



Global EdTech Trialing Network

United States

Tenets & Principles of
EdTech Trialing Networks &
Environments within the US

Version 1.0

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Introduction

A Global Movement

In March 2023, education leaders from across the world convened in Rome, Italy at the inaugural [Global EdTech Testbed Network \(GETN\)](#) event. The discussion focused on how the fields of education technology, research, and K12 education could come together to learn how to better develop and evaluate the effectiveness of education technologies in authentic classroom settings. Participants were policymakers, researchers, school practitioners, non-profit leaders, philanthropists, and venture capitalists from Asia, Europe, Sub-Saharan Africa, Middle East and Northern Africa (MENA), South America, and the United States. The white paper, "[Towards Systemic EdTech Testbeds: A Global Perspective](#)" was released in advance of the convening, exploring the global context of testbeds, or the real-world learning environment (classrooms or anywhere that K12 learning occurs) where education technology testing take place, and how they are systematically implemented.

At this meeting, a small group of education researchers, practitioners, investors, philanthropists, and policymakers from the United States committed to working together to accelerate the success and scale of effective, usable products that enhance learning for students.

This group has continued to meet and ideate, ultimately creating the tenets and principles discussed in this document. These tenets and principles are intended to be a resource to help guide the creation and sustainability of Testbeds, or Trialing Environments. The tenets and principles were created to:

- adapt the GETN principles and ideas for a US context
- provide a shared language to guide the ongoing structuring of R&D Trialing Networks and Trialing Environments, and
- bring more cohesion to R&D Trialing Network practices within the United States.

While this group believes in the need for innovation across the entire education sector (innovations in policy, pedagogy, staffing models, the teaching experience, higher-ed institutions, etc.), this document will only speak to R&D practices involving education technologies (Ed-Tech) in real-world classrooms and learning environments.

Additionally, the term “R&D Trialing Network,” is expansive and speaks to many types of research within the education sector. R&D occurs across a continuum by many individuals and organizations, in the United States and beyond, who are making valuable contributions to this ecosystem. For this specific document, we will be using the term “R&D Trialing Networks” to refer to organized groupings of Trialing Environments, also known as Testbeds.

The tenets and principles were created with the goal of enabling increased community building, collaboration, and resource sharing. They are not meant to be taken as prescriptive; we anticipate that groups will adopt some of these principles, modify them, and/or disregard some based on their needs and goals. Our hope is that these tenets and principles are helpful and generate shared learning and collaboration across the field.

Finally, it is also important to note that this document is **version 1**. We plan to keep updating this document as our collective learning continues to evolve. Specifically, we’re eager to incorporate the insights of our learning communities and school districts, and welcome feedback.

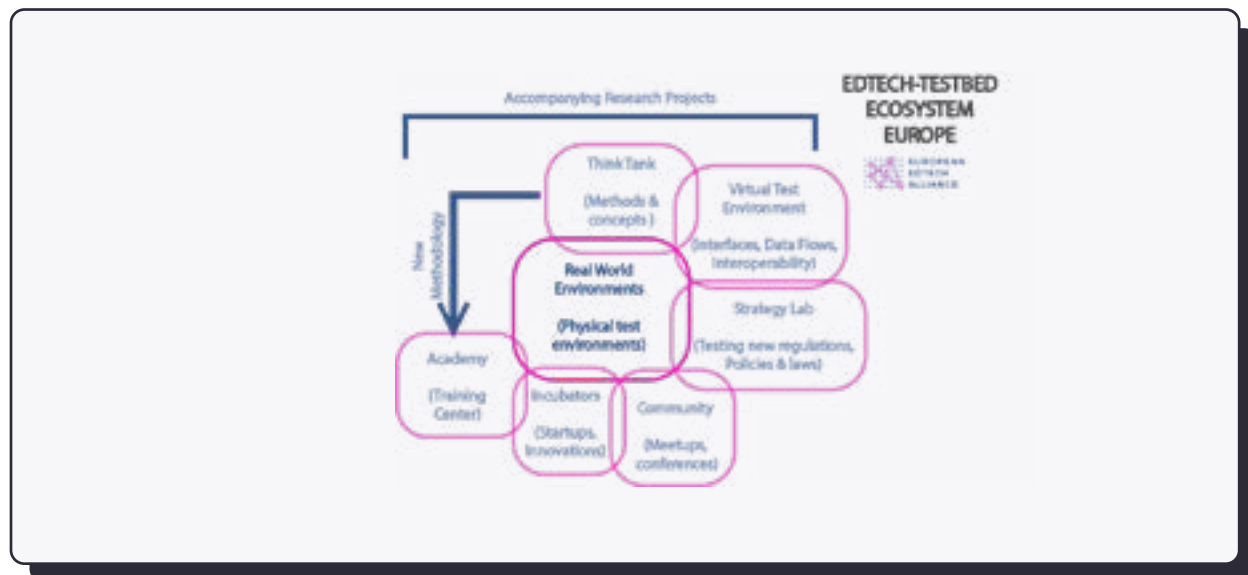
Testbeds within the US Context: R&D Trialing Networks & Trialing Environments

The white paper, "[Towards Systemic EdTech Testbeds: A Global Perspective](#)" breaks down the terminology of testbeds as:

*"the systematic ways in which we **test** "if," "to what extent," "how," "why," "why not," "in what conditions," and "for whom" EdTech interventions work for their intended users within certain settings and places—the **beds** (p.11)."*

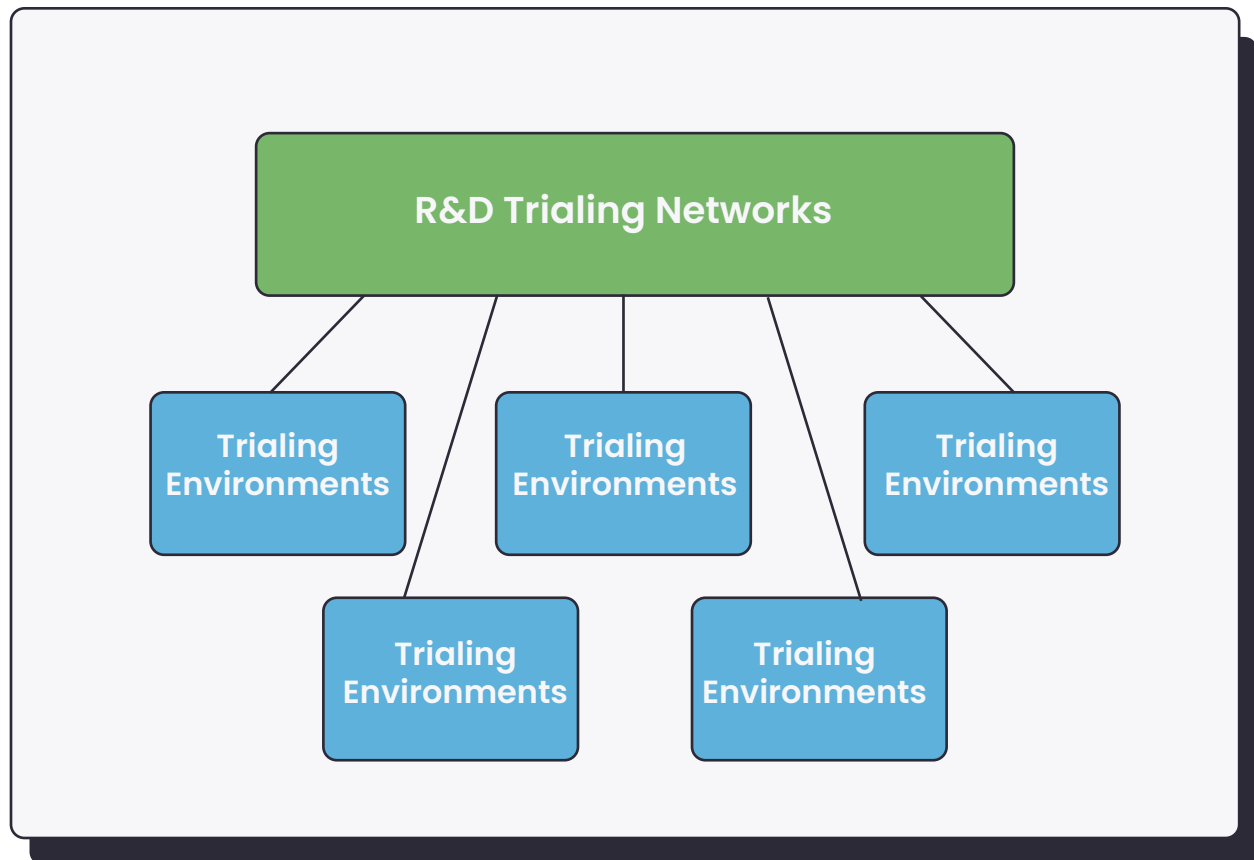
In other words, testbeds exist as lab environments to understand "what works, for whom, and under what conditions," as the US Department of Education's Institute for Education Sciences often asks.

The white paper also refers to EdTech Testbeds as "real world environments" situated between other educational and technology initiatives in a larger, interconnected education ecosystem, as described within the EdTech-Testbed Ecosystem Europe figure created by the European Edtech Alliance below:



While this terminology has been adopted globally, there is a need to revise the “testbed” phrasing to be more culturally sensitive within the context of the US. In an effort to create more inclusive terminology, we will refrain from using language that connotes treating humans as “test subjects.”

Instead, we will be using the term **“Trialing Environment”** to refer to the physical/digital location of a real-world classroom/learning environment where research occurs. We will also use the more expansive term **“R&D Trialing Networks,”** which speaks to a larger, networked community of Trialing Environments where various R&D activities occur (i.e., a state might have an R&D Trialing Network comprised of many different Trialing Environments within traditional public school districts, microschool environments, and community centers; an EdTech solution may run a study across various Trialing Environments within an R&D Trialing Network, trying to understand how a product performs in different contexts, etc.).



Purpose, Benefits, and Barriers of R&D Trialing Networks & Trialing Environments

PURPOSE

These Trialing Environments within R&D Trialing Networks serve several purposes:

- **Evaluation:** They help assess the effectiveness of EdTech products in real or simulated classroom scenarios, considering factors like student engagement, learning outcomes, and teacher feedback.
- **Iteration:** Trialing Environments allow developers to gather data and user feedback, enabling them to make improvements and refinements to their EdTech solutions.
- **Replication:** Trialing Environments allow developers and researchers to engage in replication studies, testing to see if similar findings related to an EdTech intervention can be duplicated in different contexts.
- **Research:** Trialing Environments provide opportunities for educational researchers to study the impact of technology on teaching and learning, contributing to the broader understanding of EdTech's role in education.
- **Trialing:** Educational institutions use Trialing Environments to validate the sustainability and alignment of EdTech tools with their specific educational goals and requirements.
- **Professional Learning:** Teachers and educators often participate in these environments to gain experience with new technologies, enhance their digital teaching skills, and participate in codesign/collaborative design activities informing EdTech development/evaluation.

Overall, R&D Trialing Networks play a crucial role in ensuring that educational technology is well-suited for its intended purpose, can effectively support teaching and learning in various educational settings, and reflects the needs of learning environments.

BENEFITS

Benefits of R&D Trialing Networks & Trialing Environments for EdTech

- **Evidence-Based Decision-Making:** R&D Trialing Networks provide empirical data and insights, allowing educators, administrators, policymakers, philanthropists, and developers to make informed decisions about which EdTech solutions to adopt and invest in.
- **Product Improvement:** Developers can refine and enhance their EdTech products based on feedback and data collected in Trialing Environments, resulting in more effective and user-friendly tools.
- **Customization:** Trialing Environments allow educators to customize and tailor EdTech solutions to fit the specific needs and curriculum of their institutions, classrooms, and learning environments.
- **Teacher Professional Learning & Leadership:** Teachers can gain valuable experience and training in using technology for teaching, improving their digital literacy skills and instructional practice. Teachers can also elevate their expertise, guiding EdTech to meet their unique instructional and classroom needs.
- **Research Opportunities:** R&D Trialing Networks serve as valuable research environments, enabling educational researchers to investigate the impact of technology on learning outcomes and teaching methods.

BARRIERS

Barriers to R&D Trialing Networks & Trialing Environments

- **Resource Constraints:** Establishing and maintaining Trialing Environments and R&D Trialing Networks can be resource-intensive, requiring funding, infrastructure, and personnel to oversee operations, stakeholder engagement, research activities, data collection and analysis, and reporting out results.
- **Time Constraints:** Implementing and evaluating EdTech in Trialing Environments can be time-consuming, which may discourage educators and institutions from participating.
- **Access to Technology:** Not all educational institutions or students have equal access to the technology (laptops/tablets, reliable internet, etc.) required to participate in Trialing Environment activities, leading to potential disparities in educational experiences.
- **Privacy and Data Security:** Handling sensitive student and teacher data in Trialing Environments requires robust privacy measures to protect individuals' information, which can be challenging to implement effectively.
- **Resistance to Innovation:** Teachers and educators may resist the adoption of new EdTech solutions, viewing them as disruptive, fearing that they may replace traditional teaching methods, or lacking confidence to try new approaches.
- **Generalization Issues:** Findings from Trialing Environments will likely not generalize to all educational contexts, making it important to consider the specific characteristics of the target audience and environment, and to consider the variation available across a more expansive R&D Trialing Network.

Despite these barriers, well-designed and adequately supported R&D Trialing Networks can help address many of the challenges associated with EdTech adoption and contribute to more effective, informed, and sustainable integration of technology in education.

A New Set of Tenets and Principles

The purpose of these tenets and principles is to create new terminology and shared language that allows for a modernized, streamlined, and equity-centered approach to Education R&D within Trialing Environments. The following 4 tenets and 10 principles represent the first version of the guidelines for a US-focused EdTech R&D Trialing Network, or authentic learning environments where research methodologies are implemented to develop and evaluate the impact of education technology in real-world settings (Trialing Environments).

Specifically, these guidelines are aimed to be used by:

- non-profit, intermediary organizations,
- K12 school system and learning environment administrators,
- “end-users” of EdTech – students, teachers, administrators, families, and caregivers,
- education technology developers/innovators,
- policymakers and government officials,
- venture capitalists, investors,
- philanthropy,
- researchers

to guide the process of collaborative development and evaluation of technologies and innovations within authentic learning environments (public school districts, school communities, out-of-school time, and other learning environments).

The end goal of these efforts is to create an innovation infrastructure (i.e., places, policies, protocols, and resources/funding) within the field of education R&D that is more efficient and inclusive, yielding unprecedented breakthroughs in the field.

TENETS

TENET 1

Inclusivity

A shared belief in the agency and expertise of school and student communities, especially those from historically excluded communities. A belief that teachers, administrators, students, and families should actively contribute and co-construct the development, research design, and implementation process of emerging innovations.

TENET 2

Innovation

A shared belief that innovation and disciplined, applied research in real-world learning environments can help us achieve unprecedented breakthroughs that advance teaching and learning.

TENET 3

Infrastructure

A shared belief that sustainable R&D is facilitated by the necessary physical (school buildings, learning environments, Trialing Environment spaces), digital (student data, edtech solutions, etc.), and organizational structures (processes, compliance systems, and protocols) necessary to facilitate ongoing R&D practices.

TENET 4

Impact

A shared belief that by streamlining research and development activities in trialing environment communities, we will be able to bring more coherence to the R&D field, thus accelerating breakthrough discoveries in the field of education.

PRINCIPLES

To establish a viable and healthy EdTech ecosystem, we've developed the following principles. These core principles fall across two primary categories: Context Principles and Implementation Principles.

CONTEXT PRINCIPLES

PRINCIPLE 1

Adequate Funding Availability

There is a reasonable and sustainable funding model to support the work of the R&D Trialing Network and the products being developed. Adequate funding is needed for:

Participant compensation

- Compensation for participating teachers and administrators.
- Compensation to support logistical efforts needed to coordinate R&D partnerships within school sites (participant recruitment, data collection, etc.).

Trialing Environment support

- Funding is available to support the learning environment with their needs to engage in R&D, including staffing, technology, etc.

Research

- Funding is available to support research activities, including unbiased/independent evaluation of EdTech products and their potential impact at all levels of the [ESSA tiers of evidence](#).

Non-profit/intermediary coordinating support

- Support for coordinating work between EdTech/innovations providers and school communities, research design, and research implementation.

EdTech adoption

- School districts have committed budget/funding to be able to adopt and scale up trialed EdTech.

Growth capital

- Funding is available to education technology/innovation providers to grow and/or support the ongoing development of innovations that are demonstrating promise.

PRINCIPLE 2

Context Adaptability

The R&D Trialing Network is responsive to the appropriate local, regional, or national education and economic context. The R&D Trialing Network solicits buy-in and consent from communities, key decision-makers, and participants and builds on regional/contextual strengths and priorities.

- The R&D Trialing Network might take advantage of the resources within different Trialing Environments, leveraging assets in universities or policy initiatives that help shape the direction of an R&D Trialing Network (for instance, a learning science R&D Trialing Network may emerge in close proximity to a university with a learning sciences program. Another R&D Trialing Network may focus on competency-based learning in a region where policy conditions favor competency-based learning. A geographically distributed network may emerge aligned to AI enabled EdTech, etc.).
- Where it is challenging to create favorable conditions, the network works to cultivate more favorable conditions by building trust, fostering nonpartisanship, and soliciting buy-in from key parties (i.e., if there are school board or state policies regarding restrictions on student privacy data, for instance, The R&D Trialing Network should adopt policies and protocols to stay within the bounds of regional restrictions, and should work to build trust at the decision-making levels to enhance the credibility and viability of the work).

PRINCIPLE 3

Supportive Learning Environments

The R&D Trialing Network is made up of authentic learning environments, like school systems (school districts, charter schools) and out-of-system educational environments (after-school centers, community centers, micro-schools, etc.) that have leadership support, teacher support, training, resources, and community buy-in necessary to implement R&D studies with fidelity.

- Learning environment leadership (Superintendent cabinet, etc.), building leadership, teachers, and families are in support of the R&D initiatives and willing to sign MOUs/ data share agreements and enlist staff support necessary to champion and coordinate studies.
- Learning environments should have the necessary technology, security, privacy, and data infrastructure to participate in studies. When not in place, the network should adapt implementation practices accordingly and/or help the learning environment gain access to necessary technology.

PRINCIPLE 4

Elevation of Learning Environment Expertise

Learning environment community members—administrators, teachers, students, and parents—are recognized as domain experts. As such, they actively contribute to co-creating research questions, product designs/iterations, and evaluation of EdTech products in partnership with EdTech developers and researchers.

The learning environment communities' self-identified needs and strategic priorities are cataloged and are used to guide EdTech selection and research design.

- R&D intermediaries may keep running inventories of “problems of practice,” or “challenge maps” that include opportunities for innovation/needs/priorities of school systems.
- Needs assessment tools that help illuminate how a challenge manifests for different members of learning environments across hierarchies may be leveraged to gain further insight into a challenging area.
- Relevant members of school communities are engaged proactively in designing research questions, informing how methodologies are applied, etc.

PRINCIPLE 5

Adequate Representation & Variation

The R&D Trialing Network is composed of learning environments (school districts, school sites, and other community-based learning environments) that reflect the diversity of the education system in the United States. There is adequate variation among the size and type of school systems and learning environments (rural, urban, etc.), and the race, socio-economic status, nationalities, etc. of students served within the schools and learning environments.

- Given the variation of learning environments, resources/incentives may be leveraged to provide additional capacity for learning environments that may be resource-constrained, ensuring meaningful diversity across the R&D Trialing Network.
- Representation and variation allow for different methods of research, variation of sample size, replication studies, etc.

IMPLEMENTATION PRINCIPLES

PRINCIPLE 6

Vetting & Decision-Making for EdTech

EdTech/tech-enabled services vetting criteria and processes are in place to support good matches between EdTech solutions and learning environments. EdTech solutions are screened to assess technical compatibility, data privacy, and security requirements and for both pedagogical and strategic alignment to learning environments within the R&D Trialing Network, before being matched with a learning environment for a study. Intermediary organizations can be leveraged to do the vetting of EdTech tools, or additional capacity may be made available to research institutions and/or school systems.

Additionally, EdTech is assessed for its maturity/stage of development and is aligned to appropriate corresponding research study/activities (i.e., early stage products may undergo usability studies, whereas established products may be evaluated by more rigorous efficacy studies).

PRINCIPLE 7

Viability of the Research Study

The research design is viable for both the EdTech company and the learning environment and is implementable. Specifically,

- The research design is mutually beneficial.
- The research study aligns with the current developmental stage of the technology.
- Implementation of the research minimizes disruption to the learning environment and is feasible for teachers and school community members to implement.
- There are clear protocols and structures in place to support strong implementation of the tool (PD/training, etc.), and easy, secure, and private data collection.
- There is alignment between the location or venue through which the study is happening (physical classroom, virtual, distance, synchronous, asynchronous, or hybrid) and the goals of the research.

PRINCIPLE 8

Adequate Personnel, Resources, & Process

There are clearly articulated roles and responsibilities defined for all participants, including students, administrators, and teachers, and adequate resources and time are allocated for each implementation. Participants have the freedom and encouragement to engage meaningfully throughout studies, including ongoing professional learning opportunities.

- Necessary professional development and meeting time is proactively communicated and negotiated with learning environments to ensure participation; relevant administrators are supportive of personnel engaging in R&D activities.
- Implementation requirements (i.e., how often teachers use a tool, how many focus groups they engage in, etc.) are co-determined with learning environment communities.
- Participants are meaningfully compensated for their time and contributions to the studies.
- EdTech partners will provide adequate training, onboarding, technical assistance, and support to learning environments.
- There is distributed ownership of the project across researchers, intermediaries, learning environment participants, and EdTech developers.

PRINCIPLE 9

Communication & Reporting

Results will be reported to participating and interested stakeholders, and there are opportunities for co-interpretation and co-analysis of data with participants to mitigate potential bias and identify limitations of research/results.

- Participants have the chance to engage directly with data/results of studies to make meaning of the findings.
- Translate findings and evidence to interested stakeholders including parents, community, and policymakers so that understanding is built about why and how to engage in this work and what the results mean.
- Researchers adhere to the SEER principles.

PRINCIPLE 10

Taking Action & Sharing Results

Study findings are used to inform action, whether it be product or implementation improvements, or future studies. Results and learning are shared broadly across the network(s) and the field.

- Studies may include “action reports” in addition to recommendations, and incentives for companies and school environments to adopt changes.
- Convenings occur to keep R&D Trialing Network Trialing Environments in community with one another, creating a peer network where they can learn from one another’s findings.
- Detailing, reporting, and sharing findings from studies exists in scalable ways; Studies and findings are made broadly available by digitally publishing, and/or circulating relevant learnings within the Network(s) and beyond.

Glossary of Terms

EdTech

An education technology that enhances teaching and/or learning. We use the term EdTech broadly here to speak to digital learning products (DLPs), digitally enhanced curricular resources, and tech-enabled services.

Education Technology R&D Trialing Network (formerly Testbed Network)

A collaborative community of researchers, EdTech developers/entrepreneurs, school practitioners, philanthropists, venture capitalists, and non-profit organizations who work together to share resources and collaborate on the creation of productive trial environments for emerging EdTech solutions. A coordinating intermediary may lead a network. Education R&D Trialing Networks may coalesce around a geographic region, area of study, or specific topic.

Trialing Environment (formerly Testbed)

The authentic learning environment (physical, online, virtual, or hybrid place) where the EdTech Test takes place.

Learning Environments

Broadly, the spaces (physical, online, virtual, or hybrid place) where all K12 learning takes place. These can be within traditional school districts/systems, charter schools, or out-of-system (microschools, community programs, etc.) All Trialing Environments are learning environments, but not all learning environments are Trialing Environments.

Intermediary

An organization that acts as a coordinating entity between EdTech companies, learning environments, and researchers to help increase efficiency and cohesion across multiple stakeholders involved in R&D trials.

Codesign, Co-creation, Participant Agency

The practice of elevating participant expertise (in this instance, specifically the end users of EdTech—students, teachers, administrators, and/or families/parents) in the product design

process, research design process, and implementation. The goal is to extend agency to the participants, elevating their expertise and incorporating their perspective with equal weight to the EdTech developers and researchers.

Problem of Practice

A specific type of challenge that learning environments face that has a significant impact on teaching and learning.

Implementation

The phase of R&D in which a trial of an EdTech is taking place in an authentic learning environment.

Product Development Stages

The current state of an education technology while undergoing a product development cycle (i.e. concept, minimum viable product/low-fidelity prototype, high-fidelity prototype, systems prototype, fully implemented solution). Different stages of development require different types of research.

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