



Lightweight Evidence-Gathering Instruments and Tools (LEGIT) for Students with Disabilities

How Inclusive Design, Learning Science Grounded Measurement, and a New Technical Ecosystem can Unlock the Potential of Assessment for Learning and Thriving



Baseline

Education is failing learners at the margins

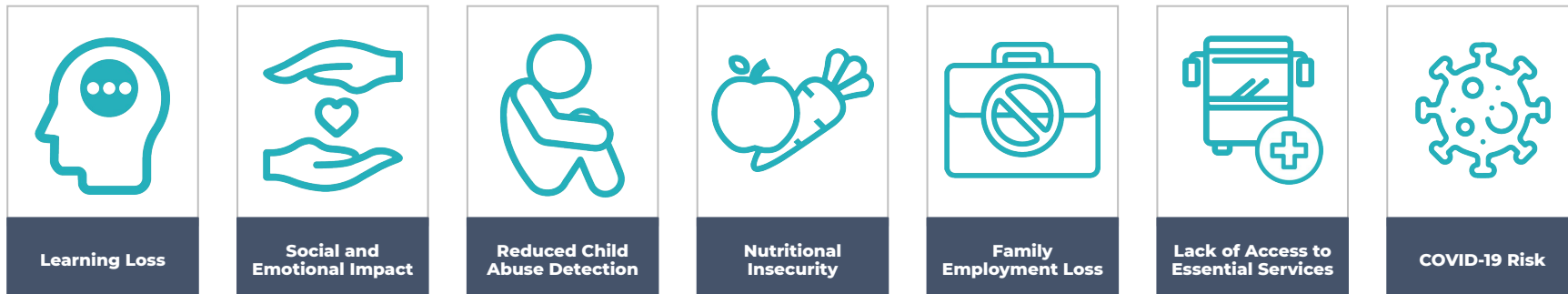
Young people with learning and attention issues are as full of potential as their peers and can achieve at the highest levels. But because most schools are designed with an almost exclusive focus on the needs of “average students,” students with disabilities do not receive adequate supports, and as a result are much more likely to repeat a grade, get suspended, drop out, and take longer to earn a high school diploma.



Students face increased pressures



Schools lack adequate systems to detect and understand needs



See the [Parabola Project](#)

Concurrent pandemics exacerbate inequity



Race and class compound this equity gap, and the COVID-19 pandemic has further exacerbated inequities. Not only are students with disabilities, particularly Black, Indigenous, and people of color (BIPOC) students, experiencing greater challenges at home and with school, teachers have even fewer opportunities to connect with their students. As a result, teachers lack a meaningful understanding of how social and emotional well-being, student background, cognition, and domain-specific (e.g. math) factors shape student engagement and outcomes. It's typically students with disabilities who may particularly benefit from such insight.

Today's measurement instruments and tools



Surveys

Protocols and questionnaires that present a standard set of questions and response options.



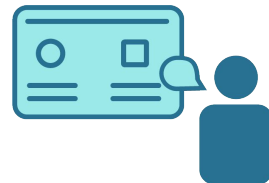
Interview and Check-In Protocols

Questions for specific, actionable information, facilitating both data generation and a focused conversation aligned to an aim.



Observational Rubrics and Checklists

Rubrics are guides that inform efforts to observe and evaluate classrooms and instructional practice.



Tests and Performance Tasks

A test or performance task asks a student to demonstrate their knowledge, understanding, and mastery—with the product serving as evidence of learning.

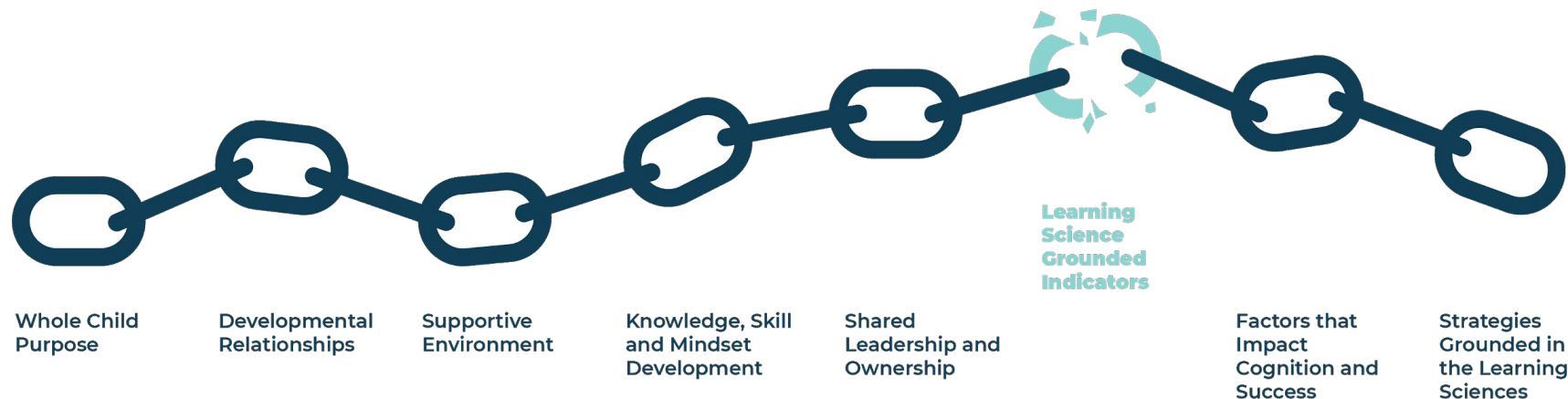
Edmund W. Gordon: Invitation to a Centennial Celebration

The Edmund W. Gordon Brooklyn Laboratory Charter School honors the insights and contributions of our namesake, Professor Edmund W. Gordon. Throughout his career, Dr. Gordon has touched on many aspects of society, especially its educational system and the academic understanding and measurement of learning. This proposal is a component of EquitybyDesign's participation in the Centennial Celebration: we invite those who have been influenced by Dr. Gordon over this long arc in the development of his perspective on knowledge and agency to participate by making the case for Assessment for Learning.

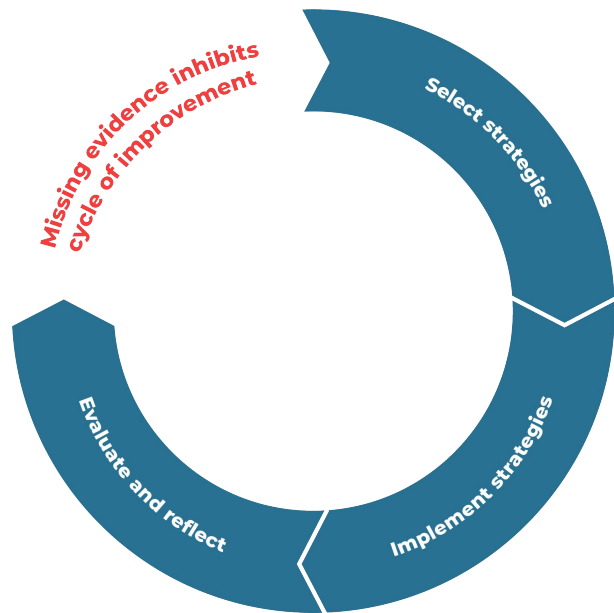
In the words of Professor Gordon: "Over the last few years I have invested much of my energy in trying to repurpose educational assessment to better serve learning and teaching. This reflects the major finding that came from The Gordon Commission on the Future of Assessment for Education (in contrast to "Assessment of Education.") This group that I led advanced the notion that educational assessment can and should inform and improve learning and its teaching, as well as measure developed ability. As Wade Boykin has argued, the system of educational assessment should privilege the development of ability as much as it has promoted the measurement of ability."



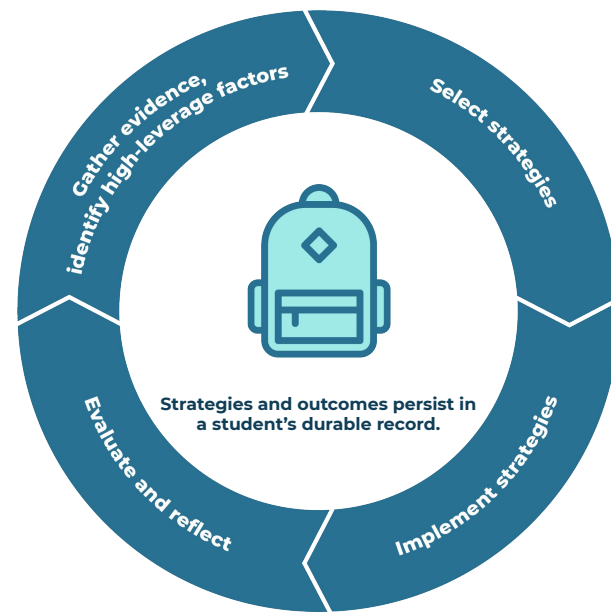
Learning science-informed practice: Without adequate indicators, the chain is broken



Learning science informed cycles of continuous improvement are inhibited



Currently, the cycle of improvement is inhibited.



With lightweight evidence-gathering, the cycle is unleashed.

Take stock of five limits of assessment practice

Assessment is too often done *to* learners rather than *for* them. At public schools, assessment is high stakes, but too frequently does not serve, inform, and enhance teaching and learning. Similarly, practices and products do not allow for the effective assessment of academic and nonacademic development and competencies.



LIMITATION #1

Students with disabilities and those who serve them do not have efficient and effective diagnostics.



LIMITATION #2

Assessments capture “snapshots” in time and the data ecosystem does not yet allow for safe, seamless portability of student data.



LIMITATION #3

Early-stage measure design and development is neither systematic nor robust.



LIMITATION #4

Design and development are exclusive and disconnected.



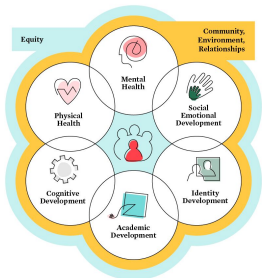
LIMITATION #5

Smart supply and smart demand do not send clear signals.



How do recent research and technical advancements inform this approach?

Research



Technology



Policy



Objectives

Reimagine measurement as a tool to unlock the potential of relationships

Measurement is one of the essential tools schools use to understand and improve teaching practices and support strategies for all students. Yet most educational assessment tools on the market fail to give teachers what they need to calibrate and deliver the right intervention at the right time for students with disabilities, especially those who are also BIPOC or living in poverty. Teachers need new tools that capture students' cognition and competencies—all in service of tailoring instructional decisions to individual needs.



Invest in BIPOC students with disabilities, especially those who live in poverty

We aim to center the voices of historically marginalized communities, including people with disabilities, English language learners, and Black, Indigenous, and people of color (BIPOC).

It's time for our nation to invest in assessments that enhance teaching and learning for complex learners.



Recognize and correct disproportionality

Years of research points to inequities in education for students of color, students from low-income backgrounds, and students with disabilities, particularly when it comes to rates of discipline and special education enrollment. We must recognize the magnitude of significant disproportionality and take actions to correct it and prevent it from happening.



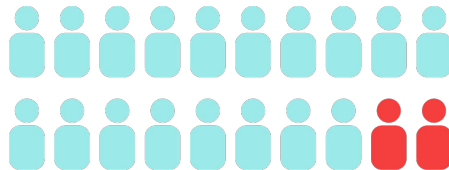
Black and Latino students are identified for special education at higher rates.



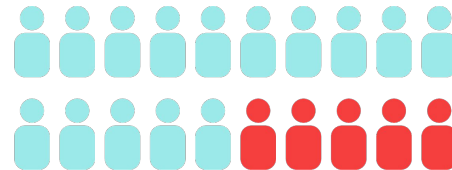
They are placed in more restrictive educational settings.



They are disciplined at markedly higher rates than their peers.



1 in 10 White boys with disabilities are suspended each year

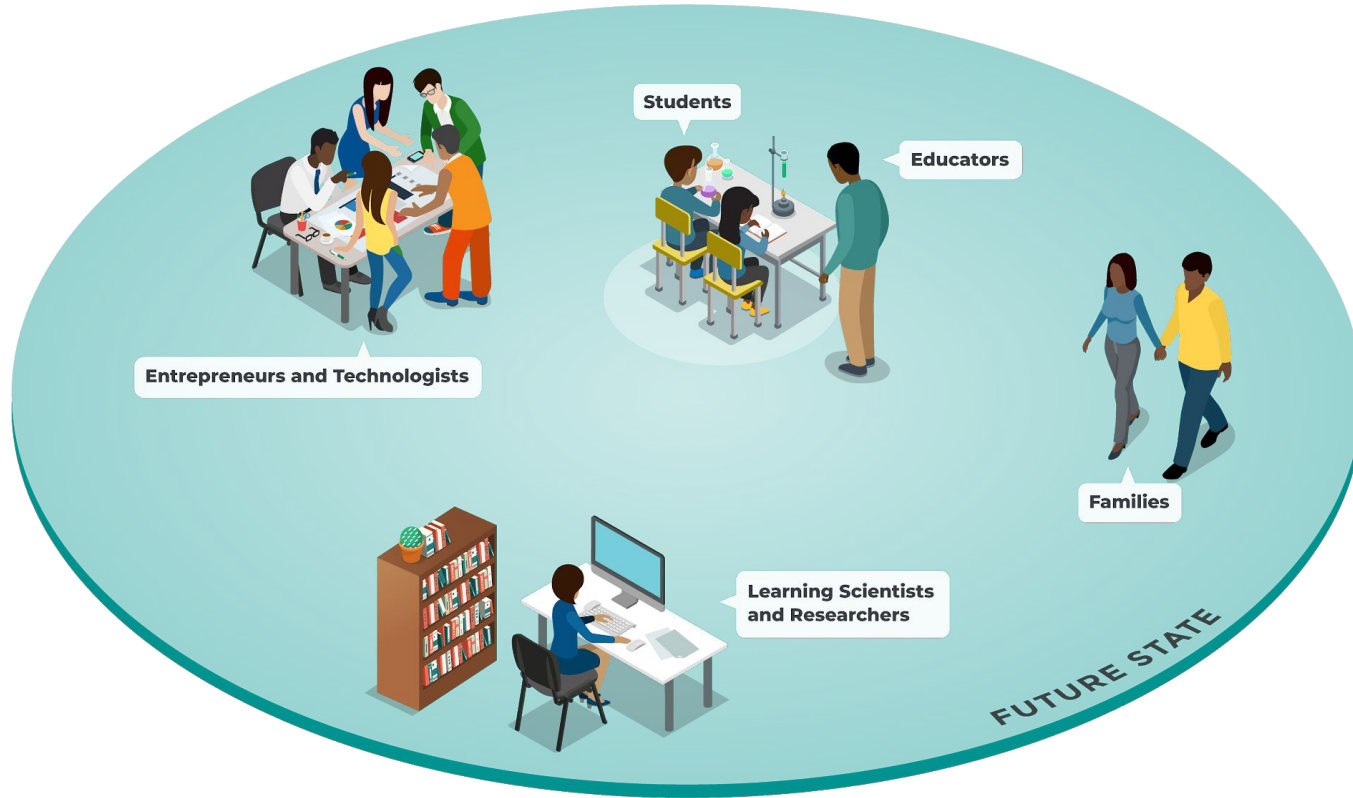


1 in 4 Black boys with disabilities are suspended each year

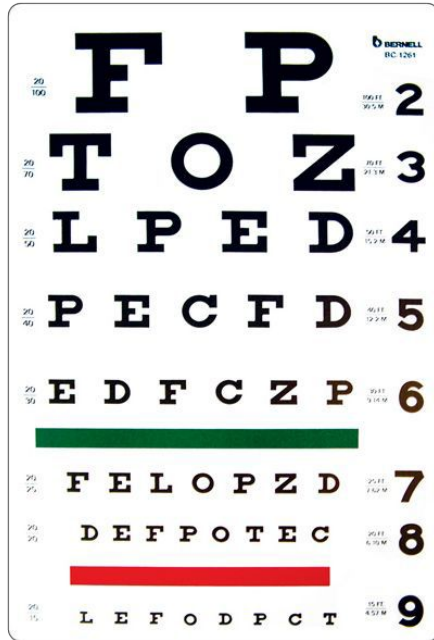
Make relationships the foundation of learning and thriving



Engage teachers, students and families in design



Lightweight vs. heavyweight evidence gathering

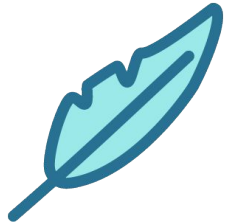


Snellen Eye Chart



TOPCON Vision Tester PHOROPTER VT-SE

Transform the sector thru LEGIT solutions



Lightweight

Low-stakes, low level of transaction cost, and flexible



Evidence-Gathering

Proactive collection and generation of evidence that captures well-being and learning



Indicators and Tools

Measures of learning and thriving and instruments to collect relevant data (e.g., survey questions, observation, testing)

This baseline creates the conditions for the future of assessment

Assessment's Baseline

Isolated

Evaluation

Expose Inequality and Gaps

Control



LEGIT Solutions

Integrated and Comprehensive

Reflection and Feedback

Enact Justice and Equity

Collaborative, Continuous Improvement

We need new indicators and infrastructure



Learning-Science-Grounded Indicators

Prototyping should focus on measurement instruments and tools grounded in the world of learning science indicators.



Technical Infrastructure

Leveraging the progress in assessment-related data standards and schemas work, technical prototyping should focus on the Data Backpack and Trust Framework.



Leverage basic research and tech to enable scale



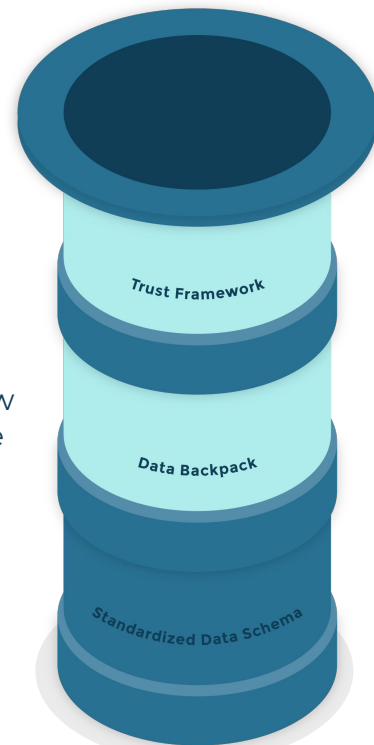
Learning-Science-Grounded Indicators

Learner Variability Navigator synthesis of research informs understanding of factors. Diagnostics connected to those insights would build upon a strong foundation.



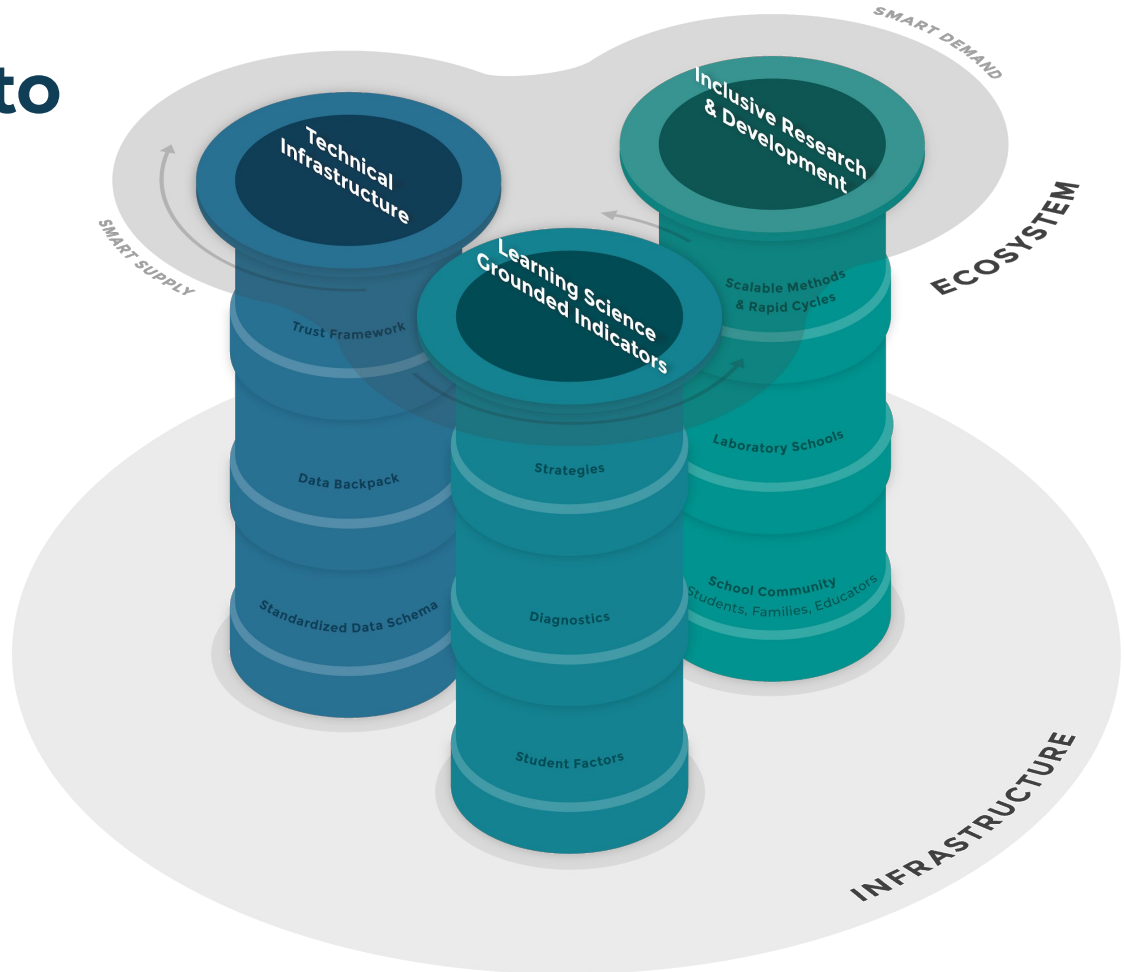
Technical Components

The Data Backpack and Trust Framework instantiations would allow LEGIT solutions to pursue commercialization.



Use inclusive R&D to power prototyping and transform the ecosystem

Leveraging Inclusive research and development in prototyping technical infrastructure and learning-science-grounded indicators would help bring about an ecosystem that supports impact and scale.



Leverage compelling research to operationalize learning and thriving

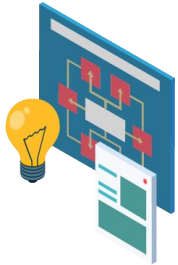
Academic Growth



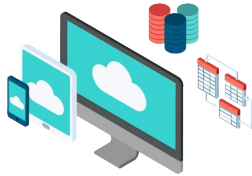
Optimized Whole-Child Development



A proposed pathway to scale and impact

**STEP 1**

LEGIT solutions are available.

**STEP 2**

Push-button technical components facilitate scale.

**STEP 3**

Teachers employ the right evidence-gathering approach to accurately understand individual student needs.

**STEP 4**

Teachers provide customized, effective instruction based on individual student needs.

**STEP 5**

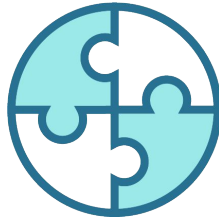
Students with disabilities get the supports they need to learn and thrive.

Cultivate an effective assessment ecosystem



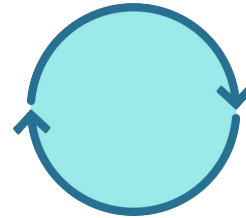
Comprehensiveness

The range of measurement approaches should generate a variety of evidence and provide multiple pathways for students to demonstrate competence and mastery.



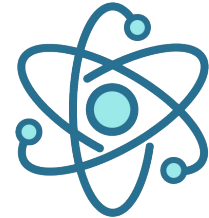
Coherence

Assessment systems should be vertically coherent—from summative to formative assessments—and horizontally coherent with curriculum and instruction.



Continuity

An assessment system should provide continuous records of progress.



Dynamism

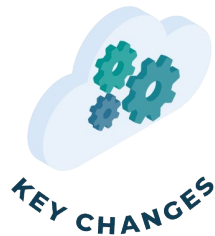
Assessments should be able to diagnose and guide personalized learning and support interaction and complex learning tasks.

The Proposed Plan

Theory of Change



Investments to prototype learning-science-grounded indicators and technical components, powered by inclusive R&D, together lay the foundation for a stronger assessment ecosystem.



We know what factors matter for a student to learn and thrive, and we measure them easily and regularly. Stronger measurement tools enable better decision-making and IEP process improvement for special education students.

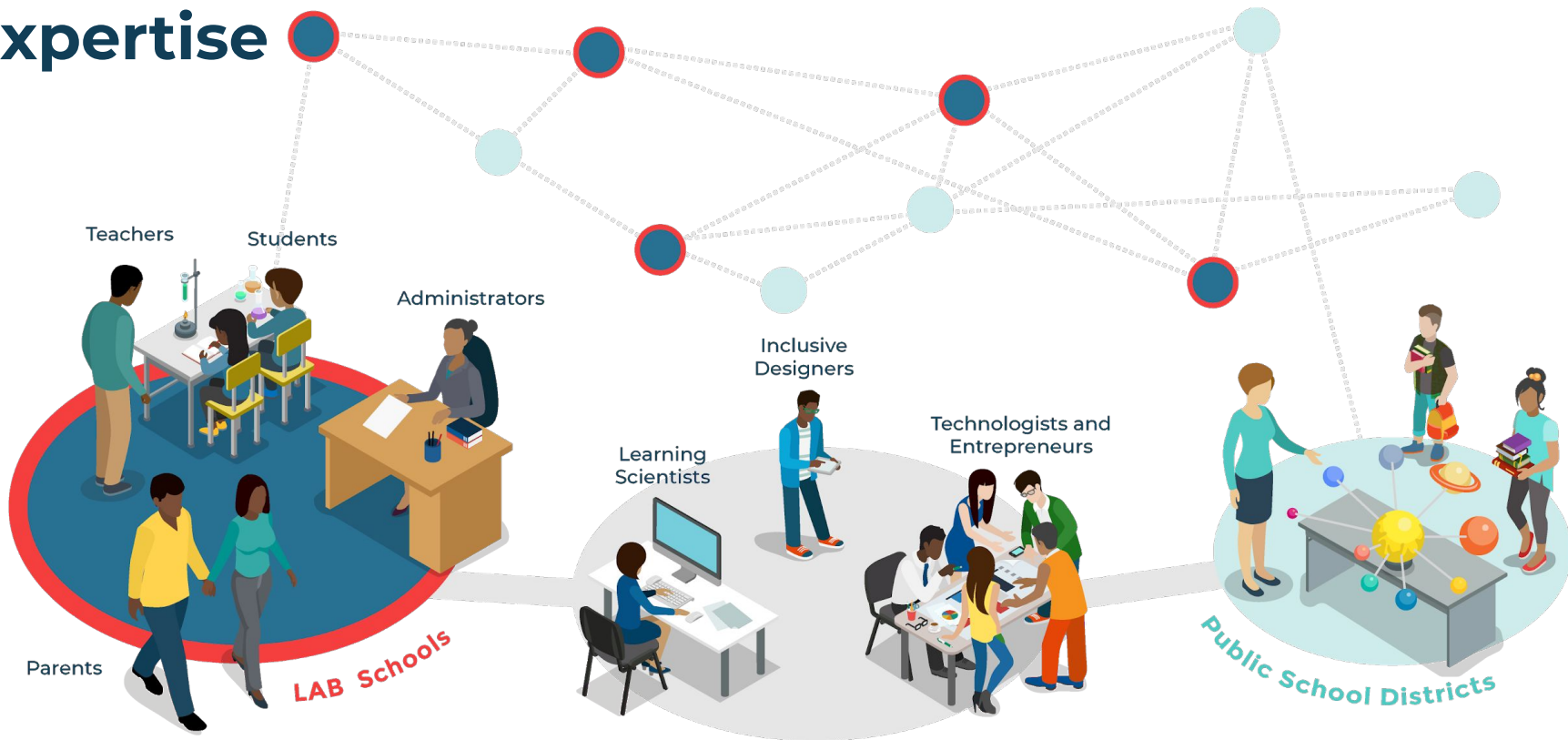


Special education is reimaged and breakthrough results are achieved, including improving leading indicators in one or more of the following: math, ELA, student engagement (including attendance and discipline), and transition to postsecondary life.

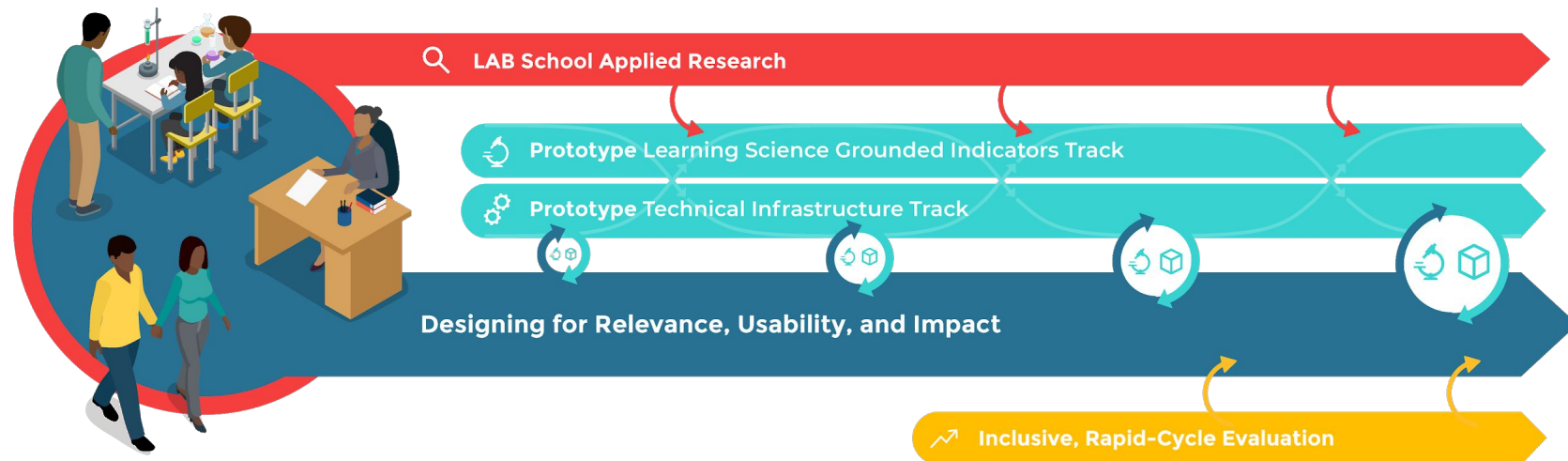


Schools can become a place for healing systemic inequality and structural social divides—and a place where all students grow academically and thrive.

Activate key LEGIT partner fields & expertise



Launch strands of actively managed work



STRAND 1

Designing for Relevance, Usability, and Impact

LEGIT solutions and technical components are designed in partnership with school communities, including students, families, teachers, and administrators.

STRAND 2

Prototype Technical Infrastructure and Learning Science Grounded Indicators

Multi-disciplinary prototype teams of researchers, assessment experts, inclusive designers, and developers build LEGIT solutions and a push button digital ecosystem to scale use.

STRAND 3

LAB School Applied Research

LAB School teams facilitate sustained engagement of school communities in the design and development process, contributing to LEGIT solutions that identify factors and strategies to produce breakthrough results for students with disabilities.

STRAND 4

Inclusive, Rapid-Cycle Evaluation

The program conducts rapid-cycle evaluation to track progress and drive continuous improvement.

STRAND 1

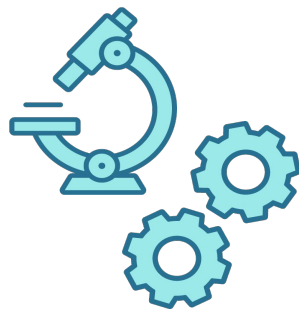
Designing for relevance, usability, and impact



In this strand, we will collaborate with LAB School communities—educators, families, and students—to engage in problem identification and definition, solutions design and development, and formative feedback. We employ EquitybyDesign.org methodologies to partner with school communities to co-design solutions (both instruments and technical components) that respect learner assets and are relevant in real-world classrooms. This will help build empathy for and start conversations about how to best support vulnerable students.

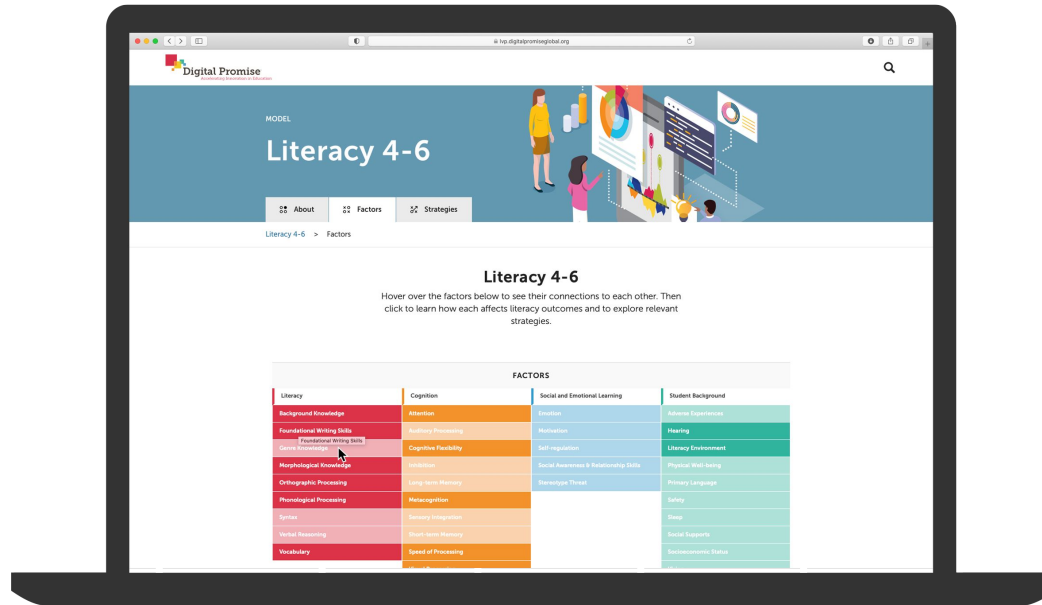
STRAND 2

Prototype technical components and learning science-grounded indicators



In this strand, we propose constitution of multidisciplinary teams that design and develop products and solutions in one of two tracks to move LEGIT solutions forward. We propose engaging prototype teams that bring a deep commitment to inclusive R&D, learning, and collaboration. Track 1 teams would draw on school community expertise, design for equity, ground solutions in learning science, focus on lightweight evidence-gathering, and aim for scale. Track 2 teams would gather technical prototyping teams of researchers and developers to design and develop the technical ecosystem necessary to facilitate a transition to learning science-grounded diagnostics and solutions.

Examples of potential LEGIT solutions



The Learner Variability Navigator is a whole child framework that puts research to work for practitioners and ed-tech product developers. They have developed Learner Models for grades pre-K through 12 in these content areas: Reading, Math, and Literacy. Each Learner Model has columns that address learning content factors, including cognitive factors, Social Emotional Learning (SEL), and student background (which includes topics such as adverse experiences, sleep, socio-economic status, and more). The Navigator shows connections among factors. For example, if educators notice a student has challenges with working memory, they will see the multiple factors that connect. Integrating LEGIT solutions might help connect diagnostics to Navigator factors and strategies.

Examples of potential LEGIT solutions

II. SUPPORTIVE ENVIRONMENT: EMOTION COACHING | SCAFFOLDING LEARNING | FOSTERING GROWTH MINDSET

FOSTERING GROWTH MINDSET

Staff support young people in developing achievement-effort beliefs

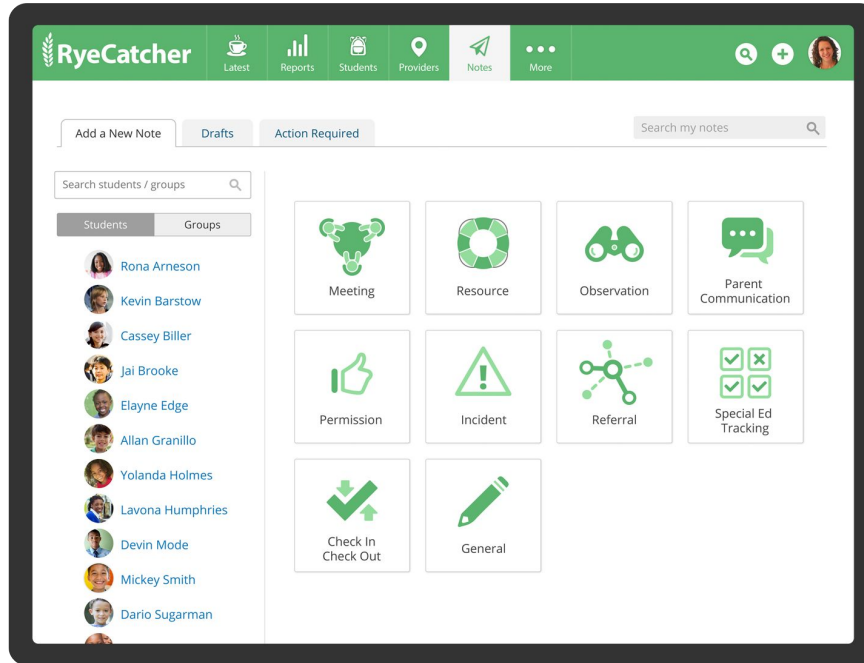
ITEMS		SUPPORTING EVIDENCE/ANECDOTES
1.	<p>1 Staff do not have young people attempt to figure out for themselves how to improve.</p> <p>3 Staff ask young people to attempt to figure out how to improve or correct their work but do not sufficiently allow them to do so (e.g., staff jump in with correct answer before young person has time to respond; when a young person doesn't know how to improve, staff do not rephrase the question or give a hint).</p> <p>5 Staff guide or support young people in attempting to figure out for themselves how to improve (e.g., "So, what could you do differently?" "Next time, what could you do to keep yourself focused?").</p>	<input type="checkbox"/>
2.	<p>1 Staff do not support contributions or accomplishments of young people in either of the ways described for a score of 3 or 5, or simply don't support young people at all.</p> <p>3 Staff support contributions or accomplishments of young people, but use only subjective or evaluative comments, such as "Good job!", "I like it!" or "You're so smart!"</p> <p>5 Staff support contributions or accomplishments of young people by acknowledging what they've said or done with specific, non-evaluative language (e.g., "The detail in that sentence helps me create the picture in my mind." "You figured that word out from the context by yourself!").</p>	<input type="checkbox"/>
3.	<p>1 Staff only attribute success or failure to factors outside of young people's control (e.g., innate ability, luck, fate, the mistakes of others. "Some people just aren't good at math." "It was the teacher's fault for giving such a hard test.")</p> <p>3 Staff attribute success or failure to factors both within and outside of young people's control or make no attributions about young people's control over success or failure.</p> <p>5 Staff attribute success to effort, strategy, attention, practice, or persistence (e.g., "Your brain is like a muscle, the more you exercise it, the better it works", "It may take some extra practice, but you'll get better at it." "I see you worked hard to meet your goal." "You can do this – just try a different strategy this time.")</p>	<input type="checkbox"/>

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The Social and Emotional Learning Program Quality Assessment (SEL PQA) is designed to empower people and organizations to envision the highest-quality programming for young people by providing a shared language for adult practice and by producing scores that can be used for comparison and assessment of progress over time. The SEL PQA provides a framework for supporting youth to reach the highest level of engagement and skill development. A LEGIT solution extension might enhance usability, relevance, and connection to strategies.

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Examples of potential LEGIT solutions



The RyeCatcher Family Needs Mapper is a brief survey that schools use to gather information about students and their families. It can be completed online or in person, it is available in English and Spanish, and it is designed for families to complete on their own, which they can typically do in three to five minutes. Needs Mapper survey questions help schools learn about a student's life at home, their behaviors, and areas where help and support are needed or desired. Insights gathered from Needs Mapper questionnaires enable schools to develop interventions and to connect students and families to social support services. A LEGIT solutions extension might integrate with technical components and the Learner Variability Navigator.



Examples of potential LEGIT solutions



The Vision for School and Student Success

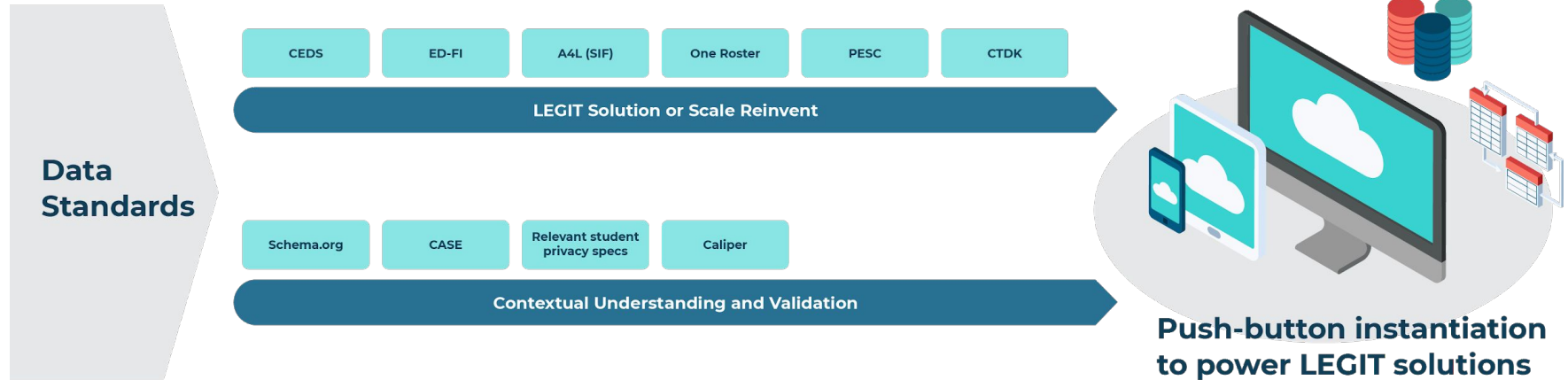
drives toward an equitable, whole-child approach for all students—especially those who have experienced significant adversity. It takes into account safety, relationships, and foundational skills and mindsets. With their holistic, healthy development supported, students will grow academically toward mastery. Turnaround is building lightweight tools to check in on how the student and school environment are doing. LEGIT solutions might integrate strong indicators with Learner Variability Navigator referrals and the Data Backpack and Trust Framework.



Push-button instantiations of assessment domains of data standards

Intention: Compile variables pertaining to LEGIT solutions operating in the school context

Focus: Data Backpack variables focused on students, grade, school, and organization



Data Backpack

Data Backpack

- Demographic data
- Standards-based gradebook
- Grades and transcript data (for secondary students)
- Portfolio of personal bests (e.g., current writing sample)
- State testing data
- Attendance and behavior data
- Supplementary student reports
- **LEGIT solution data**



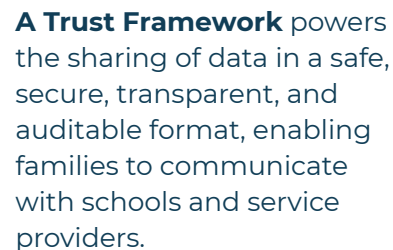
Expanded Learner Profile

- Expanded achievement data
- Motivational profile that predicts persistence and performance
- A narrative description of student assets and challenges
- Recognitions and badges
- Full portfolio of student work
- Student goal statements
- College and career readiness tracker

Optional additions to profile:

- Non-cognitive variables
- Self-management skills
- Behavior and character education
- Record of community service



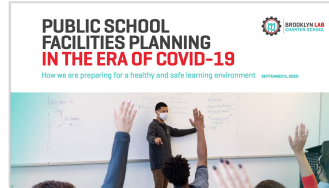
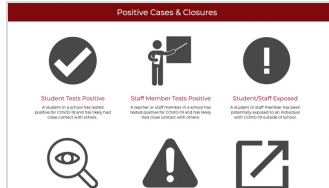
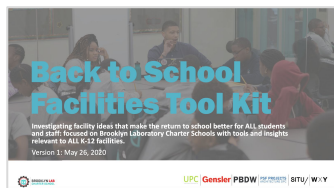
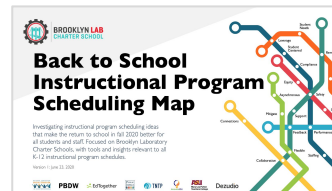
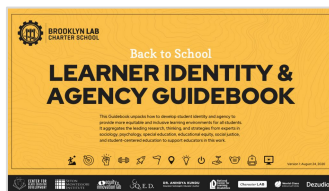


RyeCatcher

STRAND 3

LAB School applied research

Through this strand, we propose work with school communities to understand what they want and need from LEGIT solutions, and how to best identify factors and strategies to produce breakthrough results for students with disabilities. This requires solutions to make learning-science-grounded factors visible and strategies actionable in real time, reaching each learner and helping them soar.



STRAND 4

Inclusive, rapid-cycle evaluation



To enhance and track program success, we propose the conduct ongoing, rigorous, rapid-cycle evaluations throughout the discovery and development process. The evaluation will review the efforts to continually improve and adapt IEPs by using evidence-gathering. It would help ensure we build exemplars of a process for scale for existing measurement and evidence-gathering tools.

Mobilize civil rights, disability, and technology



Inclusive Design

Inclusive R&D drives the development of LEGIT solutions

STEP 1

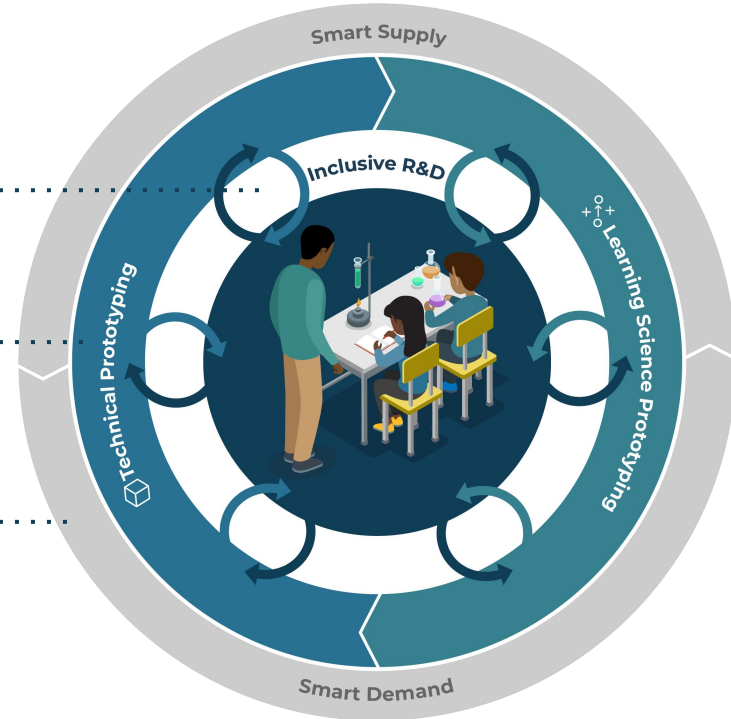
In all cases, inclusive R&D informs the prototyping process.

STEP 2

Technical prototyping informs learning science prototyping, and vice versa.

STEP 3

This cycle drives smart supply and smart demand.



Our inclusive research methodologies

The LAB School inclusive research and design process allows the field to engage all stakeholders, listen to their insights, and incorporate their input throughout the iterative process. Working this way builds in equity and creates shared ownership so that the solutions we co-create are more likely to be embraced by everyone in our school community.

EXPLORATORY



Understand people's needs, patterns, and behaviors

- Contextual inquiry
- Interviews
- Observation
- Territory maps
- Personas
- User journeys

GENERATIVE



Co-create and prototype ideas

- Design workshops
- Creative toolkits
- Collage
- Card sorting
- Charrettes
- Speed dating
- Storyboards

EVALUATIVE



Test solutions for usability

- Usability studies
- Field studies
- Interviews
- A/B Testing
- Focus groups

LAB Schools: Working towards equitable and inclusive design

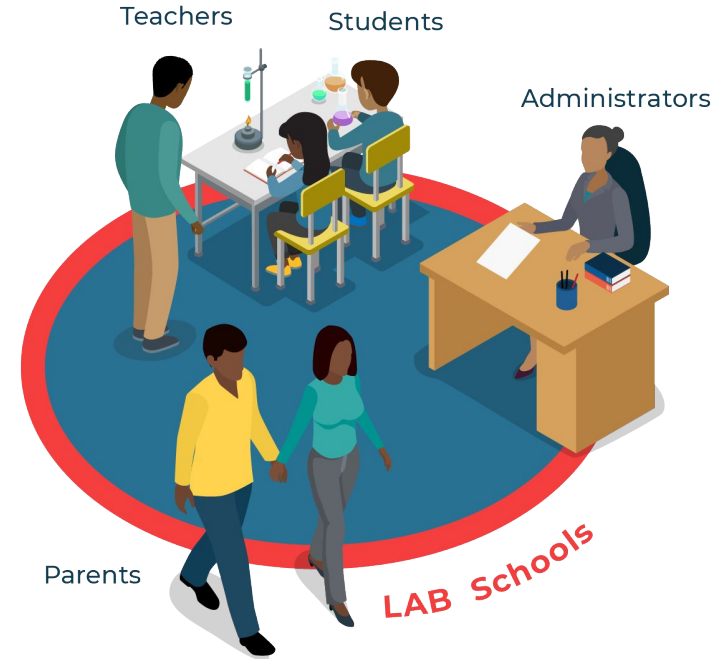
Co-designing in real-world classrooms:

Experience gathering students, families, educators, instructional leaders, and designers to examine problems of practice faced by schools and in piloting potential solutions, such as charrettes for COVID-19 reopening plans.

High percentage of high-needs students:

30%+ students with disabilities.

Individualized approach to LEGIT solutions for complex learners: Each school brings a unique constellation of abilities and experiences when it comes to supporting complex learners.



The EquityByDesign.org process at work

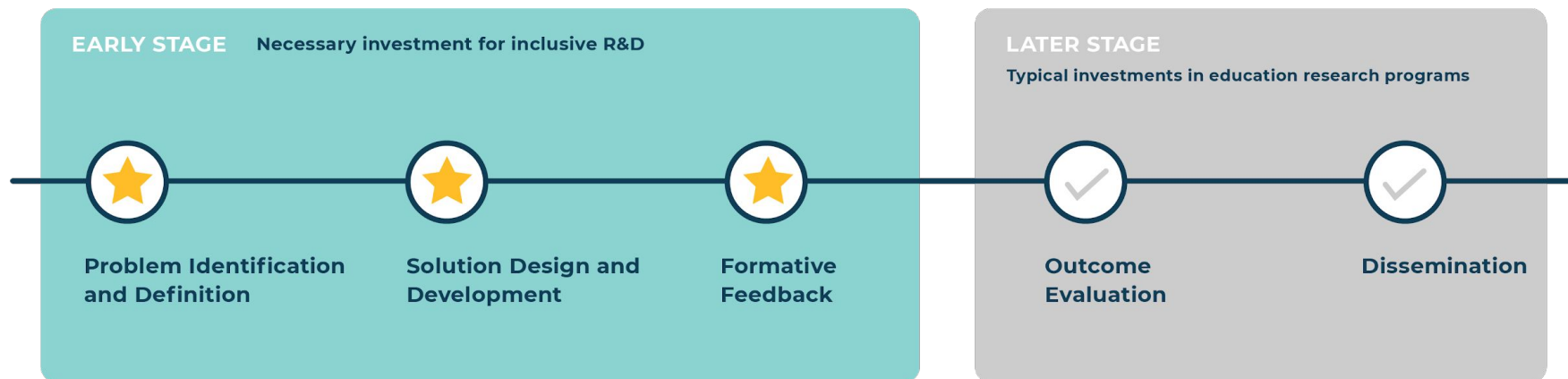


In May 2020, we made the commitment to an inclusive, anti-racist response to the COVID-19 pandemic. Through a series of co-design initiatives, the school community tackled topics like facilities, scheduling, and student success.



The Front Porch is an example of an idea that grew from the LAB School process, was evaluated and iterated on by community members, and has ultimately been an essential facet of the school's safe and equitable reopening.

Early-stage, inclusive investment in LEGIT solutions



Inclusive R&D: human-centered design process

To create LEGIT solutions, we will follow an inclusive, human-centered design approach that engages students, families, educators, and administrators in the complete process, from the design of the assessments we trial, to how assessment results are interpreted, to which interventions work best based on those results.



The applied research imperative

This moment demands inclusive design and directed research. The COVID-19 pandemic, lockdowns, economic recession, and our country's current reckoning with racial injustice have drawn bright lines around historical inequalities that we can heal only by tearing down old systems and building new ones. Inclusive design will help by engaging school communities who have relevant expertise and experience.

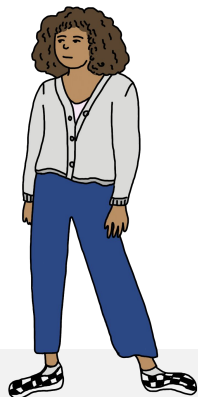


Focus on student experience & user journeys



Isabel Diaz

- Struggles with changing circumstances
- English as a new language
- Individualized Education Plan (IEP) for a specific learning disability
- Lacks bandwidth



Sarah Diaz

- Has a health impairment
- Access to college counselor
- Lacks bandwidth
- Loss of peer group
- Earn money for family



Jason Ai

- Autism in changing environments
- School check-in and mask-wearing is difficult
- Occupational therapy at home
- At high risk if infected by virus
- Parents require childcare



Dillon Baker

- Faces housing insecurity with fluctuating housing
- Parent works away from home
- Academic excellence is hampered by changing schools
- Not initially allowed to attend in person



Sam Brauer

- Struggles with anxiety and depression
- Art room is safe space
- At risk being away from school
- Musical instrument at home
- Trusted adult at school

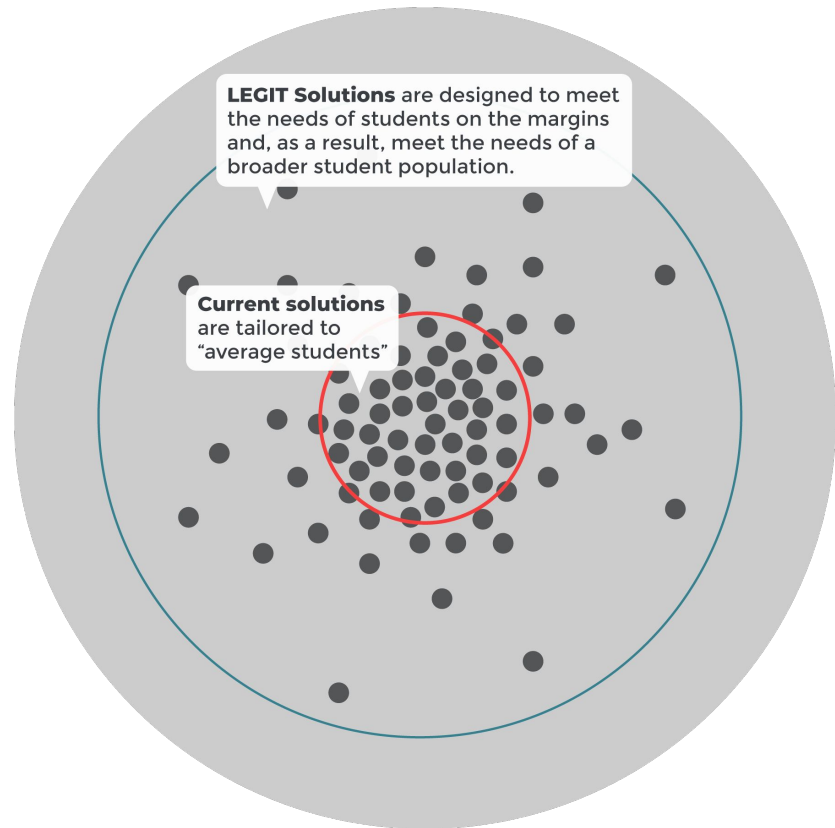
Personas by



Design for the margins

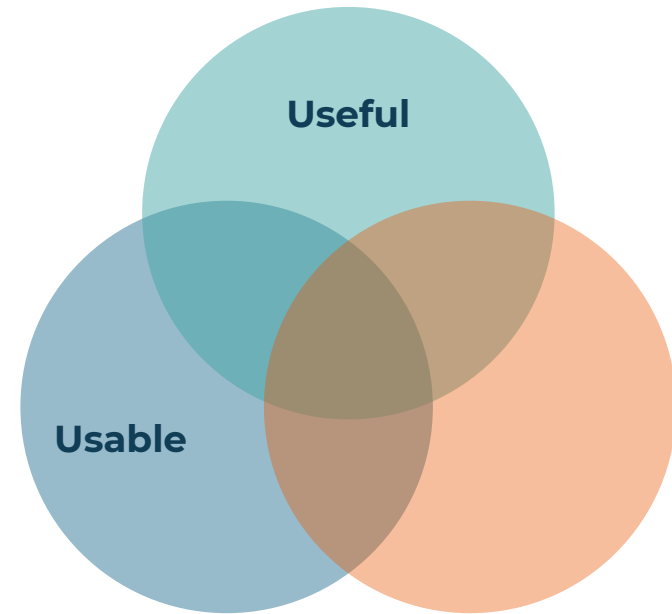
Current solutions are tailored to the “average” student, making them brittle. They work modestly well for most, are difficult to use for many, and aren’t at all usable by some.

An approach that is explicitly anti-racist and anti-ableist starts with designing for students with special needs who are consistently overlooked. Solutions that work well for these populations benefit all students more.



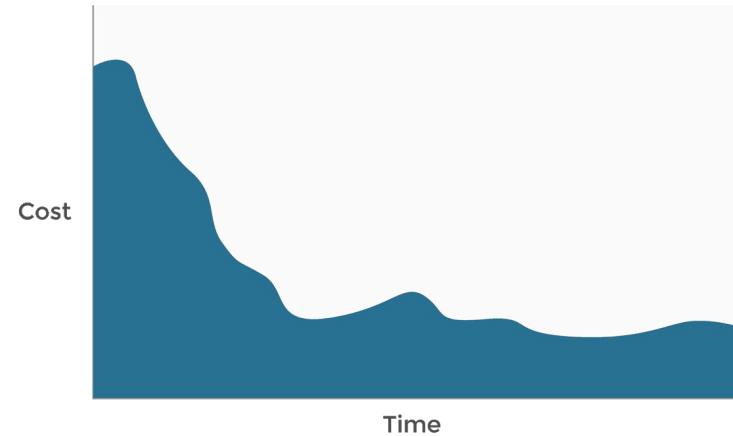
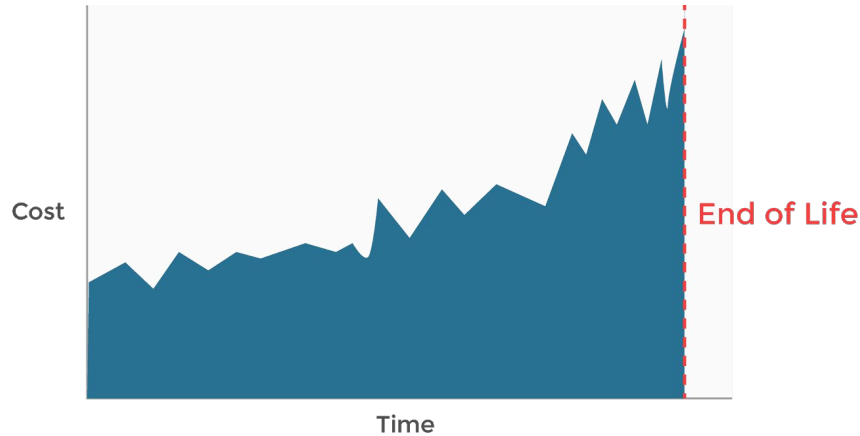
A human-centered, inclusive design process drives adoption and scale

- Solutions are user-friendly, and school community members want to use them because they meet their specific needs and make their lives better.
- Community members become evangelists for the solution.
- A feedback loop is opened, and the community becomes invested in continually improving the solution.
- Investing in designing for the marginalized students early on will create more durable solutions that work better for a broader population of students.



Solutions that evolve from this approach are useful, usable, and desirable.

Design at the margins reduces brittleness, improves operational scalability, and enables sustainable growth





Impact

IMPACT

PROBLEM

- Students and families are under increased pressures
- Teachers are skeptical of assessment
- The evidence gathering needs of schools are unmet
- Players in the assessment market lack innovation
- There is a disconnect between the lived experience of students and pathological explanation of adults

OPPORTUNITY

- The Black Lives Matter movement and a time of great transitions and uncertainty serves as a catalyst
- Emerging inclusive, anti-racist methods place students at the center of R&D
- Learning science is informing new approaches to teaching and supporting students

PROGRAM OBJECTIVE

If assessment produced actionable information and better supported students to learn and thrive, students of color and those experiencing poverty could experience breakthrough results.

FUTURE

We need new systems of assessments that:

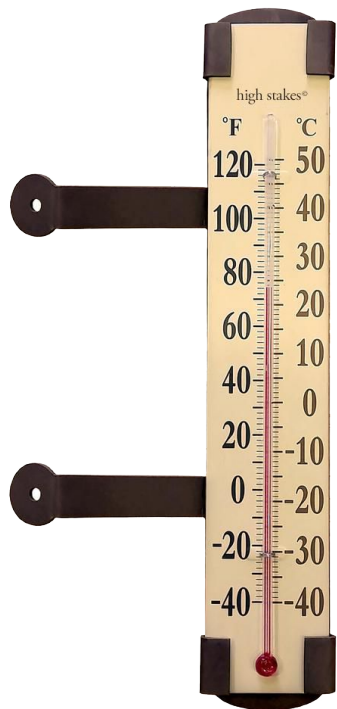
- Provide actionable, real-time information
- Support innovative schools and learning models
- Drive instructional improvement
- Provide multiple measures of student learning
- Measure the things we care most about

Mission Driven Pathway Forward

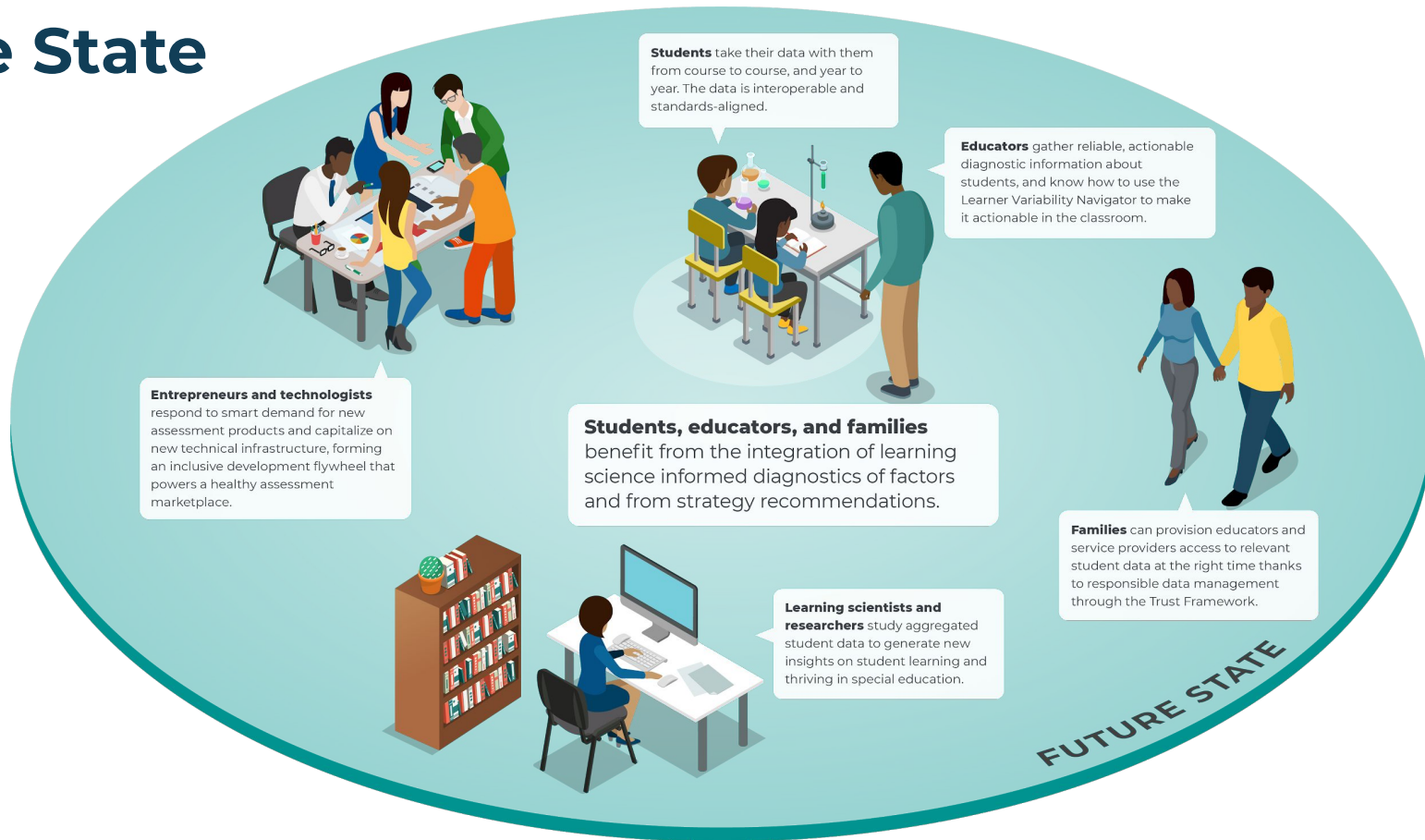
We propose sustained effort to ensure every student has customized, fitting supports and opportunities to learn. LEGIT solutions would help educators, families, and students understand the strengths and challenges of each learner, so that students are set up to learn and thrive. We aim to significantly improve leading indicators related to social emotional well being, cognition, math, ELA, and student engagement for students with disabilities in pilot schools that serve a high proportion of Black, Latino, and low-income students.



A thermostat, not a thermometer



Future State



Motivations for adopting LEGIT solutions



Teachers

- Access to useful, timely information about how students are doing
- Individualized strategies and ideas to try with students
- Low-stakes and easy to administer



Administrators

- Access to useful, timely information about trends and gaps
- Comprehensive set of data that give an indication of school- and district-level performance



Students

- Opportunities to feel heard and develop connections with trusted adults
- Personalized attention and classroom strategies to enhance learning experience

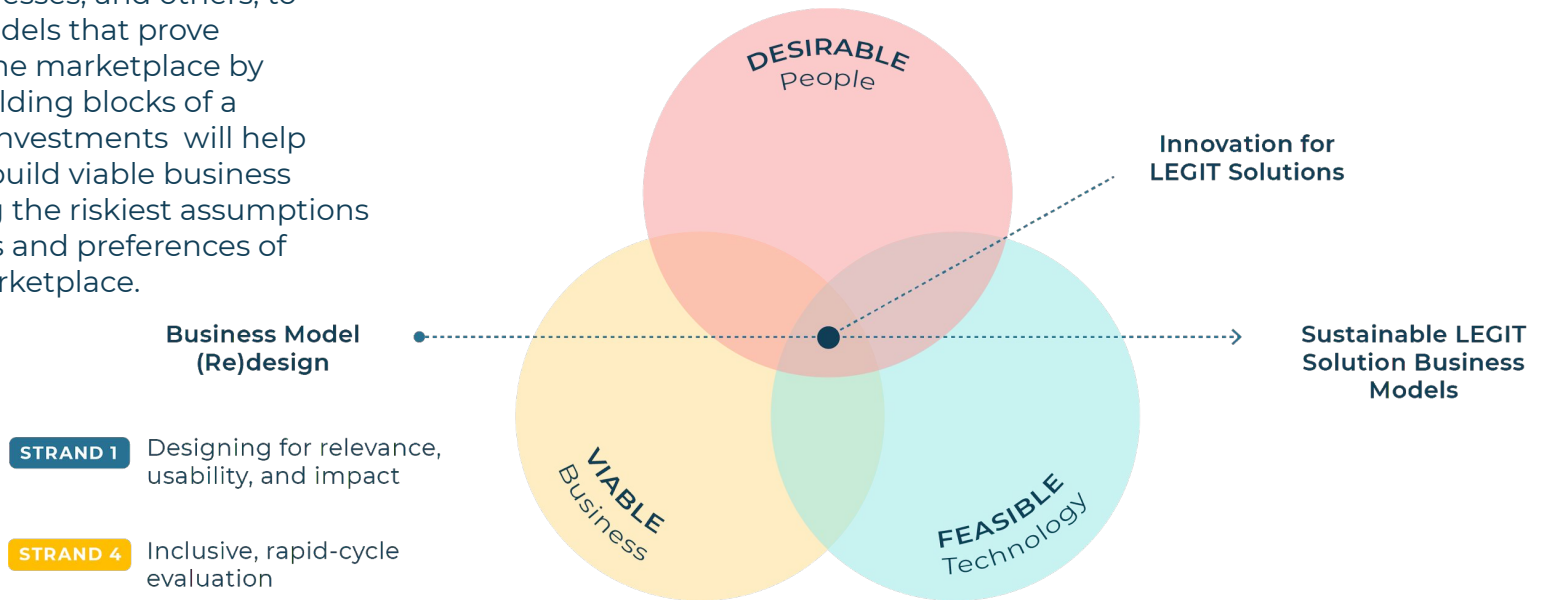


Families

- Personalized attention and classroom strategies to enhance learning experience for their child
- Opportunities to give input into, support, and reinforce strategies at home

Create the conditions for sustainable LEGIT business models

Sustained investments would enable non-profits, businesses, and others, to craft business models that prove sustainability in the marketplace by validating the building blocks of a business model. Investments will help organizations to build viable business models by testing the riskiest assumptions against the needs and preferences of users and the marketplace.

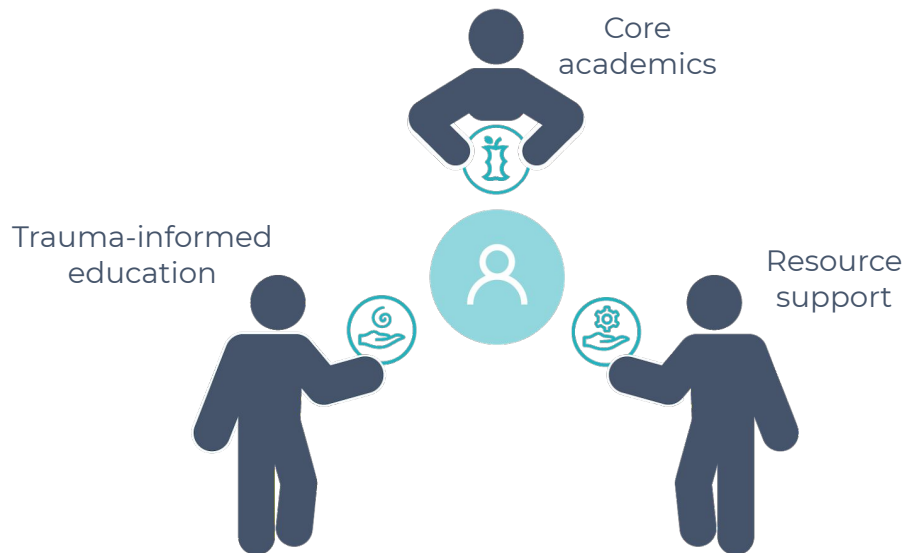


Re-envision evidence-grounded systems of support

Current Model



LEGIT Approach



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