Some Basic Ideas Behind IMS Learning Design

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Some common Learning Situations
What did you see?

- Large variety of formal and informal *learning activities*
- Large variety of *learning environments* (generic, task specific)
- Sometimes *individual*, sometimes *group* interactions
- In most situations some kind of *support* (teachers, tools)
- Sometimes *self-directed*, sometimes *teacher directed*
- When appropriate using *technologies*
provides a *generic description* of all
- these learning & support activities,
- including the environment in which they take place
How it works...

Role: Teacher
- Tell about X
- Write on blackboard
- Ask questions
- Manage group

Activities:
- Listen to Information
- Take Notes
- Answer questions

Environment: Classroom
Tools: Controls

Tools:
- Tables, Pen, Paper

Communication Services:
- face-to-face comm.
- blackboard

Role: Student
Basic Learning Design Model

Role performs within an Environment
It is not static, it is a process

**Vision**

**Act**

**Activity**

**Description**

**Sequence**

1. man stands up
2. walks found through
3. then continues to exit
4. ring ring... man stops
5. man looks up in confusion
6. then says his shudders
7. continues walking off

**Environment**
Visual Representation Learning-Teaching Process

BPMN

UML activity

ad hoc notations
Example XML LD Coding

<imsld:method>
  <imsld:play identifier="play-858f210a-a93d-1fd6-9e31-7e50a27784a5" isvisible="true"/>
  <imsld:title>Play</imsld:title>
  <imsld:act identifier="act-b6a15166-3fe6-67ea-a7ad-9af5f046ec3f">
    <imsld:title>Act</imsld:title>
    <imsld:role-part identifier="rolepart-2caee9ee-4b15-356d-df84-9881f6541a2b">
      <imsld:title>Part of Learner</imsld:title>
      <imsld:role-ref ref="role-2b4d2d18-8184-35b0-3eac-d9503ff7330"/>
      <imsld:activity-structure-ref ref="as-017b1e6b-13e9-fbf5-f186-62f0624dd408"/>
    </imsld:role-part>
    <imsld:role-part identifier="rolepart-e5b42709-4d50-c394-95d1-268003c8e887">
      <imsld:title>Part of Tutor</imsld:title>
      <imsld:role-ref ref="role-d90849e9-18a2-5cc3-e9bd-f50557fa6d79"/>
      <imsld:activity-structure-ref ref="as-d00c45ec-e9da-e428-5380-f2d65855ca22"/>
    </imsld:role-part>
  </imsld:act>
  <imsld:complete-act>
    <imsld:when-role-part-completed ref="rolepart-2caee9ee-4b15-356d-df84-9881f6541a2b"/>
  </imsld:complete-act>
</imsld:method>

<imsld:act>
  <imsld:complete-play>
    <imsld:when-last-act-completed/>
  </imsld:complete-play>
</imsld:act>
<imsld:complete-unit-of-learning>
Nota Bene

This notation is nothing more or less than a notation: it does *not* say anything about:

- how to record/create the notation
- how to adapt/edit the notation
- how to aggregate several notations
- how to use the notation
Example Runtime (CopperCore Player)

Individualised Learning Activities

The environment associated with the selected activity

Description of the selected activity to be performed
Some Example Pedagogical Constructs that can be expressed with LD

- The traditional pedagogical approaches
- Exploratory learning approaches
- Active and Collaborative learning
- Adaptive learning and personalisation
- Automation of workflow in the teaching-learning process
- Dynamic task selection
- Conditional text and runtime tracking of user performance
- ePortfolio's and new forms of assessment
- Multi-role activities (e.g. role-playing games)
- Modelling of pedagogical patterns
- …
LD does NOT prescribe a Development Methodology (similar to UML, XML, HTML, etc.), nor does it prescribe any usage:

So, how to develop and use LD?
Scenario 1: Deductive Design

1 Course Team

2 Unit of Learning Package

3 Runtime system provides personalised activities for roles

role: teacher
role: student

or: individual designer

4 Persons perform activities
Scenario 2: Inductive Design

1. Course Run
2. Capture activities
3. Runtime Provides activities
4. Other groups replay activities

role: teacher
role: student
adapt or rewrite
Scenario 3: Course Interoperability

LMS1

UOL Package

LMS2

export LD

import LD
Scenario 4: Repositories

- Study UOL
- Search UOL
- Repository

designers

OpenUniversiteitNederland
Scenario 5: Research

Educational Practice

Standard Descriptions

Analysis

What are the differences?

Look for patterns!
Summary IMS Learning Design

- Interoperable Description of the learning and teaching process in a Units of Learning
- Learning & Support activities at the centre, not the content
- Released as an open standard by IMS (imsglobal.org) in 2003
- Integrative framework for a large number of open standards: IMS CP, LOM, SCORM, LIP, QTI, ...
- Supports all types of pedagogies, also the newer ones based on social-constructivist approaches
- Supports advanced learning scenarios like adaptation, collaboration, agents,..
Further Information

Publications

• Some publications: 'Learning Design' book from Springer (overview)

• Special Issue IEEE Educational Technology & Society, Jan. 2006 on Learning Design

• Special Issue Journal of Interactive Media in Education on Learning Design (Dec. 2005)

• Preprints of articles & presentations at dspace.ou.nl

Websites:

• www.unfold-project.net

• Moodle.learningnetworks.org
Thank You!