

Demonstrating Lexile® Growth with *Actively Learn*™ and *Achieve3000 Literacy*™

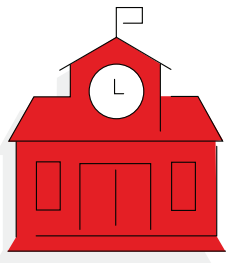
Introduction

Actively Learn™ and *Achieve3000 Literacy*™ are part of McGraw Hill's digital supplemental literacy portfolio. *Achieve3000 Literacy* is a powerful differentiated learning solution for students in grades 3–12 that is proven to accelerate literacy growth for students at every grade and ability level.

Actively Learn is an award-winning curriculum platform for students in grades 3–12. It is designed to deepen learning in ELA, science, and social studies. The *Actively Learn* platform enables deeper learning with real-time teacher feedback, text-based questions embedded into the reading assignments, and a variety of reading aids that provide support to learners of every profile.

In July 2020, *Achieve3000* conducted a national study of student reading growth in schools where both *Actively Learn* and *Achieve3000 Literacy* were being used.

DISTRICT INFORMATION



School Year
2019–2020

Grades:
3–12



Methodology

The focus of this study was on students who used both *Actively Learn*™ and *Achieve3000 Literacy*™ during the 2019–2020 school year. The benefit of this approach was that the Lexile® reading measure (see below) from *Achieve3000 Literacy* could be used as a measure of general reading ability. Student records from the *Actively Learn* and *Achieve3000 Literacy* databases were merged to produce an analytical file containing 17,285 individual student records. Data was then analyzed to examine the relationship between *Actively Learn* usage and improvements in reading ability.

Measures

The primary outcome measure used in the analysis was Lexile®, a measure of overall reading ability developed by MetaMetrics®, Inc. The power of the Lexile Framework for Reading is its ability to measure both a person's reading

ability and the complexity of a text (e.g., a book or magazine article) on a single developmental scale. The Lexile measure is shown as a numeral with an “L” after it—880L means 880 Lexile.

For this study, student Lexile measures were obtained from the *Achieve3000 Literacy* program. Students using *Achieve3000 Literacy* take the LevelSet assessment to establish an initial Lexile level. Their Lexile is then used to match them to texts within *Achieve3000 Literacy*. Lessons in *Achieve3000 Literacy* include embedded assessments that measure students' comprehension of the texts. At the end of each month, using a proprietary Bayesian scoring algorithm developed by MetaMetrics, student Lexiles are adjusted according to students' performance on the embedded assessments. In this study, the Lexile of each student as of March 15, 2020 was used for analysis.



Results

Researchers analyzed the relationship between Lexile growth and various *Actively Learn*™ usage variables. The analysis revealed statistically significant positive correlations to Lexile growth for two *Actively Learn* usage variables: students' grades on short-answer and multiple-choice text-based questions.

Students were divided into groups based on the grade received for their responses. A “Low” group was defined as an average score less than 55 percent, a “Mid” group was defined as an average score between 55 percent and 75 percent, and a “High” group was defined as an average

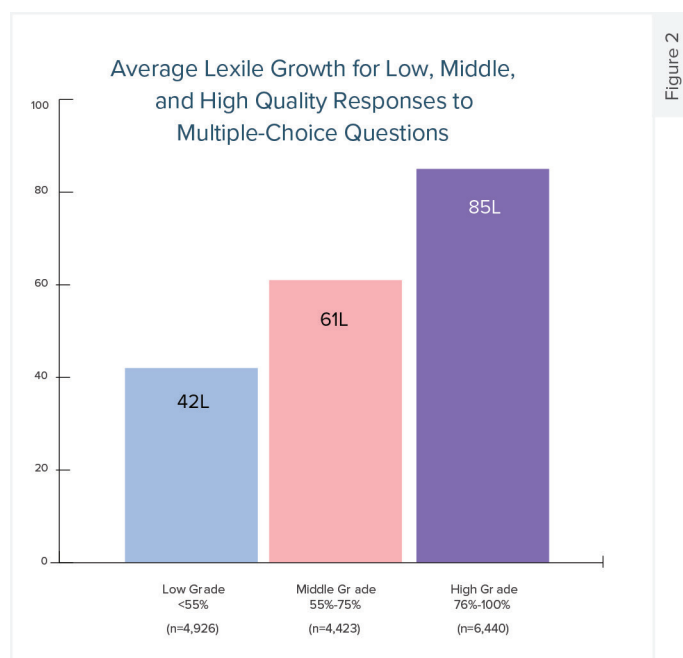
score above 75 percent. As shown in Figures 1 and 2, students with a “High” grade, either on short-answer or multiple-choice questions, exhibited more Lexile growth than students with a Low grade. Cohen’s d effect sizes reveal the differences between students with Low versus High grades represents a medium effect (Cohen’s $d = .5$ when using either short-answer or multiple-choice grades).

Since higher grades imply stronger engagement in the program, it can be inferred that stronger engagement in *Actively Learn* is associated with larger gains in reading comprehension, as measured by Lexiles.



Definitions: Low Short-Answer Grade = average grade across assignments was less than 55%
Mid Short-Answer Grade = average grade across assignments was between 55% and 75%
High Short-Answer Grade = average grade across assignments was greater than 75%

To examine the influence of *Achieve3000 Literacy* usage, students were further grouped according to their level of *Achieve3000*® usage. The *Achieve3000 Literacy*™ usage groups were



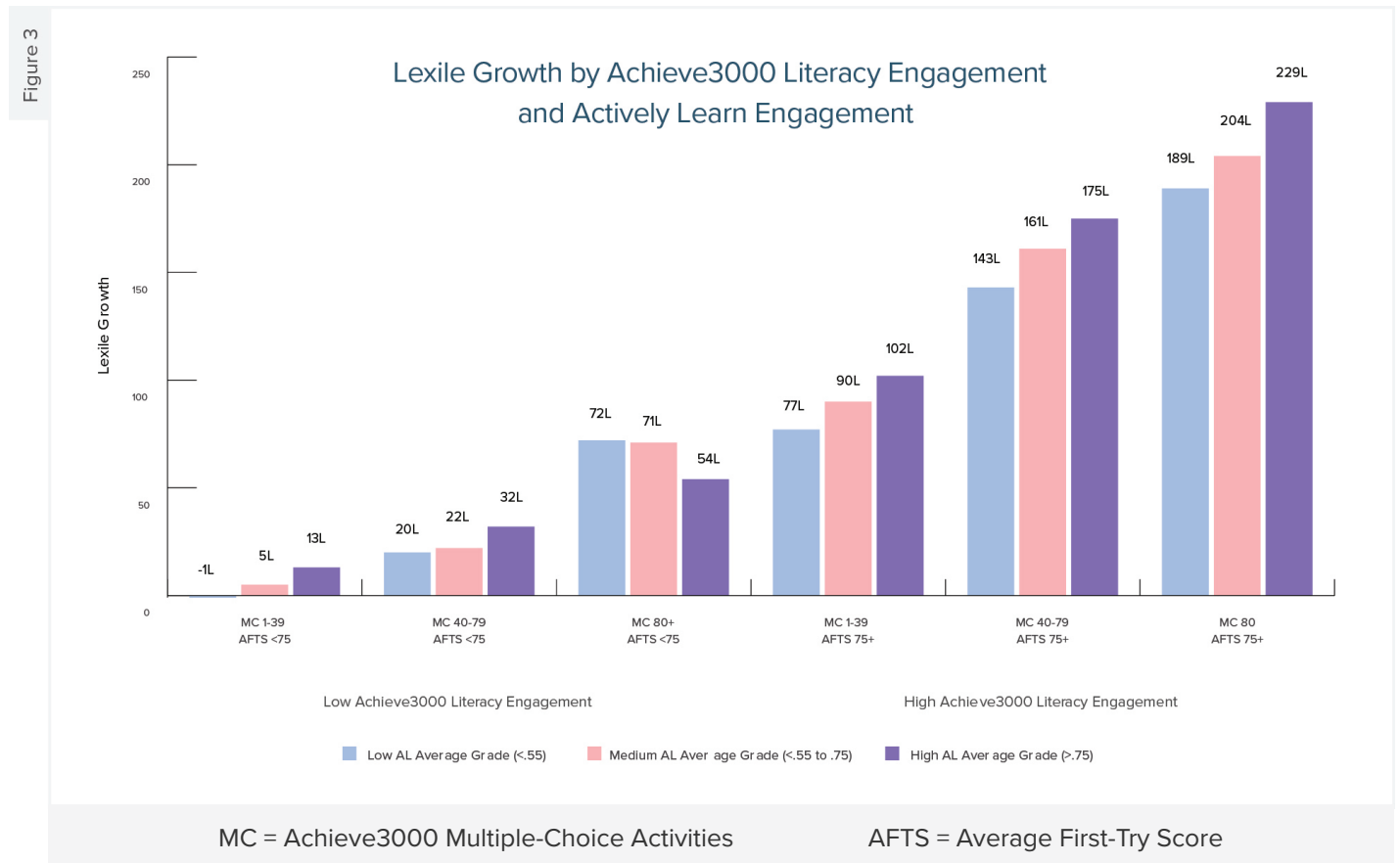
Definitions: Low MC Grade = average grade across assignments was less than 55%
Mid MC Grade = average grade across assignments was between 55% and 75%
High MC Grade = average grade across assignments was greater than 75%

defined based on the number of multiple-choice (MC) activities completed by students and their average first-try scores (AFTS) on those activities.

*The MC activities are assessments embedded into each lesson in *Achieve3000 Literacy*. They typically consist of eight items. Only students' first attempts on each item contribute to the students' Lexile scores. The average first-try score is the mean score across all completed MC activities.

Figure 3 shows the average Lexile growth for each group. From left to right, the groups are organized from low to high *Achieve3000 Literacy™* engagement. A clear trend can be seen whereby Lexile growth is higher when students' *Actively Learn™* grades are higher. Specifically, based on Cohen's d effect sizes, students with high *Actively Learn* grades exhibited more Lexile growth than students with low *Actively*

Learn grades in each group except those who completed at least 80 activities with an AFTS below 75%, with effect sizes ranging from small to medium (Cohen's d range from .2 to .6). This indicates that, regardless of engagement in *Achieve3000 Literacy*, higher engagement in *Actively Learn* is associated with more Lexile growth.



Conclusion

In this national study of 17,285 students, a clear and positive relationship was found between higher grades in *Actively Learn*™ and reading ability, as measured by students' Lexile measure in *Achieve3000 Literacy*™. This positive relationship implies that stronger engagement in *Actively Learn* is associated with larger gains in reading ability.

This relationship held when controlling for *Achieve3000 Literacy* usage. It is significant that *Actively Learn*'s embedded multiple-choice and short-answer questions in ELA, science, and social studies require students to engage with the instructional content and respond with evidence-based answers to receive the highest scores.

To learn more about our programs, visit:

mheducation.com/activelylearn and mheducation.com/a3kliteracyforall

