Predictability Study of ISIP Reading
and Kansas Assessment Program: 3rd – 6th Grade Students

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Chalie Patarapichayatham, Ph.D.

Southern Methodist University

Abstract

This study provides evidence that Istation's Indicators of Progress (ISIP™) Reading cut scores can predict Kansas Assessment Program: English Language Arts (KAP-ELA) Performance Levels 2, 3, and 4. This study uses 3rd through 6th grade ISIP Reading scores (Overall Reading Ability and Reading Comprehension) and KAP-ELA scale scores. All data come from one district in the state of Kansas and were collected in the 2016–2017 school year. Simple linear regression analysis was applied. Predictability "bands" were further computed by using the confidence interval approach to identify the ISIP Reading cut scores that predict KAP-ELA Performance Levels 2, 3, and 4. Results of a simple linear regression showed that the ISIP Reading measures are predictive of KAP-ELA tests. The ISIP Overall Reading Ability cut scores and ISIP Reading Comprehension cut scores to predict KAP-ELA Performance Levels 2, 3, and 4 are reported here.

Introduction

Istation's Indicators of Progress (ISIP) is a sophisticated Internet- and Web-delivered computer-adaptive testing system that provides continuous progress-monitoring assessment for students in prekindergarten through 8th grade. It is built using two-parameter item response theory and driven by a fully computer-adaptive algorithm. ISIP Reading gathers and reports frequent information about student progress in the critical domains of reading throughout and across academic years (Patarapichayatham, Fahle, & Roden, 2013).

The purpose of ISIP Reading is to measure students' reading ability and identify deficits in critical areas in order to provide continuous differentiated instruction. ISIP accomplishes this by delivering short tests, at least monthly, that target critical areas to inform instruction. It is realistic to administer ISIP assessments for an entire classroom, an entire school, and even an entire district in a single day with adequate computer resources. Student results are immediately available online for teachers and administrators and illustrate each student's past and present performance and skill growth. Teachers are alerted when students are not making adequate progress so that the instructional program can be modified before a pattern of failure becomes established (Mathes, 2011). For full information about ISIP Early Reading (for prekindergarten through 3rd grade) and ISIP Advanced Reading (for 4th through 8th grade), see Mathes (2011) and Mathes, Torgesen, and Herron (2011).

The Kansas Assessment Program (KAP) was developed by the Center for Educational Testing and Evaluation (CETE), part of the University of Kansas' Achievement and Assessment Institute. The content of all KAP tests and tools is derived from Kansas' approved content standards for English language arts, science, mathematics, and social studies. KAP field-tests its test questions to ensure appropriate fairness and difficulty.

Student performance on each assessment is given in terms of a scale score (see Table 1). Scale scores are mathematical conversions of the total number of points a student earned on the assessment into a score along a predefined scale. Scale scores allow for consistent reporting of assessment results across years for any specific grade and subject area. Scale scores on all KAP assessments range from 220 to 380. Although this range is the same for all KAP assessments, it is important to note that the scale scores themselves can only be used to compare students in a single grade and subject area (for example, grade 3 ELA). In this context, scale score comparisons are valid across years. So a scale score of 320 on this year's grade 3 ELA assessment will mean the same thing as a scale score of 320 on next year's grade 3 ELA assessment. Scale scores cannot, however, be compared across other grades and subject areas. A scale score of 320 on a grade 4 ELA assessment does not indicate the same level of performance as a scale score of 320 on a grade 3 ELA assessment.

Scale scores on KAP assessments place student's assessment scores into one of four possible categories: Level 1, Level 2, Level 3, and Level 4. These are known as performance levels. The Performance Level Descriptors (www.ksassessments.org) are as follows:

- A student at Level 1 shows a **limited** ability to understand and use the English arts skills and knowledge needed for college and career readiness.

- A student at Level 2 shows a **basic** ability to understand and use the English language arts skills and knowledge needed for college and career readiness.

- A student at Level 3 shows an **effective** ability to understand and use the English language arts skills and knowledge needed for college and career readiness.

- A student at Level 4 shows an **excellent** ability to understand and use the English language arts skills and knowledge needed for college and career readiness.

This study provides evidence that ISIP Overall Reading Ability scores and ISIP Reading Comprehension scores can predict KAP-ELA Performance Levels 2, 3, and 4 for 3rd through 6th grade students in state of Kansas.

Methods

Measures

Results from ISIP Early Reading for 3rd grade, ISIP Advanced Reading for 4th through 6th grade, and KAP-ELA Reading tests for 3rd through 6th grade from the 2016–2017 school year were used: specifically, ISIP Overall Reading Ability (ORA) middle of the year scores (January assessment month), ISIP Reading Comprehension (RC) middle of the year scores (January assessment month), and KAP-ELA Reading scores from 2016–2017 for these same students. The ISIP-ORA scores are computed from four different sub-skills: reading comprehension, spelling, vocabulary, and connected text fluency. Table 2 shows the Pearson product-moment correlation coefficients, by grade level, between ISIP-ORA and KAP-ELA scores and between ISIP-RC and KAP-ELA scores.

The correlations between ISIP Reading and KAP-ELA scores were relatively high, indicating a strong relationship between ISIP Reading measures and KAP-ELA tests. The correlation coefficients for ISIP-ORA scores and KAP-ELA scores were 0.76, 0.74, 0.77, and 0.75 for grades 3 through 6, respectively. They were 0.72, 0.73, 0.76, and 0.76 for ISIP-RC scores and KAP-ELA scores for grades 3 through 6, respectively.

Samples

The ISIP-ORA sample included 5,226 students from 3rd through 6th grade in one district in the state of Kansas — comprised of 1,760 students in 3rd grade; 1,265 in 4th; 1,170 in 5th; and 1,031 in 6th. Table 1 shows descriptive statistics of the samples. The means of ISIP-ORA scores were 247.57; 1,938.79; 2,034.15; and 2,137.10 for grades 3 through 6, respectively. The

means of KAP-ELA scores were 304.06; 305.54; 304.56; and 304.45 for grades 3 through 6,

respectively. The percentage of students in each performance level is also reported (see Table 1).

The ISIP-RC sample included 5,393 students from 3rd through 6th grade in one district in

the state of Kansas — comprised of 1,819 students in 3rd grade; 1,297 in 4th; 1,200 in 5th; and

1,077 in 6th. Table 1 shows descriptive statistics of the samples. The means of ISIP-RC scores

were 250.26; 2,052.24; 2,175.35; and 2,265.15 for grades 3 through 6, respectively. The means

of KAP-ELA scores were 304.09; 305.53; 304.69; and 304.33 for grades 3 through 6,

respectively. The percentage of students in each performance level is also reported (see Table 1).

Analysis

The simple linear regression analysis was applied for each grade's data by using SPSS

software version 22. The ISIP-ORA score was the predictor, and the KAP-ELA scale score was

the outcome variable. The ISIP-RC score was also the predictor and the KAP-ELA scale score

the outcome variable. I first ran the simple linear regression. The $\hat{y}$ for each grade's data was

computed (see Part I result). Then the confidence interval was further computed.

Prediction bands commonly arise in 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 data set is sampled. There are two types of prediction bands:

confidence interval (CI) and 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 percent

confidence intervals enclose the area that one can be 95 percent certain contains the true curve. If

there are many data points, the CI will be near the line or curve, and most of the data will lie

outside the CI. The 95 percent prediction intervals enclose the area that is expected to enclose 95

percent of future data points. They are wider than confidence bands, and they are much wider with large data sets.

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

$$E(y \mid x^*) = \hat{y} \pm t^*_{n-2} \sqrt{\frac{1}{n} + \frac{(x^* - \overline{x})^2}{(n-1)\,s_x^2}}$$

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

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

Next, the ISIP Reading scores around KAP-ELA cut point for the lower bound and the upper bound of the CI were selected.

Results

Part I: Simple Linear Regression

ISIP Overall Reading Ability

Simple linear regression was applied for each grade's data. The results for each grade are shown in Tables 5–12 and reported as follows.

For 3rd grade (Table 5), 58.4 percent of the variance in KAP-ELA scores can be predicted from ISIP Overall Reading Ability (ORA). The equation for predicting the KAP-ELA score is *KAP-ELA = 300.143 + 1.097 (ISIP) + e.* The intercept was 300.143. The KAP-ELA score was 300.143 as ISIP was zero. The slope for ISIP-ORA was 1.097, indicating that the KAP-ELA score was 301.24 as the ISIP-ORA score increases one unit.

For 4th grade, 54.9 percent of the variance in KAP-ELA scores can be predicted from ISIP-ORA. The equation for predicting the KAP-ELA score is *KAP-ELA = 301.959 + 0.113 (ISIP) + e.* The intercept is 301.959. The KAP-ELA score was 301.959 as ISIP was zero. The

slope for ISIP-ORA was 0.113, indicating that the KAP-ELA score is 302.072 as the ISIP-ORA score increases one unit.

For 5th grade, 59.9 percent of the variance in KAP-ELA scores can be predicted from ISIP-ORA. The equation for predicting the KAP-ELA score is *KAP-ELA = 299.962 + 0.116 (ISIP) + e.* The intercept was 299.962. The KAP-ELA score was 299.962 as ISIP was zero. The slope for ISIP-ORA was 0.116, indicating that the KAP-ELA score is 300.078 as the ISIP-ORA score increases one unit.

For 6th grade, 56.3 percent of the variance in KAP-ELA scores can be predicted from ISIP-ORA. The equation for predicting the KAP-ELA score is *KAP-ELA = 298.066 + 0.106 (ISIP) + e.* The intercept was 298.066. The KAP-ELA score was 298.066 as ISIP was zero. The slope for ISIP-ORA was 0.106, indicating that the KAP-ELA score was 298.172 as the ISIP-ORA score increases one unit.

ISIP Reading Comprehension

For 3rd grade, 51.2 percent of the variance in KAP-ELA can be predicted from ISIP Reading Comprehension (RC). The equation for predicting the KAP-ELA score is *KAP-ELA = 301.073 + 0.825 (ISIP CMP) + e.* The intercept was 301.073. The KAP-ELA score was 301.073 as ISIP-RC was zero. The slope for ISIP-RC was 0.825, indicating that the KAP-ELA score was 301.898 as the ISIP-RC score increases 1 unit.

For 4th grade, 52.6 percent of the variance in KAP-ELA scores can be predicted from ISIP-RC. The equation for predicting the KAP-ELA score is *KAP-ELA = 302.662 + 0.072 (ISIP CMP) + e.* The intercept was 302.662. The KAP-ELA score was 302.662 as ISIP-RC was zero. The slope for ISIP-RC was 0.072, indicating that the KAP-ELA score was 302.734 as the ISIP-RC score increases one unit.

For 5th grade, 58.2 percent of the variance in KAP-ELA scores can be predicted from ISIP-RC. The equation for predicting KAP-ELA score is *KAP-ELA = 299.845 + 0.072 (ISIP CMP) + e.* The intercept was 299.845. The KAP-ELA score was 299.845 as ISIP-RC was zero. The slope for ISIP-RC was 0.072, indicating that the KAP-ELA score was 299.917 as the ISIP-RC score increases one unit.

For 6th grade, 57.0 percent of the variance in KAP-ELA scores can be predicted from ISIP-RC. The equation for predicting KAP-ELA score is *KAP-ELA = 299.281 + 0.070 (ISIP CMP) + e.* The intercept was 299.281. The KAP-ELA score was 299.281 as ISIP-RC was zero. The slope for ISIP-RC was 0.070, indicating that the KAP-ELA score was 299.351 as the ISIP-RC score increases one unit.

Part II: Prediction Bands

The confidence interval was set at 0.95 and applied to obtain the prediction band from simple linear regression results. Table 3 shows ISIP Reading prediction bands to predict Kansas Assessment Program: English Language Arts Performance Levels 2, 3, and 4 for 3rd through 6th grades. Table 4 shows ISIP Reading cut scores to predict KAP-ELA Performance Levels 2, 3, and 4 for 3rd through 6th grades. Table 1 shows the KAP-ELA cut scores referenced below. The results are reported as follows.

KAP-ELA Performance Level 2

ISIP Overall Reading Ability (ISIP-ORA)

For 3rd grade, the prediction band ranges from 221 to 223. The ISIP-ORA score at 223 is the cut score. It is 95 percent certain that a group of students who have an ISIP-ORA of 223 will score higher than the KAP-ELA Performance Level 2 cut score 276. In other words, 3rd grade

students who score 223 or higher on ISIP-ORA will almost certainly achieve KAP-ELA

Performance Level 2.

For 4th grade, the prediction band ranges from 1,608 to 1,656. The ISIP-ORA score at

1,656 is the cut score. It is 95 percent certain that a group of students who have an ISIP-ORA

score of 1,656 will score higher than the KAP-ELA Performance Level 2 cut score 271. In other

words, 4th grade students who score 1,656 or higher on ISIP-ORA will almost certainly achieve

KAP-ELA Performance Level 2.

For 5th grade, the prediction band ranges from 1,756 to 1,801. The ISIP-ORA score at

1,801 is the cut score. It is 95 percent certain that a group of students who have an ISIP-ORA

score of 1,801 will score higher than the KAP-ELA Performance Level 2 cut score 275. In other

words, 5th grade students who score 1,801 or higher on ISIP-ORA will almost certainly achieve

KAP-ELA Performance Level 2.

For 6th grade, the prediction band ranges from 1,840 to 1,890. The ISIP-ORA score at

1,890 is the cut score. It is 95 percent certain that a group of students who have an ISIP-ORA

score of 1,890 will score higher than the KAP-ELA Performance Level 2 cut score 277. In other

words, 6th grade students who score 1,890 or higher on ISIP-ORA will almost certainly achieve

KAP-ELA Performance Level 2.

ISIP Reading Comprehension (ISIP-RC)

For 3rd grade, the prediction band ranges from 214 to 219. The ISIP Reading

Comprehension (RC) score at 219 is the cut score. It is 95 percent certain that a group of students

who have an ISIP-RC score of 219 will score higher than the KAP-ELA Performance Level 2 cut

score 276. In other words, 3rd grade students who score 219 or higher on ISIP-RC will almost

certainly achieve KAP-ELA Performance Level 2.

For 4th grade, the prediction band ranges from 1,529 to 1,598. The ISIP-RC score at 1,598 is the cut score. It is 95 percent certain that a group of students who have an ISIP-RC score of 1,598 will score higher than the KAP-ELA Performance Level 2 cut score 271. In other words, 4th grade students who score 1,598 or higher on ISIP-RC will almost certainly achieve KAP-ELA Performance Level 2.

For 5th grade, the prediction band ranges from 1,724 to 1,798. The ISIP-RC score at 1,798 is the cut score. It is 95 percent certain that a group of students who have an ISIP-RC score of 1,798 will score higher than the KAP-ELA Performance Level 2 cut score 275. In other words, 5th grade students who score 1,798 or higher on ISIP-RC will almost certainly achieve KAP-ELA Performance Level 2.

For 6th grade, the prediction band ranges from 1,845 to 1,908. The ISIP-RC score at 1,908 is the cut score. It is 95 percent certain that a group of students who have an ISIP-RC score of 1,908 will score higher than the KAP-ELA Performance Level 2 cut score 277. In other words, 6th grade students who score 1,908 or higher on ISIP-RC will almost certainly achieve KAP-ELA Performance Level 2.

KAP-ELA Performance Level 3

ISIP Overall Reading Ability (ISIP-ORA)

For 3rd grade, the prediction band ranges from 243 to 245. The ISIP-ORA score at 245 is the cut score. It is 95 percent certain that a group of students who have an ISIP-ORA score of 245 will score higher than the KAP-ELA Performance Level 3 cut score 300. In other words, 3rd grade students who score 245 or higher on ISIP-ORA will almost certainly achieve KAP-ELA Performance Level 3.

For 4th grade, the prediction band ranges from 1,876 to 1,904. The ISIP-ORA score at 1,904 is the cut score. It is 95 percent certain that a group of students who have an ISIP-ORA score of 1,904 will score higher than the KAP-ELA Performance Level 3 cut score 300. In other words, 4th grade students who score 1,904 or higher on ISIP-ORA will almost certainly achieve KAP-ELA Performance Level 3.

For 5th grade, the prediction band ranges from 1,980 to 2,010. The ISIP-ORA score at 2,010 is the cut score. It is 95 percent certain that a group of students who have an ISIP-ORA score of 2,010 will score higher than the KAP-ELA Performance Level 3 cut score 300. In other words, 5th grade students who score 2,010 or higher on ISIP-ORA will almost certainly achieve KAP-ELA Performance Level 3.

For 6th grade, the prediction band ranges from 2,079 to 2,115. The ISIP-ORA score at 2,115 is the cut score. It is 95 percent certain that a group of students who have an ISIP-ORA score of 2,115 will score higher than the KAP-ELA Performance Level 3 cut score 300. In other words, 6th grade students who score 2,115 or higher on ISIP-ORA will almost certainly achieve KAP-ELA Performance Level 3.

ISIP Reading Comprehension (ISIP-RC)

For 3rd grade, the prediction band ranges from 245 to 247. The ISIP-RC score at 247 is the cut score. It is 95 percent certain that a group of students who have an ISIP-RC score of 247 will score higher than the KAP-ELA Performance Level 3 cut score 300. In other words, 3rd grade students who score 247 or higher on ISIP-RC will almost certainly achieve KAP-ELA Performance Level 3.

For 4th grade, the prediction band ranges from 1,954 to 1,997. The ISIP-RC score at 1,997 is the cut score. It is 95 percent certain that a group of students who have an ISIP-RC score

of 1,997 will score higher than the KAP-ELA Performance Level 3 cut score 300. In other

words, 4th grade students who score 1,997 or higher on ISIP-RC will almost certainly achieve

KAP-ELA Performance Level 3.

For 5th grade, the prediction band ranges from 2,087 to 2,134. The ISIP-RC score at

2,134 is the cut score. It is 95 percent certain that a group of students who have an ISIP-RC score

of 2,134 will score higher than the KAP-ELA Performance Level 3 cut score 300. In other

words, 5th grade students who score 2,134 or higher on ISIP-RC will almost certainly achieve

KAP-ELA Performance Level 3.

For 6th grade, the prediction band ranges from 2,184 to 2,228. The ISIP-RC score at

2,228 is the cut score. It is 95 percent certain that a group of students who have an ISIP-RC score

of 2,228 will score higher than the KAP-ELA Performance Level 3 cut score 300. In other

words, 6th grade students who score 2,228 or higher on ISIP-RC will almost certainly achieve

KAP-ELA Performance Level 3.

KAP-ELA Performance Level 4

ISIP Overall Reading Ability (ISIP-ORA)

For 3rd grade, the prediction band ranges from 267 to 270. The ISIP-ORA score at 270 is

the cut score. It is 95 percent certain that a group of students who have an ISIP-ORA score of

270 will score higher than the KAP-ELA Performance Level 4 cut score 327. In other words, 3rd

grade students who score 270 or higher on ISIP-ORA will almost certainly achieve KAP-ELA

Performance Level 4.

For 4th grade, the prediction band ranges from 2,176 to 2,227. The ISIP-ORA score at

2,227 is the cut score. It is 95 percent certain that a group of students who have an ISIP-ORA

score of 2,227 will score higher than the KAP-ELA Performance Level 4 cut score 335. In other

words, 4th grade students who score 2,227 or higher on ISIP-ORA will almost certainly achieve

KAP-ELA Performance Level 4.

For 5th grade, the prediction band ranges from 2,198 to 2,243. The ISIP-ORA score at

2,243 is the cut score. It is 95 percent certain that a group of students who have an ISIP-ORA

score of 2,243 will score higher than the KAP-ELA Performance Level 4 cut score 326. In other

words, 5th grade students who score 2,243 or higher on ISIP-ORA will almost certainly achieve

KAP-ELA Performance Level 4.

For 6th grade, the prediction band ranges from 2,330 to 2,388. The ISIP-ORA score at

2,388 is the cut score. It is 95 percent certain that a group of students who have an ISIP-ORA

score of 2,388 will score higher than the KAP-ELA Performance Level 4 cut score 336. In other

words, 6th grade students who score 2,388 or higher on ISIP-ORA will almost certainly achieve

KAP-ELA Performance Level 4.

ISIP Reading Comprehension (ISIP-RC)

For 3rd grade, the prediction band ranges from 276 to 281. The ISIP-RC score at 281 is

the cut score. It is 95 percent certain that a group of students who have an ISIP-RC score of 281

will score higher than the KAP-ELA Performance Level 4 cut score 327. In other words, 3rd

grade students who score 281 or higher on ISIP-RC will almost certainly achieve KAP-ELA

Performance Level 4.

For 4th grade, the prediction band ranges from 2,424 to 2,506. The ISIP-RC score at

2,506 is the cut score. It is 95 percent certain that a group of students who have an ISIP-RC score

of 2,506 will score higher than the KAP-ELA Performance Level 4 cut score 335. In other

words, 4th grade students who score 2,506 or higher on ISIP-RC will almost certainly achieve

KAP-ELA Performance Level 4.

For 5th grade, the prediction band ranges from 2,436 to 2,512. The ISIP-RC score at 2,512 is the cut score. It is 95 percent certain that a group of students who have an ISIP-RC score of 2,512 will score higher than the KAP-ELA Performance Level 4 cut score 326. In other words, 5th grade students who score 2,512 or higher on ISIP-RC will almost certainly achieve KAP-ELA Performance Level 4.

For 6th grade, the prediction band ranges from 2,681 to 2,770. The ISIP-RC score at 2,770 is the cut score. It is 95 percent certain that a group of students who have an ISIP-RC score of 2,770 will score higher than the KAP-ELA Performance Level 4 cut score 336. In other words, 6th grade students who score 2,770 or higher on ISIP-RC will almost certainly achieve KAP-ELA Performance Level 4.

Conclusions

Overall, I conclude that ISIP Reading test scores are predictive of Kansas Assessment Program: English Language Arts test scores for 3rd through 6th grade data. ISIP Reading curriculum and ISIP measures definitely can be used to prepare students for the KAP-ELA tests. If a student does very well on the ISIP assessment, it is likely that he or she will also do very well on KAP-ELA tests. The ISIP Reading cut scores to predict KAP-ELA tests are useful for school administrators, superintendents, teachers, and parents to predict student performance on KAP-ELA tests. Also, teachers can use ISIP Reading cut scores to encourage students to improve their reading ability in order to meet KAP-ELA performance standards. Teachers and parents can compare a student's ISIP Overall Reading Ability score and ISIP Reading Comprehension score directly with the ISIP Reading cut score in this study.

To benefit from these results, teachers would ideally begin tracking their students' scores from the beginning of the school year. By comparing a student's ISIP score with the ISIP cut

score, teachers can immediately tell how much a student must improve his or her English reading ability in order to meet the ISIP cut score, which means a likely chance of passing the KAP-ELA test. For example, the ISIP-ORA cut score for 3rd grade to pass KAP-ELA Performance Level 2 is 223. If a 3rd grade student scores 213 at the beginning of the year (September assessment month), the teacher will know that this particular student has room to grow: the student will need 10 more points to meet an ISIP-ORA cut score at the middle of the year (January assessment month). The teacher can work closely with this student to improve his or her reading skills.

Even though this study suggests that teachers use ISIP-ORA cut scores and ISIP-RC cut scores to prepare students for KAP-ELA tests, it must be understood that complete certainty of passing the KAP-ELA test cannot be guaranteed. It must be noted that there are many other factors that may affect students' KAP-ELA scores aside from their English reading ability. For example, if a student has a physical issue (i.e., sickness or stress) before or during the KAP-ELA test, he or she may or may not pass, despite having met the ISIP cut score. Also, each student has several months between the ISIP January assessment and KAP-ELA test taking in spring. If a student stops using the ISIP curriculum and assessment after January, he or she may or may not pass KAP-ELA Reading tests.

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Table 1

Kansas Assessment Program: English Language Arts Cut Scores and Descriptive Statistics of Samples

Grade	Level 1	Level 2	Level 3	Level 4
3	220–275	276–299	300–326	327–380
4	220–270	271–299	300–334	335–380
5	220–274	275–299	300–325	326–380
6	220–276	277–299	300–335	336–380

Grade	Sample Size n	ISIP Overall Reading Ability		Kansas Assessment Program: English Language Arts					
		Mean	SD	Mean	SD	Level 1 (%)	Level 2 (%)	Level 3 (%)	Level 4 (%)
3	1,760	247.57	20.54	304.06	29.48	316 (18.0)	480 (27.3)	563 (32.0)	401 (22.8)
4	1,265	1,938.79	186.33	305.54	28.31	132 (10.4)	413 (32.6)	521 (41.2)	199 (15.7)
5	1,170	2,034.15	199.20	304.56	29.85	210 (17.9)	306 (26.2)	366 (31.3)	288 (24.6)
6	1,031	2,137.10	213.06	304.45	30.04	195 (18.9)	236 (22.9)	466 (45.2)	134 (13.0)

Grade	Sample Size n	ISIP Reading Comprehension		Kansas Assessment Program: English Language Arts					
		Mean	SD	Mean	SD	Level 1 (%)	Level 2 (%)	Level 3 (%)	Level 4 (%)
3	1,819	250.26	25.54	304.09	29.46	326 (17.9)	497 (27.3)	584 (32.1)	412 (22.6)
4	1,297	2,052.24	285.88	305.53	28.34	134 (10.3)	423 (32.6)	536 (41.3)	204 (15.7)
5	1,200	2,175.35	315.56	304.69	29.92	213 (17.8)	313 (26.1)	375 (31.3)	299 (24.9)
6	1,077	2,265.15	325.98	304.33	30.01	204 (18.9)	245 (22.7)	490 (45.5)	138 (12.8)

Table 2

Pearson product-moment correlation coefficients between ISIP Overall Reading Ability and Kansas Assessment Program: English Language Arts Scores and ISIP Reading Comprehension and Kansas Assessment Program: English Language Arts Scores

Grade	ISIP Overall Reading Ability	ISIP Reading Comprehension
3	0.76	0.72
4	0.74	0.73
5	0.77	0.76
6	0.75	0.76

Table 3

ISIP Reading Prediction Bands to Predict Kansas Assessment Program: English Language Arts

ISIP	Grade	Level 2	Level 3	Level 4
	3	221–223	243–245	267–270
Overall Reading Ability	4	1,608–1,656	1,876–1,904	2,176–2,227
	5	1,756–1,801	1,980–2,010	2,198–2,243
	6	1,840–1,890	2,079–2,115	2,330–2,388
	3	214–219	245–247	276–281
Reading Comprehension	4	1,529–1,598	1,954–1,997	2,424–2,506
	5	1,724–1,798	2,087–2,134	2,436–2,512
	6	1,845–1,908	2,184–2,228	2,681–2,770

Note: Level 1 cut score is not reported here. Students fall in Level 1 if their scores are lower than Level 2 cut points.

Table 4

ISIP Cut Scores to Predict Kansas Assessment Program: English Language Arts

ISIP	Grade	Level 2	Level 3	Level 4
	3	223	245	270
Overall Reading Ability	4	1,656	1,904	2,227
	5	1,801	2,010	2,243
	6	1,890	2,115	2,388
	3	219	247	281
Reading Comprehension	4	1,598	1,997	2,506
	5	1,798	2,134	2,512
	6	1,908	2,228	2,770

Note: Level 1 cut score is not reported here. Students fall in Level 1 if their scores are lower than Level 2 cut points. In other words, students fail if their scores are lower than Level 2 cut points.

Table 5

Simple Linear Regression Analysis for 3rd Grade: ISIP Overall Reading Ability

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
					Change Statistics				
1	.764[a]	.584	.584	19.007	.584	2472.579	1	1758	.000

a. Predictors: (Constant), MOY

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	893214.282	1	893214.282	2472.579	.000[b]
	Residual	635074.036	1758	361.248		
	Total	1528288.318	1759			

a. Dependent Variable: KAP
b. Predictors: (Constant), MOY

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	300.143	.460		652.715	.000
	MOY	1.097	.022	.764	49.725	.000

a. Dependent Variable: KAP

Table 6

Simple Linear Regression Analysis for 4th Grade: ISIP Overall Reading Ability

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.741[a]	.549	.549	19.019	.549	1537.676	1	1263	.000

a. Predictors: (Constant), MOY

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	556234.391	1	556234.391	1537.676	.000[b]
	Residual	456874.000	1263	361.737		
	Total	1013108.391	1264			

a. Dependent Variable: KAP
b. Predictors: (Constant), MOY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	301.959	.542		556.625	.000
	MOY	.113	.003	.741	39.213	.000

a. Dependent Variable: KAP

Table 7

Simple Linear Regression Analysis for 5th Grade: ISIP Overall Reading Ability

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
					Change Statistics				
1	.774[a]	.600	.599	18.892	.600	1750.615	1	1168	.000

a. Predictors: (Constant), MOY

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	624834.047	1	624834.047	1750.615	.000[b]
	Residual	416885.646	1168	356.923		
	Total	1041719.692	1169			

a. Dependent Variable: KAP
b. Predictors: (Constant), MOY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	299.962	.563		532.632	.000
	MOY	.116	.003	.774	41.840	.000

a. Dependent Variable: KAP

Table 8

Simple Linear Regression Analysis for 6th Grade: ISIP Overall Reading Ability

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
					Change Statistics				
1	.750[a]	.563	.563	19.870	.563	1325.942	1	1029	.000

a. Predictors: (Constant), MOY

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	523497.458	1	523497.458	1325.942	.000[b]
	Residual	406261.411	1029	394.812		
	Total	929758.869	1030			

a. Dependent Variable: KAP

b. Predictors: (Constant), MOY

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	298.066	.643		463.445	.000
	MOY	.106	.003	.750	36.413	.000

a. Dependent Variable: KAP

Table 9

Simple Linear Regression Analysis for 3rd Grade: ISIP Reading Comprehension

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
						Change Statistics			
1	.715[a]	.512	.511	20.591	.512	1904.086	1	1817	.000

a. Predictors: (Constant), MOY

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	807296.142	1	807296.142	1904.086	.000[b]
	Residual	770373.430	1817	423.981		
	Total	1577669.572	1818			

a. Dependent Variable: KAP
b. Predictors: (Constant), MOY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	301.073	.488		617.321	.000
	MOY	.825	.019	.715	43.636	.000

a. Dependent Variable: KAP

Table 10

Simple Linear Regression Analysis for 4th Grade: ISIP Reading Comprehension

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
					Change Statistics				
1	.725[a]	.526	.526	19.521	.526	1436.644	1	1295	.000

a. Predictors: (Constant), MOY

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	547453.145	1	547453.145	1436.644	.000[b]
	Residual	493477.646	1295	381.064		
	Total	1040930.791	1296			

a. Dependent Variable: KAP
b. Predictors: (Constant), MOY

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	302.662	.547		553.002	.000
	MOY	.072	.002	.725	37.903	.000

a. Dependent Variable: KAP

Table 11

Simple Linear Regression Analysis for 5th Grade: ISIP Reading Comprehension

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
					Change Statistics				
1	.763[a]	.582	.581	19.364	.582	1665.324	1	1198	.000

a. Predictors: (Constant), MOY

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	624448.943	1	624448.943	1665.324	.000[b]
	Residual	449215.816	1198	374.971		
	Total	1073664.759	1199			

a. Dependent Variable: KAP
b. Predictors: (Constant), MOY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	299.845	.571		524.677	.000
	MOY	.072	.002	.763	40.808	.000

a. Dependent Variable: KAP

Table 12

Simple Linear Regression Analysis for 6th Grade: ISIP Reading Comprehension

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
					Change Statistics				
1	.755[a]	.570	.570	19.689	.570	1425.250	1	1075	.000

a. Predictors: (Constant), MOY

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	552497.381	1	552497.381	1425.250	.000[b]
	Residual	416723.282	1075	387.650		
	Total	969220.663	1076			

a. Dependent Variable: KAP
b. Predictors: (Constant), MOY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	299.281	.615		486.891	.000
	MOY	.070	.002	.755	37.752	.000

a. Dependent Variable: KAP