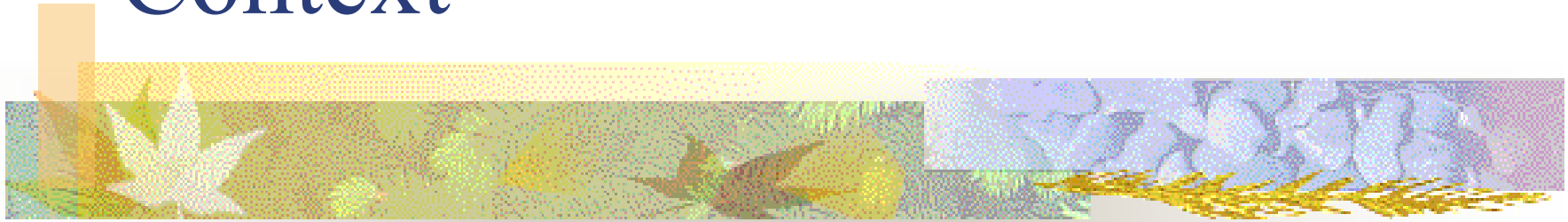# Learning Objects in a Wider Context

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Outline

- The Learning in Learning Objects
- Describing Learning Objects
- Learning Object Semantics
- The Grammar of Learning Objects
- Learning Environments

1. The Learning in Learning Objects

- What are learning objects?
    - Sterile, stand-alone, modular?
    - Must contain learning intent, objectives?
- Where is the learning?
    - Is the learning *in* learning objects? Or
    - Is the learning in how we *use* learning objects?

How We Use Learning Objects

- Is this your picture…?

  - Learning objects are like pre-built lessons

  - We search for learning objects and arrange them into classes and courses

  - In order to contextualize learning, we edit or revise their content

  - We package the result and place it in WebCT or on a CD-ROM

Rethinking Learning Objects

- The model: learning objects are bits of instruction strung together to form a course

- But this model is not right, indeed, it *cannot* be right:

  - If learning objects narrowly defined, they cannot be re-used

  - But if learning objects broadly defined, they cannot be string together (Wiley)

Learning as an Emergent Property

- Composition: the whole is greater than the parts – bricks, atoms, pixels

- The content is not contained in the parts, it *emerges* from the combination of the parts

- The use of learning objects consists not in stringing them together, like a narrative, but in arranging them, like (a painting, an orchestra, a sand castle, …)

2. Describing Learning Objects

- How it works: you get a bunch of learning objects and put them in a database

- You then *tag* these objects using (say) IEEE-LOM or CanCore

- The content of these tags – typical age range, classification, interactivity – are used as parameters in a search

Learning Object Metadata

- We think of metadata as describing the contents of a learning object, like the label on a can, and that's partially true. But…

- *Learning* Object metadata doesn't describe an object, it describes a *use* of an object

- That is why we need multiple metadata schemes, because we have multiple uses

Example: Classification

- Classification is a classic example. What is the *topic* of a learning object? That depends on which classification scheme you use…

- Is this a picture of:
    - Hands?
    - Lines?
    - A runner?
    - Start position?
    - Vagueness?

Who Uses Learning Objects?

- Overwhelmingly, the picture we see is one where the learning object designer (or an agent) creates tags for learning objects

- Overwhelmingly, the picture we see is one where an instructional designer (or maybe an instructor, if they have the time) brings learning objects together

Breaking the Chain

- The creation of metadata (aside from obvious properties) must occur in the *use* of a learning object by many people

- Analogy: the aggregation and *commenting* on news and other items by bloggers

- These comments form part of the description of the object, aid in searching

3. Learning Object Semantics

- Question: Did Yeats use reusable objects? (I guess these would be poem objects…) by taking, say, a Shakespeare sonnet?

- Intuitive answer: no he did not – each poem was an original creation

- But the correct answer is: yes, Yeats did use reusable objects

Reuse in Language

- There are two levels of reuse in Yeats:

- First, Yeats used the same set of 26 letters

- Second, Yeats used the same set of (say) 50,000 words

- The process: take the words, put them in a repository (called a dictionary), reuse as necessary

Meaning in Language

- With some very few exceptions, the meaning of a word is not contained in the word itself

- Nor can the meaning of a sentence be found by studying the individual words

- The meaning is found in the *relation* of the words to each other and to external objects

- Example: 'calf'

'Words in a Language'

- People should stop thinking of learning objects as though they were classes or lessons or some such thing with built-in intent

- It is preferable to think of them as a greatly enhanced vocabulary that can be used in a multidimensional (as opposed to merely linear) language

4. The Grammar of Learning Objects

- Abundant evident that such a language exists on the internet (in the domain of multi-user multi-media online communication)

- Artifacts include chatrooms and IM, online games, blogs, hyperlinks, avatars…

Characteristics of the Language

- Two major differences from text-based language:

1. Transmission → Immersion

2. Description → Experience

- Words are abstractions, pale reflections of a much deeper experience (hence, eg., tacit knowledge…)

Structure of the Language

- Old: objects are placed in a sequence with (maybe) limited branching – limited choices, need for uniformity, static, single focus

- New: objects are placed in an environment – multiple choices, room for diversity, dynamic, multiple points of focus

The Wider Context

- Linear → Multi-threaded
- Content Delivery → immersive, interactive
- Static, paced → dynamic, unpaced
- Demonstration → inference
- Learning objectives → learner goals
- Motivation → desire

Using Learning Objects (1)

- Old: Static, paced
  - Objects are organized in a predetermined order – the idea of succession
  - The delivery or invocation of objects is determined by time or sequence
  - This delivery is defined by an instructional designer or teacher

UsingLearning Objects (2)

- New: dynamic, unpaced
    - Objects are not ordered; each persists independently of the others
    - The delivery ore invocation of objects is triggered by events
    - The use of learning objects is based on learner choices

5. Learning Environments

- The attempt to organize bits of instruction into neatly packaged courses is a mistake

- The use of learning objects is best characterized as placing (access to) objects in an environment

- The design of the environment consists in the creation of a context of use

Types of Learning Environment

- Simulation or artificial environment, such as a game

- Multi-threaded stream of discourse, such as a blog or newsletter

- Dynamic interactive knowledge base such as a wiki

- Embedded learning, such as workplace support, smart artifacts

The Integrated Environment

- Like the student's desktop, only more so
- Provides access to tools (simulations, blogs, wiki, support)
- Is itself immersed in some wider real-life context or environment
- Learning occurs in the real world, learning design supports this learning

Learning With Learning Objects

- Continuous, not interrupted
- Task or project oriented, not subject oriented
- Global, not local
- Dynamically organized, not statically predetermined
- Learner driven, not instructor driven

Some Examples

- OLDaily – newsletter / blog
- The Budget simulator
- Student newspaper
- Smart fishing rod

Beyond Learning

- Historically, we have artificially separated learning from life (or learning from work)
- This line, in a learning object environment, becomes blurred
- We may *begin* in a simulated environment, but this eventually becomes the real-world
- The learning never ends…

More Information

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