Creating a culture of Data-savvy SAMRites

Todd Lark
Larkworks
todd@larkworks.org
Agenda

Expectations of the 21st Century Learner/Educator

Data and problematic features of data

SAMR as conduit to inquiry

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

(adapted from Bernhardt, 1998)
<table>
<thead>
<tr>
<th>Type of leadership activity (with and for internal or external audiences)</th>
<th>How data are used and what kinds of data are implied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosing or clarifying instructional or organizational problems (primarily internal to the decision making group)</td>
<td>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.</td>
</tr>
<tr>
<td>Weighing alternative courses of action (primarily internal)</td>
<td>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.</td>
</tr>
<tr>
<td>Justifying chosen courses of action (primarily external)</td>
<td>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.</td>
</tr>
<tr>
<td>Complying with external requests for information (external)</td>
<td>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.</td>
</tr>
<tr>
<td>Informing daily practice (internal)</td>
<td>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.</td>
</tr>
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<td>Managing meaning, culture, and motivation (internal)</td>
<td>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.</td>
</tr>
</tbody>
</table>
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 inherently boring!
“A narrow focus on individual areas has resulted in strategies being developed and implemented in isolation...The result has been implementation efforts that have occurred independently and without recognition of the interdependencies among strategies. The result, when applied within a school or district, has often been a set of initiatives and policy changes that are disconnected in their design, even as they inevitably intersect at the student and classroom levels.”

—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

**Redefinition**
Tech allows for the creation of new tasks, previously inconceivable

**Modification**
Tech allows for significant task redesign

**Augmentation**
Tech acts as a direct tool substitute, with functional improvement

**Substitution**
Tech acts as a direct tool substitute, with no functional change

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<tr>
<th>Social</th>
<th>Mobility</th>
<th>Visualization</th>
<th>Storytelling</th>
<th>Gaming</th>
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<tbody>
<tr>
<td>200,000 years</td>
<td>70,000 years</td>
<td>40,000 years</td>
<td>17,000 years</td>
<td>8,000 years</td>
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<th>The EdTech Quintet – Associated Practices</th>
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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 problem-solving approaches.
DRIVING K-12 INNOVATION

Tech Enablers 2019
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 are supporting tools that smooth the way to more expansive opportunities and solutions in education.
Surmounting Hurdles

- Analytics and Adaptive Technologies*
- Extended Reality
- Cloud Infrastructure
- Blended Learning*
- Mobile Devices
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Extended Thinking

Strategic Thinking

Skills and Concepts

Recall and Reproduction
Data Types

Live Data vs. Stale Data
Computing Power
Machine Learning

Information Technologies

Communication Patterns

Mobile Devices
Social Media

Blended Spaces
Digital Integration

Work & Leisure Space Design
Data concerns

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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.
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."  

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

"Driving K-12 Innovation | CoSN."  https://www.cosn.org/k12innovation.

"How Does Your Child's Teacher Influence Academic Performance ...."  8 Nov. 2017,
