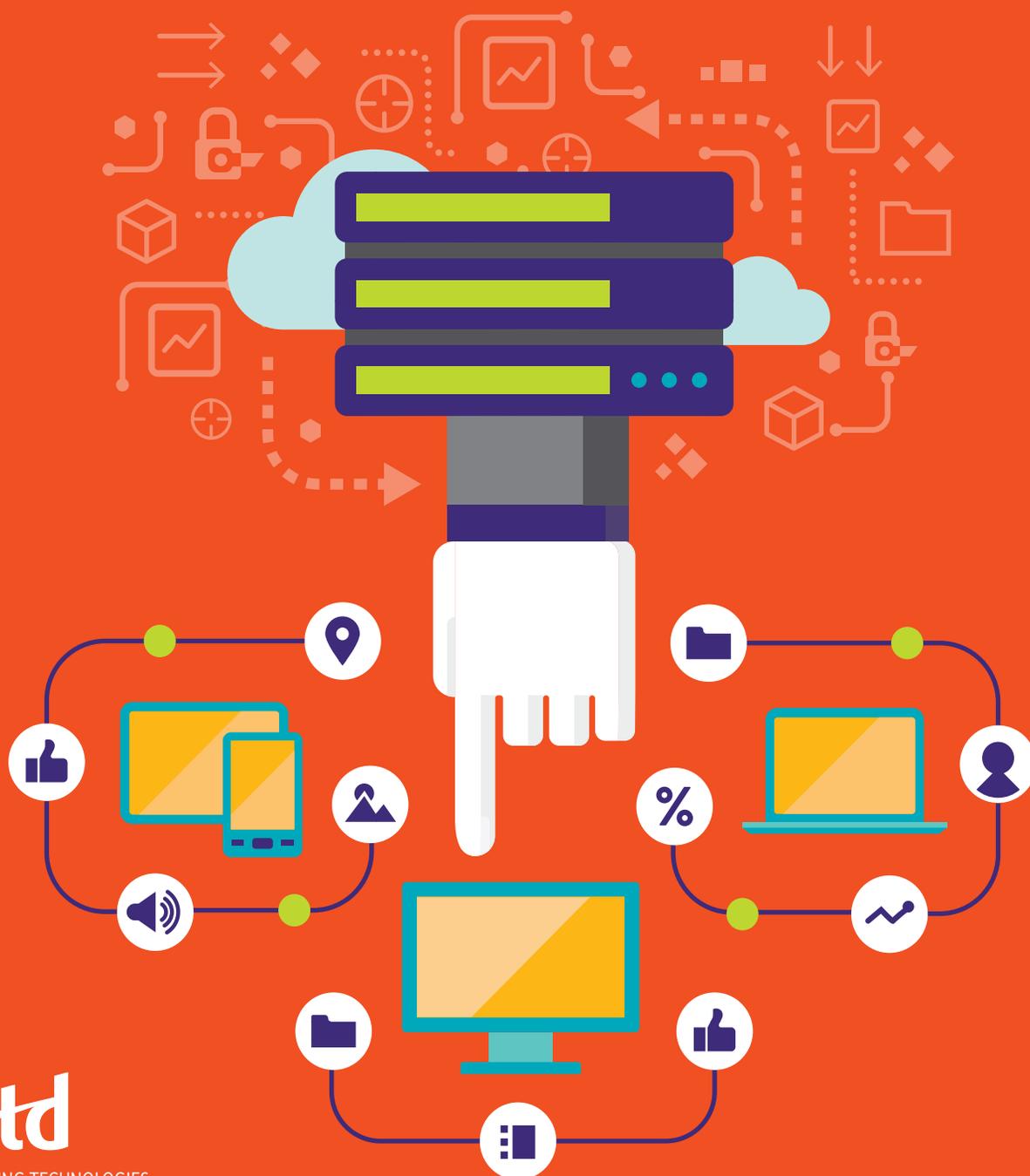


MAKING SENSE OF xAPI

Megan Torrance and Rob Houck



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Nearly every functional unit in an organization has better data than the talent development and learning team. The sales and marketing departments have customer contacts, detailed customer engagement and web traffic reports, product data, and sales activity; customer service has detailed customer records, troubleshooting support, and historical data on problems and resolutions; manufacturing has plant operations information and inventory and production records; and so on.

In learning and development (L&D), we are rather limited. We have course enrollment and completion data from the learning management system; we know how much time is spent in formal learning and whether participants passed the test at the end of the course. But we typically capture very little data about what happens in a classroom training setting. In addition, we may have electronic performance support systems (EPSS), knowledge bases, learning games, and rich simulations; but the data for these activities are not stored in most learning management systems (LMSs).

In many cases, the L&D function collects disconnected chunks of relatively limited and shallow data, and the data are not integrated with the rest of the organization. If learning isn't improving performance, or if some learners are improving and others aren't, we don't have the data to answer questions about why, how, where, and what to do next.

For more than a decade, SCORM (the Sharable Content Object Reference Model)—and AICC (Aviation Industry CBT Committee) before it—offered the e-learning industry a standard for tracking basic data about an e-learning event. SCORM allowed for the rapid growth of the industry with few barriers to entry and a rich and interchangeable pool of development vendors, tools, and LMSs. What it didn't do was track rich data about the learning experience or offer correlations to on-the-job behaviors or organizational results.

With the Experience API, or xAPI, we have the opportunity to record far more detailed data about a wider variety of learning experiences than ever before. We can then use those data to improve the quality and the usability of our

offerings to learners. xAPI also affords us the ability to use real-world job performance and results data to personalize the learning experience as well as to determine which aspects of the learning are contributing the most to the bottom-line results.

This issue of *TD at Work*:

- provides an overview of xAPI, including terms associated with it
- explains how xAPI can benefit your learning organization
- outlines the types of data you may want to gather
- offers guidance on getting an xAPI project started.

WHAT IS xAPI?

xAPI is a specification for how we send, store, and retrieve a wide variety of records about learning and performance experiences and subsequently share that data across platforms. These records (also known as learning record statements) are sent from a variety of sources known as learning record providers or activity providers, and they are aggregated in a learning record store (LRS). An LRS has some of the same functions as a learning management system (LMS), but it is not required to offer the hosting and enrollment features that are usually the primary function of an LMS.

As a Github document by the Experience API Working Group in the office of the deputy assistant secretary of defense explains it, xAPI was born from the efforts of the Advanced Distributed Learning Initiative, which sought to standardize and modernize the administration of training and learning. Since that initiative began in 1997, there has been a greater realization of the need to measure more than formal, computer-based training. Learning interventions, both formal and informal, as well as online and offline, need to be considered.

The x in xAPI refers to “experience.” This is important because it implies that we are dealing with a wide variety of learning and performance experiences and are not limited to e-learning, unlike SCORM and AICC.

According to the TD magazine article by Megan Torrance and Craig Wiggins,

“With xAPI you can track classroom activities, usage of performance support tools, participation in online communities, mentoring discussions, performance assessment, and actual business results. The goal is to create a full picture of an individual’s learning experience and how that relates to her performance.”

API stands for *application programming interface*, which refers to the rules for data interchange across software systems as they interact and share data. Many commercially available applications offer APIs to make their data available in other systems, and vice versa. For example, if you post a status update in LinkedIn, you can choose to also automatically post to Twitter. This is the work of an API that exists between LinkedIn and Twitter.

Some learning experiences can be documented with just a single statement that captures learner participation. In other instances, thousands of activity statements can be generated during a learning experience, capturing the fine detail of the encounter.

xAPI statements can be sent in a variety of directions:

- from a learning record provider to an LRS
- from an LRS to a learning activity
- from an LRS to another system
- from one LRS to another and even from LMS to LRS.

The LRS is the behind-the-scenes plumbing of the xAPI ecosystem. It collects and stores the data and often provides the platform for analyzing the learning and performance experience. All of this will give the learning and development team richer insight into the effects of its work. For example, a working group at a conference quickly generated a short list of what xAPI will allow us to do much better than we could have with SCORM:

- see more detail about the e-learning experience

- capture more about learning that happens outside an e-learning course
- gain insight about the actual performance of job tasks
- correlate learning with performance
- offer more targeted training based on experience and performance
- support performance in better ways
- use data to learn with others
- compare performance and learning across learners
- deliver and track training outside the LMS, even when disconnected from the Internet.

THE LRS IS THE BEHIND-THE-SCENES PLUMBING OF THE xAPI ECOSYSTEM. IT COLLECTS AND STORES THE DATA AND OFTEN PROVIDES THE PLATFORM FOR ANALYZING THE LEARNING AND PERFORMANCE EXPERIENCE.

Do I Really Need xAPI to Do This?

The short answer is no, but it may be a short-sighted answer.

xAPI is not revolutionary in its technology. The revolution is in the adoption of a new, broader common language for interoperability. All of these things in the list above can be accomplished—and are being done in some organizations—without xAPI, using custom-built software.

The trouble is that these unique systems are hard to expand and extend with products and services from other vendors because they are not following an industry-wide specification for interoperability. SCORM provided interoperability and fluidity in the marketplace, and xAPI builds on the baseline interoperability with an environment that allows organizations to add new vendors into their ecosystem more seamlessly.

How Is xAPI different From SCORM?

In short, as is written on Advanced Distributed Learning's xAPI website:

“SCORM is the most widely used e-learning standard [today]. If an LMS is SCORM conformant, then it can play any SCORM content, and conversely any SCORM content can be played in any SCORM conformant LMS. This interoperability makes everybody happy, and saves everyone a lot of time and money. SCORM has served us well, but it really doesn't capture the entire picture of e-learning.”

xAPI BUILDS ON THE BASELINE INTEROPERABILITY WITH AN ENVIRONMENT THAT ALLOWS ORGANIZATIONS TO ADD NEW VENDORS INTO THEIR ECOSYSTEM MORE SEAMLESSLY.

While xAPI will replace SCORM, to say that xAPI is the next generation of SCORM is misleading. It's like saying the smartphone is the next generation of the rotary-dial phone many of us had in the 1980s. xAPI does all of the things that SCORM does, but it handles many more types of data and is expandable and interoperable with other systems.

The table, Key Differences Between xAPI and SCORM, highlights how the two specifications vary.

KEY DIFFERENCES BETWEEN SCORM AND xAPI

	SCORM	xAPI
Tracks basic e-learning course statistics: bookmarking, completion, score, time, pass/fail	x	x
Tracks e-learning question-level data	x	x
Tracks e-learning objective-level status	x	x
Records multiple attempts and scores per object/test		x
Supports offline data transfer		x
Operates without an Internet browser		x
Operates across domains		x
Tracks one learner at a time	x	x
Tracks multiple learners and team-based activity		x
Tracks non-e-learning activity (instructor-led training, virtual instructor-led, mobile, game, scenario-based learning, performance support, and so on)		x
Records actual job performance		x

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