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Learning Consortium

Prospects and Expectations for Learning Analytics

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in figure 1, which is adapted from the book "Analytics at Work" by Davenport et al [1].

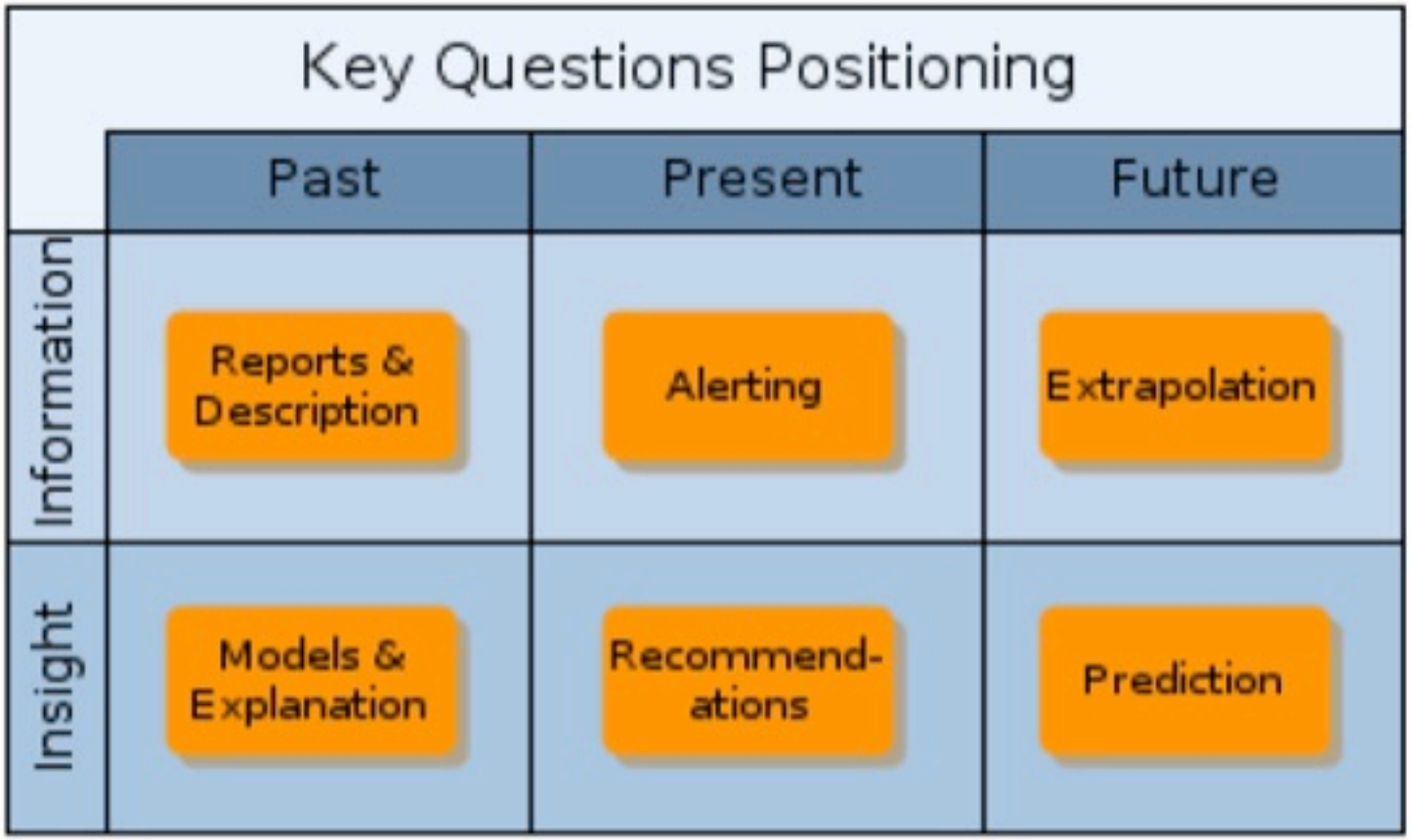


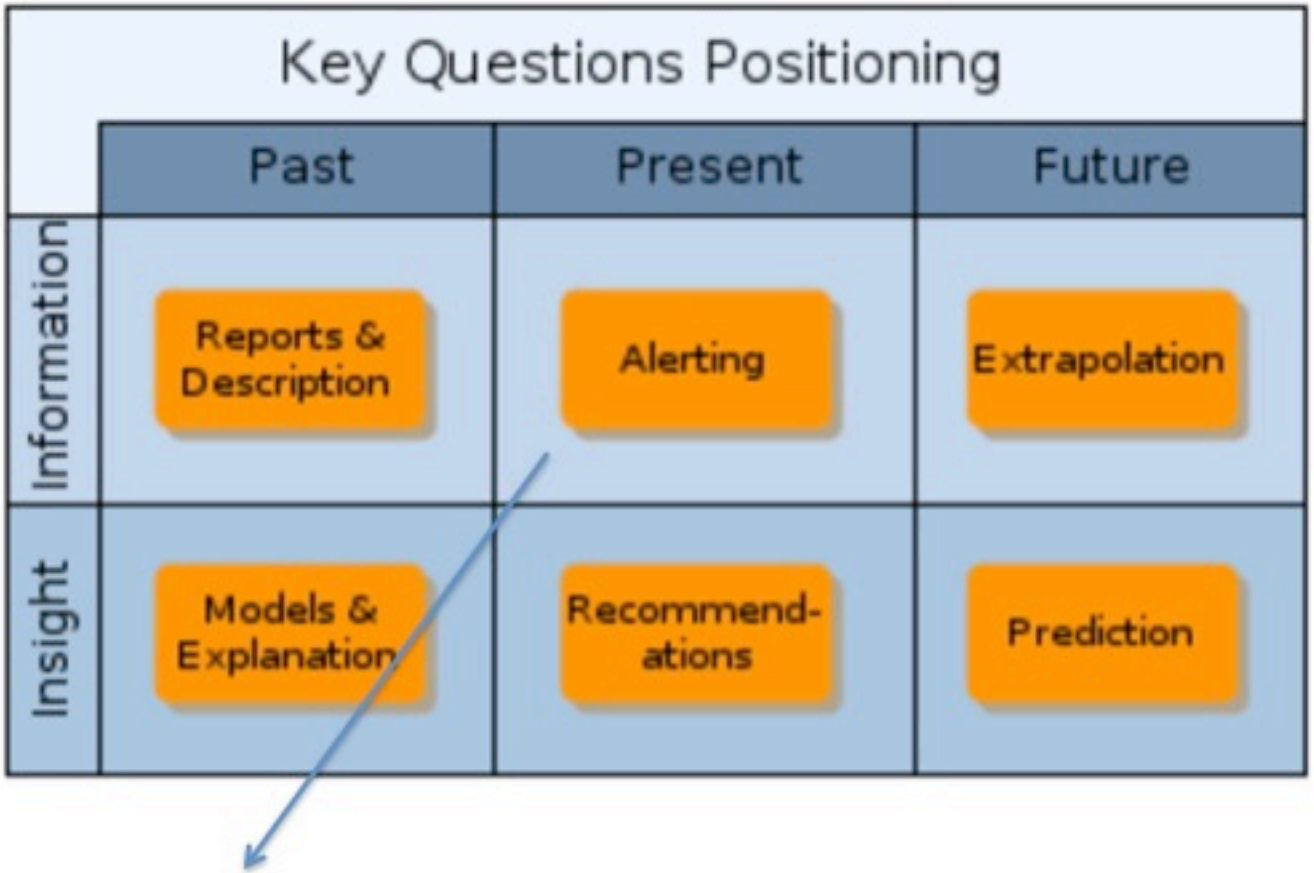
Figure 1 - Key Questions Matrix from Davenport et al

Source: CETIS: Adam Cooper; A brief history of analytics
http://publications.cetis.ac.uk/wp-content/uploads/2012/12/Analytics-Brief-History-Vol-1-No9.pdf

TABLE 1: LEARNING AND ACADEMIC ANALYTICS

TYPE OF ANALYTICS	LEVEL OR OBJECT OF ANALYSIS	WHO BENEFITS?
Learning Analytics	**Course-level:** social networks, conceptual development, discourse analysis, "intelligent curriculum"	Learners, faculty
	Departmental: predictive modeling, patterns of success/ failure	Learners, faculty
Academic Analytics	**Institutional:** learner profiles, performance of academics, knowledge flow	Administrators, funders, marketing
	Regional (state/provincial): comparisons between systems	Funders, administrators
	National and International	National governments, education authorities

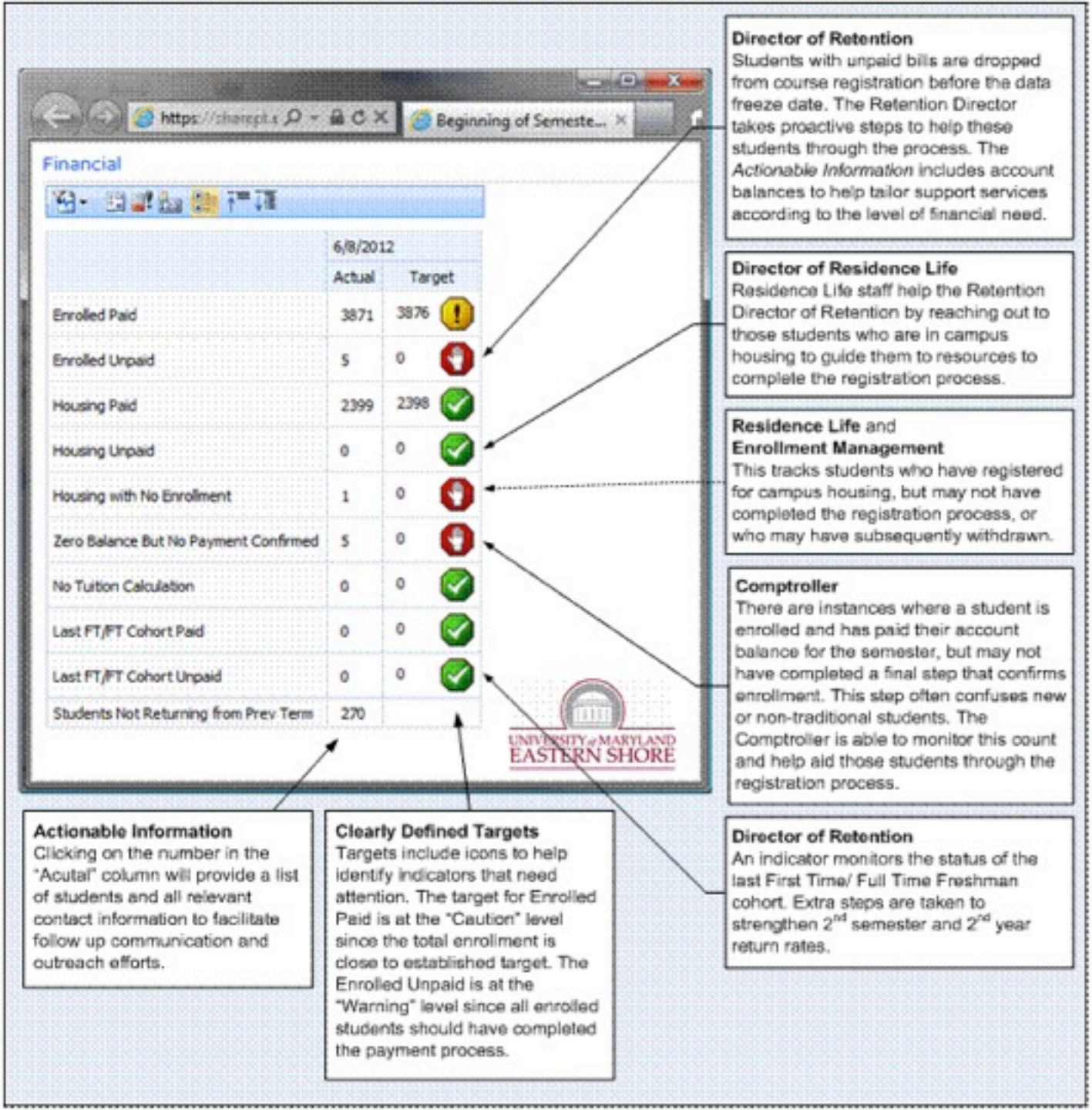
Source: EDUCAUSE
www.cdn.educause.edu/visuals/shared/er/ERM1151/ERM1151_table.jpg

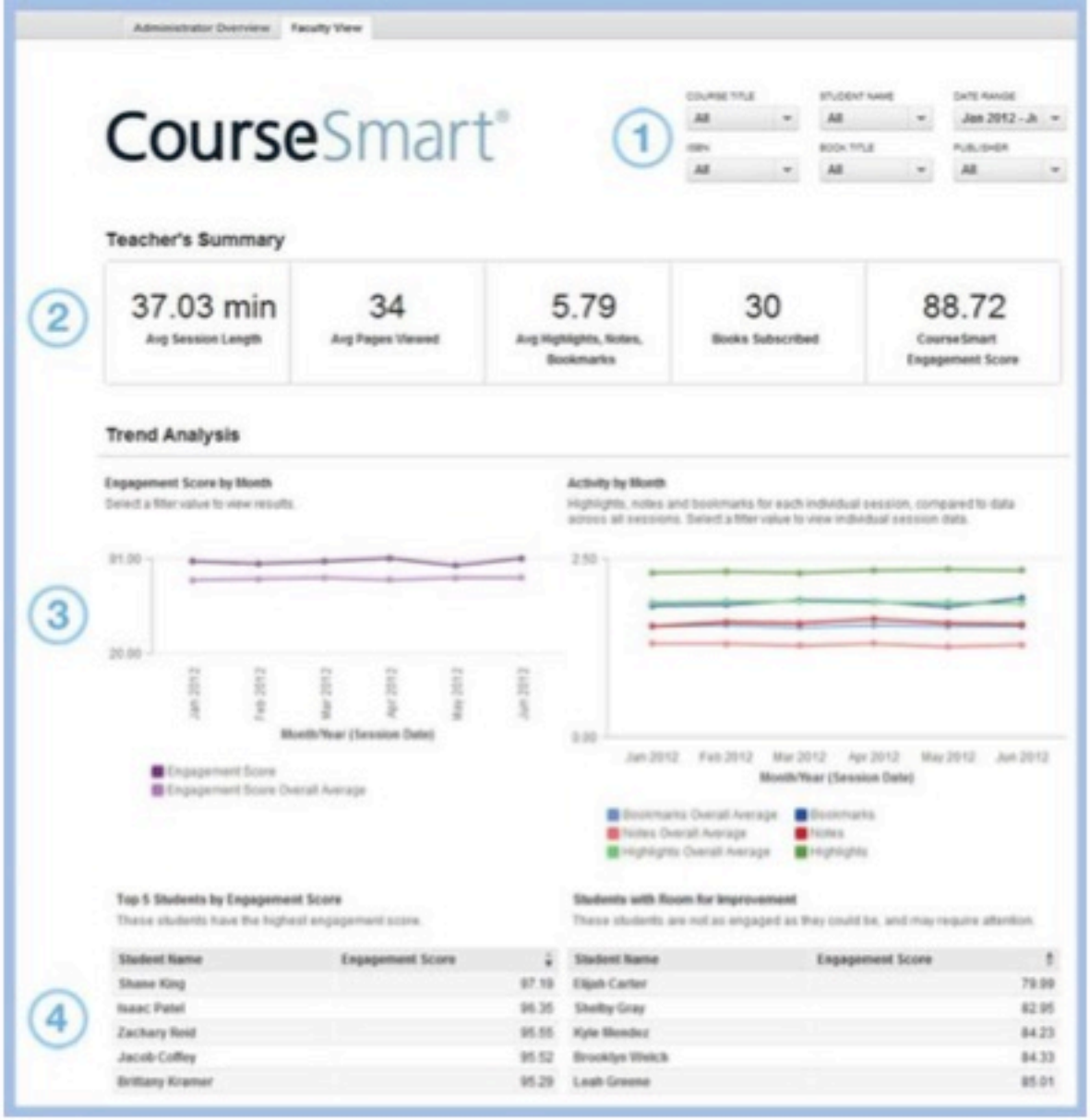


Learning Analytics: Does student appear to be understanding a key concept?

Academic Analytics: Is student not participating and therefore likely to drop?

Source: EDUCAUSE: Two Case Studies of Learner Analytics in the University System of Maryland http://www.educause.edu/ero/article/two-case-studies-learner-analytics-university-system-maryland





Source: WikiSpaces: Big Data and Learning Analytics
http://21cgl.wikispaces.com/Big+Data+and+Learning+Analytics

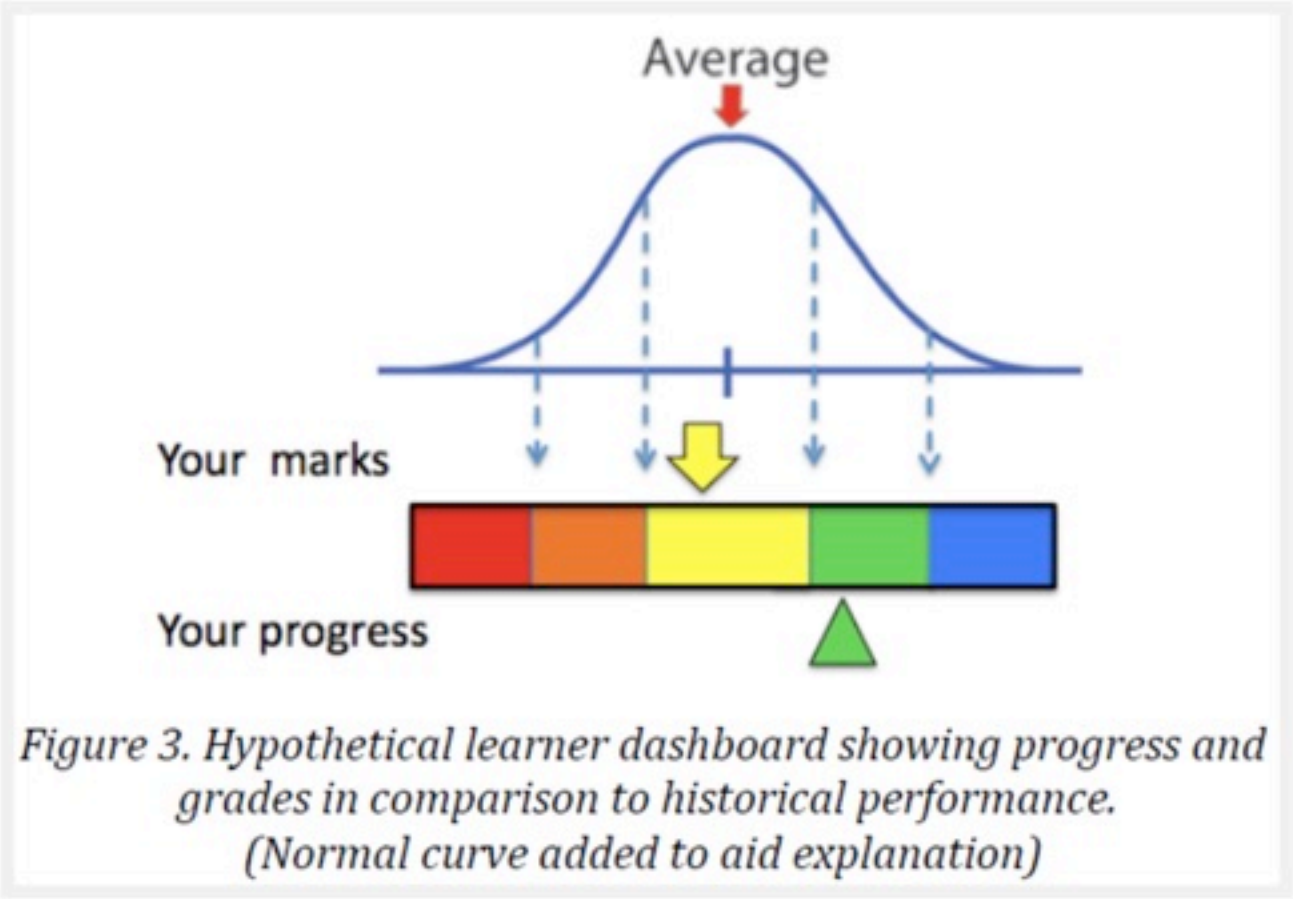
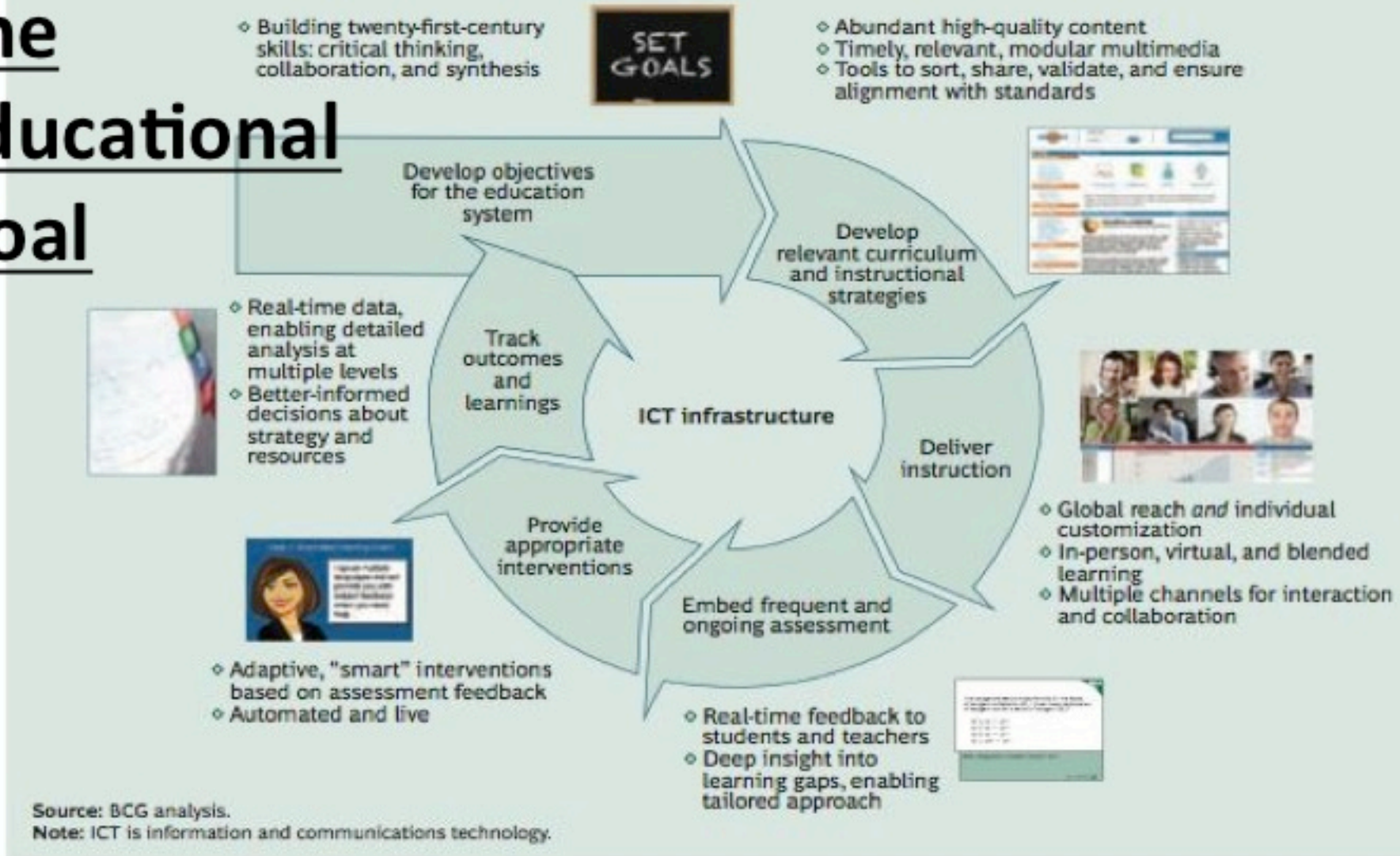


Figure 3. Hypothetical learner dashboard showing progress and grades in comparison to historical performance. (Normal curve added to aid explanation)

Source: Moodle News: Measuring Engagement: Learning Analytics in Online Learning [paper by Griff Richards]
http://www.moodlenews.com/2013/measuring-engagement-learning-analytics-in-online-learning-paper-by-griff-richards/

The Educational Goal

Exhibit 4. Technology Enables a Closed-Loop Instructional System to Deliver Better Student Outcomes



Source: BCG analysis.
Note: ICT is information and communications technology.

Source: BCG: Unleashing the Potential of Technology in Education
http://www.bcg.com/documents/file82603.pdf

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Edu Analytics Hot Areas

- HED: Early warning/alerts based on lack of LMS/tool engagement
- HED: Prediction of student success in an academic program based on incoming student characteristics
- K12: Dashboards to understand student achievement at the local and state authority levels
- K12: "Recommendation engines" to recommend alternate digital learning materials

A New Architecture for Learning

by Rob Abel, Malcolm Brown, and John J. Suess

Published on Monday, October 7, 2013 | 0 Comments

If we are to support students and faculty as connected learners and instructors, we must rethink our approach to academic technology architecture. At the foundation and core of that architecture is information technology, in its role as the strategic enabler of connected learning.

Rob Abel is Chief Executive Officer, IMS Global Learning Consortium. Malcolm Brown is Director, EDUCAUSE Learning Initiative (ELI). Jack Suess is Vice President of Information Technology and CIO, University of Maryland, Baltimore County.

http://www.educause.edu/ero/article/new-architecture-learning

The Open Innovation Revolution Across K-20 Education: Enable 10-100X Improvement in Adoption of Digital Learning

We are living in a world full of exciting new technologies that have the potential to help students learn, teachers teach and institutions deliver personalized educational experiences. The hopes for educational technology has never been higher as we transition from primarily print to predominantly digital learning resources and evolve to more digital learning options that student's desire.

Unfortunately, the reality today is that incorporating or combining innovative applications and content from diverse sources is difficult. New technologies are not easily combined to enable the efficient, effective and personalized experiences that teachers and students desire.

The good news is that IMS Global Learning Consortium, a non-profit alliance of suppliers, higher education institutions, school districts and states, are working together to develop and bring to market a set of open standards that make educational applications, content and data plug and play. Together we are helping education move towards an open platform to enable greater efficiency, effectiveness, and innovation.

Join the Open Revolution for Higher Education

Earn recognition as an institutional leader for breaking the status quo of closed, proprietary systems

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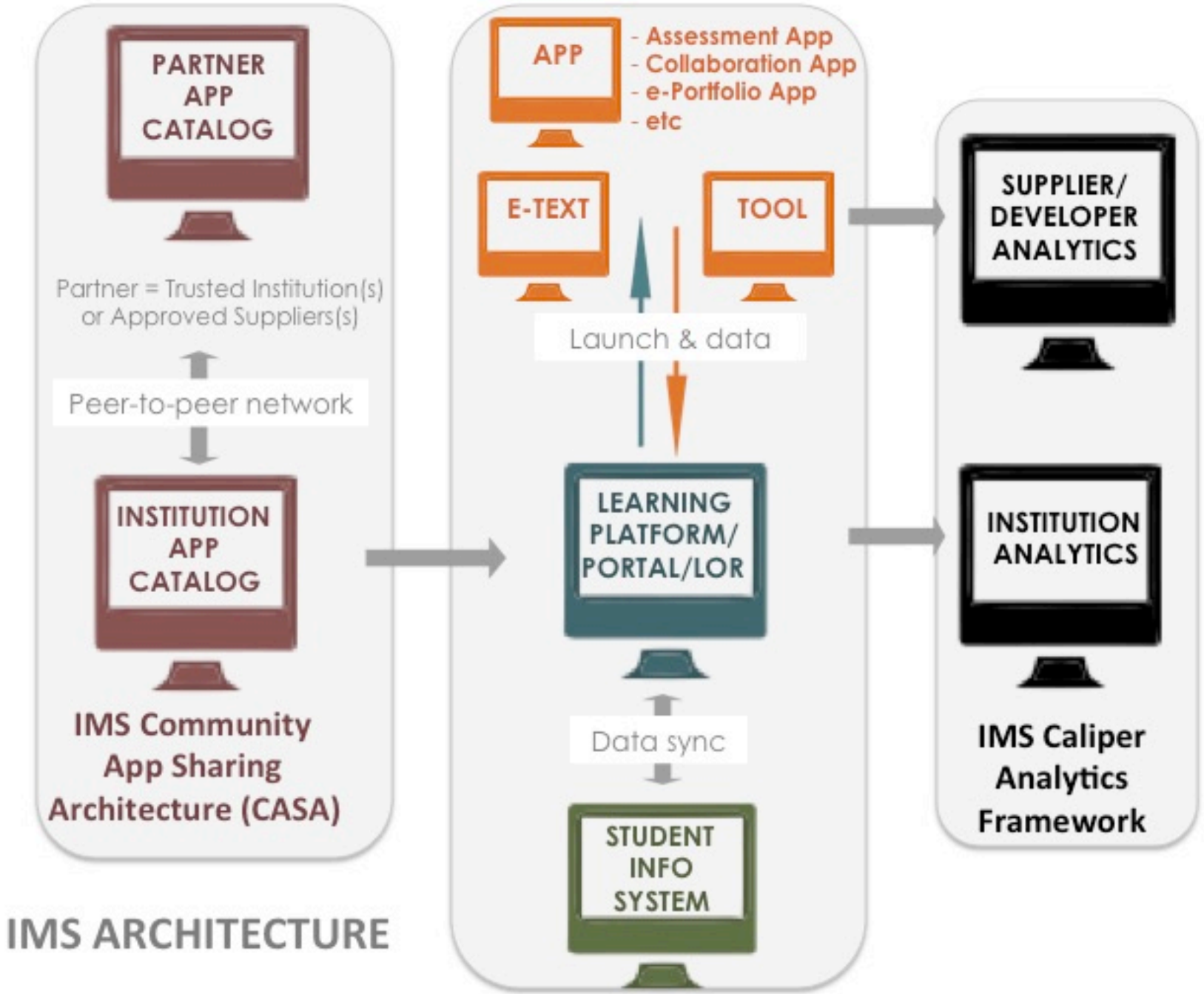
The Prerequisite Goal

http://www.imsglobal.org/imsrevolution.html



IMS ARCHITECTURE

Is there a vendor-neutral way to create an explosion of connected educational applications to help enable new innovative lifelong educational models?

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Current Registrations:
imscert.org

Learning Platforms that Accept IMS Apps!

http://imscatalog.org/

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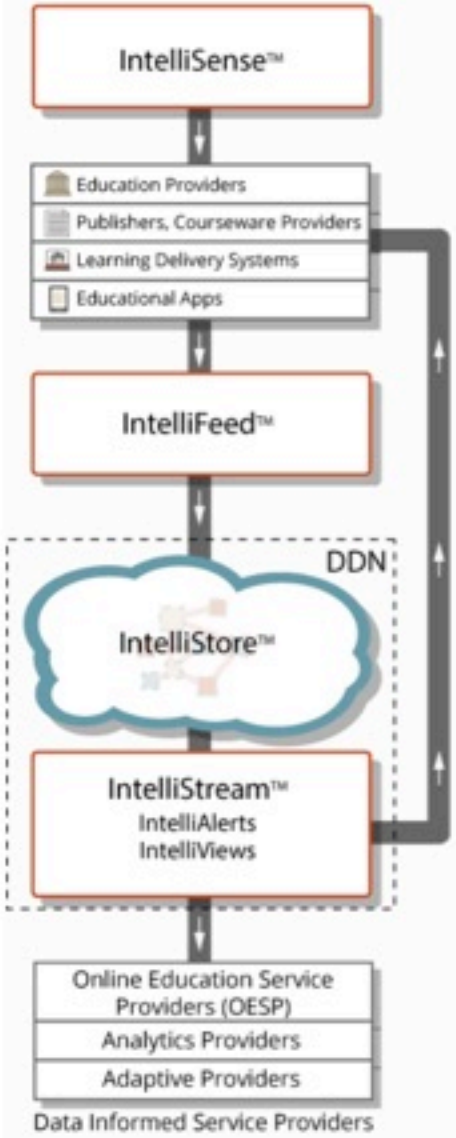
Annual Report 2013

http://www.imsglobal.org/imsglobal2013annualReport.pdf



We Collect

Using the IntelliSense™ web/mobile, emerging open standards (IMS Caliper) based measurement APIs, Intellify "sensors" are applied to instrument learning content and activities such as reading, assessment, lecture/video viewing, social/collaboration, etc., to capture extensive and granular activity metrics from your LMS, educational apps or any other learning content delivery system.

We Measure

Once the IntelliSense sensors are in place to collect metrics, IntelliFeeds package and marshal streams of learning events efficiently at scale to an Intellify sensor endpoint which in turn intelligently routes these event streams to the IntelliStore cloud storage service.

We Store

Intellistore is a highly configurable, learning data optimized, storage repository for learning metrics. Options include privatized as well as shared cloud configuration, data lifecyle management capabilities, integration with other external data warehouses and more.

You Consume

The Intellify Intelligence APIs are used to access or consume learning data from the IntelliStore.

Intellistreams enable high capacity and configurable access to all learning data that needs to be consumed programmatically by software services or applications. IntelliViews enable off-the-shelf, ready to integrate, visualization components to present key insights. IntelliAlerts, enable invaluable push alerts to learners, instructors, administrators or any stakeholder that can benefit from getting timely, criteria-based notification of key data reflected changes occurring.

The IntelliStream access/consumption APIs are made available as part of the Intellify Data Delivery Network (DDN) capability which enables flexible aggregation and potential routing of IntelliStreams across one or more target consumption points requiring access to the data. With that, the DDN enables secure, private and/or trusted routing or shared access to IntelliStreams to enable partners and similar external parties to access a configurable and controlled data set via the IntelliStreams they are permitted to access. Basically, no need to create custom APIs or controlled access capabilities to enable any trusted access for your internal stakeholders or external partners .

Source: Intellify Learning http://www.unicon.net/learning-analytics

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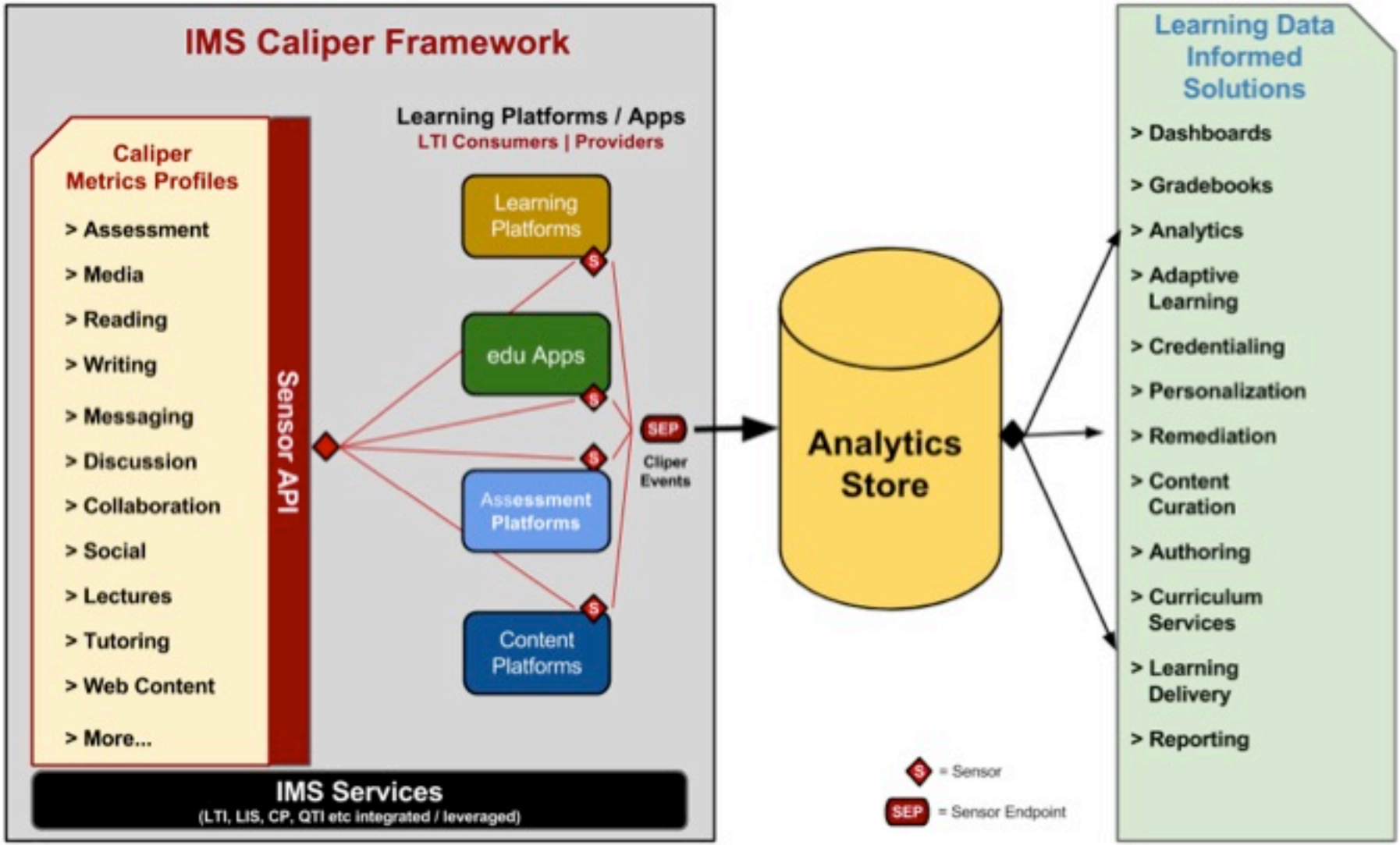
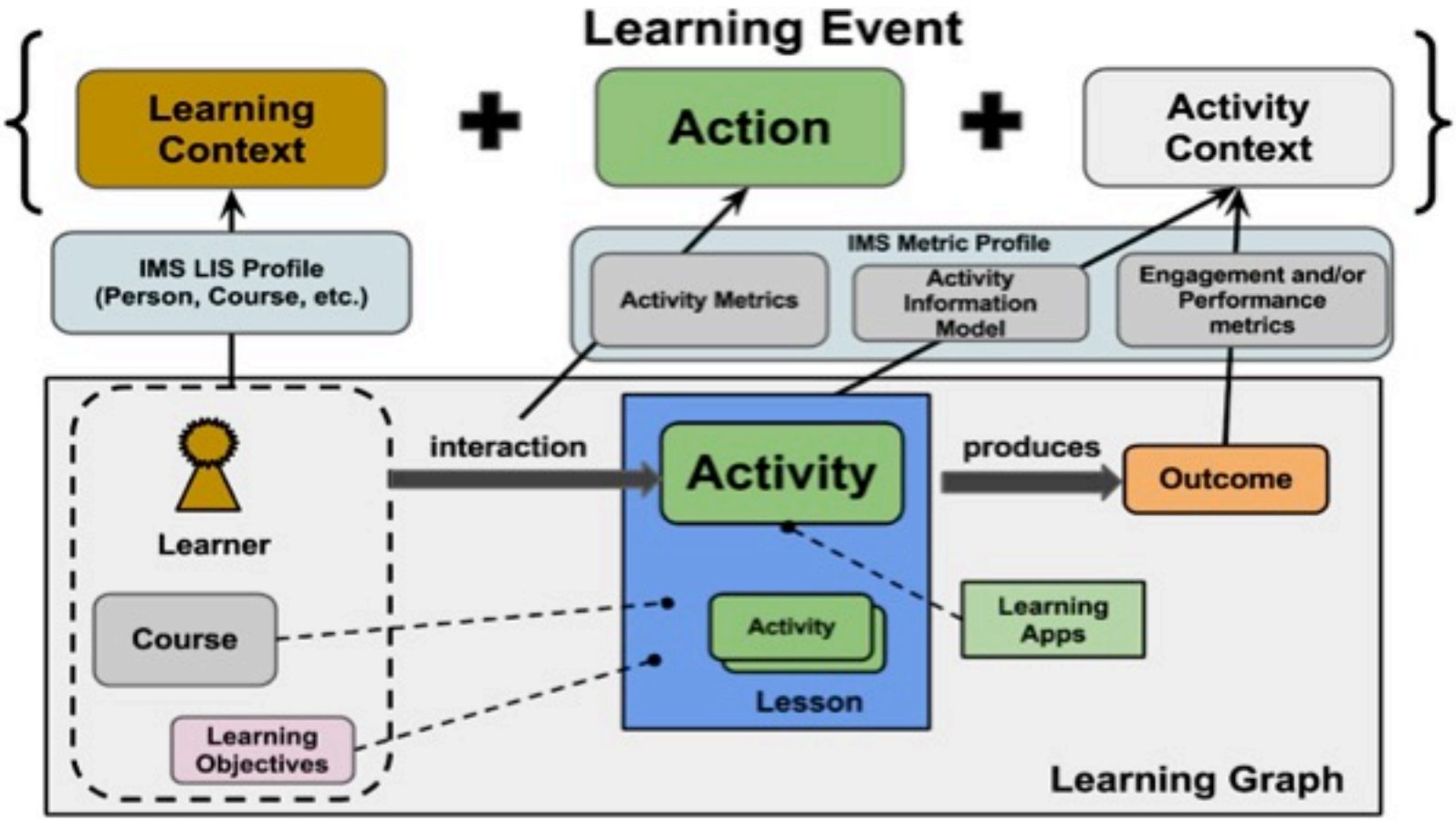


Caliper Events



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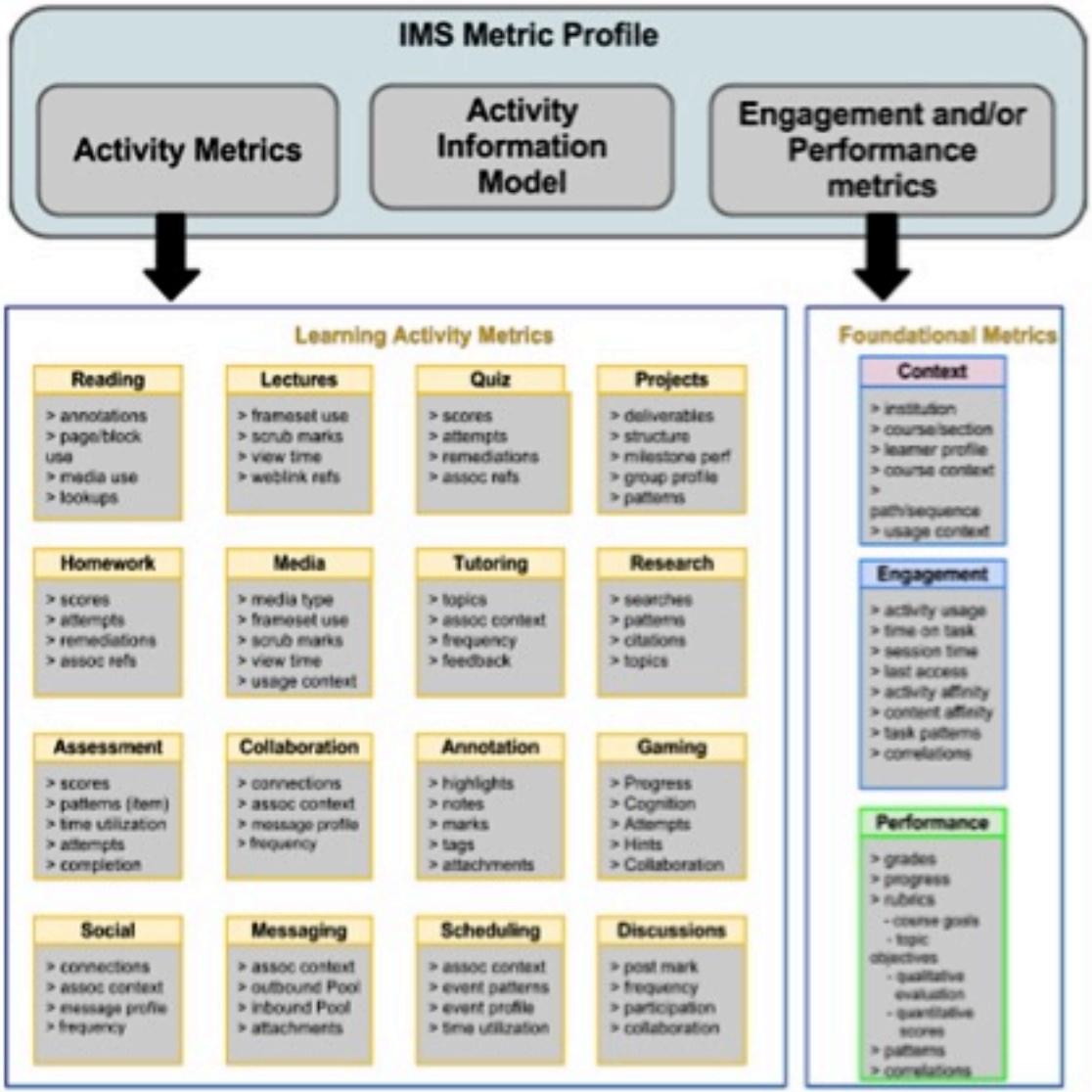
Caliper Analytics Metric Profiles



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Analytics Challenges

- Need to start with good data
- Need to have a clear project goal
- Need organizational culture and capacity to enact action
- To achieve any of the above in education motivation for improvement must be compelling
- "Good judgment" is still required

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Thank You!

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