



## WiKIT's pledge to the EdTech Ecosystem

Converging evidence from research, government and industry reports shows a disconnect between Educational Technology (EdTech) research and school and business practice. The global consensus is that to transform education, the EdTech ecosystem needs a collective change. The contrast between the lack of EdTech evidence base and its unwarranted explosion across the globe are the priority for the next decade. Key lever in the systemic change in the global EdTech ecosystem is acceleration of EdTech evidence.

### *Why do we need evidence in EdTech?*

Increasing number of [reports](#) show the gap between the rhetoric of EdTech transforming education and the reality of its learning impact. Although widely used, popular EdTech products lack research-based learning principles, which has negative consequences for education. Our research shows even more worrying trends: popular digital books harm children's [reading development](#), and most popular apps lure children into manipulative games and thus [negatively impact children's learning](#). Early childhood apps, [especially those that are free](#) and that are not vetted by teachers (cf [teachers select and seek evidence in apps](#)), engage children in repetitive use without advancing their learning.

The low quality of EdTech has been known for some time, with various frameworks used to document the gap between the science of learning and the design of EdTech. For example, in 2019, [Meyer and colleagues](#) analysed the 124 most-downloaded EdTech mobile apps and found that the vast majority stimulated repetitive, distracting, and meaningless experiences with minimal learning value. In addition to low educational impact, widely used apps and platforms in schools mishandle children's data: [The Human Watch report](#) revealed that 163 EdTech products recommended by 49 governments for children's education during the COVID-19 pandemic were inadequate and that several of them collected data for commercial purposes.

### *What is evidence?*

For scientists, evidence is an independent scientific proof that an EdTech positively impacts children. Such independent evidence is in very short supply: only [25% out of 100 most popular Edtech](#) sold in USA have research evidence of impact. Further, only 7% out of 568 popular UK EdTech completed a Randomised Controlled Trial — the golden standard of evidence imposed by some evidence frameworks, notably the US government's [standards of evidence](#).

### *Who can provide evidence for EdTech?*

One of the difficulties with EdTech evidence is to marry the different perspectives of the trio of EdTech stakeholders: teachers, developers and researchers. Without a doubt, marrying the interests of three [different stakeholder groups, each operating under different incentive mechanisms](#), is difficult. Motivating EdTech researchers to generate evidence implies building long-term relationships with the industry and agreeing research goals that lead to



academic journal publications. For teachers, access to data that would facilitate their classroom practice, including data planning and possibility to individualise instruction, are key prerequisites to engage with EdTech testing. For solution providers, evidence should be easy and inexpensive to get and should directly improve their product and increase sales.

The [Science of Learning is in its “golden age”](#) and provides some “lessons learnt” that can be integrated into both formative and summative evidence evaluations of EdTech. Current EdTech evaluations are dominated by evaluation frameworks adopted from clinical trials in medicine (e.g. [the ESSA Tiers of Evidence](#)) or by customer reviews published on various user sites (e.g. [Common Sense Media](#)). Very few rely on independent, scientifically verified frameworks developed purposefully for EdTech. Yet, it is scientific evidence that is necessary for EdTech to reach its potential in addressing educational inequalities and making a substantial impact on children’s learning.

#### *Who pays for EdTech evidence?*

Without a doubt, positioning public schools – which are globally underfunded and understaffed - as the paying customer for EdTech evidence will not solve the challenge. EdTech Evidence should be funded by public organisations. However, democratic governments have fallen short of financing educational evaluations and regulating the development and use of educational technologies.

Some progress has been made in the space of children’s personal data: GDPR, COPPA and the Children’s Code (Age appropriate design code) compel EdTech vendors to comply with ethical standards around personal data. However, while these compel vendors and users to secure children’s privacy, there is no equivalent for securing EdTech’s learning impact. The problem is: EdTech can comply with the personal data regulation and still churn out apps with minimal learning value. Just like restaurants can comply with food hygiene and serve foods that damage our health. In the case of children, debates around selling “junk tech” are equivalent to selling children “junk food” that might give children pleasure and immediate rush but little long-term value.

#### *What evidence pathways can be followed?*

In 2023, there is no standard quality assurance mechanism for EdTech but several national initiatives are underway to develop national standards of evidence. The efforts come at a time of highly politicised and ideological educational policies. These are a result of a long history of diverse education evaluation systems. Indeed, the [“what works marketplace” is an outstanding problem in education and requires alignment of efforts of several actors over several years.](#)

The reality is that even the largest education clearinghouses, which produce evidence-based recommendation for educational interventions, [use diverse criteria with discrepant recommendations](#). In EdTech, the lack of standard assessment criteria has led to a vibrant private marketplace of evidence services. Some are oriented towards parents, some towards teachers and all use different quality assurance criteria, frameworks and standards



of evidence. Some are free, others behind paywall (e.g. the review system by [Common Sense Media](#)), some are teacher-centred (e.g. the [ISTE standards](#)), some are recommended by national agencies (e.g. the [Australian Standards of Evidence](#)) and some by global organisations (e.g. [UNESCO's Smart Buys](#)). Some are oriented towards innovation (e.g. [Nesta standards of evidence](#)), while others towards quantitative evidence (e.g. the [ESSA Tiers of Evidence](#)). One of the challenges for EdTech developers (EdTech companies), buyers (schools and procurement teams) and users (teachers and parents) is to navigate the marketplace of EdTech evidence and accurately prioritise solutions that are aligned with children's needs, learning content and context.

### *What is the role of policy-makers?*

EdTech Evidence is at an inflection point, driven by national digitization strategies and educational reforms as well as post-COVID19 economic shifts. Governments and philanthropic organisations are looking to create EdTech ecosystems that keep equitable access to EdTech while mobilizing the EdTech economy.

The challenge of diverse education evaluation frameworks more broadly and EdTech frameworks in particular, cannot be addressed by individual states. Given the interconnected EdTech's global operations, a unified framework in the form of SDG could provide the necessary guidance for the private sector, governments, investors and schools. Unfortunately, the development of SDGs takes years of cross-lateral negotiations and EdTech evidence needs to be generated *now*. The urgency is further underscored with the advent of generative AI.

To increase equity in EdTech evaluations, the evidence frameworks need to be equitable across the Global North and Global South. This means that research and innovation projects need to support both foundational learning skills (e.g. literacy) that address educational inequalities as well as skills necessary for new learning paradigms (e.g. critical thinking) that address educational inequities. EdTech can be designed and implemented to unlock learner variability through [personalized-pluralized learning models](#) and thus transform education for millions of children.

In order to understand what works, for whom, and under what conditions, it is vital to focus not only on type of evidence but also on the ways in which the evidence was gathered. With the current very [low number of research-based EdTech](#), policy-makers need to embrace methodological plurality in evaluating EdTech's evidence claims. This implies the need to focus on methodological rigour and ethics of various types of evidence. So that evidence evaluations do not harm innovation, they need to be followed with actionable recommendations that develop local research capacity and catalyse local innovation.

### *What is the role of AI in EdTech Evidence?*

EdTech innovation in generative AI is [progressing at light-speed](#) — an exclusive focus on existing evidence and current impact would be thus misplaced. If we consider what EdTech



can do in terms of generating new learning paradigms, then the transformative potential of EdTech for both children’s learning and the learning sciences, becomes apparent.

Moving forward, AI combined with solid data infrastructure would ensure that children’s progress data are used to train the EdTech’s AI to deliver [precisely personalized education](#). At the same time, it is important to ensure that personal data are combined with data from other platforms to diversify the learning experience and expand children’s horizons. Such give-and-take in data generation is only possible with [open evidence evaluations](#). This is where RCT-oriented frameworks such as ESSA fall short, and the need for EdTech-specific evidence evaluation frameworks, becomes apparent.

A minimum entry point that verifies the EdTech’s logic model, the scientific pillars behind its theory of change and that helps with a suitable theory of action, are standard M&E tools that underlie basic research. These tools are part of the scientific mindset that all EdTech developers should have. It is this kind of mindset we should be nurturing in the edtech ecosystem, not a punitive approach that purely identifies what works and what doesn’t. The core to best practice evidence policy-making and practice is [not so much what evidence is, but how it is approached](#).

This doesn’t mean that EdTech don’t need evidence of efficacy and the field needs to develop new alternatives. Rather, it means that in the rapidly evolving EdTech ecosystem, the minimum requirement for evidence lies in the stakeholders’ *approach to evidence*. Evidence-driven EdTech skilfully combine instruments and iterate their evidence portfolio. An “evidence-ready” EdTech enterprise showcases a principled commitment to continuously engage with scientific evidence and integrate it into its [“evidence portfolio”](#). WiKIT pledges to support EdTech on their evidence journey and model the values that build towards the vision that **in 2030, all children benefit from evidence-based EdTech**.

WiKIT, March 2023

## Our values

WiKIT draws on the knowledge of outstanding scholars and collaborates with **ethical EdTech companies**.

By “EdTech” we mean technologies such as apps, platforms, online courses and other software developed with a learning intent. Such EdTech are developed to either advance children’s learning in core curriculum subjects (e.g. literacy) or to target foundational skills (e.g. creativity) and key development areas (e.g. empathy). The technologies are typically offered for either the school or the home market, although some explicitly bridge the two learning contexts. Given the expertise of WiKIT’s current research network and the subject matter expertise these researchers represent, we focus on children aged between two to twelve years. This age group corresponds to the early (kindergarten) and primary (elementary) school age and is the core age group targeted by major global educational initiatives. In the long-term, we plan to expand this age group to cover the entire learning cycle, from early to high school.

Given our global operation, we use the terms EdTech vendors, founders, entrepreneurs and simply “companies” to refer to the producers and publishers of the technologies.

By “ethical” EdTech, we mean companies led by founders who care about diversity, inclusivity, equity and equality in education and who share our commitment to the “5Es” in EdTech Evidence development. The companies must be led by a leadership team who demonstrates willingness to learn and commit to empower a new generation of EdTech that is driven by science and that enables ALL children to thrive.

Figure 1: The 5Es mindset of ethical EdTech that WiKIT nurtures with their partners

