

COMPETING STANDARDS FOR LEARNING ANALYTICS: TINCAN VS CALIPER

In October 2015, McGraw-Hill, one of the largest publishers in the world, has released [a study report](#) of a survey on more than 2,600 U.S. college students about the impact of technology on study habits. 87% of the students 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. Students embrace analytics as a form of continual feedback on their progress. If their school is using a Social LMS to manage the online learning activity in the campus and blend analytics results in the personalized activity stream at the student’s home page, it is perceived much like the feedback they receive after taking any action on social media. It helps them learn more effectively through continual feedback. Students also responded that adaptive learning tools are the most effective study technology, beating out learning management systems.

In higher education, learning analytics is taking off and as more vendors incorporate analytics in their toolset offerings the pressure on standardization builds up. There are two standards bodies in eLearning world: IMS who developed LTI for learning tools, QTI for assessment and ADL who developed SCORM for content standards.



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Of these two, ADL was the first to notice the need for a standard to represent and store data. As learning took place more and more in a digital environment, data collected and stored is growing. Learning analytics tools are burgeoning, but each tool has its own requirements for its input data. The stored data may not be able to fulfil those requirements. ADL’s vision was to define a representation so that all tools could use the same data set. The result was the [Tin Can API](#) (sometimes known as the Experience API or xAPI). The xAPI was released as version 1.0 in April 2013. There are currently over 160 adopters.

IMS was late. Version 1.0 of the Caliper standard was released in October 2015, but the first certification was granted that very same month and the standard was adopted, especially in higher education sector in USA very rapidly. [Caliper Analytics](#) enables the collection of high rate real-time event data, via software sensors (or the Sensor API™) and information models (known as metric profiles).

It doesn’t make sense to have two standards with the exact same goals for interoperability. There were attempts from the xAPI community to build a bridge, but IMS was reluctant to find common ground. It seems there will be a split in the market, and both standards will become de facto at some segment. Caliper will potentially be a de facto standard in US higher education market and xAPI will be de facto in enterprise training and schools, especially in Europe.

Unlike SCORM or LTI standards, the standards on data do not bring the same easy set of incentives for vendors. Data accumulated in an LMS is used by that LMS to generate some reports and add value to the product. If the LMS vendor standardizes the data store learning analytics software

vendors can also use it, but there is no direct benefit for the LMS vendor. Therefore, the growth in adoption needs to be driven by customer demand, as the institutions increasingly add this requirement in their requests for proposals. Secondly, publishers and content providers are likely to be early adopters. Giving institutions access to data that increases the likelihood they will remain customers is a win-win. For example, [Kaltura's](#) open source video platform was one of the first products to receive conformance certification based on Caliper. Blackboard, D2L, Elsevier, Intellify Learning, Learning Objects, McGraw-Hill Education, and VitalSource Technologies are among the other ed tech providers to achieve conformance certification for their products.



The ultimate aim for all of this data collection is to help students self-regulate their own learning by empowering them with actionable insights or actionable predictions out of data. Available data is just the starting point. User experience design is crucial. Imagine tools that let's learners critically self examine their own performance, where they're spending their time, their study habits, what they want out of their educational experience — and really how they can refine their thinking. How would these tools look like constitutes most of their impact.