



# The Five Dimensions of Attaining Scale: Implications for MSP Projects

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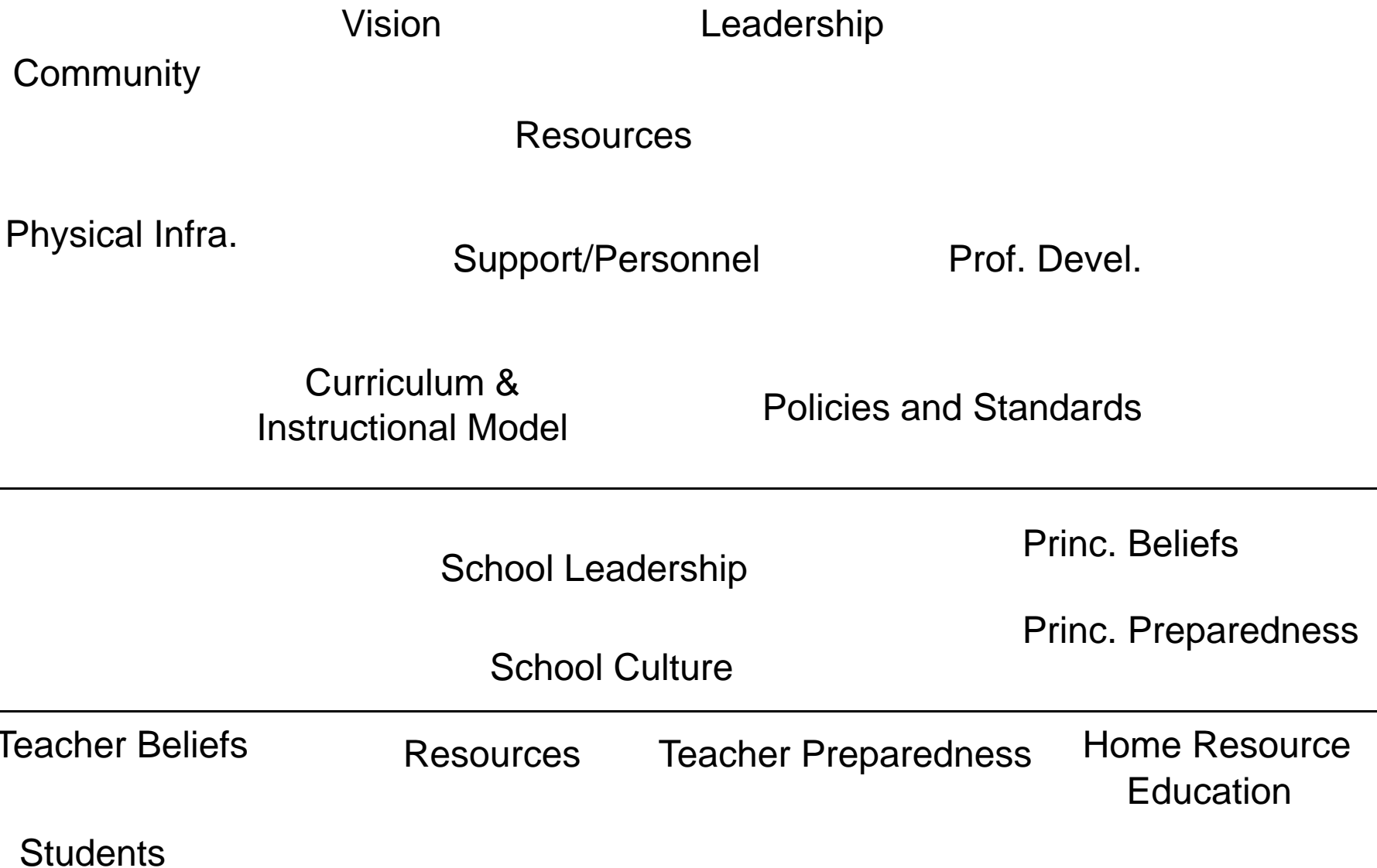
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# Scaling Up in Education

- Adapting an innovation successful in some local setting to effective usage in a wide range of contexts
  - Fast food as example
  - Need not be one-size-fits-all; can be personalized, as with apps
- In contrast to experiences in other sectors of society, scaling up *successful* programs has proved very difficult in education
- The more complex the innovation and the greater the influence of setting, the more likely a new practice is to fail crossing the “chasm” from its original setting to other sites
  - Avoiding the “replica trap”: the erroneous strategy of trying to repeat everywhere what worked locally, without considering challenges of size and contextual variations in needs/resources
    - Problems of magnitude
    - Problems of variation -- not adoption, but adaptation



**Dwyer, Russell, Bebell (2003) Elementary Teachers' Use of Technology**

<http://www.bc.edu/research/intasc/PDF/ElmTeachUseTech.pdf>



# Sources of Leverage for Scaling

- *Depth*: **evaluation and research** to understand and enhance causes of effectiveness
- *Sustainability*: **robust-design** to enable adapting to negative shifts in context
- *Spread*: modifying to retain effectiveness while **reducing resources and expertise** required
- *Shift*: **moving beyond “brand”** to support users as co-evaluators, co-designers, and co-scalers
- *Evolution*: learning from users’ adaptations about how to **rethink the innovation’s model**

You have a proven innovation you want to scale...



# Exploring the Process of Scaling Up

What are the steps—and traps—in moving from innovation to broad-based adoption and consequential change?



<p><b>Dimensions of Scale</b> Taking an educational innovation completely to scale involves five dimensions that reflect different aspects of making an intervention effective in one setting useful across a wide spectrum of contexts.</p>	<p><b>Depth</b> Getting to scale produces deep and consequential changes in practice. Requires evaluation and research to understand and enhance the causes of effectiveness.</p>	<p><b>Sustainability</b> Sustaining scaled growth means maintaining these changes in practice over substantial periods of time. Requires robust design to enable adapting to negative shifts in context.</p>	<p><b>Spread</b> Scaling up is achieved by diffusion of the innovation to large numbers of users. Requires modifications to retain effectiveness while reducing the resources and expertise required.</p>	<p><b>Shift</b> Ownership of the innovation is assumed by users, who deepen and sustain the innovation via adaptation. Requires moving beyond "brand" to support users as co-evaluators, co-designers, and co-scalers.</p>	<p><b>Evolution</b> The innovation as revised by its adapters is influential in reshaping the thinking of its designers. Requires learning from users' adaptations about how to rethink the innovation's model.</p>
<p><b>Sources of Leverage</b> Each dimension provides leverage for the scaling process by evolving the intervention to increase its power, durability, applicability, and flexibility.</p>	<p><b>Evaluation and Research</b> What are the sources of the innovation's effectiveness? What conditions does each source depend on for success? How sensitive is each source to these conditions? How consistent is the innovation with the current political and cultural context of educational improvement?</p>	<p><b>Robust Design</b> How can the innovation be modified so that it functions in various types of inhospitable conditions? How typical is each condition for success in the target population of users? How can developers support varied users while evolving toward conditions for success that enable full effectiveness?</p>	<p><b>Reducing Resources and Expertise</b> How much is the overall power of the innovation affected by reducing its cost or the knowledge required to implement it? How much power is retained in a light version that requires fewer resources or less expertise of its users? How can developers support light users to achieve full effectiveness?</p>	<p><b>Moving Beyond Brand</b> How can developers support users going beyond what the originators have accomplished? How can developers build users' capacity as co-evaluators, co-designers, and co-scalers? How can users form a "community of practice" that helps answer questions about scale?</p>	<p><b>Rethinking the Model</b> How can developers unlearn their initial beliefs, values, and assumptions about the innovation, and generate willingness to start the innovation process over again? How can developers facilitate reconceptualization and discontinuous evolution? How can developers form a "community of reflective redesign" with other innovators?</p>
<p><b>Traps to Avoid</b> Evolving along each dimension requires the developers of the innovation to overcome traps that have both cognitive and affective aspects.</p>	<p><b>Trap of Perfection</b> Developers should not seek an unattainable goal of perfection at the cost of deflecting resources from other dimensions of scale. (The great should not be the enemy of the good.)</p>	<p><b>Trap of Mutation</b> Developers should ensure that the ways they modify the innovation to adapt to various inhospitable contexts do not undercut its core conditions for success.</p>	<p><b>Trap of Optimality</b> Developers should realize a somewhat less powerful innovation that reaches much greater numbers of users is a step forward.</p>	<p><b>Trap of Origination</b> Developers should not attempt to control the original innovation in ways that deter adaptation and further innovation by users.</p>	<p><b>Trap of Unlearning</b> Developers' unwillingness to take a fresh look can prevent genuine evolution.</p>

Source: Christopher Deke, Harvard University Graduate School of Education; Cynthia Coburn, "Rethinking Scale: Moving Beyond Numbers to Deep and Lasting Change," *Educational Researcher* (2008).

Illustration by Patrick Corrigan



# Depth Steps Towards Scale

- What are the sources of the innovation's effectiveness?
  - On what conditions for success does each source depend?
  - How sensitive is each source to attenuation or absence of a particular condition for success?
  - How consistent is the innovation with the current political and cultural context of educational improvement?

*Trap of Perfection*



## *Sustainability* Steps Towards Scale

- How can I modify the innovation (robust-design) so that it functions in various types of inhospitable conditions?
  - How typical is each condition for success in my target population of users?
  - How can I support “robust-design” users in evolving towards conditions for success that enable full effectiveness?

*Trap of Mutation – Don’t Want to Lose Depth*



# Spread Steps Towards Scale

- How can I modify the innovation to retain effectiveness while reducing resources and expertise required?
- How much is the overall power of the innovation affected by reducing its cost or the knowledge required to implement?
  - How much power is retained in a “light” version of the innovation that requires fewer resources or less expertise of its users?
  - How can I support “light” users to evolve towards sufficient resources and expertise to achieve full effectiveness?

*Trap of Optimality – Scaling Not the Project, but the Model*





# Shift Steps Towards Scale

- How can I move beyond “brand” to support users as co-evaluators, co-designers, and co-scalers?
- How can I support users going beyond what the originators have accomplished?
  - How can I build users’ capacity as co-evaluators? As co-designers? As co-scalers?
  - How can users form a “community of practice” that helps answer questions about scale?

*Trap of Origination*



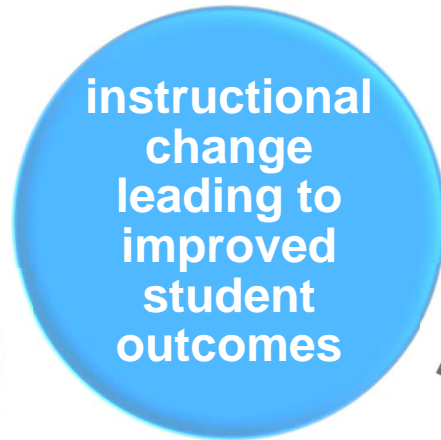
# Evolution Steps Towards Scale

- How can I unlearn my beliefs, values, and assumptions about the innovation?
  - How willing am I to start the innovation process over again?
  - How can I “make the familiar strange” to facilitate reconceptualization and discontinuous evolution?
  - How can I form a “community of reflective redesign” with other innovators?

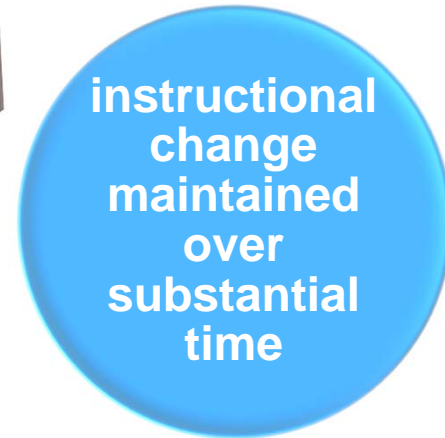
*Trap of Unlearning*

# DEPTH

EVOLUTION



SUSTAINABILITY



SPREAD



SHIFT





# Heuristics for Scaling Up

1. Examine your initial project model to identify threats that might prevent going to scale.
2. Consider which aspects are most important to evaluate, given limited time and resources. Collect baseline data as soon as possible.
3. Determine what proportion of your initial resources to allocate to depth, sustainability, and spread.



# 13 Factors Related to Success

- **Leadership**
- **Vision**
- **Goals**
- **Technology Plan**
- **Funding**
- **Resources**
- **Community**
- **Professional Development**
- **Teacher Support**
- **External Programs**
- **Collaboration**
- **Obstacles (Fewer)**
- **Technology Standards**



# Resources and Support

Districts with strong technology programs have:

- line item funding
- a technology plan that includes equipment and support personnel
- school integration specialists
- focused and evolving PD
- diversified and strategic technology support



## Leadership and Vision

Districts with strong district-wide technology leadership have:

- higher levels of community involvement
- district leaders who emphasize technology and who have clear technology visions
- and educational goals that are supported by technology



# Key Factors Affecting Elementary Classroom Use

- Home Use, Skills, and Beliefs about tech
- Teacher's Pedagogical beliefs and practices
- Mean Student Technology Skill Level
- Teacher's Beliefs about Technology
- Principals beliefs about technology
- Principals Emphasis on technology and Pressure to use Technology





# What Leaders Do

- Showcase to community and school board
- Vision and expectations
- Pockets of innovation
- Professional Development - teams and extended time



# Scale is a “Wicked” Problem

- Complexity at multiple, fractal levels
- Scaling to each site requires adaptation to local context and culture
  - “Tower of Babel” as a symptom of deeper confusion
- Whether an innovation can scale is not the same as whether it should scale
- This framework helps to determine both, primarily focusing on how to scale

# Organic Scaling “like a Weed”



