

# From planning learning paths to assessment: Innovations to the practical benefits of Learning Design

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<http://gti.upf.edu>

# Overview

- Context: TENCompetence Project
- Role of Learning Design in TENCompetence
- GTI innovations to the practical benefits of LD:
  - Graphical planner of personal learning paths
  - Flexible support of (IMS) LD at runtime
  - Test-based assessment using (IMS) QTI
- Conclusion

# TENCompetence Project

- IST/TEL Integrated Project – Sixth Framework Programme, EC
- December 2005 – November 2009
- 15 core partners + Associate Partners
- Aim: to build a technical and organizational infrastructure for **lifelong competence development**



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# TENCompetence Focus

- Supporting **individuals** in development of their competences during the whole life
  - I want to (further) develop a specific competence
  - I want a better job position
  - I want a new or different job
  - I want to keep my competences up-to-date
  - ...

# Role of LD in TENCompetence

- **Community:** A domain representing a certain profession. Users can collaborate within the context of a certain community
- **Competence profile:** A set of Competences that define the minimum requirements for a specific function/job
- **Competence:** The estimated ability of an actor to deal with critical events, problems or tasks that can occur in a certain situation (at work, at home, etc.)
- **Competence development plan: (CDP; synonyms: route, learning path, curriculum, programme) An ordered set of activities and units of learning that have to be followed to attain a certain Competence**

(IMS) Learning Design



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# (Some) tooling

Competence Development Plan

Composed of ↓

Activities or/and

IMS LD **units of learning**

May include ↓

IMS QTI **items**

(assessment)

Personal Development Plan tool (PDP)  
with a **graphical planner**<sub>GTI</sub>

authoring

ReCourse editor (Creating LDs) with  
a plug-in for creating QTI items,  
allows addition of Widgets

runtime

SLeD player integrated with a  
Widget server, and an **updated QTI  
engine**<sub>GTI</sub> (APIS)

Also: **new QTI interaction type for  
graphical exploration**<sub>GTI</sub>

Also: **flexible support of LD at  
runtime**<sub>GTI</sub>

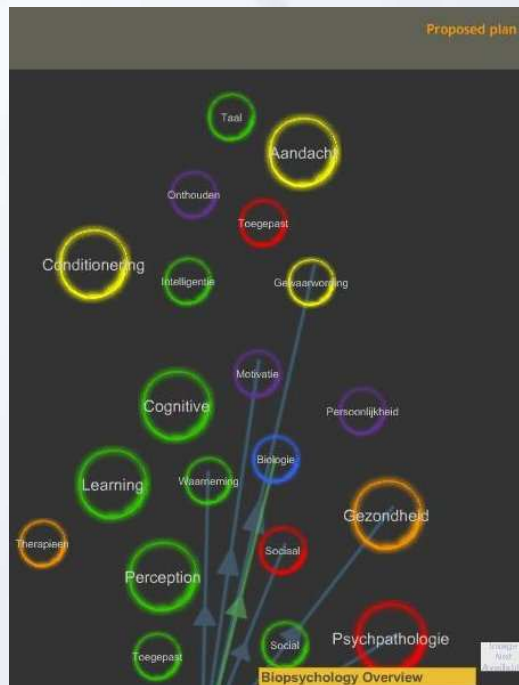


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# Graphical planner (I)

- Provide a personalized view on all the available UoLs to support **Learner's** planning of a CDP



- Use personalization services (positioning, navigation, preference, curriculum) developed in TENCompetence



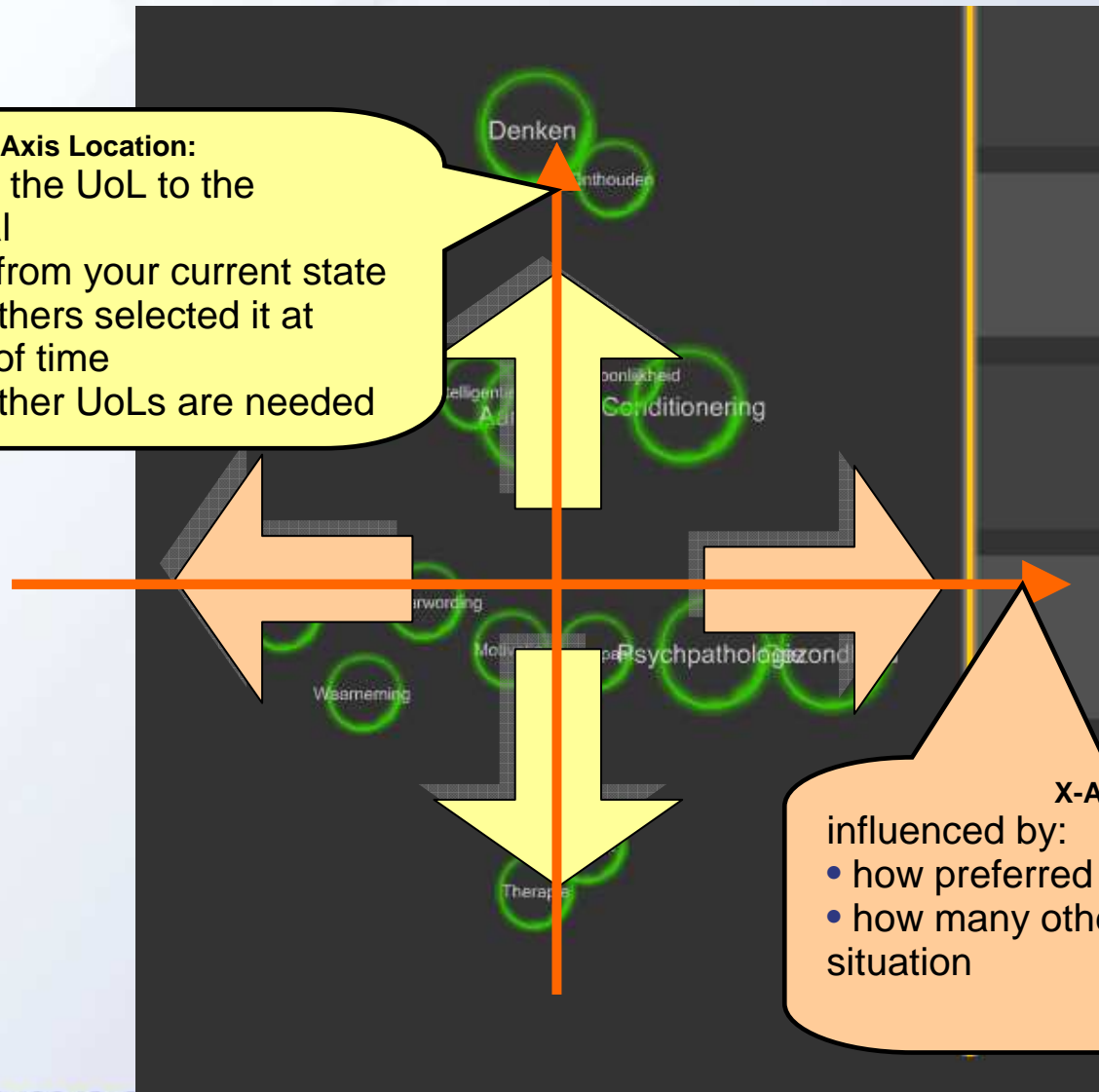
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# Graphical planner (II)

## Y-Axis Location:

- how close is the UoL to the learning goal
- how far is it from your current state
- how many others selected it at which point of time
- how many other UoLs are needed



## X-Axis Location:

influenced by:

- how preferred is UoL
- how many others selected in a similar situation



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Demo at <http://upf.ernestoarroyo.com/Planner/>



# Flexible support of LD at runtime

- Developing templates that can be refined / particularized at runtime (enabling authoring at runtime)
- Flexibility desirable in general, specific requirements in:
  - Collaborative learning: group members dependence
  - Particular educational methodologies, e.g., dialogic learning for (non-formal) adult education (democratic participation even in the design of the learning process)



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# An approach to support flexibility (I)

- Dialogic learning and interactive groups: an IMS LD template integrated in runtime systems
- **Principles of dialogic learning** (Egalitarian dialogue, Cultural intelligence...) and **actual practice** in La Verneda School for adult education → input for a **metaUoL with seven possible activities**
- Usage: Any participant can
  - 1) Select “activity type”, (Negotiating, Dialoguing, Sharing, Discovering...)
  - 2) Define/configure the activity (description, tool, input/output artifacts)
  - 3) Perform the activity (with the rest of participants)
- metaUoL computationally represented with **IMS LD level C** (can be interpreted by any IMS LD compliant player)
- Tested with two trainers of La Verneda. Paper to be published at iJET

# An approach to support flexibility (II)



- Dialoguing Activity**
  - 1.1. Selecting "Dialoguing"
  - 1.2. Defining "Dialoguing"
  - 1.3. Performing "Dialoguing"
- Negotiating Activity**
  - 2.1. Selecting "Negotiating"
  - 2.2. Defining "Negotiating"
  - 2.3. Performing "Negotiating"
- Discovering Activity**
  - 3.1. Selecting "Discovering"
  - 3.2. Defining "Discovering"
  - 3.3. Performing "Discovering"
- Assessment Activity**
  - 4.1. Selecting "Assessment"
  - 4.2. Defining "Assessment"
  - 4.3. Performing "Assessment"

Define activity

All participants can view and edit the

Participants

Trainer

**Service Based Learning Design Player (Sled)** Logged in as: sergio Logout

Meta-UoL

- activity-self-assessment-1
- activity-creating-collaboratively-2
- define-activity-negotiation-3**

**define-activity-negotiation-3**

Learning Objectives | Prerequisites | Feedback | Metadata

**Service Based Learning Design Player (Sled)** Logout

Meta-UoL

- activity-self-assessment-1
- activity-creating-collaboratively-2
- activity-negotiation-3

**activity-negotiation-3**

Learning Objectives | Prerequisites | Feedback | Metadata

So far, you have seen a number of aspects related to using computers, but I do not know whether these aspects are useful to you or not. Please, could you tell me what you want to do in the next session?

The result of this activity should be: **A list of topics to be covered in the next session, or in the rest of the sessions of this course**

Use as supporting tools to complete the activity: **Doodle ([www.doodle.ch](http://www.doodle.ch))**

and this resource: **I have some ideas, just to foster the discussion: - Strategies for seeking online information (do you know the Yahoo! directory?) - Some aspects of web design (do you want to have your website, and show it to your grandchildren?)**

ok

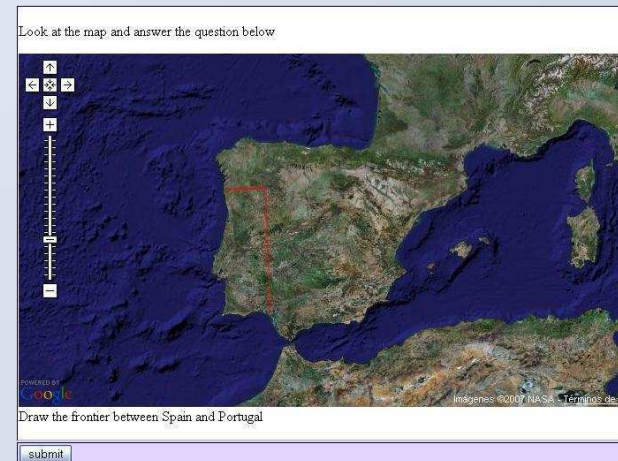
Perform activity

# New QTI interaction type for graphical exploration

- New forms of interaction in IMS QTI (graphical exploration)
- Example implemented: Google Maps embedded in QTI items (edition and runtime)

- Video:

[http://www.sled.upf.edu/activities/videos/Demo\\_Exam\\_qti\\_gmaps/Demo\\_Exam\\_qti\\_gmaps.html](http://www.sled.upf.edu/activities/videos/Demo_Exam_qti_gmaps/Demo_Exam_qti_gmaps.html)



# Conclusion

- From planning learning paths to assessment: innovations to the practical benefits of Learning Design
- GTI is currently:
  - Finalizing the graphical planner  
(to be evaluated in September/October)
  - Exploring new solutions to provide flexibility; planning new experiences in La Verneda
  - In the process of evaluating the use of Google Maps embedded in QTI items. Aiming at embedding other Web2.0 services in test items



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# Validation of TENCompetence

- An increasing number of **associated partners** have enlisted to help develop, demonstrate and pilot the project outcomes.

Participation is invited from all interested parties particularly SMEs.

- **Pilot proposals** are welcome

# Contact

- Project website  
[www.tencompetence.org](http://www.tencompetence.org)
- GTI website  
<http://gti.upf.edu>
- Davinia Hernández-Leo  
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Thank you!



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