



POLICY BRIEF

EDTECH EFFICACY AND EFFECTIVENESS FRAMEWORKS

Consolidated Benchmark

Key Insights

- There is an urgent need for research-based evaluation standards in the EdTech market to assess impact on learning outcomes.
- A consolidated benchmark is required to assess individual EdTech solutions and the strength of their evidence, given the numerous existing evaluation frameworks.
- Focusing on 'Efficacy' and 'Effectiveness', the consolidated benchmark evaluates the impact of EdTech on learning. It is a flexible rubric, reflecting the dynamic nature of the EdTech market.
- This benchmark underscores the importance of evidence in aligning EdTech investments with proven impacts on student learning. It also highlights the need for considerable investment in evidence production and regulation.

Education Technology (EdTech) has shown great potential in enhancing learning and teaching. However, in the COVID19 aftermath, experts recognised an urgent need to scientifically evaluate the effectiveness of EdTech on students' learning. This evaluation is crucial as the K12

EdTech sector is attracting significant investments from private, government, and philanthropic sources. With the increasing use of AI in EdTech, it's essential that these technologies are backed by solid research showing they truly help students.

Diverse evaluation frameworks are available, developed by diverse groups and stakeholders – including experts, researchers, and clearinghouses. However, the field still lacks a consensus and a consolidated benchmark of “**what works**”. There are five key impact dimensions for understanding evidence quality in EdTech: Efficacy, Effectiveness, Ethics, Equity and Environmental outcomes (Kucirkova, 2023). **Efficacy and Effectiveness are critical** in assessing impact on learning outcomes. Though the terms are often used interchangeably, and both efficacy and effectiveness studies provide useful insights into how an EdTech works in relation to specified learning outcomes, there is a distinction to be made. Efficacy study would typically be carried out under ideal and controlled circumstances, whereas effectiveness studies refer to use under “real-world” conditions.

The ‘Consolidated Benchmark’ of ‘EdTech Efficacy and Efficiency Frameworks’ (Kucirkova & Cermakova, 2024) is based on a systematic literature search for frameworks that target the efficacy and/or effectiveness of teaching and learning of K12 EdTech products. Sixty-five frameworks were analysed in relation to their methodological rigour and use of the science of learning principles embedded in EVER (EdTech Evidence Evaluation Routine; Kucirkova, Brod & Gaab, 2023). The results were synthesised into a consolidated benchmark categorising the frameworks at three levels, see Table 1.

Table 1: Consolidated Benchmark

Consolidated Benchmark	Level 1	Level 2	Level 3
EVER score	1-2	3-4	5
Examples:	Conceptual studies Effectiveness	Effectiveness → Efficacy	
ESSA Tiers of Evidence	Tier IV	Tier III & II	Tier II & I
NESTA Standards of Evidence (2020)	Level 1 and 2	Level 1 and 2	Level 1 and 2

Table 1 includes two example frameworks: the US ESSA ‘Tiers of Evidence’ which are mapped onto the three levels of the consolidated benchmark and the Nesta Standards of Evidence, which assess both the impact and innovation potential of EdTech solutions.

The consolidated benchmark is a valuable tool for evaluating any EdTech type. It uses available frameworks to understand the wider context of each framework, such as its capacity for measurable and verifiable impact of efficacy/effectiveness, and at what level. In the dynamic landscape of educational technology, this benchmark facilitates informed decision-making– it can help both funders and developers to align investments with documented impacts and tailor solutions to learners.

However, it cannot address the issue of limited evidence of impact within the EdTech sector. The broader EdTech ecosystem needs meaningful support mechanisms and a combined effort from government, philanthropy, and private-public partnerships for funding this research and setting effective regulations.

References

- Kucirkova, N. (2023). How can philanthropy catalyse a system-wide change in EdTech? *Alliance* magazine, 15 March 2023. Available at: <https://www.alliancemagazine.org/blog/how-can-philanthropy-catalyse-a-system-wide-change-in-edtech/>
- Kucirkova Ingebretsen, N. & Lindroos Cermakova, A. (2024). *Consolidated Benchmark for Efficacy and Effectiveness Frameworks in EdTech*. University of Stavanger.