

SUMMARY REPORT

EVIDENCE- READY SERVICE

Learning Ladders

2023

WiKIT, AS.



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Table of contents

Why is evidence necessary?.....	1
How WiKIT supports companies on their evidence journey?	1
About Learning Ladders	2
Logic model	3
Theory of Change	4
Theory of Action.....	6
Cited and suggested sources of literature:	7

Table of figures

Figure 1. Simplified logic model for Learning Ladders	3
Figure 2. Theory of change for Learning Ladders’ school and home collaboration	4
Figure 3. Scientifically supported theory of action for Learning Ladders.....	6

Why is evidence necessary?

Prioritizing evidence of efficacy and positive impact is essential for K-12 EdTech companies, particularly in the context of online reading platforms. By doing so, companies can ensure that their platforms are not only effective in improving target skills, but also engage teachers and/or students, personalize learning experiences, inform decision-making, and build trust among educators, administrators, and parents. By prioritizing evidence-based practices, EdTech companies can make a meaningful and lasting impact in education.

How WiKIT supports companies on their evidence journey?

WiKIT has a vision for research and innovation driven technologies that address educational inequities and support high-quality, science-based learning outcomes for all children. WiKIT's mission is to ensure that technologies developed for 2 to 12-year-old children are based on science and are therefore well positioned to positively advance children's learning and development¹. We enable the integration of science with EdTech design and implementation by empowering partnerships between EdTech developers, scientists, and practitioners, and by supporting the necessary policy infrastructure to mobilize these partnerships. We operate through a nationally oriented head-office for EdTech Evidence evaluations in Norway, and an international network of EdTech Evidence research consultancy services offered globally.

In 2023, WiKIT was commissioned by Learning Ladders to deliver the "Evidence-ready" service, which streamlines, systematises, and brings rigor to the evidence-development phase for an EdTech company. Through this service, WiKIT supports EdTech companies to develop a scientific basis for their product and a systematic approach for their monitoring and evaluation (M&E). WiKIT researchers provide the EdTech company with a sample of relevant studies that scientifically verify the research basis of their product and aggregate the findings from these studies in a narrative of existing evidence. WiKIT's support and coaching method ensures that EdTech founders iterate their logic model and theory of change as they scale their solutions and pay attention to the challenges and opportunities on the road to achieving impact (as captured by a theory of action). While WiKIT customizes the evidence roadmap to each company's needs, the core is built around:

- 1 Developing a logic model in the form of inputs, outputs, activities, and impact statements that summarise the company's mission.
- 2 Developing a theory of change supported by relevant scientific papers that underpin the outcome and impact statement in the EdTech's logic.
- 3 Developing a theory of action with the scientific pillars of the EdTech's current work, as well as the gaps, capabilities, challenges, and strategies for future development.

Together, these essential monitoring and evaluation tools feed into mutually reinforcing steps that embed evidence priorities and realistic execution within an EdTech. They represent a vital first building block in every EdTech company's evidence portfolio, and are aligned with the ESSA IV standards of evidence recommended by the Office of Educational Technology and other international bodies concerned with EdTech impact².

This report summarises selected outputs from this process, as agreed with Learning Ladders.

About Learning Ladders

Founded by a visionary teacher in 2016, Learning Ladders stands out as a unique tool that transforms school data management and parental engagement. Born from the need to overcome inadequate tracking systems and elevate parental involvement, this innovative product seamlessly integrates the design, management, and reporting of custom school curriculum and assessments. Parents are now not just informed but actively engaged, thanks to the rich, tailored data insights, making Learning Ladders a unique blend of technology and personal touch in the students' educational journey.

Learning Ladders is designed to support primary and early years schools to keep on top of assessment data, prepare for inspections, and keep parents informed. It is a student progress tracking software that combines powerful data, custom frameworks, automated student reports, and linked parent resources, and that enables teachers and parents to work together in a respectful and sustainable way. This innovative approach reduces conflict, workload, and anxiety for those directly involved in children's learning.

Learning Ladders currently serves schools across 15 countries, and supports curriculum and assessment in 100+ languages. Comprehensive senior leader and teacher training is provided, within an ongoing personalised approach to client support. The Learning Ladders team is deeply committed to transparency and precision in reporting their impact on students' learning. This dedication is exemplified by their role as co-founders of the EdTech Evidence Group in the UK.

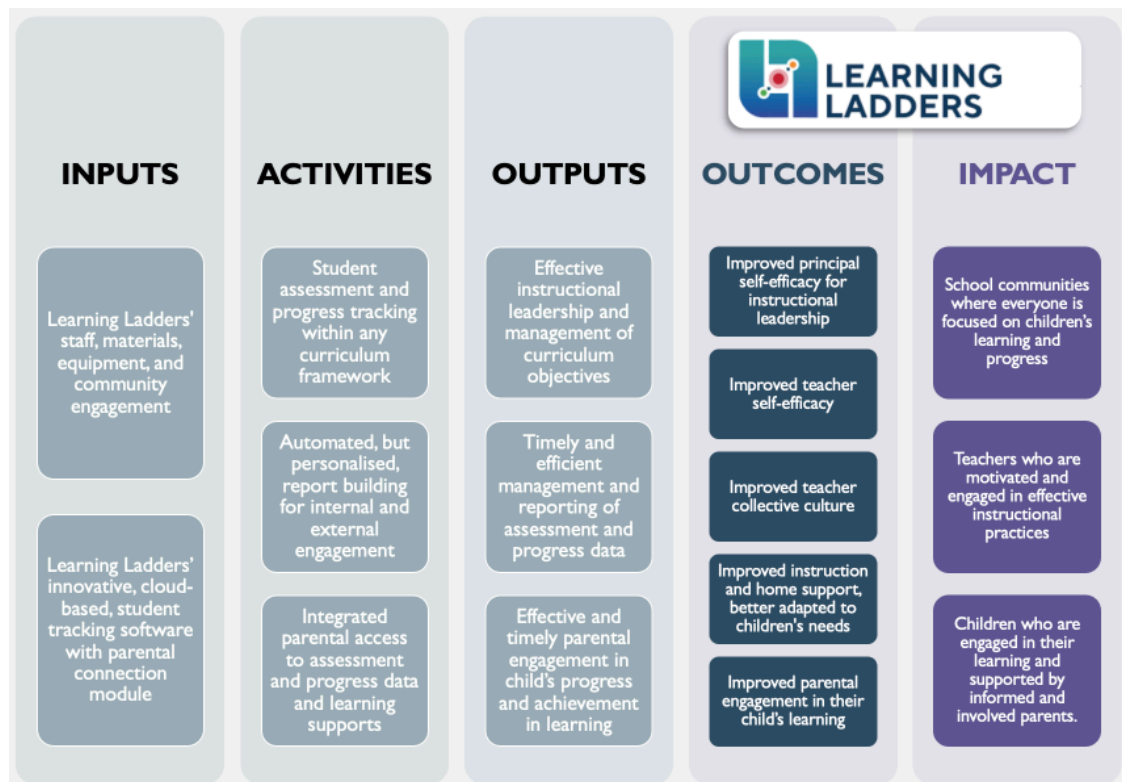
Logic model

The logic model for Learning Ladders is illustrated in a simplified form in Figure 1. It outlines how organisational inputs, the cloud- and subscription-based student tracking software, and the parental connection model, logically result in effective and timely educational leadership, reporting of assessment and progress data, and parental engagement. This, in turn, feeds into improving principal and teacher self-efficacy and a school-wide collective culture, which support improved personalised instruction and home support, and the effective involvement of parents in children’s learning. These outcomes will support school communities that are fully focused on learning and progress, teachers who are motivated and engaged in effective instruction practices, and children who are engaged, motivated, and supported by informed and involved parents.

This model is based on early research identified by the founders of Learning Ladders, that supported parental involvement as one of the most significant factors that a school can influence for securing higher student achievement^{3 4 5}. Traditionally, assessment data and parental engagement have been siloed into different processes, teams, and budgets. By bringing them together, Learning Ladders seeks to build a harmonious, collaborative, and happy school community, where children (and adults) can unlock the best of themselves to support independent, confident, and successful learners.

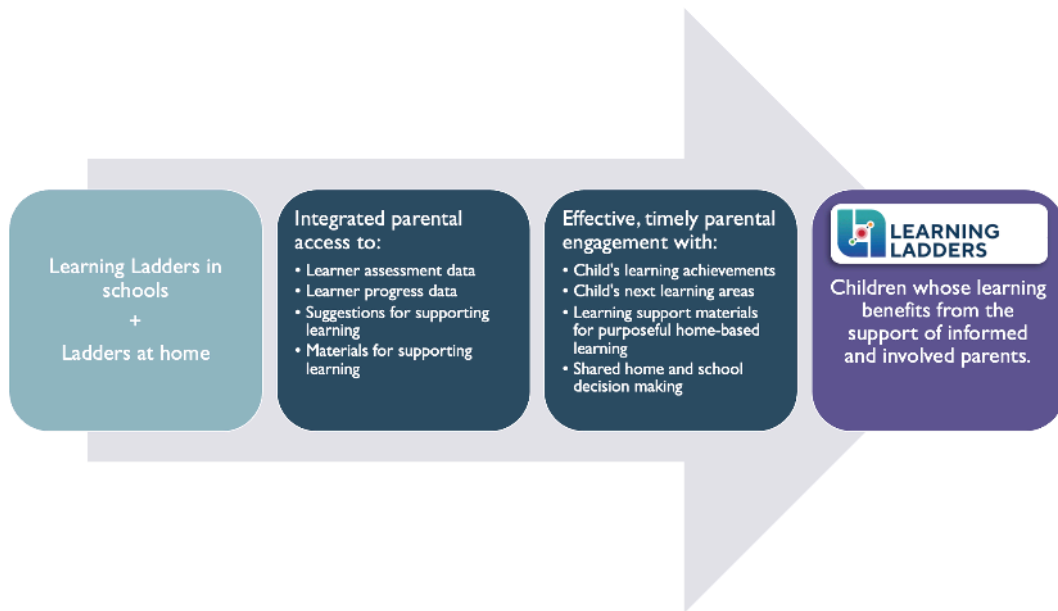
As the early research conducted by Learning Ladders focused specifically on parental engagement, the objective of WiKIT’s research review was to identify recent scientific support for parental engagement, and explore how effective data management, teacher self-efficacy, and collective culture theoretically, together relate to parental engagement and improved educational outcomes for children.

Figure 1. Simplified logic model for Learning Ladders



Theory of Change

Figure 2. Theory of change for Learning Ladders' school and home collaboration



Learning Ladders' theory of change for supporting children's learning through parental involvement is based on a research-based theory of change, illustrated in Figure 2. Integrated parental access to timely data and children's progress and assessment will result in purposeful parental engagement in their child's learning, and shared home and school responsibility for progress. This, in turn, will result in benefits to children, through the support of appropriately informed and involved parents, who are knowledgeable about the educational processes of their child. Researchers from WIKIT discussed this theory of change with Learning Ladders, in light of the specific ways in which the scientific literature corresponds to the individual features of Learning Ladders. A full list of relevant research papers, prioritising (where possible) open access literature, is provided at the end of this report.

This review of the literature found that:

Effective, timely, and efficient data management improves schools.

The effective, timely, and efficient data management provided by Learning Ladders can build a data culture that contributes to continuous school improvement, can help teachers to improve their instructional practices, and can unlock potential for instructional leadership and professional development. This improves teachers' use of time, reduces time-pressure stress, and improves teachers' motivation and engagement^{6 7}. The Learning Ladders software is supported by a group of professionals and experts that work continuously to meet individual user's needs and guarantee its ongoing stability and adaptability for providing an effective and efficient data management infrastructure.

Effective, timely, and efficient data management improves teacher self and collective efficacy.

A positive experience with effective data management enhances teachers' sense of success and their collective and individual belief that they can guide student learning and progress^{8 9 10}. Efficient management of learning data also reduces stress and burnout and therefore contributes to teacher well-being, including self-efficacy and perceived collective efficacy. These are positively associated with

improved instructional practices, teacher engagement, and motivation. The Learning Ladders software is innovative and streamlined, and user testimonials corroborate its usefulness and user-friendliness.

Collective teacher culture promotes teacher motivation and engagement.

Learning Ladders has a large and diverse client base, creating a teacher culture around its product. Collective teacher culture (CTC) is the combination of positive and professional relationships with colleagues, perceived collective efficacy, teacher self-efficacy, and shared goals around common values. CTC is positively associated with teacher engagement and motivation. A prerequisite for a CTC is a learning goal structure, where the emphasis is on individual student improvement within a safe and inspiring learning environment, rather than a performance goal structure focused only on grades and scores ¹¹.

Parents want and need to be more involved in their children's education.

A whole-school approach to parental engagement is a key factor for improving educational outcomes ^{3 4 5}. Parents will only become involved when they feel welcome and understand how they can support their child's education ¹². In typical educational settings, parents are in the dark about their children's learning progress, and traditional report cards do little to alleviate that, providing too little information too late to action. Parents therefore need more timely, complete, and regular feedback from schools ¹³.

Parental involvement increases child motivation, and therefore child engagement.

Parental engagement in their children's educational processes can create a supportive and nurturing environment for children's learning, and positively influence their attitudes towards education. By enhancing communication between home and school, children's parent-oriented motivation (desire to please their parents) can increase, as well as their autonomous and intrinsic motivation to do well. This motivation leads to engagement and enhances children's enjoyment and mastery of academic pursuits, thereby contributing to greater academic competence and ultimately learning ^{14 15 16}.

Parental involvement and teacher self-efficacy are mutually supportive.

One of the major sources of teacher self-efficacy is vicarious experience, including feedback from others, such as colleagues, school leaders, and parents ¹⁰. Successful experience with parental engagement can feed into positive vicarious experiences for teachers, which can improve teacher self-efficacy, and raise the collective teacher culture.

Teacher and child motivation and engagement are interrelated and both support learning.

Teacher motivation and engagement has a bidirectional, positive relationship with child motivation and engagement, such that motivated and engaged teachers are often observed in classes with engaged children, and vice versa ¹⁷.

Early reviews found a lack of rigorous scientific evidence on the impact of interventions promoting parental engagement in education ^{3 4}, and this is still true. Due to parental involvement being difficult to define and measure, evidence in this area has generally been weak or of poor quality. In addition, research on data practices in schools has primarily been exploratory. More research is needed, especially connecting digital data, instructional design, pedagogical practices, and child outcomes ¹⁸. Consolidating the evidence base

for Learning Ladders will involve advancing research in these areas, to further validate the organisation’s theory of change.

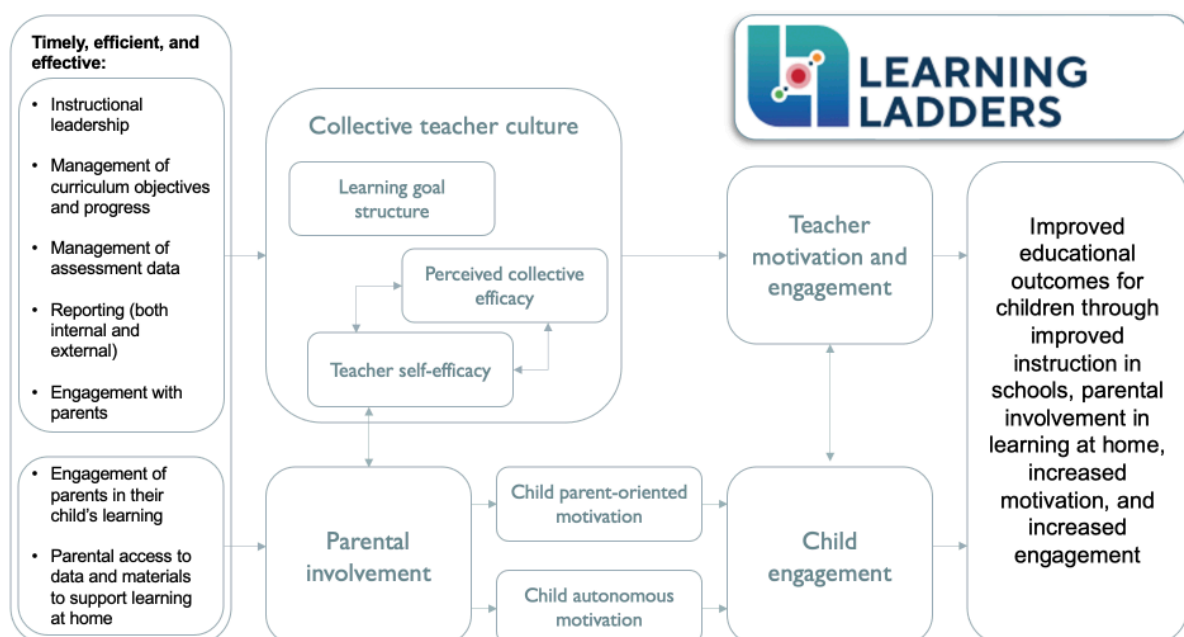
Overall, Learning Ladders’ theory of change is based on the logic that the adoption of this software in a learning community will improve school leadership, instructional practices, teachers’ and children’s motivation and engagement, and children’s learning supported by informed and involved parents. This theory of change is supported by the scientific literature, via the pathways of teacher motivation and engagement through teacher collective culture, and child motivation and engagement through parental involvement.

Theory of Action

Based on the available literature and WIKIT’s review of Learning Ladders, Learning Ladders has a well-supported logic model and theory of change. The theory of action, illustrated in Figure 3, specifies that:

- Learning Ladders is grounded in a **learning goal structure** with the emphasis on individual child progress within a safe and inspiring learning environment, rather than on grades and scores (a performance goal structure).
- Learning Ladders promotes a **collective teacher culture** by supporting a learning goal structure, teacher self-efficacy, and perceived collective efficacy.
- Learning Ladders supports **teacher motivation and engagement** by advancing a collective teacher culture. Teacher motivation and engagement is associated with improved educational outcomes for children, including child motivation, engagement, and progress.
- Ladders at home promotes **parental involvement** and engagement through timely and regular reports linked to parent resources, which can increase children’s motivation for learning.
- Parental involvement through Ladders at home supports increased **child engagement**, which is further enhanced by teacher motivation and engagement. Child engagement is strongly associated with improved educational outcomes.

Figure 3. Scientifically supported theory of action for Learning Ladders



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- ¹⁶ Dotterer, A. & Wehrspann, E. (2016). Parent involvement and academic outcomes among urban adolescents: Examining the role of school engagement. *Education Psychology*, 36(4), 812-830.
- ¹⁷ Cents-Boonstra, M., Lichtwarck-Aschoff, A., Denessen, E., Aelterman, N., & Haerens, L. (2021). Fostering student engagement with motivating teaching: An observation study of teacher and student behaviours. *Research Papers in Education*, 36(6), 754-779.
- ¹⁸ Krein, U., Hartenstein, A., & Schiefner_Rohs, M. (2022). Mapping research approaches to data practices in schools. *Frontiers in Education*, 7, 1023096.