Research suggests that experts are not born but develop expertise by engaging in deliberate practice. Technology represents one solution to enhancing college and career readiness through personalization during deliberate practice of literacy skills. By means of technology, EdSphere® integrates key elements of deliberate practice to promote students’ growth in reading. The research literature on expertise and deliberate practice spans several decades. More than 12 years of research and development have focused on the design of the EdSphere platform; since approximately 2010, research has begun to provide information about the efficacy of using EdSphere to promote growth in student reading ability. The efficacy research has produced multiple instances of the benefit of using EdSphere. Highlights of this efficacy research are provided below in a series of synopses.

EdSphere®: Using technology to enhance literacy through deliberate practice

The objective of this research was to ascertain whether growth realized from using EdSphere was sufficient to place students on a growth trajectory predictive of college and career readiness. Students engaged in daily deliberate practice by using EdSphere for one calendar year from Spring 2009 to Spring 2010. Gains in reader ability were interpreted relative to growth expectations commensurate with a trajectory leading to college and career readiness.

Participants consisted of 843 students in grades 2-12 in a diverse school district in north central Mississippi. The racial/ethnic composition of the group was: 56% Euro-American; 38% African-
American; and 6% Hispanic. Demographically, the majority of students were economically disadvantaged—i.e., 60% qualified for free-reduced price lunches.

Key findings indicated that, on average, students who used EdSphere:

- experienced greater-than-expected growth in reading ability based on a national sample of readers; and
- were on a trajectory predictive of college and career readiness in reading.

Furthermore, students near the end of high school (i.e., those in grades 10-12) were reading above 1300L, the median text demand associated with college and career reading materials.

In summary, after one year of using EdSphere, students at each grade level were, on average, on a reading growth trajectory predictive of college and career readiness.


The purpose of this study was to investigate whether EdSphere promotes greater than expected growth in reading ability. The study monitored use of EdSphere and growth in 843 students in grades 2–12 in a school district in north-central Mississippi. Students represented wide ethnic diversity and levels of socio-economic status.

Students used EdSphere daily for a minimum of three years, but no more than four years. Participants dedicated approximately 27,000 hours to reading well-targeted and high quality text (75% of the texts were informational texts). Students read 243 million words from over 331,000 articles from periodicals targeted to their reading ability. Students also composed over 45,000 essays with approximately 8.5 million words and edited more than 185,000 passages for grammar, spelling, punctuation, and capitalization errors.

At the end of the four-year study:

- seventh- and eighth-grade students exceeded their predicted achievement by 91L (Observed 1124L vs. Predicted 1033L);
- ninth-grade students experienced slightly less than their predicted achievement (Observed 1122L vs. Predicted 1142L); and
- tenth-grade students exceeded predicted achievement by 93L (Observed 1212L vs. Predicted 1119L).

Students in the seventh, eighth and tenth grades engaged in more deliberate practice of their reading and writing ability compared to ninth-grade students. These results provide preliminary support not only for the role of technology to promote literacy through personalization, but also for the contention that the amount or dosage of that practice may provide differential outcomes.


The objective of this research was to ascertain whether student growth in reading in response to exposure to EdSphere could be detected from an external progress-monitoring assessment (NWEA MAP®). The study was based on longitudinal data (for grades 2-8) from a panel of students who first encountered EdSphere in seventh grade.

Participants constituted a panel of students (n = 392) who attended a large middle school in the southeastern United States as eighth-graders in 2010-11 and had historical reading data spanning grades 2-8. Approximately 50% of the students were Caucasian, 43% African-American, 4% Asian, 2% Asian-American,
and less than 0.5% Latino. Students began using EdSphere in the winter of 2009-10 (their seventh-grade year).

Key findings included the following:

- While using EdSphere, students' reading ability increased approximately 1L (one Lexile) beyond their normal growth for every encounter (i.e., every article read) with EdSphere.
- There was a statistically significant impact on the acceleration of growth coincident with exposure to EdSphere—notably, decelerating growth was replaced by accelerating growth.
- During the 15-month exposure period, students using EdSphere experienced three times the total gain they would have been expected to make based on their historical growth prior to using EdSphere.


Conclusion

Efficacy research has used multiple methods to produce characterizations of the educational benefit of using EdSphere. To date, research has employed counter-factual comparisons, longitudinal interventions, and quasi-experimental treatment designs with varying dosage levels. Across all designs and analytical studies, the results have consistently demonstrated that students utilizing EdSphere experience higher than predicted growth in reading.