

Learning Theory and Improvement Practice

Barry Fishman

Arthur F. Thurnau Professor

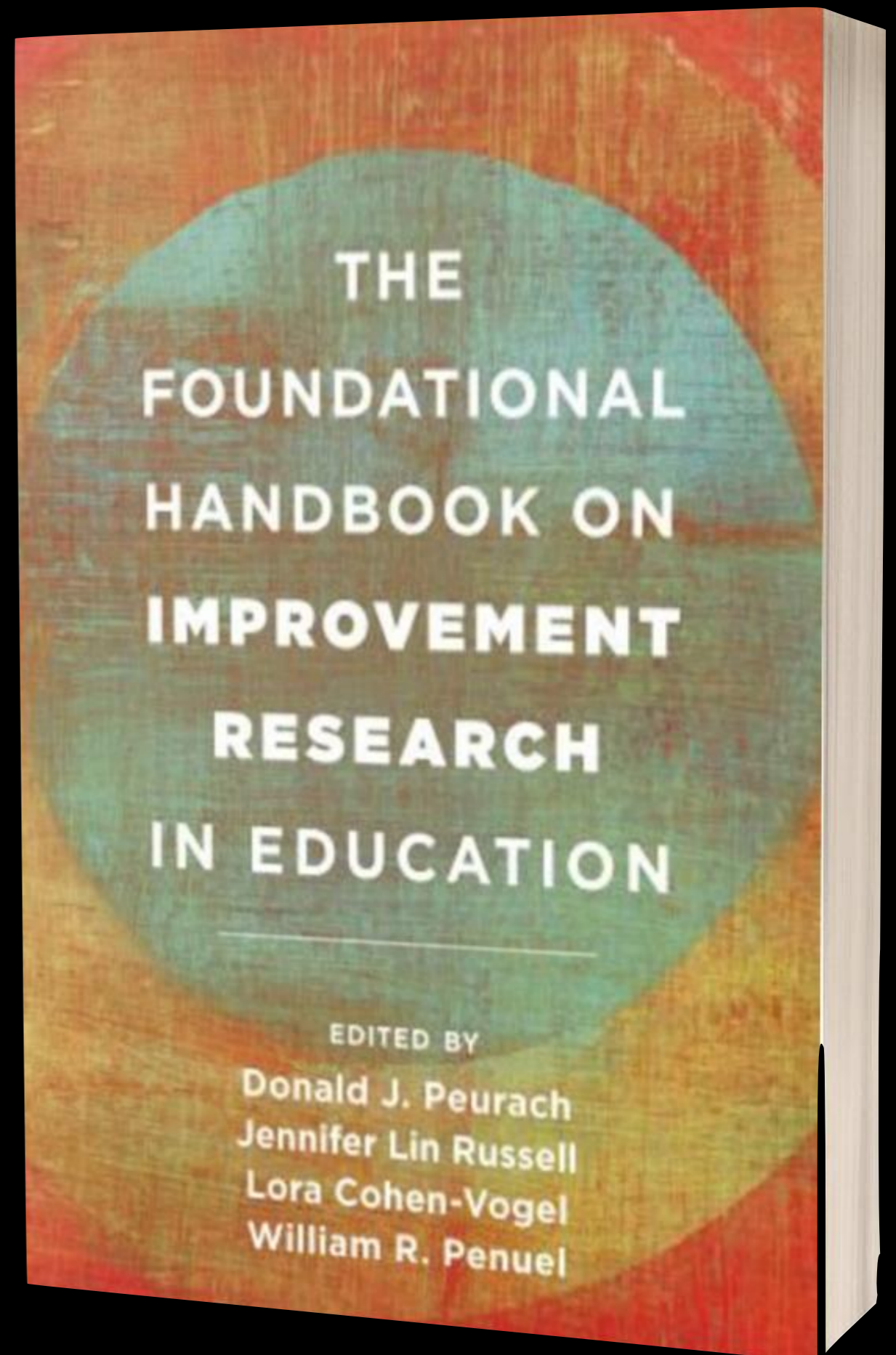
University of Michigan School of Information

and School of Education

@barryfishman

Chapter 3: Equitable Learning

Barry Fishman &
Leslie Rupert Herrenkohl



THE
FOUNDATIONAL
HANDBOOK ON
IMPROVEMENT
RESEARCH
IN EDUCATION

EDITED BY

Donald J. Peurach
Jennifer Lin Russell
Lora Cohen-Vogel
William R. Penuel

Two Kinds of “Improvement”

- **Doing things better**
 - Create incremental improvement for groups or individuals
 - Works within the constraints of current current systems and structures
- **Doing better things**
 - Making changes to systems or structures to emphasize new or different outcomes or practices
 - Equity-focused improvement work *must* emphasize this frame

Because we cannot improve
systems immediately or all at
once, our plans for
improvement should navigate
between both
doing things better and
doing better things

Learning Theories

- **Behaviorism**
 - Changes in observable behaviors
- **Cognitivism**
 - Changes in mental structures
- **Constructivism**
 - Thinking is shared & “stretched across” cultures & systems
- **Sociocultural Theory or Critical Theory**
 - A transformation of participation with and among others

Why does it matter?

- The way(s) That we conceive of learning shapes the way that we design learning environments
- If you are a behaviorist, memorization and recall may be satisfactory
- If you are a cognitivist, how learners reason or solve problems on their own is the target
- If you are a social constructivist, you will likely want to observe and examine the products of interaction with real-world problems

Institutions learn, too.

- We often focus on learners, or on teachers as they interact with learners
- But institutions and systems learn, too.
 - Institutions are comprised of *people*
- How does change or improvement in one classroom affect surrounding classrooms?
The building? The district?

From Theory to Practice

- Behaviorism
 - **Skinner's (and others') Teaching Machines**
- Cognitivism
 - **Carnegie Mellon's Cognitive Tutors**
- Constructivism or Social Constructivism
 - **MIT's Logo or Scratch**
- Sociocultural Theory or Critical Theory
 - **Much improvement research!**

Sociocultural Theory
is central to
equity-minded
improvement research
in education

Four Key Principles

- Learning and thinking are forms of social action
- Cultural tools (language and other forms of representation) play a critical role in thinking and learning
- Learning and thinking are reflective of values and are located in particular places, institutions, and contexts
- Learning and education are, by definition, political and can be used to perpetuate existing inequalities OR to create the possibility for more just systems through transformative change

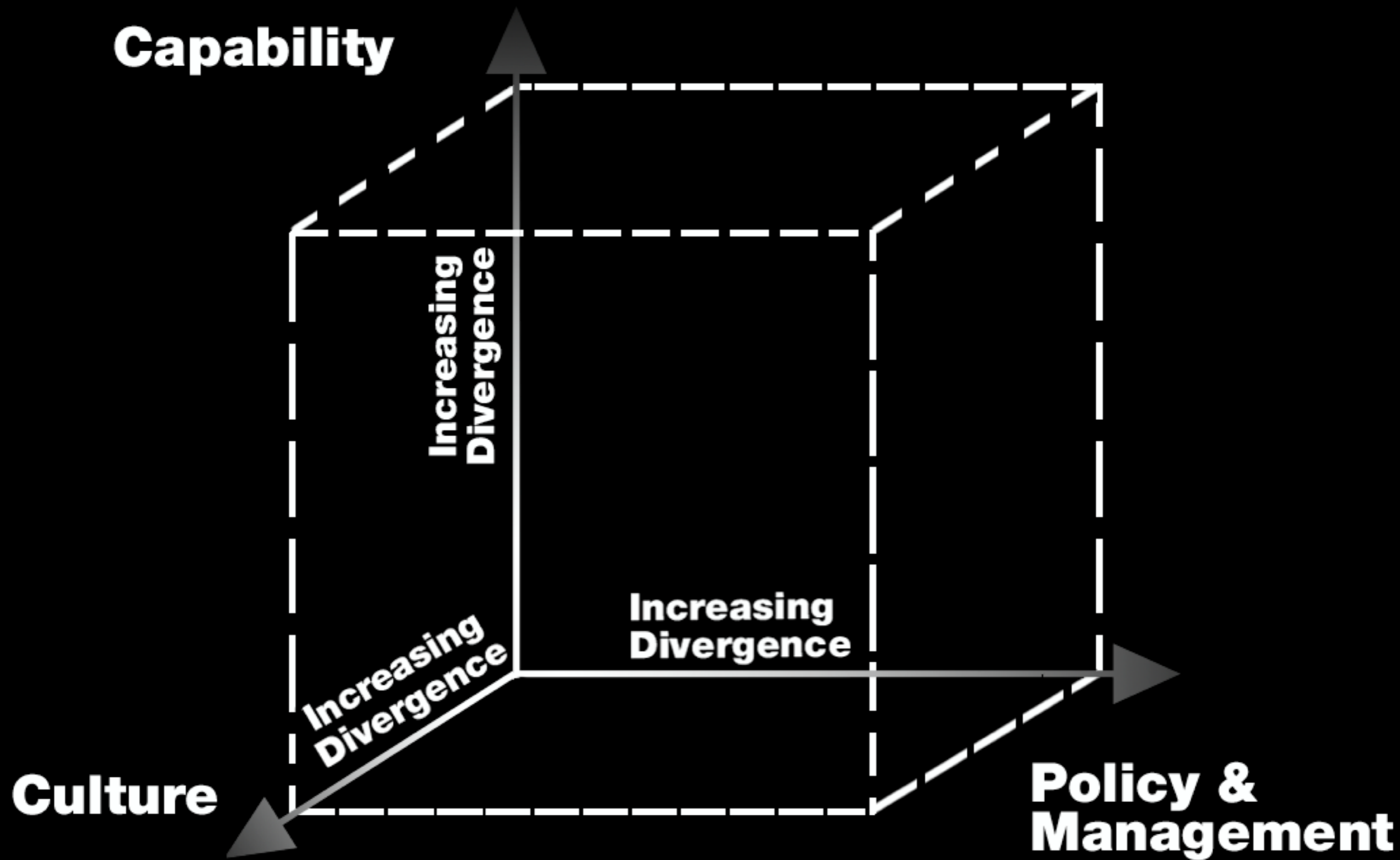
Key Tensions

- Who gets to be involved in educational improvement, and in what ways?
- Who decides what counts as learning?
- Who decides what is are valid places for learning?

Example: LeTUS

- The Center for Learning Technologies in Urban Schools
- Research Practice Partnership between U. Michigan, Detroit Public Schools, Northwestern, Chicago Public Schools
- A 13+ year collaborative project to imagine, construct, and use new middle school inquiry-based science materials
- LeTUS was an inspiration for design-based implementation research (DBIR)

- LeTUS started with a cognitive and constructivist frame, focused on materials and technologies to support individual students learning (measured as average improvement within and across classrooms)
- Over time, LeTUS evolved a sociocultural frame, understanding curriculum as embedded in local justice issues (e.g., air and water quality) and coming to understand school districts as complex systems
- Much late-stage LeTUS work focused on learning at the *district* or *system* level and how proposed improvements interacted with current structures



“In theory, theory and practice are the same. In practice, they are not.”

-Albert Einstein (or Benjamin Brewster)

- Theory is abstracted practice, and practice is applied theory
- All theories are just lenses... but lenses help you focus, and where you focus dictates what you see!