Data Trippers {EPUB3 + xAPI}

Managing the Health and Safety Concerns Associated with Engineered Nanomaterials

ADL Design Cohort 2015

Coaching Round-trip Objectives

- **Deliver engaging learning experiences via** *bi-directional feedback*

- **Dashboard widget receives real-time LRS data**
  - Student view: learning engagement + assessment
  - Interactive coaching request/feedback
- **Enhanced LRS analytics**

Design Approach

Simple use case scenario
- Team field mark-up of technical docs

Analytics-first design for xAPI
- Provide multiple data dimensions for back-end analytics, visualizations

Demonstrate EPUB3 affordances
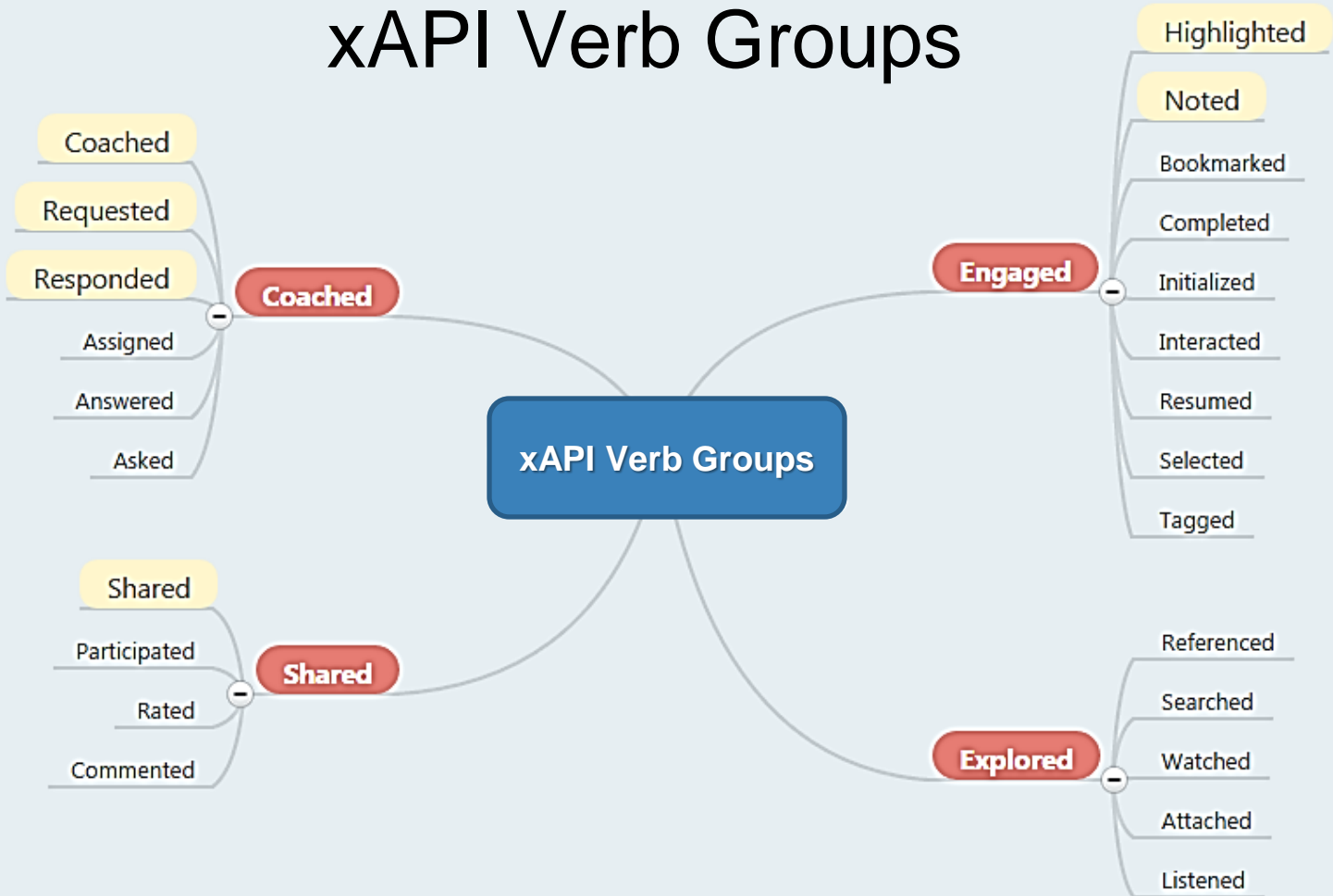- Embedded dashboards, RCAT content, graphics

Use Case: *Field content mark-up*

Nano-tech work team explores, enhances new safety guidelines for ultra-hazardous materials

- **Nano-tech evolving rapidly, SME's scarce**
- **Workers begin with different knowledge levels, learning needs**
- **Technical complexity requires interactive exploration, reflection**

xAPI Verb Groups

Capture, analyze learning pathways

EPUB3 reader widget tracks interactions
- Pages, web links, comments, highlights, time on page
- Related documents in EPUB3 repository

Current level assessments
- My starting level (low, medium, high)
- My finishing level (low, medium, high)

Evaluate novice vs. expert paths

Demos

EPUB3
John Costa

LRS Analytics
Jessie Chuang

Learner Personas

Paul: Content is too easy for him, but he ***contributes to the cohort*** by responding to other's requests and sharing relevant outside resources

Tom: A diligent learner, but lacks study or problem-solving skills. When he finally requested coaching - ***too late to catch up***

Emily: Good study skills(taking notes, highlighting, requesting help), but ***never assists team***

Mary: ***Not engaged with the content***. The coach offered help twice, but she did not respond – for reasons beyond the scope of this analysis

Watson: A fast learner, who engages early and actively with the content and feedback widget, has good learning skills, and ***outperforms novice peers***.

Learner Profile Matrix

name	Initial	final	Engagement	Performance
Paul	H	H	L	H
Tom	L	M	H	M
Emily	M	H	H	H
Mary	L	L	L	L
Watson	L	H	H	H

Next Steps: Advanced analytics

- Investigate outcomes and relationships
  - Outliers
  - Correlations, hypotheses

- Identify improvement opportunities
  - Optimize learning pathways
  - A/B testing for UX design/content (2016)

Data-driven learning designs

Shorten ID cycle for complex, rapidly changing content

- Mark-ups, learning pathways captured

    o Team de-brief, worked examples, ownership

- SME's, managers validate

ID's develop *targeted* learning

- Performance support tools, E-learning levels

- Facilitated collaborations, ILT

➢ **Continuous improvement via analytics**

Future EPUB3 + xAPI Use Cases

Field users (may be offline)
- Maintenance workers, installers
- Technical sales and configuration
- Build-to-order manufacturing

Complex, rapidly changing environments
- Healthcare
- Defense
- Others?

2015 DataTrippers Core Team

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Discussion

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Thank You!

Managing the Health and Safety Concerns Associated with Engineered Nanomaterials

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