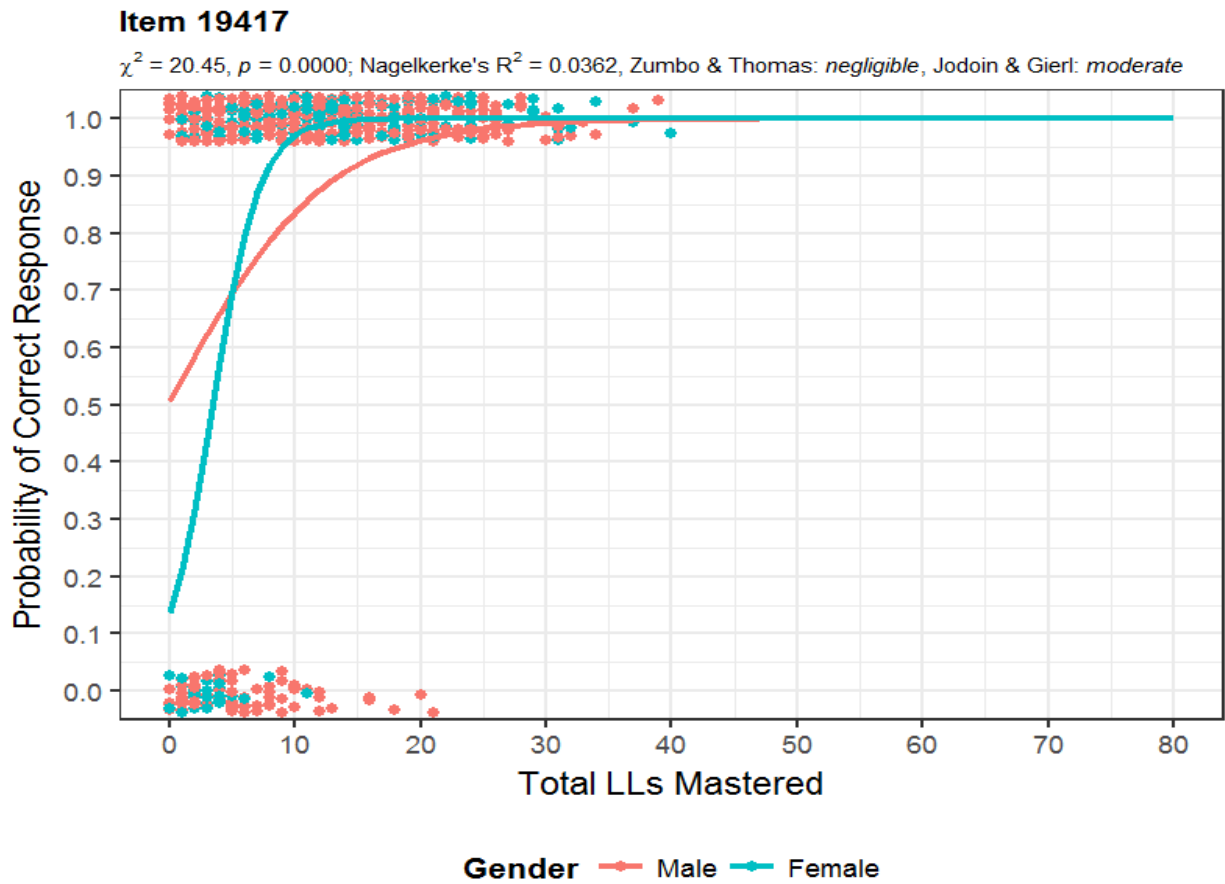
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Figure B13. Combined model logistic regression plot for mathematics grade 3 item 11838



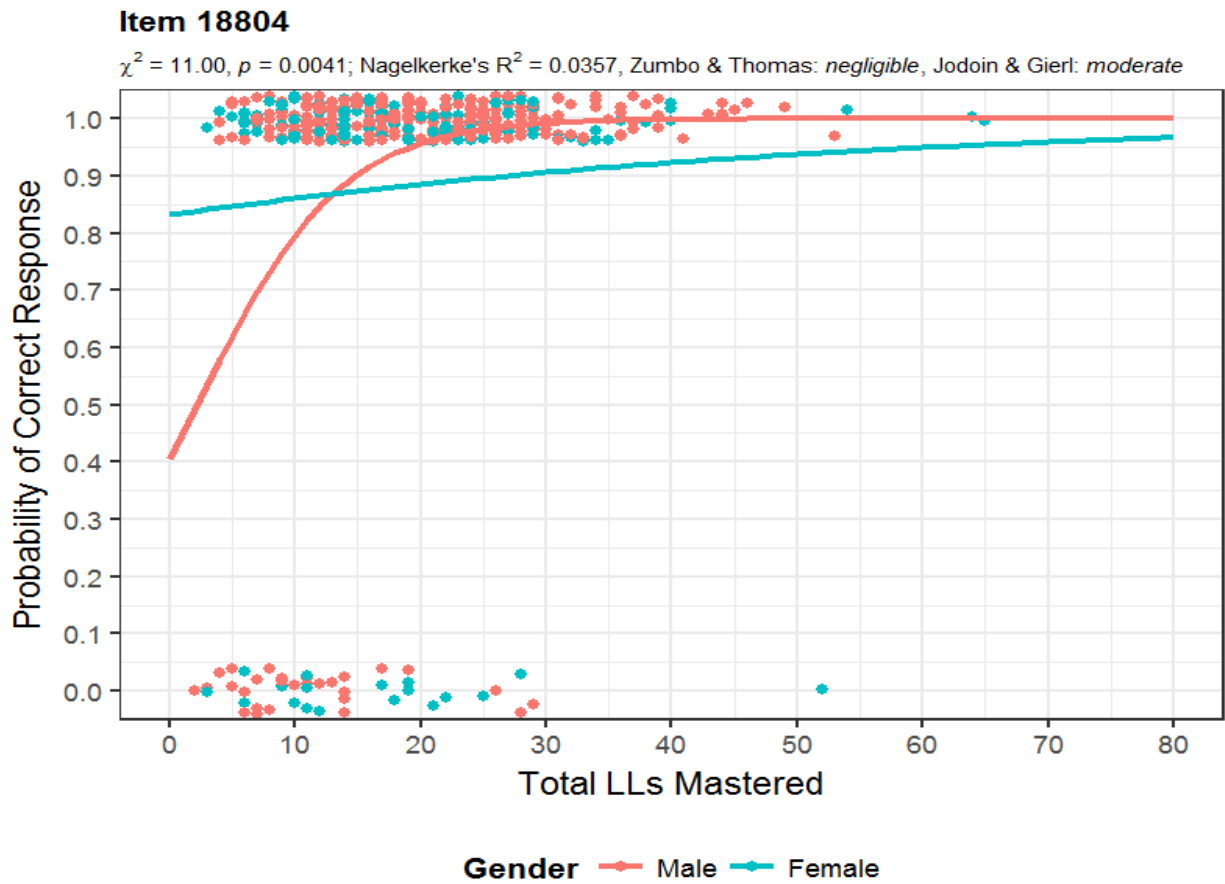
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Figure B14. Combined model logistic regression plot for mathematics grade 4 item 9835



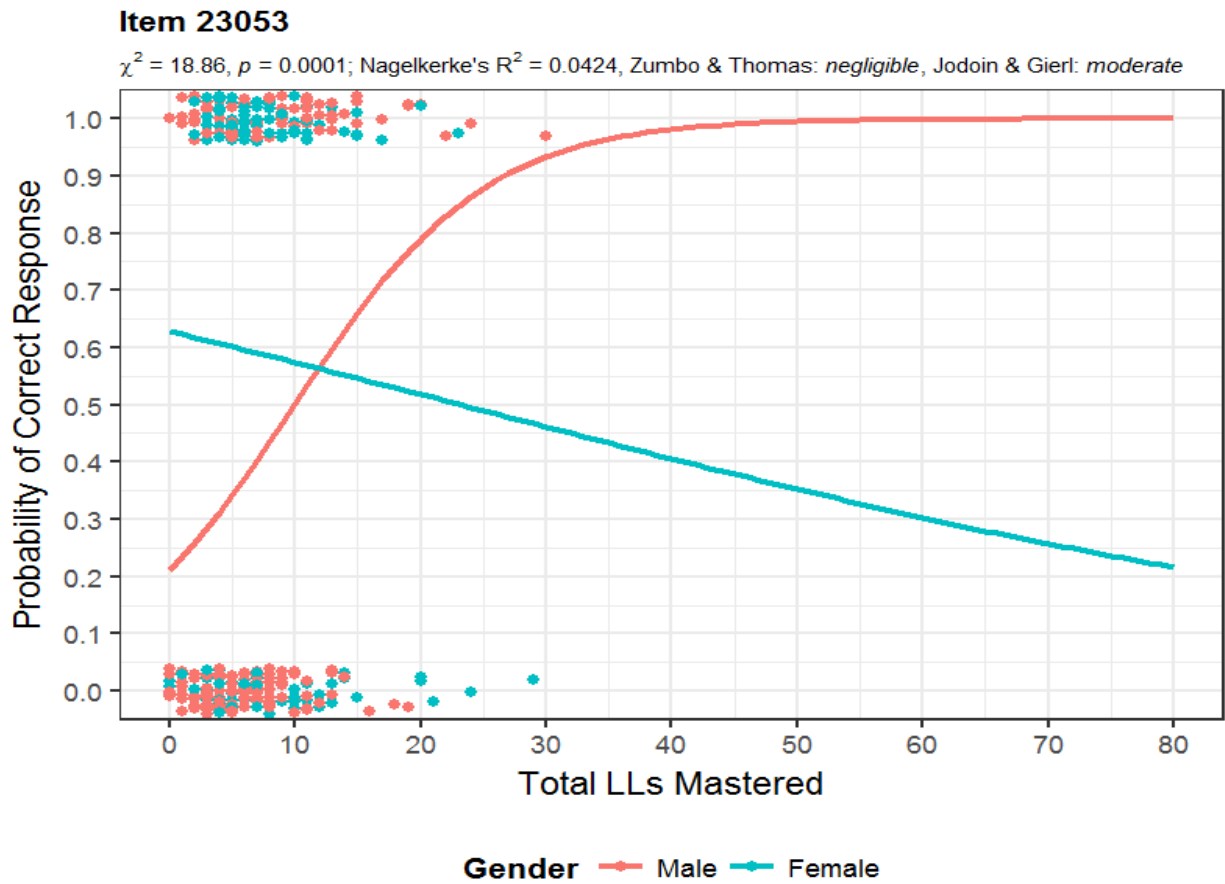
n = 580

Figure B15. Combined model logistic regression plot for mathematics grade 4 item 19417



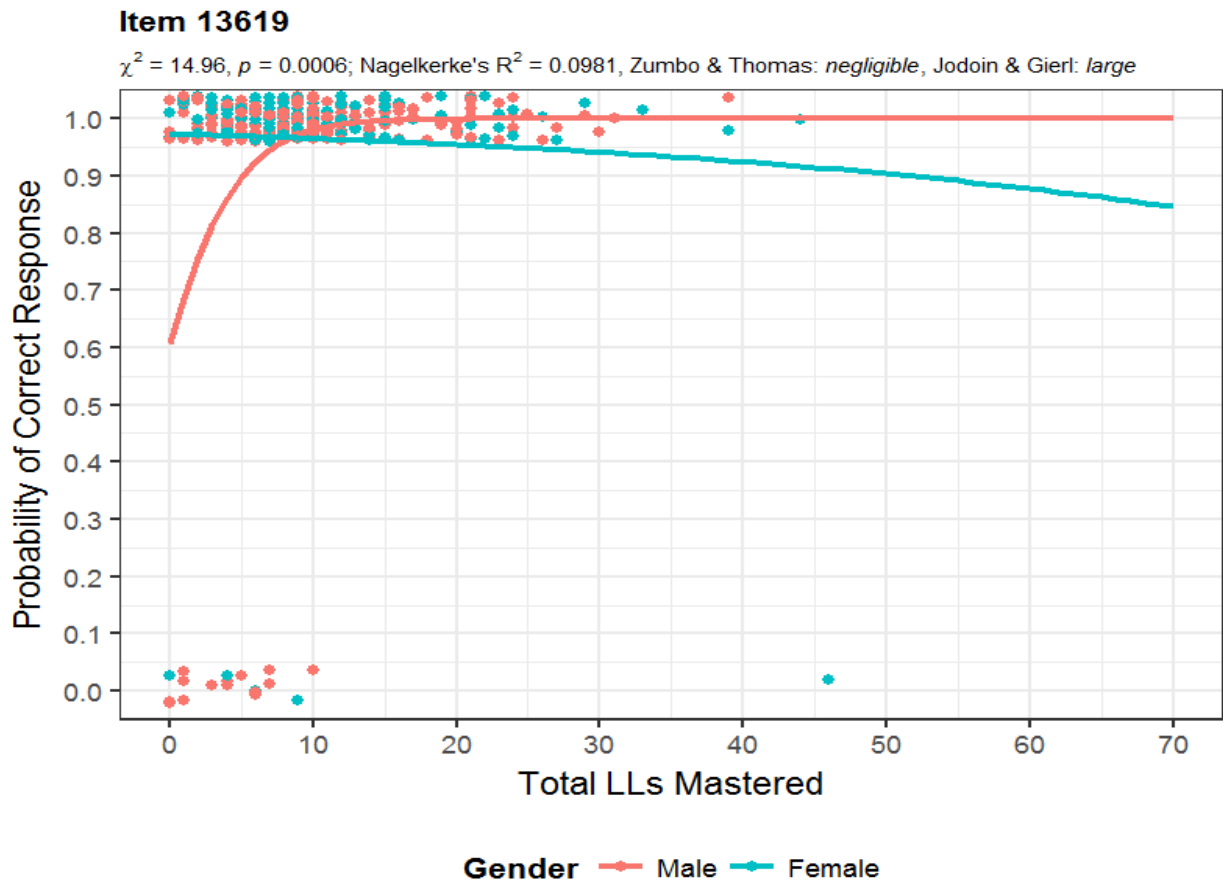
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Figure B16. Combined model logistic regression plot for mathematics grade 5 item 18804



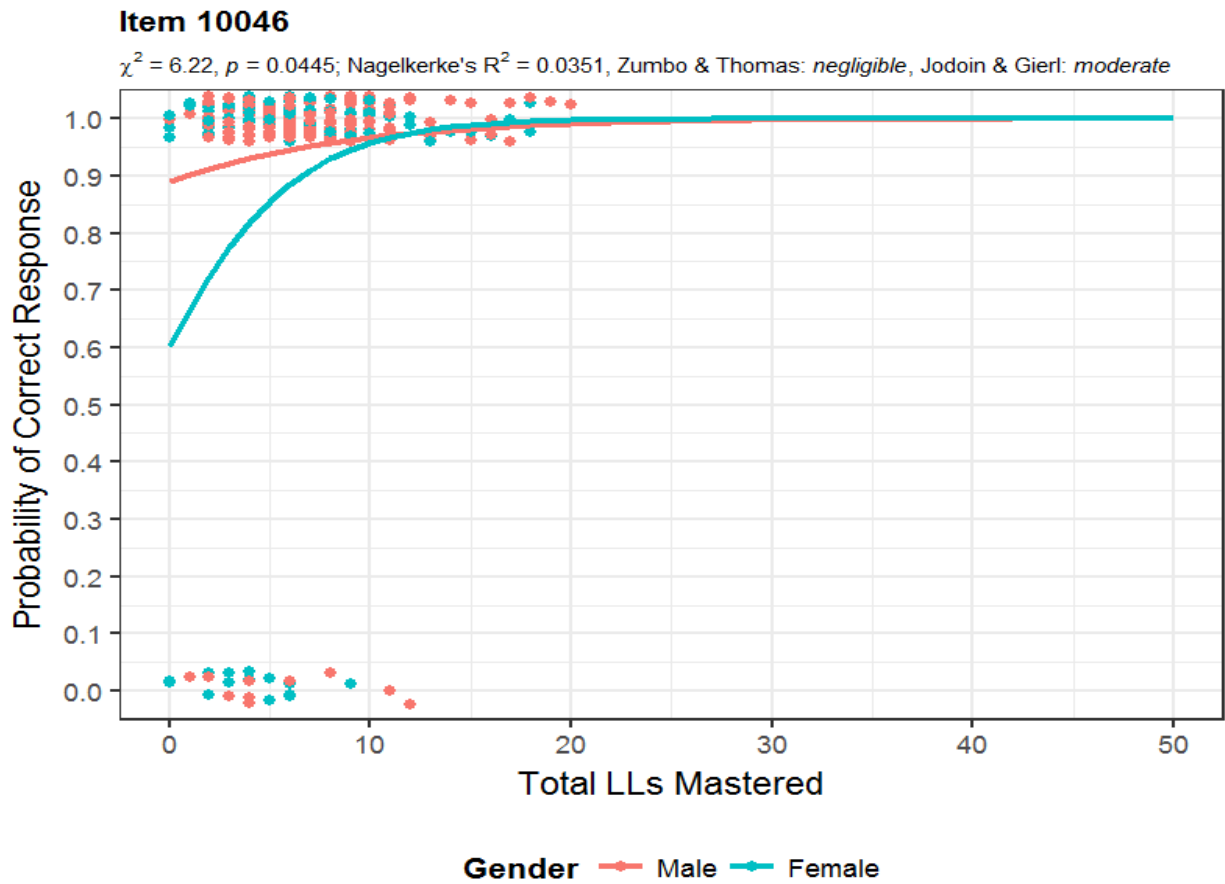
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Figure B17. Combined model logistic regression plot for mathematics grade 5 item 23053



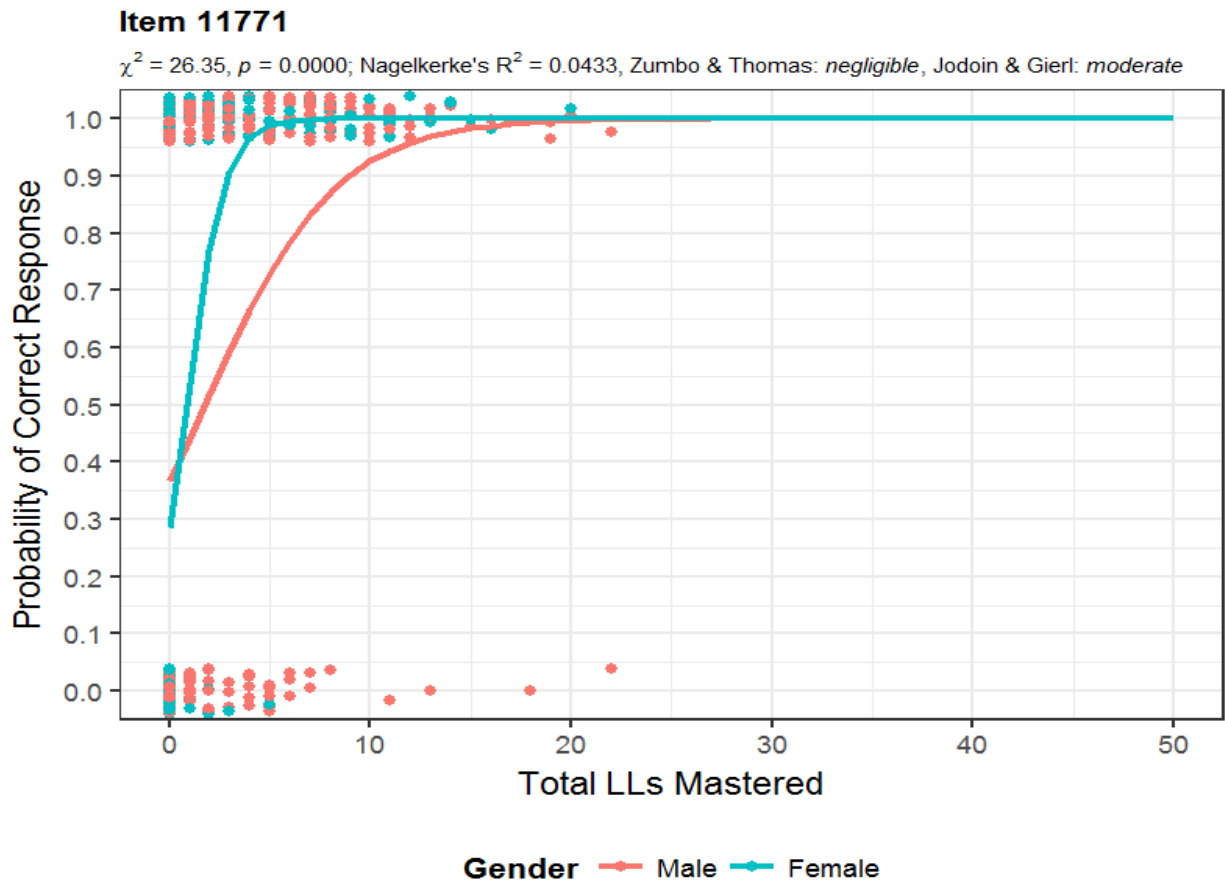
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Figure B18. Combined model logistic regression plot for mathematics grade 7 item 13619



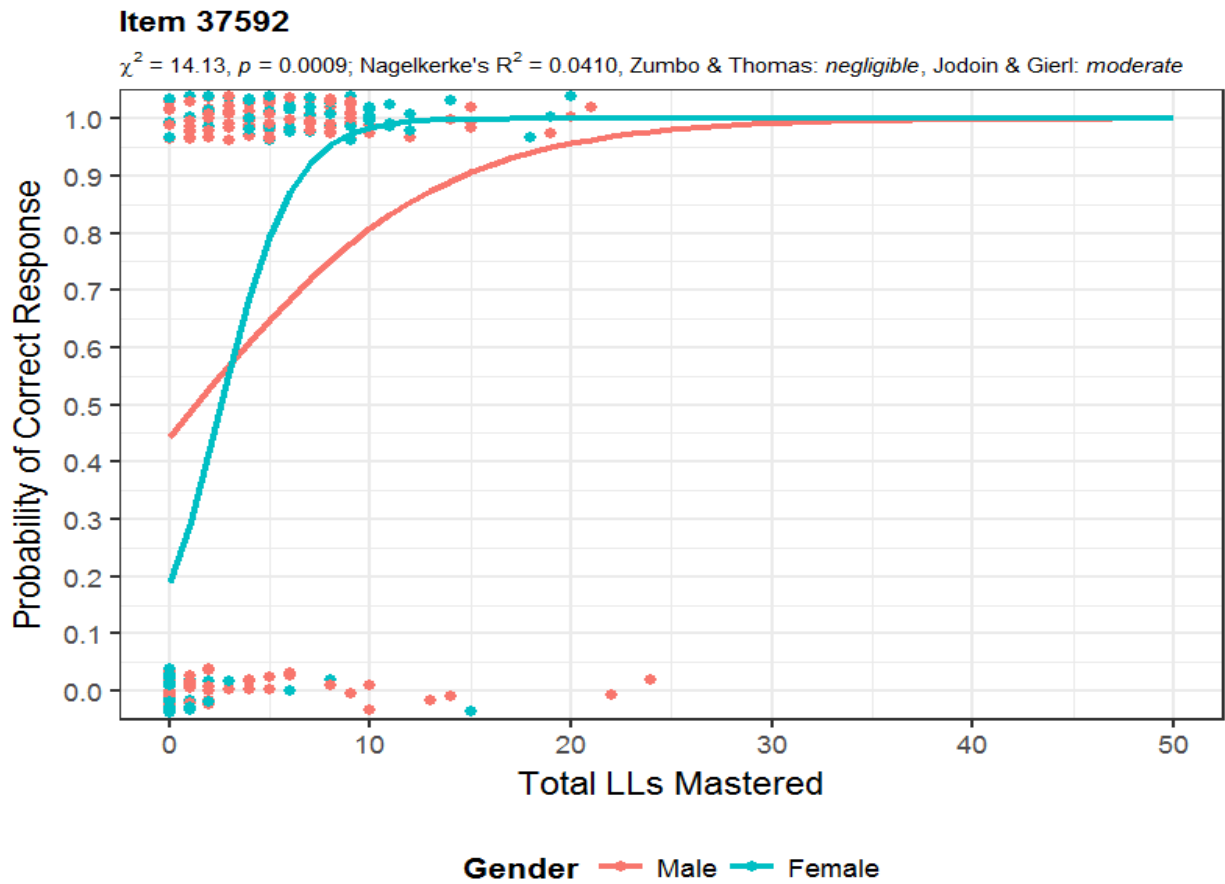
n = 306

Figure B19. Combined model logistic regression plot for mathematics grade 9 item 10046



n = 458

Figure B20. Combined model logistic regression plot for mathematics grade 10 item 11771



n = 255

Figure B21. Combined model logistic regression plot for mathematics grade 10 item 37592

APPENDIX A.4: INTEGRATED MODEL BLUEPRINT COVERAGE

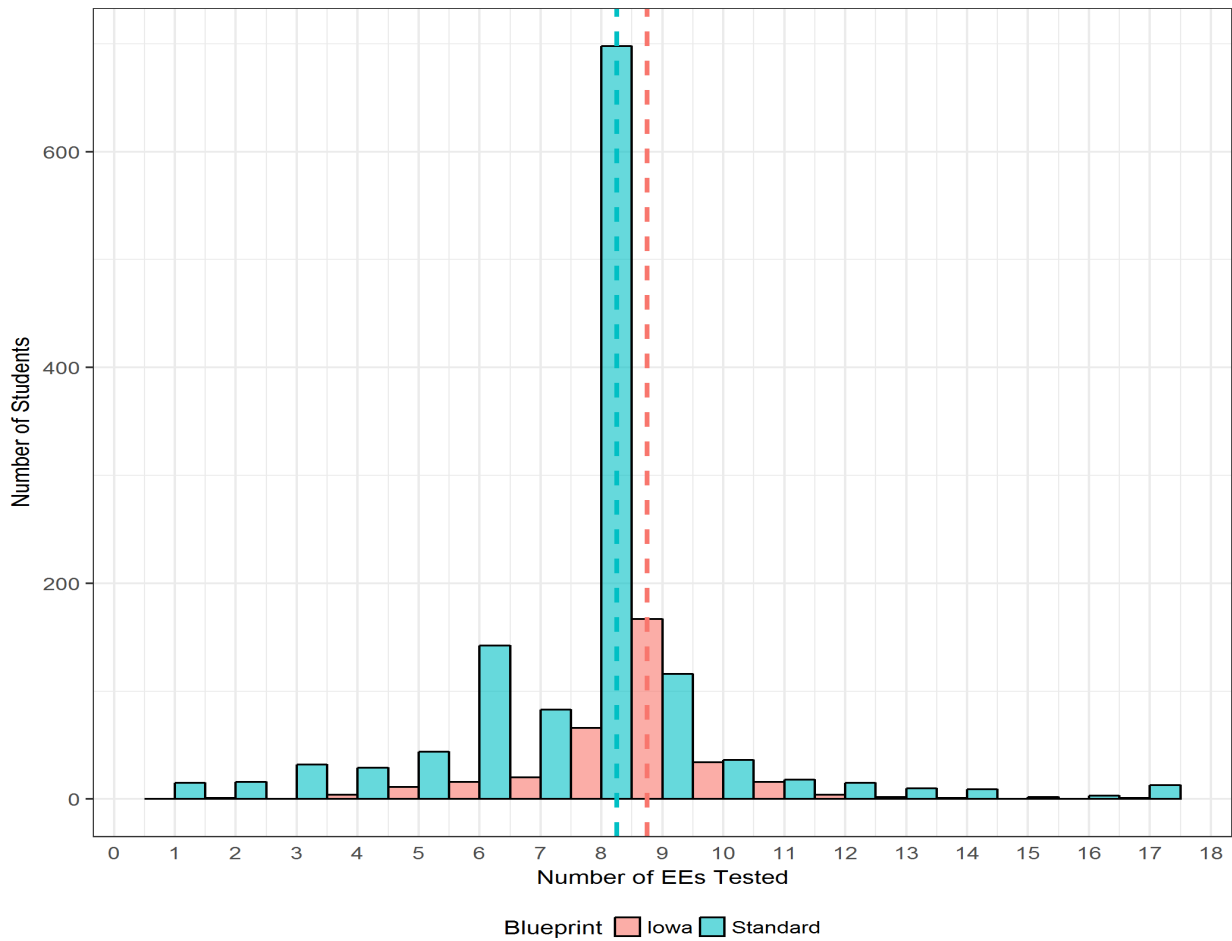


Figure A.1. Blueprint coverage for English language arts grade 3.

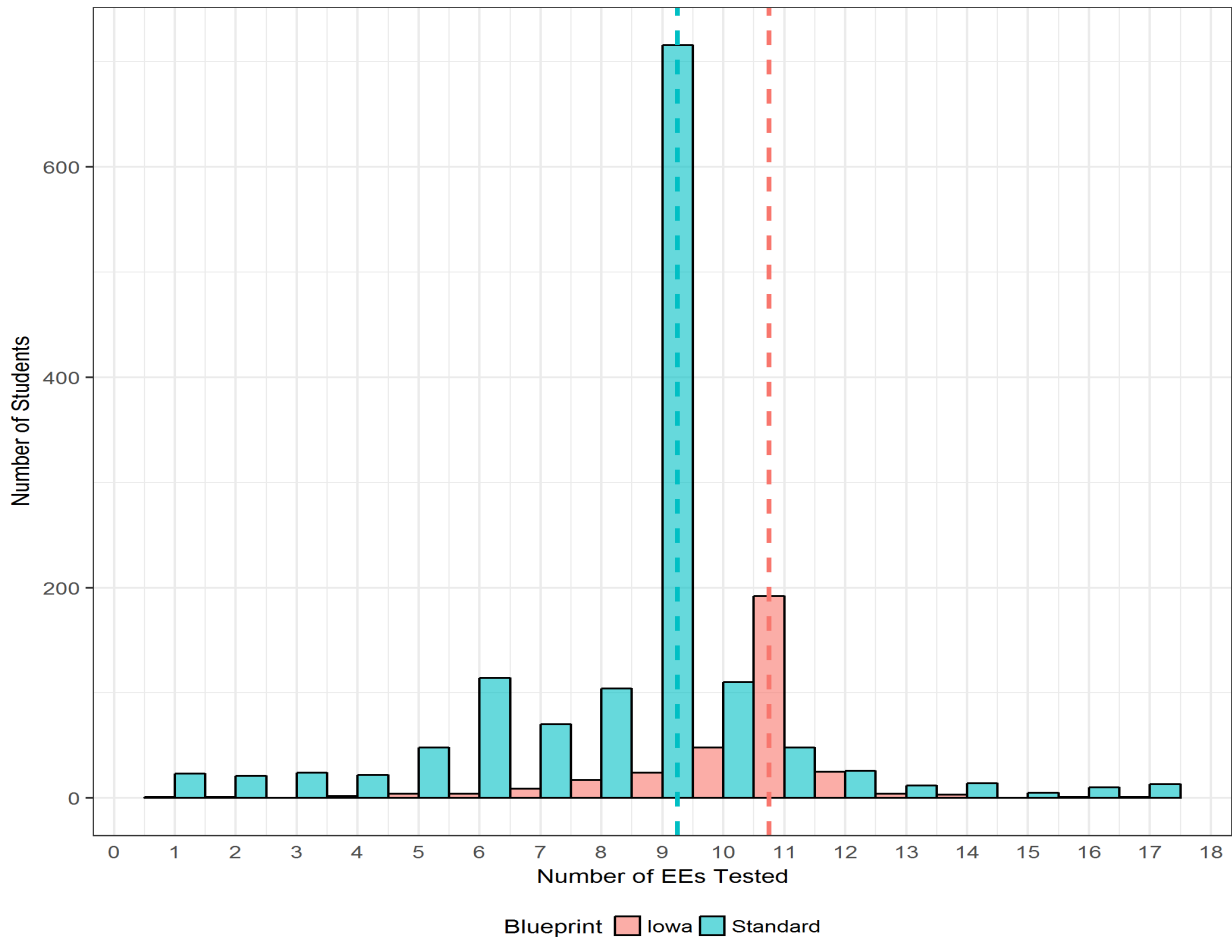


Figure A.2. Blueprint coverage for English language arts grade 4.

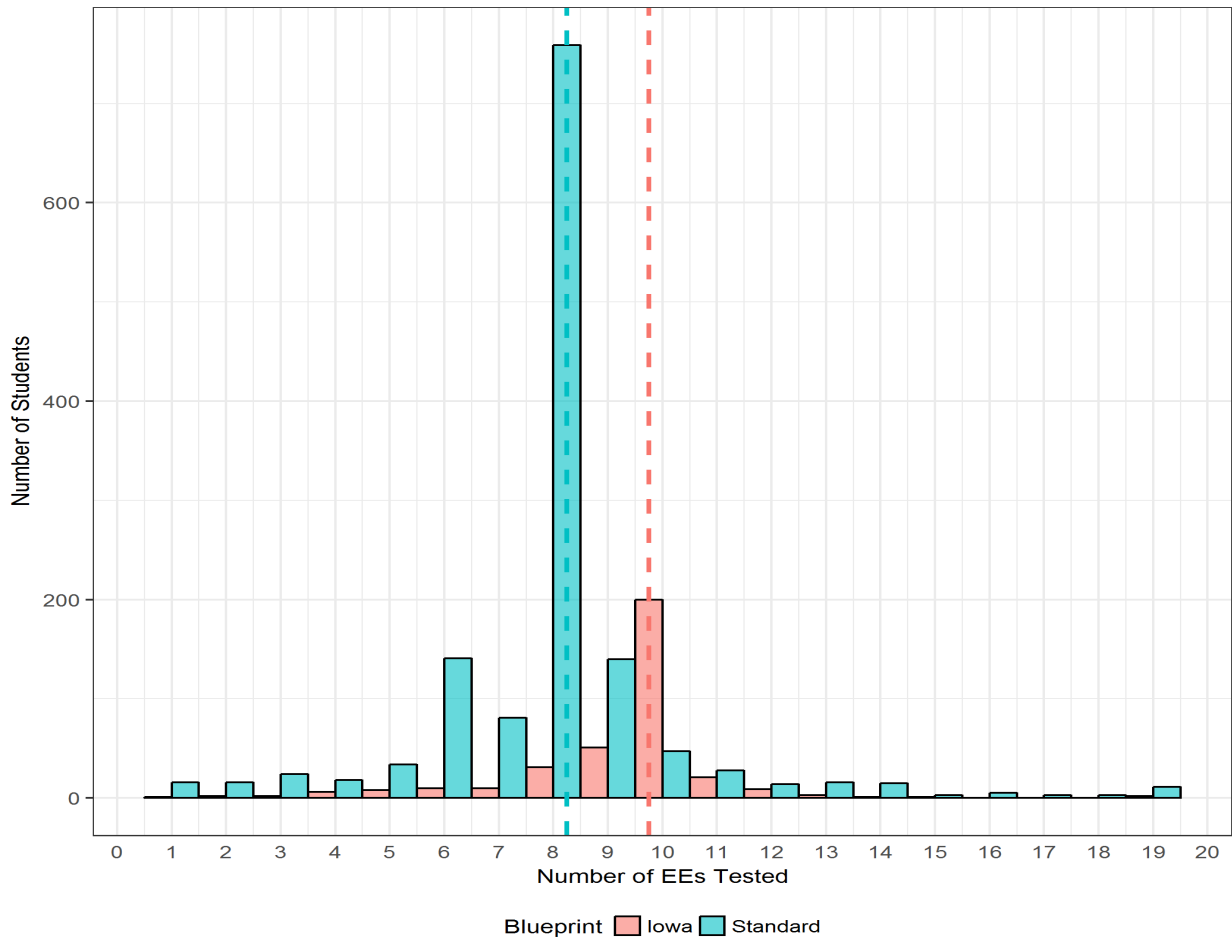


Figure A.3. Blueprint coverage for English language arts grade 5.

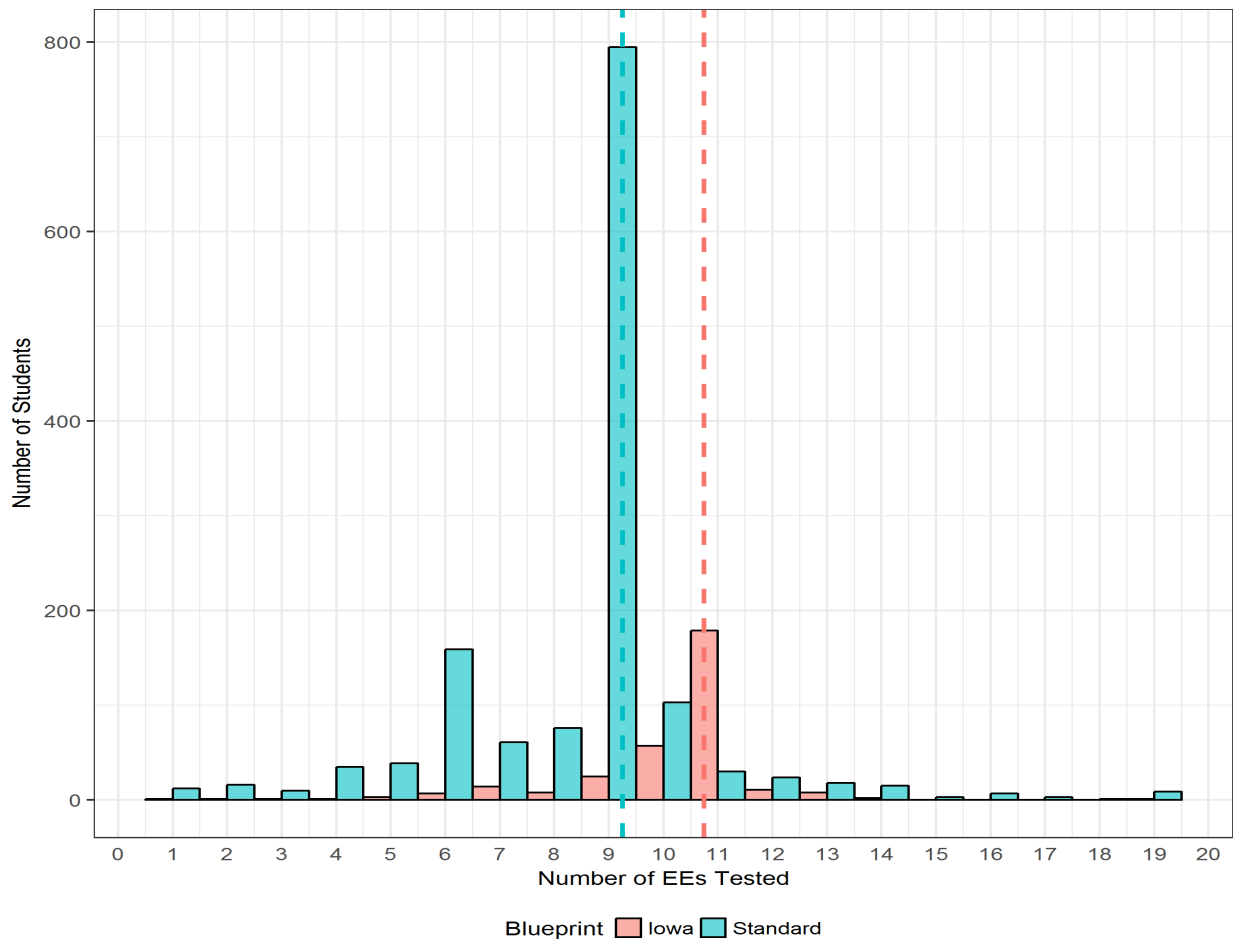


Figure A.4. Blueprint coverage for English language arts grade 6.

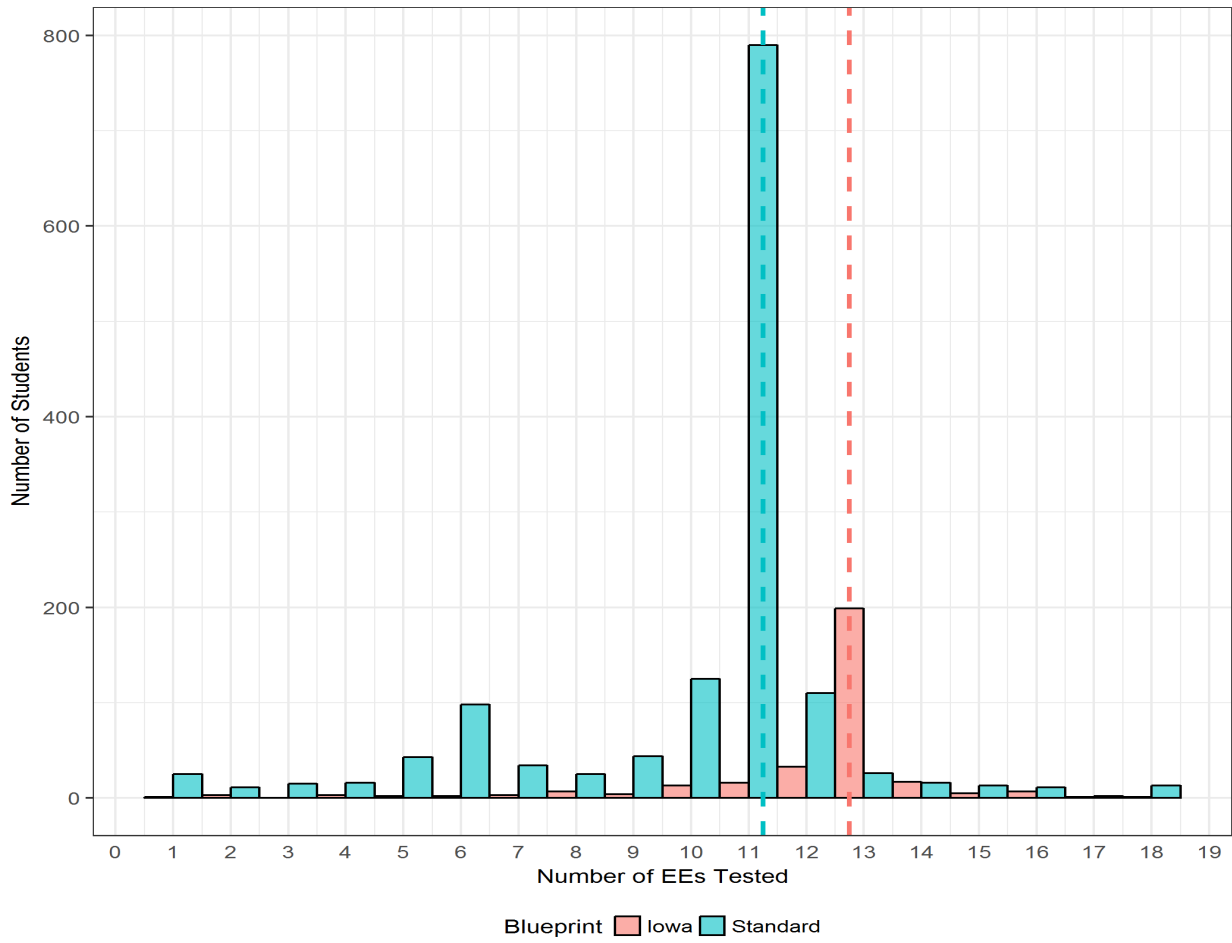


Figure A.5. Blueprint coverage for English language arts grade 7.

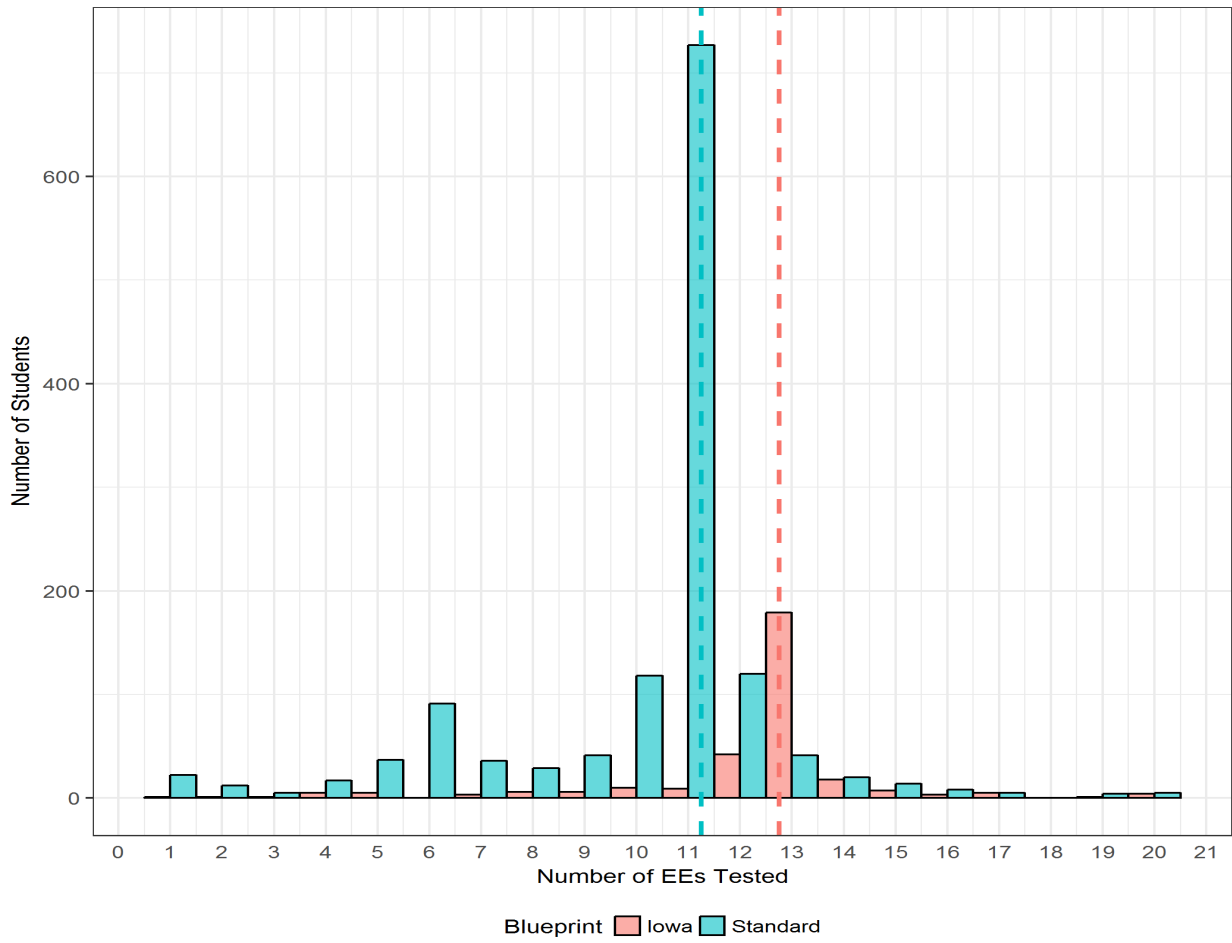


Figure A.6. Blueprint coverage for English language arts grade 8.

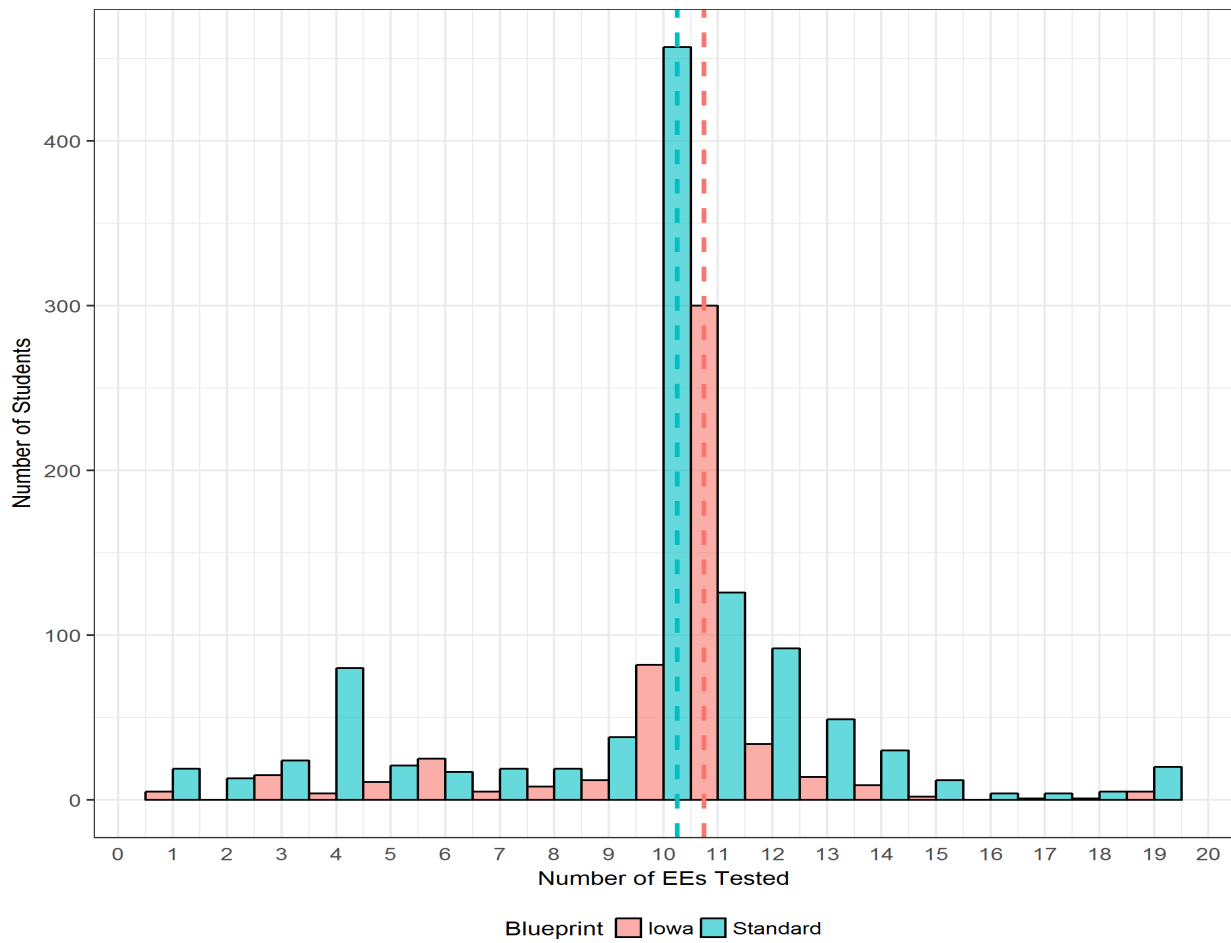


Figure A.7. Blueprint coverage for English language arts grade band 9-10.

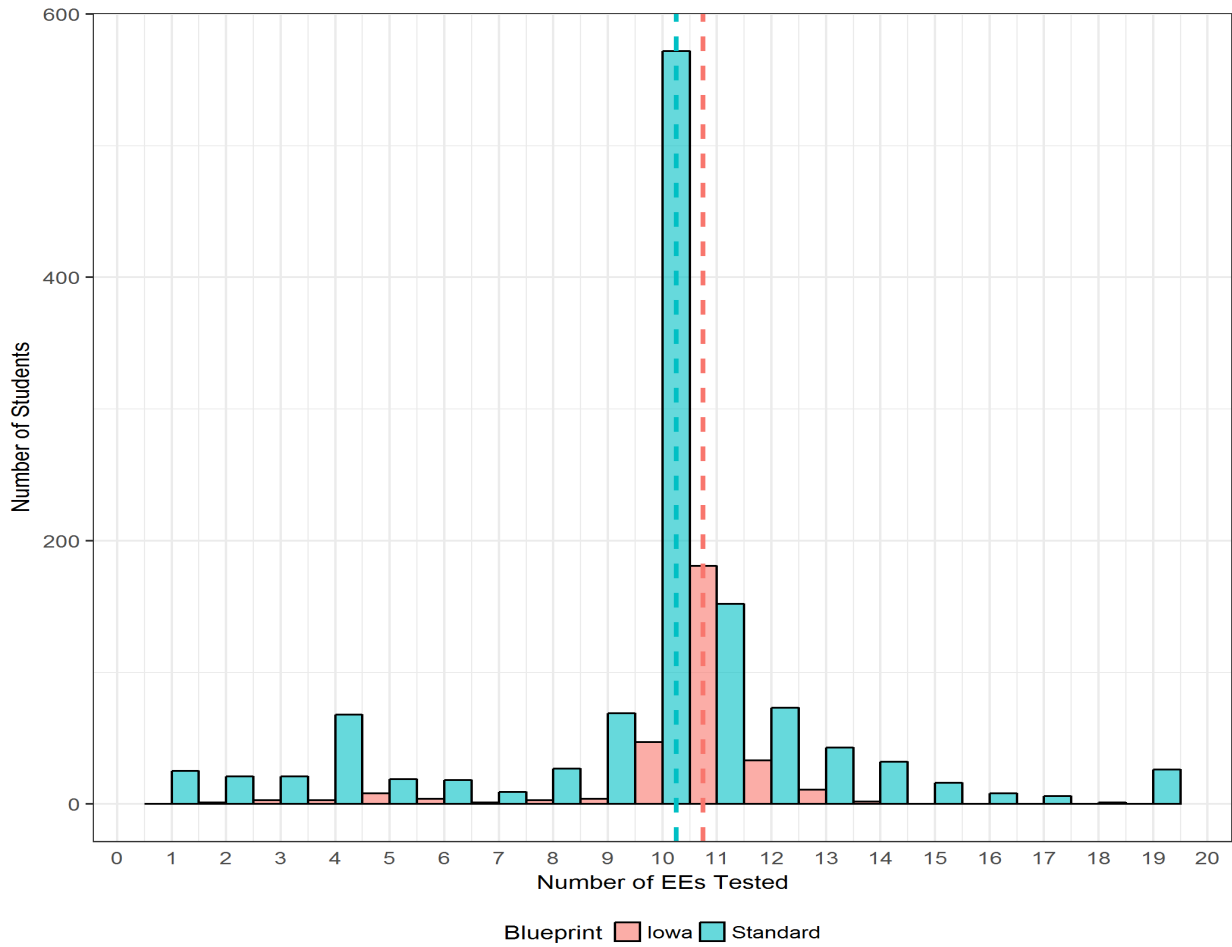


Figure A.8. Blueprint coverage for English language arts grade band 11-12.

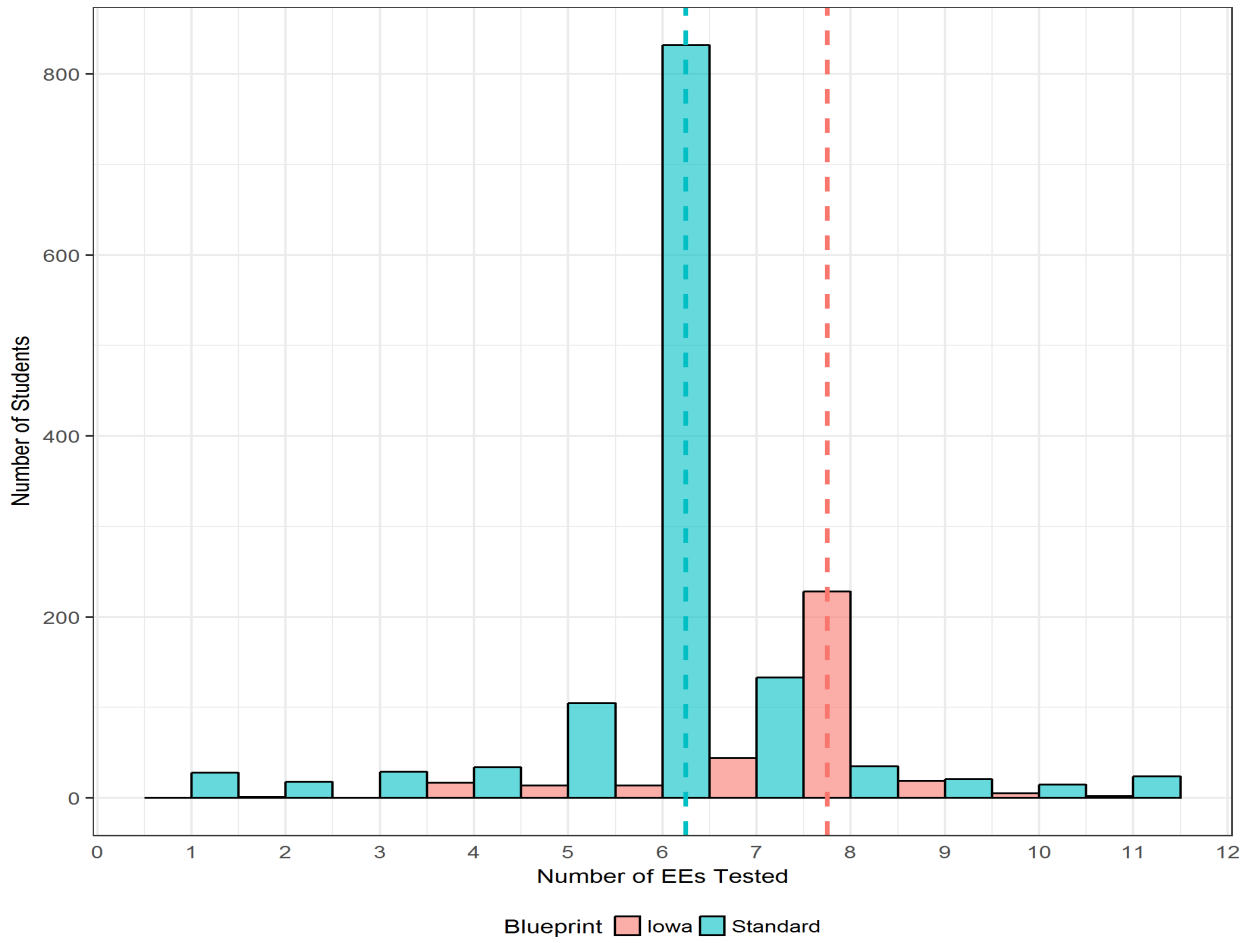


Figure A.9. Blueprint coverage for mathematics grade 3.

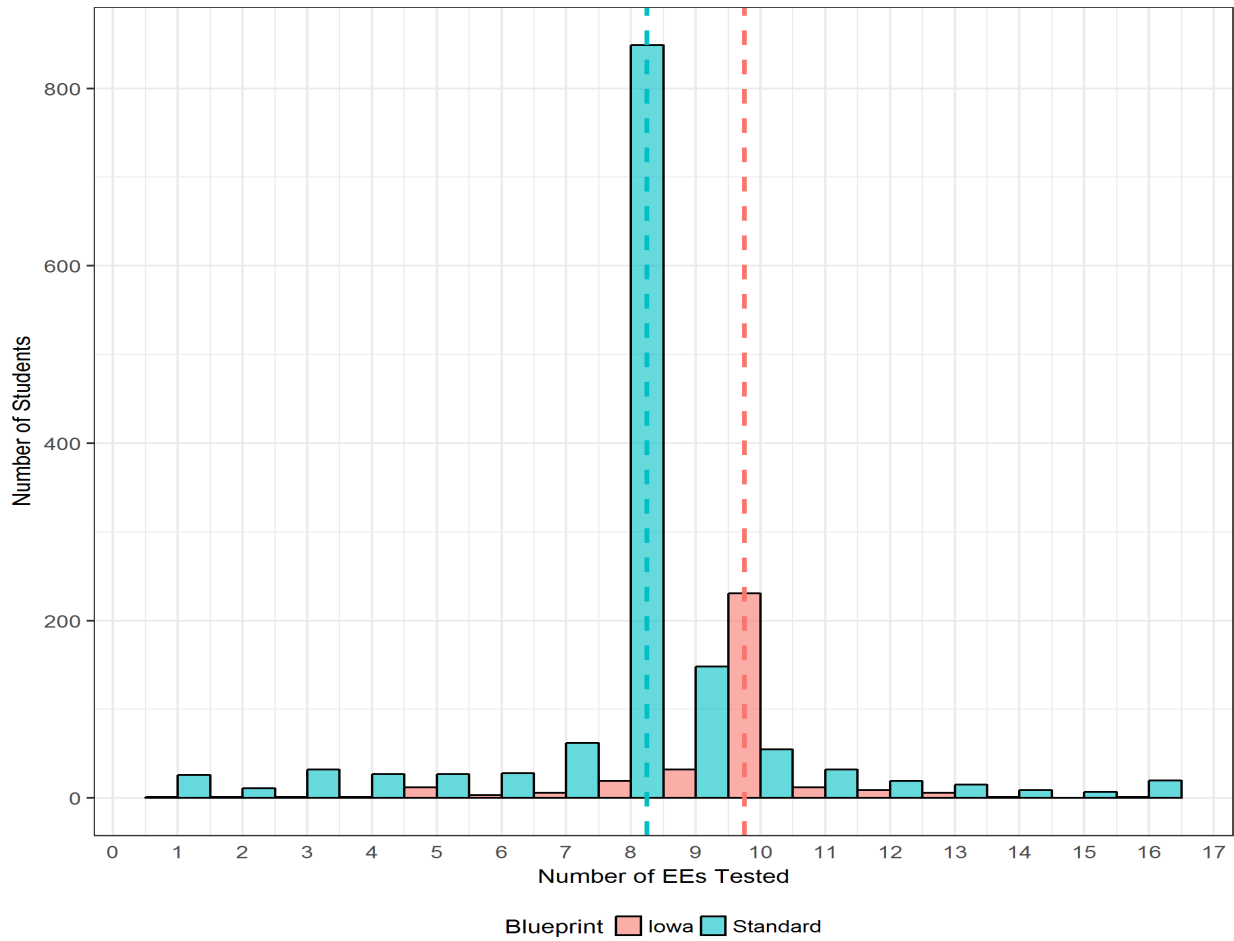


Figure A.10. Blueprint coverage for mathematics grade 4.

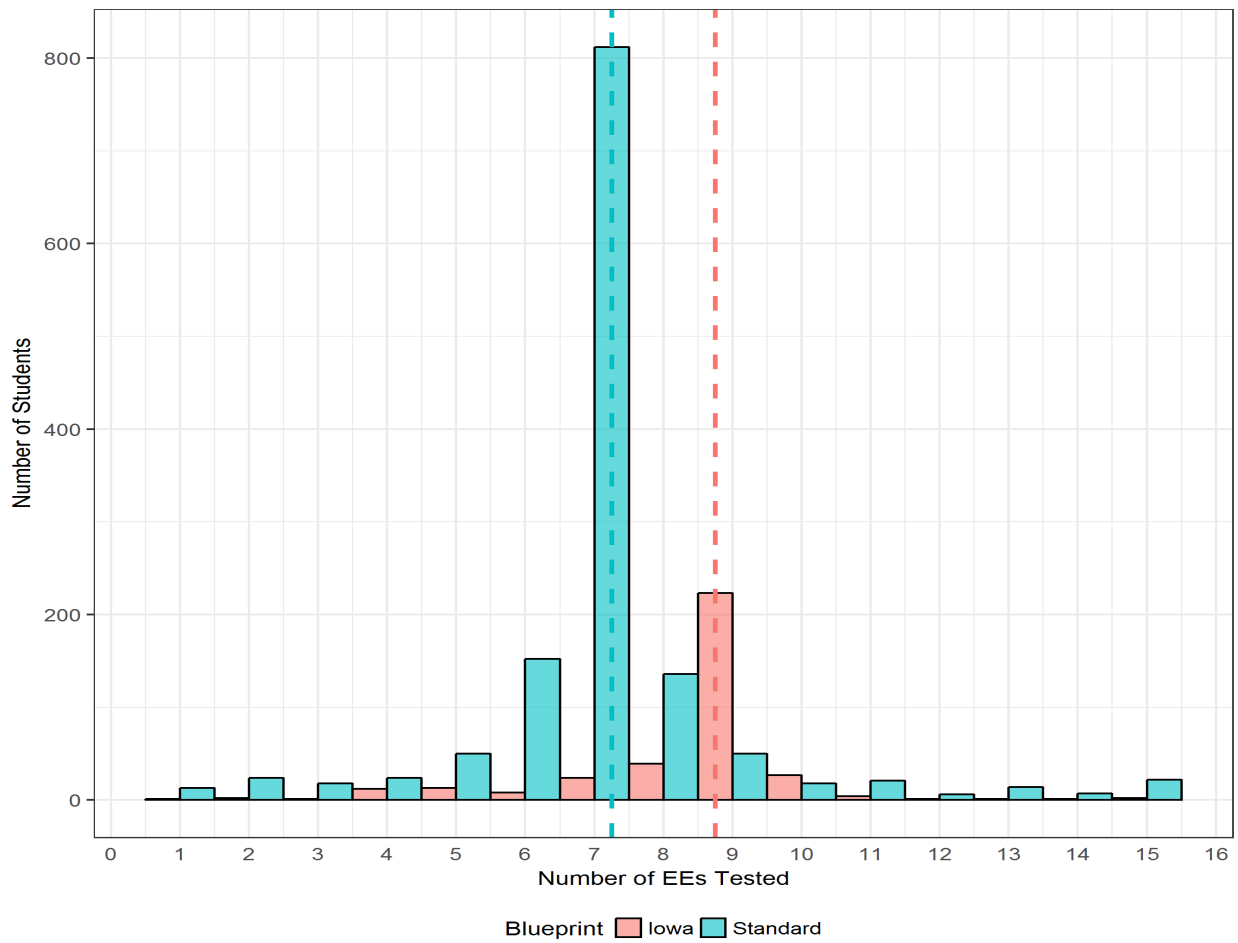


Figure A.11. Blueprint coverage for mathematics grade 5.

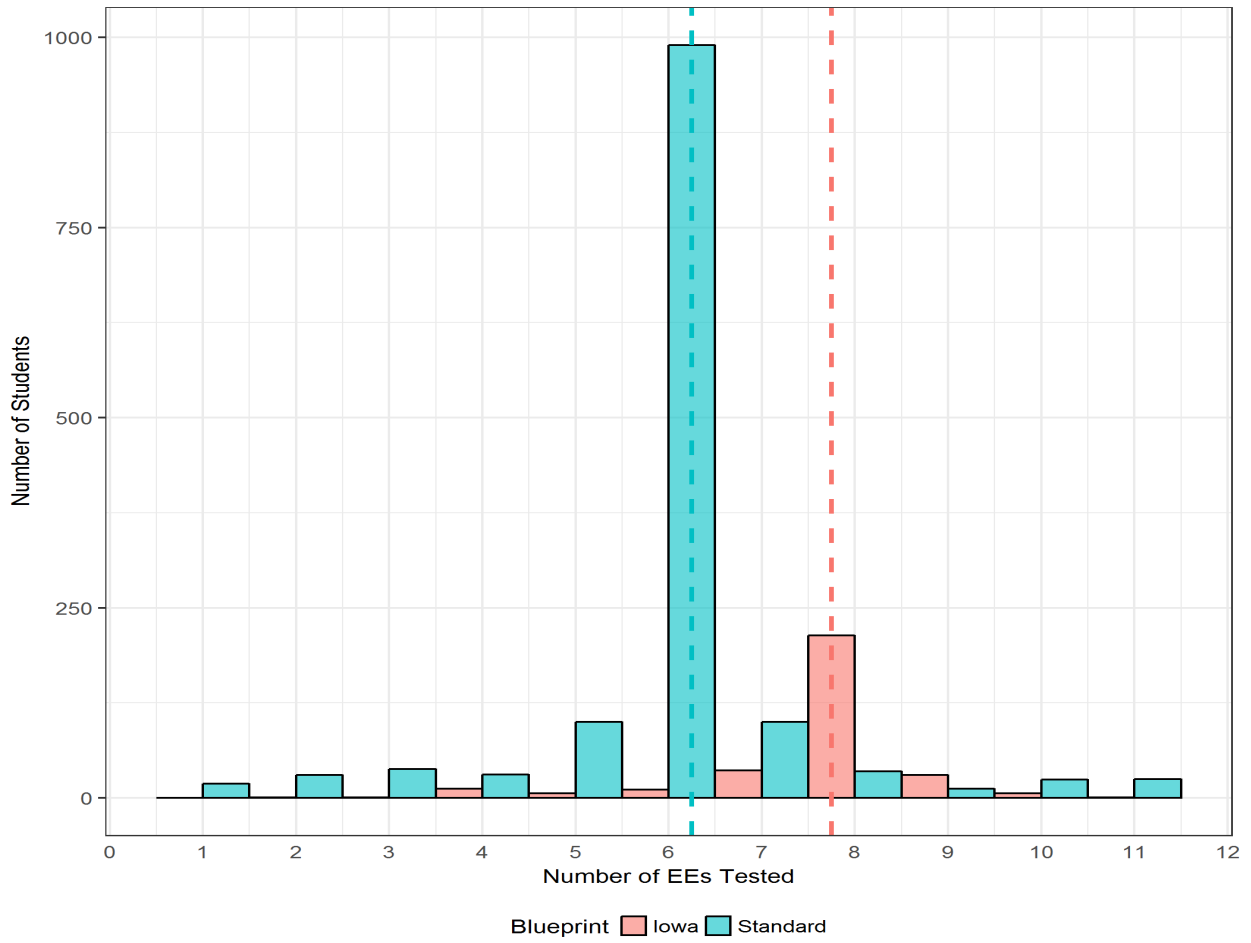


Figure A.12. Blueprint coverage for mathematics grade 6.

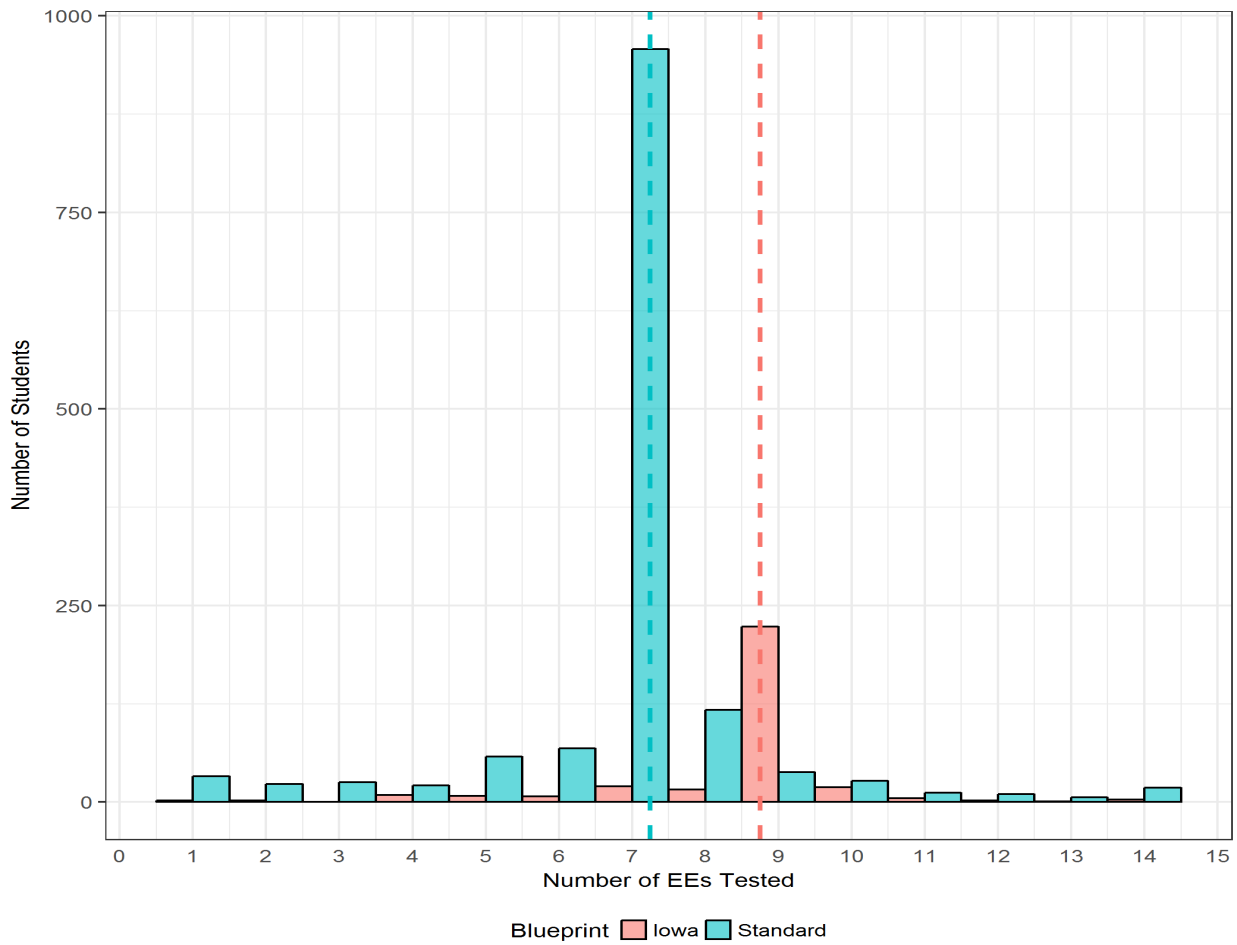


Figure A.13. Blueprint coverage for mathematics grade 7.

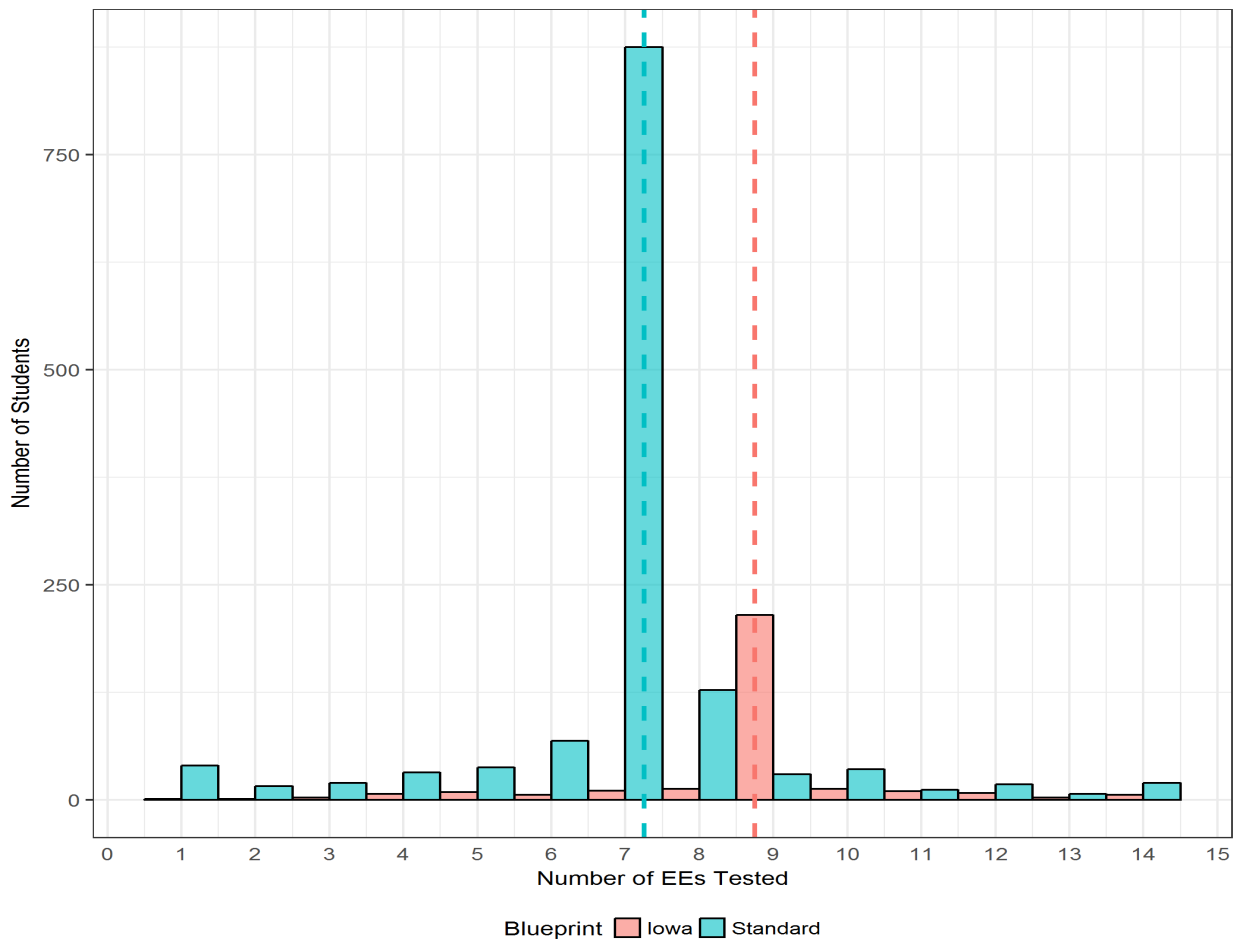


Figure A.14. Blueprint coverage for mathematics grade 8.

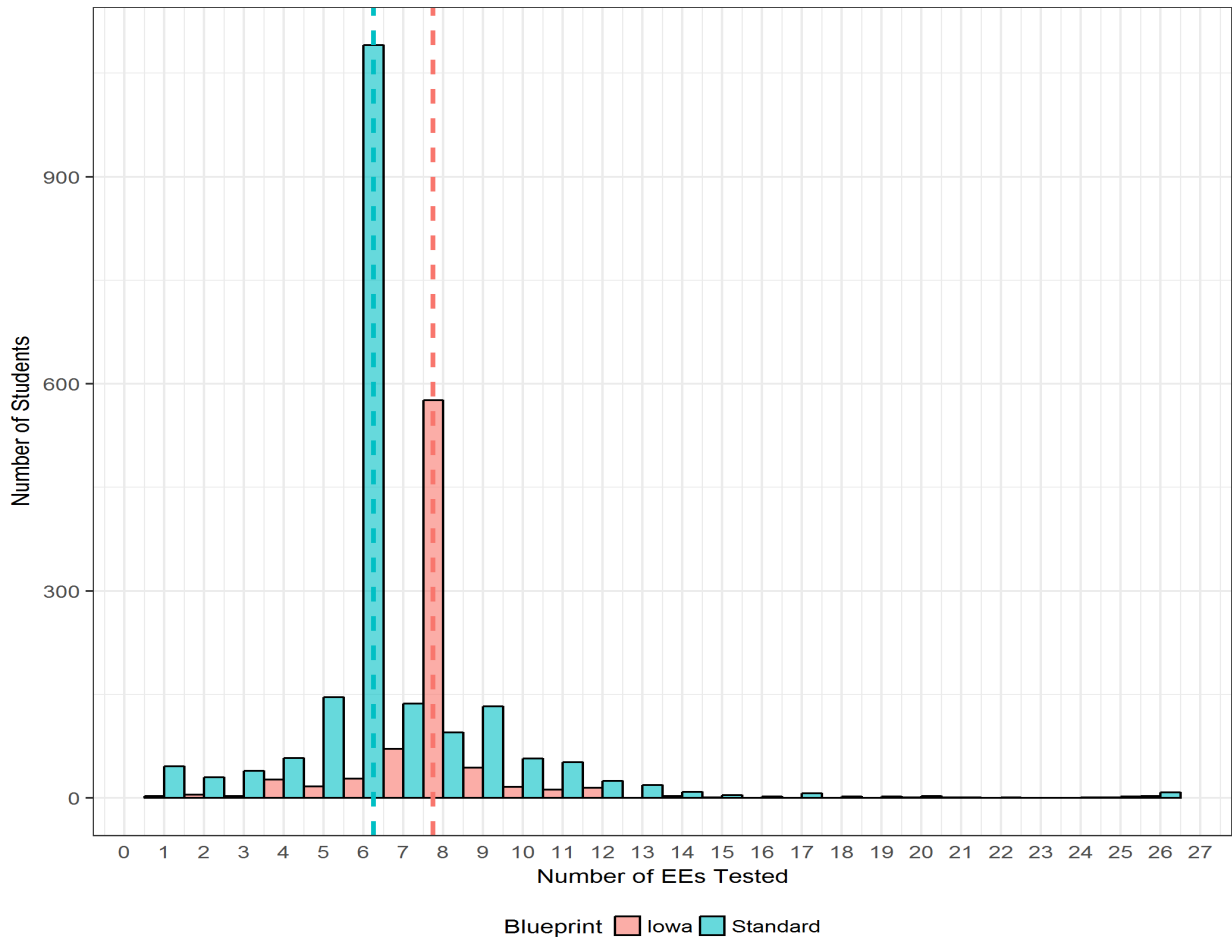


Figure A.15. Blueprint coverage for mathematics high school grade band.