The Exponential Factor: Tip the Dynamics in Your Favor to Improve Schools

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A linear view of achievement gaps and underperforming schools

The expectation of “one year’s growth for each grade” is not working.
A Gap as Balancing Feedback

- Actual State of the System
- Goal or Desired State of the System
- Intervention Strategies
- Gap

Diagram showing the relationship between the actual state, goal, intervention strategies, and the gap.
Data-driven Achievement Gaps as Balancing Feedback

Current levels of achievement

B

Gap

Intervention Strategies

Desired # of students meeting standards
Using benchmark data and strategies for improvement to monitor diminishing gaps
It is time to give greater attention to reinforcing feedback and exponential growth when transforming underperforming schools.

Linear growth, “one year’s growth per grade” is not working for many schools and students.
The “X” factor:
Exponential and reinforcing dynamics to consider when transforming schools

- Efficacy Loop
- Seeing and Believing Loop
- The Ladder of Inference
- Core Theory of Success
- Epidemic Model
- Tipping Point Social Epidemics
The Case of an Underperforming School

...in the midst of transformation

- Demographics: 950 students; 90% Hispanic; 39% English language learners; 85% free and reduced lunch

- The school has been classified as underperforming for four straight years including state-level corrective action and federally-mandated school improvement.

- During SY 2006-07 approximately 65% of students are not meeting standards in reading, writing and/or math.

- Beginning SY 2007-08, district voluntary reconstitution resulted in over half of the staff new to the school including all new administrators.

- Beginning SY 2007-08, 65% of the teachers are new to teaching and/or are teaching their content for the first time.
What was learned from the first year of transformation?

- Linear expectations of student progress: one year’s growth in one year was not enough to achieve any measure of success (e.g. AYP).

- Balancing feedback that addressed achievement gaps was the primary focus for school improvement. Again, it was not enough.

- The school needed some powerfully influential dynamics to turn things around so they could move in the right direction.

- The school discovered new insights when exploring the power of reinforcing feedback and structures that generated non-linear exponential growth.
These beliefs had been escalating over time and were self-reinforcing.
A cultural overhaul: Paying attention to what is said, heard and seen

**Student Efficacy**
“I believe I can succeed.”

**Effort**
“I try my hardest because I believe I can succeed.”

**Achievement**
“I have proof of my success.”

R
Problem: Diminishing teacher efficacy

Teacher Efficacy
“I’m not sure my students can succeed.”

Effort
“Why bother trying? What’s the use?”

Achievement
“See, I told you they weren’t capable.”

R
Adaptable Systems are those that Learn

Heifretz, R & Linsky, M (2002) Leadership on the Line: Staying alive through the dangers of leading

- Adaptive work takes time.
- Adaptive work generates disequilibrium and avoidance.
- The people with the problem are the problem and the solution.
- Narrowing gaps require difficult learning.
Turning beliefs into action:
Through collaboration, dialogue and a collective willingness and desire to change.

Teacher Efficacy
“I believe my students can succeed.”

Achievement
“Progress may be slow at first, but I will look for small successes.”

Effort
“I will be open to learning new strategies and do what it takes.”
How does the chicken and egg theory of seeing and believing influence mental models?
Reinforcing Feedback in the Ladder of Inference: Seeing and believing; Believing and seeing
Take time to ask: What would “our dream school” look like, sound like, feel like?

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By surfacing personal visions, individuals begin to see similarities and shared beliefs. By thinking together and planning together, relationships begin to heal and positive relationships begin to develop.
A Core Theory of Success

Quality of Results → Quality of Relationships → Quality of Thinking → Quality of Actions → Reinforcing Engine of Success

Daniel Kim
The Systems Thinker, Pegasus Communications
April, 1997
www.pegasuscom.com
Model from: Lyneis, J. & Lyneis, D., *Two Loops, Three Loops, or Four Loops: Pedagogic Issues in Explaining Basic Epidemic Dynamics*
Is it enough to slow down infection? What would it take to reverse the process so that the infected can regain health?

Model from: Lyneis, J. & Lyneis, D., Two Loops, Three Loops, or Four Loops: Pedagogic Issues in Explaining Basic Epidemic Dynamics
What would a different mental model of being infected mean? What if infection was desirable?

Re-examining the dynamics of social epidemics by tapping into Gladwell’s *The Tipping Point*
Principles of Epidemic Transmission: Influencing School Culture by Word-of-Mouth Epidemics

Adapted from Malcolm Gladwell’s *The Tipping Point* (2002)

- **Law of the Few:** There are three types of people critical to the spreading of information or ideas
  - Mavens are the data banks. They provide the message.
  - Connectors are social glue. They spread the message.
  - Salespeople persuade when others are unconvinced of what they are hearing.

- **The Stickiness Factor:** Ideas have to be memorable and move us to action (Infection strength)

- **Context:** Epidemics are sensitive to the conditions and circumstances of the times and places in which they occur.
Assess your strengths to influence a culture-changing epidemic

Rate yourself on a scale from 1-5
5 = strong and 1 = weak

- **Connectors**
  - Connectors know lots of people and make lots of acquaintances.
  - Acquaintances, in short, represent a source of social power, and the more acquaintances one has the more powerful one becomes.
  - The closer an idea comes to a Connector, the more power and opportunity it generates.

- **Mavens**
  - From a Yiddish work meaning “one who accumulates knowledge”
  - Mavens believe that the people with the most information are the most important.
  - Mavens are information brokers, sharing and trading for what they know.

- **Salespeople**
  - Salespeople have the gift of persuasion.
  - They use words, body language, intonation and a keen sense of interpersonal dynamics to convince others to believe in or embrace a new product, idea, or belief.
  - Salespeople sway opinions, convert, win over and assure others.
The “X” factors
What other exponential and reinforcing dynamics might one consider when transforming schools?

- Efficacy Loop
- Seeing and Believing Loop
- The Ladder of Inference
- Core Theory of Success
- Epidemic Model
- Tipping Point Social Epidemics
- Other
Habits of a Systems Thinker

- Observes how elements within systems change over time, generating patterns and trends
- Changes perspectives to increase understanding
- Seeks to understand the big picture
- Identifies the circular nature of complex cause and effect relationships
- Changes perspectives to increase understanding
- Observes how elements within systems change over time, generating patterns and trends

- Recognizes that a system’s structure generates its behavior
- Seeks to understand the big picture
- Identifies the circular nature of complex cause and effect relationships
- Changes perspectives to increase understanding

- Surfaces and tests assumptions
- Considers an issue fully and resists the urge to come to a quick conclusion
- Considers how mental models affect current reality and the future
- Uses understanding of system structure to identify possible leverage actions

- Considers both short and long-term consequences of actions
- Finds where unintended consequences emerge
- Recognizes the impact of time delays when exploring cause and effect relationships
- Checks results and changes actions if needed: “successive approximation”

- Considers both short and long-term consequences of actions