

# Learning Objects: Their Use, Their Potential, and Why They Are Not Dead Yet

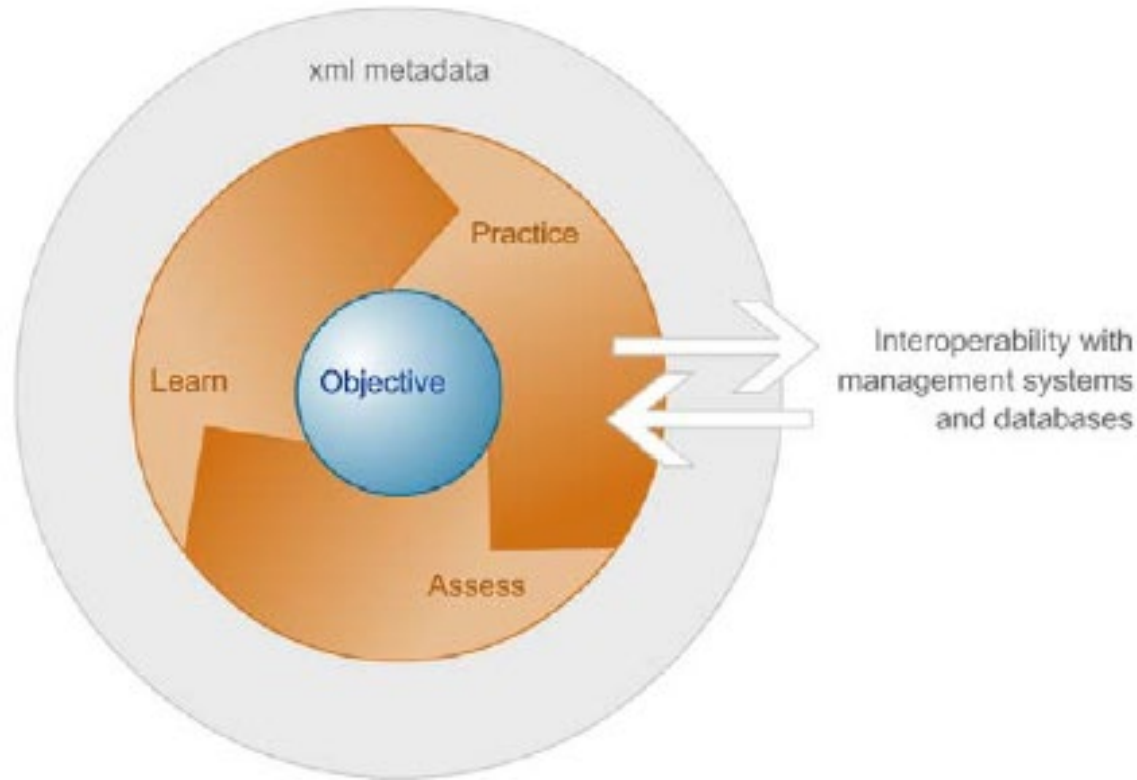


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July 27, 2006

# What Are Learning Objects?

## Anatomy of an e-Learning Object



# Three Definitions

- “Modular digital resources, uniquely identified and metatagged, that can be used to support learning.” -- NLII
- “Any digital resource that can be reused to support learning” -- [David A. Wiley](#)
- “Any entity, digital or non-digital, that may be used for learning, education or training.” – [IEEE](#)

# Essential Properties

- Wisc-Online Resource Center
  - Smaller units of learning
  - Self-contained
  - Reusable
  - Can be aggregated
  - tagged with metadata

# Essential Properties (2)

- Friesen, [What Are Educational Objects](#)
  - Discoverable
  - Modular
  - Interoperable

## Examples

<http://www.det.wa.edu.au/education/cmis/eval/curriculum/learningobjects/>

# From a Theoretical Perspective

- Object-Oriented Design
- Course Construction and RAD
- Open Standards
- A Common Language
- IMS, IEEE and SCORM

# Object Oriented Design

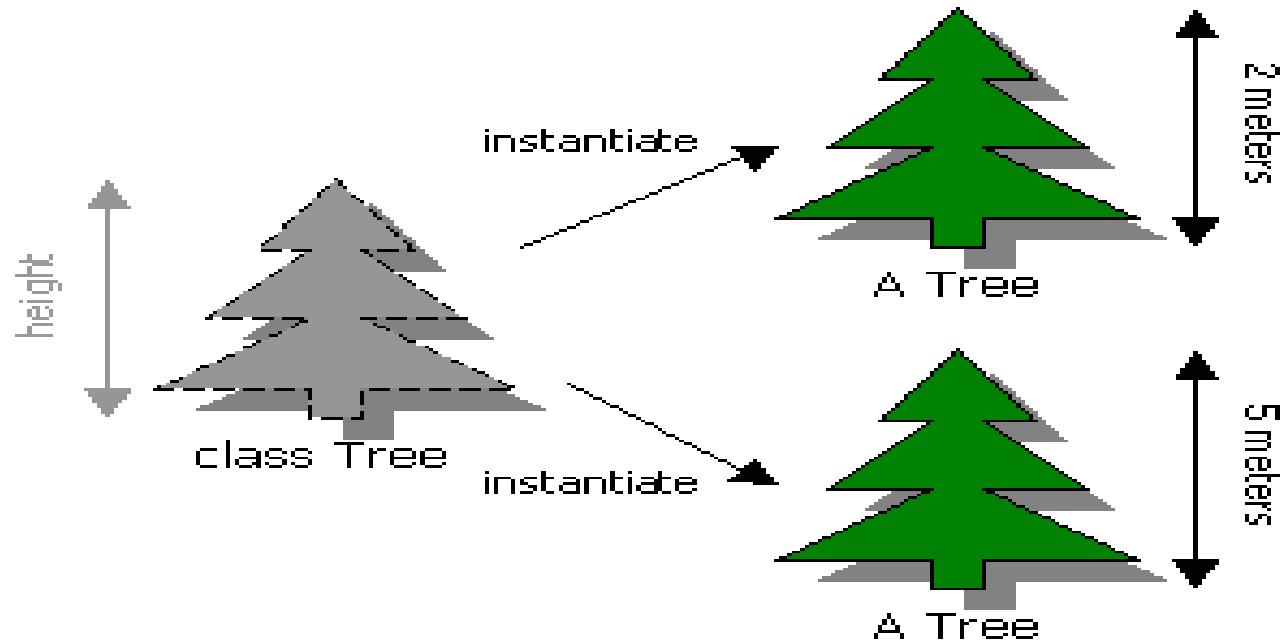
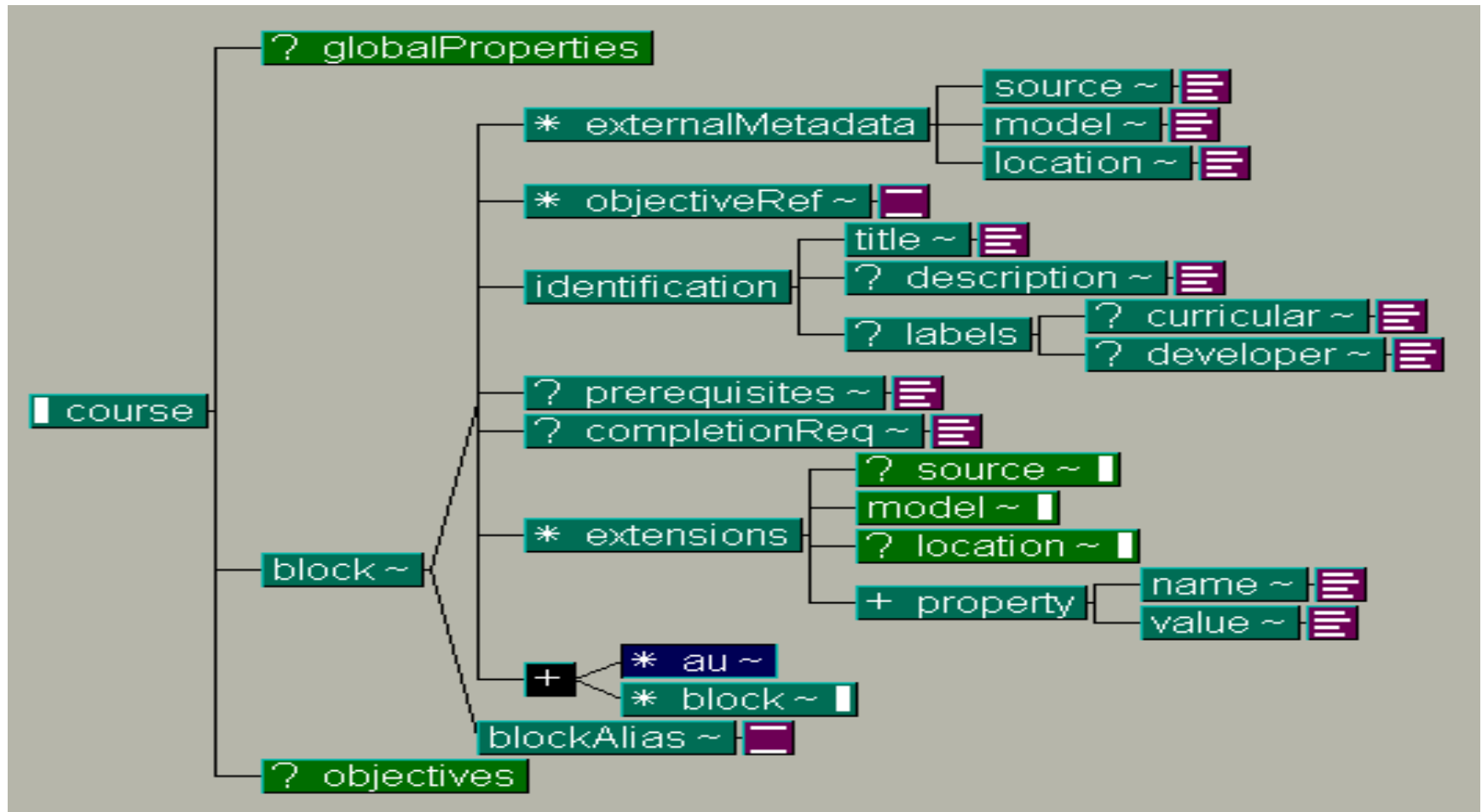


Fig. 1: Instantiating two Trees from the Tree class

[Object Oriented Concepts in Java](#). See also [Basic Object-Oriented Concepts](#)

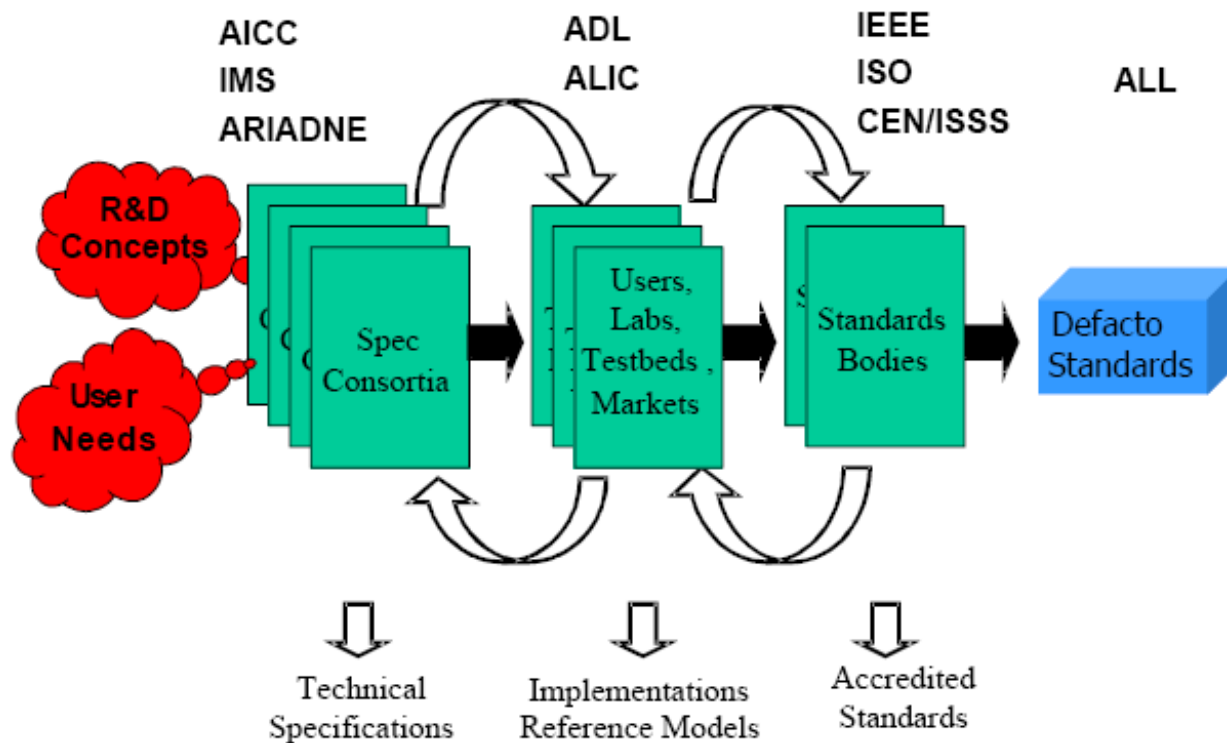
# Course Construction and RAD





# Open Standards

## A Model for Standards Evolution



# A Common Language

```
<tome name="Bible">
```

```
  <book name="Genesis">
```

```
    <chapter name="1">
```

```
      <verse name="1">
```

```
In the beginning God created the heaven and the earth.
```

```
      </verse>
```

```
      <verse name="2">
```

```
And the earth was without form, and void; and darkness was upon  
the face of the deep. And the Spirit of God moved upon the face of  
the waters.
```

```
      </verse>
```

```
    ..
```

```
  </chapter>
```

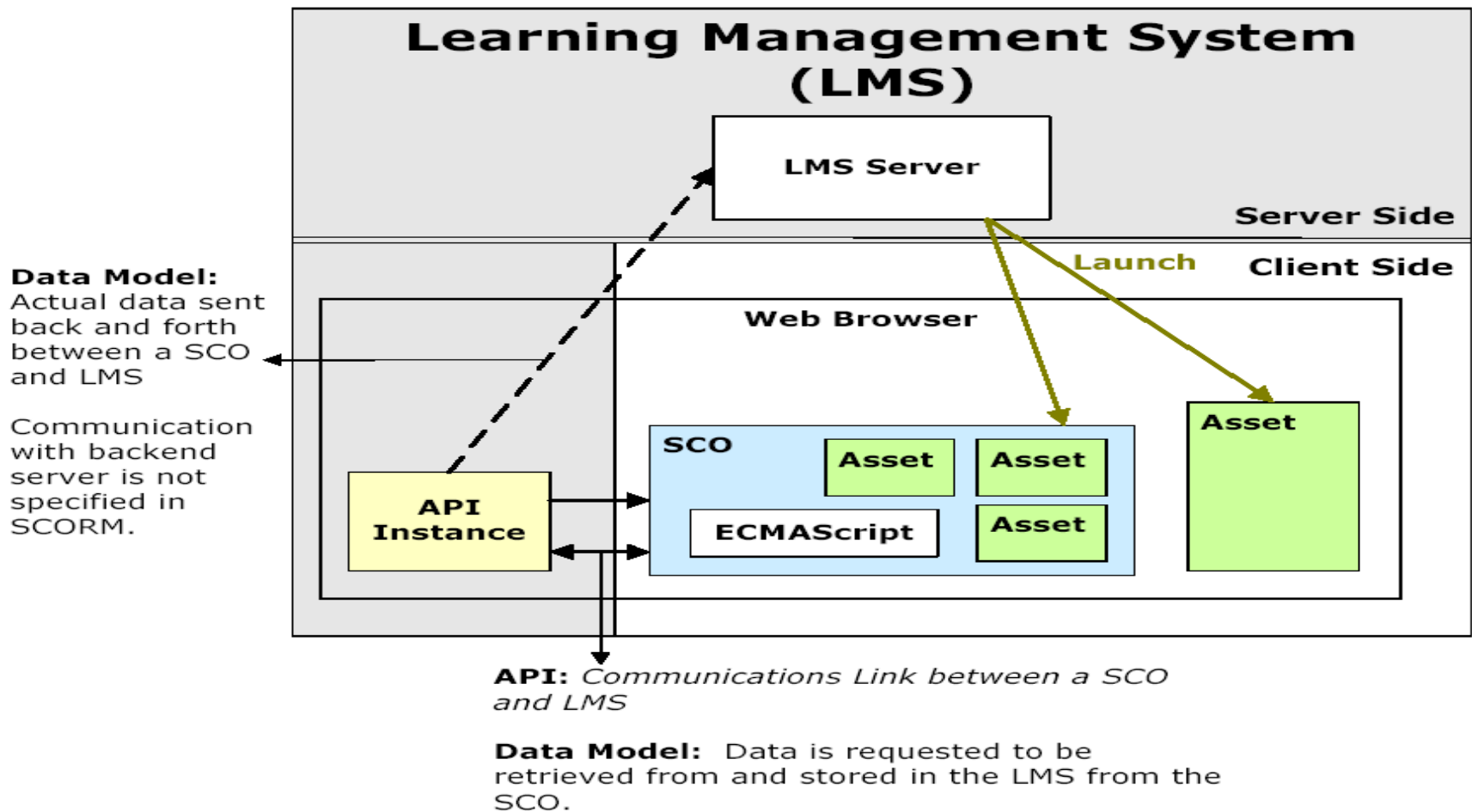
```
  ..
```

```
</book>
```

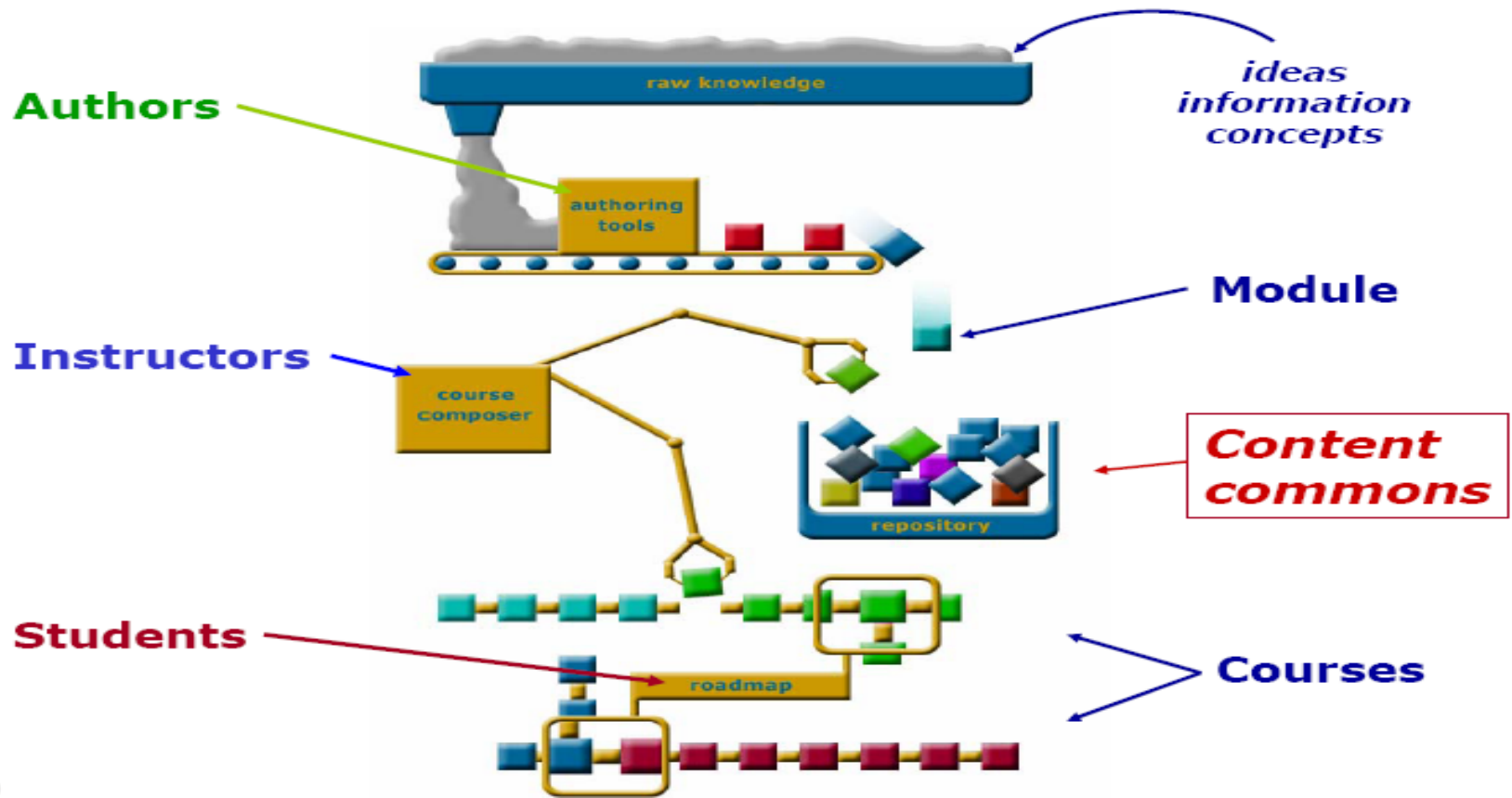
```
..
```

```
</tome> [36]
```

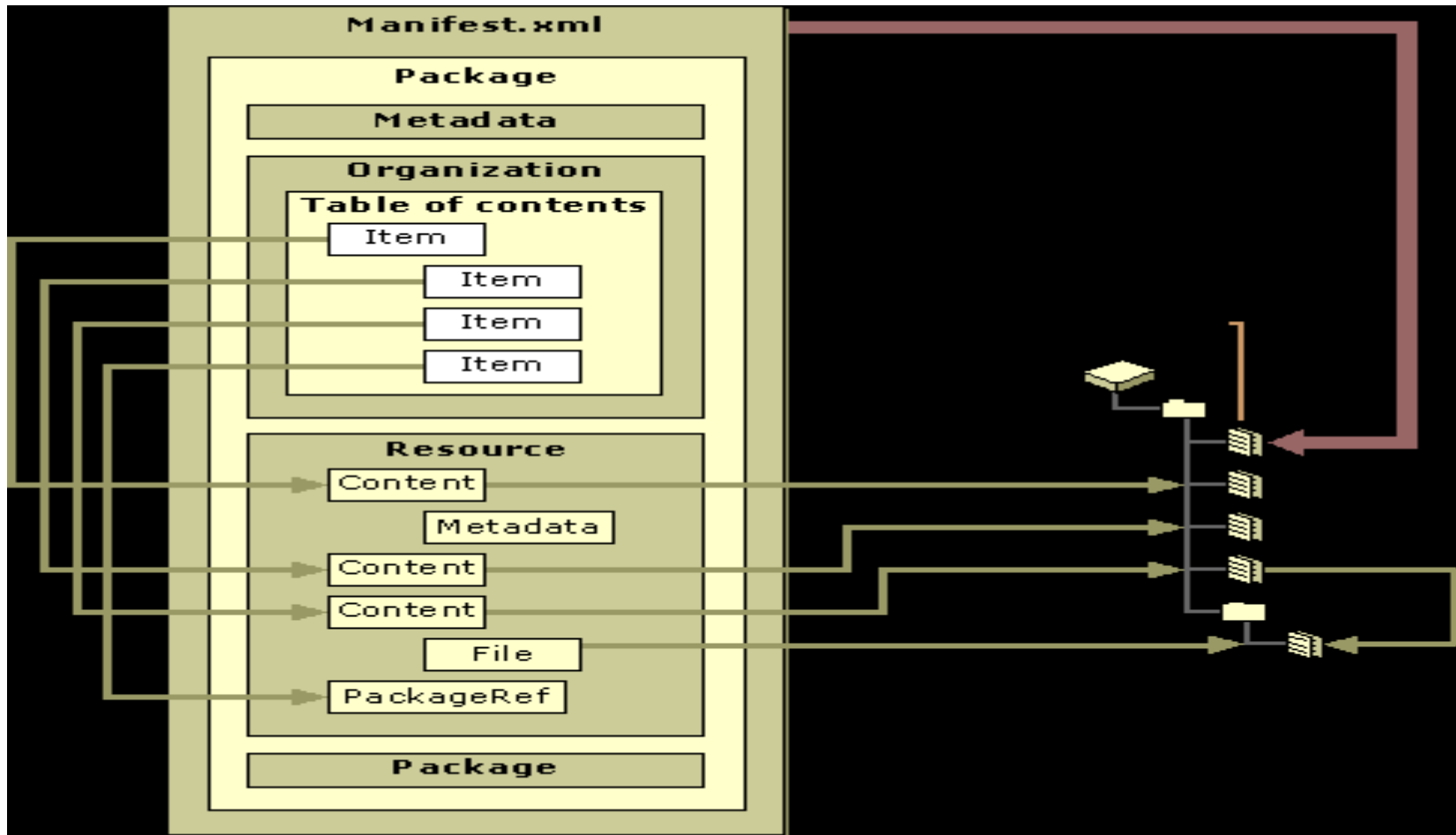
# IMS, IEEE and SCORM



# Course Assembly

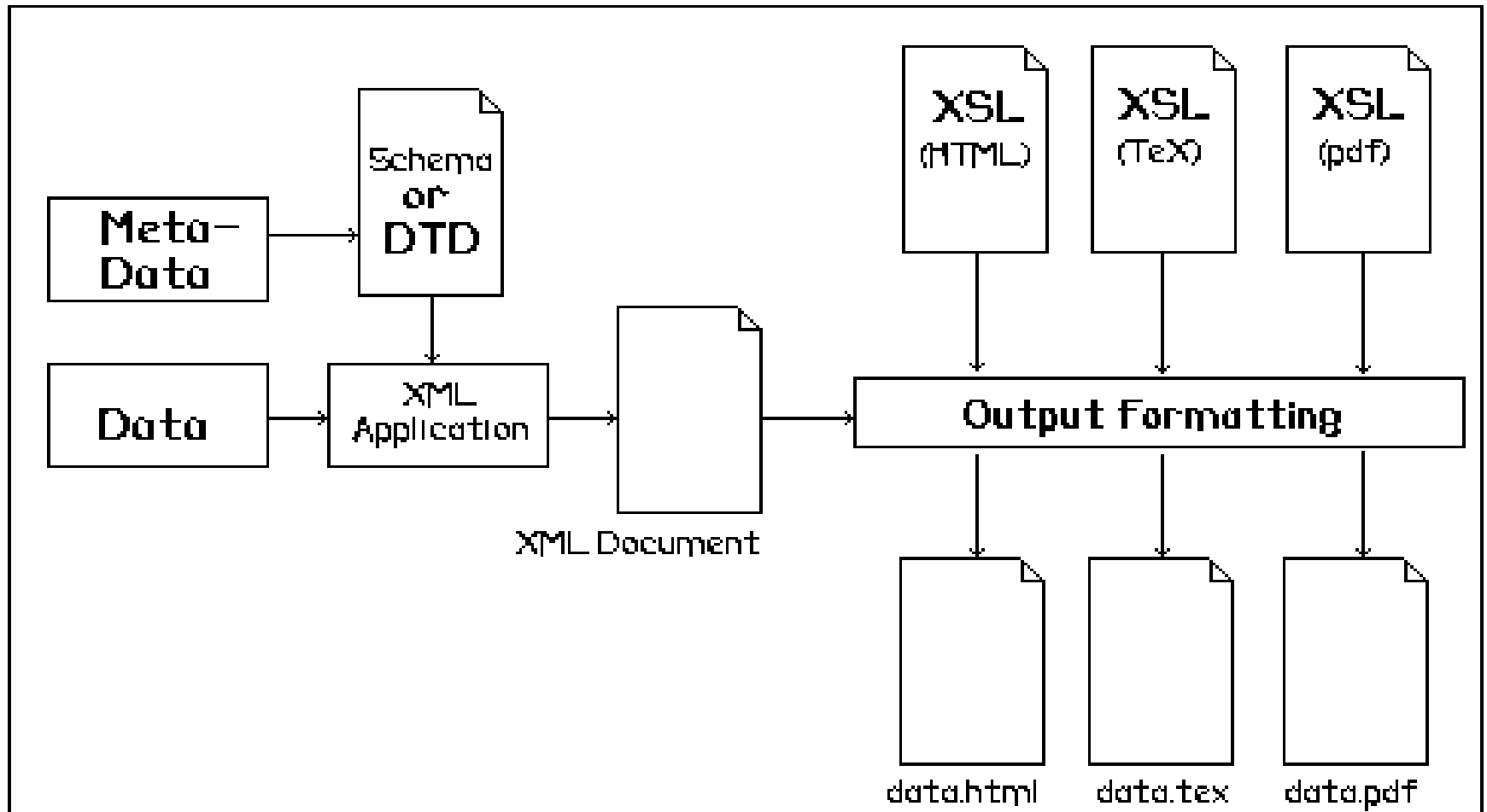


# Course Packages



[http://www.downes.ca/files/Learning\\_Objects.htm](http://www.downes.ca/files/Learning_Objects.htm)

# Reuse – A Different View



## 2. The Death of Learning Objects?



# Three Objections (1)

- Objection 1: What's a learning object, anyway? - Norm Friesen: [Three Objections to Learning Objects](#)
- Any entity in the universe - digital or non-digital - can be used for learning, education and teaching ... why should we call them “learning **objects**” and not just learning content, or pieces of learning content?

<http://flosse.dicole.org/?item=learning-objects-is-the-king-naked>



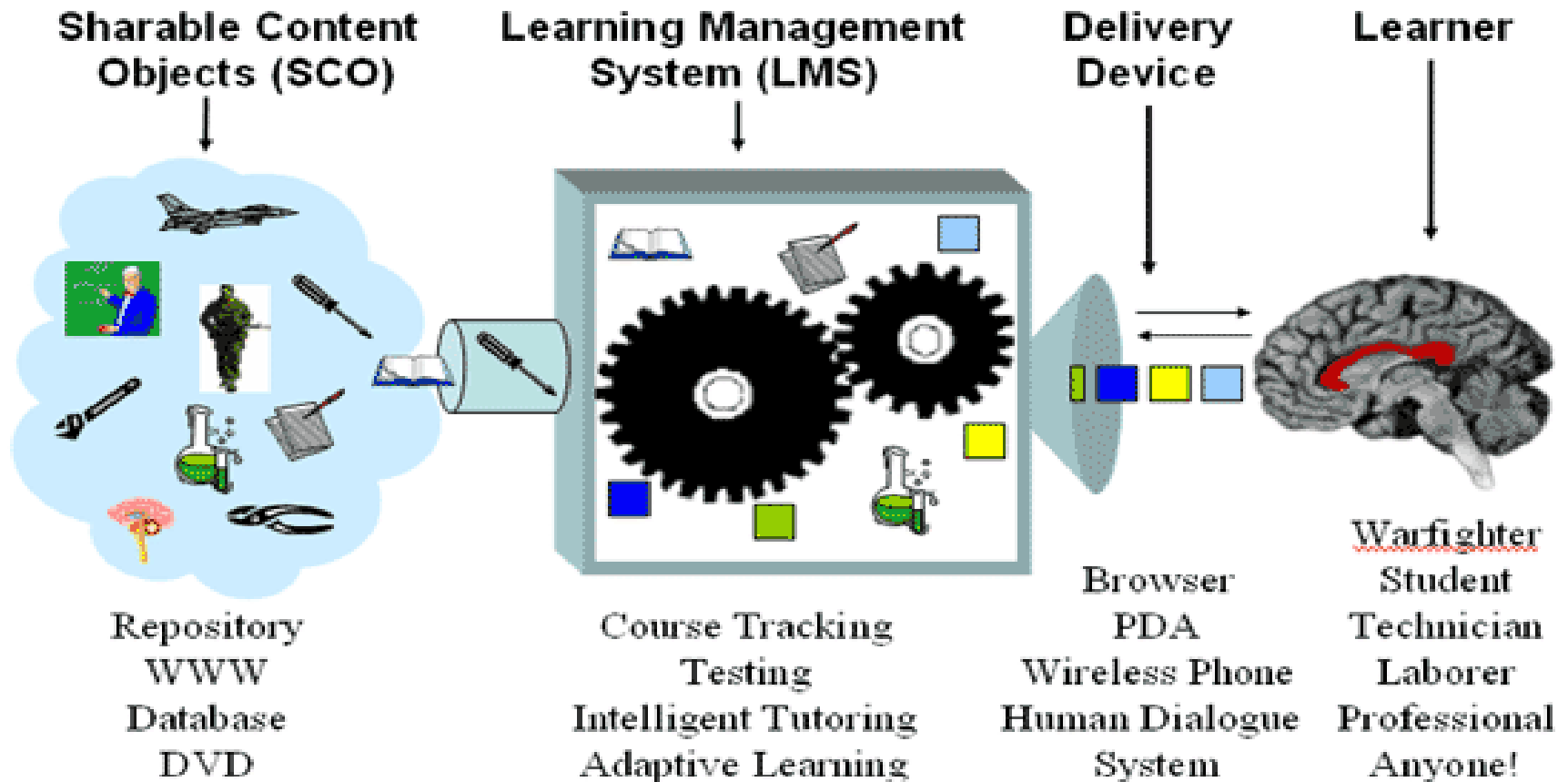
# Three Objections (2)

- Objection 2: Where is the Learning in E-Learning Standards?
- Dan Rehak: "SCORM is essentially about a single-learner [whose learning is] self-paced and self-directed. This makes it inappropriate for use in [higher education] and K-12." - [Kraan & Wilson](#), 2002

# Three Objections (3)

- Objection 3: Education in a Militarized Zone?
- Friesen: “implied understanding of pedagogy: namely, from its simultaneous claims to pedagogical relevance and pedagogical neutrality. ... The obvious fact is that the goals of public education are radically different than those of the American military.”

# Learning?



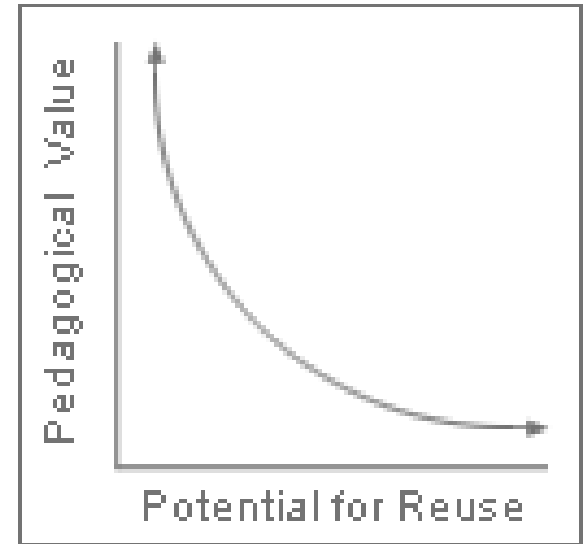
From: Slosser, S. (2001) "ADL and the Sharable Content Object Reference Model." MERLOT 2001.

# In What Sense Reuse?

- For example, consider [this example](#) of a learning object, [from CIDER](#) ... Check it out first:
- Alan Levine: What can I do with this “object”? How can I re-use it? How can I “recontextualize it”? What is it exactly I can do with it? Here is the big answer. I can link to it.
- Alan Levine <http://cogdogblog.com/2005/05/24/learning-objects-rip/>

# The Reusability Paradox

- In a nutshell:
  - As usefulness (educational purpose) increases, reusability decreases
  - As reusability increases, usefulness decreases



<http://cnx.org/content/m11898/latest/>

<http://rcit.usu.edu/whitepapers/paradox.html>

# Other Issues

- The Complexity of the Metadata Specifications
  - Very few fields actually used
- Copyright and digital rights management
  - And therefore, authentication and identification

# 3. The Future of Learning Objects?



# What Doesn't Work

- David Wiley: the idea of LEGO-like assembly of resources simply will not work from a learning perspective. The role of context is simply too great in learning, and the expectation that any educational resource could be reused without some contextual tweaking was either naive or stupid.

<http://opencontent.org/blog/archives/230>



# You Can't

- Daniel Lemire: People who create objects on the fly for one project will simply not create highly reusable content, even if you add supposedly smart software to support them. You cannot easily package the work of teachers as lego-like objects. You can't.

<http://www.daniel-lemire.com/blog/archives/2006/01/09/death-of-learning-objects/>

# Refocus on the Problem

- Scott Leslie: Address “the problems they were supposed to be trying to solve - namely enabling learning content to be shared and found through means that were otherwise unavailable”
- Scott Leslie <http://www.edtechpost.ca/mt/archive/000681.html>

# Friesen: What Works

- The rate of adoption increases significantly when innovations possess some of the following characteristics:
    - Simplicity
    - Compatibility with existing methods and techniques
    - Relative advantage in comparison
- <http://www.learningspaces.org/n/papers/objections.html>
- See Also: [Nine Rules for Good Technology](#)

# What Is Needed

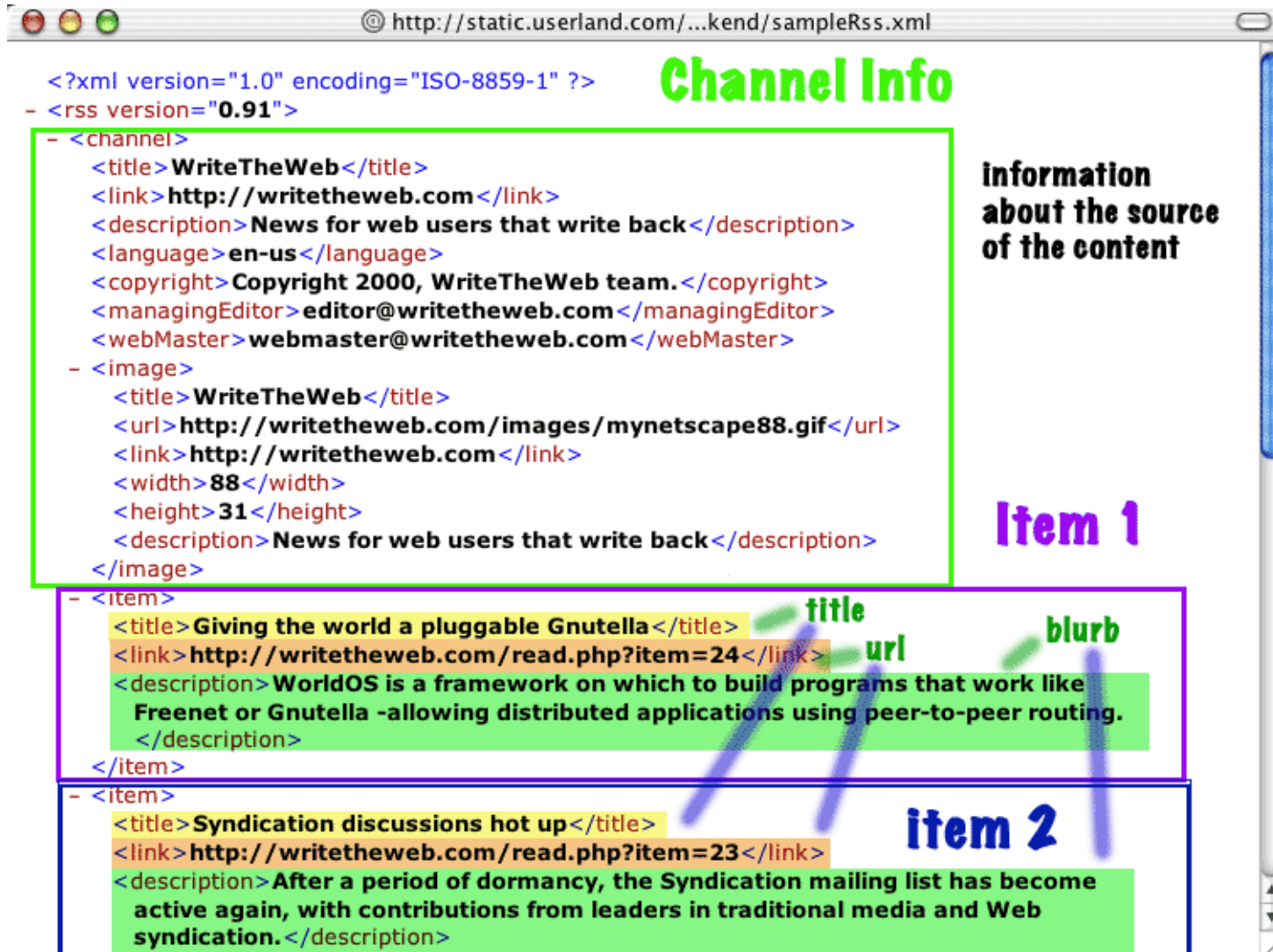
- Friesen: In order for the positive potential of learning objects to be realized, they need to be labelled, described, investigated and understood in ways that make the simplicity, compatibility and advantages claimed for them readily apparent to teachers, trainers and other practitioners.

# Syndicating Learning Objects



<http://www.mcli.dist.maricopa.edu/show/merlot03/>

# RSS - Simplest of Meta-Data



The screenshot shows a web browser window with the address bar containing `http://static.userland.com/...kend/sampleRss.xml`. The main content area displays XML code for an RSS feed. The code is annotated with colored boxes and labels:

- Channel Info:** A green box highlights the `<channel>` section, which includes metadata like title, link, description, language, copyright, and contact information.
- Item 1:** A purple box highlights the first `<item>` section. Labels "title", "url", and "blurb" are placed above the corresponding XML tags. The description text is highlighted in green.
- Item 2:** A blue box highlights the second `<item>` section. The label "item 2" is placed to the right of the description text, which is highlighted in green.



What is RSS?

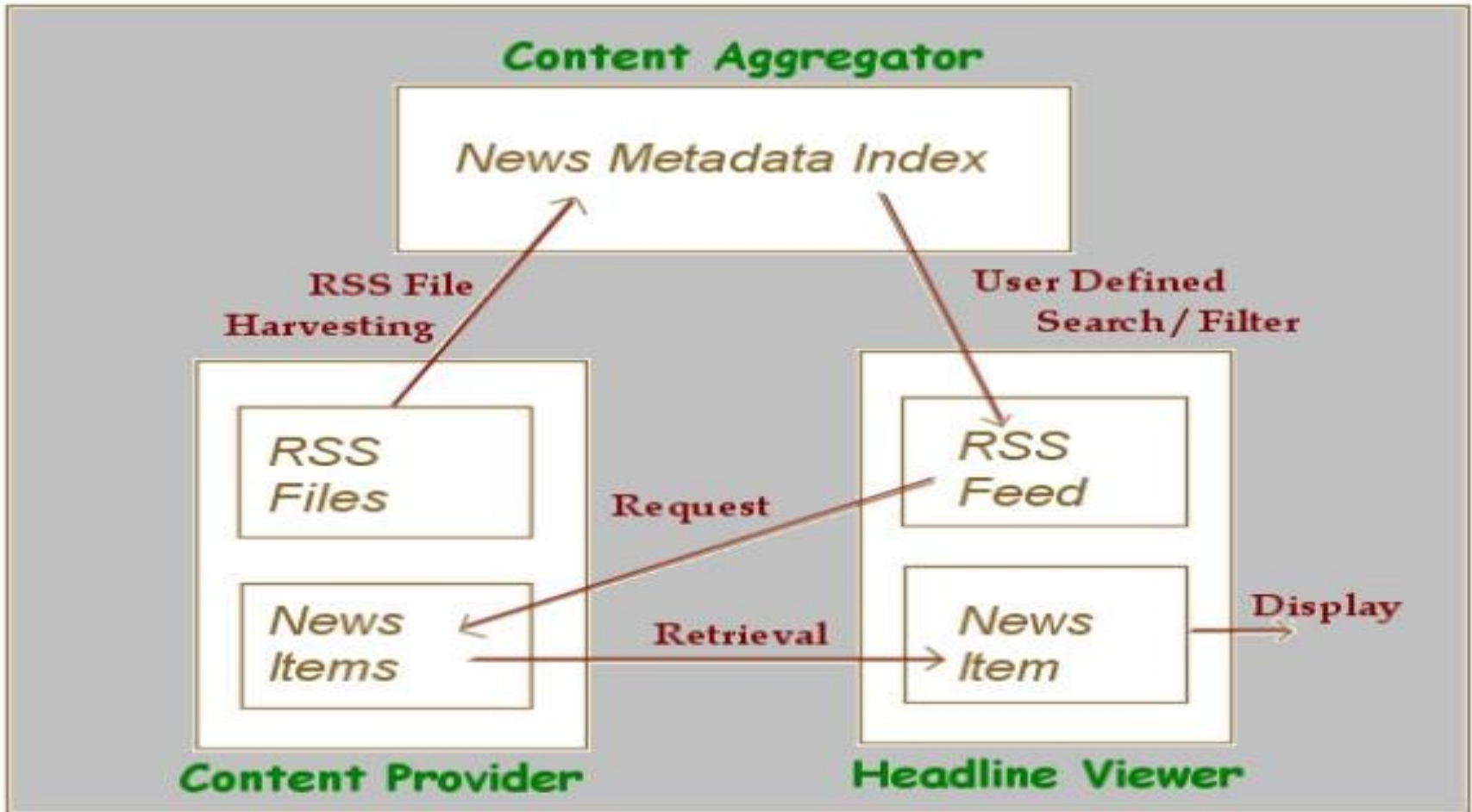


Pick an Acronym



Killer App for Education?

# How RSS Works



# RSS Network Examples

- Edu\_RSS - <http://www.downes.ca/edurss02.htm>
  - [Threads Community](#) comment topic list
  - [Search Posts](#)
  - [Research](#) - lists of topics, publications and authors
  - [Most Popular Links](#)
  - [Conversation](#)
  - [Edu\\_RSS Most Recent](#) harvested links
  - [Most cited links](#)
  - [Feed List](#) and [Feed List - OPML](#)
- DLORN
  - <http://www.downes.ca/cgi-bin/dlorn/dlorn>



# Context and Use

- **Tarmo Toikkanen:** “Learning for humans happens in context. Having complete reusability means having no context, and vice versa. Modularity and reusability is great when the material is to be used by a machine, but not when the user is a human brain - our brains need concrete, memorable, weird things that are anchored to our previous experiences and linked to our motivations and goals.” <http://flosse.dicole.org/?item=intentional-learning-reflecting-the-discussion-in-the-blogsphere>
- What does this mean? The learning is not in the object, but in the **use** of the object

# Examples of Use

- Non-instructional performance interventions
  - Electronic Performance Support System (EPSS)
  - Workplace Design
  - Knowledge Management (KM)
  - Just-in-Time Support
  - Communities of Practice
  - Multimedia
  - Internet and Intranets
  - Corporate Culture changes
  - Process Re-engineering
  - Job Aids

# Web 2.0



O'Reilly: [What is Web 2.0?](#)

# Content Creation

- Blogs
- E-Portfolios – [ELGG](#)
  - [ePortfolios](#) – Helen Barrett
  - [ELGG and blogging](#) – Miles Berry

(a good way of promoting learner autonomy and voice)
- Images - [Flickr](#)
- Audio – [Odeo](#), [Audacity](#)
- Video - [YouTube](#)

# Collaborative Writing

- Wikis – [PB Wiki](#), [Media Wiki](#)
  - [RSS inside a Wiki](#) – Alan Levine
  - [South African Curriculum](#) on a wiki
- Collaborative Bookmarking – [del.icio.us](#), [Furl](#)
- Online Office Applications – [Writely](#), [Gliffy](#), [iRows](#)

# Aggregators

- [Aggregate This](#), Scott McLemee
- [MetaxuCafe](#) is "a network of literary blogs with over 300 members."
- [Postgenomic](#), aggregates "posts from life science blogs."
- [Edu RSS](#)
- [Intute](#) - the new face of the Resource Discovery Network (RDN)

# Webtops

- [30Boxes](#), [PageFlakes](#), [ProtoPage](#), [Goowy](#)
  - [Interfaces of the future](#) – Mark Oehlert
- The Personal Learning Environment
  - [PLE Blog](#)
- [Windows Live](#)

# Enabling new forms of learning

## Progress/Innovation



Linear, slow  
Proprietary knowledge  
Ideas as strategic advantage  
Mentors  
Learn by reverse-engineering  
Progress by "Shoulders of Giants"  
Wisdom of experts

**Old (closed)**



Exponential, networked, quick  
Shared knowledge  
Ideas "paid forward"  
Micromentors  
Lessons-learned benefit all  
Progress by "The Mosh Pit"  
Wisdom of crowds

**New (open)**



# E-Learning 2.0

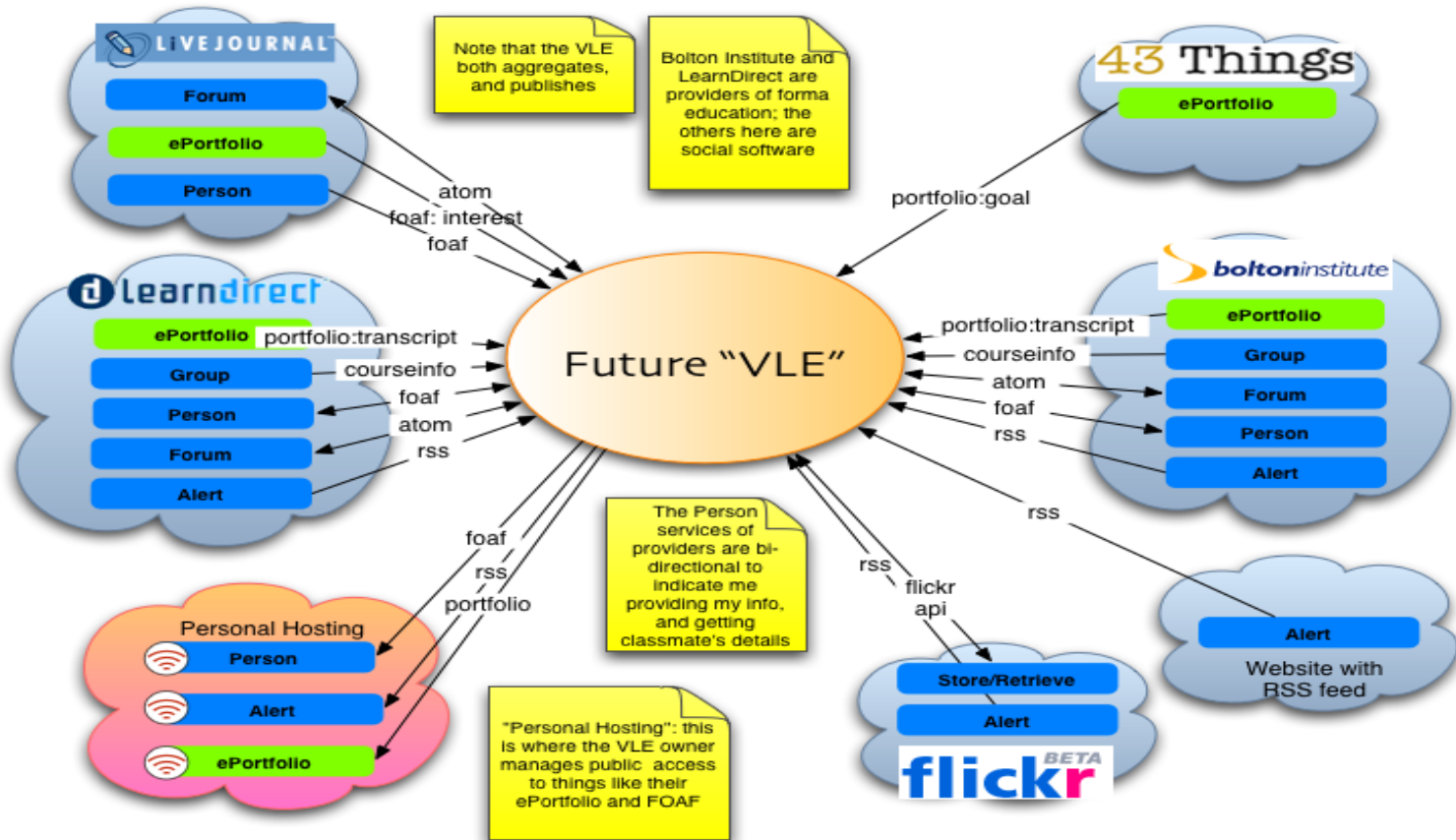
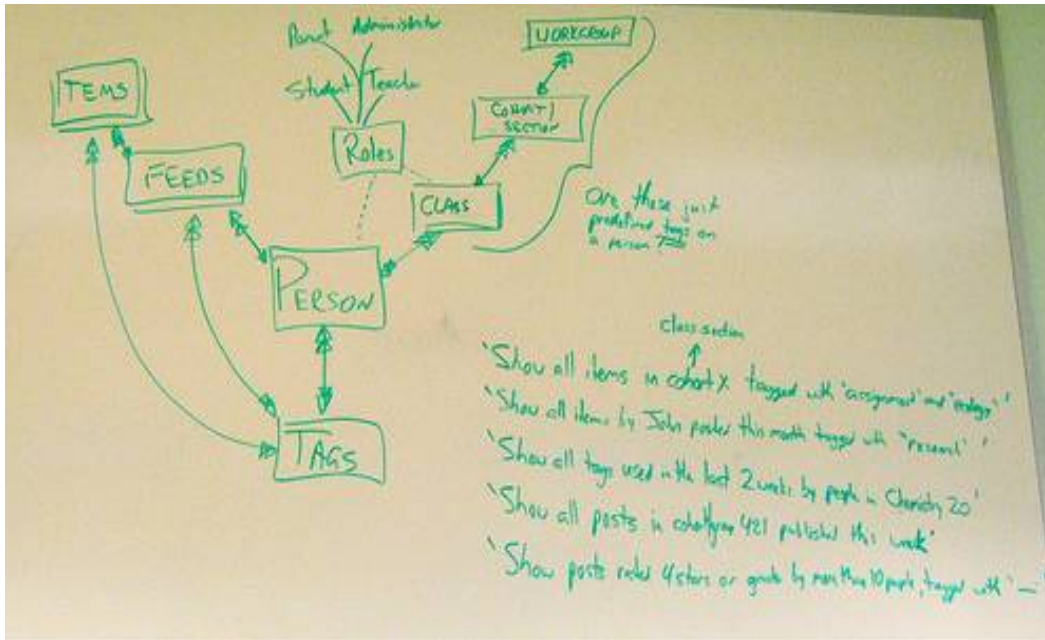


Diagram by Scott Wilson; Downes: [E-Learning 2.0](#)

# Personal Learning Environments



<http://www.cetis.ac.uk/members/ple>

<http://www.flickr.com/photos/dnorman/100494256>

<http://www.darcynorman.net/2006/02/16/eduglu-early-whiteboard>

USB: Study Stick: <http://blogs.open.ac.uk/Maths/ajh59/005515.html>

# Read/Write E-Learning

Stephen's Web Start Search  
[Change Theme]

[OLDaily] [Archives] [Threads] [Best Of] [Search] [Options]







### *Welcome to RSS Writr*

Select a content source from the list (see the panel at the lower right hand side of the page).

When you see an item that interests you, drag it into the editing area (at right). You can drag multiple items into the editor.

When you have finished editing, save your new post to your blog.

Title:

**B** **U** *I*         Shift+Enter for single line spacing

Hello

### *Content Sources*

Select an Entry

# Thank You

- Stephen Downes
  - [stephen@downes.ca](mailto:stephen@downes.ca)
  - <http://www.downes.ca>

