Digital Educational Content

Interoperability:

**Establishing the Foundation for an Integrated System of Instruction and Assessment**

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“You must be the change you wish to see in the world.”

-- Mahatma Gandhi
Agenda

• Where are we trending in terms of the role of digital content in education?

• How might the U.S. Race to the Top program influence digital support for education?

• What does this mean for the future focus of education-specific interoperability standards?
The Bigger Picture: Technology & Learning

- **Quality:** Technology has the potential to improve personalization, engagement, and assessment

- **Access:** Technology has the potential to enable independence from the industrial age education models that still are predominant today

- **Affordability:** Technology has the potential to improve productivity and scalability
The Trends
• eBooks + Adaptive Tutors + Open Content + Simulations
• + new learning platforms
Online Technology Usage
BYU Faculty Survey, April 2009 (n=254)

Source: Jon Mott, Brigham Young University
### Bb Feature Usage @ BYU

<table>
<thead>
<tr>
<th>Feature</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Materials / Documents</td>
<td>85.9%</td>
</tr>
<tr>
<td>Gradebook</td>
<td>78.0%</td>
</tr>
<tr>
<td>Announcements</td>
<td>68.9%</td>
</tr>
<tr>
<td>Email</td>
<td>68.1%</td>
</tr>
<tr>
<td>Assessments / Quizzes</td>
<td>30.7%</td>
</tr>
<tr>
<td>Discussion Board</td>
<td>13.5%</td>
</tr>
<tr>
<td>Other (e.g., Reserve, Dropbox)</td>
<td>12.2%</td>
</tr>
<tr>
<td>Virtual Classroom</td>
<td>2.0%</td>
</tr>
<tr>
<td>Lightweight Chat</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

Source: Jon Mott, BYU
The LMS/VLE: We Know We Need to Evolve- But to What?

New fossils shed light on this part of the family tree.
Social Web

- Collaboration & social applications from outside edu
Digital Fashion
THE FLICKERING MIND
The False Promise of Technology in the Classroom and How Learning Can Be Saved

TODD OPPENHEIMER
Winner of the National Magazine Award

THE DUMGEST GENERATION
How The Digital Age Stupefies Young Americans and Jeopardizes Our Future

OR, DON'T TRUST ANYONE UNDER 30
MARK BAUERLEIN
What We Think We’ve Learned So Far
The Digital Content Net-Net

1. Content is (still) not education: Duh!

2. Chunking is still a big challenge: Curriculum options are good, but incoherent content choices are not

3. All or nothing: E-Book alternatives make most sense if they eliminate the need for ALL textbooks

4. The big opportunity: Products that improve the homework/study process and provide feedback

5. Social & web 2.0 lessons: Educational experience is critical - requires tools & communities

6. Growing a long tail: It makes sense for edu!
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The Race to the Top

How Can Nations Improve Results from their Education Systems?
Race to the Top Objectives

- Improve Teacher Effectiveness
- Collection & Use of Data
- Improve College & Career Preparedness
- Refine Curriculum, Standards & Assessment
- Improve School Performance
- Improve Student Awareness & Achievement
The Common Core State Standards

The Common Core State Standards provide a consistent, clear understanding of what students are expected to learn, so teachers and parents know what they need to do to help them. The standards are designed to be robust and relevant to the real world, reflecting the knowledge and skills that our young people need for success in college and career.
Race to the Top Assessment

Creating a Shared Vision for Assessment Reform:
Building on the Common Core

ROB ABEL, Ed.D.
“Integrated System of Instruction and Assessment” Based Upon the Common Core
Accessible Portable Item Profile (APIP)

QTI + Access for All + Common Cartridge
Race to the Top Implications on Educational Technology

1. Assessment will no longer be primarily a standalone function outside of the teaching and learning process

2. Alternative approaches to and adaptations of the core curriculum will be critically important

3. Direct, effective, and timely feedback to students and parents is expected

4. Seamless integration of content, learning tools, assessments, and delivery platforms and comparable results across online and classroom is essential
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<table>
<thead>
<tr>
<th>11.00-12.30</th>
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<tbody>
<tr>
<td><strong>Breakout session 3</strong></td>
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</table>

**The next generation of school interoperability: classroom meets online, learning meets data** During this session there will be a panel discussion moderated by Rob Abel of the IMS Global Learning Consortium with several leading providers of classroom and online learning technologies and school operators specialising in personalised learning. It is clear that to students, teachers and administrators there should be a seamless user experience across classroom and online. And all systems should produce data that help improve the personalisation of the learning experience in line with every pupil’s needs. How do we get there from here using vendor-neutral interoperability as a foundation? Participants include: Blackboard, SMART, RM, and Icodeon.
The New “Content” Interoperability

- Online Book & App Store
  - Purchase
- eBook
  - eBook Link
- “Learning Experience” Web App
  - Assessment inside
- LMS/Portal Web Browser
- Student Progress Record
- Online Course Catalog
  - Provided Course
- Teacher

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Case Study: Amanda Severance

- Senior in Special Education
- Technology in the Classroom Course
- Eleven different accounts
- Setup required technical support

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Internet Access:
- Learners
- Faculty
- Administrators

Open Internet + Secure Internet + Local Network

Portal
- Learner Interface
- Faculty Interface
- Administrator Interface

Course / Instructional Management

Content Management / Repository

Search

Content Authoring and Rich Media Capture

ICT Context

Institution & Program Analytics Apps
ePortfolio
Summative Testing Content & Apps
Social & Collaborative Learning Apps
Digital Library Content
eBook Content
Homework & Formative Assessment
Classroom Whiteboard, Capture, Interactive Response

Student & Course Data Exchange

Administrative Systems
The Next Generation of Education Interoperability Stds

- Content integration is a small piece: ICT system and web application integration are key
- “Content” must be enabled in all its forms, especially “content as a service”
- Assessment is the key education-specific type of content
- Integration across classroom and online experiences will become essential
- Must make life easier & better for suppliers & end-users
IMS Digital Learning Services Stds

Free the content

Seamlessly connect to learning

The information architecture for learning

Common Cartridge

Learning Tools Interoperability (LTI)

Learning Information Services (LIS)
Associated IMS Standards

Question and Test Interoperability:
Assessment interchange standard - items, tests, results - part of Common Cartridge but also stands on its own

Access for All:
Metadata standards to match content alternatives to personal preferences

Learning Design:
XML language for capturing the pedagogy associated with a sequence of collaborative learning activities

Learning Object Discovery & Exchange (LODE):
Standards for accessing repositories of learning objects

Gradebook, ePortfolio & Outcomes:
Standards for seamless interaction between learning management platforms, ePortfolios, and curriculum design
Write Once, Run Anywhere
But, Any Interoperability Standard is Only as Good as the Community that Stands Behind It
Who Will Create
The New Innovative
Educational Experiences?
Summary

• Within the next 10 years all educational content will be digital and most will be applications

• Assessment will be integrated throughout the instructional experience - in class and online

• Education-specific standards must make it easy to plug together a flexible variety of cooperating applications for the benefit of the student, teacher, and institution
Thank You!

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