The Virtual Learning Commons

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The Problem

• Rapidly evolving technologies for science
• Hard to know what even exists, much less what is relevant
• Yet MORE data, tools, papers, things to try to keep up with
• Hard to find entry level resources unless you already know where to look
• Proposition: Need cross-disciplinary scientific “innovation networks”
Proposed solution: The Virtual Learning Commons (VLC)

Support user in:
- finding relevant content about a given technology (VLC Discover)
- Incorporating learning resources about that technology into classes (VLC Educate)
- Appropriating that technology into their work (VLC Innovate)
- Collective learning, rating, and discussion around content (VLC Collaborate)

Theory-based:
- Learning theories
- Innovation theories
- Spatial interaction theories (virtual space)
What is different about the VLC?

Many online learning systems for classroom education
Many online systems for sharing documents

- VLC connects distributed content: Semantic Web solution
- VLC connects people: Social Web solution
- VLC connects solution seekers with solution providers: Innovation-Centered solution

Discover
Educate
Collaborate
Innovate
VLC Research

- What are the patterns that researchers use to discover and evaluate resources in virtual space?
- How does networked learning and social media impact those patterns?
- What is the impact on innovation?
Distributed Resources

Sensor project
Resources: Data, models, websites, tutorials, presentations
Candice Fierro (UTEP)

Cyber-ShARE
Animations
RDF – Linked Open Data
Candice Fierro (UTEP)

AGU sessions
RDF – Linked Open Data
Eric Rozell (RPI)

1. RDF tags embedded VLC registered website
2. RDF tags manually captured and managed in the VLC
VLC Approach

Distributed resources

Collections – Semantic Mashups

Semantic views:
Who  What
Where  When
Why  How

Internal resources (social content)

Ontologies

Semantic Tags

Distributed resources

8 12/7/2012
Discover!

Who
List (What)
Where
When

Project A
Data

Metadata from registry

More

Website

Project website

More

AGU Presentation

AGU abstract

More

More…
Discover!

Who
What
Where
When

VLC Collection
Metadata registry (RDF)
Sensor network
Workflow registry
Website
AGU (RDF)
Project educational site
YouTube
More…

Collection A
Data
Sample methods
Analysis
Website
AGU Presentation
Tutorial
Video
More…

Collection B
Resource 1
Resource 2
Resource 3
Resource 4
More…

Collection C
Resource 1
Resource 2
Resource 3
Resource 4
More…

Collection D
Resource 1
Resource 2
Resource 3
Resource 4
More…

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Marketplace

Search term(s)

Searches:
• Elevator speeches
• One page flyers
• Lightning presentations
• Conceptual models
• Examples
Tool Match

Search data type

Returns:
• Tools that take that type directly as input
• Tools that can be automatically launched through the VLC

NASA ACCESS ELSeWeb Project (see poster Friday)

SADI Semantic Services – orchestration of transformation Services VisKo Services – Visualization Services

(Chris Lynnes, Goddard)
J. Grudin’s (1994) Principles

1. Disparity between work and benefit
2. Critical mass - currently recruiting!

Grudin (1994) Groupware and Social Dynamics: Eight Challenges for Developers
Video demo

YouTube Video: VLC Discover
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