Technology:
Evolving,
Transforming &
Reinventing
Learning Environments

Jennifer Groff

OECD ILE Conference 2011

Literacy

Modality

Lever

What is innovation?

What is innovative enough?

evolving

what
we have

what
could be

Technology
Evolving Learning Environments

First Order	Second Order
blogs, wikis	augmented reality (AR)
social networking sites	simulations
virtual learning environments	digital games
laptops, netbooks, tablet PCs	console games
interactive whiteboards	remote-response systems
web apps	mobile/handheld computing
digital cameras, scanners,	programming applications
projectors	pico projectors
e-Learning	electronic books
digital portfolios	

Technology
Evolving Learning Environments
a la carte

Technology
Evolving Learning Environments

Emerging ▸ Applying ▸

Technology
Evolving Learning Environments
backbone

Technology
Evolving Learning Environments

Emerging → Applying → Integrating

evolving → transforming
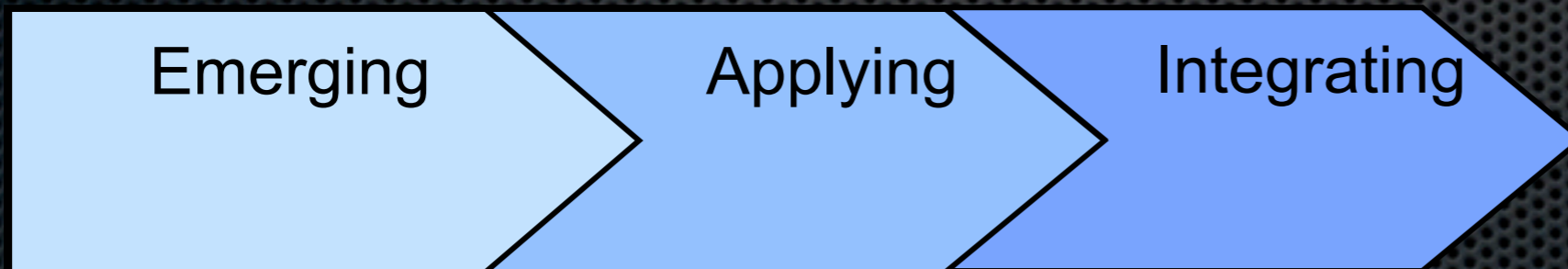
what
we have

what
could be

Technology
Transforming Learning Environments

- tech as lever to overhaul all parts of the school

- first/second-order tech

- flexible environments

- new teacher programs

- profound academic gains

Technology
Transforming Learning Environments

- tech as lever to create innovation practices

- first/second-order tech

- digitally-rich pedagogies

- professional innovation culture

Technology
Transforming Learning Environments

Emerging → Applying → Integrating → Transforming

evolving → transforming → reinventing
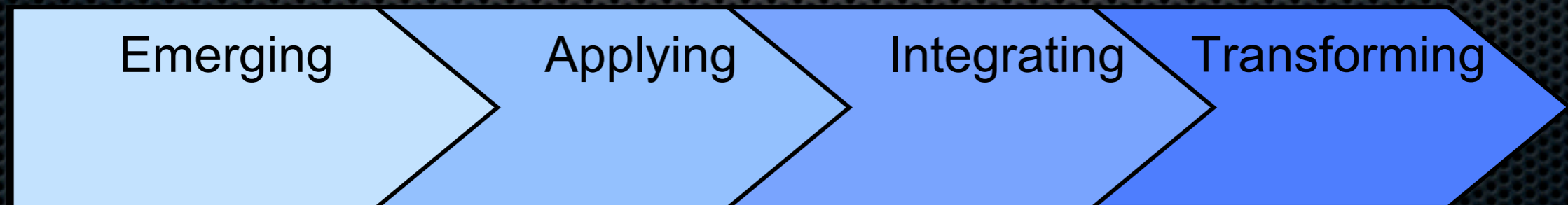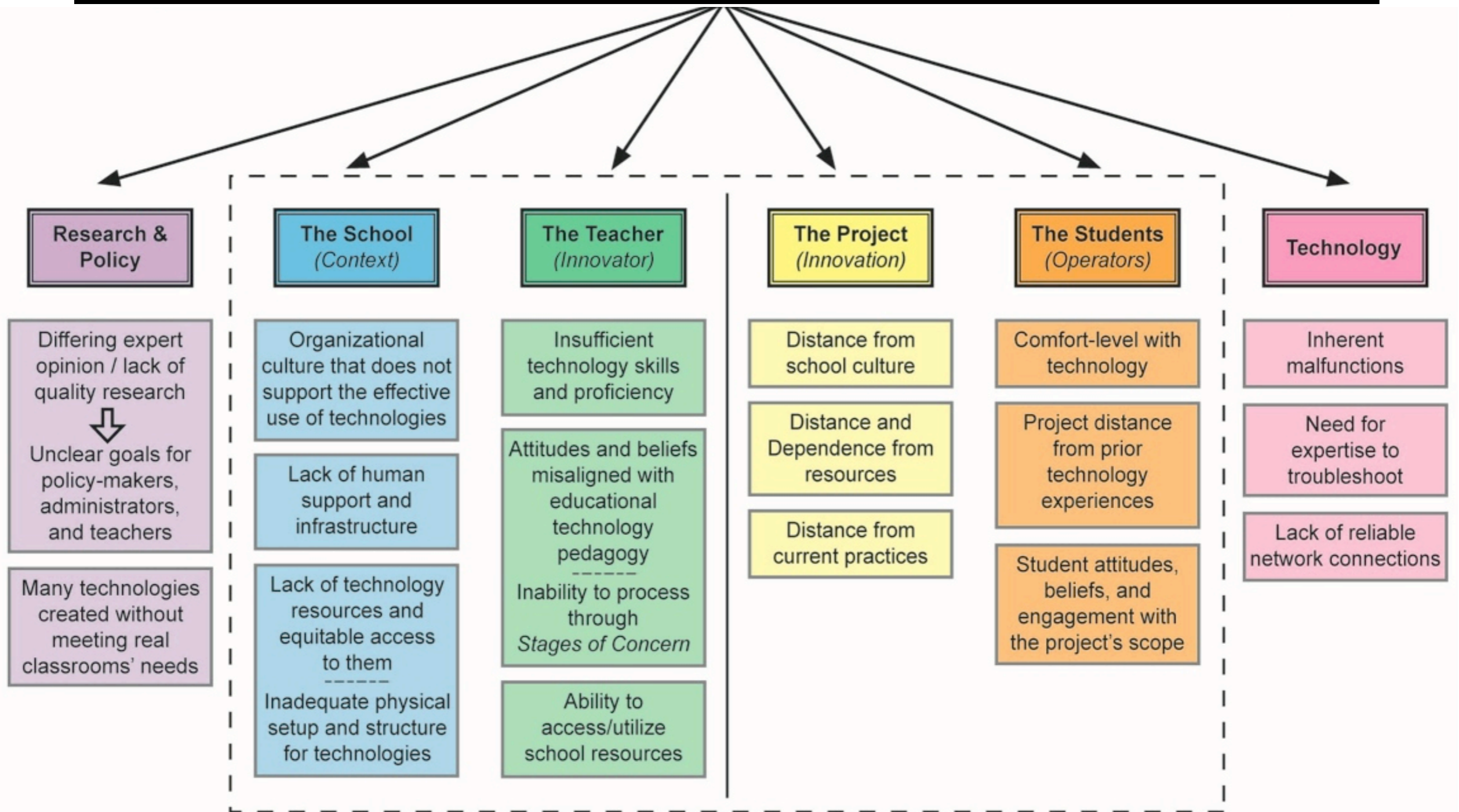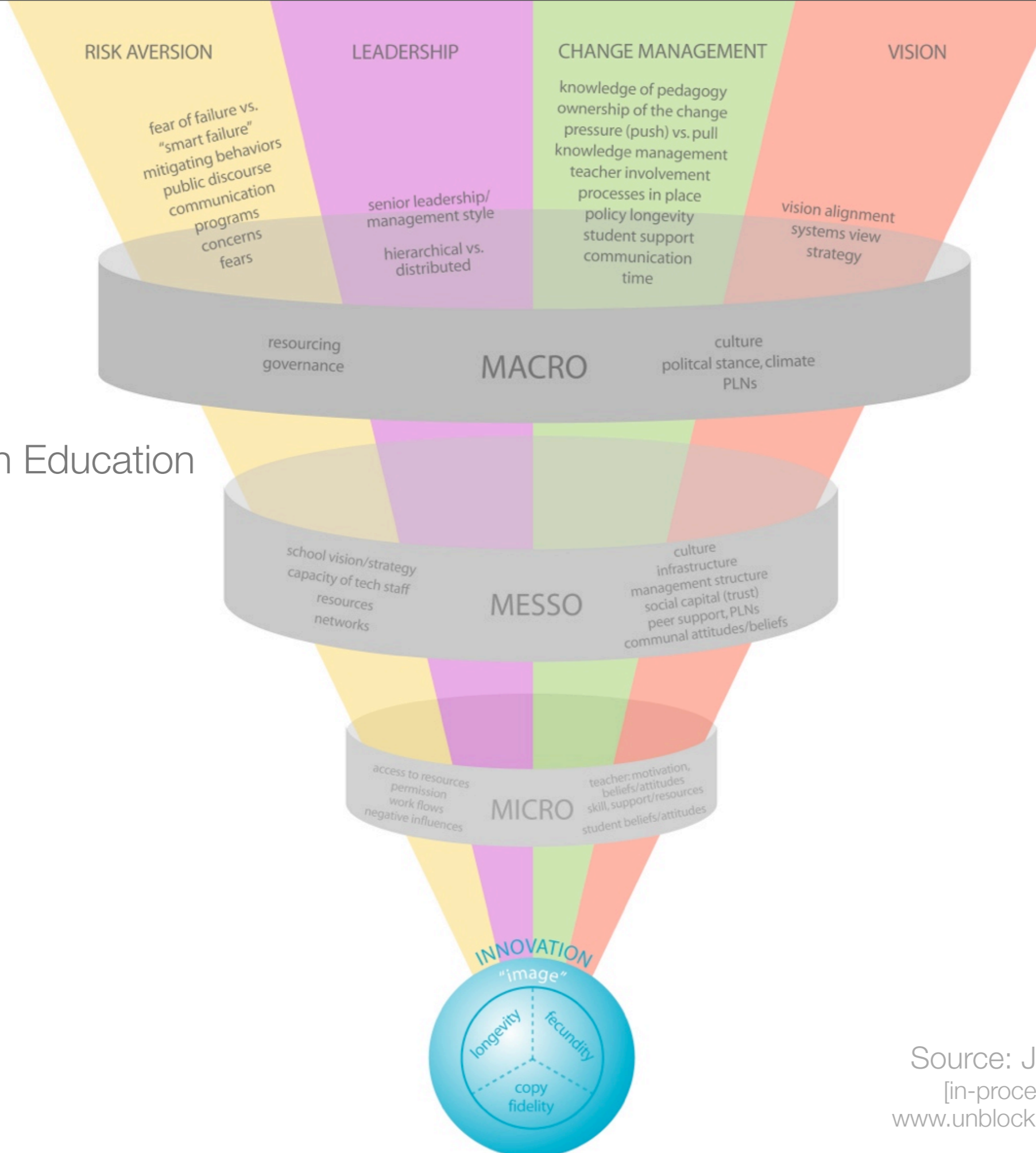
what
we have

what
could be

Technology
Reinventing Learning Environments

- all elements [re]designed in synergy

- innovation in all areas

Obstacles to Integrating Technology in the Classroom

Source: Groff & Mouza, 2008

System Barriers to Innovation in Education

RISK AVERSION

LEADERSHIP

CHANGE MANAGEMENT

VISION

fear of failure vs.
"smart failure"
mitigating behaviors
public discourse
communication
programs
concerns
fears

senior leadership/
management style

hierarchical vs.
distributed

knowledge of pedagogy
ownership of the change
pressure (push) vs. pull
knowledge management
teacher involvement
processes in place
policy longevity
student support
communication
time

vision alignment
systems view
strategy

MACRO

resourcing
governance

culture
politcal stance, climate
PLNs

MESSO

school vision/strategy
capacity of tech staff
resources
networks

culture
infrastructure
management structure
social capital (trust)
peer support, PLNs
communal attitudes/beliefs

MICRO

access to resources
permission
work flows
negative influences

teacher: motivation,
beliefs/attitudes
skill, support/resources
student beliefs/attitudes

INNOVATION
"image"

longevity   fecundity

copy
fidelity

Source: Jennifer Groff
[in-process research]
www.unblockinginnovation.org

Opportunity-Cost

- Conflicting research

- OECD analysis of ICT implications on PISA
    --> complex and undefined

➡ Technology lives in ecology called the classroom...
    much less WHAT but HOW

Richer, Deeper, *New* Learning

- Engagement & Motivation

- Student-driven Learning & Inquiry

- Interactivity & Collaboration

- Personalization & Flexibility

- Innovating

- Digital Learning

The Opportunity of Technology

Distant Communication, Connection & Collaboration

Specific & Alternate Experiences

Mobility

Access

Jennifer Groff

jennifer_groff@mail.harvard.edu

@jsgroff

www.unblockinginnovation.org