Science-Based Innovation and the Foundations of Resilience

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Supportive Experiences

Advances in Science Are Opening Up the Black Box of Disparities in Learning, Health, and Development

Effective learning, adaptive behavior, lifelong health and well-being

School failure, risky behaviors, chronic illness, and shorter lifespan

Supportive Experiences
Parents
Genes
Negative Experiences
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Early Experiences Leave Chemical “Signatures” on Genes

External Experience
Gene Regulatory Proteins

Epigenetic “Signature” Turns Gene On or Off
Resilience Can Be Strengthened by Supportive Relationships and Skill-Building

- Supportive community services
- Responsive relationships
- Increasing sense of mastery
- Faith and cultural traditions

Scientific Concepts That Can Help Us Think Differently About Solutions to Big, Costly Problems That Have Their Roots in Early Childhood
3 Key Science Concepts

1. Responsive relationships and positive experiences build strong brain architecture.
How Serve and Return Builds the Foundation for Literacy Skills

Responsive relationships and positive experiences build strong brain architecture.

The core capabilities we all use to thrive in school, at work, and in the home are built over time through practice and modeling.
Core Skills for Life, Learning, Work, and Health

An “Air Traffic Control System” in the Brain

Executive function and self-regulation are a foundational set of capabilities that help us:

• focus and sustain attention
• set goals, make plans, and monitor actions
• make decisions and solve problems
• follow rules, control impulses, and delay gratification

The Pencil Tap Test
(Cognitive Flexibility and Inhibitory Control)

Age 3

Age 5
The Development of Executive Function Skills Begins in Early Childhood and Extends Into the Early Adult Years

How Services for Youth and Adults Can Support Core Skills

1. Provide strategies and opportunities to practice in situations that matter
   - Scaffold
   - Plan for obstacles
   - Build on small successes
   - Choose meaningful goals

2. Deliver services in ways that reduce stress rather than cause it
   - Meet basic needs
   - Streamline & simplify
   - Use familiar tools
   - Leverage social relationships
3 Key Science Concepts

1. Responsive relationships and positive experiences build strong brain architecture.

2. The core capabilities we all use to thrive in school, at work, and in the home are built over time through practice and modeling.

3. Serious adversity disrupts the developmental process with consequences across the lifespan.

Toxic Stress Disrupts the Development of Brain Architecture and Systems Affecting Lifelong Health
How Excessive Stress Affects the Development and Use of Core Capabilities

A Test of Working Memory Under Stress
Let’s De-Stress

Applying These Science Principles to Build Resilience in Children and Families

Reduce Sources of Stress

Build Responsive Relationships

Strengthen Core Life Skills

Children
Healthy Development & Educational Achievement

Adults
Responsive Caregiving & Economic Stability

Center on the Developing Child
Harvard University
Policy & Practice Shifts Using the Principles

Build Responsive Relationships

- Avoid children cycling in and out of programs
  - e.g., due to housing instability, involvement in child welfare, loss of child care subsidy
- Reduce turnover in child care and human services positions
  - e.g., through compensation, PD, benefits, etc.
- Provide workers in service programs with enough time to develop relationships with their clients

Strengthen Core Life Skills

- Prioritize funding for programs that provide opportunities for participants to practice these skills
- Focus on small, incremental steps with frequent feedback
  - e.g., break down the goal “find housing” into a manageable sequence of smaller tasks
- Include executive function & self-regulation as a key strand in the “braided rope” of skills children need
Policy & Practice Shifts Using the Principles

Reduce Sources of Stress

- Reduce barriers to families accessing basic supports—nutritious food, safe shelter, diapers, medical care, mental health services
- Provide services in well-regulated, welcoming environments
- Establish streamlined rules for eligibility and re-certification; minimize punitive regulations that add stress

Using the Science Principles as a New Lens for Policies and Intervention Strategies

- Survey current policies and practices
- Assess proposed changes
- Envision new strategies
- Apply to policies and services for children and adult caregivers

Is one of the principles a specific target of this policy or practice?
How does this policy or practice affect one or more of the principles?
Can you measure its impact of on one or more of the principles?
Measuring *What Works on Average* Is Important—But Not Enough to Achieve Breakthroughs

Current Approach

- Significant mean effect earns evidence-based status

**What We Should Also Ask**

- Why did this work so well for these children and families?
- Why did this work so poorly for these children and families?
Greater Impact at Scale Requires a New Definition of an Evidence-Based Program

- Scale effective strategies for similar subgroups
- Build a suite of programs and policies across sectors that matches different strategies to different resources, needs, and outcomes
- Design and test new approaches for these subgroups

Becoming More Precise About Impact

- What about it works?
- How does it work?
- For whom does it work, and for whom does it not work?
- In what contexts does it work?
Becoming More Precise About Impact

The IDEAS Impact Framework
A set of steps and method to help innovators:

• Go from idea to implementation to measurement.
• Be clear about the root causes they want to change and the outcomes they are aiming for.
• Determine how an intervention works, for whom, and in what contexts.
• Generate usable knowledge quickly.

Any Healthy Field Requires a Full Spectrum of Approaches to Move Forward

Meeting standards and increasing access

Basic quality issues that must be addressed

Delivering state of the art

Adapting and scaling promising new strategies in existing systems

Generating and testing new ideas across sectors

(Adapted from Everett Rogers, *Diffusion of Innovations*, 2003)
It’s Time for a New Approach

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