IES Institute of Education Sciences

From Education Research to Market: The Invent-Apply-Transition Framework

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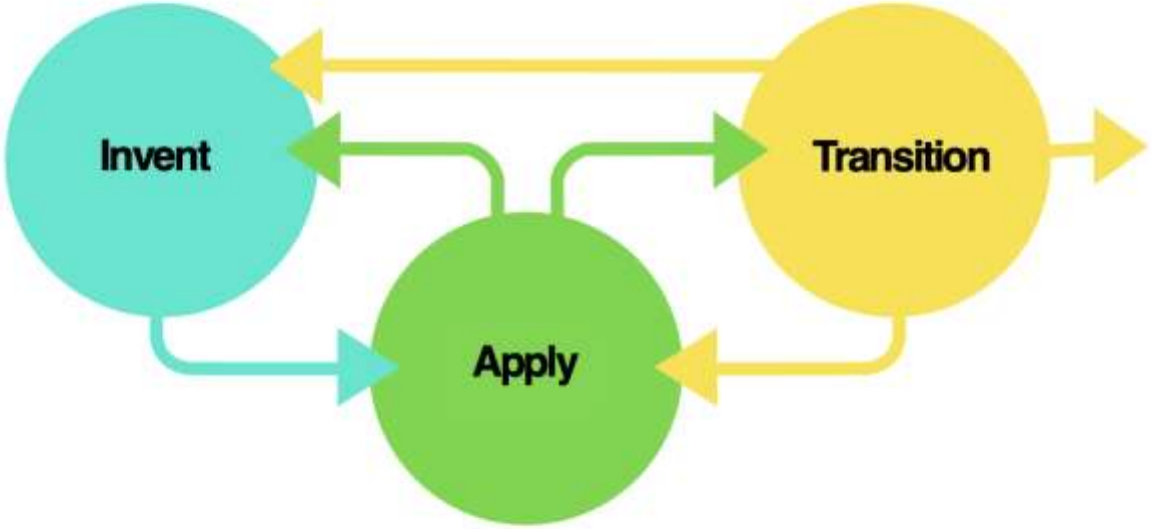
Advancing Equity and Inclusion in the Education Sciences

Agenda

- Project background
- Intro to the Invent-Apply-Transition framework
- Panelist reflections
- Q&A

SRI International

SRI I-A-T Framework



Hypothesis

Could a scaling framework be created for educational research by adapting common startup methodologies?

Could the adoption of the I-A-T framework support more successful transitions of educational research into widespread use?

Methodology for Tailoring the Framework

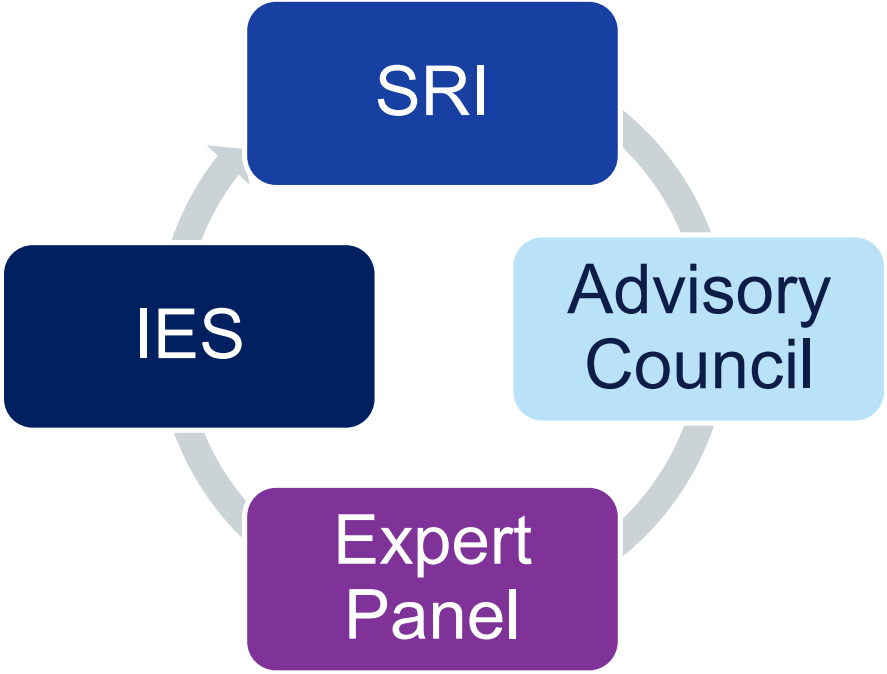
Advisory Council Members

Rob Horner, Professor Emeritus at the University of Oregon and developer of school-wide positive behavior interventions and supports (PBIS)

Malvika Bhagwat, Director of Outcomes and Efficacy at Owl Ventures

Melissa Dodd, Chief Technology Officer of San Francisco Unified School District

Tim Hudson, Chief Learning Officer, Dreambox



Framework for Education Researchers

Solution Readiness Levels	I-A-T Scaling Activities	IES Research Phases
SRL 1 – Invent: Process of ideation and spending time understanding the use-case and the need	Needs hypothesis Key performance indicators hypothesis Solution hypothesis (minimum viable product) Basic protype performed Initial Performance, Reliability, Convenience, and Cost (PRCC) analysis	Exploration Innovation and Development
SRL 2 – Apply Demonstrates that the technology satisfies the need of its principal direct users (proof of concept)	Product-user fit hypothesis Champion(s) identified Stakeholder mapping Initial market and differentiation analysis Product-market fit hypothesis	Innovation and Development Efficacy and Replication Studies Effectiveness Studies
SRL 3 – Transition Demonstrates that the technology satisfies the needs of all stakeholders, and thereby those of a large or strategic segment of the market	Scaling pathway hypothesis Considerations for the 4 T's: Team, Technology, Total Addressable Market, Traction Pitch deck	Effectiveness Studies

Areas of Focus

Gaps in transition planning:

- A disconnect between the needs identified by researchers and the needs held by administrators of local education agencies.
- Not identifying all the important stakeholders and not understanding their priorities.
- Not recognizing that convenience and adaptability are as important as impact and cost, if not more, including how the innovation would be incorporated into existing systems.
- Not completing an initial market analysis to understand the best path for transition.

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Are the needs identified by researchers widely shared by district stakeholders and intended users?

10 out of the 13 interviewees emphasized that the needs definition is often mischaracterized, in whole or in part. Informants reported a disconnect between needs identified by researchers and needs held by administrators of local education agencies (districts)

What researchers can ask

- Is the problem widespread enough that it has been acknowledged by practitioners?
- Is the problem in line with the top needs identified by school districts, state education agencies, and schools?
- How is the proposed solution believed to be better than existing options?

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Who are the important stakeholders and what are their needs and priorities?

"Researchers need to deeply understand the gatekeepers and determine how and why they make their decisions" – *Expert Panel Member*

"There are many people who can say no, and very few people who have the power to say yet" – *Expert Panel Member*

What researchers can ask

- Who are the people whose needs must be satisfied for an innovation to be adopted and what are their functions in the adoption process?
- What are the critical criteria that must be met for different types of stakeholders and what is the plan to meet those criteria?

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Convenience and adaptability are as important as impact and cost, if not more.

"It had the right ingredients, it had early-stage traction, it showed a good effect size (though not as good as the other), but it only took 4 minutes whereas others took 15. So it was the right combination of convenience and efficacy. Schools are pragmatic, and if it's good enough and convenient and usable, they'll use it." – *Expert Panel Member*

What researchers can ask

- Usable: Does the solution make the user's life easier?
- Adaptable: What components of the innovation can be flexibly adapted and what parts need to be replicated?
- Easily integrated: Does the innovation seamlessly fit with existing systems in the host environment?

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Has an initial market analysis been completed?

How is the innovation different from existing solutions?

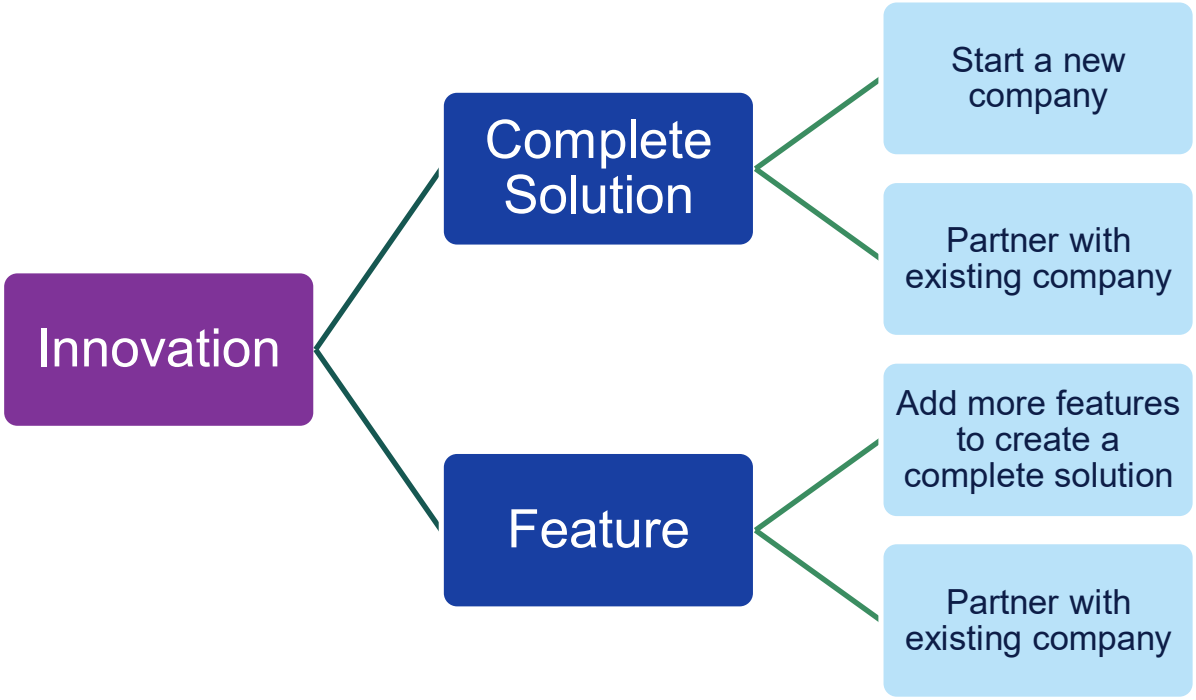
Is this innovation a feature or a complete solution?

What researchers can ask

How is the innovation differentiated from existing solutions?

- Performance
- Reliability
- Convenience
- Cost

Scaling Pathway Hypothesis



Summary

Invest time and resources to:

- Ensure that your needs hypothesis reflects the priorities and needs of districts, teachers, and other key stakeholders.
- Recognize the importance of convenience and adaptability, in addition to performance and reliability.
- Understand where and how the innovation will fit into the field to drive the design specifications and scaling pathway.

Report Link

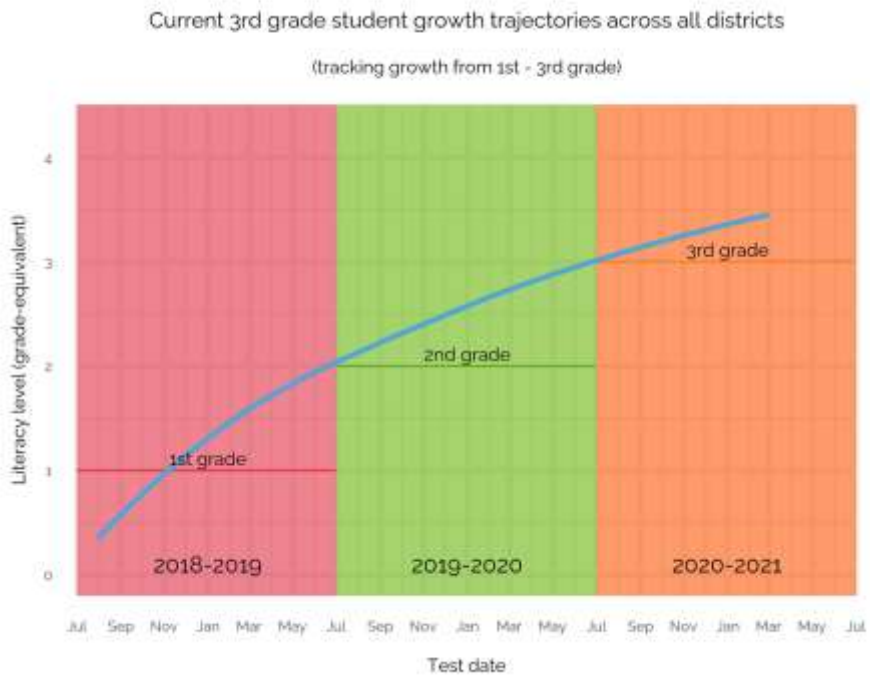
https://www.sri.com/publication/from-research-to-market-development-of-a-transition-process-to-integrate-sustainable-scaling-methodologies-into-education-innovation-research-design-and-development/

Jay Connor

- Who is the customer?
- What are the impediments to easy application in practice? (Curriculum Agnostic) – Teacher/Administrator as Co-Designer
- Who is the purchasing gatekeeper? (Strategic Selling)
- Can you identify a specific pain or fear your solution addresses?
- Know whether you are replacing or improving impact of a part of the present system OR does your solution imply a different system?

Systems Alignment

Student Growth Trajectories



All schools, teachers, and students

Average Growth for 6688 students from Grades 1 to 3

Student Demographics
4 states, 17 districts, 90 schools
38% Limited English Proficiency
77% Free and Reduced Lunch
80% Students of Color

Roberta Golinkoff's Reflections

Chris Hansen
In District Practitioner

Director of Learning - Hortonville Area School District - Gatekeeper

- Practitioners and Researchers MUST collaborate more frequently
- Traditions bind educators more than science can overcome at times
- Higher Education also has traditions and don't follow their own School of Ed research
- Scaling means "investment" and means institutional change that requires a foundation – PLC
- Frameworks are only as good as the collective understanding – implementation science is important
- Performance, Reliability, Convenience, Cost – TIME in the swirl