

# WHAT'S THE EFFICACY CASE FOR TOP DIGITAL SUPPLEMENTS?

For district leaders looking to accelerate students' learning recovery in the wake of the pandemic, digital supplements offer the promise of personalizing the learning experience, engaging students, and offering educators a relatively low-cost, scalable method for promoting academic growth.

It's no surprise, then, that digital supplements now dominate the market for instructional materials. **Pre-pandemic projections estimated that digital supplements would account for 57% of the market for instructional materials, up from 25% in 2010.**<sup>1</sup>

While digital supplements are widely praised for their ability to engage students, questions around efficacy linger.

To provide insights into which specific digital supplements likely offer the most reliable benefit to district leaders, we reviewed the efficacy research base for market-leading digital supplements for middle and high school ELA and math.

## Our analysis looked at:

- Randomized control trials (RCT) or peer-reviewed studies
- Studies with sound methodology and statistically significant results, but which were not peer-reviewed or did not include randomized control trials
- Studies conducted by the providers of the product themselves

In this post, we provide an overview of this efficacy research to district leaders interested in leveraging ESSER funds to invest in digital supplements. While the market for digital supplements is vast and varied, having a clear-eyed view into which popular products have a research case, and how strong that case is, will help leaders make better decisions. Our goal is not to provide a comprehensive overview of digital supplements, but to surface some of the more solid research findings in a complicated, emergent product landscape.

## Research-backed digital supplements

### English Language Arts

#### Newsela

- **Description:** Newsela takes authentic, real world content from trusted sources and makes it instruction-ready for K-12 classrooms. Texts are published at five reading levels, so content is accessible to every learner.

<sup>1</sup> BMO Capital Markets: "The Education Industry 2019," and "Education and Training 2013"



- **Research overview:** One peer-reviewed study showing positive outcomes (WestEd); one non-peer-reviewed/RCT study showing positive outcomes (Empirical Education).
- **Research highlights:**
  - *WestEd*: “Students who used Newsela at recommended dosage saw an additional growth of 113% in size compared to the control group. A small percentage of students (6%) used Newsela daily, and they saw an additional 255% growth in reading comprehension when compared to the control group.”
  - *Empirical Education (2017)*: “Schools that were active users of Newsela performed better on the state reading assessment than schools that were not Newsela users.”

## READ 180

- **Description:** READ 180 is the leading blended learning intervention program building reading comprehension, academic vocabulary, and writing skills for struggling students in Grades 4 and up.
- **Research overview:** 9 peer-reviewed or RCT studies; 6 showed positive outcomes, 1 showed positive and neutral outcomes, 1 showed positive and negative outcomes, and 1 showed negative outcomes.
- **Research highlights:**
  - *Fitzgerald & Hartry (2008)*: Statistically significant improvement in comprehension. Not statistically significant, but still shown in average improvement index: improvement in reading fluency and alphabets.
  - *Kim et al. (2010)*: Statistically significant improvement in reading fluency. Not statistically significant: improvement in comprehension and general literacy achievement

## Achieve3000 Literacy

- **Description:** Achieve3000 provides nonfiction reading content to students in grades preK–12 and focuses on building phonemic awareness, phonics, fluency, reading comprehension, vocabulary, and writing skills.
- **Available research:** 1 peer-reviewed/RCT study showing positive outcomes; 4 non-peer-reviewed/RCT studies – 3 showing positive outcomes, 1 showing positive and neutral outcomes; 9 provider studies showing positive outcomes.
- **Research highlights:**
  - *Borman et al. (2015)*: Statistically significant positive outcomes were found in the domain of general literacy achievement.
  - *Supplier studies*: Show positive outcomes on Lexile levels, test scores, the IB program, and different literacy skills.
  - *Real Time Insights (2020)*: On average, students using Achieve3000 Literacy do not appear to have experienced the severe degree of learning loss projected by other studies.



## CommonLit

- **Description:** CommonLit provides free reading passages and literacy resources for Grades 3-12.
- **Research overview:** 1 non-peer-reviewed/RCT study showing positive results, 1 provider study showing positive results.
- **Research highlights:**
  - *Ad Hoc Analytics (2021)*: Students experienced greater gains with increased program usage; increased usage is associated with more students at proficient or mastery level on a state assessment; Title I students and special education students have greater gains students who use guided reading mode have greater gains; and students in Mexico had significant gains using the program's Spanish library.
  - *Brown (2014)*: Being in the treatment group was associated with a statistically significant positive change in overall student engagement. The treatment group outperformed the comparison group in every latent variable category in terms of overall mean changes in engagement, but not all of those results were statistically significant and some were quite small.

## NoRedInk

- **Description:** NoRedInk provides interest-based curriculum, adaptive exercises, and actionable data for teaching grammar, usage, mechanics and style to students in Grades 4-12.
- **Research overview:** 1 non-peer-reviewed/RCT study showed positive results.
- **Research highlights:**
  - *Perez (2015)*: Results suggest that NoRedInk usage is correlated with gains on the MAP Language Usage test.

## Math

### IXL Math

- **Description:** IXL Math provides in-depth content to help students master complex topics and take charge of their learning.
- **Research overview:** 6 peer-reviewed/RCT studies showing positive results; 1 non-peer-reviewed/RCT study showing positive results, 1 showing positive and neutral results; several provider-led studies.
- **Research highlights:**
  - *Smarter Balanced IXL Study (2019)*: Even with a wide range in student usage, researchers found a statistically significant strong positive correlation between IXL usage and school performance.



- *Texas IXL Study (2019)*: TX schools using IXL outperformed schools without IXL in math. Schools that used IXL for two or three school years performed better than schools that used the program for one school year.
- *Georgia IXL Study (2017)*: IXL schools performed better than non-IXL schools in math. Schools that used IXL for two school years performed better than schools that used IXL for one school year.

## DreamBox

- **Description:** DreamBox is a math program that intelligently adapts to each child, letting them drive their own learning while giving parents and teachers in-the-moment data and insights.
- **Research overview:** 1 peer-reviewed/RCT study showing positive results, 1 non-peer-reviewed/RCT study showing positive results.
- **Research highlights:**
  - *Wang and Woodworth (2011)*: Estimated impacts in mathematics achievement were positive and statistically significant, according to the WWC.
  - *Harvard University*: Found meaningful achievement gains. In particular, for every 20 minutes a student spent on the program, their MAP score increased by 2.5 points. The study also found that students who followed the program's lesson recommendations saw greater gains, progress in DreamBox was positively associated with achievement gains on state tests and interim assessments, and students who spent more time on the program saw larger achievement gains.

## Math Nation

- **Description:** Math Nation helps students master middle and high school mathematics through high-quality instructional videos, workbooks, collaborative learning tools, and adaptive assessments and support.
- **Research overview:** 3 peer-reviewed/RCT studies showing positive results, 1 non-peer-reviewed/RCT study showing positive results; 2 provider studies showing positive results.
- **Research highlights:**
  - *Leite et al. (2019)*: Higher levels of logins, video views, and practice questions answered were related to higher scores when students re-took the exam.
  - *Collier and Leite (2017)*: Usage data from the Algebra nation platform compared with FL A1 EOC Exam passing rates from Spring 2015 showed that high-using schools had an average A1 EOC exam pass rate of 83%, which is 20 points higher than the low-using schools' average pass rate of 63%.
  - *Mitten et al. (2015)*: "Results indicate that the effects of Algebra Nation usage are both statistically significant and substantively important."



## Gizmos

- **Description:** Gizmos are interactive math and science virtual labs and simulations for Grades 3-12 that bring new STEM learning experiences to the classroom.
- **Research overview:** 1 peer-reviewed/RCT study showing positive results.
- **Research highlights:**
  - *Maine Impact Study for Technology in Mathematics:* Statistically significant differences between treatment and control groups were found in middle school students' overall math achievement.

## ALEKS

- **Description:** ALEKS is an artificially intelligent learning and assessment system that determines each student's precise knowledge of a subject and helps the student work on the topics they are ready to learn.
- **Research overview:** 1 peer-reviewed/RCT study showing positive and neutral results.
- **Research highlights:**
  - *Craig et al. (2013):* Students assigned to the ALEKS classrooms performed at the same level as students taught by expert teachers on the Tennessee Comprehensive Assessment Program. Students' conduct and involvement remained at the same levels in both conditions. However, students in the ALEKS classrooms required significantly less assistance in math from teachers to complete their daily work.

## Khan Academy

- **Description:** Khan Academy offers practice exercises, instructional videos, and a personalized learning dashboard that empower learners to study at their own pace, inside or outside the classroom.
- **Research overview:** 2 non-peer-reviewed/RCT studies showing positive results, 1 provider study showing positive results.
- **Research highlights:**
  - *Albertson Family Foundation Case Study (2015):* "Analysis shows very positive correlations between usage of Khan Academy and academic progress." Students who complete 60% or more of their grade-level math on Khan Academy experienced 1.8 times their expected growth on the math portion of the NWEA MAP Growth.
  - *Provider study (2017):* Students who used Khan Academy for more than 30 minutes per week (recommended usage time) scored 22 points higher on the 2018 math portion of SBAC than students who did not use Khan Academy.
  - *SRI Education Report (2014):* "In a set of exploratory analyses, positive relationships were found between Khan Academy use and better-than-expected achievement and nonachievement outcomes, including level of math anxiety and confidence in one's ability to do math."



## i-Ready Classroom Mathematics

- **Description:** i-Ready Classroom Mathematics is a comprehensive core mathematics program that makes math accessible to all students.
- **Research overview:** 4 non-peer-reviewed/RCT studies showing positive results, 2 provider studies showing positive results.
- **Research highlights:**
  - *Marple et al. (2019):* Found that i-Ready “significantly improves math achievement as measured by the grade 7 SBAC summative assessment,” and that the more minutes students spend on the lessons in i-Ready, the higher the differences in scale compared to similar students using i-Ready for fewer minutes.
  - *Utah STEM Action Center:* i-Ready was consistently one of the top mathematics solutions among the evaluated vendors. Evaluation with SAGE outcomes available from spring 2018 found that the use of i- Ready was associated with increased likelihood of proficiency on the SAGE test, and students who used the program with greater frequency demonstrated higher growth percentiles than those who used it with lower frequency.
  - *Forsman (2018):* Students in inclusion classrooms (in which students with and without disabilities learn together) scored statistically significantly higher in the spring than the fall in mathematics.

*The Center for Education Market Dynamics aims to help district leaders make smarter choices about which products and services are most likely to help them achieve their goals. Contact us to learn more about this research or to explore how your district can more effectively navigate the education market.*