



Measuring the predictability of Istation Indicators of Progress Early Reading (ISIP-ER) scores on Renaissance STAR Reading® 2019



**Morgridge International
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Research Study Title

Measuring the Predictability of Istation Indicators of Progress Early Reading (ISIP-ER) scores on Renaissance STAR Reading® scores.

Purpose

The following report has been prepared for Istation. The report is a predictability study of the Istation Indicators of Progress Early Reading (ISIP-ER) scores to the Renaissance STAR Reading® scores. Included in this report are charts, tables, and figures demonstrating the predictability of the ISIP-ER scores to STAR scores with a sample of student data ($N = 988$). The data in this report does not identify individual districts, schools, or students.

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Abstract

The study described herein provides evidence that Istation's Indicators of Progress (ISIPTM) Reading cut scores can predict the STAR Reading Assessment (STAR) statewide examination scores for all achievement levels among first and second grade students. The study examined kindergarten, first, and second grade ISIP-ER scores (Overall Reading Ability and Reading Comprehension) and STAR Reading scores. All data came from one county in the state of Florida and was collected during the 2017-2018 school year. A simple linear regression analysis was conducted to determine the correlation of the STAR Reading Scaled scores and the ISIP-ER overall reading scores, $R = .83$ (69% of the variance explained) and comprehension $R = .56$ (31% of the variance explained). ISIP-ER scaled scores had a strong correlate to the STAR scores. Predictability "bands" were computed to identify the ISIP-ER cut scores that predict STAR Reading scores for all achievement levels.

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Introduction

The purpose of this study is to determine (a) the predictability of Istation's Indicators of Progress Early Reading (ISIP-ER) overall scaled scores and reading comprehension subtest scores related to the Renaissance STAR Reading® (STAR) scores and (b) the cut scores of the ISIP-ER and the STAR based on achievement level. Obtaining the predictability of a curriculum-based measure like ISIP-ER scores on a high stakes assessment like the STAR can provide early awareness of students' yearly progress towards reaching expected state standards (Miller, Bell, & McCallum, 2015). Further, ISIP-ER can provide evidence of how students are meeting formative benchmarks, and the resulting data can provide a pathway to personalized instructional decision-making (Campbell, Lambie, & Planinz, 2017).

The predictability of ISIP-ER scores may inform students, families, and educators of the areas of needed remediation for the STAR. The following report provides evidence of predictability and subsequent cut scores for the ISIP-ER and STAR. The following two research questions guided this study:

Research Question 1. To what level does the ISIP-ER (overall and reading comprehension scores) predict kindergarten, first and second grade students' STAR scores?

Research Question 2. What are the cut scores as determined by the confidence interval of the ISIP-ER relationship to kindergarten, first, and second grade students' STAR levels of achievement?

Review of Related Literature

Computer-adaptive testing (CAT) is computer-based testing that adjusts to encourage student growth by adapting test difficulty to meet the unique needs of each student based on his or her progress and performance on earlier questions. For instance, if a student answers a question incorrectly, CATs reduce the difficulty level of the upcoming questions. Conversely, if a student answers correctly, the difficulty is increased. Through these personalized adjustments, students' literacy skills are sharpened.

Istation's Indicators of Progress Early Reading (ISIP-ER)

ISIP-ER is a computer-adaptive, Internet-delivered, curriculum-based measure, for students in kindergarten through third grade. Educators utilize ISIP-ER for continuous progress monitoring of students' reading abilities. The composition of the overall reading scaled score for grade three is derived from the

following subtests: (a) reading comprehension, (b) spelling, and (c) vocabulary (Matthes, Torgeson, & Herron, 2011; 2016). ISIP-ER takes approximately 20 to 40 minutes to complete. Although the ISIP-ER assessment is scheduled to be taken monthly, school districts typically have their students take the assessment four to six times per year based on previous observed usage and schedules (Campbell, Lambie, Hahs-Vaughn, & Bai, 2015; Campbell, Lambie, Planinz, & Pulse, 2016).

Previous predictive studies have concluded that the ISIP-ER is predictive of national (Hoelzle, 2012) and state-wide high-stakes assessment scores (Campbell, Lambie, & Sutter, 2018; Gaughin, 2011, Luo, Guang-Lea, & Molina, 2017; Patarapichayatham, 2016; 2017). The ISIP-ER test questions are computer-adaptive and the test was built on two-parameter Item Response Theory (IRT). The ISIP-ER assessment considers the difficulty of the question and the performance and ability of the test-taker.

STAR Reading Test

Upon completion of a STAR Reading assessment, students receive scaled scores (SS) based on question difficulty and their total number of correct responses to demonstrate students' performance level. Renaissance Learning established the STAR Reading™ assessment in 1996. Renaissance Learning developed the STAR Early Literacy™ to meet the needs of students ranging from pre-kindergarten to third grade. Star Early Literacy™ directs students through domains of Word Facility and Skills, Comprehension Strategies and Constructing Meaning, and Number and Operations and their sub-domains to foster literacy skill development. Benchmarks serve as the minimum performance scores expected of students to meet expectations for their grade-level and can aid instructors on identifying students in need of extra intervention or those that exceed expectations so that learning can be adapted for best skill development. Cut off scores serve a similar purpose, focusing on identifying students that need additional attention in order to meet grade-level proficiency (see Table 1).

STAR Reading™ reliability was demonstrated through a norming study yielding split-half reliability coefficients between .88 and .91 by grade and .92 overall (Renaissance Learning, 2016). Alternate form reliability ranged from .80 to .90 (Renaissance Learning, 2016). Reliability of performance level scores were reviewed by the National Center on Response to Intervention (NCRTI) and the National Center on Intensive Intervention (NCII) with each determining strong reliability ratings (Renaissance Learning, 2016). STAR Reading™ scores display evidence of validity through correlations to the Comprehensive Test of Basic Skills, the Stanford Achievement Test, the California Achievement Test, the Metropolitan Achievement Test, and the Iowa Test of Basic Skills. For grades 1-6, the within-grade average concurrent validity coefficients ranged from .72 to .80 and predictive validity ranged from .69 to .72 (Renaissance Learning, 2016).

Table 1. STAR Achievement Percentiles and Scale Scores Grades K, 1 and 2

Spring May				
Grade	Percentile	Scaled Score	Achievement Levels	Scaled Score Range
K	10	58	Level 1: Below 10 PR Urgent Intervention	0 - 57
	20	65		
	25	68	Level 2: 10-24 PR Intervention	58 - 67
	40	75		
	50	80	Level 3: 25-39 PR On Watch	68 - 74
	75	104		
	90	182	Level 4: At/Above 40 PR	75 - highest
Grade	Percentile	Scaled Score	Achievement Levels	Scaled Score Range
1	10	73	Level 1: Below 10 PR Urgent Intervention	0 - 72
	20	82		
	25	86	Level 2: 10-24 PR Intervention	73 - 85
	40	105		
	50	139	Level 3: 25-39 PR On Watch	86 - 104
	75	230		
	90	323	Level 4: At/Above 40 PR	105 - highest
Grade	Percentile	Scaled Score	Achievement Levels	Scaled Score Range
2	10	139	Level 1: Below 10 PR Urgent Intervention	0 - 138
	20	199		
	25	222	Level 2: 10-24 PR Intervention	139 - 221
	40	279		
	50	317	Level 3: 25-39 PR On Watch	222 - 278
	75	421		
	90	519	Level 4: At/Above 40 PR	279 – highest

Renaissance Learning (2016)

School District Information:

Southeastern County School District Demographics

The southeastern district serves 8,676 students in its 16 schools, both traditional and charter. Schools in the district serve various grade-level ranges, depending on the need and location: (a) PK-5, (b) K-5, (c) PK-8, (d) K-8, (e) 6-8, (f) 6-12, and (g) 9-12. The district's demographics indicate that 46.2% of students identify as white, non-Hispanic, 38.5% report as Hispanic, 10.9% describe themselves as black, non-Hispanic, and the remaining 2.5% are deemed as "other". Academic diversity includes students

enrolled in exceptional student education (17.9%) and gifted programs (4.0%). The socioeconomic status of students within the district includes 51% of students qualifying for free and reduced-price.

Methods

Results from kindergarten, first, and second grade students ISIP-ER and STAR Reading tests from the 2017- 2018 school year were used to conduct this study. Assessment results from the Spring Administration of the STAR and May ISIP-ER (overall and comprehension subtest) were compared.

Participants

The sample ($N = 988$) were kindergarten ($n = 45$), first grade ($n = 487$), and second grade ($n = 456$) students from one county in the state of Florida. Race and ethnicity were reported as available (See Table 2). Students were included in the sample if they had both a spring ISIP-ER score and a spring STAR score.

Table 2. *Demographics of the Sample*

Grade	Gender			Race				
	Male	Female	Not Reported	White	African American	American Indian (AI)* Pacific Islander (PI)*	Asian*	Not Reported
Kindergarten	19 (42%)	22 (49%)	4 (9 %)	33 (72%)	8 (18%)	NA**	NA**	4*
First Grade	210 (43%)	225 (46%)	52 (11%)	370 (76%)	62 (13%)	1 (PI) *	2	52 (11%)
Second Grade	193 (42%)	192 (42%)	71 (16%)	336 (74%)	46 (10%)	1 (AI) *	2	71 (16%)

* Percentage less than one-half percent. **NA – Not Applicable

Analysis

The purpose of this study was to determine predictability ISIP-ER scores on STAR scores and to determine the cut scores relative to the STAR achievement levels for kindergarten and grades one and two. Scores for first and second grade students were evenly distributed for both ISIP and STAR. Scores for the kindergarten sample were skewed to the right. The skewness was expected based on the small sample size (Piovesana, & Senior, 2018). The descriptive statistics of both ISIP reading scores (overall reading ability and reading comprehension) as well as the STAR reading scaled scores are presented in Table 3.

Table 3. *Descriptive Statistics of the Assessment Scores*

Grade	N	ISIP Overall Reading Ability		ISIP Reading Comprehension		STAR	
		M	SD	M	SD	M	SD
Kindergarten	45	208.81	11.94	**	**	128.76	64.19
Grade 1	487	219.66	19.19	221.29	21.46	211.63	121.3
Grade 2	456	239.36	19.63	242.63	27.14	369.62	156.0

**No comprehension score for kindergarten students

To determine the correlation of the ISIP-ER overall score to the STAR scores, a Pearson’s *r* was conducted. The ISIP-ER (overall scores) and STAR scores correlated ($r = .83$ $p < .001$). The effect size for the identified correlation was large, explaining 69% of the variance (Cohen, 1988; 1992). Therefore, the ISIP-ER overall scores had a strong correlation with the STAR Reading test scores (see Table 4).

The ISIP-ER reading comprehension subscale scores correlated with the STAR scores ($r = .56$, $p < .001$), explaining 31% of the variance. Therefore, both the ISIP-ER overall scores and reading comprehension subscale scores had a strong correlation with the STAR Reading test scores.

Table 4. *Pearson Product-Moment Correlation Coefficients and Effect Size Interpretation*

	ISIP-ER Overall MAY	r^2	ISIP-ER Reading Comprehension MAY	r^2
Scaled Score	.83	.69	.56	.31
STAR				
Effect Size		Large		Moderate

Using SPSS software version 24, two simple linear regression analyses were conducted to determine the predictability of the overall ISIP-ER reading scores to the students’ STAR scores. The ISIP-ER Overall Reading Ability score was the predictor (independent) variable, and the STAR Reading score was the outcome (dependent) variable. In the second regression, the ISIP-ER Reading Comprehension score was the predictor variable, and the STAR Reading score was the outcome variable. The \hat{y} for kindergarten, first, and second grade data was computed.

Simple Linear Regression Analysis: Research Question 1

To what level does the ISIP-ER (overall and reading comprehension scores for May) predict kindergarten, first, and second grade students STAR scores?

For kindergarten ISIP-ER Overall Reading Ability, 42.1% of the variance in STAR Reading scores was predicted by the ISIP-ER Overall Reading Ability scores. The equation for predicting the STAR Reading score is: $STAR = -610.929 + 3.542(\text{ISIP Overall score}) + e$. The intercept was -610.929. The STAR Reading score was -610.929 as ISIP-ER Overall score was zero. The slope for ISIP-ER Overall Reading Ability was 3.542, indicating that the STAR Reading score was -607.387 (-610.929 + 3.542) as the ISIP-ER Overall Reading Ability score increases 1 unit.

For first grade ISIP-ER Overall Reading Ability, 55.4% of the variance in STAR Reading scores was predicted by the ISIP-ER Overall Reading Ability scores. The equation for predicting the STAR Reading score is: $STAR = -823.325 + 4.712(\text{ISIP Overall score}) + e$. The intercept was -823.325. The STAR Reading score was -823.325 as ISIP-ER Overall score was zero. The slope for ISIP-ER Overall Reading Ability was 4.712, indicating that the STAR Reading score was -818.613 (-823.325 + 4.712) as the ISIP-ER Overall Reading Ability score increases 1 unit (See Figure 1). For first grade ISIP-ER Reading Comprehension, 59.1% of the variance in STAR Reading was predicted from ISIP-ER Reading Comprehension scores. The equation for predicting the STAR Reading score is: $STAR = -751.212 + 4.351(\text{ISIP Overall score}) + e$. The intercept was -751.212. The STAR Reading score was -751.212 as ISIP-ER Overall score was zero. The slope for ISIP-ER Reading Comprehension was 4.351, indicating that the STAR Reading score was -746.861 (-751.212 + 4.351) as the ISIP-ER Reading Comprehension score increases 1 unit. ISIP-ER overall scores and reading comprehension subscale scores were significant predictors of the STAR scores for student in grade one.

For second grade ISIP-ER Overall Reading Ability, 63.2% of the variance in STAR Reading was predicted from ISIP-ER Overall Reading Ability scores. The equation for predicting the STAR Reading score is: $STAR = -1108.938 + 6.170(\text{ISIP Overall score}) + e$. The intercept was -1108.938. The STAR Reading score was -1108.938 as ISIP-ER Overall score was zero. The slope for ISIP-ER Overall Reading Ability was 6.170, indicating that the STAR Reading score was -1102.768 (-1108.938 + 6.170) as the ISIP-ER Overall Reading Ability score increases 1 unit. ISIP-ER overall scores were significant predictors of the STAR scores for students in grade two. For second grade ISIP-ER Reading Comprehension, 48.5% of the variance in STAR Reading was predicted from ISIP-ER Reading Comprehension scores. The equation for predicting the STAR Reading score is: $STAR = -582.023 + 3.916(\text{ISIP Overall score}) + e$. The intercept was -582.023.

The STAR Reading score was - 582.023 as ISIP- ER Overall score was zero. The slope for ISIP-ER Reading Comprehension was 3.916, indicating that the STAR Reading score was - 577.777 (- 582.023 + 3.916) as the ISIP-ER Reading Comprehension score increases 1 unit. ISIP-ER overall scores and reading comprehension subscale scores were significant predictors of the STAR scores for student in grade two.

Area Under the Receiver Operating Characteristic (AUC).

To determine the overall ability of the ISIP ER to predict the score above and below the 40th percentile by grade the statistical technique Receiver Operator Characteristic (ROC) curve and the Area Under the Receiver Operating Characteristic (AUC) was analyzed. The analysis of the ROC curve is a plot of the curve indicating the true positive rate for all of the classifications in the data set. The AUC has perfect accuracy at 1. For the purpose of this analysis only the AUC was reported. For Grade 1, the overall accuracy as determined by the AUC was area .917 (SE .013), which is interpreted to have high accuracy, $p < .001$ with CI .892 - .942. (Swets, 1996). For Grade 2, the overall accuracy as determined by the AUC was area .908 (SE .014), which is interpreted to have high accuracy, $p < .001$ with CI .880 - .936 (Swets, 1996). Finally, for kindergarten, the overall accuracy as determined by the AUC was area .43 (SE .067), $p = .001$ with CI .711 - .974.

Research Question 2: Confidence Intervals

What are the cut scores of the ISIP-ER in relationship to kindergarten, first, and second grade students' STAR levels of achievement?

To answer research question two, confidence intervals (CIs) were computed. Prediction bands occur in a regression analysis. The goal of a prediction band is to cover with a prescribed probability the values of one or more future observations for the same population from which a given dataset was sampled. There are two types of prediction bands: (a) confidence interval (CI) and (b) prediction interval (PI). A CI is used in statistical analysis to represent the uncertainty in an estimate of a curve or function of the data. The 95% confidence intervals enclose the area one can be 95% certain contains the true curve. With many data points, the CIs will be near the line or curve, and most of the data will lie outside the CIs. The 95% PIs enclose the area expected to enclose 95% of future data points, which are wider than confidence bands, and are much wider with larger datasets.

The CI for the average expected value of y for a given x* is as follows:

$$E(y | x^*) = \hat{y} \pm t_{n-2}^* \sqrt{\frac{1}{n} + \frac{(x^* - \bar{x})^2}{(n-1)s_x^2}}$$

where s_y is the standard deviation of the residuals, calculated as

$$s_y = \sqrt{\frac{\sum (y_i - \hat{y}_i)^2}{n-2}}.$$

ISIP-ER reading overall scores and ISIP-ER reading comprehension subscale scores upper and lower bound CI were selected to develop the cut point. The CI was applied to obtain the prediction band from simple linear regression results. The confidence level was set at 0.95. ISIP-ER prediction bands for overall reading ability scores were calculated to predict STAR scores by Achievement Level (See Table 5). Achievement levels were provided by the Renaissance Learning Inc. (See Table 1). STAR scores in Achievement Level 1 identify the need of immediate intervention for students. The cut score for STAR Achievement Level 4 is 208 for kindergarten, 226 for first grade, and 246 for second grade (See Table 5).

Table 5. ISIP-ER overall score prediction bands and cut scores for the STAR Reading test.

ISIP Reading Overall Score					
Grade	Achievement Levels	Level 1 Below 10 PR Urgent Intervention	Level 2 10-24 PR Intervention	Level 3 25-39 PR On Watch	Level 4 At/Above 40 PR
K	ISIP-ER overall scores	***	182 - 219	189 - 206	208 – 216
	ISIP-ER Overall Lower Bound Cut Scores	***	182	189	208
	STAR Reading Confidence Interval Bands	0 - 57	58 - 67	68 - 74	75 – highest
1	ISIP-ER overall scores	185 - 197	195 - 204	206 - 212	226 – 229
	ISIP-ER Overall Lower Bound Cut Scores	185	195	206	226
	STAR Reading Confidence Interval Bands	0 - 72	73 - 85	86 - 104	105 – highest
2	ISIP-ER overall scores	202 - 212	214 - 223	224 - 232	246 – 249
	ISIP-ER Overall Lower Bound Cut Scores	202	214	224	246
	STAR Reading Confidence Interval Bands	0 - 138	139 - 221	222 - 278	279 – highest

*** No students in this range.

As an example, for first grade students, the prediction band for Achievement Level 1 (below 10 PR, urgent intervention) was 185-197. The ISIP- ER Overall Reading Ability score at 197 is the cut score. Therefore, it is 95% certain that first grade students who have an ISIP- ER Overall Reading Ability score below 197 will score at Achievement Level 1 and that their STAR Achievement Level 1 cut score will be in the 0 - 72 range. In other words, first grade students who score equal to or lower than 197 on the ISIP-ER Overall Reading Ability will almost certainly achieve STAR Reading Achievement Level 1. For each achievement level, the prediction bands are indicated with 95% certainty. Likewise, the same pattern can be followed for all of the other STAR Achievement Levels.

To obtain STAR Reading Achievement Level 4, the prediction band ranges for the ISIP-ER overall reading ability scores range from 226 - 229 for first grade students. The ISIP-ER overall reading ability lower bound score of 226 is the cut score for Level 4 (at/above 40 PR). It is 95% certain that a group of first grade students who have an ISIP-ER Overall Reading Ability score of 226 or above will score at or above the 40th percentile on the STAR with the bound cut score of 105 or higher. In other words, a first grade student who

score 226 or higher on ISIP-ER Overall Reading Ability will almost certainly achieve STAR Achievement Level 4.

Reading Comprehension

The ISIP-ER reading comprehension subtest was considered when determining cut scores for students in first and second grade. The prediction band ranges from 187 - 196 would indicate that a first grade student would be in Level 1 achievement (below 10th percentile; urgent intervention). The ISIP-ER Reading Comprehension lower bound cut score is 187 for this level. It is with 95% certainty that students who have an ISIP-ER Reading Comprehension score of 187 will score at STAR Reading Achievement Level 1 with a STAR range score of 0 - 72. In other words, first grade students who score between 187 - 196 on the ISIP-ER Reading Comprehension subtest will almost certainly achieve STAR Reading Achievement Level 1 (See Table 6).

Table 6. ISIP-ER Reading Comprehension Prediction Bands and Cut Scores for the STAR Reading.

ISIP Reading Comprehension Subtest					
Grade	Achievement Levels	Level 1 Below 10 PR Urgent Intervention	Level 2 10-24 PR Intervention	Level 3 25-39 PR On Watch	Level 4 At/Above 40 PR
1	ISIP-ER Comprehension scores	187 - 196	194 - 203	205 - 213	228 - 232
	ISIP-ER Comprehension Lower Bound Cut Scores	188	195	207	212
	STAR Reading Confidence Interval Bands	0 - 72	73 - 85	86 - 104	105 - highest
2	ISIP-ER Comprehension scores	196 - 208	217 - 228	229 - 235	248 - 254
	ISIP-ER Comprehension Lower Bound Cut Scores	196	217	229	248
	STAR Reading Confidence Interval Bands	0 - 138	139 - 221	222 - 278	279 - highest

Note. Analyses for kindergarten students could not be computed due to the small number of students within the achievement levels.

Conclusions

Overall, the study indicates the ISIP-ER assessment scores are predictive of the kindergarten,

first, and second grade students' STAR scores for both the overall score and the reading comprehension subscale score (May). Based on this sample of kindergarten, first, and second grade students ($N = 988$), educators can rely on the ISIP-ER Overall and Reading Comprehension subscale scores to be predictive of STAR scores. The ISIP-ER cut scores are useful for educators to predict students' performance on STAR tests and to guide instruction prior to high-stakes achievement testing of the Florida ELA standards.

The ISIP-ER is designed to be administered monthly during the time students spends using the Istation reading curriculum. Teachers, reading coaches, school counselors, and administrators can view the students' data monthly to determine students' progress towards a satisfactory achievement level in reading on the STAR Reading achievement scores. For example, the ISIP-ER Overall Reading Ability cut score for second grade to pass STAR Achievement Level 3 is 224 - 232. If a second-grade student scores 214 at the beginning of the year (September assessment month), the student will need to gain 10 more points to meet the minimum ISIP-ER Overall Reading Ability lower bound cut score of 224 before STAR testing in the Spring.

Even though this study provided ISIP-ER Overall Reading Ability cut scores and ISIP-ER Reading Comprehension cut scores to prepare students for STAR Reading tests, these scores are presented with 95% certainty. Students' STAR scores may be influenced by other extraneous variables such as environmental, physical, and psychological factors.

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Appendix A

Table 7. Model Summary^b

Simple Linear Regression Analysis for differentiated by grade: ISIP Overall Reading Ability

Grade	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ² square	Std. Error of the Estimate	Change Statistics				
					<i>R</i> ² Change	<i>F</i> Change	<i>df</i> 1	<i>df</i> 2	Sig. <i>F</i> Change
K	.659 ^a	.435	.421	48.830	.435	33.039	1	43	.000
1	.745 ^a	.555	.554	81.068	.555	604.469	1	485	.000
2	.796 ^a	.633	.632	92.381	.633	783.696	1	454	.000

a. Predictors: (Constant), May Overall Score

b. Dependent Variable: STAR scale score

Table 8. ANOVA^a

Grade		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.
K	Regression	78778.67	1	78778.67	33.039	.000 ^b
	Residual	102529.63	43	2384.41		
	Total	181308.311	44			
1	Regression	3972611.36	1	3972611.36	604.469	.000 ^b
	Residual	3187451.57	485	6572.06		
	Total	7160062.94	486			
2	Regression	6688296.66	1	6688296.66	783.696	.000 ^b
	Residual	3874573.11	454	8534.30		
	Total	10562869.78	455			

a. Dependent Variable: STAR scale score

b. Predictors: (Constant), May_Overall_Score

Table 9. Coefficients^a

Grade		Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	sig
		<i>B</i>	Std. Error	Beta		
K	(Constant)	-823.325	42.256		-19.48	.000
	ISIP overall score	4.712	.192	.745	24.58	.000
1	(Constant)	-1108.938	52.936		-20.94	.000
	ISIP overall score	6.170	.220	.796	27.99	.000
2	(Constant)	-610.929	128.892		-4.74	.000
	ISIP overall score	3.542	.616	.659	5.74	.000

a. Dependent Variable: STAR scale score

Table 10. Simple Linear Regression Analysis: ISIP Reading Comprehension

Model Summary^b

Grade	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	Std. Error of the Estimate	Change Statistics				
					<i>R</i> ² Change	<i>F</i> Change	<i>df</i> 1	<i>df</i> 2	Sig. <i>F</i> Change
K	.412 ^a	.170	.151	59.15	.170	8.81	1	43	.005
1	.769	.592	.591	77.63	.592	702.90	1	485	.000
2	.697	.486	.485	109.32	.486	429.78	1	454	.000

a. Predictors: (Constant), May Reading Comprehension

b. Dependent Variable: STAR scale score

Table 11. ANOVA^a

Grade		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.
K	Regression	30832.18	1	30832.181	8.811	.005 ^b
	Residual	150476.13	43	3499.445		
	Total	181308.31	44			
1	Regression	4236727.06	1	4236727.067	702.900	.000 ^b
	Residual	2923335.87	485	6027.497		
	Total	7160062.94	486			
2	Regression	5136696.69	1	5136696.690	429.780	.000 ^b
	Residual	5426173.09	454	11951.923		
	Total	10562869.78	455			

a. Dependent Variable: STAR scale score

b. Predictors: (Constant), ISIP comprehension score

Table 12. Coefficients^a

Grade		Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	Sig.
		<i>B</i>	Std. Error	Beta		
K	(Constant)	117.541	9.594	.412	12.252	.000
	ISIP comprehension score	.327	.110		2.968	.005
1	(Constant)	-751.212	36.487	.769	-20.588	.000
	ISIP comprehension score	4.351	.164		26.512	.000
2	(Constant)	-582.023	46.112	.697	-12.622	.000
	ISIP comprehension score	3.916	.189		20.731	.000

a. Dependent Variable: STAR scale score