



# ESSA Evidence-Based Intervention: Study Island in Elementary Schools

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Peer Reviewed by

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# Executive Summary and Highlights

Edmentum performed a quasi-experimental study of the effectiveness of our Study Island online learning platform on student growth during the 2016-17 school year. These results indicate that Study Island is an effective, evidence-based intervention. Specifically, the study has been verified to meet all criteria to qualify Study Island as meeting the ESSA requirements of an “evidence-based” intervention.

## Moderate Evidence

Study Island intervention earned a very good ranking that meets requirements of virtually all SEAs and LEAs in the United States. ESSA assigns the rank of *moderate evidence* to quasi-experiments that show a “causal effect” of the intervention on student learning outcomes. A quasi-experimental design is like an experimental design, except that the treatment and control groups are not randomly assigned. Instead, baseline differences between the groups are adjusted using statistical corrections. As stated by the U.S. Department of Education (2016), interventions supported by these studies are deemed by ESSA to be “evidence-based” when:

1. The statistical analysis shows a positive, favorable effect
2. The finding is not overridden by statistically significant and negative evidence from other high-quality studies
3. The study uses a large sample, and a multi-site sample
4. The study uses a sample that overlaps with the populations proposed to receive the intervention

Because Edmentum’s 2016-17 study meets all these criteria, the study -- under rigorous ESSA rules – may be used by LEAs and SEAs to justify use of Study Island in elementary classrooms.

## Independent Peer Review

Edmentum is cognizant that third party vendors have a responsibility to conduct their research in a rigorous and objective manner. Many states and school districts ask third party vendors to provide research showing the efficacy of their product in the schools. But they also require this research to be independently reviewed by an objective and reputable third party.

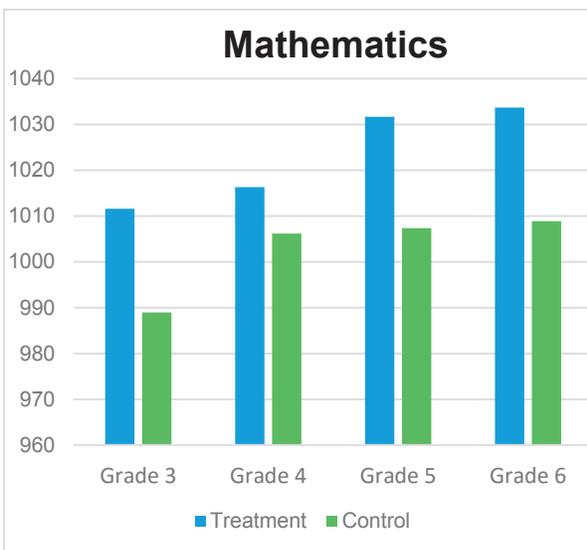
Edmentum has sought and secured independent peer review by the highly respected Marzano Research group. Edmentum submitted its research results to the Marzano group, who reviewed the study design, gave extensive guidance on the conduct of the study, and performed an independent replication of the results using their highly qualified researchers. This independent review found that the Edmentum 2016-17 study meets ESSA standards of moderate evidence. The Marzano validation study, published recently by Steward, Brodersen, and Chersasaro (2017), outlines the ESSA standards of evidence, and after a detailed review concludes:

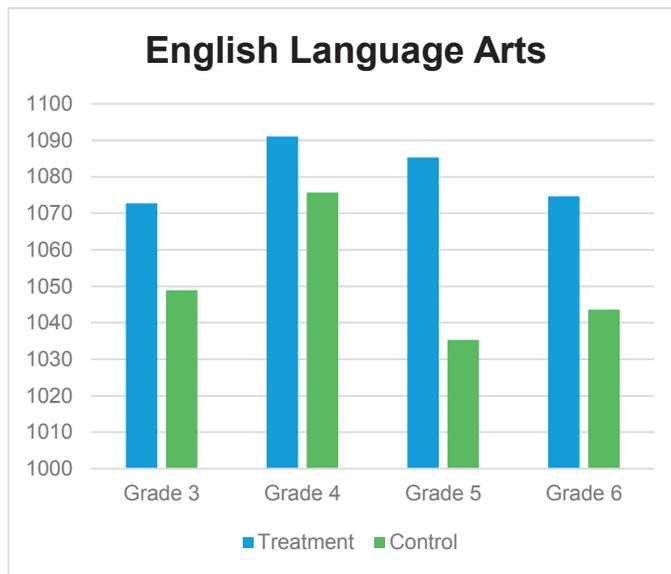
Marzano Research verified the findings of statistically significant and positive effects on student achievement, which suggest that **the Study Island intervention has a positive impact on student achievement in reading and math, as well as a positive relationship with student achievement in language arts** (p. 9).

## Treatment Effect

Edmentum’s research study found consistent, positive effect sizes for the Study Island intervention across all grades 3-6. The graphs below show treatment (blue) compared to control (green) groups. Again, the educational **intervention** was “*use of Study Island for a period of 12 weeks by elementary school students in the fall and winter of 2016-17.*” The **outcome** variable was *student growth in achievement scores* using Edmentum’s highly reliable and valid Exact Path adaptive diagnostic growth scale.

The following tables show the differences between treatment and control groups across grade for each subject. The treatment effect is consistent throughout.





## How Much Study Island Usage is Needed?

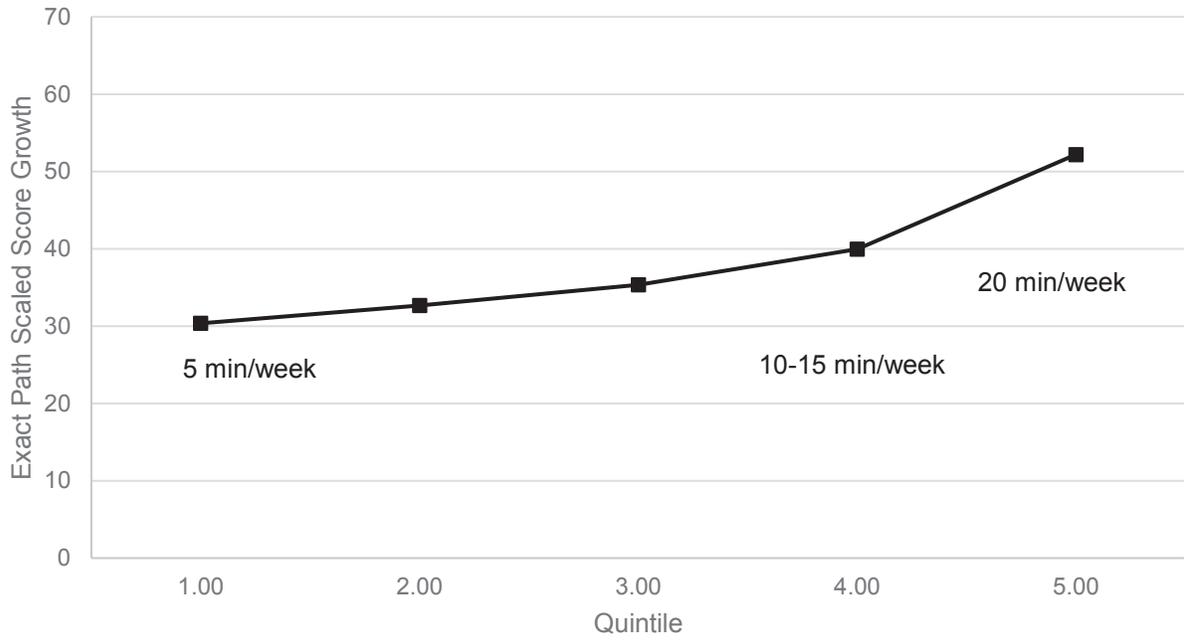
A correlational study was also performed to indicate the effect of the time on platform on academic growth. The results show what recent research (Cheung and Slavin, 2012; Cheung and Slavin, 2013) has confirmed, that modern educational technology must be used faithfully to realize its potential. These authors noted that modern computer assisted instructional programs should be used for about 30 minutes per week to realize the benefits.

To calibrate Study Island to the guidance of Cheung and Slavin, Edmentum’s researchers describe the growth curve effect from its own participants. Students were ranked from low to high on Study Island usage, and broken into quintile groups. The student growth outcomes are shown below for each of the subjects of Mathematics, Reading, and English/Language Arts.

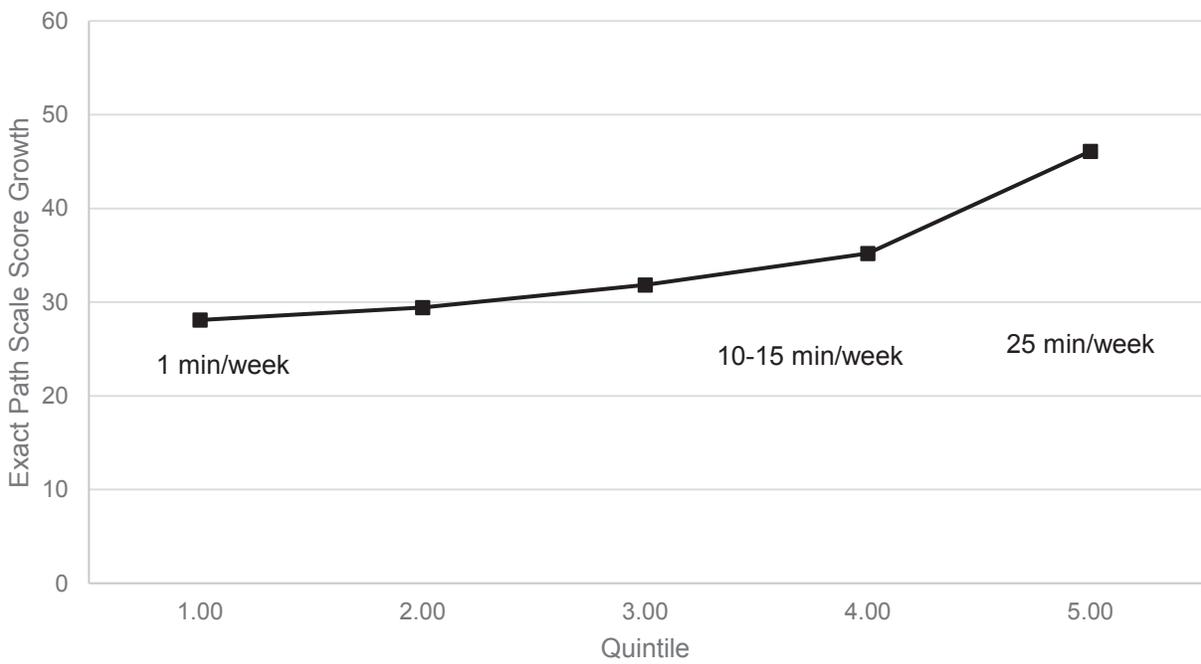
The effect of 20-30 minutes of usage per week is about a half of a standard deviation in growth, and as such is considered robust. This effect is in line with previous research by Cheung and Slavin (2012, 2013).

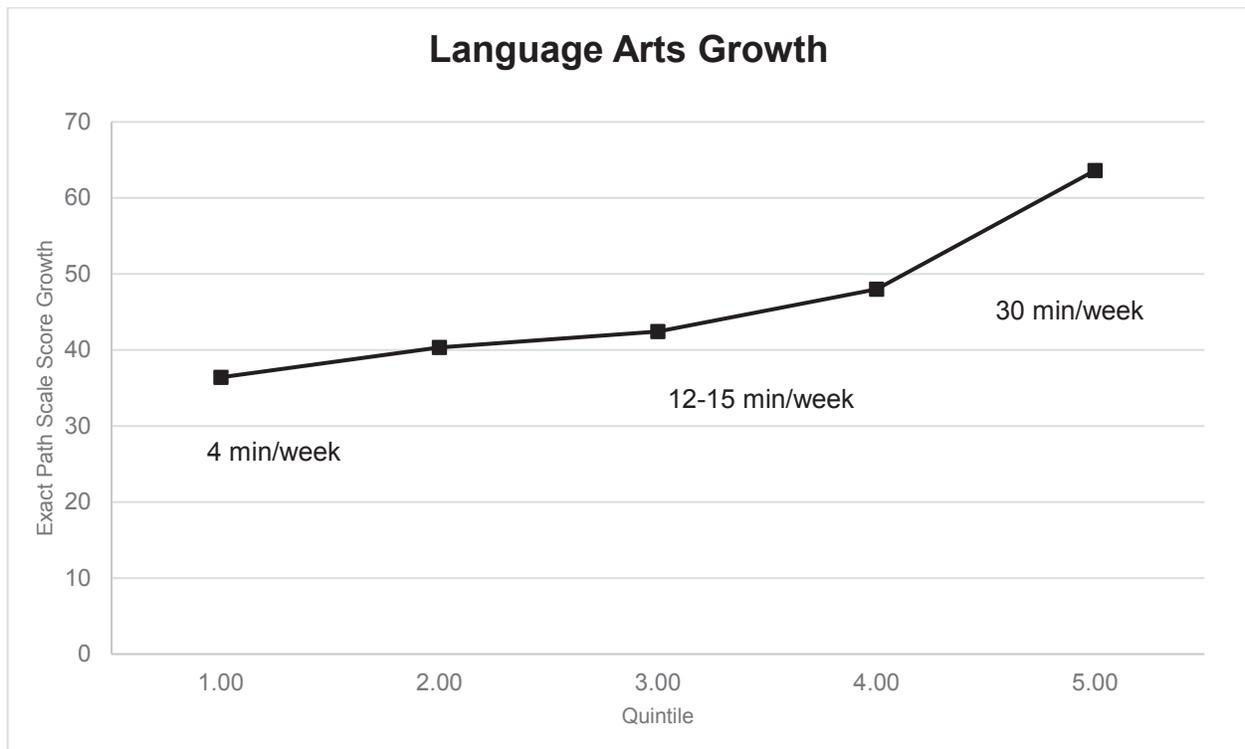
The three figures below show how time on task is related to growth in Mathematics, Reading, and ELA.

## Mathematics



## Reading





## Guidance for Schools

Study Island is an evidence-based intervention for all students in grades 3-6. It has achieved the level of Moderate Evidence under ESSA rules and is therefore appropriate in classrooms.

**Minimum Usage.** Edmentum recommends that the Study Island platform be made available to students. To implement the treatment with fidelity, Edmentum recommends setting minimum usage guidelines of at least 30 minutes every week. This implementation should be cumulative. In other words, sporadic use of Study Island one week, followed by no usage the next, and so on, does not facilitate sustainable gains. The thirty-minute minimum per week is a semester-long effort.

In Reading, the 30-minute minimum can be surpassed because time spent reading is always a good intervention.

**Massed and Distributed Practice.** How should the 30 minutes be parceled out? Educational psychologists recognize two kinds of independent practice, massed practice, and distributed practice. Massed practice is a long time spent in one sitting. In the case of Study Island mastery-based practice, massed practice is good. Children should be encouraged to put in sessions of at least 15 minutes of active work. Our data indicates that typical sessions are shorter than that, so we really encourage at least one 15-minute block of effort during each week. Distributed practice is defined as short-burst practice, such as when a child reviews flash cards for 5 minutes. This is

useful for Study Island as well, and should not be discouraged, as long as the massed practice sessions take place.

**Motivation and Passion.** Finally, consider the motivational factor. Our research shows that children who set goals – such as earning a blue ribbon, or reaching a 70 percent pass rate – progress more reliably than those who do not. Teachers should encourage children to approach Study Island as a personal challenge. An additional instructional approach with Study Island standards mastery is to talk to the child, especially if he or she is an older learner. Ask them what they think they need the most work on. Students are insightful about their strengths and weaknesses. Identify a skill and a goal, something the students wants to improve upon, and encourage the child to focus on that skill for a week or two. Some of the best results from Study Island has come from such an approach.

In the psychology of practice, kids (and adults!) tend to practice what they know best. A piano player wants to play the beginning of the song all the time because it's pleasurable to hear yourself sounding good. This is an impediment to practice, though. The richest benefit of practice is when the teacher or coach helps the student find the one skill that is rusty, not quite perfected. Teach children to think about that skill, and make it better.

## References

- Cheung, A. C. K., & Slavin, R. E. (2012). How features of educational technology applications affect student reading outcomes: A meta-analysis. *Educational Research Review, 7*, 3, 198-215.
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Outside of the United States, Edmentum International offers the following solutions: Exact Path, Courseware, EducationCity, Study Island and Academy.

You can contact Edmentum International via the contact info below to learn more about how our solutions can support your academic goals.

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