


Harcourt Connected Learning

Technology: The Driving Force Behind Data-Driven Decision Making


TECSIG Conference



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Today's Goal

- To learn how technology can play an integral role in all facets of data-driven decision making.
 - District
 - School
 - Classroom




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Welcome

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- Handouts
 - <http://twi.classroom.com/workshops/lskelly>



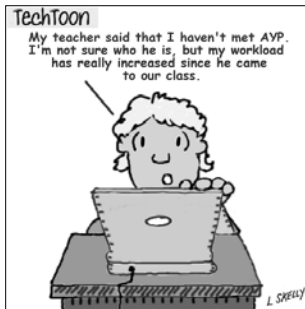
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Today's Kids



Kids and AYP



Besides AYP...

Top Skills for New Hires	Employers	Recent Graduates
Teamwork	44%	38%
Critical thinking/reasoning	33%	37%
Oral/Written Communication	30%	37%

Respondents were asked to identify the two most important skills.
Source: Peter D. Hart Research Associates based on surveys of 305 business leaders and 510 recent college graduates.

Where are our tech dollars going?

- According to QED (2004), \$5B was spent on hardware and software
 - \$2B in infrastructure and wiring
- 63% dedicated to instructional technology
 - Digital whiteboards
 - Video streaming technologies
 - Voice recognition tools
 - Tablet PCs

What about administrative technologies?

- *The data-tracking requirements imposed by the federal No Child Left Behind law also will receive significant attention from school budget offices this year. It's estimated that schools will spend 21 percent of their technology funds on advanced administrative and enterprise tracking tools, including NCLB-related software.*

-Corey Miller, eSchool News

Ongoing Question: Does technology impact student achievement?

The Great Debate



How can technology have a greater impact on learning?



- Aligning of the stars: It depends on...
 - What outcomes are targeted
 - How technology is integrated into instruction
 - How teachers assess student performance
 - How teachers adjust instruction
- There has to be more systematic approach to instruction

What is D³M as a system?

“Data-driven decision-making (DDDM) is a system of teaching and management practices that gets better information about students into the hands of classroom teachers.”

-Dr. Scott McLeod

What is D³M as a process?

- DDDM is a process that helps teachers and schools to:
 - Identify student achievement needs.
 - Ask good questions about student results.
 - Find the data to answer these questions.
 - Analyze the data to find root causes.
 - Implement action plans to address root causes.
 - Monitor and revise action plans as needed.

How can this be achieved?



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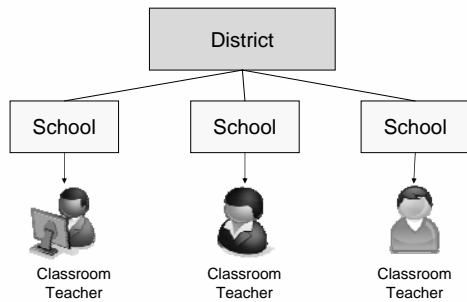
Data-Driven Decision Making Cycle

- Starts with a simple model



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Trickle Down Effect of D³M



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What technology tools, services and resources are available?



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The District

From the Top Down



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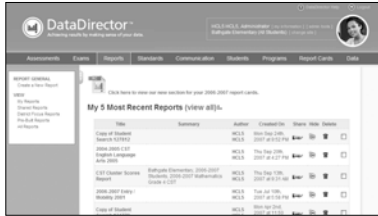
Laying the Foundation

- Starts with the district
 - Establishing the right data management and assessment system
 - Data Management
 - Access to all data
 - Easy access to reports
 - Assessment
 - Benchmark testing
 - Building a DDDM culture

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Data Management and Assessment System

- Let's look at an example
 - Data Director



The screenshot shows the DataDirector web interface. At the top, there are navigation tabs: Assessments, Events, Reports, Standards, Content Areas, Students, Programs, Report Cards, and Data. Below the tabs, there is a section titled "My 5 Most Recent Reports (view all)". A table lists the following reports:

Title	Summary	Author	Created On	Status	View	Details
State of Indiana		MCIS	2007-07-20 10:00			
Search 02/19/07		MCIS	2007-02-19 17:00	Done		
2006-2007 12/1		MCIS	2007-01-01 00:00			
English Language		MCIS	2007-01-27 17:00	Done		
April 2007		MCIS	2007-04-27 17:00			
121 Chapter Section	Belgium Elementary - 2006-2007	MCIS	2006-12-20 10:00			
Report	Belgium - 2006-2007 Performance	MCIS	2007-01-27 17:00			
2006-2007 12/1		MCIS	2007-01-27 17:00			
Monthly 2007		MCIS	2007-01-27 17:00			
State of Indiana		MCIS	2007-01-27 17:00			

Building a DDDM Culture

- Build a data infrastructure
- Build a professional learning community
 - Leadership teams
 - Data teams
- Collaborate
- Communicate and promote
- Provide professional development



National Perspective

- The George Lucas Foundation: Edutopia
 - <http://www.edutopia.org/>
 - Assessments
 - Standards-based projects



Web-based Learning Environment

- eChalk
 - <http://www.echalk.com/>
- Blackboard
 - <http://www.blackboard.com/us/index.Bb>



The School

Data-Driven Decision Making

In a Data Driven School

Data-driven decision making...

- ✓ Allows administrators, teachers and students easy access to data
- ✓ Reveals patterns and correlations in data
- ✓ Provides real-time intervention
- ✓ Ensures that all students succeed

In a Data Driven School

Data-driven decision making...

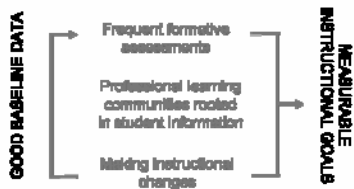
- ✓ Focuses on learning, student achievement and outcomes
- ✓ Use data to transform teaching and learning
- ✓ Inform school decisions-about books, schedules, grouping, professional development

Data Driven Instruction

- According to Scott McLeod, data driven instruction has 5 elements:
 - good baseline data,
 - measurable instructional goals,
 - frequent formative assessment,
 - professional learning communities, and
 - focused instructional interventions.

The Model

- Ongoing interaction
 - Enhance student learning
 - Inform instructional practices

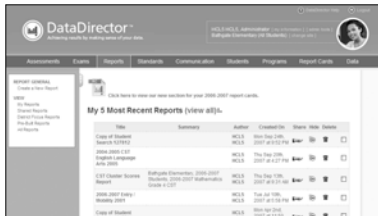


Plenty of Data



Data Management and Assessment System

- Giving access to teachers
 - Data Director



"The most promising strategy for sustained, substantial school improvement is developing the ability of school personnel to function as professional learning communities."

-Richard DuFour & Robert Eaker,
Professional Learning Communities at Work (1998)

Professional Learning Communities

- What technologies support PLCs?



Communication and Collaboration

- Airset
 - www.airset.com



Communication and Collaboration

- Windows Live
 - <http://get.live.com/WL/all>



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The Classroom

Data-Driven Decision Making

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Giving Students Access

TechTOON

This year we are going to the computer lab each day to help me make AYP.

I just got my own laptop to help me.

I got a new no. 2 pencil?

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Simplifying the D³M process

- Starts with a simple question:
 - Which data, well analyzed, can help us improve teaching and learning?
- Focus on the needs of the teachers
 - Their use of data has the most direct impact on student performance

-Mike Schmoker

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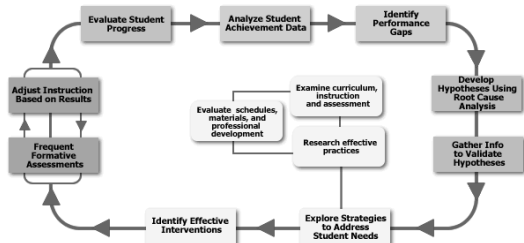
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Starts with Two Questions

- Data can give teachers the answer to two important questions:
 - **How many students are succeeding in the subjects I teach?**
 - **Within those subjects, what are the areas of strength or weakness?**

Understanding D³M

- Expanding the cycle



Tools of the Classroom

- Facilitate the DDDM processes
 - Data management system
 - Assessment tools
 - Online resources in DDDM
 - Classroom productivity tools
 - Communication and collaboration tools
 - Integrated learning systems

Accessibility to Data

- TEA Accountability
 - <http://www.tea.state.tx.us/accountability.html>
- Student Assessment Division: Released tests
 - <http://www.tea.state.tx.us/student.assessment/>
- Strengths of this site:
 - Your own state department
 - Most current information
 - Provides subgroup information
 - Released tests

Root Cause Analysis

- Six Sigma
 - The 5 Whys: Process
 - Benefits
 - How
 - Examples



Best Practices: Interventions

- The George Lucas Foundation: Edutopia
 - <http://www.edutopia.org/>
 - Assessments
 - Standards-based projects



Student Collaboration Tools

Google Docs

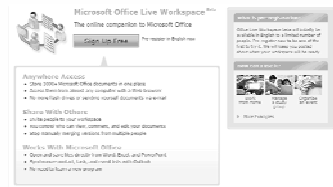
- <https://www.google.com/accounts/ServiceLogin?service=writely>



Collaboration

Microsoft Office Live Workspace

- <http://office.microsoft.com/en-us/officelive/FX102394081033.aspx>



Online Curriculum

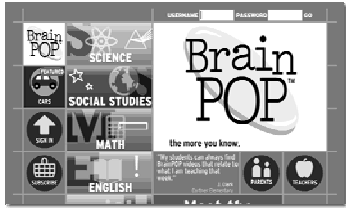
United Streaming

- <http://streaming.discoveryeducation.com/index.cfm>



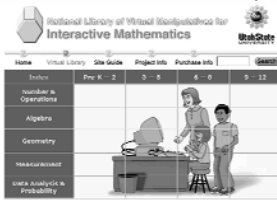
Online Curriculum

- BrainPop
 - www.brain.pop



Online Learning Tools

- Interactive Mathematics
 - Virtual Library
 - <http://nlvm.usu.edu/en/nav/vlibrary.html>



Assessment

*"When the cook tastes the soup,
that's formative. When the guests
taste it, that's summative!"*

• Robert Stake

Formative Assessment

“Links teaching, learning and assessment for changing conceptions that include:

- Creating/capitalizing on teachable moments and
- Providing immediate feedback on how to improve understanding.”

Richard Shavelson 2005

Types of Assessment Tools

- Observations
- Authentic assessment
 - Rubrics
- Exit cards
- Self and peer assessment
- Interviews
- Record keeping
- And more...



Teacher Tools

- 4Teachers.org
 - www.4teachers.org



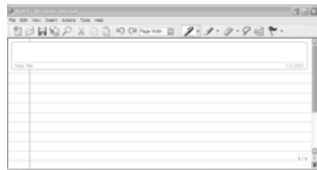
Student Assessment

- Quia
 - www.quia.com



Windows Journal

- Windows Journal enables you to take notes in your own handwriting via a pen.
- You can vary the size and color of the pen point, change it to a highlighter, and change it to an eraser - all with a tap of the pen.



Understanding the Technology

The Internet is a great way to get on the Net.
--Bob Dole

Importance of PD

- "...most teachers and other instructional support staff are unprepared to adopt data-driven approaches without extensive professional development and training."

Robert Marzano

Professional Development

- Product Training
 - Data management
 - Data assessment
- Professional Development
 - D³M
- Online Support
 - Best practices
 - Research



PD Services

- Harcourt Connected Learning
 - www.harcourtcl.com
- PBS Teacherline
 - <http://teacherline.pbs.org/teacherline/>
- Teachscape
 - <http://www.teachscape.com/html/ts/public/html/index.htm>

The Buzz about D³M

- **Scott McLeod**
 - Data-Driven Teachers Article (White Paper)
McLeod, S. (2005, June). Data-driven teachers. Retrieved from Microsoft Innovative Teachers Thought Leaders at <http://www.microsoft.com/education/ThoughtLeadersDDDM.aspx>.
- **Mike Schmoker**
 - Article: First Things First: Demystifying Data Analysis

What does the future hold?

- **Technology is and will continue to be the driving force behind DDDM**



Session Resources

- **Harcourt Connected Learning**
 - <http://www.harcourtcl.com>
- **Session Cartoons**
 - Techtoon: <http://techtoon.tripod.com>

Thank you for attending!



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