Creating a culture of Data-savvy SAMRites

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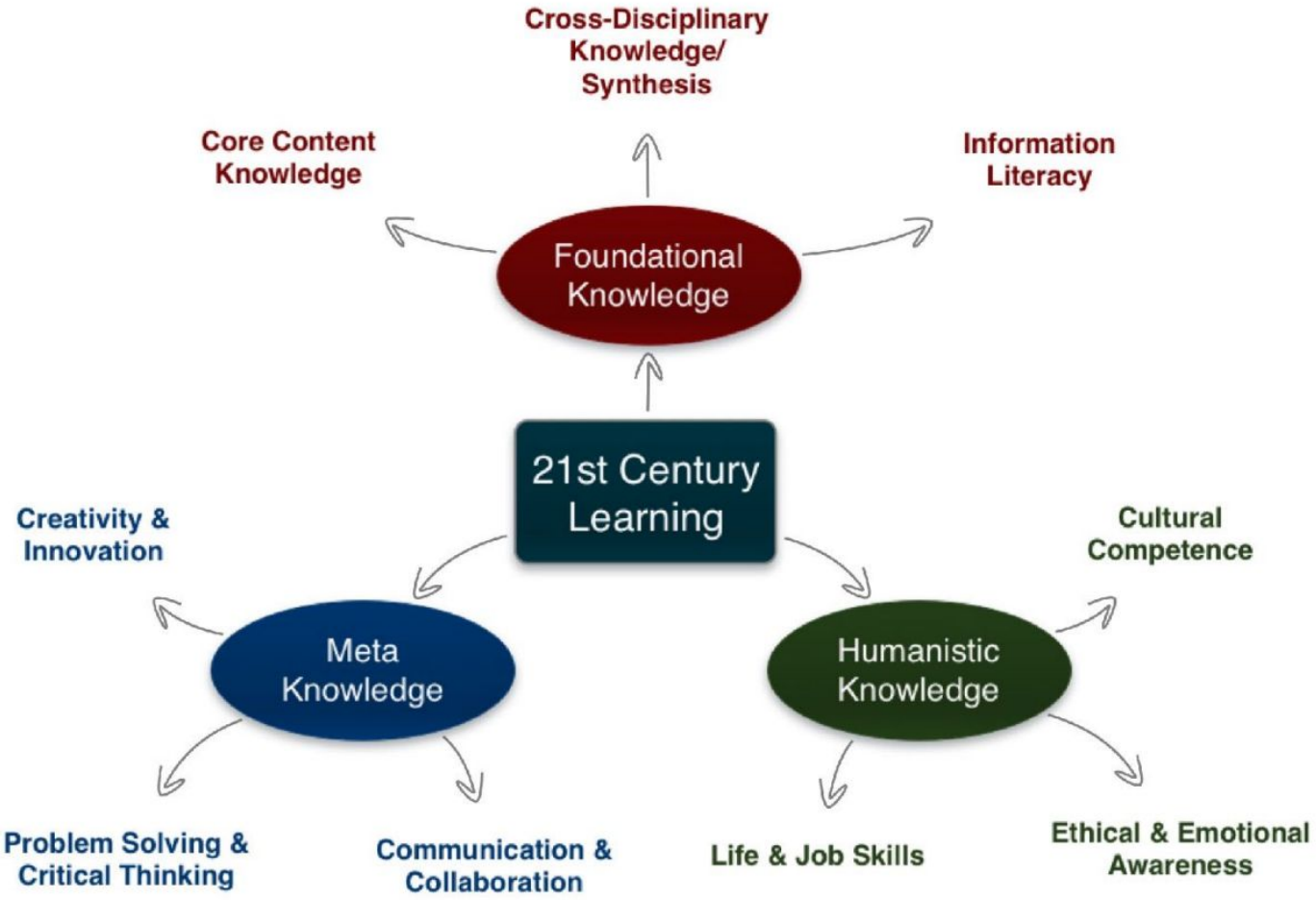
Agenda

Expectations of the 21st Century Learner/Educator

Data and problematic features of data

SAMR as conduit to inquiry

Techniques to tell your story



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Gakushiryoku

“Gakushiryoku - ability required for university graduates for an unpredictable era including the education, knowledge and experience to make correct decisions in the face of unexpected difficulties.”

Data, data everywhere!

SEL (Social Emotional Learning)

Grades and Performance

Attendance and Participation

Internal applications and communications

External applications and communications

Effectiveness and Outcomes

Data Category	Sample Data Points
Student demographics	Enrollment, attendance, dropout rate, ethnicity, gender, grade level (by school, district, etc.)
Perceptions	Perceptions of learning environment, values and beliefs, attitudes, observations … (e.g., held by a school's teachers, districtwide educators, or the local community)
Student learning	Standardized tests, norm/criterion-referenced tests, teacher observations, authentic assessments …
School processes	Descriptions of programs, instructional strategies, classroom practices …
Teacher characteristics, behavior, and professional learning	Teacher assignment (grade, subject area, students served), qualifications, retention, participation in professional development …

(adapted from Bernhardt, 1998)

Type of leadership activity (with and for internal or external audiences)	How data are used and what kinds of data are implied
Diagnosing or clarifying instructional or organizational problems (primarily internal to the decision making group)	State and local leaders seek to know whether, or to what extent, the learning that is occurring for students in the local context matches those overarching expectations for learning (standards) established at the top of the system. Therefore, leaders would seek out information such as disaggregated scores on criterion-referenced state assessments that reflect one measure of student learning in particular content areas.
Weighing alternative courses of action (primarily internal)	State and local leaders use data to evaluate existing programs or curriculum approaches and (where they have relevant data) to judge their potential in comparison with alternative programs, some of which may be implemented in pilot form. Comparative implementation and outcome data would therefore be especially helpful in such circumstances—e.g., to judge their relative contributions to a learning improvement agenda.
Justifying chosen courses of action (primarily external)	Data (e.g., concerning learner characteristics, learning outcomes, comparative program benefits, school closure decisions) are used selectively to make a compelling case for programs or courses of action that may or may not have been chosen on the basis of the data.
Complying with external requests for information (external)	State and local leaders are careful to generate information requested by external agencies, authorities, or groups on which their funding or legitimacy depend—for example, descriptions of how different learner groups are served on evaluations of services to these groups.
Informing daily practice (internal)	Data of various kinds are used by administrators and teachers to guide daily practice. The data are often informal, gathered in mid-stream, and in a form that can be immediately interpreted and used by a practitioner for refining teaching and learning.
Managing meaning, culture, and motivation (internal)	Data help leaders understand and guide the cultural aspects of the professional workplace, by representing to staff what the organization is accomplishing, how people feel about their work, what matters in the work, and what professional learning needs exist.

Reflect

When does data encourage growth?

Why? With whom do you mostly share data?

Please share your experience(s)

Data concerns

- Fragmentation
- Bad data
- Interventions that go on forever
- Hurdles (Staff)
- Negative Feedback Loops
- Data doesn’t match expectations
- Data is iherently boring!

Fragmentation

“A narrow foc veloped and
implemented hat have
occurred inde es among
strategies. Th n been a
set of initiativ gn, even as
they inevitabl

Carnegie Integration Design Consortium Problem Statement

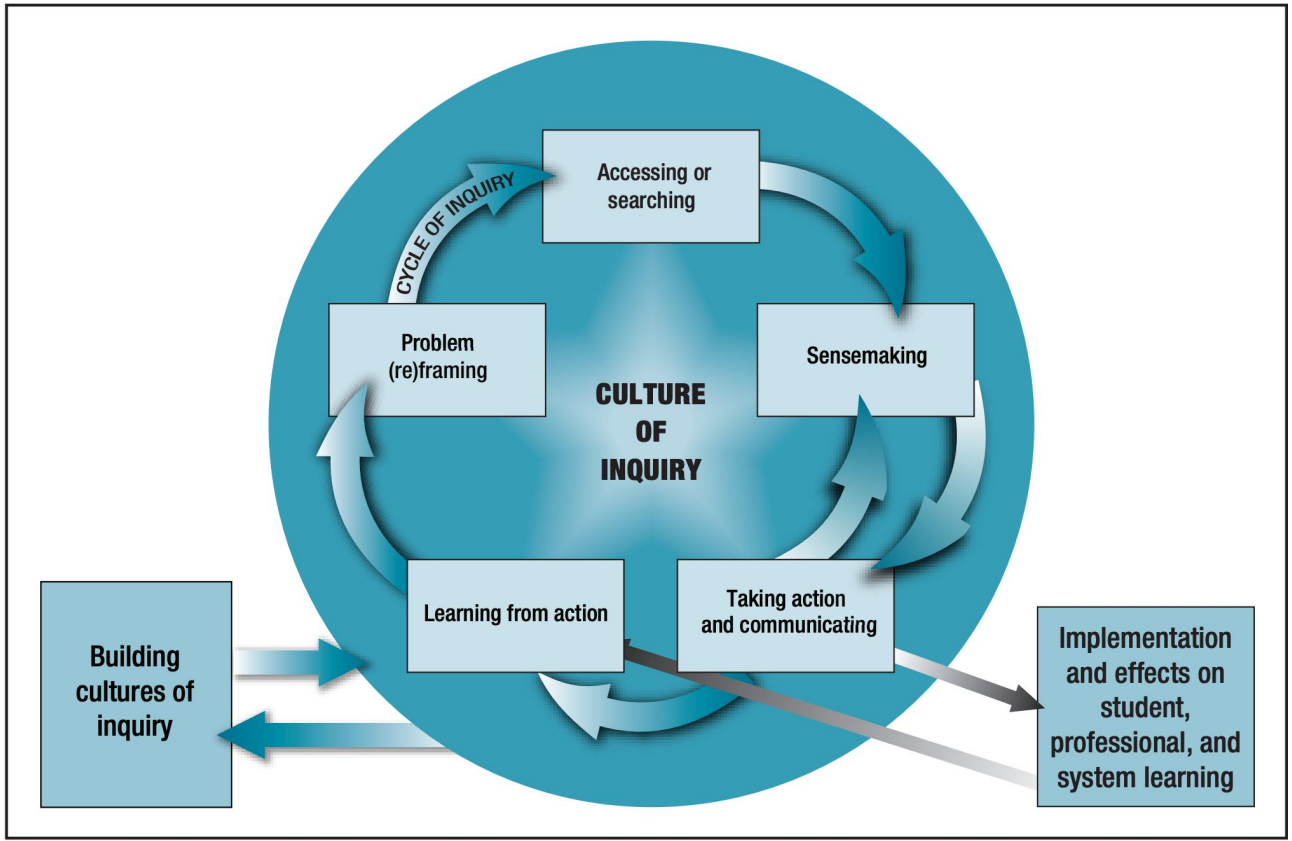
Bad Data

Hurdles

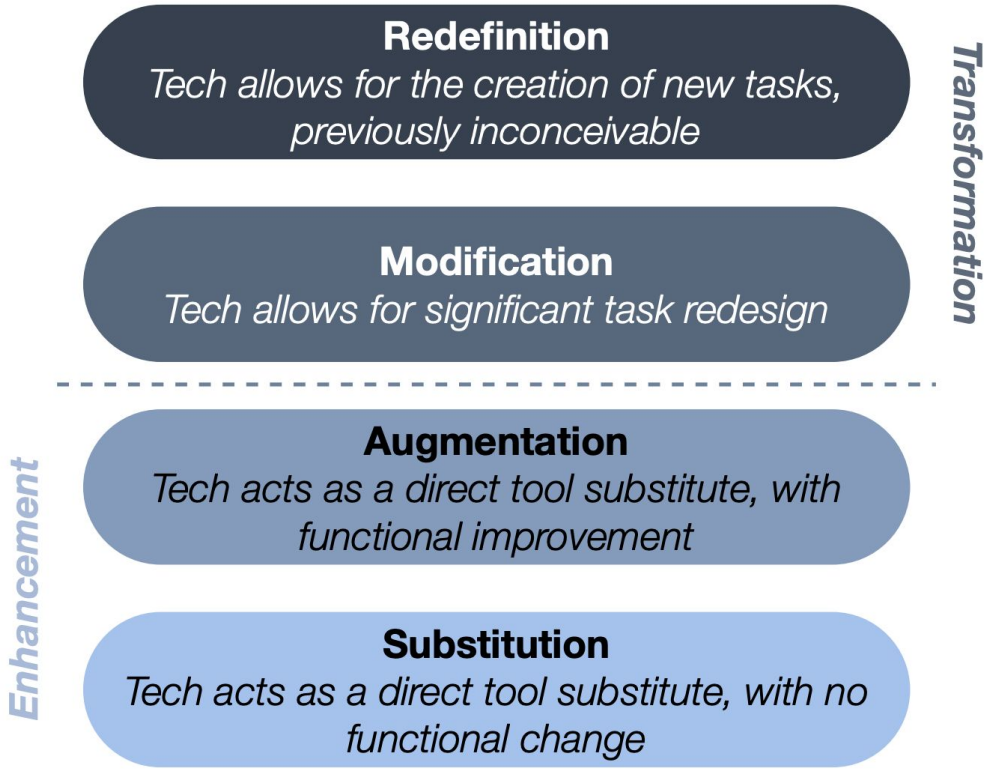
Negative Feedback Loops

A **teacher's influence**, ideas and expectations of his or her **students**' capabilities have an effect on **student** academic performance and achievements. If **teachers** believe in their **students**, their **students** begin to believe in themselves.

Culture of Inquiry



SAMR as Conduit to Inquiry



Ruben R. Puentedura, *As We May Teach: Educational Technology, From Theory Into Practice*. (2009)

Substitution

Augmentation

Modification

Redefinition

EdTech Quintet

Shared Practices

TPCK

21C Learning Framework

Refraction

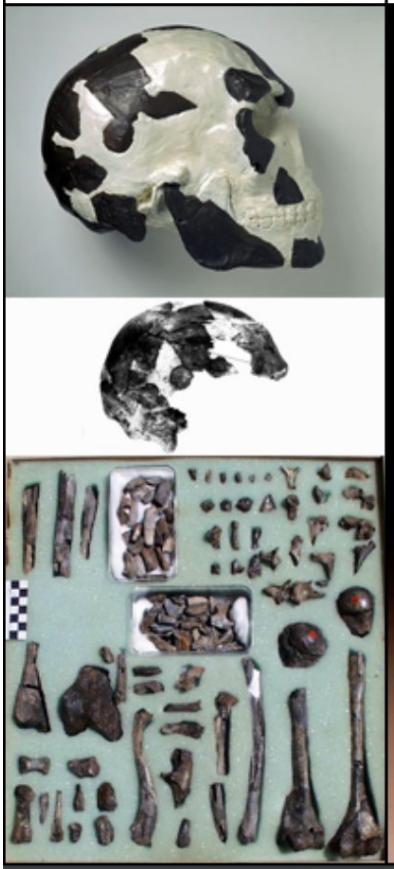
Conversational Framework

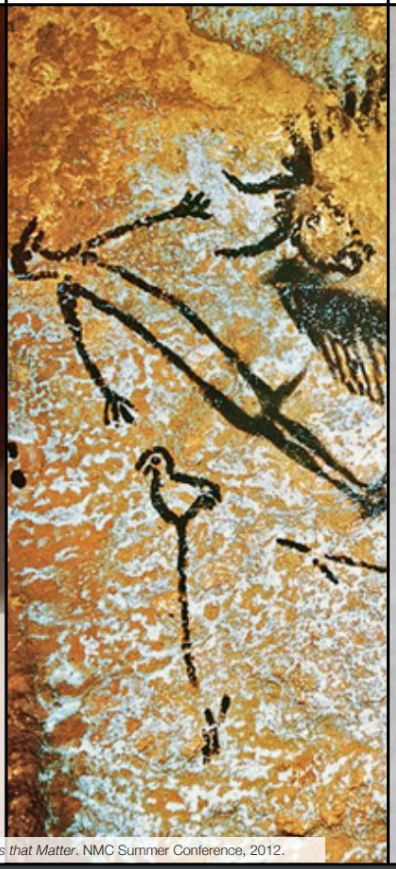
Communities of Practice

Personal Learning Networks

Dynamic Learning Structures

Social	Mobility	Visualization	Storytelling	Gaming
200,000 years	70,000 years	40,000 years	17,000 years	8,000 years





Ruben R. Puentedura, "Technology In Education: The First 200,000 Years" *The NMC Perspective Series: Ideas that Matter*. NMC Summer Conference, 2012.

The EdTech Quintet – Associated Practices	
Social	Communication, Collaboration, Sharing
Mobility	Anytime, Anyplace Learning and Creation
Visualization	Making Abstract Concepts Tangible
Storytelling	Knowledge Integration and Transmission
Gaming	Feedback Loops and Formative Assessment

School as Community of Practice

- A ***domain*** of shared interest, commitment, and competence;
- A ***community*** where joint activities, discussions, information sharing, and help processes are
focused around and by the domain;
- A ***practice*** with a shared repertoire of resources, such as experiences, stories, tools, and problemsolving approaches.

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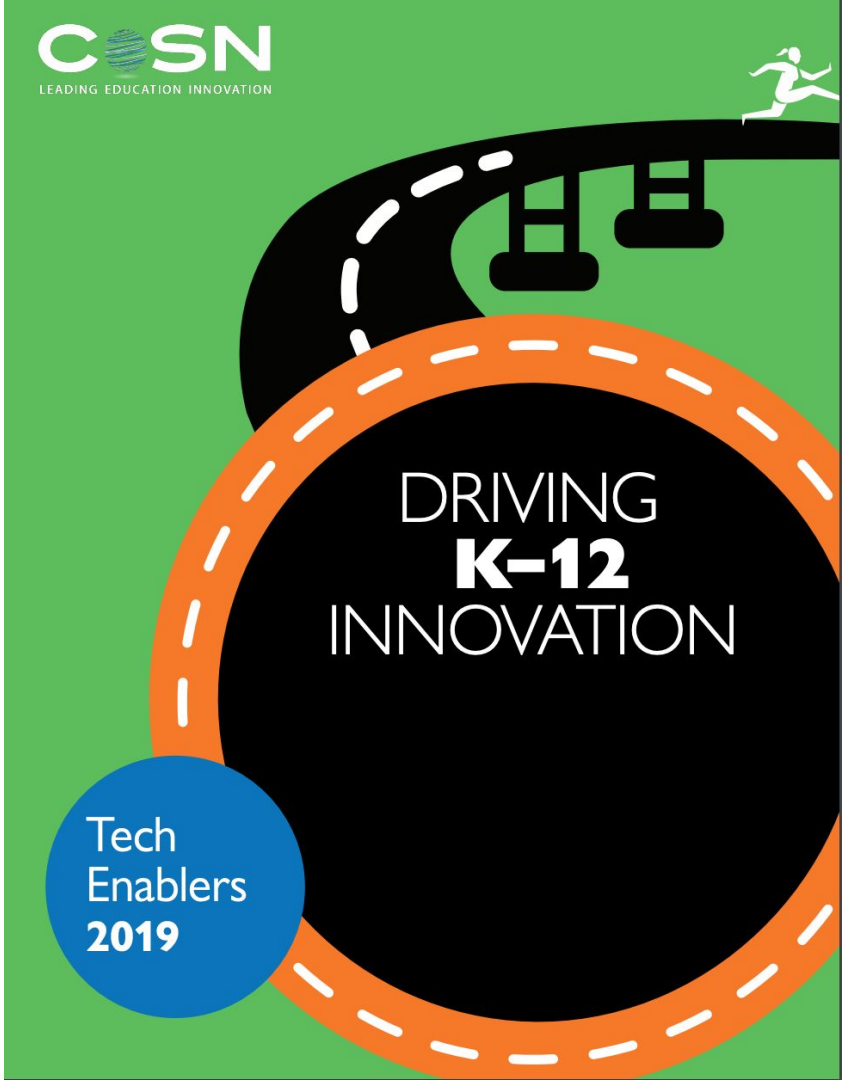
CoSN
LEADING EDUCATION INNOVATION



DRIVING K–12 INNOVATION

Tech Enablers 2019

HURDLES

Hurdles are more than pesky obstacles. They are significant organizational and human capacity challenges that force educators to slow down, prepare themselves and—with sufficient practice, knowhow and tools—make the leap to innovation.

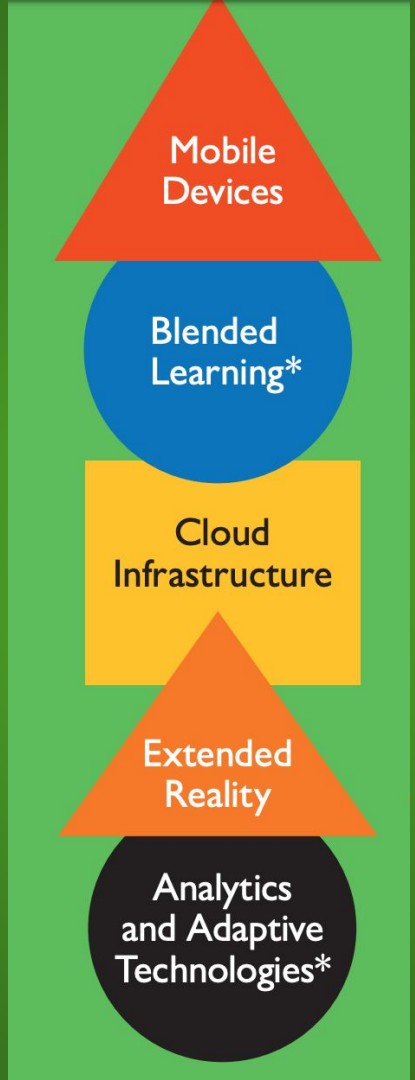
ACCELERATORS

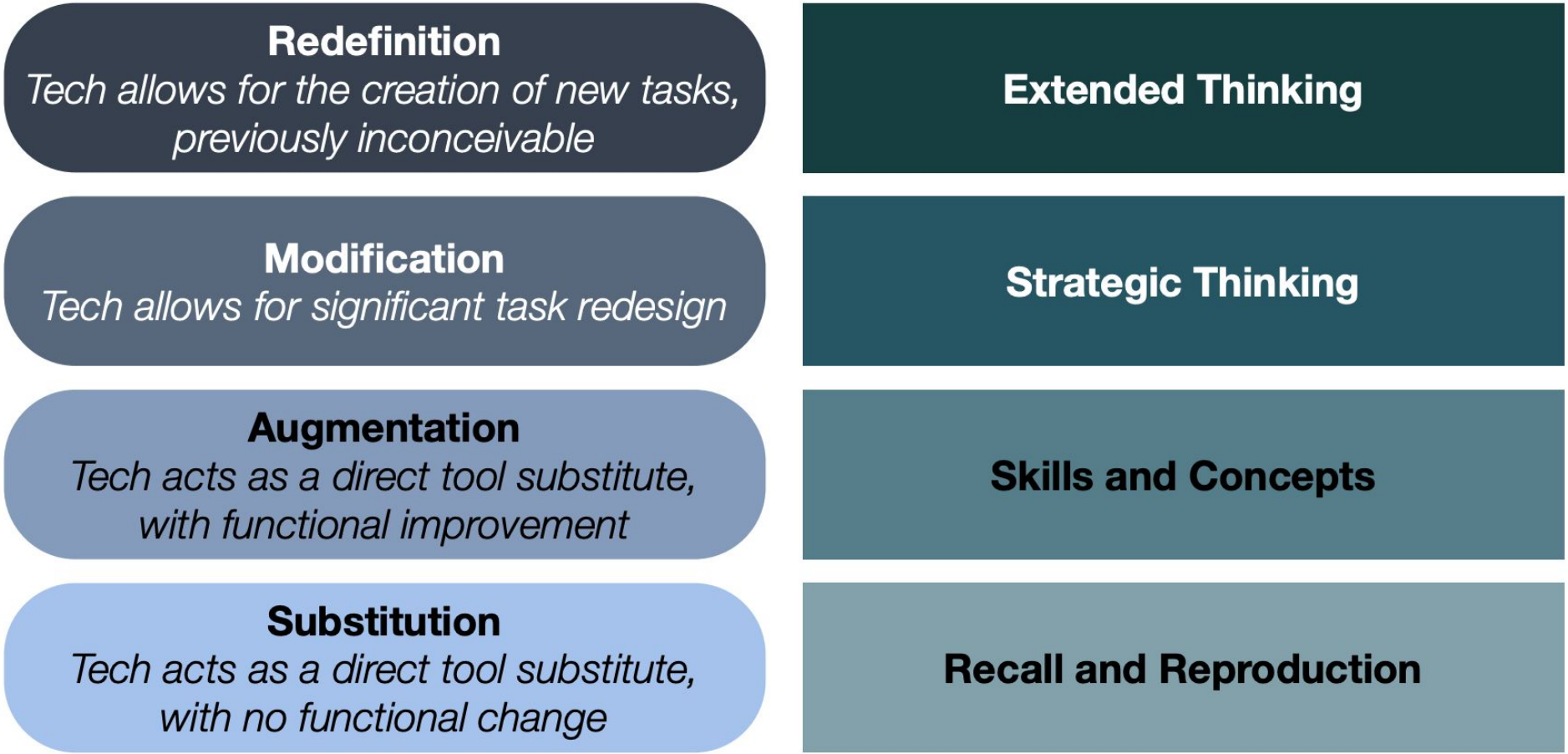
Accelerators are megatrends that drive the needs and skills expected of students and educators. Some disruptive shifts are moving rapidly (even suddenly), while others are happening so gradually that their effects may not be felt for years.

TECH ENABLERS

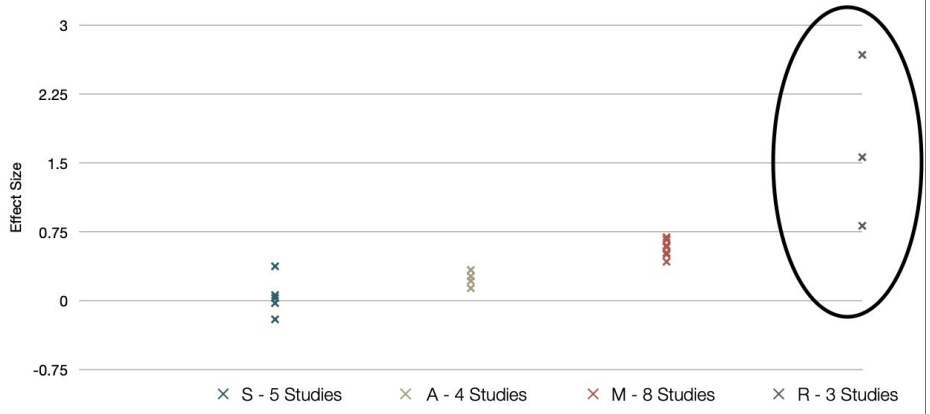
Tech enablers are supporting tools that smooth the way to more expansive opportunities and solutions in education.

Surmounting Hurdles




Redefinition
Tech allows for the creation of new tasks, previously inconceivable
Extended Thinking
Modification
Tech allows for significant task redesign
Strategic Thinking
Augmentation
Tech acts as a direct tool substitute, with functional improvement
Skills and Concepts
Substitution
Tech acts as a direct tool substitute, with no functional change
Recall and Reproduction

SAMR and the Use of Technology to Enhance Reading Performance in Middle School



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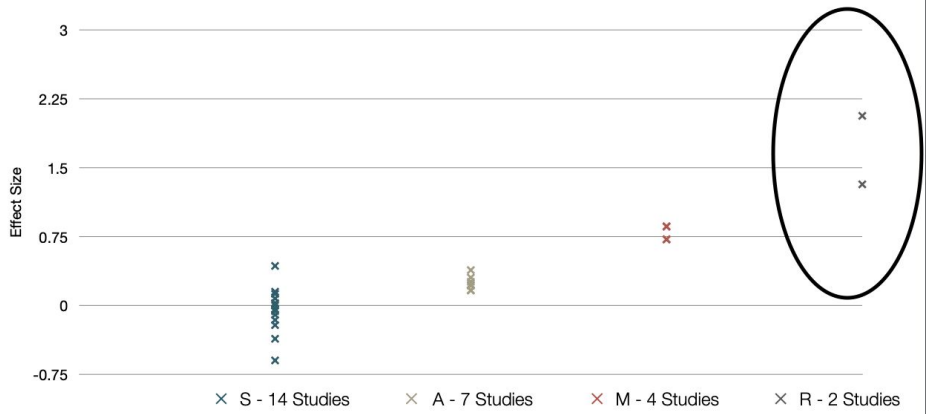
SAMR and the Use of Tablets in Education

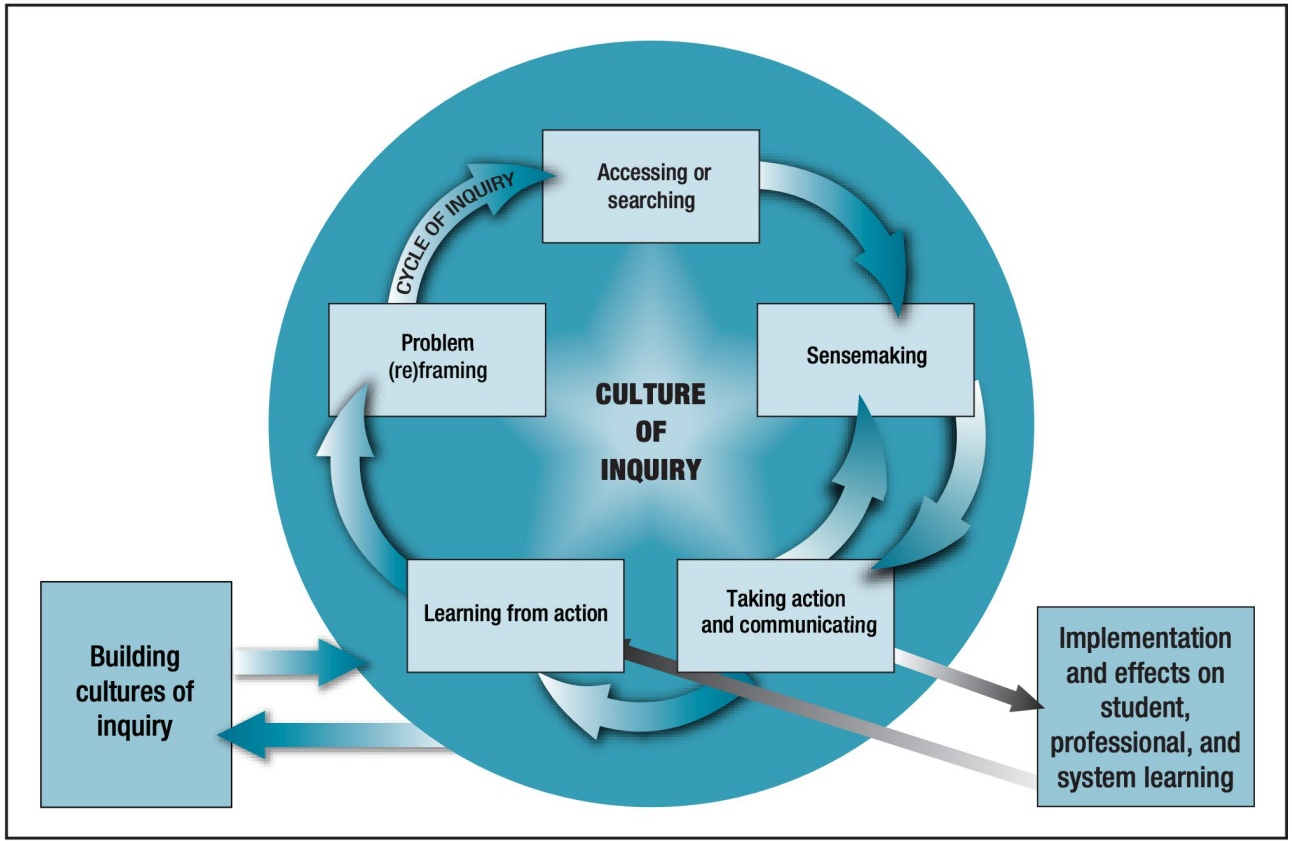


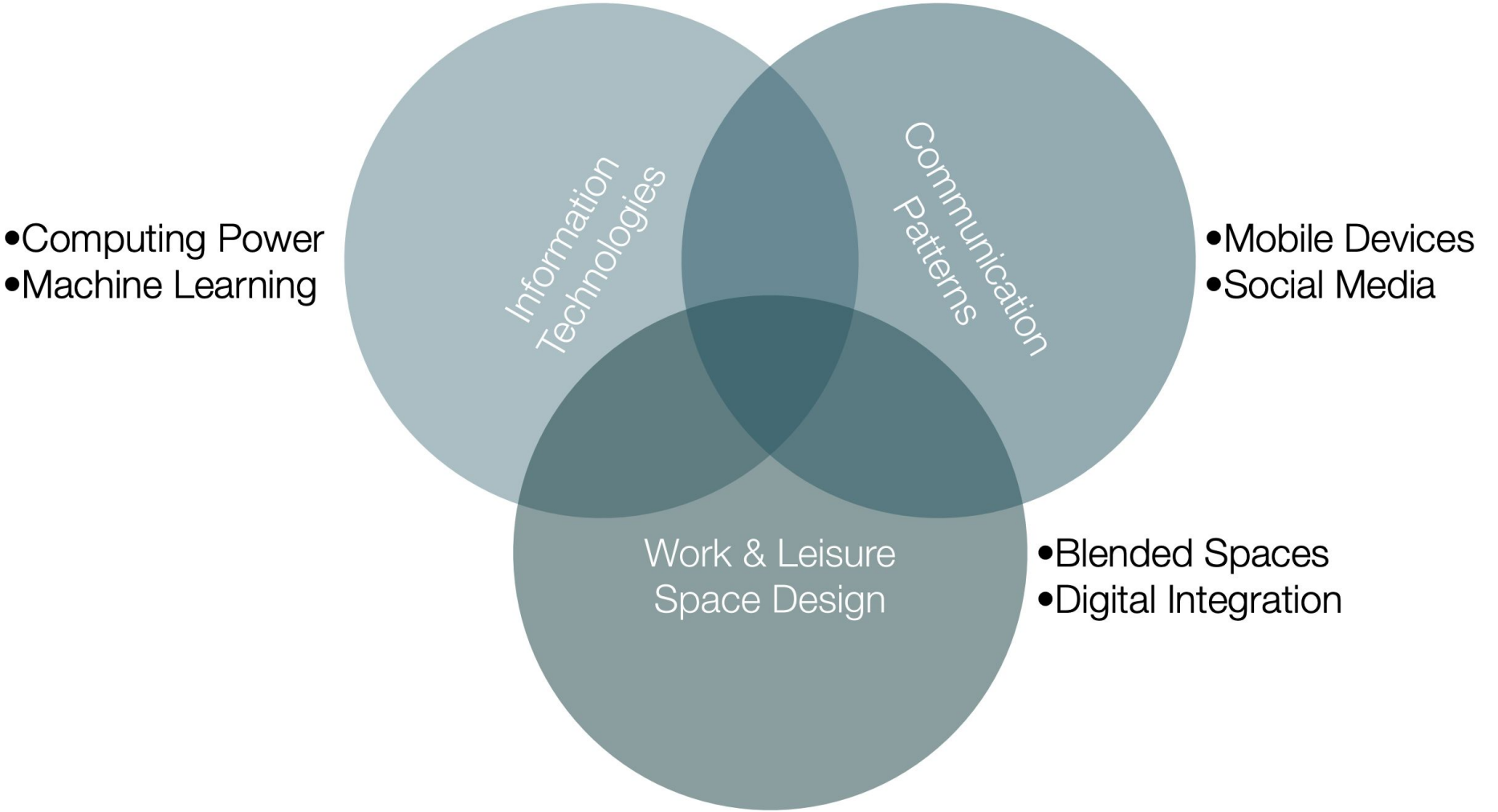
Tamim, R.M., Borokhovski, E., Pickup, D., Bernard, R.M. & El Saadi, L. "Tablets for Teaching and Learning: A Systematic Review and Meta-Analysis." *Commonwealth of Learning (COL)* (2015).

Data Types

Live Data vs. Stale Data

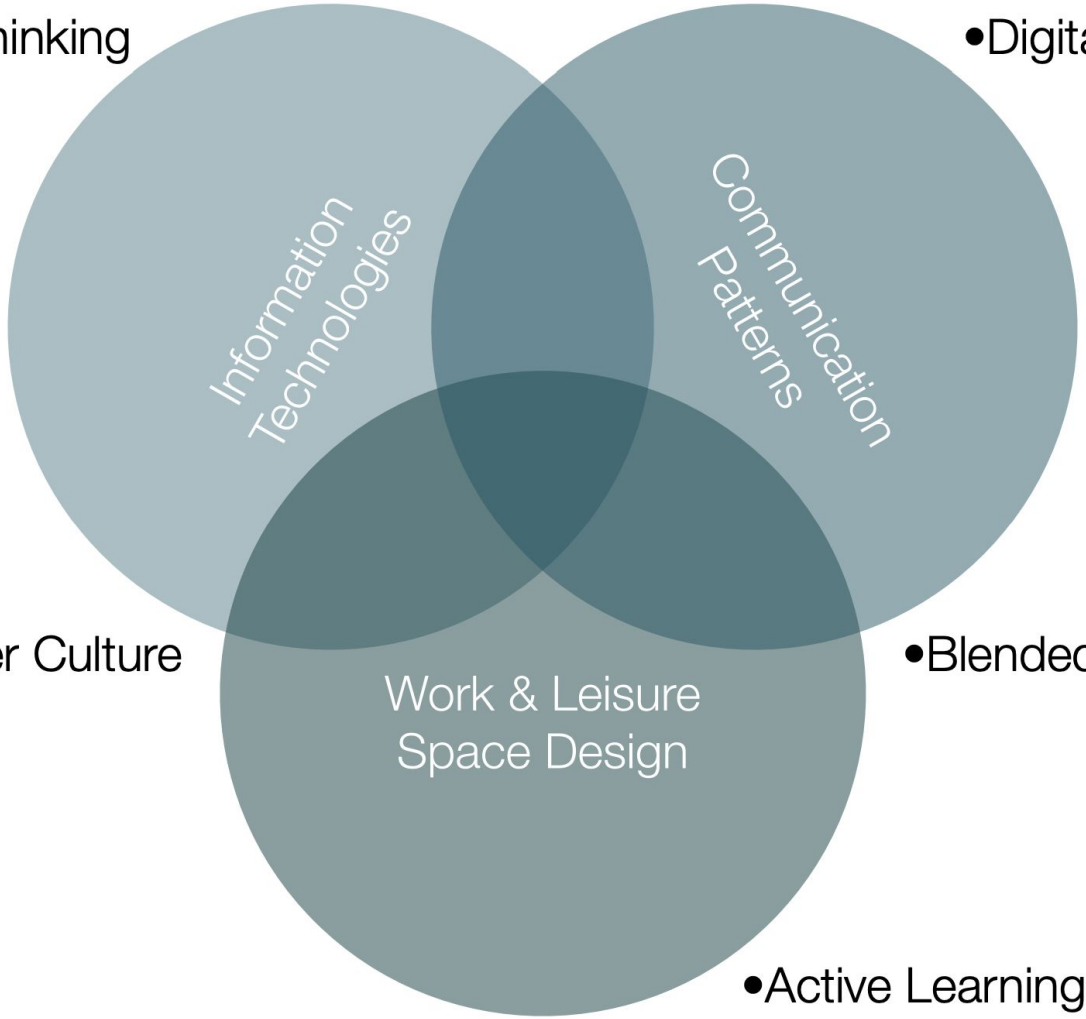
Culture of Inquiry




•Computing Power
•Machine Learning
Information Technologies
Communication Patterns
•Mobile Devices
•Social Media
Work & Leisure Space Design
•Blended Spaces
•Digital Integration

•Computational Thinking

•Digital Citizenship



•Maker Culture

•Blended Learning

•Active Learning Design

Data concerns

- Fragmentation
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We have reliable, live data, now what?

Telling Stories with Data

1. Understand the context
2. Choose an appropriate visual display
3. Eliminate clutter
4. Focus attention where you want it
5. Think like a designer
6. Tell a story

Beyond Bullet Points - Cliff Atkinson

1. The setting: When and where does the story take place?

2. The main character: Who is driving the action? (This should be framed in terms of your audience!)

3. The imbalance: Why is it necessary, what has changed?

4. The balance: What do you want to see happen?

5. The solution: How will you bring about the changes?

THE WHY

82 interventions and 97,000 students over a period of 6 months to 18 years; 2017

2017 META DATA Analysis

3.5 years after the last intervention the academic performance of students exposed to SEL programs was an average 13 percentile points higher than their non-SEL peers, based on the eight studies that measured academic performance.

82

Interventions

13

Percentile Points Higher Achievement

Design Project

Take one data point that you would like to share (a success, a place to improve) -

Now, tell a story to your table….

Citations

"Data-Informed Leadership - The Wallace Foundation."
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