



LXDRESEARCH
AT CHARLES RIVER MEDIA

Edpuzzle Original Math Video Efficacy Study with 3rd-5th Graders

2024-2025 School Year



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MODERATE

LXD Research Recognition for Edpuzzle



This product has been rigorously evaluated and is hereby acknowledged for meeting the educational impact criteria of the Every Student Succeeds Act (ESSA), warranting a **Level 2** for "**Moderate**" Evidence. This recognition is based on its proven effectiveness in enhancing grade-level learning outcomes.

REVIEWED BY THE LXD RESEARCH EXPERT REVIEW PANEL



Rachel Schechter, Ph.D.
Founder of LXD Research

September 25, 2025

DATE

Understanding ESSA Evidence



Educators search for high-quality research and evidence-based solutions to strengthen grant applications, to support comprehensive and targeted instruction, or to implement new programming in their schools. Evidence requirements under the Every Student Succeeds Act (ESSA) are designed to ensure that states, districts, and schools can identify programs, practices, products, and policies that work across various populations.

Educational programs document their evidence of design, effectiveness, and impact in order to be eligible for federal funding. While there is no singular authority that determines a program's tier, the Department of Education's Office of Educational Technology provides standards to assess the varying levels of strength of research for education products.

The categories for ESSA Evidence are: strong (Tier 1), moderate (Tier 2), and promising (Tier 3) evidence of effectiveness, or demonstrates a rationale to be effective (Tier 4).

This product meets the requirements for Tier 2:

- ✓ In a quasi-experimental design, students who used the program are examined against a comparison group who did not use the program.
- ✓ At least one quasi-experimental study with the proper design and implementation with at least two teachers and a multi-site sample of 350 students showed statistically significant, positive findings.
- ✓ The study uses a program implementation that could be replicated.
- ★ A third-party research organization has reviewed the documentation for ESSA validation.



When product designers leverage learning sciences to design and evaluate the effectiveness of their programs, educators can better target instruction, and students' skills soar. A quasi-experimental study design using standardized assessment data, an analysis of student growth, and educator feedback demonstrates this product's efficacy, meeting the criteria for LXD Research's ESSA Tier 2 Evidence.

– Rachel Schechter, Ph.D., Founder of LXD Research

EFFICACY STUDY SUMMARY

GRADE 3-5

2024-2025



PROGRAM DESCRIPTION

Edpuzzle is an edtech solution that empowers teachers to create interactive learning experiences for their students. Edpuzzle supports flipped learning, self-paced learning, hybrid/blended learning, and differentiation.

Edpuzzle Originals are standards-aligned, customizable lessons created by experts that engage students, empower teachers, and make differentiation easy with built-in questions

STUDY DETAILS

Sample Description

- 3rd - 5th students
- 300 used Edpuzzle Originals,
- 1100 in the comparison group
 - 27% Hispanic
 - 46% Economically Disadvantaged
 - 12% SPED
 - 11% ELL
- Location: California, medium-sized district

Time Frame

- August 2024-June 2025

Methodology

- Design:
 - Matched quasi-experimental design comparing treatment and comparison 3rd-5th graders within the same school year.
- Assessment Measure:
 - State test - California Assessment of Student Performance and Progress (CAASPP)
 - Renaissance Star Math Assessment

STUDY SUMMARY

Edpuzzle contracted LXD Research, a third-party research firm, to examine whether Edpuzzle Original (EO) Math video usage among 3rd-5th graders was associated with improved standardized assessment outcomes. Educators were trained on Edpuzzle Originals by their district technology leaders and staff. This quasi-experimental study design analyzed the use of EO Math videos compared to students who did not use the EO math videos and how it impacted student scores on standardized math assessments.

KEY FINDINGS

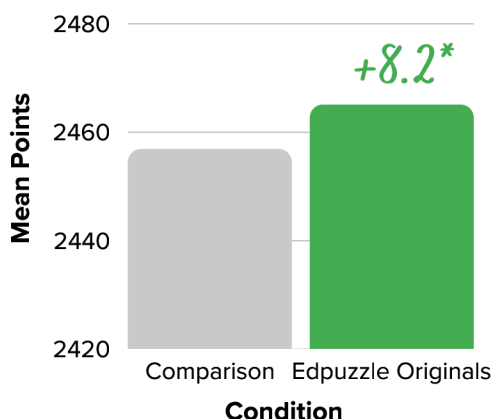
- **Students who used Edpuzzle Original Math videos outperformed the students who did not on both assessments at the end of the year.**
 - On CAASPP, EO math students had an advantage of 8.2 points
 - On Star Math, EO math students had an advantage of 7.8 points
- Additionally, EO students grew significantly more than the control group on Star Math from the beginning-of-year (BOY) to end-of-year (EOY).
- When examining EO math video usage, **students who completed more assignments (> 50) had significantly higher scores on CAASPP** (on average, 32 points higher) than those who completed 1-5, $p < .001$.
- Furthermore, EO assignment grades were significant, positive predictors of CAASPP scores.



“[Students] just weren't getting it, and the Edpuzzle solidified the concept. I'm telling you that I got shivers because I was like, oh, my goodness, this is exactly why we use technology” - District Admin



Spring 2025 CAASPP Mean Scores



Students who used Edpuzzle Originals had an **additional 8.2 points**, on average, than the comparison group on CAASPP, equivalent to an **additional 2.5 months of math instruction**.

$F(1,1368)=5.77, p=.039, \text{partial } \eta^2=.0051, \text{Cohen's } d \text{ equivalent effect size}=.14$

STUDY DESIGN



STAR MATH ASSESSMENT FINDINGS



Key Takeaway: Students who used Edpuzzle Originals had higher EOY scores and grew more from BOY to EOY than those who didn't

Spring 2025 Star Math Unified scale scores were **significantly higher** for Edpuzzle users than the comparison group, with an additional 7.8 points on average.¹ Likewise, Fall 2024 to Spring 2025 Star Math Unified **scale score growth was significantly greater** for Edpuzzle users (27.8 points) than the comparison group (21.3 points) with an additional 6.5 points.

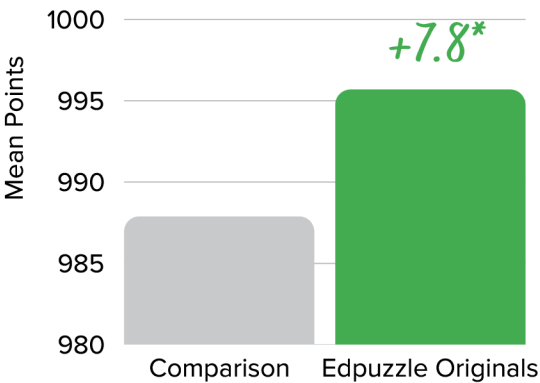


"I think [EOs] are a great way for my students to be **engaged and be active learners**...when we reinforce or practice a math subject."

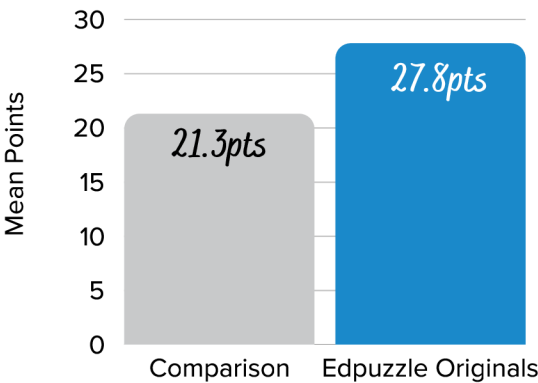
- 3rd grade teacher



Spring 2025 Star Math Mean Scores²



Fall to Spring Star Math Mean Score Growth³



This additional growth over the year is equivalent to **an additional 2.7 months of school** for the students who used Edpuzzle Originals.

USAGE ANALYSIS FINDINGS



Key Takeaway: High Edpuzzle Original usage is correlated with higher student achievement scores on CAASPP

Edpuzzle Original Math **usage level** in the treatment group was a significant, positive predictor of CAASPP state test scores.⁴ Additionally, EO Math **assignment grades were a significant, positive predictor of CAASPP scores.**⁵ Therefore, EO Math assignment grades could be a helpful indicator of a students' state test score.

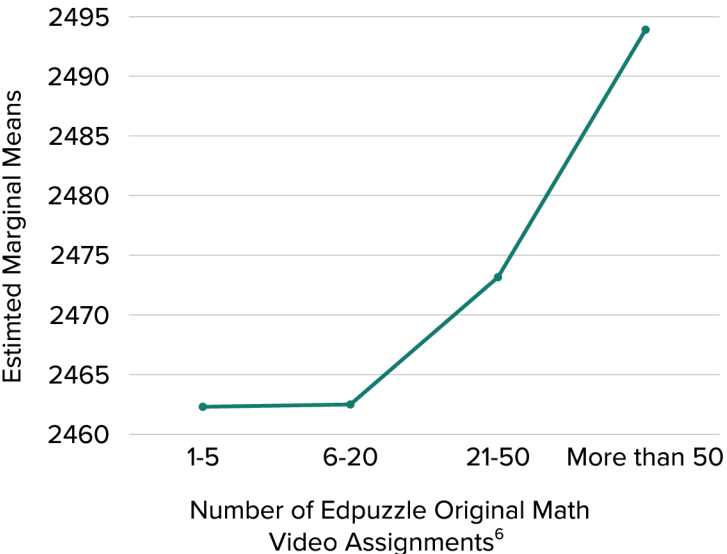


"I could tell they were learning because...I would pull them for small group... they'd say, **oh, we learned this in the Edpuzzle**"

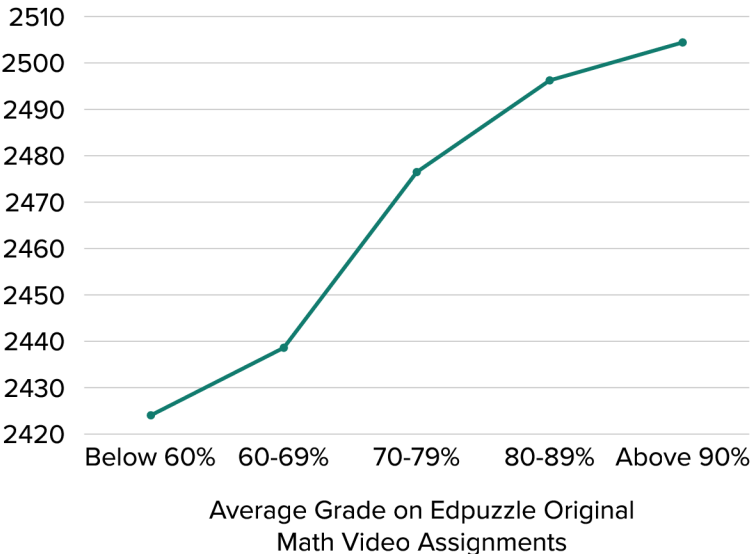
- 4th grade teacher



Number of Edpuzzle Original Math Assignments Correlations to CAASPP Scores



Grades on Edpuzzle Original Math Video Assignments Correlations to CAASPP Scores



Statistical Citations by Key Finding

Key Takeaway: Students who used Edpuzzle Originals had higher EOY scores and grew more from BOY to EOY than those who didn't

¹ After controlling for baseline score and economic disadvantage and using cluster robust standard errors to account for the effect of clustering by school.

² $F(3, 1385) = 3.2, p = .02$, partial eta squared effect size = .008, Cohen's d effect size = .18

³ $F(2, 1385) = 7.3, p < .01$, partial eta squared effect size = .005, Cohen's d effect size = .14

Key Takeaway: High Edpuzzle Original usage is correlated with higher student achievement scores on CAASPP

⁴ Controlling for Fall 2024 Star Math Unified scale scores, $f(3, 271) = 5.0, p < .01$, partial eta squared effect size = .053 Cohen's d effect size = .47)

⁵ Controlling for Fall Star Math Unified scores $f(4, 253) = 17.0, p < .001$, partial eta squared effect size = .216, Cohen's d effect size = 1.05)

⁶ This figure shows a consistent relationship between usage and outcomes; the ANCOVA analysis showed that significant effects could be observed among students assigned more than 50 Edpuzzle Original Math videos in one year (on average, 32 points higher) than those who completed 1-5, $p < .001$.



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Edpuzzle Original Math Video Efficacy Study with 3rd-5th Graders

2024-2025 School Year

Conducted by Sofia Jimenez, Ph.D., Isabella Ilievski, Ed.M., Paul Chase, Ph.D., and Rachel Schechter, Ph.D.

[LXD Research](#) at Charles River Media Inc.

Abstract

In a study examining the efficacy of Edpuzzle Original Math videos during the 2024-2025 school year, LXD Research measured the program's impact on 3rd-5th grade students' mathematics outcomes on the CAASPP state assessment and Renaissance Star Math assessment. Results indicated that students using Edpuzzle Original Math videos demonstrated significantly greater achievement than their comparison group peers. Students using the videos gained an additional 8.23 points on CAASPP ($p = .039$, Cohen's $d = .14$), representing 2.5 months of additional learning gains, with similar findings on the Star Math assessment (7.8 points higher, Cohen's $d = .18$). Usage analysis revealed a dose-response relationship, with students assigned more than 50 videos throughout the year scoring 32 points higher on CAASPP than those with minimal exposure ($p < .001$). Grades on Edpuzzle assignments strongly predicted state test scores (Cohen's $d = 1.05$), suggesting the platform's assessments effectively gauge student mastery. This mixed-methods study included teacher surveys and administrator interviews which highlighted educators' perceptions that Edpuzzle Original Math videos effectively supported differentiated instruction and reduced preparation burden. Educators indicated that the videos' visual elements, step-by-step explanations, and embedded comprehension checks enhanced student understanding while maintaining engagement. Findings demonstrate that well-designed, standards-aligned content can meaningfully supplement traditional mathematics instruction when implemented consistently as part of regular classroom practice.

Keywords: Educational technology, video-based learning, mathematics achievement,

APA Cite: Jimenez, S., Ilievski, I., Chase, P., & Schechter, R. (2025). *Edpuzzle Original Math Video Efficacy Study with 3rd-5th Graders, 2024-2025 School Year*. LXD Research.



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Introduction

Educational technology has fundamentally transformed classroom instruction, with digital learning tools experiencing unprecedented adoption following the COVID-19 pandemic (GovTech, 2022). This technological integration has opened new pathways for interactive and individualized learning experiences, particularly through video-based learning and multimedia instruction, while simultaneously prompting critical examination of these tools' effectiveness in driving meaningful student outcomes.

Contemporary research in educational technology establishes several foundational principles for successful classroom integration. Effective digital learning environments must provide personalized experiences that adapt to individual student needs (Spiro, 2001), deliver immediate feedback mechanisms that reinforce learning progress (Grünke, 2017), and leverage visual and auditory elements that enhance student comprehension (Huang et al., 2024). These evidence-based principles form the theoretical framework for evaluating modern edtech solutions.

Interactive media platforms like Edpuzzle exemplify how digital tools can operationalize these research-backed strategies. The platform enables educators to transform traditional content – like videos, slides, and quizzes – into dynamic learning experiences through embedded questioning, customized feedback, and personalized instruction which directly addresses the core principles identified in educational technology research.

Video-based instruction research reveals that specific design elements significantly influence learning outcomes. Effective educational videos incorporate strategic audio and visual cues, maintain subject relevance, employ conversational delivery styles, include clear signaling techniques, and optimize duration to 6-9 minutes to maximize learner attention and engagement (Brame, 2016). Furthermore, embedding guided questions and interactive components throughout video content has been consistently linked to improved learning outcomes (Vural, 2013).

Edpuzzle's design directly incorporates these evidence-informed strategies, allowing educators to curate educational content while strategically inserting comprehension checks that promote active engagement with lesson material (Johnson, 2023). The platform's functionality extends to custom voice-over capabilities designed to enhance understanding while minimizing cognitive load, alongside editing tools that enable optimal lesson length through strategic content curation (Hibbert, 2014).

Emerging research on Edpuzzle implementation demonstrates promising outcomes across multiple educational metrics. Studies indicate the platform effectively enhances student motivation, engagement, and academic performance, with particularly notable benefits for



supporting low-achieving students in developing self-regulated learning skills (Álvarez-Álvarez & Mischel, 2024). Additional research in flipped classroom environments shows Edpuzzle usage correlates with more efficient class time utilization through reduced teacher explanation periods (Álvarez-Álvarez & Mischel, 2024).

Product Description

Edpuzzle is an interactive media platform that transforms how educators deliver video-based instruction by turning passive viewing into active learning experiences. This dynamic platform enables teachers to make content – including videos, slides, and quizzes – interactive by weaving in questions, commentary, and engaging elements at precisely the right moments throughout the material.

Teachers gain powerful customization tools that let them edit their assignments to fit their specific needs, such as adding audio notes or strategically placing different question types like multiple-choice or open-ended prompts. The platform's signature Edpuzzle Originals offer ready-made, expert-crafted lessons that align with common core standards while remaining flexible enough for teachers to adapt to their unique classroom requirements.

Edpuzzle provides comprehensive insight into student learning as well. Educators can see exactly how students interact with content by tracking viewing habits, identifying where students struggle, and measuring comprehension through embedded assessments. This data-driven approach supports meaningful differentiation and personalized instruction.

The platform's adaptability shines across diverse educational contexts, seamlessly fitting into flipped classroom models, distance learning scenarios, and traditional face-to-face instruction. Its compatibility with existing learning management systems means teachers can integrate Edpuzzle into their current workflows without disruption. Whether supporting elementary math concepts or high school literature analysis, Edpuzzle provides educators with the flexibility to meet students where they are and guide them toward deeper understanding across all grade levels and subject areas.

Study Description

To further examine the previous literature outcomes, Edpuzzle partnered with LXD Research, a third-party education research firm, to conduct an independent evaluation of their signature Edpuzzle Original Math videos (i.e. expert-developed standards-aligned video assignments) implementation within grades 3 to 5 in a California school district throughout the 2024-2025 academic year. Researchers employed a quasi-experimental design to compare growth in math performance on the end-of-year state assessment and from fall to spring using the Renaissance Star Math assessment. In addition to the student assessment data, LXD Research also



interviewed administrators and surveyed teachers to understand their perspectives of implementing their supplemental educational technology math resources. This comprehensive study contributes to the expanding evidence base regarding digital learning tool efficacy in upper elementary and middle school settings, specifically examining how Edpuzzle usage impacts student achievement in Mathematics across 3rd-5th grade.

Research Questions

This study investigates the effects of Edpuzzle Original Math video assignments on math achievement in upper elementary students, specifically grades 3-5. The goal is to determine whether supplemental, standards-aligned video assignments developed by Edpuzzle improve math outcomes. The study is guided by the following research questions:

1. What is the impact of Edpuzzle Original Math video use on standardized math assessment scores at EOY compared to no Edpuzzle Original Math video use in grades 3 through 5?
 - a. Is there anything interesting to note about the students with certain demographic profiles?
2. How did different usage levels impact outcomes on the standardized assessments? How did the number of Edpuzzle Original Math video assignments impact the formative and state assessments? How did the grades on the assignments relate to the state test at the end-of-the-year?
3. What feedback did educators have about the implementation of Edpuzzle Original Math videos? Why and when did educators use the videos with their students? What suggestions do they have for improvements?

Method

Research Design

The research employed a mixed-methods design that combined a matched quasi-experimental framework with asynchronous teacher surveys and interviews with administrators. This methodological integration enables researchers to examine classroom implementation of the materials, collect educator perspectives, and identify the program's perceived effects while simultaneously measuring academic outcomes.

Edpuzzle Original Math videos are being implemented in a rural school district in California, with a total of 12,703 students across 18 schools, 9 elementary, 3 middle schools, 4 high schools, 1 community school and 1 adult school. According to the California Department of Education, the district serves almost 26,000 students. The demographic makeup of the students includes 40.6% Hispanic or Latino, 34.8% White, 10% of students are two or more races, 5.7% Black, 3.8% Filipino, and 3.1% are Asian.



Participants

The student sample included 1,400 3rd-5th grade students across four treatment and four comparison schools in a large, diverse district in California. 300 students in the treatment schools used Edpuzzle Original Math videos and 1,100 served as comparison students. The two groups were baseline equivalent as shown in Table 1. The differential attrition percentage from BOY-EOY was 2% indicating that the number of students did not decrease substantially from BOY to EOY across treatment and comparison groups, as shown in Table 2. The student-level demographics were very similar across conditions, but there were some statistically significant differences, including percentage of Hispanic students, and percentage economically disadvantaged, as shown in Tables 3 and 4. See the Quantitative Analysis plans section for the procedure for selecting the analytic sample.

Table 1. Baseline Equivalence of the Analytic Sample

	N	Baseline Unified Math Score	SD	Mean Difference	Mean Difference / Pooled SD	Equivalent?
Comparison Group	1060	965.5	71.59	13.36	.19	.19 < .25 = Yes, Equivalent
Edpuzzle Originals Math Video Group	292	978.9				

Table 2. BOY-EOY Attrition for Analytical Sample

	BOY Unified Math N	EOY CAASPP N	Attrition %	Differential Attrition	Differential Attrition < 15%?
Comparison Group	1163	1100	5.4%	1.9%	2% < 15% = No differential attrition
Edpuzzle Originals Math Video Group	311	300	3.5%		



Table 3. Demographics of the Analytic Sample

	Female %	Economically Disadvantaged %	SPED %	ELL %	504 %
Comparison Group	53%	54%*	13%	22%*	2%
Edpuzzle Originals Math Video Group	48%	46%	12%	11%	3%

*p < .05

Table 4. Demographics of the Analytic Sample: Race/Ethnicity

	White (Non-Hispanic)	Hispanic	Multiracial	Black %	Filipino %	Asian %
Comparison Group	37%	41%*	10%	5%	4%	3%
Edpuzzle Originals Math Video Group	46%	27%	12%	5%	5%	5%

*p < .05

Implementation Description

For this study, four of the elementary schools were randomly selected to use Edpuzzle Original Math videos and the other four continued to use their business-as-usual supplemental math tools. The treatment schools were provided with free Edpuzzle training, webinars, and resources to learn how to incorporate Edpuzzle Original Math videos into their instruction. The district also prepared a resource linking their math Tier 1 curriculum and standards to various Edpuzzle Original Math video assignments to minimize teacher burden.

Teachers were instructed to try to implement at least two Edpuzzle Original Math video assignments per week, but participation was voluntary and, ultimately, up to the teacher to decide the consistency and how they would implement the assignments. To encourage implementation, Edpuzzle provided pizza party classroom incentives for the teachers who would assign the most videos throughout each month, starting in January 2025. To be eligible for this incentive, teachers had to assign a minimum of eight videos in the month to encourage the two per week implementation suggestion. The qualitative insights provide more description on how



the Edpuzzle Original Math video assignments were actually implemented in the classrooms during this study.

Measures

CAASPP

California Assessment of Student Performance and Progress ([CAASPP](#)) system includes the Smarter Balanced Summative Assessment for mathematics assessment at the end of every school year. According to the California Department of Education, the test is aligned with the Common Core State Standards for mathematics and measures progress toward college and career readiness for grades 3-8. The assessment leverages the advantages of computerized adaptive evaluation—streamlined and accurate measurement throughout the entire spectrum of performance with rapid delivery of outcomes (California Department of Education, 2025).

Renaissance Star Math Assessment

A formative assessment developed by Renaissance Learning (2025), [Star Math](#) for K-12 is an assessment tool for educators to understand their students' progress in order to prioritize differentiated instruction. Star Math, usually taken at the beginning, middle and end-of-year, includes scale scores and benchmark categories to identify math proficiency and provide recommended groupings for student intervention (Renaissance Learning, 2025). As it is an adaptive digital assessment encompassing domains such as numerical reasoning, algebraic concepts, geometric principles, and statistical interpretation (depending on grade level), the responsive design allows questions to modify based on learner responses, providing precise and streamlined evaluation.

Educator Survey

LXD Research distributed a 15-minute, asynchronous survey for the educators in both the treatment and comparison groups. The goal was to understand how teachers were implementing either Edpuzzle Original Math videos or the business-as-usual tools as well as to understand their perspective on the positives and challenges of using the tool. An incentive of \$20 was given to teachers who completed the survey within the two week timeframe and an additional \$30 was given to teachers who participated within the first week. The survey was distributed via email at the end of May and kept open until the first week of June.

Administrator Interviews

LXD Research requested nominations from district leadership on which district and school level administrators to interview to gain an overview perspective of implementing Edpuzzle Original Math videos in their school. LXD research interviewed three administrators, one digital education



coordinator, one curriculum coordinator, and one principal. Participants were given an incentive of \$50 for the one-hour interview. Interviews were conducted in May and June, depending on participant availability.

Analysis Plan

Quantitative Analysis

As Edpuzzle Original Math videos are a supplemental tool, LXD Research created a sample inclusion criteria of a teacher assigning at least 5 Edpuzzle Original Math video assignments in the fall semester to be included in the treatment group for the end-of-year outcome analysis. After identifying the students of these participating teachers, LXD Research created a matched sample with baseline equivalence between the treatment and comparison groups in fall 2024 using the matching frontier statistical software package within the R program.

To conduct our analysis of main effects, we conducted a series of ANCOVA analyses, with EOY CAASPP summative assessment as the primary outcome of interest, along with formative assessments and usage effects. These analyses used ANCOVAs with Star BOY baseline scores and relevant demographic variables as covariates. In addition, the ANCOVA model used cluster robust standard errors (CRSEs) to account for the effect of assignment to conditions clustered at the school level. Whereas an HLM/MLM approach would require a minimum of 30 level-2 units for unbiased estimates of fixed effects standard errors (Maas & Hox, 2005), ANCOVAs with CRSEs do not attempt to estimate variance components, and adjust standard errors empirically based on observed clustering (Cameron & Miller, 2015). Therefore, the CRSE approach was considered most appropriate for estimating clustering effects due to the relatively small number of schools in each condition.

As noted above, the primary outcome was the end-of-year (EOY) CAASPP Overall Scale Score. In addition to analyzing spring test scores, the same model was applied to several secondary outcomes: score gains from Fall 2024 (BOY) to Spring 2025 (EOY) and EOY Scale Scores on Star Math. The analysis also examined usage data, specifically analyzing the number of Edpuzzle Original Math videos and the grades on Edpuzzle Original Math video assignments relationships to EOY CAASPP Overall Scale Score. These models made it possible to assess the robustness of Edpuzzle Original Math videos' effect across multiple measures of student progress.

Qualitative Analysis

Interview transcripts underwent thematic examination to identify meaningful patterns. Preliminary coding revealed repeated elements related to implementation contexts, program outcomes, and barriers to execution. These codes were subsequently grouped into broader categories through



an ongoing process of evaluation and refinement. Representative quotations were chosen to illustrate key findings while preserving participant anonymity using role-based labels.

For the educator survey, summary statistics were computed for all Likert-scale questions, including averages and response patterns. Open-ended survey responses were examined through content analysis to identify recurring themes around implementation approaches, student advancement, and program modifications.

Findings from interviews and surveys were compared to identify any convergences or divergences in evidence between data sources. Areas of consistency between quantitative scores and qualitative feedback were explored to understand the complex nature of implementation experiences.

Study Results

Student Outcomes

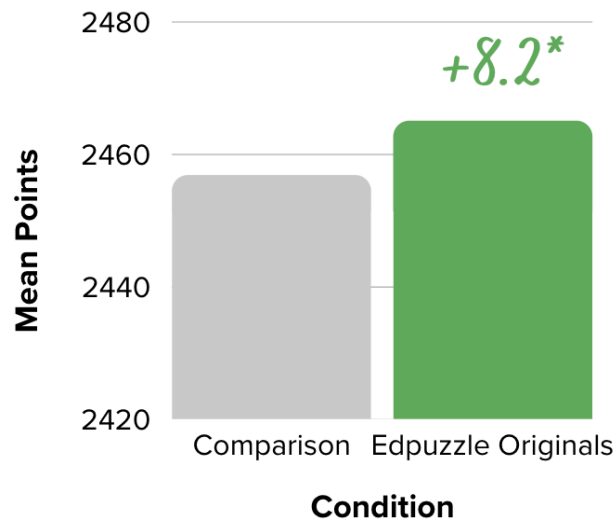
CAASPP

A one-way ANCOVA revealed a statistically significant main effect of Edpuzzle Original Math videos on spring CAASPP scale scores after controlling for baseline math scale score, age, and economic disadvantage; $F(1, 1368) = 5.77$, $p = .039$, partial $\eta^2 = .0051$, Cohen's d effect size = .14. Students in Grades 3-5 within the treatment group, completing Edpuzzle Original Math videos, had an estimated marginal mean of 2465.1 points while comparison 3rd-5th graders had an estimated marginal mean of 2456.9 points on CAASPP. The treatment group significantly outperformed the comparison group with an additional 8.23 points on the 2025 CAASPP ($p = .039$).

To contextualize this finding, the most recent year for which state average scores are available (2023-2024) showed that the expected annual growth in CAASPP Math scores for students in Grades 3-5 among 50th percentile students was 29 CAASPP points (California Dept. of Education, 2025). Therefore, the difference of 8.23 CAASPP points between treatment and comparison groups represents 28% of a school year, or 2.5 months of additional math gains on the state summative test (See Figure 1, below).



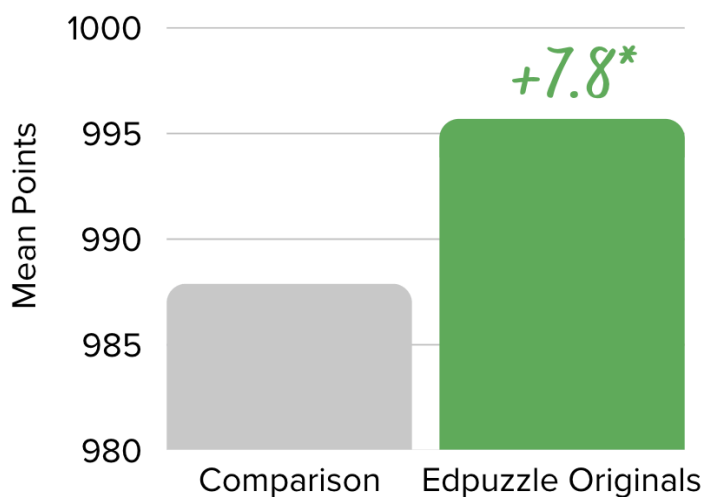
Figure 1. Spring 2025 CAASPP Mean Scores



Renaissance Star Math Assessment

Spring STAR Unified Math scale scores were significantly higher for 3rd-5th graders using Edpuzzle Original Math videos than the comparison group after controlling for baseline score and economic disadvantage. This analysis used cluster robust standard errors to account for the effect of clustering by school ($f(3, 1385) = 3.2$, $p = .02$, partial eta squared effect size = .008, Cohen's d effect size = .18). The comparison students scored, on average, 987.9 while the treatment group scored 995.7; an additional 7.8 points on the EOY Star Math assessment.

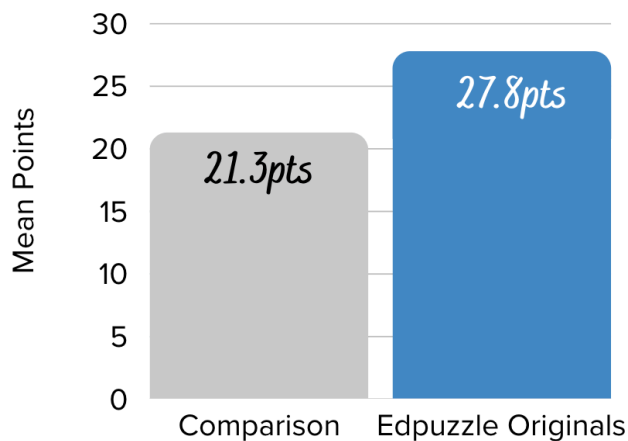
Figure 2. Spring 2025 Star Math Mean Scores





Likewise, Fall to Spring STAR Unified Math scale score growth was significantly greater for Edpuzzle Original Math video users (27.8 points) than the comparison group (21.3 points) ($f(2, 1385) = 7.3$, $p < .01$, partial eta squared effect size = .005, Cohen's d effect size = .14). This additional math growth of 6.5 points is equivalent to an additional 2.7 months of school for the Edpuzzle Original Math video group.

Figure 3. Fall to Spring Star Math Mean Score Growth

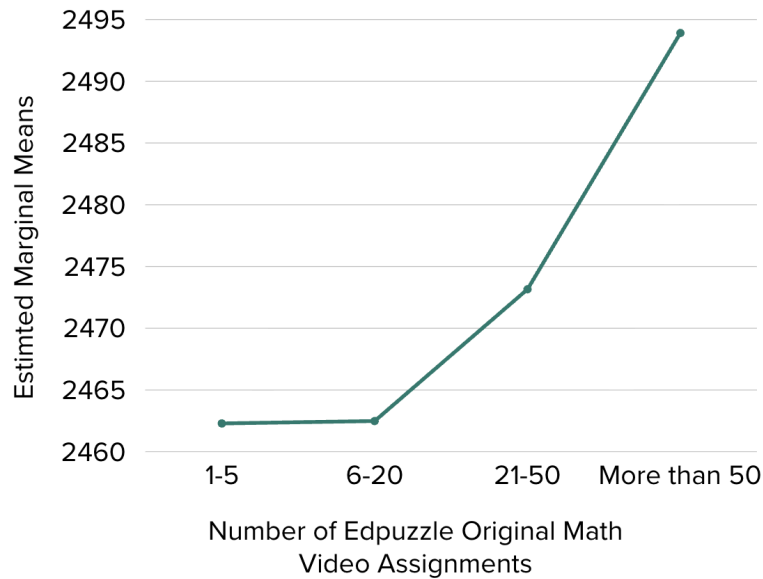


Supplemental Usage Findings

To understand how different usage levels impacted the Edpuzzle Original Math video group student outcomes, LXD collected and analyzed Edpuzzle usage data, including number of video assignments and grades on those assignments. The number of Edpuzzle Original Math video assignments was a significant, positive predictor of CAASPP state test scores, controlling for Fall Star Math Unified scale scores ($f(3, 271) = 5.0$, $p < .01$, partial eta squared effect size = .053, Cohen's d effect size = .47). *Figure 4* shows a consistent relationship between usage and outcomes. This ANCOVA analysis showed that students assigned more than 50 Edpuzzle Original Math video assignments over the course of the school year had significantly higher scores on CAASPP (on average, 32 points higher) than those who completed 1-5, $p < .001$. (See *Figure 4*, below).

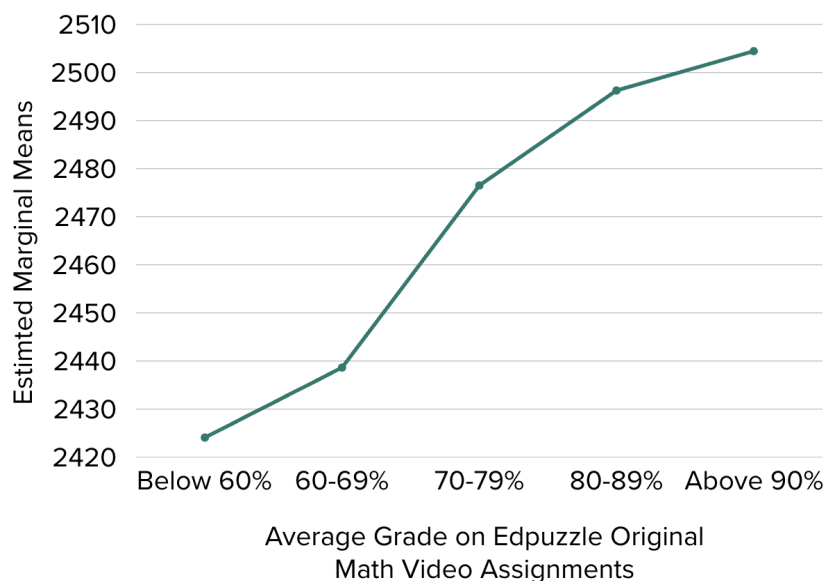


Figure 4. Number of Edpuzzle Original Math Assignments Correlations to CAASPP Scores



Additionally, LXD analyzed the relationship between students' grades on Edpuzzle Original Math video assignments and CAASPP scores. The EO Math video assignments grades were a significant, positive predictor of CAASPP scores, controlling for Fall Star Math Unified scale scores ($f(4, 253) = 17.0, p < .001$, partial eta squared effect size = .216, Cohen's d effect size = 1.05). Therefore, EO Math assignment grades appear to be a helpful indicator of a students' state test scores.

Figure 5. Grades on Edpuzzle Original Math Video Assignments Correlations to CAASPP Scores





Educator Feedback & Qualitative Insights

A total of 16 educators responded to the educator survey, 10 teachers who used Edpuzzle Originals and 6 comparison teachers who did not. Three administrators were interviewed, one digital education coordinator, one curriculum coordinator, and one principal. Hearing directly from the educators allowed LXD Research to understand the implementation practices of both Edpuzzle Original educators and comparison teachers. From the educator survey, educators who used Edpuzzle Originals were able to express their perceptions of program impact on student engagement and learning behavior as well as the impact on their own teaching and preparation for class time.

Implementation of Edpuzzle Originals

Most teachers (56%) integrated Edpuzzle videos at the beginning or middle of lessons rather than at the end, suggesting they see value in using videos to introduce or reinforce concepts rather than just for review. One teacher mentioned, "I used the Edpuzzle math videos when I wanted to reinforce a lesson or for students that needed extra help on a lesson." However, 44% of Edpuzzle Original teachers reported assigning them at the end, indicating a mix of integration preferences. One 5th grade teacher mentioned, "It's also really great for review towards the end of the test, to like kick key components, make sure they have all the steps mastered before we take the final assessment".

Furthermore, all Edpuzzle Original teachers (100%) implemented the videos as independent desk work, underscoring its dominant use as a self-paced learning tool. Comparison teachers primarily used YouTube, Go Math, and Khan Academy, to name a few. Comparison teachers mentioned using these video platforms in a similar way, at the beginning or end of a lesson, but emphasized needing more content and having more user friendly platforms to navigate.

Impact of Edpuzzle Originals

When asking educators about the perceived impact of using Edpuzzle Original Math videos on student learning and engagement, 56% of teachers reported improved student understanding, with this benefit being strongest among 4th grade (100%) and 3rd grade (67%) teachers. Teachers specifically praised the visual elements and step-by-step explanations. One teacher added, "I think that the students love the animation as well as the clarity and practice questions that they were given to assess whether or not they understood what they were doing".

All teachers agreed that using Edpuzzle Original math videos had helped to decrease learning gaps for their students. Refer to Figure 6 for more information on the teacher's perceived impact of using Edpuzzle Original Math videos on their students' learning. District administrators agreed that using Edpuzzle Original Math videos was making an impact on student learning within the



classroom as one administrator said, “[Students] just weren't getting it, and the Edpuzzle solidified the concept. I’m telling you that I got shivers because I was like, oh, my goodness, this is exactly why we use technology”.

Teachers also valued the program for its impact on their preparation for class. Teachers reported significant time savings and reduced planning burden, with 78% agreeing that Edpuzzle made it easier to assign quality content. As teachers said, "It is an easy way for teachers to differentiate content to students across ability levels, and it decreases the amount of time required for planning and grading". However, the benefits varied by task type as seen below in Figure 7.

Figure 6. Teachers using Edpuzzle Original Math Videos Agreement with Statements about Student Impact

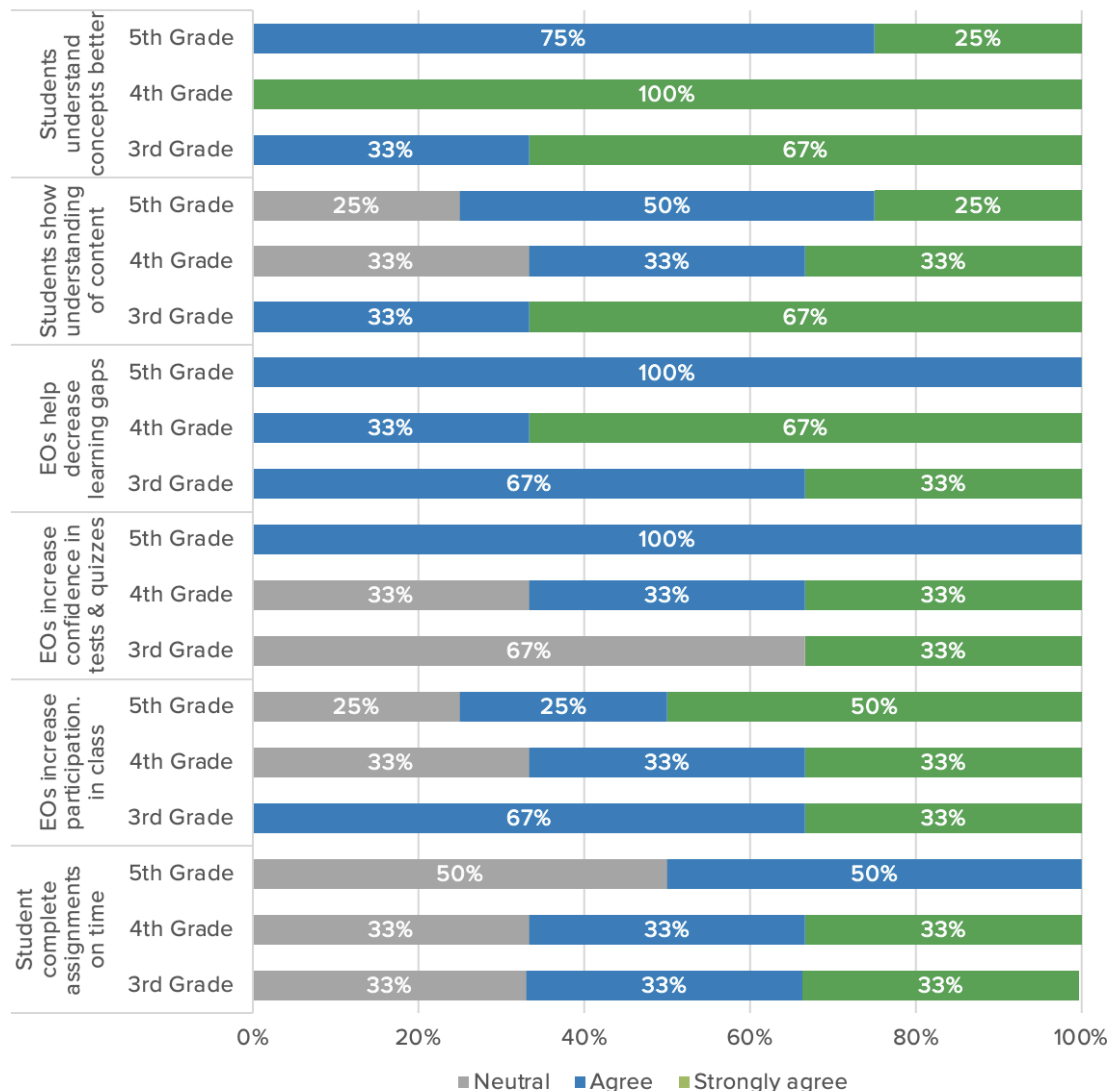
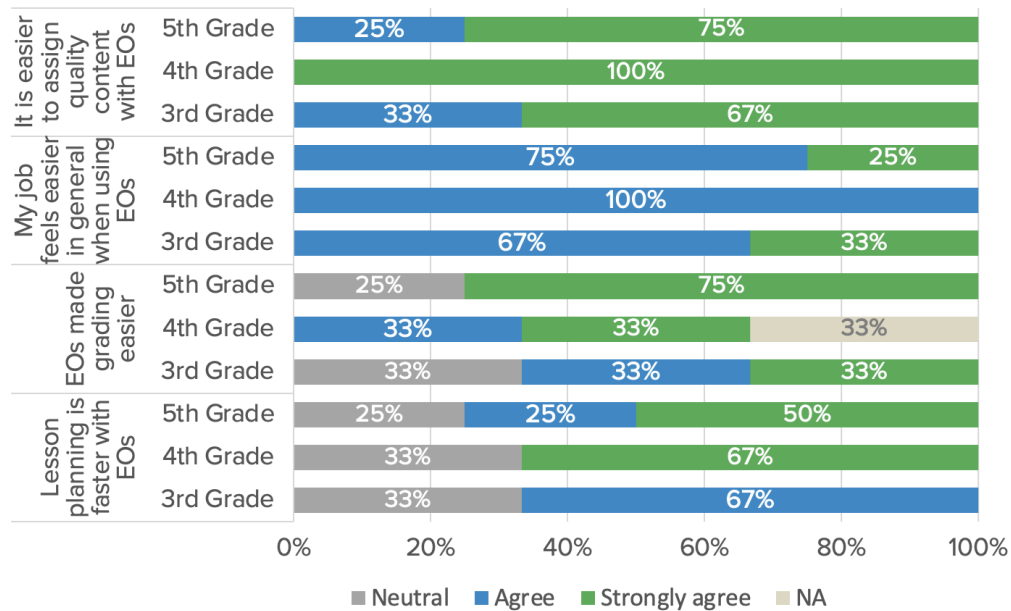




Figure 7. Teachers using Edpuzzle Original Math Videos Agreement with Statements about Teacher Impact



Overall, teachers and administrators emphasized the potential of using Edpuzzle Original Math videos as an impactful supplemental tool to core math instruction. As one teacher commented, "They are the perfect companion to good math instruction".

Discussion

This mixed-methods study provides compelling evidence that Edpuzzle Original Math videos serve as an effective supplemental tool for elementary mathematics instruction in grades 3-5. The treatment group showed meaningful gains on both state summative assessments (CAASPP) and formative assessments (Renaissance Star Math), with effect sizes of .14 and .18 respectively. The relative difference in math outcome scores, as measured in additional equivalent months of growth, was virtually identical as indexed by state CAASPP summative scores (2.5 months) and fall to spring Star math scores (2.7 months). This notable consistency of findings on distinct math outcome assessments adds to our confidence that the reported impacts of Edpuzzle Original Math videos on math outcomes are meaningful and reliable.

The qualitative findings reveal important implementation insights, with grade-level variations suggesting adaptable pedagogical applications. Third-grade teachers primarily used videos for skill reinforcement, fourth-grade teachers emphasized visual support benefits, and fifth-grade teachers focused on review and mastery preparation. All treatment teachers implemented videos as independent desk work, though implementation timing varied, with 56% using them at lesson



beginnings or midpoints versus 44% at lesson endings. Teachers reported significant benefits for preparation and classroom efficiency, with 78% agreeing that Edpuzzle made assigning quality content easier and 100% expressing intent to continue using the platform despite limited formal training. The finding that significant benefits emerged for students receiving more than 50 video assignments over the school year provides practical guidance for optimal implementation (approximately 1.5-2 assignments per week).

The study's naturalistic implementation approach provides ecologically valid evidence, with successful implementation across diverse school contexts indicating broad potential for educational impact. However, teacher requests for expanded content coverage in areas like fractions and inverse operations, along with improved video navigation features, identify opportunities for platform enhancement. The mixed-methods design, baseline demographic equivalence, and low differential attrition rates support confidence in the generalizability of findings to similar elementary school populations while demonstrating that well-designed, curriculum-aligned video content can meaningfully supplement traditional instruction without requiring extensive pedagogical changes.

Limitations

The usage level of Edpuzzle Original Math videos in the classroom was at the educators' discretion, as was their decision to participate in LXD surveys and interviews. Although this may have led to some bias in the teachers who were identified as using EOs at the highest levels, this approach provided a more naturalistic example of Edpuzzle usage, and still provided robust results when complemented by the main effect of assignment to the Edpuzzle condition.

Conclusion and Next Steps

In conclusion, the consistency of significant findings across distinct assessment instruments (CAASPP and Star Math) strengthens confidence in the reliability of these positive outcomes of adding Edpuzzle Original Math videos as a supplemental math instructional tool. These results align with previous research on video-based learning while extending evidence to elementary mathematics, where the platform's incorporation of evidence-based design principles appears particularly beneficial for supporting individualized learning experiences. Next steps would include continuing to understand how Edpuzzle Originals are implemented in the classroom, differences between grade levels, and what type of implementation and dosage yields the biggest impact on student learning.

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