

ATI Research

Making a measurable difference



ATI uses state-of-the-art measurement techniques to provide reliable and valid assessments and accurate forecasting to facilitate data-driven decision-making for instruction, professional development, and strategic planning. ATI's ongoing research helps make it possible for Galileo K-12 to continuously evolve in ways that are relevant to changes in client needs, federal and state legislation, assessment and instruction research findings, and technology.

ONGOING RESEARCH POWERING GALILEO

- application of Item Response Theory (IRT) techniques to establish item characteristics (difficulty, discrimination, and guessing)
- application of IRT placing scores from multiple assessments on a common scale to assess student growth
- identification of cut scores forecasting likely student performance on statewide assessments
- annual determination of expectations for student growth



Powered by ATI Research

IRT analyses for district assessments go beyond percent correct to measure growth & achievement & to forecast state test performance.

RAW SCORES VS. IRT

Systems that don't use IRT must rely on raw scores such as number or percent correct that ignore variations in difficulty across items and tests. Without IRT, these systems can only consider test scores in isolation and attempts to measure student growth may produce inaccurate and potentially misleading information.

EASE OF ACCESS TO HIGH POWERED DATA

Galileo *Dashboard* reports transform high-powered data analysis procedures, into practical, interactive reports. IRT makes it possible for Galileo to place scores from multiple assessments over the course of the year on a common scale to accurately measure student growth. IRT supports Galileo forecasts of student performance on state-wide tests based on periodic district-wide benchmark assessments.

Galileo's categorical growth analyses indicates whether students have maintained, exceeded or not maintained expected growth. Using IRT, Galileo evaluates the relative difficulty of items and tests. With this information in hand, scores from different tests are placed on the same scale so that growth can be accurately measured.

Galileo also uses IRT to place the student on a developmental path and provide teachers with easy-to-use graphical reports about what students have mastered and what they are ready to learn next.

Forecast Report									
District: ATI Demo District									
Title: District 5th Math Tests and Statewide Test									
Subtitle: Three 5th Math Tests and Statewide Test									
Benchmark Performance			Risk Classification		Statewide Test Performance			Percent Accurately Forecast	
Test 1	Test 2	Test 3	Risk Group	Student Count	Met	Not Met	Percent Met		
Met	Met	Met	On Course	269	255	14	95	95	
Met	Met	Not Met	Low Risk	26	19	7	68	68	
Met	Not Met	Met		62	41	21			
Not Met	Met	Met		15	10	5			
Met	Not Met	Not Met	Moderate Risk	32	7	25	28	72	
Not Met	Met	Not Met		14	1	13			
Not Met	Not Met	Met		29	13	16			
Not Met	Not Met	Not Met	High Risk	97	8	89	8	92	
Correlations with Statewide Test				Total Student Count: 544		Overall Percent Accuracy: 88			
0.78	0.76	0.8							
Test 1 Title: Demo 5th Math #1									
Test 2 Title: Demo 5th Math #2									
Test 3 Title: Demo 5th Math #3									

FORECASTING STATEWIDE TEST PERFORMANCE

Forecasting information can be used by teachers, administrators, specialists, and parents to improve instructional effectiveness and student learning.

Galileo® K-12 Online

ACCURATELY MEASURING STUDENT ABILITY WITH IRT

Developmental Level Scale Score

Galileo provides an IRT Developmental Level (DL) scale score, similar to the scale score on the state test. Systems that don't use IRT can only provide raw scores (i.e., number/ percent correct).

With Raw Scores

- student responses to items and tests are evaluated in isolation
- nothing is known about the student's underlying ability
- it is difficult to predict student performance on other items assessing a standard or other standards

With IRT Scale Scores

- a student's ability in a given subject or knowledge area is evaluated, not just their performance on a specific set of items
- for a given ability, it is possible to predict a student's likely performance on any item and any standard
- educators know not only what the student has already mastered, but also what they are ready to learn next
- educators have information about item characteristics including discrimination, difficulty, and guessing
- the Developmental Level (DL) scale score provides educators with information indicating student ability in a grade and subject
- developmental path reports that use the ability score help guide teachers in next instructional steps

Common Scale Score

Galileo places the DL (IRT) score on a common scale across tests in a grade and subject to measure growth. Systems without IRT can only evaluate a student's score for each test in isolation.

With Raw Scores

- the relative difficulty of different tests is ignored
- student growth estimates can be inaccurate and misleading

With IRT Scale Scores

- the score is adjusted based on the relative difficulty of different tests
- student growth estimates are accurate and defensible

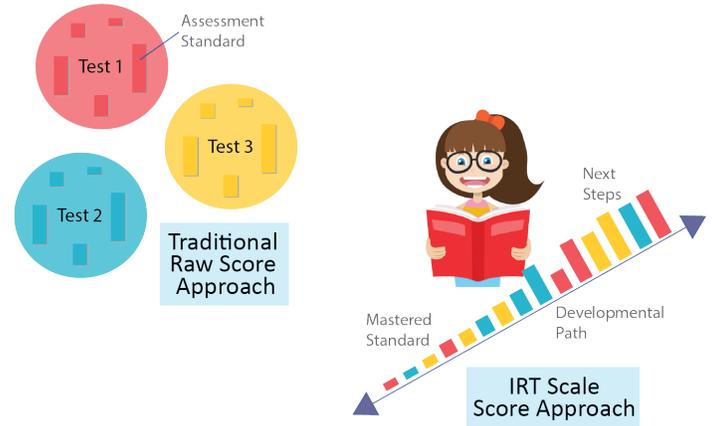


"ATI has supported us with high quality assessments, state-of-the-art metrics and scoring, and excellent customer service."

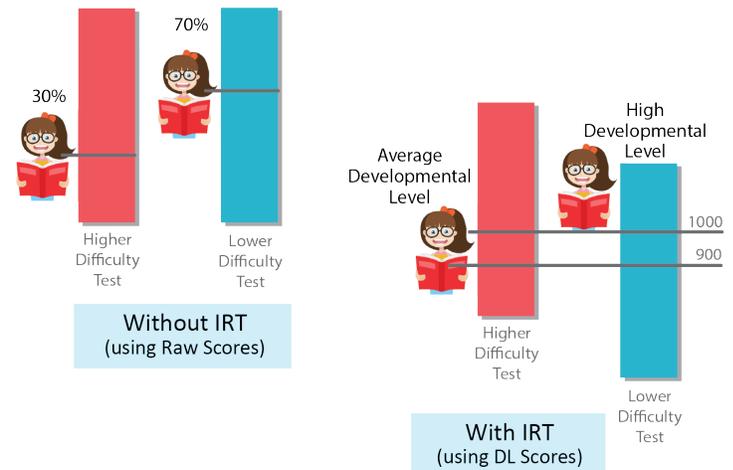
— Jared Prolo, Coordinator of Assessment, Research, and Evaluation Services, San Mateo-Foster City School District, CA

Galileo Provides the Benefits of IRT Theory

Unlike raw scores, IRT scale scores place the student on a developmental path to illustrate mastery and guide instructional next steps



Measuring Student Growth Across Tests



Visit ati-online.com to learn more or contact us:

1.800.367.4762

GalileoInfo@ati-online.com

Find us:

facebook.com/AssessmentTechnologyIncorporated

youtube.com/AssessmentTechnology

townhallblog.ati-online.com