Modern Learning Ecosystem Design with xAPI

March 28, 2018 — #xAPI
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Today’s Agenda

• What We Heard in 2017
• State of Learning Ecosystems
• Intro to xAPI
• xAPI Case Studies
• Takeaways and Next Steps

Welcome!

Thank you for joining me today!
Quick Rewind: 3 L&D Leader Goals

1. Provide data about individual learning and performance directly to employees, managers, and other stakeholders.

2. Make the move from manual data processing to real-time reporting and automated analytics in the next 9-18 months.

3. Bring together stakeholders from across departments including IT, Sales, HR, and Talent Development at the onset of xAPI initiatives.
Quick Rewind: One Big Problem

“I’m responsible for a complex, fragmented ecosystem and I don’t love the tools we’re using. And neither does anyone else.”

“From what I’ve seen, xAPI could be our way to fix this whole thing.”
Current State

- Very siloed systems
- Data fragmentation
- Poor learner experience (LX)
- Disaster in reporting
- Lots of time spent in data cleaning, little time in analytics
Current State

- Very siloed systems
- Data fragmentation
- Poor learner experience (LX)
- Reporting is a disaster
- Lots of time spent in data cleaning, little time in analytics

“My life right now.”
Total Integration

- Seamless system and content communication
- Learning experience happens in unified system
- Automated data collection, reporting, and analytics accessible to stakeholders
Total Integration

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- Learning experience happens in unified system
- Automated data collection, reporting, and analytics accessible to stakeholders

“By 2020.”
We know we can’t go from 0-100.

We have to build the road first.
What is xAPI?

xAPI is a way to capture experience data.
What is experience data?

Experience data is a combination of activity, learning, behavior, and performance data.

By unifying data from across organizational data sources, insights into engagement, learning effectiveness, information use, and team behaviors can be identified and applied to improve business outcomes.
How is experience data collected?

Experience data is collected using the Experience API (xAPI), a standardized Actor — Verb — Object data format.

This interoperable data structure allows you to activate information across tools and technologies where experience data is created in real-time.

Actor  Verb  Object
Stacey  Completed  Course #1
How is experience data collected?

Because xAPI is designed around activity-based data collection, xAPI data can provide high-resolution insights into specific learner activity.

For example, completing a course is actually a summation of many, much more granular, actions. This information can show us how engaging or valuable an experience is for a learner.

<table>
<thead>
<tr>
<th>Stacey</th>
<th>Completed</th>
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<tbody>
<tr>
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<table>
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<tr>
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<tr>
<td>Final Slide</td>
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<tr>
<td>Course</td>
</tr>
</tbody>
</table>
How is a learning ecosystem designed with xAPI?

xAPI allows for modular, flexible, and scalable learning ecosystem design through data interoperability.
How does xAPI power a learning ecosystem?

Experience data is standardized across tools into xAPI format and stored in a Learning Record Store (LRS).

Data can then be sent to other system like automated dashboards, reporting tools, or applications.
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But where are organizations starting?
Hybrid Ecosystem

• Modernization of learning ecosystem to modular structure
• Solves for reporting challenges through data unification using the LRS
• Future-proofed through xAPI enablement
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• Modernization of learning ecosystem to modular structure
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Where you can be 6-8 months from today.
Do you think it’s true? 6-8 months!

No. Definitely not. Proof or it can’t happen.
Case Studies to Prove It

**AIRO** An International Research Organization  
Identifying Content Improvements through Learner Usage Data

**CALIFORNIA Public Nursing School**  
Measuring the Effectiveness of Instructional Content with Granular Learner Behavior

**KHAN LAB SCHOOL**  
Reimagining Performance Assessment for Personalized Learning & Development

**A RETAIL CO.**  
Creating xAPI-Powered Career Pathways to Improve Retention

**The Learning Accelerator**  
Measuring Skill Development through a Multi-Source Learning Experience Interface
Identifying Content Improvements through Learner Usage Data
An international research organization works to improve food security and reduce poverty in developing countries. In order to understand where their training initiatives are having the greatest impact, they need to know which of their resources are getting used, who they are used by, and where those users are. By using xAPI to get better data about learning patterns and content use, they are able to understand overall engagement and improve their resources.

**AIRO + Yet Analytics**
Problem

- Content usage is unknown
- Content users are unknown
- Wanted to understand how much time is spent on different resources
- Wanted to identify where there are content gaps or opportunities to create more supporting resources
Solution

- Connect LMS and CMS to LRS
- Use xAPI to gather activity and behavior data from content users
- Send statements to the Yet LRS
- Analyze results to understand content usage patterns and opportunities
Outcomes

- Understanding of audience engagement

- By using xAPI to get better data about learning patterns and content use, they are able to shift their content creation team to be proactive designers rather than reactionary producers
Measuring the Effectiveness of Instructional Content with Granular Learner Behavior
A California-based Public Nursing School has created online, interactive experiences to simulate clinical problem solving and help students develop reasoning skills. By enabling xAPI data to be collected from their LMS and sent to the Yet LRS, instructional designers are able to analyze high-resolution activity and behavior data to measure the effectiveness of content, identify modules that need improvement, and understand student decision-making processes. With this data about digital learning, instructors are now able to personalize in-person instruction and make more relevant student interventions.
Problem

- Developing the expertise of students in diverse patient environment
- Focused on in-person experiential learning for students
- Wanted to incorporate online interactive simulations and provide mobile learning solutions
- Wanted more granular data
Solution

- Develop interactive eLearning modules using Lectora
- Use xAPI to collect granular data about student response behavior and send statements to the Yet LRS
- Analyze and manipulate data in Yet LRS
- Export unified data to current BI workflow to correlate and apply results
Most students correctly identify findings

Some students ask more questions than they need to and flag things that are not relevant

Identification of significant findings does not translate to correct decision making in branching scenarios

Most students reject poor choices but many get distracted by reasonable choices

Source: https://www.slideshare.net/slideshow/embed_code/key/cmyyNV4uIAS2d1
Outcomes

- Interactive eLearning modules enhance instruction and improve learning analytics
- Creates feedback loop for instructors so they can identify necessary interventions and personalize learning
- Easy to collect learning analytics provide foundation for long-term data-driven instructional improvements

“With xAPI it’s now possible to gain insights into our students’ clinical reasoning skills. Yet Analytics worked closely with us and made it possible to harness this new technology.”

— Andrew Corbett, PhD

Source: http://www.slideshare.net/slideshow/embed_code/key/cmyNV4uIA2d1
Reimagining Progress Reports in a Unified Data Dashboard for Mastery Based Blended Learning
Reimagining Performance Assessment in Personalized Learning & Development
Khan Lab School is an independent school associated with Khan Academy that runs a personalized, mixed-age program with a project-based learning approach. Because KLS tracks mastery instead of letter grades and groups students by independence level instead of age, a new kind of reporting system is needed to show student progress. Yet Analytics has built student-facing and instructor-facing dashboards that pull data from digital and in-person learning activity to provide a unified view of student progress at KLS.
Problem

➢ Had selected the best learning tools and platforms

➢ Used a modular approach and combined the components that best suited their needs

➢ Designed a program and curriculum to support self-paced, self-directed, blended learning
Problem

- Completely siloed data
- Had no way to connect learning and performance across tools
- Hours of time spent hand-mapping progress in spreadsheets each week
Solution

- Easy to understand for students, actionable for teachers and other stakeholders
- Seamless, single-sign-on, multi-permission access structure
- Secure data processing and storage
- Modular ecosystem approach for future compatibility
Student – 9 Years Old

Teacher – Professional

background

xAPI

case studies

Q&A

takeaways
Outcomes

➢ Real-time insight into student progress

➢ Individual learner dashboards that empower students and facilitate communication with other stakeholders

➢ Role-specific dashboards making it easy for teachers, parents, and administrators to see learner masteries across tools at a glance
A RETAIL CO. + Yet Analytics

Creating xAPI-Powered Career Pathways to Improve Retention
One of a Fortune 1000 retail organization’s strategic business objectives is to make more data driven decisions. For the L&D team this means shifting from a content-centric mindset to a data-centric mindset. Rather than continuing to focus on providing reactionary content solutions, the company’s leadership team has started the process of creating a modular xAPI-powered learning ecosystem. Their vision is to create a single source of record to enable observability, granularity, and accountability with regard to both learning activity and content. Using this data, they aim to deliver personal corporate transcripts to each employee and improve retention.

**A RETAIL CO. + Yet Analytics**
Problem

- Data siloed across departments compounded by manual data analysis
- Robust career pathways on paper; no connection to digital activity or training
- Lack of observability into learner engagement, no visibility into informal learning
- Employees don’t know their way forward
Problem

- Team had self-identified that xAPI is the technology they need to solve their problems
- Have a clear vision for a fully implemented xAPI learning ecosystem with a seamless employee experience
- Unsure how to start
Solution Step One: Data Assessment

- Definition of business objectives and inventory of current technology infrastructure
- Identification of system improvements, gap analysis, and prioritization of platforms
- Onsite workshop with Yet Analytics data engineers and business performance specialists
Solution Step Two: Develop Phased Approach

Proof of Concept Project: Business Objective

Content Optimization: Understand what content is used in informal self-directed learning offerings

Internal HR Resources: Measure and improve employee engagement with critical HR documents and benefits help desk

Management Training: Measure and improve manager engagement with required training and policy

Seller Readiness: Understand how engagement with content prepares sellers for success

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Solution Step Two: Develop Phased Approach

- **Proof of Concept Project:**
  - Business Objective

- **Content Optimization:**
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- **Seller Readiness:**
  - Understand how engagement with content prepares sellers for success
Solution Step Three: Start in One Place

- Define relevant data sources to connect
- Identify critical experience data activity types that are valuable to support business objective
- Gather input from each type of end user
- Create organization specific xAPI Profile for future iteration and ecosystem build out

Seller Readiness: Understand how engagement with content prepares sellers for success
Outcomes

- Building support within your team, convening stakeholders and increasing shared buy-in for investment
- Definition of a prioritized and phased roadmap of how to move forward
- Expert support, design recommendations and guidance
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Measuring Skill Development through a Multi-Source Learning Experience Interface
Through partnerships with leading human capital organizations, the Learning Accelerator aims to transform K-12 education through blended learning on a national scale. As part of their distributed adult-learning strategy, TLA has partnered with Yet Analytics to create the Learning Commons, an xAPI-enabled, multi-source content exploration and experience tracking portal. As learners utilize content through curated playlists, skill development is automatically tracked and presented back to individual learners, cohort leaders and content providers through role-specific dashboards.
Problem

➢ Learning content lives in an overwhelming number of locations

➢ Difficult for learners to get the content needed when it’s needed

➢ Instructional designers lack visibility into how resources are used or if they are valuable
Solution

- Content from different platforms and hosting systems is searchable in a single user interface
- Individual learners can track their progress across content and playlists
- Content creators and cohort leaders are able to see engagement trends and informal learning progress
Unified Search Portal for Learners

Curated Playlists Created by Instructors

Welcome to the Learning Commons

Get started here >

What are the skills and knowledge that the young people in your school really need to thrive in today's world—a world of accelerating change and increasing uncertainty? When redesigning the learning experience, start by anchoring it in a broader, deeper set of competencies. This playlist lets you dig into a new competency set built from a deep analysis of today's world, and provides tools to start a conversation with your school community to create your own new definition of student success.

Skill Areas: Planning, Delivery, Culture, Content

- PDF: MyWays Report 6: Welcome to MyWays
  Next Generation Learning Challenges
- PDF: MyWays Report 7: Habits of Success
  Next Generation Learning Challenges
- PDF: MyWays Report 8: Creative Know How
  Next Generation Learning Challenges
- PDF: MyWays Report 9: Content Knowledge
  Next Generation Learning Challenges
- PDF: MyWays Report 10: Wayfinding Abilities
  Next Generation Learning Challenges
- Websites: MyWays Exercise Two: Define Success
  Next Generation Learning Challenges

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Learning Network by Provider

Competency Mapping Through Data Model

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Q&A  takeaways
Outcomes

- Provides multiple pathways into content for learners and improves content searchability.
- Content curation is streamlined through playlist creation and community validation.
- Progress data from informal learning is automatically collected and stored in a learner’s profile.
- Enables a unified learner experience.
I agree. That was very good proof.

Wow! What great case studies!
Learning Ecosystem Configuration Recap

xAPI allows us to create learning ecosystems that are modular, flexible, and future-proof.
Designing Your Modern Learning Ecosystem

Start with the data sources that mean the most to business objectives. Then add in other components and systems in order of priority, usage, and impact. Apply and share the results throughout the process to involve all stakeholders.
Your xAPI Implementation Timeline

**Today**

**6-8 Months**

**12-18 Months**
That was a lot! What are your questions?
Manage Learning Analytics:

See the status of your team’s key performance metrics, and identify outliers with the Yet DXd, a Data Experience Dashboard.

Identify top content and courses.

See activity across cohorts.

Monitor trends and patterns in learner engagement and performance.

Measure engagement and tool usage.

Review activity logs and completion rates.
Manage Learning Analytics:

See the status of your team’s key performance metrics, and identify outliers with the Yet DXd, a Data Experience Dashboard.

Review engagement on individual learner profiles.

See individual activity, resource use, and adoption across tools.

Measure changes in learning performance.
Unify Access to Formal and Informal Learning:

*Search across content, curate learning playlists, track progress in learner profiles in the Yet LXi, a Learning Experience Interface.*

**Collect content from any web-based source.**

**Highlight top content.**

**Allow learners to search across content, competencies, and categories.**
Unify Access to Formal and Informal Learning:

Search across content, curate learning playlists, track progress in learner profiles in the Yet LXi, unifying the learner experience with learning analytics.

Curate content in playlists.

Share and save content, or create your own playlists.
Unify Access to Formal and Informal Learning:

*Search across content, curate learning playlists, track progress in learner profiles in the Yet LXi, a Learning Experience Interface.*

- Track progress in informal learning by competencies or skills.
- Save resources.
- Connect with peers through learning networks.
Built on the Yet LRS:

Connect data using xAPI in the Yet Learning Record Store.

See activity, behavior, learning, and performance activity.

Compare across learners and cohorts and identify high performers.

View data in real-time activity stream.
Start with Yet Adapter:

The fastest, easiest way to get xAPI data.

Select and upload a .csv file from your computer.

Click to transform data to xAPI.
Start with Yet Adapter:

The fastest, easiest way to get xAPI data.

Manipulate columns from .csv file to configure xAPI statements.

Create new chips as needed.
Start with Yet Adapter:

The fastest, easiest way to get xAPI data.

Send data to an LRS of your choice.
Start with Yet Adapter:

The fastest, easiest way to get xAPI data.

If you send it to the Yet LRS it will look something like this!
Thank you for sharing your time with me!

• Go explore an LRS for yourself — https://www.yetanalytics.com/demo

• Get a Yet xAPI LRS Sandbox — https://www.yetanalytics.com/free-sandbox-account

• Start using the Yet Adapter — https://www.yetanalytics.com/yetadapter

• The Yet Adapter allows non-technical users an easy way to upload spreadsheet data and to transform it into xAPI data which can be sent to any Learning Record Store.

• Have questions? Want these slides? Leave a card or email margaret@yetanalytics.com.