

The future of the IMS Learning Design specification: a critical look

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Overview

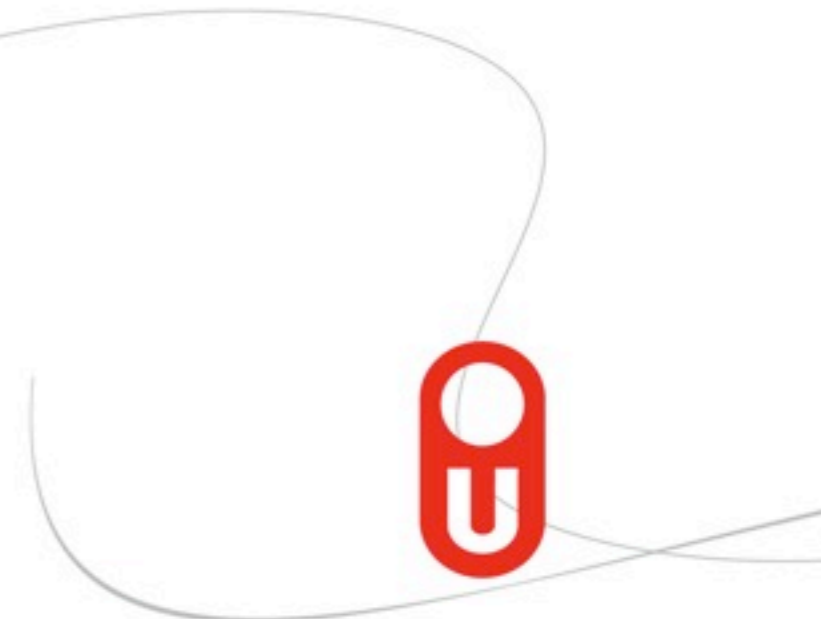
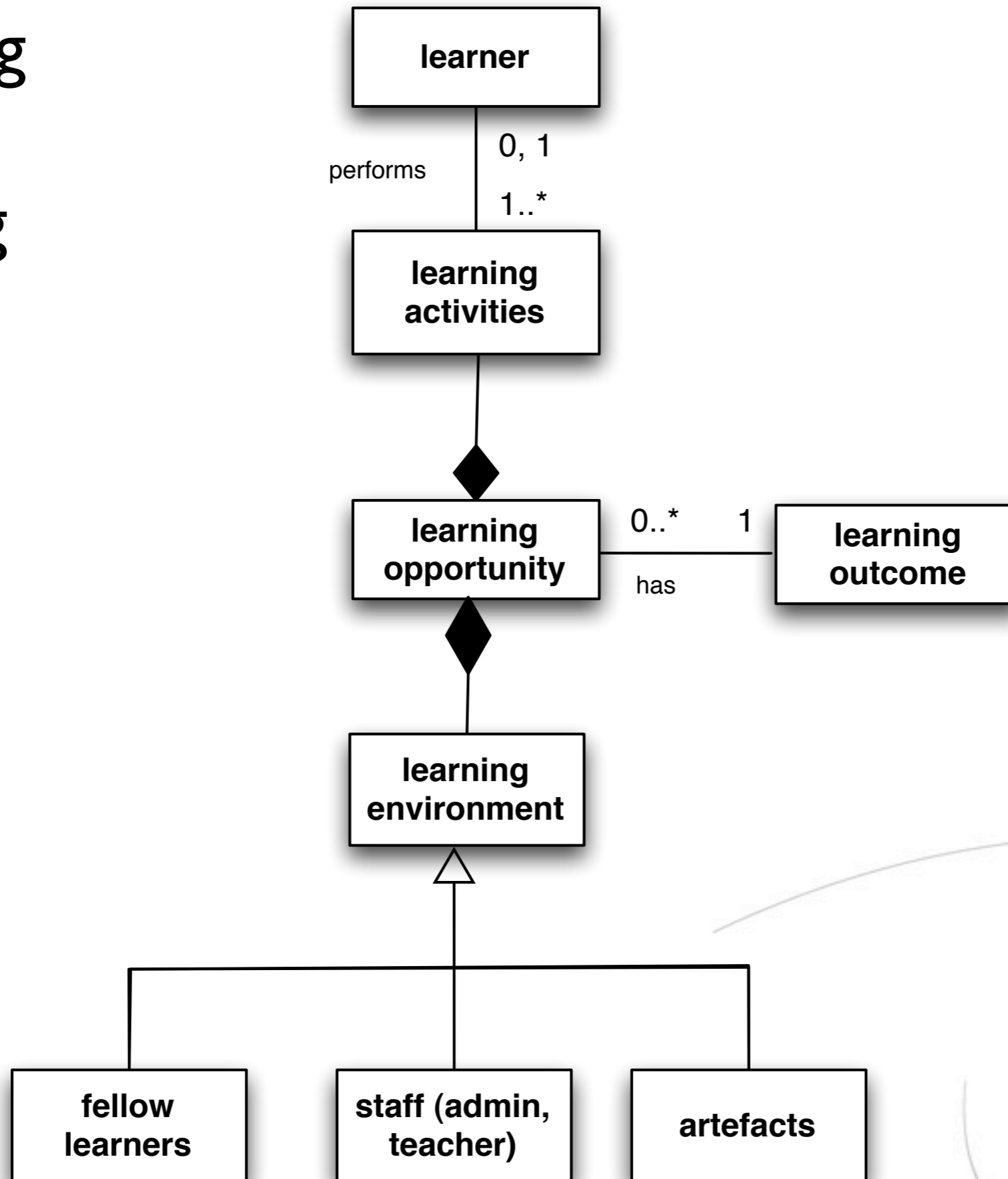
1. Designing for learning and Learning Design
2. Past: strengths & weaknesses of LD
3. Future: threats to & opportunities for LD
4. Conclusions



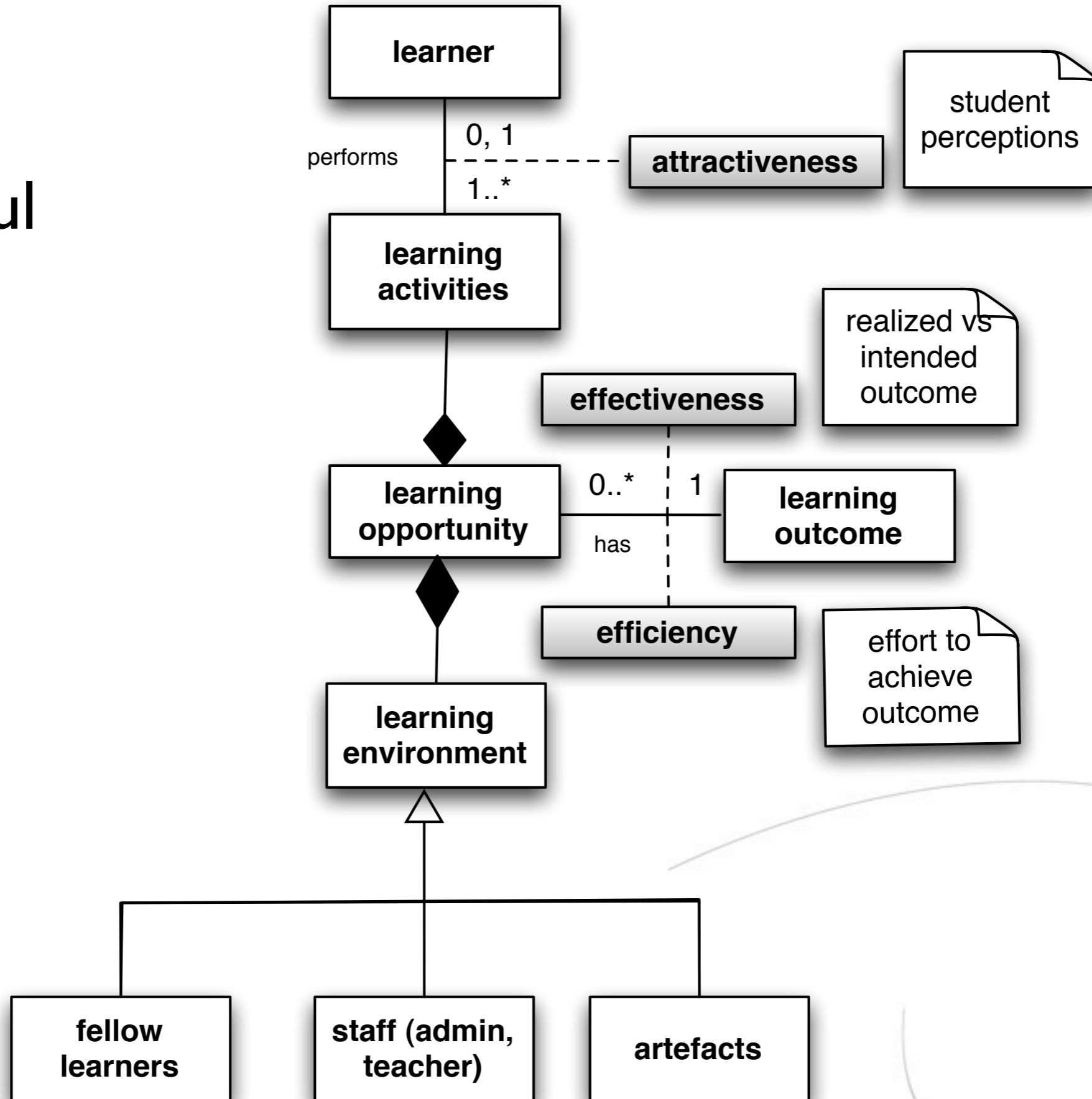
| Designing for learning



designing for learning



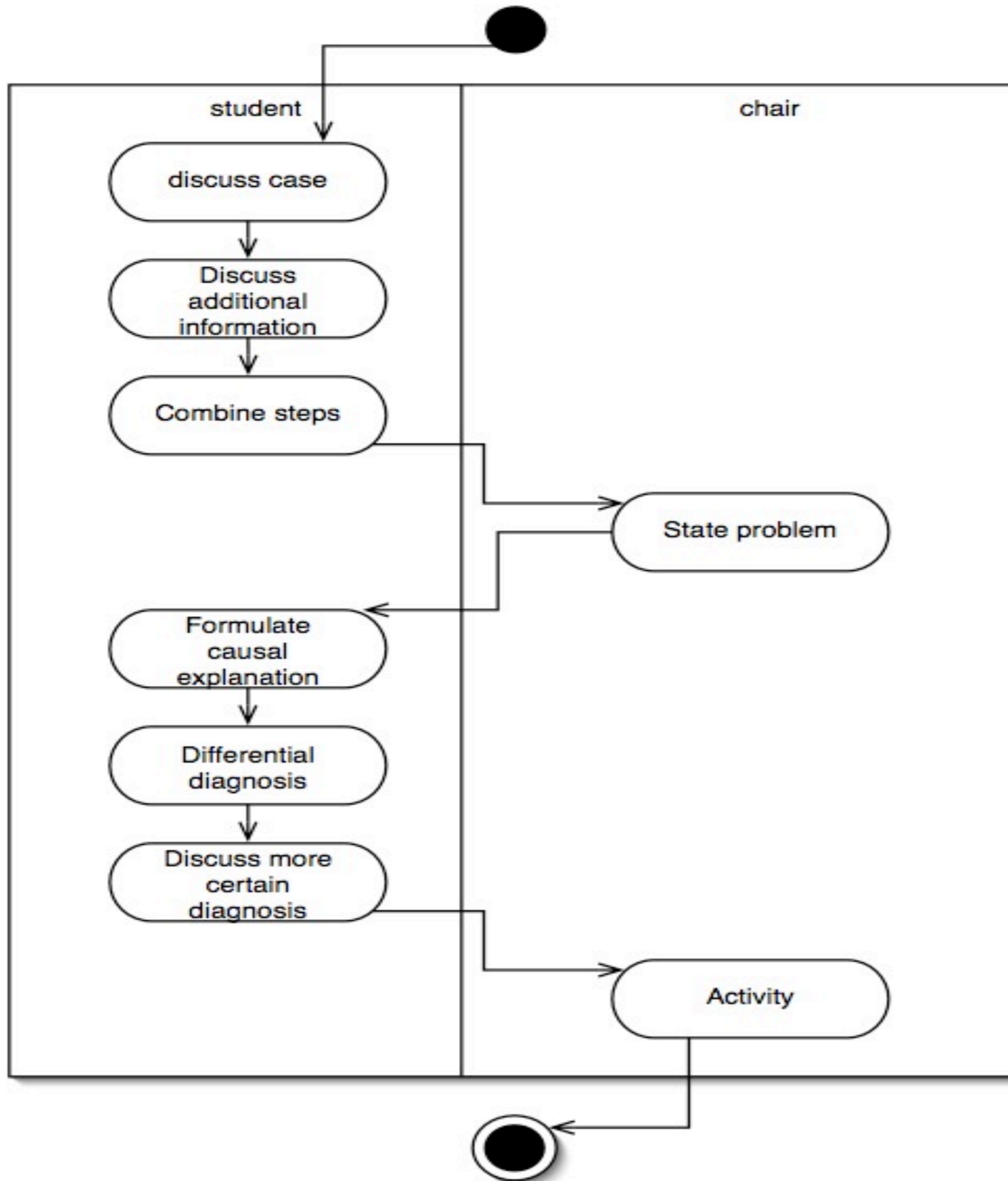
criteria for successful designs



- there is ‘learning design’ (‘instructional design’) and ‘Learning Design’ (the specification)
- Learning Design is a means to the end of designing learning or instruction



design for
problem-based
learning case in
medical education
using a UML
activity diagram



IMS LD elements

```
|
learning-design
  title
  learning-objectives
  prerequisites
  components
  roles
    learner*
    staff*
  activities
    learning-activity*
      environment-ref*
      activity-description
    support-activity*
      environment-ref*
      activity-description
    activity-structure*
      environment-ref*
  environments
    environment*
      learning objects*
      services*
      environment-ref*
  method
    play*
      act*
        role-parts*
          role-ref
          activity-ref
  metadata
```



IMS LD code bit

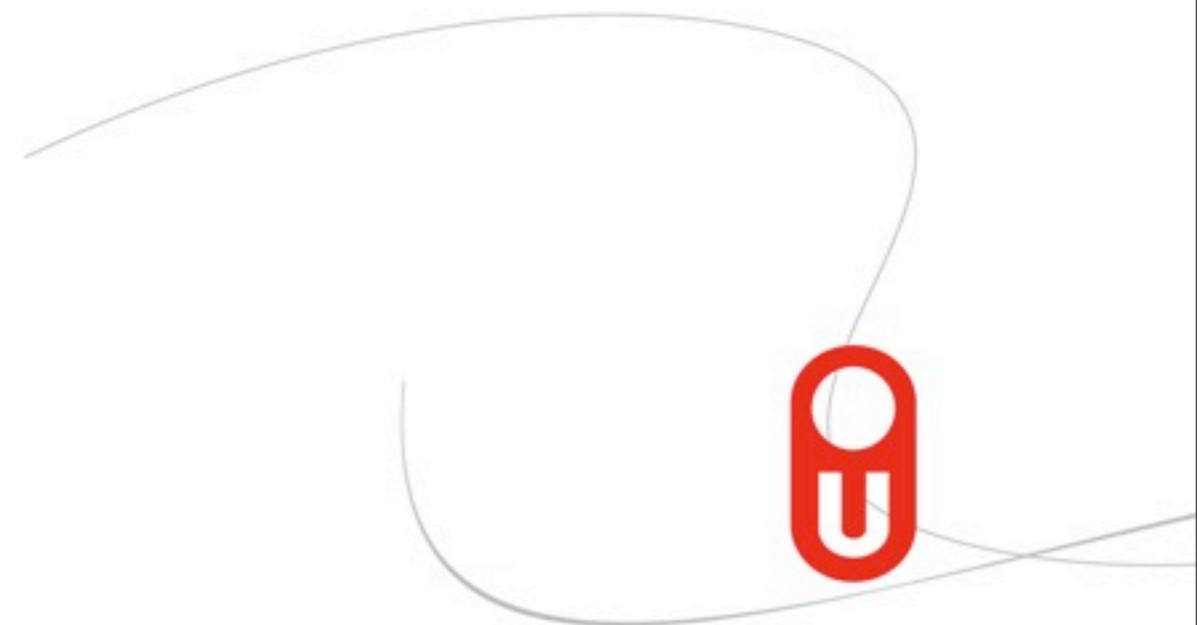
```
<?xml version="1.0" encoding="UTF-8"?>
<!-- edited by Colin Tattersall, adapted by Peter Sloep (Open University of the Netherlands) -->
<manifest xmlns="http://www.imsglobal.org/xsd/imscp_v1p1" xmlns:imsld="http://www.imsglobal.org/xsd/
imsld_v1p0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://
www.imsglobal.org/xsd/imscp_v1p1 http://www.imsglobal.org/xsd/imscp_v1p1p3.xsd http://www.imsglobal.org/
xsd/imsld_v1p0 http://www.imsglobal.org/xsd/imsld_level_c_v1p0.xsd" identifier="PBL-Manifest">
  <metadata>
    <schema>IMS Metadata</schema>
    <schemaversion>1.2</schemaversion>
  </metadata>
  <organizations>
    <imsld:learning-design identifier="Problem-Based-Learning" version="" level="C" sequence-
used="false" uri="">
      <imsld:components>

        <imsld:roles>
          <imsld:learner identifier="R-student"/>
          <imsld:learner identifier="R-chairperson"/>
          <imsld:staff identifier="R-facilitator"/>
          <imsld:staff identifier="R-coordinator"/>
          <imsld:staff identifier="R-evaluator"/>
        </imsld:roles>

        <imsld:properties>
          <imsld:globpers-property identifier="P-email">
            <imsld:existing href=""/>
          </imsld:globpers-property>
          <imsld:locrole-property identifier="P-Problem-Description">
            <imsld:role-ref ref="R-coordinator"/>
            <imsld:datatype datatype="file"/>
          </imsld:locrole-property>
          <imsld:locrole-property identifier="P-Problem-Statement">
```

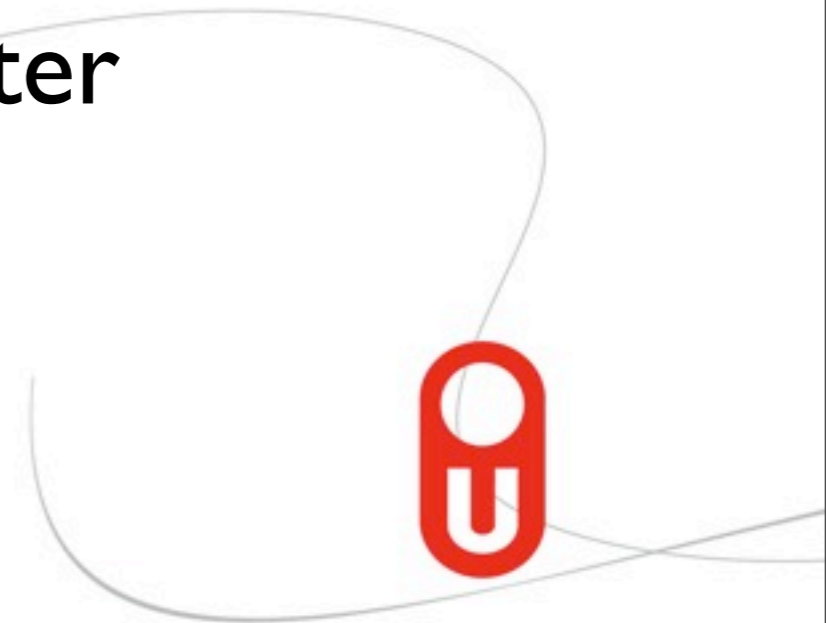


2 Learning Design



OUNL

- was founded in 1984, meant to be 'open'
- having open access, no diplomas required
- allowing students to learn at any time, any pace, any place
- offering a 'second chance' to enter academia



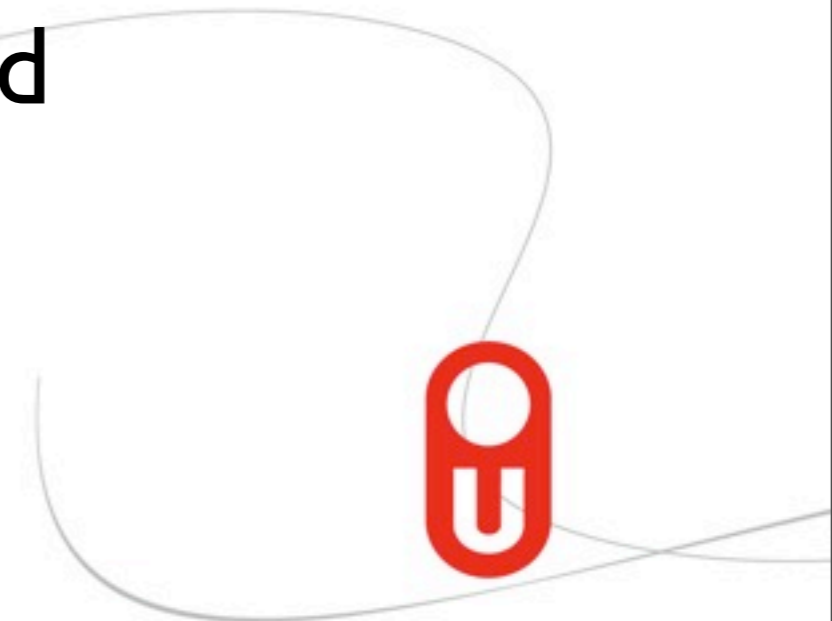
Design consequences of being open

- explicit learning/instructional design of ‘guided self-study’
- very few residential sessions, ‘distance learning’
- industrial production mode, division of labour



‘Studienet’

- 1995: launch first VLE ‘Studienet’
- 1997: adoption of e-learning by board
- goal: demand for pedagogical richness
- boundary condition: remain as efficient as ever, increase effectiveness and attractiveness



Educational Modelling Language

- 1997 -2000 development EML (open spec.)
- workflow specification ('learning flow')
 - scripting language for learning, theatrical metaphor
- formal language
 - explicit and closed vocabulary and syntax



IMS LD

- 2001 - 2003 development of IMS LD, differences with EML:
 - no content module (advice: use XHTML)
 - no assessment module (use QTI 2.0)
 - three levels of complexity A, B, C
 - member of IMS family of specifications

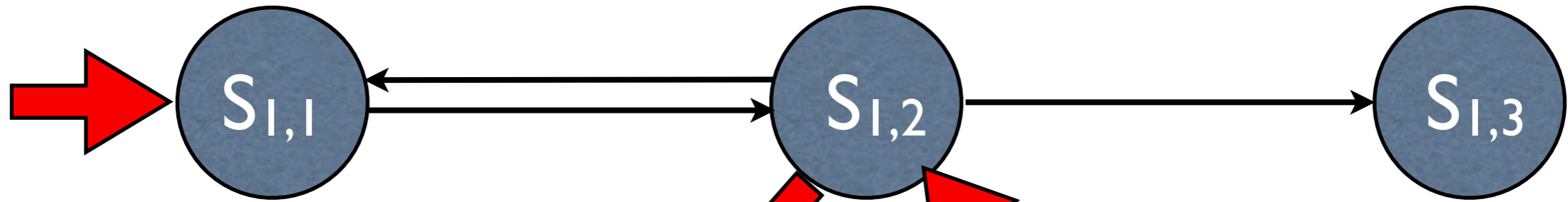


CopperCore (I)

- 2003 - 2004 under development, code has been open sourced (SourceForge)
- finite state machine, keeps track of states of users

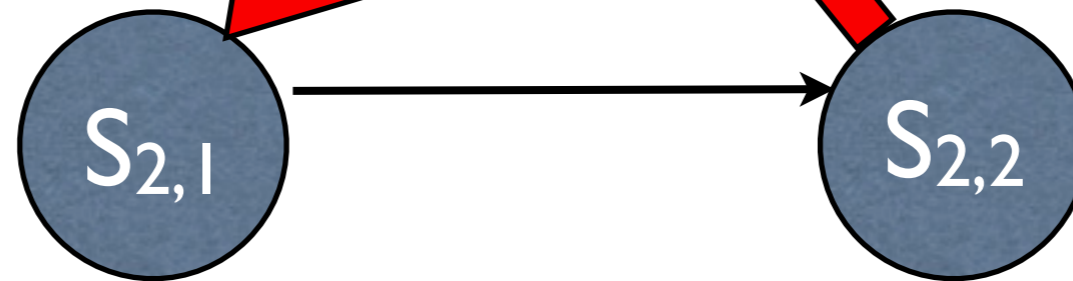


student
states

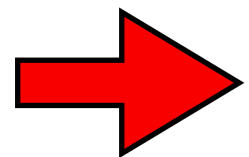


essay submitted

essay rated



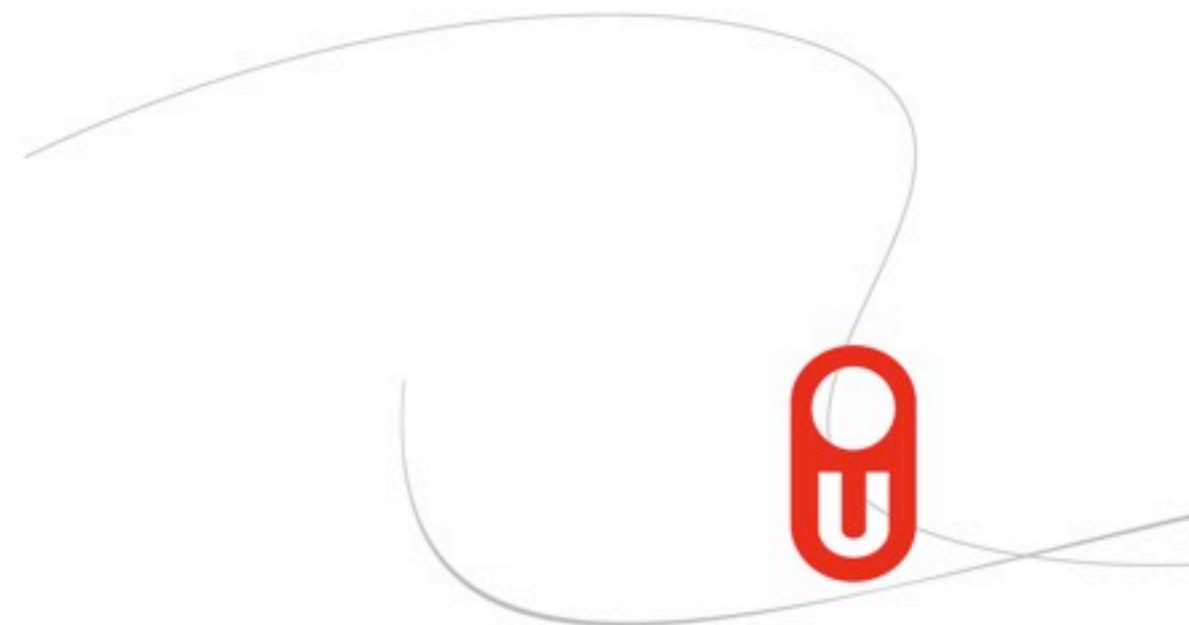
teacher
states



input/output



state transition



CopperCore (3)

- APIs to make development of LD compliant VLEs easier
- Course Manager: publish UOL, createUser, createRun, adUserToRun, addUserToRole, etc.
- LDEngine: various calls, to sequence LD's XML

Strengths of LD (1/2)

- LD is a formal language for instructional/learning design, it fosters:
 - reuse of UoLs (courses, programmes)
 - reuse of designs (templates, patterns)
 - interoperability: one VLE for every need
- hence: gains in efficiency



Strengths of LD (2/2)

- because of reuse and interoperability, also gains in efficiency?
- because of team effort, also gains in effectiveness (better designs) and attractiveness?



Weaknesses of LD

- complexity of the specification itself
- lack of players (in spite of CopperCore)
- lack of authoring environments
- lack of real uptake



3 The future of learning design



Threats to LD

- teachers' understandable reluctance to switch to industrial development model, dividing labour between specialists
- existing VLEs and their vested interests (Blackboard, but also Moodle); their tendency to cater for existing demands
- competition from SCORM and CC specs

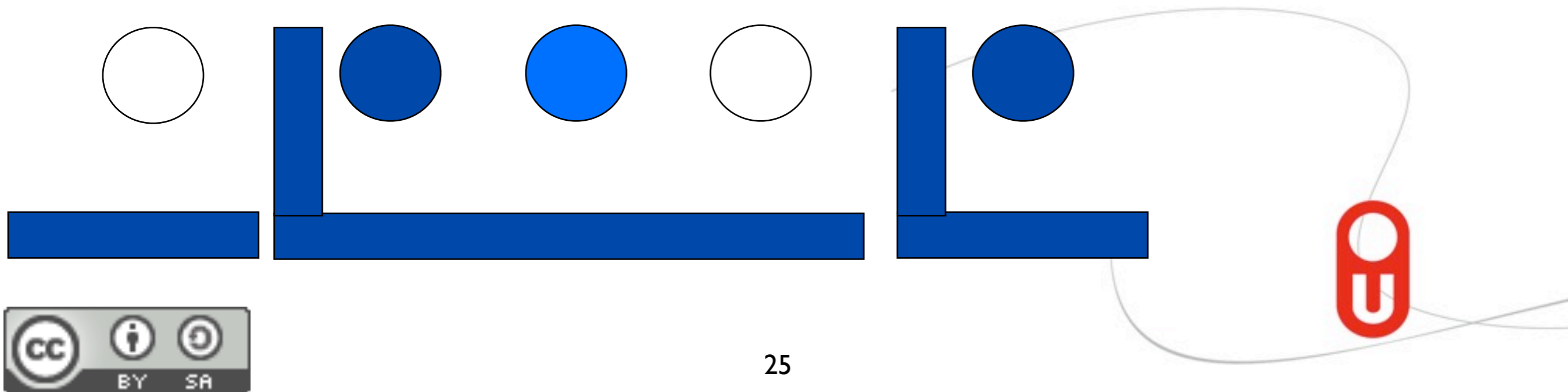


Opportunities for LD



Formalising 4C/ID (I)

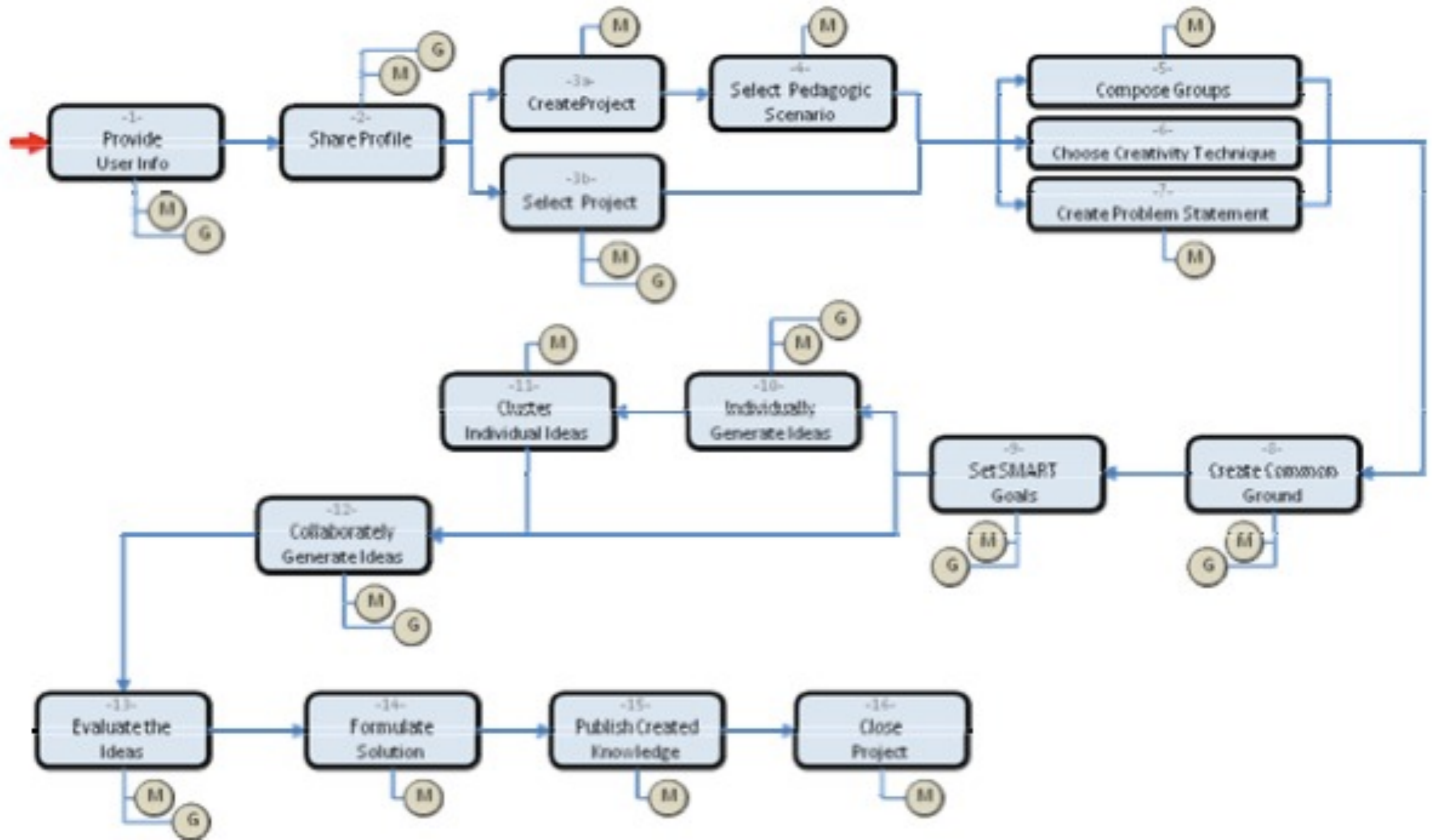
- 4C/ID is a design methodology
- based on whole tasks
- of increasing difficulty
- each task is an activity, each task class is activity structure



idSpace (2)

- platform for distributed, collaborative product design, kind of VLE
- storing 'ideas' for later use
- runs on scenarios for knowledge sharing and on creativity techniques (brainstorm, six hats, scamper, ...)
- currently: descriptive flow design patterns





Ludi (4)

- EU project proposal to extend LD
- serious gaming in teacher education
- picks up old idea to script games with LD



Learning Networks (4)

- self-organised, lifelong learning in Learning Networks
- LN is online, social network designed to support non-formal learning
- LNs rely on computing infrastructure, and on availability of learning resources



4 Conclusion



1. Strength: LD is a way to formalise (vocab. & syntax) instructional/learning design
2. Weakness: learning design is already a complex notion, the ID specification adds the complexities of a formalism to this
3. Threat: the powers that be, vested interests
4. Opportunities: non 'traditional' contexts



- Does LD have a future?
- A lot of work is being done to systematise learning design as an activity and as product.
- LD provides a formal language for describing both.
- Adoption of LD for this is a complex issue, it will only happen if people heed the rules of innovation diffusion strategies (in Rogers sense).



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<http://celstec.org>

<http://pbsloep.nl/vv.html>

<http://dSPACE.ou.nl>

[slideshare: pbsloep](#)

Twitter: pbsloep

Skype: celstec-peter.sloep

Jabber: pbsloep



Some references

On designing learning with Learning Design:

Sloep, P. B., Hummel, H., & Manderveld, J. (2005). Basic design procedures for e-learning courses. In R. Koper & C. Tattersall (Eds.), *Learning design; A handbook on modelling and delivering networked education and training* (pp. 139-60, 367-385). Heidelberg: Springer Verlag.

An evaluation of the use of Learning Design in actual practice

Sloep, P. B., Van Bruggen, J., Tattersall, C., Vogten, H., Koper, R., Brouns, F. et al. (2006). Innovating education with an educational modelling language: two case-studies. *Innovations in Education and Teaching International*, 43(3), 291-301.

On Learning Networks

Sloep, P. B. (2009). Fostering Sociability in Learning Networks through Ad-Hoc Transient Communities. In M. Purvis & B. T. R. Savarimuthu (Eds.), *Computer-Mediated Social Networking. Proceedings of the First International Conference, ICCMSN 2008. Dunedin, New Zealand, June 2008, revised selected papers.* (pp. 62-75). Heidelberg, Germany: Springer.

On finite state machines

Vogten, H., Tattersall, C., Koper, R., Van Rosmalen, P., Brouns, F., Sloep, P. et al. (2006). Designing a learning design engine as a collection of finite state machines. *International Journal on E-Learning*, 5(4), 641-661.

Overview of many aspects of LD, somewhat dated

Koper, E. J. R., & Tattersall, C. (2005). *Learning Design - A Handbook on Modelling and Delivering Networked Education and Training.* Berlin-Heidelberg: Springer-Verlag.

