

Competence Mapping And Gap Analysis in Learning Networks

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TEN Competence

Building The European Network for Lifelong Competence Development

Competence Mapping And Gap Analysis in Learning Networks

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TEN Competence

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Overview

- The Challenge
- TENCompetence Approach
- Competence Development Procedure
- Personal Competence Manager System
- Personal Development Planner
- TENCompetence Foundation



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The Challenge

- In today's economy individuals and organisations need to be flexible and agile
- But the technical and organisational systems used to deliver education and training are based on traditional structures
 - cohorts, courses, familiar career structures, qualifications based on a single institution



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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:
 - keep up to date with their competences
 - attain a new set of competences
 - upgrade their competences to a higher level
 - match their competences to other attractive job profiles



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TENCompetence Approach

- Competences as a means of unifying personal development activities
- A portal interface
- A service based architecture and Open Source applications - adaptable to particular needs and enterprise systems
- Open and standards compliant data formats ensuring portability



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Competence

A ***competence*** is 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.)

This estimation can be based on:

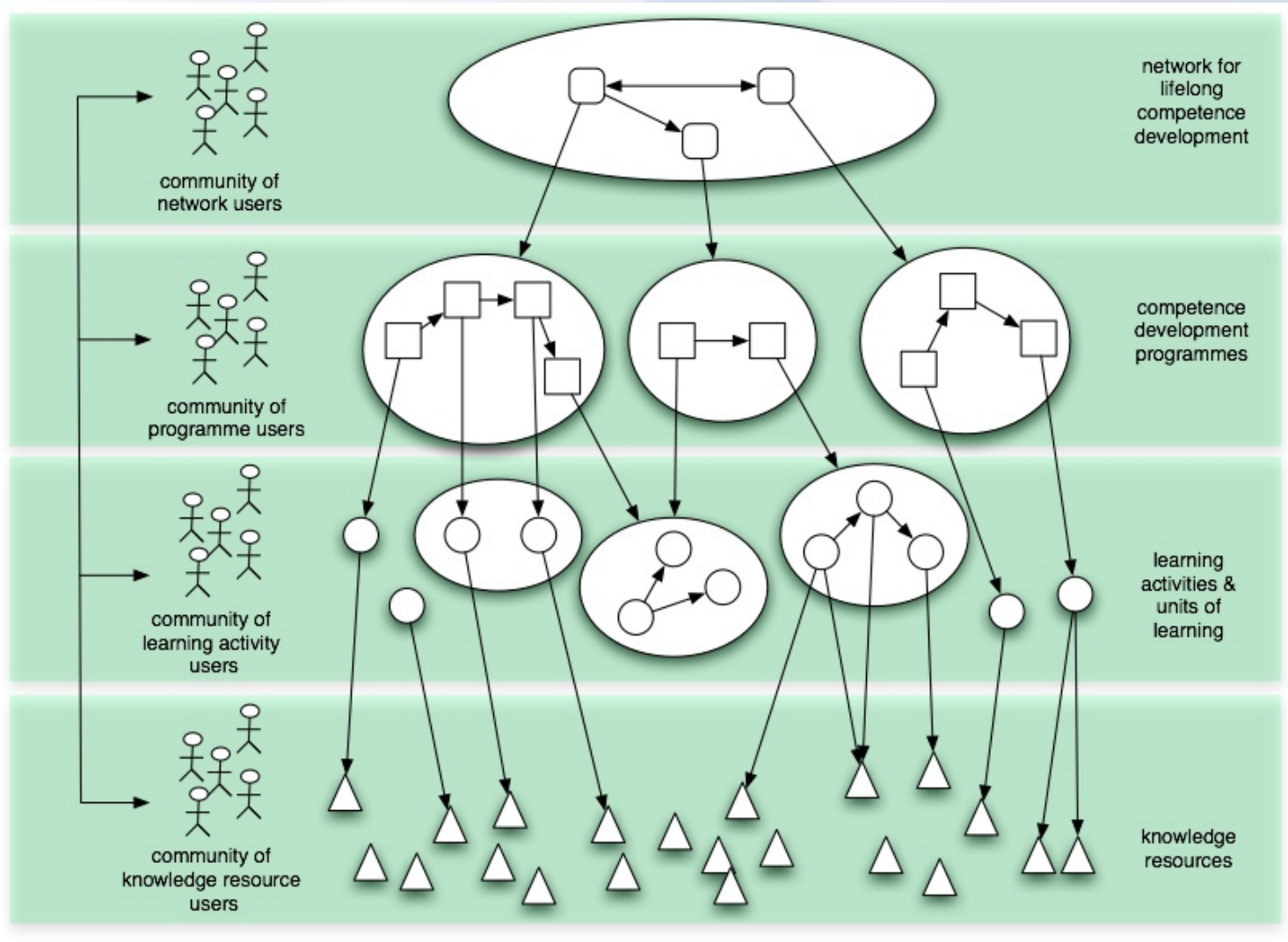
- Self assessment
- Informal assessment by others
- Formal assessment by others



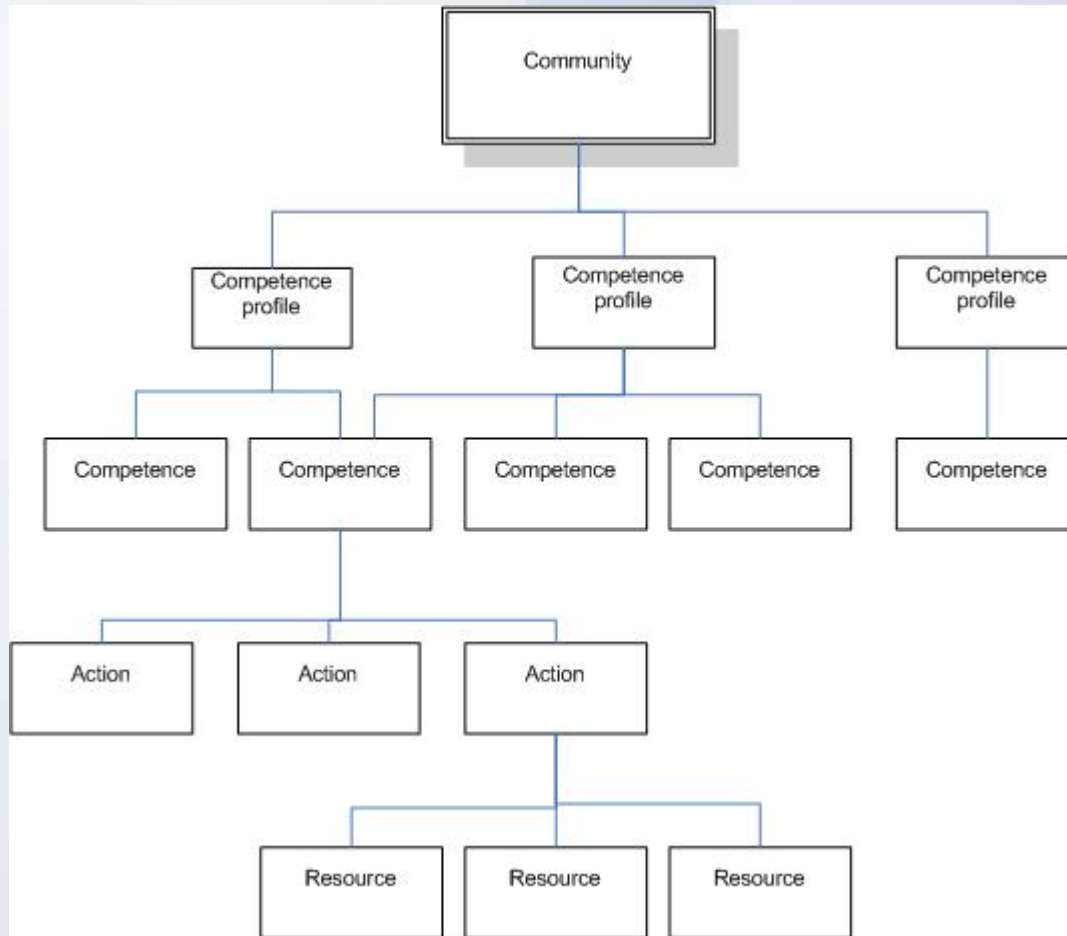
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Integration Levels



Data Structure



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Competence Development Procedure

1. Competence Map
2. Tasks-Competences Matrix
3. Self-Assessment
4. Gap Analysis
5. Training Needs
6. Expert Facilitators
7. Competence Networks



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18 Competence Profiles

- Requirements analyst
- Architectural designer
- User interface / Interaction designer
- System developer
- Software tester
- Database manager
- Etc.



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Proficiency Level

0 = none

1 = can apply this with support in a relatively simple and well organized situation

2 = can apply this independently in a relatively simple and well organized situation

3 = can apply this independently in complex situations

4 = can apply this flexible in complex situations, can evaluate the competence and can support others



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1. Competence Map

Profile: Pilot Designer & Evaluation

Competences in the profile:

- Given the aims of the project and the requirements of the software:
 - a. Be able to develop and execute an evaluation plan by selecting and applying the most appropriate quantitative or qualitative research design, according to the described principles in the methodological research literature.
 - b. Be able to develop and implement the data collection instruments (questionnaires, loggings, etc.) that are required according to the evaluation plan.
 - c. Be able to select and apply the most appropriate statistical methodologies, techniques and tools for statistical analysis. This includes the use of tools for statistical analysis (SPSS, SAS, R, spreadsheets, etc.).
 - d. Be able to interpret, report, present and discuss the statistical results (including the reporting in scientific papers).



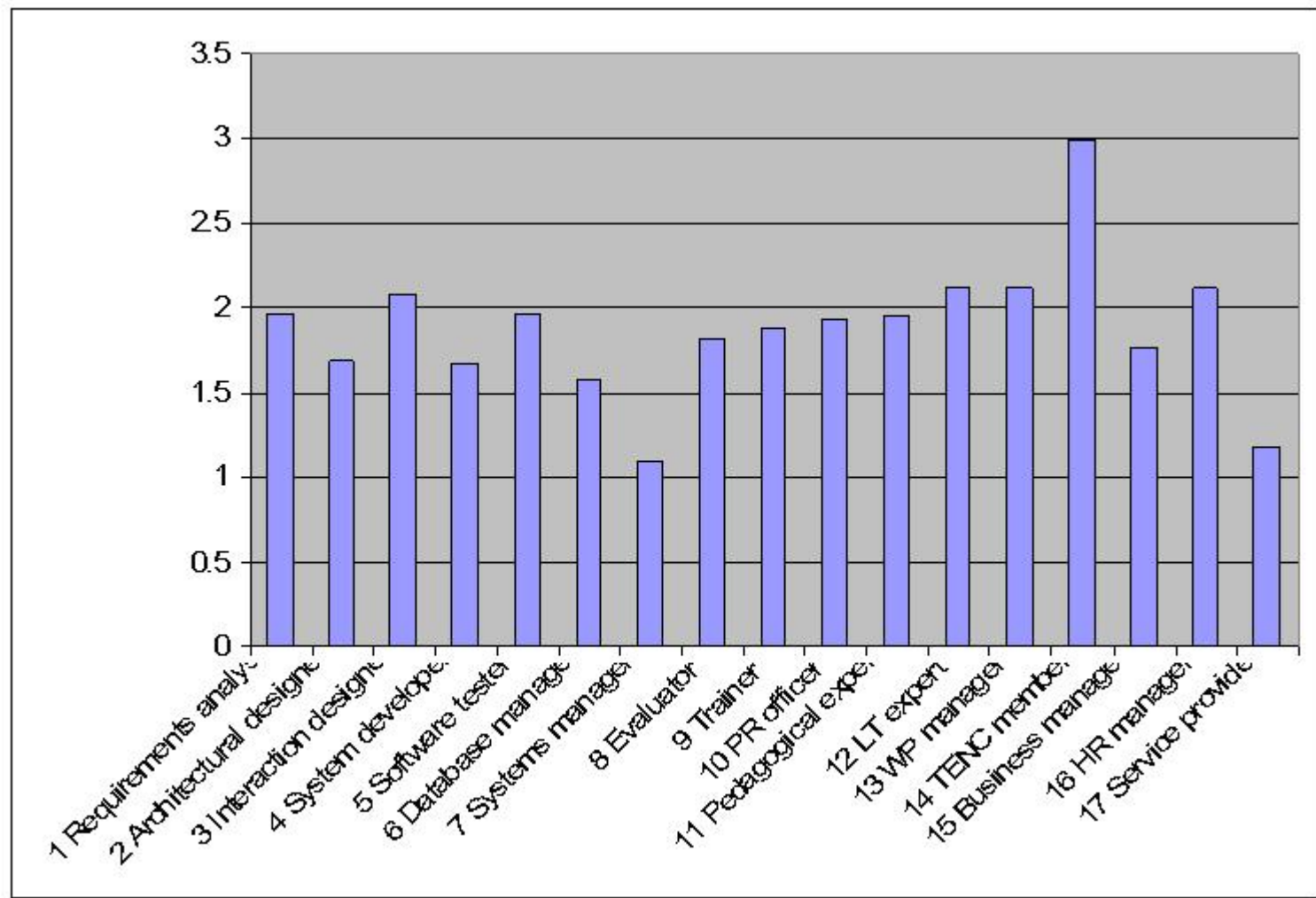
Score: 0 1 2 3 4

TEN Competence

2. Tasks-Competences Matrix

	Requirements Analysis	Architectural Design	User Interface / Interaction design
	<p>Identify users for requirement analysis</p> <p>Scope & tactical aims of personal competence development systems</p> <p>Apply the requirements analysis approach</p> <p>Design a systematic approach for requirements analysis</p> <p>Knowledge of sound methodologies</p>	<p>Present the requirements to different target groups</p> <p>Create and test simple prototypes to assess the requirements</p> <p>Describe the requirements in a measurable way (e.g. SMM4IT)</p> <p>Create systematic use case models</p> <p>Develop architecture linked to Web Services/SDN principles</p> <p>Scope & tactical aims of personal competence development systems</p>	<p>Present interaction design to different target groups</p> <p>Test and adapt interaction design with users</p> <p>Represent interaction Design in a visual scheme or prototype</p> <p>Design of click flow, layouts, navigation icons, menus, templates</p> <p>Create an Interaction Design</p> <p>Present the architecture to different target groups</p> <p>UML diagrams and SDN principles</p> <p>Handle new requirements in a transparent way</p> <p>Specify APIs for connections to other systems</p> <p>Develop architecture linked to Web Services/SDN principles</p>
WP2 Requirements & Analysis of the Integrated System			
Management, review and assessment			
Complete the work planned under DoW			
Vision development			
Operationalise the vision and models into specific functional and non-functional requirements and process descriptions			
WP3 Technical Design & Implementation of the Integrated System			
Management, review and assessment			
Update the overall TENCompetence architectural design			
Integrate finalized WP5-8 components			
Select, design and implement adaptations of additional existing components that are currently state of the art			
Set up and maintain the infrastructure for running pilots in the project			
Design, implement and deliver new releases of the integrated TENCompetence system for supporting WP4 pilots			
WP4 Pilots with the Integrated System & validation of the project			
Management, review and assessment			
Set up the cycle 1 pilot and validate the initial system			
Definition, planning, and setup of cycle-2 pilots			
Provide evaluation methodologies			
Collect and distribute requirements, use-cases, scenarios, and other useful information			
WP5 Knowledge Resource Sharing & Management			
Management, review and assessment			
Research and development of new and flexible models for pro-active knowledge resources use, sharing and exchange			
Design and develop the KRSM services and tools			
Experiment and evaluate the usability of the knowledge resource sharing & management components			

3. Self-Assessment



4. Gap Analysis

- Compare and analyze what is required (2) and what is available (3)



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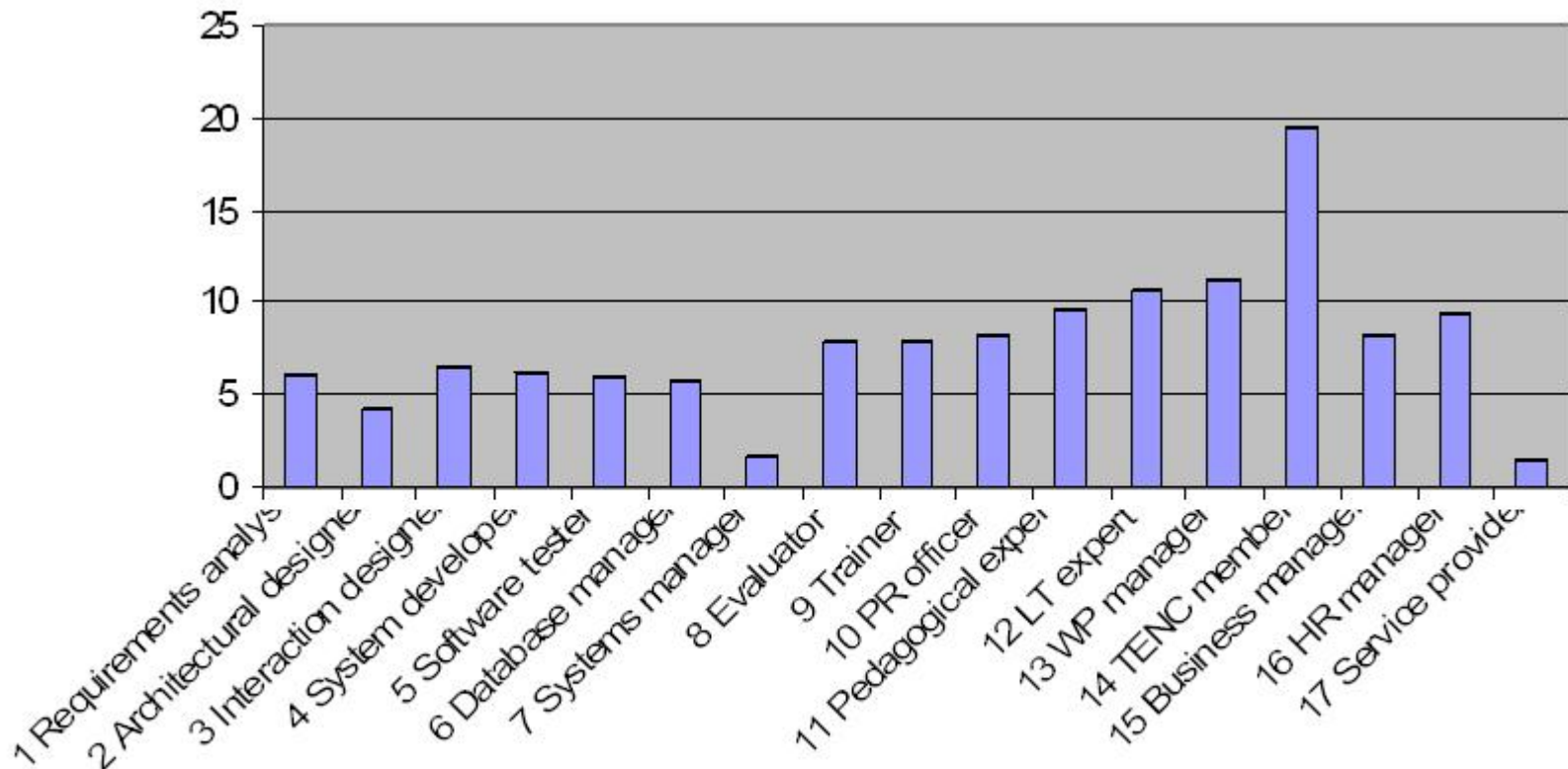
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5. Training Needs

- Lowest proficiency levels
 - deployment (Systems manager, Service provider, Database manager)
 - design (Architectural designer)
- Best proficiency level
 - TENCompetence member
- For each competence - consider how many experts are needed to plan trainings



6. Expert Facilitators



7. Competence Networks

- Competence network – purposes
 - collect and share relevant resources
 - annotate and rank them
 - discuss on open issues
 - find colleagues for collaboration
 - get guidance and advice from experts
 - organize and attend live events



Personal Competence Manager System

- Built using the Open Source Liferay Portal
- Integrates a set of prototype web applications
- Provides substantial built-in support for community based applications
- Can be integrated into enterprise systems



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TENCompetence Components

- Competence Authoring Tool
- Competence Assessment Tool
- Personal Development Planner
- Personal E-portfolio
- Learning Path Editor
- Learning Design Toolset
- LearnWeb 2.0



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Personal Development Planner

- PDP positions the learner in relation to a target competence profile
- PDP assists in identifying and making good short comings in their skills set
- PDP delivers a wide-ranging choice of competence profiles
- Competence proficiency levels are based on the EU Qualification Framework (EQF)

Personal Development Planner

The screenshot displays the 'TENCompetence PDP Tool' interface. The main window is titled 'Stef's PDP - 1' and features a navigation bar with four tabs: 'Select goal', 'Self assessment', 'Plan activities', and 'Perform'. The 'Plan activities' tab is currently active. The interface is divided into two main columns: 'Competences you need to work on' and 'Activities you still need to complete'. The 'Competences' column lists seven items, with the seventh item, '7. Ability to interpret and evaluate impacts of floods', highlighted. A tooltip for this item shows its status as 'You have not yet reached the required level for this competence, but you have selected activities to attain the required level.' The 'Activities' column lists several tasks, including '7.2. Knowing to develop and apply a DSS for flood management' and '5.2. Knowing how to model catchment processes'. On the right side, there is a 'Public blogs' section with several entries, including 'Today Activity 6.5' and 'Last week Activity 6.5'.

TENCompetence Foundation

- Provides ownership of the code base and manages the release schedule
- Facilitates and provides leadership to the TENCompetence developers network
- Facilitates the TENCompetence user network
- Further develops the TENCompetence vision to guide future work

TENCompetence Participation

- **Subscriber – free membership**
 - to receive news and updates on TENCompetence software and Foundation activities
- **Full member – paid subscription**
 - to take a more active role in contributing to the maintenance, development and continued use of the system



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