Designing and Testing xAPI Profiles Using the xAPI Profile Server and DATASIM

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Topics For Today

- Profiles and their importance
- xAPI Profile Server
  - Improvements
  - Best practices
  - Working groups
  - Demonstration
- DATASIM
  - What is DATASIM?
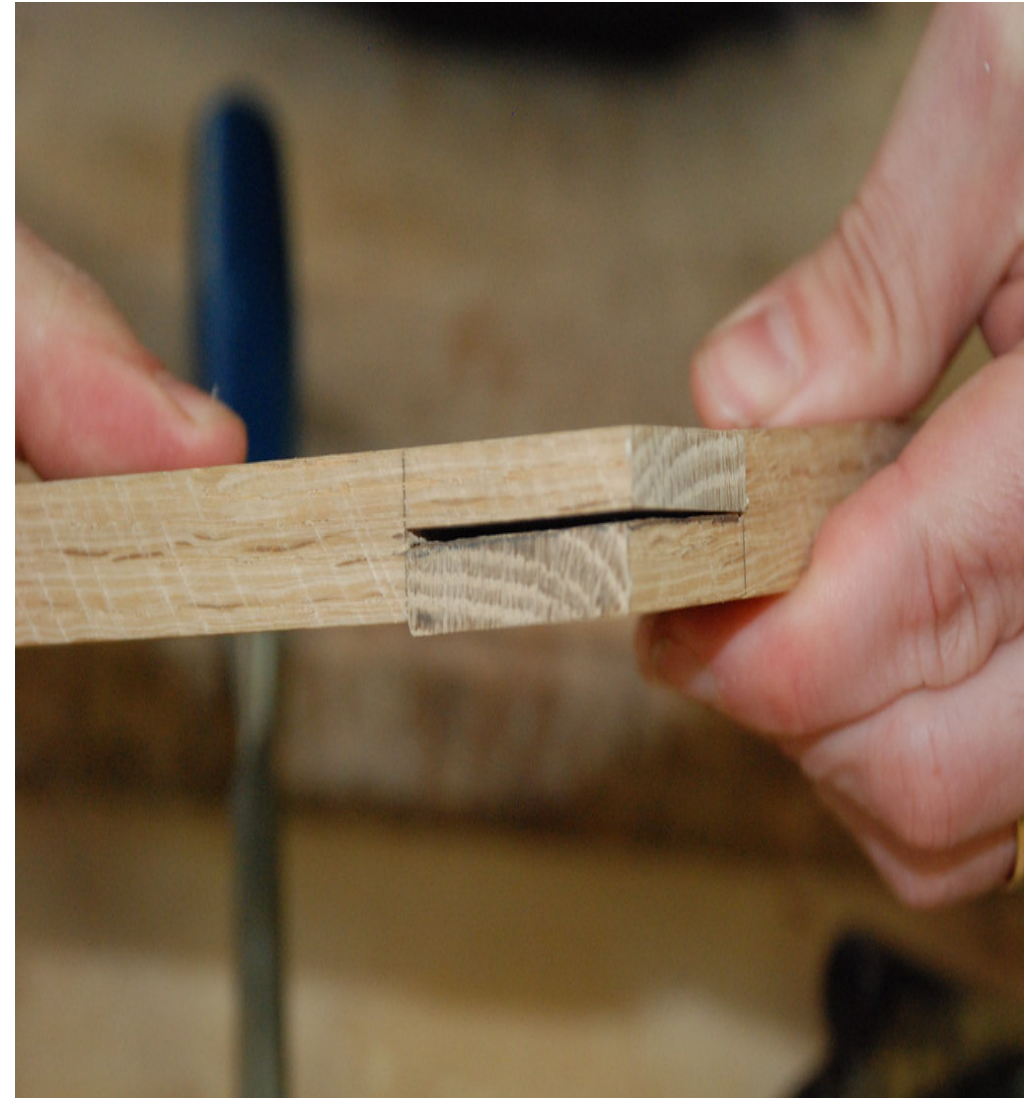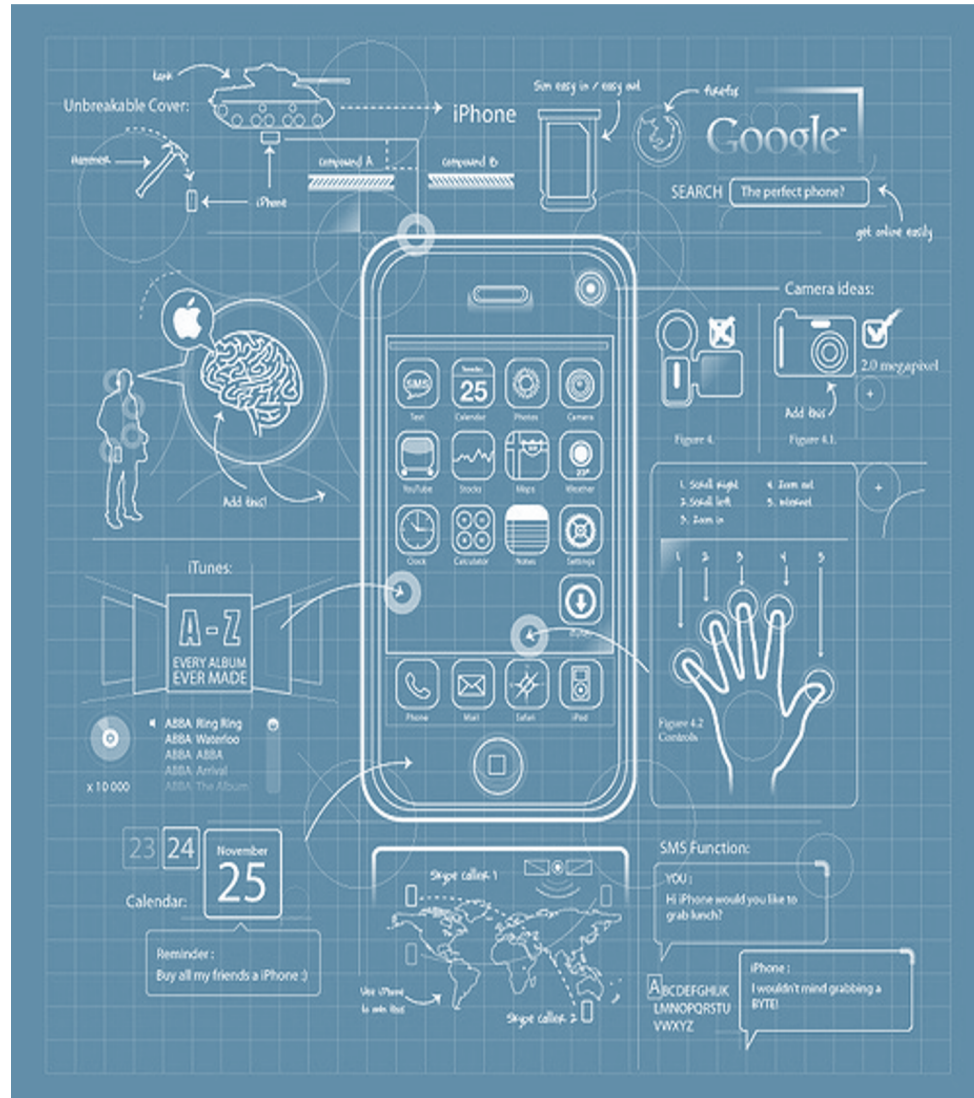 - Why is DATASIM important?
  - Demonstration

Un-Topics For Today

- Specific business processes around creating profiles

- Why learning analytics are "stuck"

- xAPI Profile Server background

- Why use the Profile Server

- Basic Profile Server demonstration

- If you are interested in any of these topics, check out the previous Webinars from December 2020 and January 2021!

xAPI Output from Tools Varies Greatly

Authoring Solution	Started / Returned to Course	Completed Course with Test	Completed Course with no Test	Test Questions
Product A	Actor **Launched** [activity_id]	Actor **Passed / Failed** Course Name with score **XX%**	Actor **Completed** Course Name	Actor **(in)correctly answered** "question text" with response "answer"
Product B	Actor **Launched** [activity_id] Actor **Attempted** Course Name	Actor **Passed / Failed** Course Name with score **XX%**	Actor **Passed / Failed** Course Name	Actor **(in)correctly answered** "question text" with response "answer"
Product C	Actor **Attempted** Course Name Actor **Launched** (Activity ID URL)	Actor **Passed / Failed** (activity ID URL)	Actor **Completed** (activity ID URL)	None (feature coming soon)
Product D	Actor **Attempted** Course Name Actor **Launched** Course Name	Actor **Passed / Failed** with score **XX%**	Actor **Completed** the course.	Actor **(in)correctly answered** "question text" with response "answer"

The Solution is xAPI [Application] Profiles

What xAPI actually is

What people think xAPI is

xAPI Profiles

The language and purpose of your project

xAPI Profile

@context: Internationalized Resource ID
id: Internationalized Resource ID
prefLabel: Profile Title
definition: Purpose of the Profile
versions: Version history
author: Authoring agent / Organization information

Profile Information
The *Who, What, When,* and *Why* of the xAPI Profile

Concepts

type: Enumeration of concepts
id: Internationalized Resource ID
inScheme: Internationalized Resource ID
prefLabel: Title of concept
definition: Definition of concept

Words
An array words and extensions that are unique to the profile
Learned

Templates

type: Enumeration of template types
id: Internationalized Resource ID
inScheme: Internationalized Resource ID
prefLabel: Name of template
definition: Definition of template
rules: Array of data to include and exclude

Sentences
An array of possible statements, and the information they should hold
Tom learned about xAPI

Patterns

type: Enumeration of pattern types
id: Internationalized Resource ID
inScheme: Internationalized Resource ID
prefLabel: Short description of the pattern
sequence: List of template IDs in the order they should appear

Paragraphs
An array of expected template flows
Tom inspected the poster. Then Tom learned about xAPI.

xAPI Profiles

- Separate from the xAPI specification
- Promote data interoperability
- Define the expected data

xAPI Profile Specification

| IEEE 9274.2.1 Working Group | The "blueprint" for xAPI Profiles | Project Authorization Request (PAR) approved | Working Group formed | First the xAPI Profile specification, then individual profiles |

Creating a Profile for the Total Learning Architecture

LMS Content Management (cmi5)

Competencies

Career States

Learning Activity Post Processing (Evidence)

xAPI Profile Server

- https://profiles.usalearning.net/
- Repository of public published xAPI Profiles
- Authoring and Validation tools

xAPI Profile Server Demonstration

Profile Server Demo

I WANT IT NOW!

GOOD BAD

What is DATASIM?

- **D**ata **a**nd **T**raining **A**nalytics **S**imulated **I**nput **M**odeler
- Tailorable xAPI data streams based on candidate specifications
- Generates realistic data without expensive exercises or interruptive training events
- Allows testing of tools, technologies, processes, and technical standards at scale
- Simulates various types of data for interoperability across the enterprise

Why DATASIM?

- Large, realistic, publicly available xAPI data sets are scarce

- Organizations need access to large data sets for testing and evaluation

- Reduces need for human subjects
  - Time
  - Money
  - Ethical concerns
  - Security and privacy for PII/PPI

Why DATASIM?

- Creating the data needed to test next-generation tools costs a lot of time and money

- Test data usually comes from one of three sources:
  - Generated from live sessions that do not approach the scale needed for real-world longitudinal testing
  - Generated by hand (very costly)
  - Generated as meaningless dummy data that does not resemble real human behavior

Using DATASIM To Test Your Strategy *Profiles*

xAPI Profiles

Can include multiple profiles

Will run validation against the xAPI Profile Specification

Using DATASIM To Test Your Strategy
Personae

The "Agents" of the simulation

Defined as an "Actor" is the xAPI

Broken in "Groups" for collective behavior

Using DATASIM To Test Your Strategy
Alignments

Actor behavior

Augments patterns defined in Profile

Can affect single actor, or groups

Using DATASIM To Test Your Strategy
Parameters

World State

Limit amount of statements

Includes seed for simulation replication

DATASIM Demonstration

DATASIM Backend Services

DATASIM UI

Questions?

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