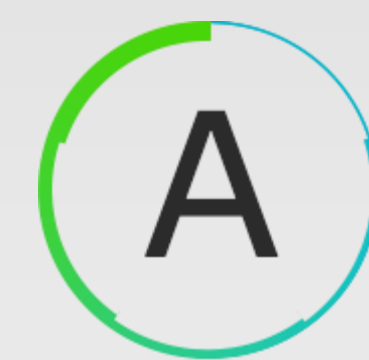# Educational Technology: What 49 Schools Discovered about Usage when the Data were Uncovered

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INTRODUCTION

Abstract

Educational technology (edtech) products are ubiquitous in schools, yet there is a dearth of research examining their use and efficacy. This leaves schools and districts without evidence to inform important decisions about edtech budgeting, instruction, impact, and implementation. We report results from a study that uncovered startling trends in edtech usage across multiple paid products and dozens of schools. Notably, 36.6% of purchased student licenses were never used. An additional 28.2% of the licenses were used negligibly, failing to meet a quarter of the fidelity goal set by the product companies or districts. Further, anecdotal evidence suggests school- and district-level leaders are unaware of these realities. This suggests a vast amount of resources are being unknowingly squandered or misallocated. Combined with analysis of how product usage impacts student achievement, these results demonstrate how schools and districts can utilize data to understand and manage their edtech ecosystems while improving critical edtech decisions.

Theoretical Rationale

- Edtech is ubiquitous
- Billions are spent annually on edtech
- Edtech is supposed to transform education
- Lack of systematic ways to monitor implementation
- Thus, the persistent implementation gap
- Systemically low implementation fidelity
- Problem: Students are using or benefitting from edtech

Research Questions

RQ 1: What percentage of students are meeting the recommended dosage?
RQ 2: Are usage patterns consistent across products?
RQ 3: Are usage patterns consistent across schools?

METHOD

Sample and Procedures

Sample: Over 17,000 students from a diverse set of schools—49 K-12 schools in multiple districts and states.

We examined data on product usage collected during the 2014-2015 academic year, covering 6 well-known digital math and literacy tools. Each product was used for primary instruction (rather than supplemental), and ranged in price from $16 to over $100 per student, per year.

Measures

Based on published dosage recommendations, our analysis into edtech product usage examined whether students:

- Never used the product
- Used the product but failed to meet even 25% of the recommended dosage
- Met 25% of the recommended dosage
- Met 50% of the recommended dosage
- Fully met the recommended dosage

Analytical Strategy

The analysis involved descriptive statistics on the extent to which students used product licenses. Each of the 6 products prescribe a specific amount of student usage, often called the recommended dosage. In other words, these products have predetermined metrics for usage goals (e.g., time logged in, progress through syllabus, number of lessons passed) intended to promote marketed outcomes. Based on these measures, we analyzed the extent to which students met certain expectations, and extrapolate findings to infer broader implications of these findings on edtech implementation, product efficacy, and budgetary decision making.

RESULTS

Summary

We found consistent patterns of usage across the schools and across the products. The main finding: 36.6% of purchased product licenses were never activated. An additional 28.2% of students activated their license, but did not use the product enough to meet even 25% of the established goal. Thus, approximately 64.8% of students exhibited zero or trivial use. Moreover, only 5.2% of students actually received the full recommended dosage (Figure 1; see Figure 2 for a breakdown of use by product). In summary, schools are paying significant amounts of money for products that students are not using.
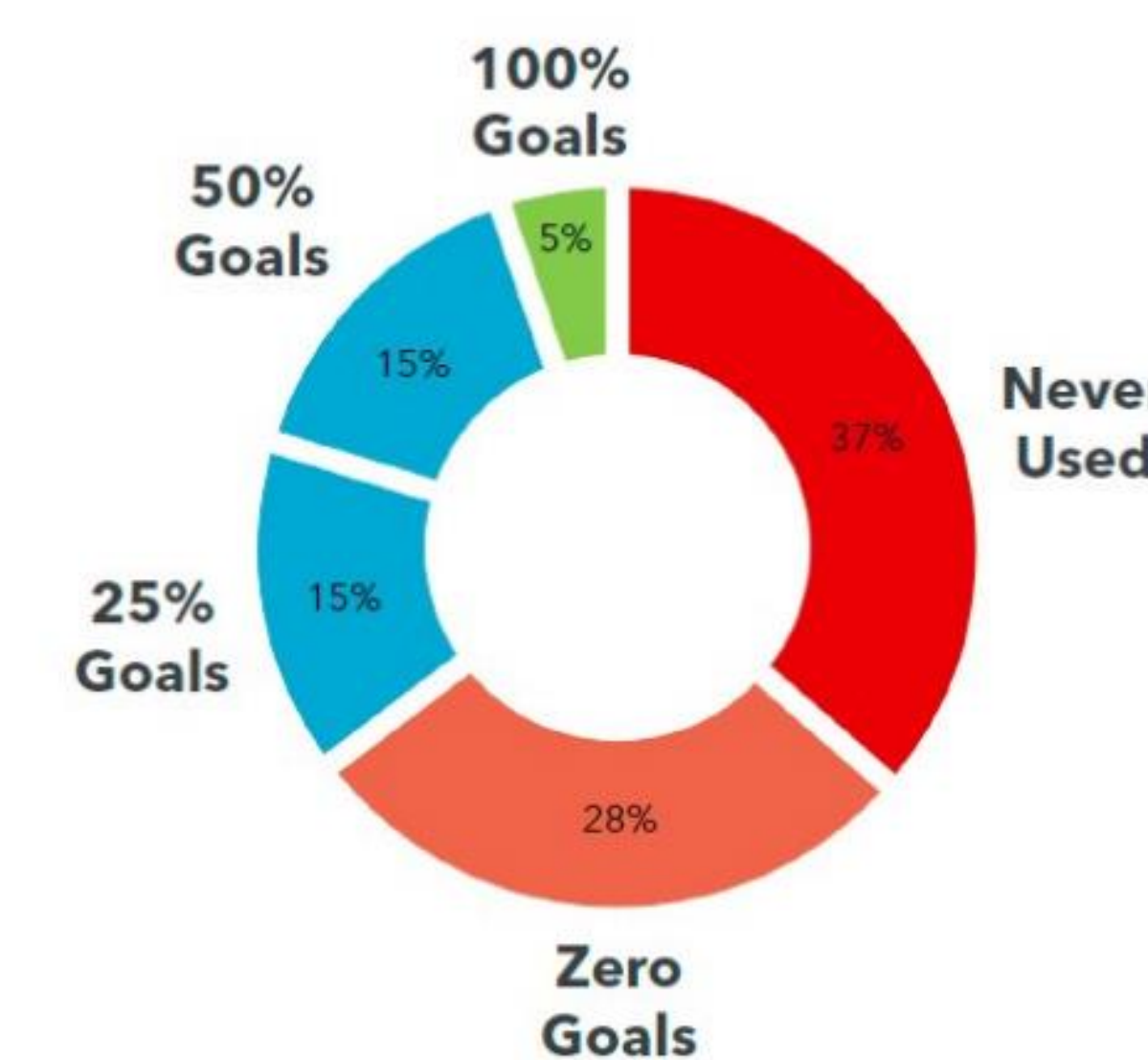
Figure 1. Percent of paid product licenses meeting dosage goals.
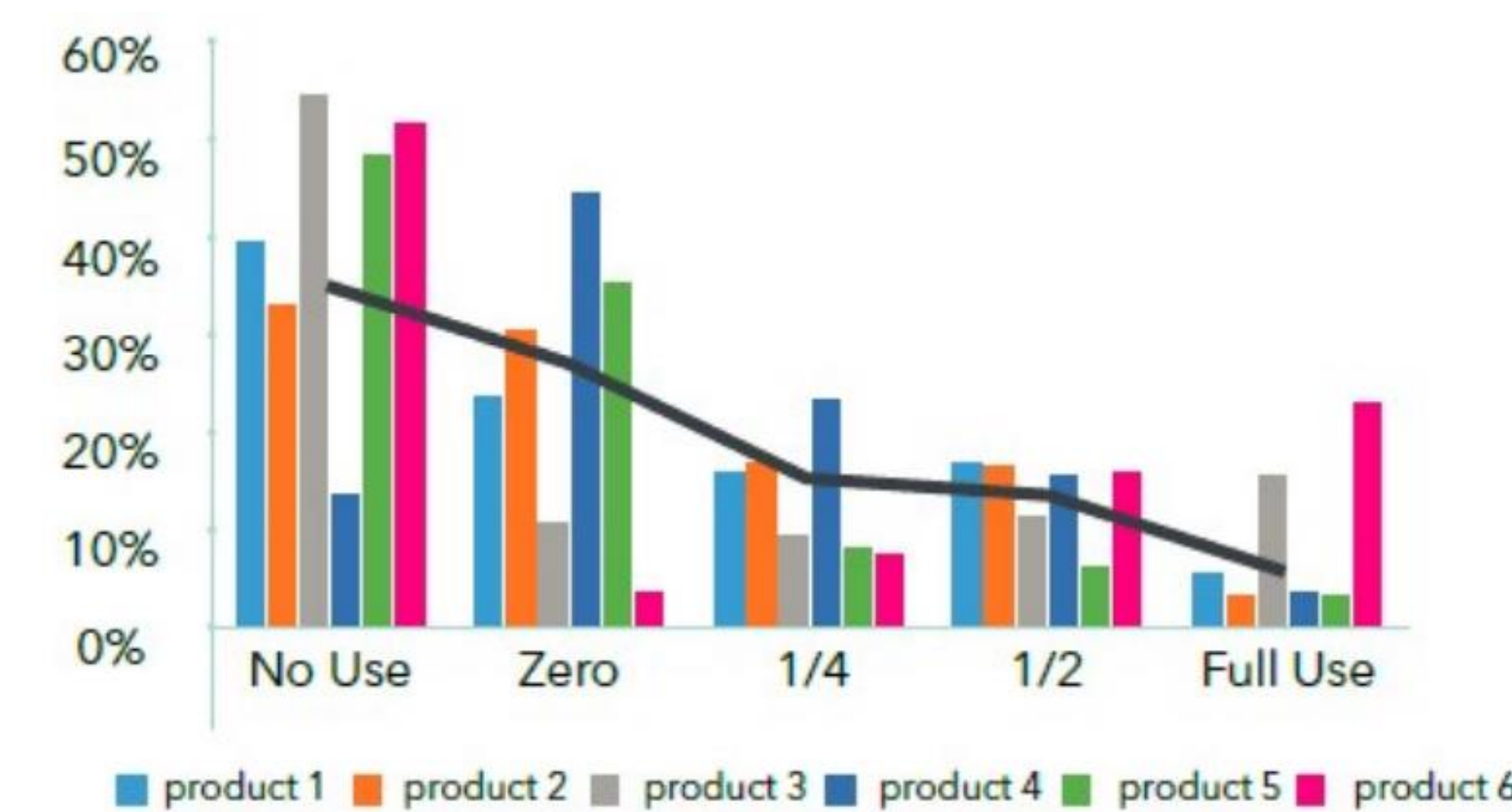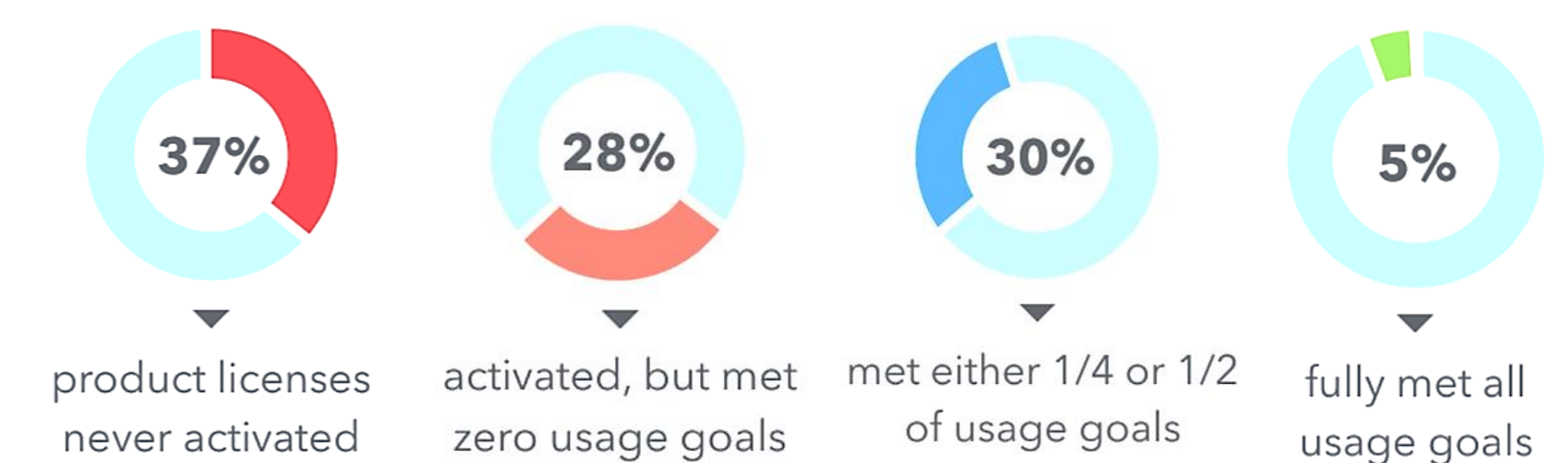
Figure 2. Paid product licenses meeting dosage goals by product. (Product names undisclosed for sake of anonymity.)

DISCUSSION

Main Findings

A similar pattern emerged across multiple core products and across multiple states and districts: Edtechs were severely underused.

Results support research and anecdotal evidence that suggests a systemic lack of implementation fidelity.

- **37%** product licenses never activated
- **28%** activated, but met zero usage goals
- **30%** met either 1/4 or 1/2 of usage goals
- **5%** fully met all usage goals

Practical and Theoretical Implications

- Implementing edtech creates opportunities and challenges
- Understanding the factors that impact implementation can increase the likelihood of success
- Using a system that enables real-time monitoring of edtech usage and efficacy can maximize the benefit that edtech offers to students and teachers
- There are obvious impacts on budget: By extrapolation, of the billions of dollars spent on products, nearly 65% of paid-for licenses are never even used

Conclusion

The consistent patterns of non-usage across edtechs offers a massive opportunity to improve a complex but immensely valuable system. Improving implementation fidelity will maximize resources, but more importantly it will improve teaching and enhance student learning for billions of educators and students across the globe.

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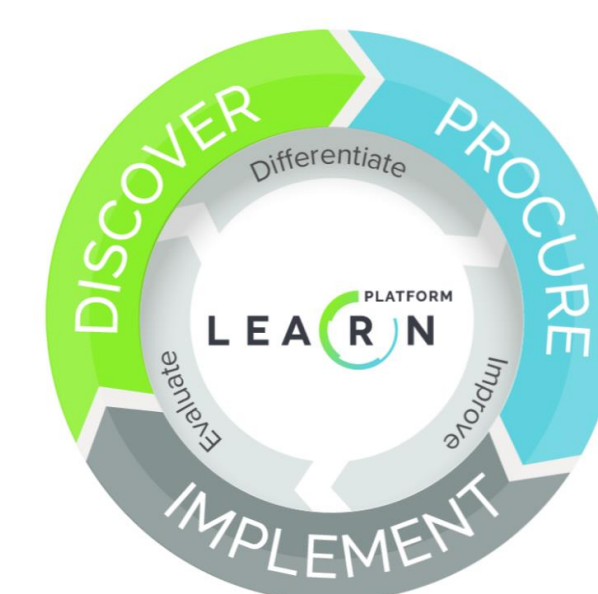
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