Rapid-cycle Evaluation:

An Efficient, Cost-effective Path to Understanding EdTech Value

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Every year, U.S. schools and districts spend billions on edtech product licenses. With such a large investment, schools and districts should examine whether edtech products have a positive impact on student achievement.

However, school systems have systemically lacked the tools and resources necessary to enable educators and administrators to conduct regular, practical evaluations of edtech effectiveness.

The Status of Evidence-based Edtech

In the 2020-21 school year, K-12 U.S. school districts accessed 1,449 different edtech products every month on average – more than double the 2019 average (***LearnPlatform, 2022***). The massive transition to remote and hybrid learning in March 2020, compounded with the unprecedented $170 billion from the Elementary and Secondary School Emergency Relief Fund (ESSER), demonstrates an overwhelming challenge for districts who need strong evidence and a way to drive decisions.

ESSER and American Rescue Plan (ARP) stimulus guidance **outlines categories of allowable and encouraged expenses** for these funds, including evaluating that interventions are equitable, safe and effective for various student groups.

Now is a critical time for education organizations to take stock of their edtech ecosystems and ask: **are technology tools safe, equitable and working for all our students, teachers and budgets?**

Limitations of existing edtech research for K-12 contexts

There are several limitations in applying existing edtech research in schools. First, few edtech product providers have research on their products. Only 59% of product providers offer any evidence backed by research, and only 7% of this research is considered to be high-quality *(Hulleman, Burke, May, Charania, & Daniel, 2017)*. Second, many education research studies are efficacy studies with limited applicability on a broad scale. Efficacy studies are conducted by researchers in tightly controlled settings, whereas effectiveness studies are implemented in real-world settings and conditions. This distinction is important because program impacts are smaller in effectiveness versus efficacy studies *(Crone et al., 2019)*. As a result, when districts examine existing edtech research, they may have questions about how findings apply to real-world, K-12 settings.

EFFICACY

How does an intervention perform under tightly controlled, ideal settings?

EFFECTIVENESS

How does an intervention perform in real-world conditions?

Pilot studies, provider assessments and feedback as foundational evidence

Instead of reviewing existing research, education leaders may conduct edtech product pilots. While pilots serve as a starting point for evidence, they do have some limitations. District pilots often examine gains in student learning along with teacher perceptions of product effectiveness *(Adams-Bass, Atchison, & Moore, 2015; Luke & Francisco, 2016)*, but learning gains offer questionable insights. First, if there is no comparison group of students who did not receive the intervention, educators cannot conclude that use of an edtech product caused higher student achievement or learning gains. Students regularly experience annual achievement gains, particularly

in the early elementary school years *(Bloom, Hill, Black, & Lipsey, 2008; Scamacca, Fall, & Roberts, 2015)*, and an array of factors could be responsible for the results (e.g., engaging teachers, positive school culture).

Second, edtech product providers may provide districts with internal assessment data as evidence of student learning gains. These internal assessments are often only given to students who receive the edtech intervention (i.e., treatment group) and, as a result, learning gains cannot be directly attributed to the edtech product. There are also potential concerns about overalignment of the edtech intervention with the providers' internal assessments *(Institute of Education Sciences, 2017)*. For example, students who use Product X might perform much higher on a Product X assessment than students who do not use Product X. In this case, there is a potential overalignment between Product X and the Product X assessment. As a result, when examining edtech impacts, districts should include a comparison group who did not receive the edtech intervention and examine student achievement and other educational outcomes distinct from those offered by edtech product providers.

Many school districts also collect teacher feedback on edtech products as another source of evidence. Administrators can (and should) take teacher feedback into account when making edtech decisions, as it is useful data. However, if teacher feedback is unstructured and anecdotal, it should be considered alongside more rigorous studies to balance data points.

Empower Educators

LearnPlatform's grading rubric is designed to give educators the ability to objectively provide insights into the edtech tools they use and how they're working for students.

Learn More

Rapid-cycle Evaluation as a Solution

Rapid-cycle evaluation (RCE) generates practical, relevant evidence that administrators and educators use to make more data-informed decisions. RCE is a formative decision-making process that can reveal actionable, credible insights more quickly than traditional evaluation. The evidence helps K-12 leaders understand how edtech is working for their own students and teachers.

Practical for K-12 settings

Like traditional evaluation, RCE allows decision makers to examine edtech impacts within their local context. Rather than reviewing available research to determine whether an edtech product might be effective for their students, administrators use RCE to examine whether an edtech product is effective for their own groups of students. Schools implement edtech products differently, with varied student populations and available resources – as a result, contextual differences can directly impact the utility of an edtech intervention *(Derzon, 2018; Jefferson Education Exchange, 2017)*. Furthermore, edtech products will not have a universal impact on all participants, even within a particular school or district *(Cody, Perez-Johnson, & Joyce, 2015)*.

RCE allows for the examination of overall program effectiveness across an organization, as well as within student demographic groups, so that K-12 leaders can delve into who edtech products are working for, and use those success points to guide improvements.

How It Works: Rapid-cycle Evaluation Use Cases

A **school district technology director** wants to understand if spending more time on Product X is related to higher student achievement. They also wanted to see if students are meeting prescribed usage goals.

Research Question

Does greater use of Product X relate to higher student achievement on X local assessment?

Results

Certain grade levels not reaching the usage goal, and the district's lowest-performing students using Product X more had greater achievement on the local assessment.

What Happens Next?

- Work to increase product use in some grade levels.
- Gather teacher feedback to draw on multiple data points, seeing if these insights support the analysis.
- Continue running RCEs in regular intervals to see whether time spent using Product X has increased and/or the Outcomes Analysis results have changed.

Types of Analyses

1. Outcomes Analysis without a Comparison Group
2. Usage Analysis with Fidelity

Data Needed

Student demographic data, product usage data, achievement data from two time points

A district has multiple products that are designed to meet similar needs. The **curriculum and instruction director** **wants to determine if the district should continue to implement and support all products, and for which student groups.**

Research Question

Is Product X or Product Y more effective for a particular student group?

Results

Product X is more effective than Product Y for this student group.

What Happens Next?

- Transition this student group to Product X, and increase support and resources across the district.
- Gather teacher feedback to draw on multiple data points, seeing if these insights support analysis.
- Review budget and overall district test scores.
- Run more Outcomes Analyses with different achievement measures, products and/or student groups.

Type of Analysis

Outcomes Analysis with a Comparison Group

Data Needed

Student demographic data, product usage data (with recommended usage goal if possible), achievement data from two time points

Iterative research and actionable insights

Unlike traditional evaluation methods, RCE involves a repeated examination of edtech product effectiveness under different implementation conditions. RCE allows educators to develop a research question about an edtech product, test it, review the findings, investigate success points and make changes to their implementation to improve outcomes for all students *(Finucane, Martinez, & Cody, 2018; Johnson, Gustafson, & Ewigman, 2015)*.

For example, in an initial RCE, a principal might observe that an edtech product has been more effective for their fifth grade students compared to their fourth grade students. After discussions with teachers, the principal learns that the fourth grade teachers had Internet connectivity issues and remedies the issue. Several months after the issue was removed, the principal runs another RCE to formatively examine changes in student achievement.

This repeated refinement and examination of research questions is a type of formative evaluation. Traditional evaluations can be formative or summative, with summative evaluations focused on asking: "Did a product work?" Formative evaluations, by contrast, allow education leaders to dig deeper into understanding what components of an edtech implementation are working in their contexts (i.e., identifying success points; *Solmeyer & Constance, 2015*). Ultimately, formative evaluation results within RCE can provide actionable insights on where to revise implementation to promote more positive outcomes.

formative evaluation

monitor learning and provide ongoing feedback to staff and students

Think: What worked in what context?

summative evaluation

evaluate learning at the end of an instructional unit by comparing it against some standard or benchmark

Think: Does this product work?

Multiple perspectives to promote informed decisions

RCE is a game-changer because it directly empowers education decision makers to examine edtech product effectiveness without paying for a costly traditional evaluation. Educators can regularly review their own data and identify success points within their local context to drive student success *(Schneeweiss, Shrank, Ruhl, & Maclure, 2015)*. RCE also allows for multi-faceted perspectives, as educators can examine edtech product impacts across an array of outcomes (e.g., student achievement, engagement, cost effectiveness) and subsequently, have greater confidence in their results and decision making *(Schneeweiss, Shrank, Ruhl, & Maclure, 2015)*.

Affordable and offers timely, evidence-based feedback

Rapid-cycle evaluations are designed to support school leaders in making evidence-based decisions about their edtech. Traditional evaluations do not always meet the need of evaluating rapidly changing education technology – they are costly and time-intensive. A traditional evaluation of a single edtech product that uses school or district data may cost a minimum of $30,000-$40,000 and take at least three months for evaluators to prepare data, analyze it, and report the findings. Furthermore, large-scale edtech product evaluations, conducted by an external evaluator, may cost over $200,000 and take 2-3 years. While they make sense in some settings, traditional evaluations serve a different purpose than most K-12 leaders need.

RCE, by contrast, offers edtech product evaluation at a fraction of the cost and time. If districts already have data available, RCE allows for data preparation, analysis and reporting in weeks instead of months or years *(Cody, Perez-Johnson, & Joyce, 2015)*.

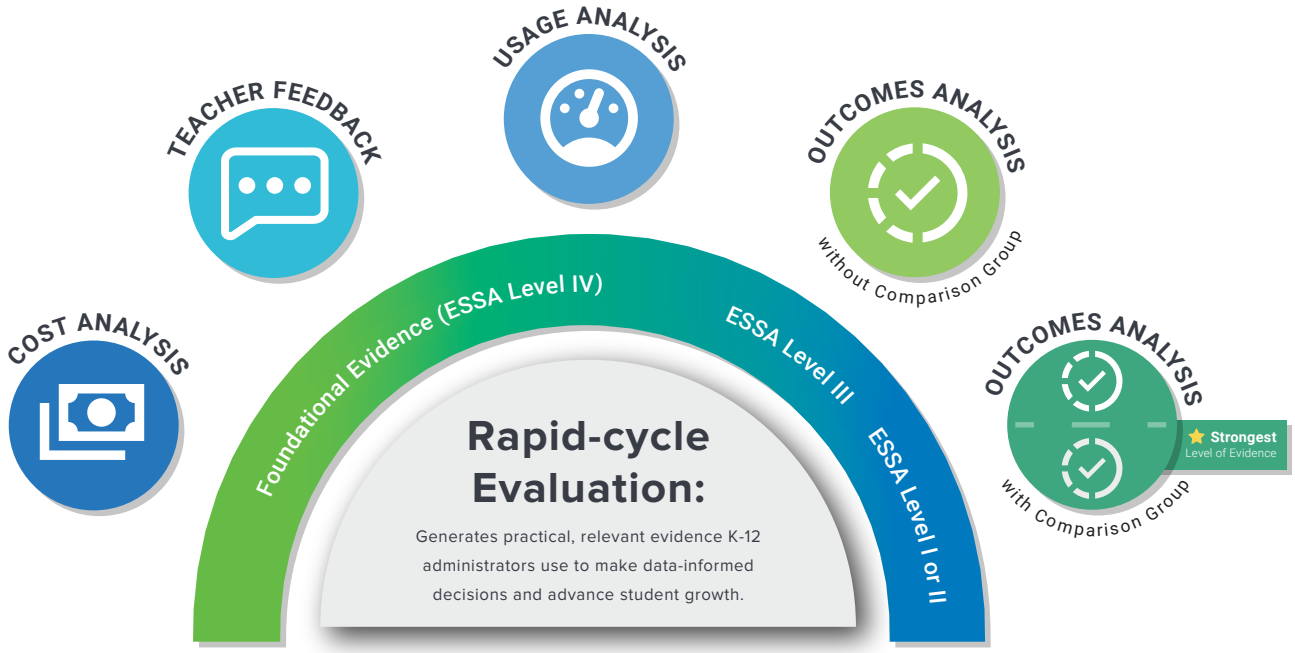
Being able to obtain insights quickly is crucial because edtech products are regularly being updated and study findings from several years ago are outdated *(Roberts, Kennedy, & Kinard, 2017)*. When decision makers have more actionable insights, they are confident in their evidence-based decisions, from vetting and implementation to purchasing and renewal *(Schneeweiss, Shrank, Ruhl, & Maclure, 2015)*.

Comparing Types of Evaluation

Large-scale product evaluations	**$200,000+**	**2-3 years**
Traditional evaluation (of one product)	**$30,000 - $40,000** *minimum*	**3+ months**
Rapid-cycle evaluation using IMPACT™	**$5,000 - $15,000**	**<4 weeks** *for a single cycle*

Results specific to local contexts

Traditional evaluations require an evaluator for research question development, data collection, analysis and reporting, whereas every step of the RCE process can be conducted by K-12 administrators. Online RCE tools offer educators the opportunity to independently conduct their own RCEs. One example is **LearnPlatform's rapid-cycle evaluation engine, IMPACT,** which offers rapid analysis and reporting of edtech data with and without comparison groups. The LearnPlatform team also supports educators with research question development, data cleaning and preparation, running analyses and viewing reports through IMPACT, and interpreting results.



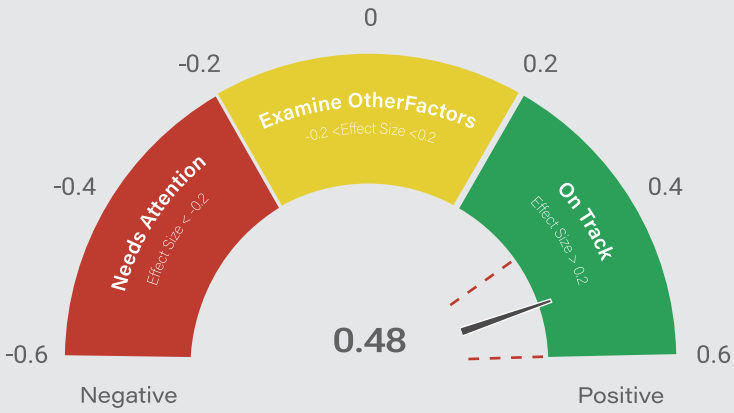
Credible and valid insights into edtech effectiveness

RCE and traditional evaluations both offer credible and valid insights into edtech effectiveness. While RCE can be conducted without a comparison group, designs that utilize a comparison group **offer the strongest evidence** of product impacts. A comparison group is essential to understanding how students would have performed without the edtech product *(Cody, Perez-Johnson, & Joyce, 2015; Derzon, 2018; District Reform Support Network, 2016)*. As mentioned previously, if there is no comparison group, administrators cannot conclude that use of an edtech product caused higher student achievement.

Given the large annual investment in edtech products, educators should be empowered with additional solutions for understanding edtech impact. RCE offers a practical approach for educators to understand effectiveness and confidently make evidence-based decisions about their edtech products.

Running RCEs Using IMPACT™ Technology

Rapid-cycle evaluations using IMPACT generate relevant evidence administrators and educators use to make more data-informed decisions. The evidence helps districts recognize what's working best for which students and teachers in their contexts. By running rapid-cycle evaluations using IMPACT, district administrators can more efficiently assess the efficacy of their digital tools for their current student groups.



Schedule a Demo

Learn How Rapid-cycle Evaluation Could Work for Your Organization

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