Caliper Learning Analytics: No Hype – Just Data

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### Table 1: Learning and Academic Analytics

<table>
<thead>
<tr>
<th>Type of Analytics</th>
<th>Level or Object of Analysis</th>
<th>Who Benefits?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Learning Analytics</strong></td>
<td><strong>Course-level</strong>: social networks, conceptual development, discourse analysis, “intelligent curriculum”</td>
<td>Learners, faculty</td>
</tr>
<tr>
<td></td>
<td><strong>Departmental</strong>: predictive modeling, patterns of success/failure</td>
<td>Learners, faculty</td>
</tr>
<tr>
<td><strong>Academic Analytics</strong></td>
<td><strong>Institutional</strong>: learner profiles, performance of academics, knowledge flow</td>
<td>Administrators, funders, marketing</td>
</tr>
<tr>
<td></td>
<td><strong>Regional (state/provincial)</strong>: comparisons between systems</td>
<td>Funders, administrators</td>
</tr>
<tr>
<td></td>
<td><strong>National and International</strong></td>
<td>National governments, education authorities</td>
</tr>
</tbody>
</table>

Source: EDUCAUSE

[www.cdn.educause.edu/visuals/shared/er/ERM1151/ERM1151_table.jpg](www.cdn.educause.edu/visuals/shared/er/ERM1151/ERM1151_table.jpg)
“Analytics” is one of the hottest buzzwords in education. For ed-tech companies, it is also a selling point. By using vendors’ suites and solutions, colleges will gain access to data about why some students succeed and where and when others stumble -- or so the pitch goes.

But there’s a catch, said Linda Feng, senior product manager for analytics and SIS integration at Instructure. “The whole premise is that all that data has to be in their world,” she said.

“All these systems have their own languages that are written for their own needs,” said John Whitmer, director for platform analytics and research at Blackboard. “In order to talk a common language, we have to agree to a common vocabulary.”
Caliper = Learning Analytics Ecosystem

IMS Caliper Enabled Services
- Caliper Sensor Endpoint(s)
- Compliant Data Mgmnt Services

Students
- Adaptive
- Personalize

EDU
- Instructors
- Curriculum
- Admins
- Learning Research

OPERATIONS PLATFORMS

LEARNING PLATFORMS

EDU TOOLS / SERVICES

PUBLISHER / COURSEWARE SOLUTIONS

MOBILE EDU APPS

= Sensor
EP = Sensor EndPoint
Caliper event

Learning Context

Activity Context

Base statement
- actor
- action
- object

- target
- generated
- Time (ISO 8601)
- startedAtTime
- endedAtTime
- duration

- edApp
- group
- membership
- fedSession
IMS Caliper: Click Stream Data for Learning Analytics
Caliper, by the IMS GLC, will be the standard for how learning data is collected.

“Caliper opens up access to meaningful data”

“Caliper is built around the IMS Learning Sensor API to define basic events and standardize metrics across different learning environments, and also uses IMS LTI standards to integrate standardized measurement with tools interoperability. Put together, Caliper is less about analytics, and more about the data standardization that will eventually drive learning analytics efforts.”
Caliper v1.0 Certified Suppliers!
“There’s a danger that the vendor community can say, ‘This is our data, not yours, and you have to pay us to learn how you teach students,’” Kellen said. “I disagree with that. The academy needs to have the line of sight to the student in digital form.”
Caliper Institutional Leadership Council
(Caliper Real-time Analytics Messaging*)

*Caliper RAM = Processing thousands of events per second and responding with intervention messages within one second
Unizin is a Major Caliper Initiative
Data Analytics

Unizin Turns Attention to Caliper Analytics Standard

By David Raths  |  11/04/15

Unizin, a consortium of 11 public universities developing a shared set of services that further teaching and learning in the digital ecosystem, is partnering with IMS Global Learning Consortium in an effort to drive the adoption of the Caliper Analytics standard.

The nonprofit IMS Global has developed Caliper as an open standard to make it easier for universities to collect student learning data from multiple software platforms in a standard way for analysis and reporting.

Unizin and IMS Global will collaborate on developing a Simple Content Use Metric Profile to define the way data is shared using Caliper. This profile will provide a standardized template for each type of learning event, down to the most basic user interactions with course materials.

The two organizations described the synergy this way: Unizin can help speed up adoption of the Caliper Analytics standard by Unizin member institutions. IMS Global can then benefit from feedback from the faculty and staff at Unizin member schools, who can provide real-world Caliper applications and validated use cases.
McGraw-Hill study habits survey finds students want learning analytics

By Tara Garcia Mathewson | November 4, 2015

Dive Brief:

- Fully 87% of students surveyed for McGraw-Hill’s report about the impact of technology on college student study habits said learning analytics would improve their academic performance, and nearly 66% of those who use it already say its impact is “very” or “extremely” positive.

- According to eCampus News, students embrace analytics as a form of continual feedback on their progress, much like the feedback they receive after taking any action on social media.

- Students also responded that adaptive learning tools are the most effective study technology, beating out learning management systems.

Dive Insight:

Learning analytics is taking off in higher education as faculty and administrators see the value of harnessing data that, in many cases, is already being collected to improve student outcomes. The newly released Caliper Analytics standard, created by IMS Global Learning Consortium, aims to create an industry standard for third-party analytics technology that ensures institutions maintain access to data collected about their students.
The Future of the “LMS” & EdTech Ecosystem is Driving the Need for Caliper

Easier/Better Functionality

Easier/Better Insight
Learning Apps:

- KNovation
- Studies Weekly
- CompassLearning
- SAS
- Istation
- NBC Learn
- CompuScholar
- McGraw Hill Education
- openStax
- cK-12
- ABC Clio
- Pearson
- Wiley
- Brainpop
- MyON Books
- Smithsonian
- Discovery Education
- Houghton Mifflin Harcourt
- Learnin3.com

IMS Open Standards:

- LTI®
- OneRoster™

LEARNING PLATFORM/PORTAL/LOR

SCHOOL DISTRICT DATA

Launch, Search, Authorize, Results

Roster Sync
Learning Platforms that Accept IMS Apps!

http://imscatalog.org/
A new paradigm for decision making:

DISTRICTWIDE Standards-Based Technology Adoption and Integration

Selecting ISTE Standards-aligned resources and IMS Global certified resources leads to effective and efficient technology-powered teaching and learning!
K–12 education institutions are increasingly looking to digital content and related e-learning technologies to meet evolving education needs and goals. Technology-based products, services, and resources are making positive impacts on education and are improving efficiency and outcomes in teaching, learning, and classroom and school management. And yet, as educators grow more sophisticated in their use of technology, there are gaps in the integration and interfaces among disparate applications.

Eight Key Areas of Interoperability Standards

This primer focuses on eight key areas of interoperability standards:

1. **Digital content**
2. Data connectivity
3. Data integration
4. **Authentication, authorization and identity management**
5. Portals and portlets
6. File sharing
7. Network infrastructure
8. Digital accessibility

http://cosn.org/interoperability-standards
The Next Generation Digital Learning Environment

A Report on Research

Malcolm Brown, EDUCAUSE Learning Initiative
Joanne Dehoney, EDUCAUSE
Nancy Millichap, Next Generation Learning Challenges

ELI Paper
April 2015

Abstract
In partnership with the Bill & Melinda Gates Foundation, EDUCAUSE explored the gaps between current learning management tools and a digital learning environment that could meet the changing needs of higher
Caliper Facilitated by IMS Global

- World’s primary K-20 educational technology standards consortium: 20 year history, 330+ member organizations (institutions & suppliers), accelerating growth & adoption
- 25+ IMS standards enable IT/academic technology flexibility, efficiency and agile innovation in a time of rapid change
- IMS works closely with our community on adoption of new technologies and building awareness through Learning Impact Leadership Institute conference and awards program (May)

IMS Global Learning Consortium Growth

- IMS Member Organizations End of Year

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