RESEARCH IMPACT REPORT

Reading Gains of Core5 Students from the Kansas Reading Initiative

Key Findings

- Schools using Core5 as part of the Kansas Reading Initiative (KRI) showed a significantly greater increase (13%) in students classified as Tier 1 on aimsweb than students in non-KRI schools (1%).

- KRI schools using Core5 showed a significantly greater increase (15%) in students categorized as at/above benchmark on DIBELS Next than non-KRI schools (5%).

- In a consecutive cohort design, the percentage of at-risk students who advanced tiers on aimsweb was significantly higher for the Core5 cohort (50%) than the non-Core5 cohort (35%).

Introduction

The Kansas Reading Initiative (KRI) was a two-year pilot program designed to improve reading outcomes in the state of Kansas using educational technology, specifically Lexia Core5 Reading (Core5). The pilot program was conducted during the 2013-14 and 2014-15 school years. KRI was funded by the Kansas state legislature and managed by the Kansas Children's Cabinet Trust Fund (CCTF).

As the selected educational technology product for KRI, Core5 was required to meet several criteria specified by the Kansas state legislature[1]. These criteria included: 1) creating personalized learning paths for students, 2) providing teachers with the resources to deliver direct instruction driven by student needs, 3) providing teachers with actionable, norm-referenced performance data to support daily instructional planning and modifications without stopping instruction to administer a test, 4) providing regular, accurate, predictive information regarding the likelihood of students achieving grade-level reading skills by the end of the school year and a related action plan for teachers, and 5) providing evidence of improved reading skills and scores for Kansas students and schools.

Schools selected to participate in KRI represented a diverse cross-section of Kansas schools and included: 1) urban, suburban, and rural schools, 2) small, medium, and large school districts, and 3) ethnically diverse student populations. Schools were selected for KRI through a statewide application process managed by Educational Design Solutions, a Kansas company that concurrently supported implementation of Core5 in Kansas. This research brief summarizes three distinct analyses conducted by Lexia researchers to compare the reading performance of students in Kansas schools who did or did not use Core5 as part of KRI.

Study Design

During the KRI pilot, Lexia Research used both between-school and within-school comparisons to examine the reading progress of students attending schools that took part in KRI. In total,

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[1] Kansas state legislature (2013). *Conference committee report on House amendments to SB 171.*

comparative analyses examined data from 3,018 students; 962 students used Core5 while 2,056 served as comparisons. All analyses examined improvements across one school year (e.g., fall to spring) on established measures of reading progress (aimsweb or DIBELS Next).

For between-school comparisons (Analyses 1 and 2), Lexia researchers identified schools in Kansas that did not participate in KRI (non-KRI) but whose demographic and state test score profiles were similar to those of KRI schools. Based on the demographic and state test score data made available to Lexia Researchers, KRI and non-KRI schools were matched for analysis.

Analysis 1 (aimsweb). The first analysis compared reading outcomes for 220 students from two KRI schools with 418 students from one non-KRI school. All students were in grades K-5. Reading outcomes were assessed using aimsweb scores, administered at two time points (beginning-of-year and end-of-year). Student scores on aimsweb were categorized by Tier Status, using default cut scores provided by the test developer[2]. These cut scores are based on the predicted probability of achieving proficiency on state reading assessments:

- Tier 1 (scores at or above the 45th percentile)
- Tier 2 (scores between the 15th and 44th percentiles)
- Tier 3 (scores below the 15th percentile)

Chi-square tests showed no significant differences between KRI and non-KRI schools in beginning-of-year aimsweb Tier Status ($p > .05$). Following beginning-of-year testing, students in KRI schools used Core5 as recommended for at least four months during the 2013-2014 school year. At the end of the school year, chi-square tests were used to compare the percentage of students scoring at each Tier across KRI and non-KRI schools.

Analysis 2 (DIBELS Next). The second analysis compared reading scores on DIBELS Next from 538 students attending three KRI schools with 1,474 students from four non-KRI schools. All students were in grades K-5. Grade-level composite scores on DIBELS Next were used to categorize students in terms of Benchmark status, using recommended benchmark goals

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[2] Pearson Education Inc. (2011). *AIMSweb Default Cut Scores Explained.*
http://images.pcmac.org/Uploads/ApplingCounty/ApplingCounty/Divisions/Forms/AIMSweb%20Cut%20Score%20 Guide.pdf

identified by the test developer[3]. These goals reflect the likelihood that a student will achieve subsequent important reading outcomes.

- At/Above Benchmark
- Below/Well Below Benchmark

Chi-square tests showed no significant differences between KRI and non-KRI schools in beginning-of-year DIBELS Next Benchmark status ($p > .05$). Following beginning-of-year testing, students in KRI schools used Core5 as recommended for at least 24 weeks during the 2014-2015 school year. At the end of the school year, chi-square tests were used to compare DIBELS Next Benchmark status across KRI and non-KRI schools.

Analysis 3 (aimsweb). The third analysis used a consecutive cohort design in which the aimsweb performance of students who used Core5 during the 2014-2015 school year was compared with a cohort of students who attended the same school the previous year but did not use Core5. Students included in this analysis were in grades K-4.

Student scores on aimsweb were classified by Tier Status using the guidelines summarized above. Students who scored at Tiers 2 and 3 on beginning-of-year aimsweb were considered at-risk. The aimsweb performance of students classified as at-risk during the Core5 school year (n = 204) was compared with the performance of at-risk students during the year prior to Core5 use (n = 164). Chi-square tests showed that the percentage of students classified as at-risk was similar for the Core5 and non-Core5 cohorts.

Chi-square analyses were used to compare the percentage of at-risk students who advanced tiers on aimsweb from beginning to end of the school year (i.e., moved from Tier 3 to Tier 2/1, or from Tier 2 to Tier 1) across the Core5 and non-Core5 cohorts.

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[3] Dynamic Measurement Group, Inc. (2010). *DIBELS Next Benchmark Goals and Composite Score.* https://dibels.amplify.com/docs/dibels/next/DIBELSNextFormerBenchmarkGoals.pdf

Results

Schools using Core5 as part of the Kansas Reading Initiative (KRI) showed a significantly greater increase (13%) in students classified as Tier 1 on aimsweb than students in non-KRI schools (1%).

Chi-square tests showed significant differences between KRI and non-KRI schools in end-of-year aimsweb Tier Status ($p < .05$). KRI schools averaged a 13% increase in students classified as Tier 1 compared to only a 1% increase for non-KRI schools. Consequently, the percentage of students classified as Tier 2 and Tier 3 decreased in KRI schools but remained nearly the same in non-KRI schools. These results are shown in the figure below.
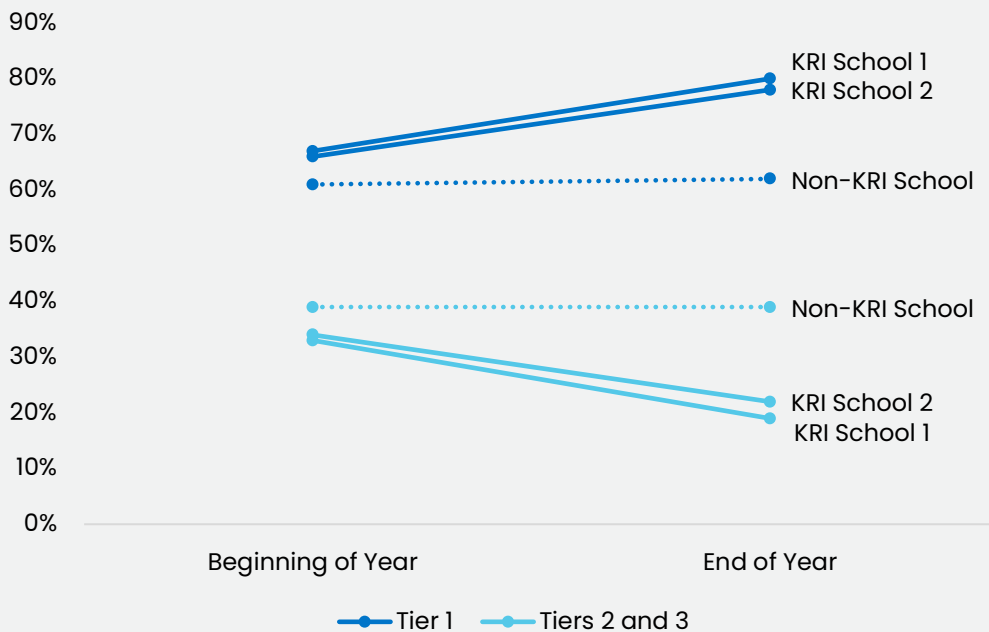
The percent of students classified as Tier 1 on aimsweb increased significantly in KRI schools using Core5.

KRI schools using Core5 showed a significantly greater increase (15%) in students categorized as At/Above Benchmark on DIBELS Next than non-KRI schools (5%).

At the end of the school year, chi-square analyses revealed significant differences in DIBELS Next Benchmark status favoring KRI schools (p < .05). There was a 15% increase in students categorized as At/Above Benchmark for KRI schools compared to a 5% increase for non-KRI schools. The figure below illustrates these results.


The percentage of students performing At/Above Benchmark on DIBELS Next increased significantly in KRI schools using Core5

In a consecutive cohort design, the percentage of at-risk students who advanced tiers on aimsweb was significantly higher for the Core5 cohort (50%) than the non-Core5 cohort (35%).

Chi-square analyses showed that the percentage of at-risk students who advanced tiers on aimsweb from beginning to end of the school year differed significantly (p < .05) between the

Core5 and non-Core5 cohorts. In the Core5 cohort, 50% of students advanced at least one tier as compared with 35% of students in the non-Core5 cohort. This outcome is shown in the figure below. Further, the percentage of students who advanced to Tier 1 was significantly higher for the Core5 cohort (42%) than the non-Core5 cohort (25%).
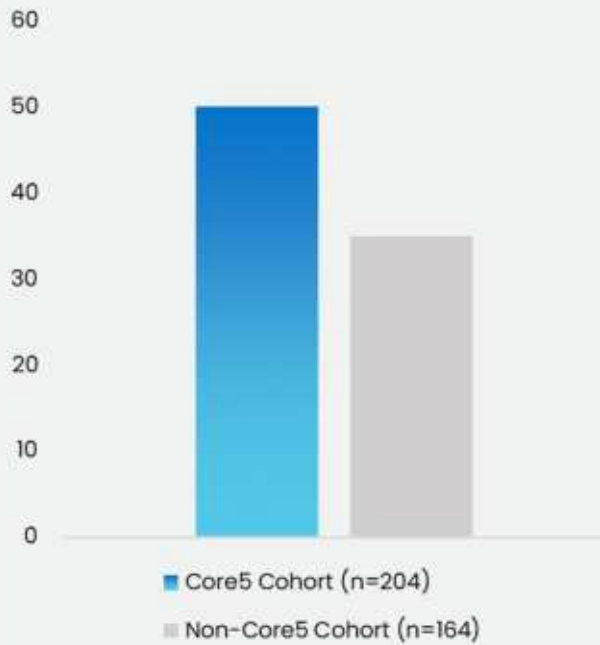
50% of at-risk students in the Core5 cohort advanced at least one tier on aimsweb

Want to Learn More?

For more information and updates on research related to Core5, please contact research@lexialearning.com.

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