

Building a Data Dashboard: The Role of the Research

Jack B. Monpas-Huber, Ph.D.
Director of Assessment & Student
Information



Steven Gering
Principal, North Central High School



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Outline of this Session

- Conceptual Issues
 - Realities of data in education
 - The concept of a data dashboard
 - The role of research / theory (of action)
- An Example from One District
- Advice for Other Districts

Guiding Principle

Validity

“An integrated evaluative judgment of the degree to which empirical evidence and theoretical rationales support the *adequacy* and *appropriateness* of inferences and actions based on test scores or other modes of assessment.”

Messick, S. (1989). “Validity”. In Robert Linn (Ed.) *Educational Measurement*. Washington, DC: National Council on Measurement in Education and American Council on Education.

Realities of Data in Education

Different Sources of Data

- State assessments (i.e., WASL, WLPT)
- District assessments (i.e., MAP, DIBELS, SRI, locally developed)
- College entrance (SAT, ACT)
- Grades / GPA
- Placement in / effectiveness of program
- Healthy Youth Survey
- Other district surveys
- Discipline

Realities of Data in Education

Other complexities

Multiple sources of data with:

- Different purposes
- Different metrics
- Different cycles, time frames
- Different audiences

How to make meaningful sense of it all?

Realities of Data in Education

Working with Data

We assessment people....

- ...produce/live by a calendar of assessments
- ...produce reports after results
- ...field data requests from schools, Supt. staff
- ...download demographic data, link with assessment data, produce PowerPoint or Word product
- ...build small database in FileMaker or Access

The Concept of a Data Dashboard

What is a Dashboard?

- Relational database / warehouse solution
 - Web-based
 - Secure accounts
- Brings fragmented data sets / different data indicators together in one place
 - Talks directly to SIS
 - Upload assessment results
 - Input classroom data directly
- Attractive, user-friendly interface
 - Pie charts, speedometers
 - Interactive

Obvious Advantages of Data Dashboard

- Expands educators' access to data
- Saves time looking for, working with data, frees us to spend more time *analyzing* data, thinking about *intervention*
- Relieves assessment folks of routine requests, reports, freeing us to do more complex, in-depth work

Other Advantages of Data Dashboard

- Enables educators to see relationships between different data sources
- Is self-determined
- Institutionalizes consensus on core values
- Provides a conceptual framework for data-informed leadership
- Provides common base of information and language for educators in professional community

Three Ways of Thinking about Data Dashboard

Dashboard as...

...technological innovation

...tool / catalyst for data-informed:

- Leadership
- Collaboration
- Instructional improvement
- Inquiry

...“mode of assessment” (Messick, 1989) to be
validated

Three Ways of Thinking about Data Dashboard

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...technological innovation

...tool / catalyst for data-informed:

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Defining the Purpose of the Dashboard

Thinking about dashboard as a social instrument invites fundamental questions about...

- What is our purpose here?
- What are we trying to accomplish?
- What is our theory of action?
- What are we trying to measure and monitor?
- What data sources do we need to measure what we value?

The Role of Research and Theory (of Action)

What does research have to do with it?

- Provides a sense of *purpose*, of what is important
 - What concepts worth measuring
 - What data worth collecting
 - Thorough measurement promises to help diagnose the problem and next steps
- Provides a sense of what to *expect* (an increase in student achievement)
- Provides a common language, common conceptual framework, common rationale

One District's Experience

Sources of Concepts to Measure

- Strategic Plan
- Written-Taught-Tested Curriculum
- Core values
- Research on high schools

What One District Values

- Personalization
- Alignment of curriculum, instruction, and assessment
- Cultural competence
- Formative assessment in the classroom
- Effort Optimism
- “Winning Streaks”
- “Early Warning”
- School connectedness

Discussion

- What does your district/school value?
- What are the burning concepts for your district?
- What would you really like to *monitor*?

What is Academic Press?

Academic press focuses on the extent to which school members, including teachers and students, experience a normative emphasis on academic success and conformity to specific standards of achievement.

Press affects student achievement in at least two ways. First, it can provide specific direction for student work and academic attainment. It points students and teachers to what they need to accomplish.

Second, academic press creates incentives that motivate students and teachers to achieve at higher levels.
(Lee et al., 1999: 10)

**Social Support, Academic Press,
and Student Achievement:**
A View from the Middle Grades in Chicago

Valerie E. Lee
University of Michigan

Julia B. Smith
Oakland University

Tamara E. Perry
Consortium on Chicago School Research

Mark A. Smylie
University of Illinois at Chicago

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Dimensions & Indicators of Academic Press

Post-Secondary Access

- Post-Secondary Preparation
 - Elimination of tracked courses
 - Elimination of the barriers for students to access advanced courses
 - All students prepared for college preparatory curriculum
 - Expansion of advanced placement program for all students
 - Students taking college entrance tests as early as the 9th grade (PSAT, SAT, and/or ACT)

Dimensions & Indicators of Academic Press

Post-Secondary Access

- Post-Secondary Awareness
 - Post-secondary options made available to all students
 - Students having the opportunity to visit colleges
 - Financial aid information being provided to all students

Dimensions & Indicators of Academic Press

- Classroom Rigor
- Teaching Quality (Pedagogy)
- Assessment for Learning
- Collective Teacher Beliefs and Individual Teacher Beliefs

Dimensions & Indicators of Academic Press

- Student Characteristics
 - Persistence/Work Ethic
 - Goals Beyond High School

- School Characteristics
 - Safe School Environment
 - Recognizing Student Behavior
 - Maximize Instructional Time
 - Effective Staff Development

Academic Press Summary

- ▣ Students Post-Secondary Prepared
- ▣ Curriculum Rigor
- ▣ Classroom Rigor
- ▣ Teaching Quality (Pedagogy)
- ▣ Assessment for Learning
- ▣ Collective Teacher Beliefs and Individual Teacher Beliefs
- ▣ Student Characteristics
- ▣ School Characteristics

What We Needed

- Dashboard or Academic Press Page to assemble these different data sets into one place
- To monitor curriculum rigor / intensity (academic press)

An Example from One

District

Validating the Dashboard

- What is the purpose of the dashboard?
 - What inferences?
 - What uses?
- What counts as evidence that dashboard is meeting its purpose?

Advice for Other Districts

- Assemble a small, diverse team
- Define key interests / needs
- Get real clear on purposes / audiences
 - What should teachers see and do?
 - What should principals see and do?
 - What should specialists see and do?

Advice for Other Districts

- Get real clear on SIS vis-a-vis Dashboard
 - What is the purpose of the SIS?
 - What is the purpose of the Dashboard?
 - Is there overlap?
- Draft a “Document of Specifications”
 - Or list of Key Questions
- Weigh flexibility/adaptability against costs of support
- Map out costs over 5-years time
- Massive training

Thank you!

Jack B. Monpas-Huber

jack.monpas.huber@shorelineschools.org

(206) 368-4774