The Total Learning Architecture (TLA): Learning Across Applications

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2017 Human Systems Conference Achieving the Third Offset: Maximizing Human-Machine Symbiosis
March 8, 2017
www.ADLnet.gov
Mandated via Congress, OSTP, and EO in 1990s

To conduct R&D on learning science and technology

To improve distributed learning across government
Vision: Help craft the vision for future learning science and technology

Outreach: Help bridge the research-practice gap

Innovation: Mature learning ideas and technologies
Research Areas

- e-Learning
- m-Learning
- Web-based VWs / Simulations
- Learner Modeling / Analytics
- Learning Theory
- Interoperability infrastructure
Building the Future
Total Learning Architecture

The Total Learning Architecture is a collection of specifications for accessing and making use of learning-related data.
e-book  LMS  Mobile  VR Simulation
What kind of data?
Nice idea...

...BUT!
Design-based Research (DBR) Design
Design-based Research (DBR) Approach

Specification analysis - Delphi methods

Round 1: Dec ’16 – March ‘17
- 53 international respondents looking at the initial specifications and providing answers to specific questions on various dimensions
- New questions formulated based on analyzed answers

Round 2: March –April ‘17

Round 3: TBD

Real system testing using real end users

Reference implementation component development and integration: 2016

Pilot testing with real users: Feb 2017
- All tech integration and research procedures tested
- UX design tested for refinements
- Cybersecurity content

End user testing: April 2017
- Ft. Bragg
- Real warfighters
- Week long testing and focus groups
- Technical and performance data captured
- UX and usability data captured

Implications for design changes in YR2
Delphi Methodology

Two Branches:
Technical - Diffusion
53 Delphi participants

React to:

About:
- Ability to implement
- Clarity
- Complexity
- And many other aspects

June 2016
Actual Architecture
DRAFT
Reference Implementation System Description and Testing
Pilot Testing at IDA Facilities Feb 21-23
Rough timeline for the next 5 years

2016
- Project kick-off
  - Formation of Technical Advisory Board (TAB)
  - Kick-off Delphi testing
  - v0.1 TLA spec

2017
- DBR Test #1
  - Pilot Test @IDA
  - Delphi data collection
  - Operational Test @ Ft. Bragg
  - Design Meeting
  - iFest with TLA “plugfest”
- DBR Test #2
  - Second operational test
    - Data collection @Ft. Bragg
  - Design Meeting
  - Personalized pathways across applications

2018
- Marketplace
  - Commercial marketplace emerging around specifications
  - Best Practice Documents
- Hardening
  - Transition

2019
- DBR Test #2
  - V1.0 TLA spec