

Exploring the Use of the  
IMS Learning Design Specification for  
Facilitating Formative Assessment

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# Assessment

Two major forms

Formative – assessment **for** learning

Summative – assessment **of** learning

## Formative Assessment

Learners formulate thoughts in their own words

Teachers provide constructive feedback tailored to individual learner

Doing formative assessment well requires

A substantial time commitment

Learning design knowledge

# IMS Learning Design Specification (IMS-LDS)

## IMS

Consortium of major international players

Development of specifications within context of e-learning

Specification related to assessment

IMS Question & Test Interoperability Specification

Facilitates specification and exchange of questions, item banks, tests

Focus on summative assessment

## IMS-LDS

Specification of learning designs in machine readable form suitable for a wide range of pedagogical approaches

# IMS Learning Design Specification (IMS-LDS)

## Learning design

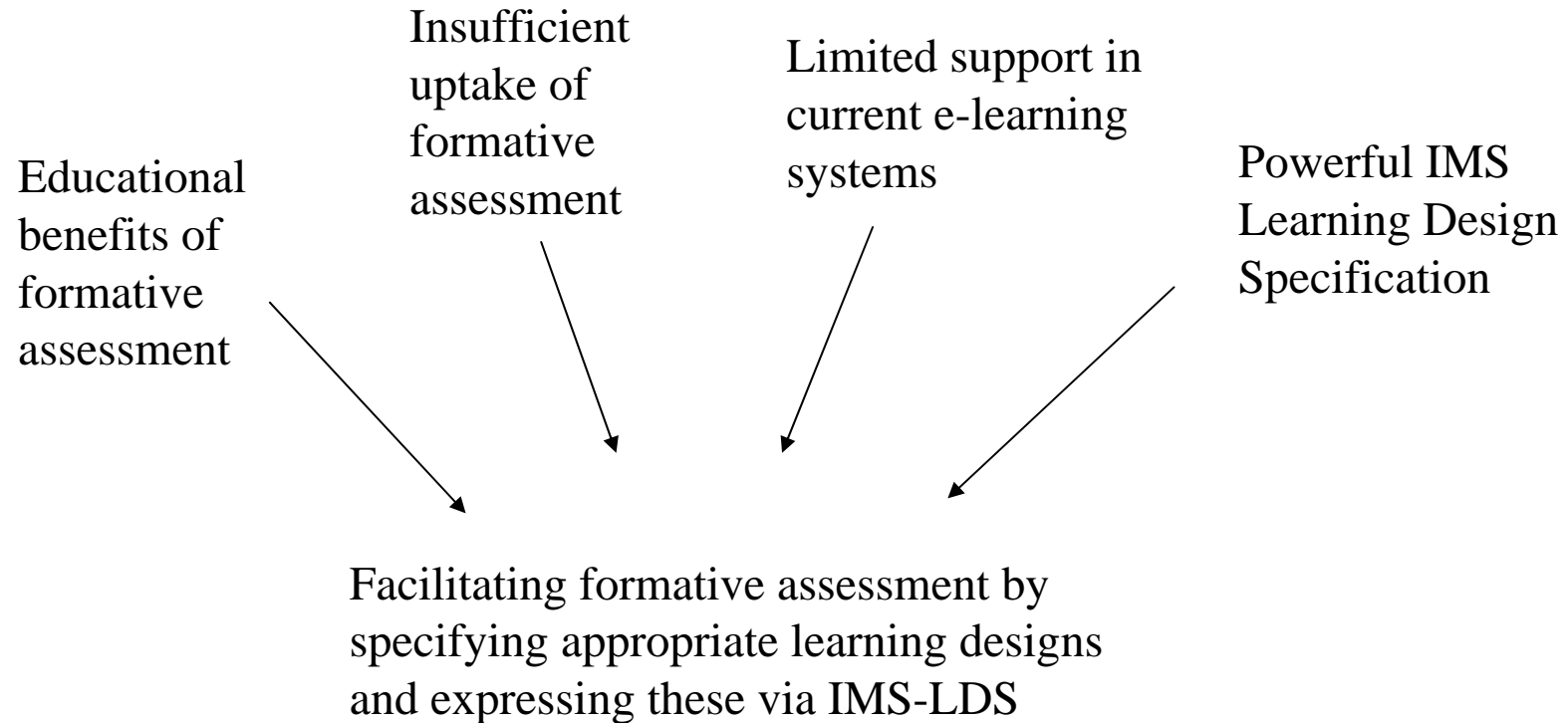
Sequencing of learning activities and content elements including description of teaching strategies

## Formal description of learning designs enables

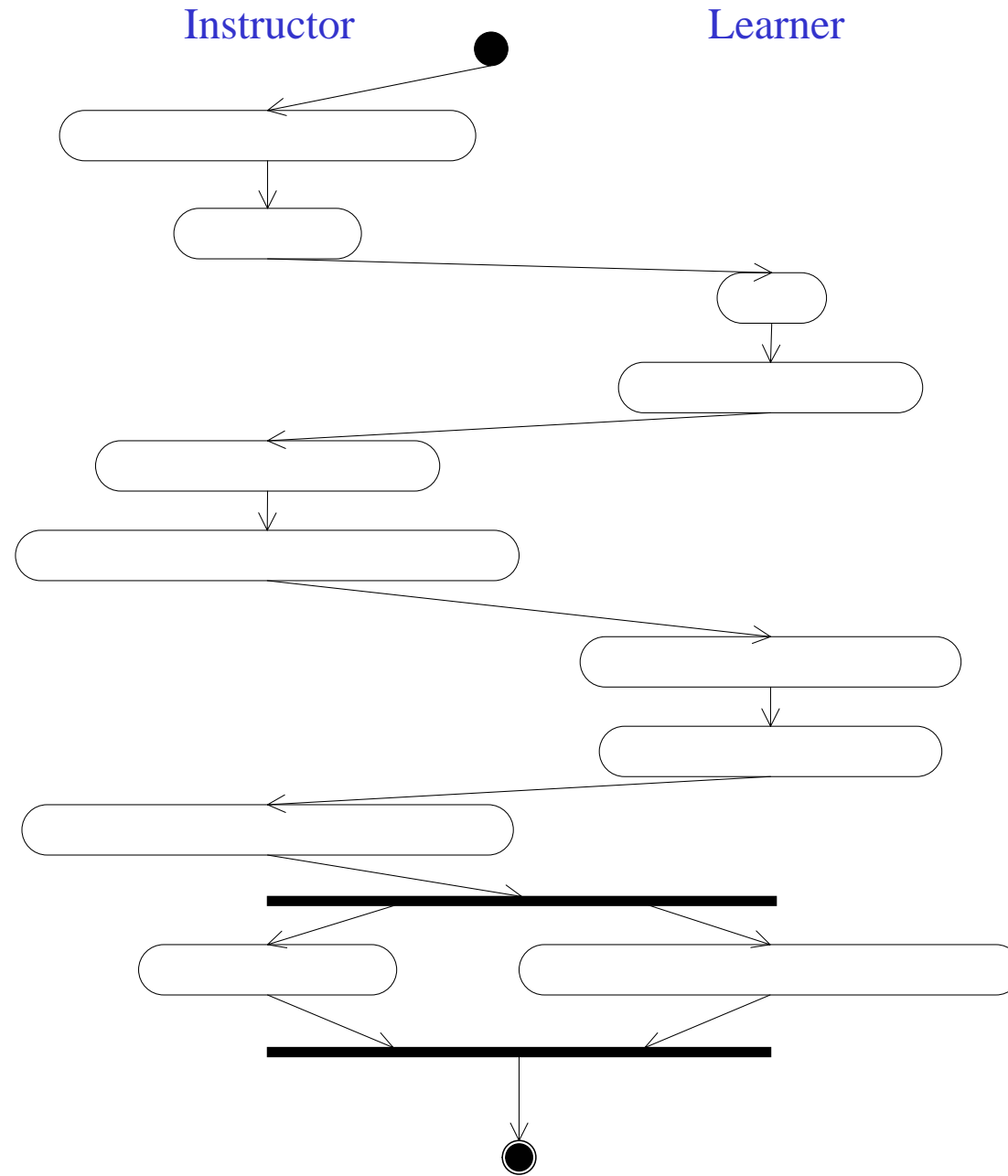
Reuse and re-purposing of activities and content across learning contexts and learning management systems

Assessment is mentioned but not specific focus of IMS-LDS

## Our research motivation and goals



A simple learning design for formative assessment



## Contained in this sample learning design

### Activities – learner

Attempt task, study the solutions by others, provide feedback, analyse feedback on own work, discuss solutions and feedback, ...

### Activities – instructor

Set task, develop marking criteria, set time frames, access solution attempts, access feedback given by students, manage groups, monitor discussions, ...

### Content elements

Task specification, marking criteria

### Teaching strategies

Active participation of learners, peer-assessment, collaborative learning

## Some more detail on IMS-LDS

Levels A – interaction of multiple learners in various roles, separation of activities from roles and resources

E.g., in peer-assessment learner acts in both traditional learner and instructor roles

Different task specifications can be used with the same design

Level B – inclusion of properties and conditions

E.g., a learner can only participate in peer-assessment after having submitted a sufficient solution attempt

Level C – messages between system components and roles

E.g., once the instructor has assigned groups the appropriate documents are sent to the learners by the system



## Steps towards specification of a IMS-LD in XML format

Higher level use case description

Focus on generic content and activities

Detailed use case description

Add concrete content and a concrete learning environment

Activity diagram

Show flow of activities and interaction of roles

## Requirements on systems implementing IMS-LDS

Authoring – to be performed by instructional designer

System needs to support by dealing with technical aspects of specification (UML and activity diagrams, XML)

Production – to be performed by the instructor

System needs to present learning design in easily understandable form (easy on both technical and instructional levels)

Delivery – to be performed by the system

Setup, management and control of activities

## Where from here?

Refine assessment-related learning design specifications

Move into practice

CopperCore

First IMS Learning Design Engine that supports all three levels of IMS Learning Design (A, B, C)

<http://coppercore.org/>

Further information, research papers and software downloads

<http://www-ist.massey.ac.nz/MarkTool/>