

# D4.4 Report on the results of the evaluation of the Cycle 2 pilots

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Building the European Network for Lifelong Competence Development

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## **D4.4 Report on the results of the evaluation of the Cycle 2 pilots**

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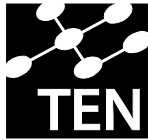
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Building The European Network for Lifelong Competence Development

Building the European Network  
For Lifelong Competence Development

TENCompetence IST-2005-027087

## Project Deliverable Report

### D4.4 - Report on the results of the evaluation of the Cycle 2 pilots

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<b>Abstract (for dissemination)</b>	This document presents the evaluation results of the Cycle 2 new pilots: UNESCO-IHE Water Management and Agora - Competence Development of Adults for their Social Inclusion. Both pilots make use of the second version of the TENCompetence infrastructure delivered in June 2008. Moreover, this deliverable explains the progress achieved on the ICT Teacher Training, the Special Education Bulgaria and the Digital Cinema piloting scenarios.		
<b>Keywords List</b>	Testing and Validation, Pilots, Cycle 2, usability, Competence Development Programmes, Integrated Infrastructure		

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# 1. Introduction

The TENCompetence evaluation work is organized in three Cycles. The role of the pilots in Cycle 1 was to take the initial TENCompetence common framework and use it in preliminary pilots which focussed on 'proof of concept'. This 'proof of concept' was achieved with two pilots devoted to two different subject areas (Moghnieh et al., 2008a; Moghnieh et al., 2008b; Schoonenboom et al., 2008): Digital Cinema and Training of professional teachers in the use of Information and Communication Technologies (ICT). Cycle 2 has the character of 'usability pilots', these pilots are expected to validate that the solutions developed to make the TENCompetence concept a reality are usable, that is to say that they provide effective solutions to real problems in authentic contexts. Finally, the plans towards Cycle 3 involve also external parties (associate partners) in the pilots, which will then represent 'business models demonstrators' (see D4.5).

**D4.3 (Hernández-Leo et al., 2008) reported on the implementation and evaluation plans of Cycle 2 pilots.** WP4 has been working on the different scenarios available for the TENCompetence pilots throughout the year 2008. However, the implementation and evaluation of the new larger pilots (UNESCO-IHE Water Management and Àgora - competence development of adults for their social inclusion) has been prioritized. **This deliverable (D4.4) focuses on the evaluation results of the Water Management and the Àgora pilot while it also reports on the progress achieved on the ICT Teacher Training, the Special Education Bulgaria and the Digital Cinema pilots.**

## 1.1 *Executive summary of the pilots*

The TENCompetence infrastructure is validated in a number of different pilots, representing the variety of contexts in which lifelong competence development takes place:

### **Water management: FMM pilot:**

- Usage of the Personal Development Planner (PDP, rich client) tool (Personal Competence Manager, PCM, for the expert)
- Effort in the description of the training in terms of competences
- Own server, 90 learners
- Professionals in the area of water management
- Contextual and cultural implications of the audience, Southern world
- Structure not fully free for learners (encourage to think by themselves about their learning path, own motivation), intermediate step towards a second pilot in Cycle 3 where learners will have the opportunity to build their own learning plans
- Start: 22 September, Finish: 23 November 2008 (some delay because of some technical problems at the beginning, but they were solved and the learners became very active)
- Reporting of the evaluation results: end of December 2008.

### **Àgora pilot**

- Usage of PDP tool (rich client), IMS Learning Design (LD) runtime, (PCM, ReCourse for the expert)
- Challenging: basic levels of proficiency, different levels of education (mostly not highly educated people, but intrinsically motivated)
- More than 100 learners (>130 persons involved, experts, volunteers...)
- Learners are free to create their own learning plan of several different competence profiles (on the topics of "English language", "ICT literacy")
- Setting: computer room available in La Verneda (Àgora), learn/work from home

- Cycle 3: larger scale (duration), new tooling
- Start: 15 September, Finish: 31 October 2008
- Reporting of the evaluation results: end of November 2008.

#### **ICT Teacher Training pilot**

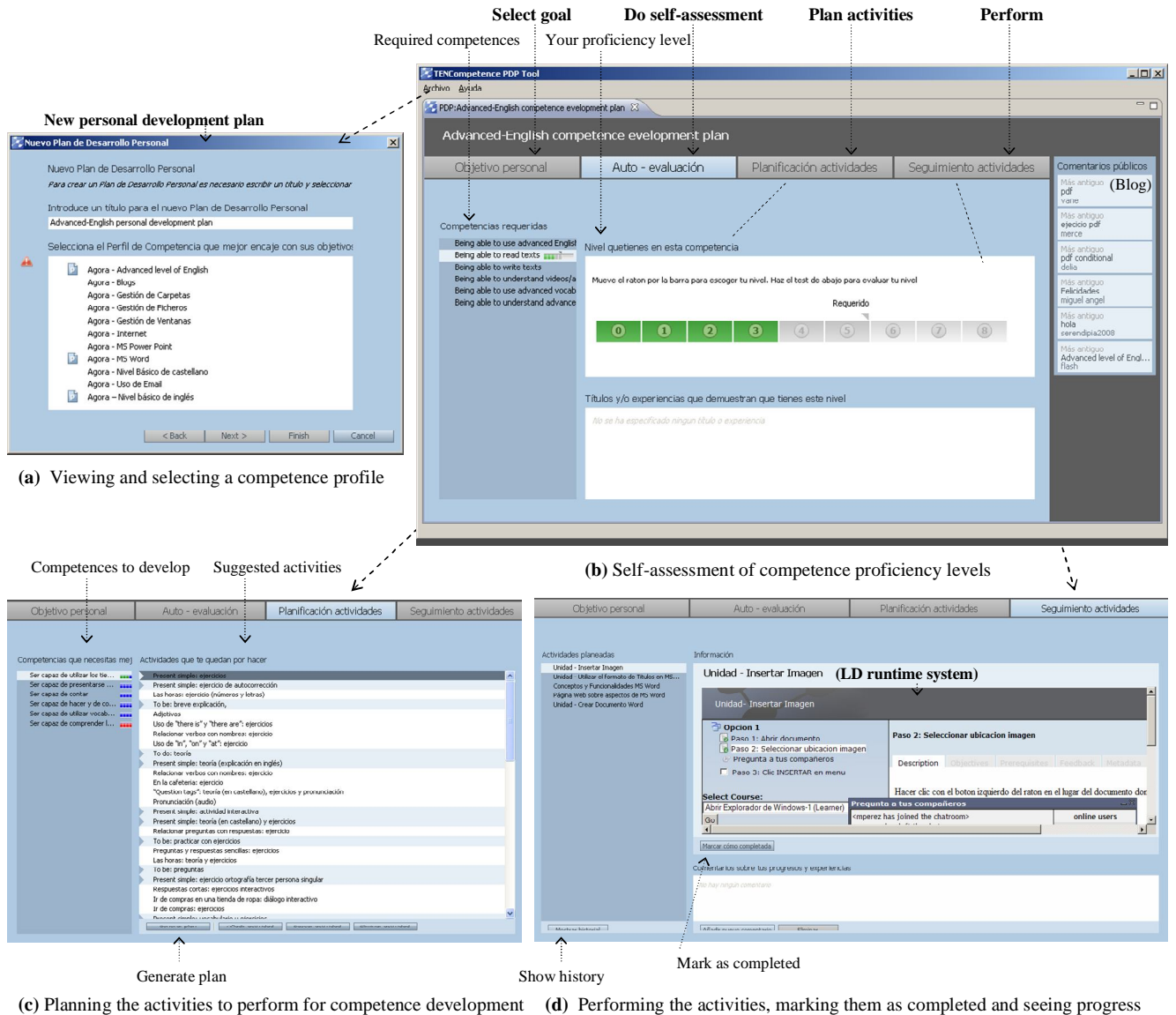
- PCM for the learners and for the experts (some participants also used the PDP tool)
- Teachers as professionals, develop competences related to the application of ICT in their professional activities (teaching)
- PCM also used as a “meta-tool” by learners “how to formulate competence-oriented learning paths, i.e., CDPs using the PCM as the tool that supports them in this formulation”
- More than 300 learners
- Start: 15 June, Finish: end October 2008 (but not all the learners are active at the same time)
- Sub-pilot: **Special Education Bulgaria (SEB)**, PCM for the learners and the experts, special education competence development, collaboration with an Associate Partner, 15 learners.
- The analysis of the data will be done in January 2009. The results will be taken into account when revising cycle 3 full pilots scenarios, which will included the ICT Teacher Training pilot (to be reported in ID4.12 as planned in DIP-4).

#### **Digital Cinema pilot**

- This pilot was initially planned to use ELGG as a GUI container,
  - tools of the GUI container,
  - PDP tool (web client), LD runtime, “link” tool, TENTube
  - (PCM, ReCourse for the expert)but because the web client of the PDP, the “link” tool and the TENTube were not in the desired stage so as to be used in the pilot and due to the new integration strategy agreed in the project (using Liferay), the plans for the DC pilot has been revised.
- Professionals in the area of audiovisual production (broader scope than Cycle 1 DC pilot)
- Learners are free to create their own learning plan
- Plan revised: it will start in February 2009
- Open to any person interested, need of a long duration.

## **1.2 Overview of the TENCompetence tools used in the Water Management and Àgora pilots**

A second version of the TENCompetence infrastructure was delivered in June 2008. This version consisted of the TENCompetence server and a client software package, called the ‘Personal Development Planner’ or PDP for short (Martens & Vogten, 2008; Koper, 2008). The pilot participants used the PDP as the central tool for the creation of their own personal development plans by selecting a competence profile, stating their goal and motivation, following a self-assessment, creating their learning plan and performing the activities in the plan (see Figure 1).



**Figure 1. TENCompetence Personal Development Plan functionalities as experienced by Àgora pilot participants (in Spanish, see also section 2.2.2). A similar version (in English was used by the Water Management pilot, see section 2.1.2)**

Figure 1 (a) shows the PDP facility that allows learners to select a profile comprising the set of competences that define the requirements for mastering a specific function (in the case of the Àgora pilot the abilities related to ICT and English language). After specifying the goal and motivation of having selected a competence profile, learners could do a self-assessment as illustrated in Figure 1 (b). The self-assessment consists in a likert scale that enables learners to indicate a proficiency level for each competence. The competences have a target proficiency level that must be attained to meet the requirement of the competence profile. Figure 1 (c) shows the “plan activities” PDP functionality. Clicking the “generate plan” button the PDP automatically suggests a list of activities associated to the competences that the learner needs to develop. This functionality takes into account that a learner may have a proficiency level beyond the targeted for the profile. When this is indicated in the self-assessment for one or more competences, the generated plan does not include the activities devoted to the already mastered competences. However, the current version of the PDP does not consider the specific proficiency level (when lower than required) for a more accurate recommendation of activities.

The planned set of learning activities can be performed in the PDP as illustrated in Figure 1 (d). The activities are shown on the left hand side panel of the screen. The right hand side provides details about the selected learning activity. This includes a descriptive text of the learning activity, which may include hyperlinks to external learning environments. In the Àgora pilot some activities devoted to ICT competences were run in the TENCompetence LD runtime system (Sharples, Griffiths & Scott, 2008). The LD system is compliant with the IMS Learning Design specification (Koper & Oliver, 2005) and facilitates the provision of structured activities (similar to courses) that learners can follow as part of their competence development. Figure 1 (d) shows how the LD runtime system can be accessed through the PDP for the activities that make use of it. The PDP facilitates learners to reflect on the progress made by allowing them to mark an activity as being completed. The completed activities disappear from the list of activities to be performed (left hand side panel) but they can be checked again by clicking the button “show history”. Learners can also post public comments using the blog available in the PDP.

In addition, experts have used the PCM client for creating the competence profiles and the ReCourse editor for authoring the IMS LD units of learning (see sections 2.1.2 and 2.2.2).

### **1.3 Summary of the evaluation strategy**

As explained in detail in D4.3, the results of cycle 1 pilots led WP4 to make several choices in the formulation of the evaluation strategy for cycle 2 pilots. The role of the pilots in cycle 1 was to take the initial TENCompetence common framework and use it in preliminary pilots which focused on 'proof of concept'. This 'proof of concept' was achieved with two pilots devoted to two different subject areas: Digital Cinema (DC) and competence development of professional teachers in the use of Information and Communication Technologies (ICT). In both pilots there was a group using the first TENCompetence realize (the PCM) and another (control) group using the Moodle learning environment. All participants could choose their own learning path. The PCM offered additional supporting elements: hierarchical organization of elements, local position of chat, rating and forum, marking elements as attained or completed, and element descriptions. The following results had several implications for the evaluation approach with the cycle 2 pilots:

- First, the stronger feeling of being in control in the PCM group in the ICT pilot plus the higher number of people that passed the competence assessment in this group, was found to be related to the hierarchical organization of resources into competences that the PCM provides. Therefore, it was seen as important to keep using the quantitative approach and questionnaires in the evaluation plan of cycle 2 pilots, to see whether these results are obtained in subsequent pilots as well. Of course the approach should include the new functionalities of the tooling developed in the project.
- Second, the target group of cycle 1 pilots was busy professionals. In the DC pilot, the most important reason for dropping-out was lack of time. In the ICT pilot, some PCM functionalities were seldom used, and lack of time was provided as the main reason. Since this fact might occur again in other pilots, WP4 decided to adapt the evaluation strategy with a focus less on whether people completed the competence development plan, but rather focus on what they have learned from the resources used through the TENCompetence infrastructure and models with which they did work, and how does this influence their competence level and future plans. This may require a more qualitative approach depending on the circumstances of each pilot. Moreover, the planned evaluation approach focuses not only on the lifelong learners (participants) but also on the organizational (providers) implications.



The two new piloting scenarios (distributed Water management professionals of the Southern world, Àgora participants - not highly educated but with a strong intrinsic motivation to learn) also give TENCompetence the opportunity to understand the effects of the project outcomes in the context of the realities of each pilot. The Àgora context is specially challenging as the lifelong learners involved have typically low educational profiles and have not always the necessary confidence to take the primary responsibility for the planning and performance of learning activities. In addition, we expect that these learners in general have low computer skills, which are probably too low to make sensible use of the TENCompetence infrastructure. Thus, we would expect that it would be much harder, if not impossible, to achieve lifelong competence development in the Àgora pilot, as participants may not have (1) the necessary planning skills for self-organized and self-directed learning, (2) the necessary computer skills, and (3) in a non-formal learning context, it will not be possible to oblige participants to acquire these skills or to continue competence development.

Chapter 2 of D4.3 explains the evaluation plan for Cycle-2 pilots. These pilots contain separate research questions for providers and learners, which are based upon the following four aims:

- Develop a better understanding of the effects and relations of competence profiles, learning processes, and the tools that are involved in competence development.
- Understand the organization of competences within learning networks and communities of learners.
- Develop a clearer picture on the usage of tools for competence centred learning, alternatives that are used by the learners, as well as the connections between the tools.
- Develop a better understanding of the organizational implications of competence centred learning for training institutions, and content providers.

And the two main research questions formulated for the Cycle-2 pilots are:

- How do people understand, define, and use competences as part of their learning experiences?
- How do the tools provided by the TENCompetence Infrastructure interlink and how are the relations of the tools experienced by the users in different settings?

The specific research questions are:

#### ***Providers***

How do providers support social interactions related to competence development?

- Which tools do they use for what type of support for social interactions?
- How do they connect tools to competences?
- To what aspect of competence development do they connect which type of support for social interactions?

How do providers formulate competences, competence development plans, actions and resources?

- At what level are competences defined? How many?
- How can the competences they define be classified in the Cheetham and Chivers classification?

What does the change from a content-based perspective to a competence-based perspective entail?

- What impact does the change towards competence-based working have on
  - the training offered
  - the organization of the provider

### *Learners*

How do learners use:

- The competences, competence development plans, actions and resources?
- The support for social interactions related to competence development?

Sub-questions with each of these questions:

- Which tools do they use, how often and what for?
- To what extent does the way in which learners use these tools match the intention of the provider?
- How do learners evaluate the usefulness of the tools?

## **1.4 Structure of this document**

The remaining of the deliverable is organized as follows. Chapter 2 documents the description of the implementation of the Water Management and Àgora pilots as actually done in their execution. This information is complemented with the Appendices 1 and 2. The evaluation results of Cycle 2 pilots achieved so far are presented in Chapters 3, 4 and 5. In particular Chapter 3 focuses on the research questions formulated to understand the organisational implications (providers) of TENCompetence. The results regarding the learners participating in the Water Management pilot are presented in Chapter 4, while Chapter 5 discusses the results of the Àgora pilot. Chapter 6 includes the main recommendations for future developments and the general conclusion of this document. Finally, Appendix 3 reports the progress achieved around the ICT Teacher Training, SEB and Digital Cinema pilots.

## 2. Actual implementation of the Water Management and Agora pilots

D4.3 provided the implementation plan of cycle 2 pilots. With the aim of providing a self-contained document and to report the actual implementation of the pilots, the descriptions of the Water Management and the Agora pilots are included in this chapter.

### 2.1 Water Management: FMM pilot

The following sections include a description of the Agora pilot as finally executed and the main issues related to the implementation of the pilot.

#### 2.1.1 Description of the pilot implemented

**Table 1. Summary of the FMM pilot description**

<b>WaterManagement Pilot FMM01</b>	
<p><b>SHORT DESCRIPTION:</b> The overall goal of the “Flood Modelling for Management” (FMM) competence development program was to support water professionals in the development of the competences that make them capable of maximizing economic and social well-being in an equitable manner (without compromising the sustainability of their ecosystem) by using catchment, river basin and urban flooding models. FMM run with a little bit of rigid structure. This is in contrast to the proposed run in 2009 in which learners will have absolute freedom in choosing their learning path. The use of the two different pedagogical models will help in evaluating the added value of the TENCompetence project. The online competence development program FMM will be run two times (FMM01 during Cycle 2 in 2008 and FMM02 during Cycle 3 in 2009) using the TENCompetence infrastructure. The competence development program was offered free of charges in exchange for evaluation activities. Yet a basic entrance level to participate in the program was set. A preference was given to applicants from the Nile Basin countries to bring synergy with the activities centred around the coming pilot component Decision Support Systems (DSS01, May 2009).</p>	
<b>USER GROUPS</b>	<p>UNESCO-IHE offers – besides its MSc programmes and several kinds of short courses – on-line training for water professionals in the field. These water professionals can come from the same organisations, can be groups or teams, or individual people, seeking competence development in their professional water management career from an academic institute.</p> <p>The FMM pilot consisted of individual people with a need to develop competences to perform their job better, for whom receiving some kind of formal certificate is crucial in their career perspective (in many developmental countries certificates, degrees and diplomas bring improvement in positions and salaries), and for whom the choice of doing an on-line training is a personal choice (e.g. they are not sent by their boss). The user group in the FMM pilot was young-mid career water professionals, interested in competence development in flood modelling, as well as contributing to a community in flood modeling expertise. Because we have an experienced, adult and geographically spread group of learners we wanted them to bring in and exchange their knowledge and experiences. There can be a big variation within the target group, e.g. with respect to the entrance level. The minimum entrance level is Bachelor in Water Science or Civil Engineering. The participants were expected to be between 25 - 45 years old.</p> <p>Within the pilot there might possibilities to treat the pilot participants as a group, who have to cope with a difficult situation (e.g. a certain risk of flood in a given area) in which group collaboration increase the chance of finding optimal solutions and strategies.</p> <p>Especially for the participants from the Nile Basin area, the pilot environment may enable them to build up a knowledge base, which can be shared, updated, improved and used for training purposes by certified participants. Within this approach physical organizations (within or between different Nile Basin countries) are connected via the virtual relationships between professionals within the community of interest. The community of flood modelling professionals (certified and non-certified) will become connected to the</p>



	<ul style="list-style-type: none"> <li>- Setting up a Community.</li> <li>- Providing a Community with information on Competence profiles and/or Competences</li> <li>- Providing a Competence with a Competence Development Plan or separate Actions.</li> <li>- Providing Actions with Resources.</li> </ul> <p>Creating personal development plan for a specific user. Competence development plans are associated to competences and competence profiles using the PDP. Users may adopt and adapt competence development plans existing in the system.</p>
<p>AIM AND EXPECTATION OF THE PILOT</p>	<p>This first pilot is for UNESCO-IHE quite important, since it confronts them with a new (competence based) approach of education, as well as a new technical infrastructure to support life-long learning, with the potential to be enlarged, extended and implemented for many more educational and life-long learning supporting activities of UNESCO-IHE all over the world.</p> <p>The aim of the pilot is to evaluate the (available) TENCompetence environment and pedagogical model in its support of improving competences in Flood Modelling and Management for participants.</p> <p>The pilot is working in a non-European environment where the effectiveness of the infrastructure in a non-Western cultural context can be validated. The pilot involves making the link between higher education and Competence Based Learning Networks. Learners' results and satisfaction are expected to be higher in the second version of the pilot.</p>
<p>CONTEXT</p>	<p>Within the scope of this component of the water management pilot an online program Flood Modelling for Management (FMM) was developed and run using the TENCompetence (TC) infrastructure and pedagogical models. The FMM pilots enable UNESCO-IHE to improve its ambition to provide water education to a wider community through e-learning. UNESCO-IHE has considerable experience and material to validate the TENCompetence objectives. A major activity of the pilot was to convert educational material on FMM suitable to be used in the e-learning environment in such a way that it is competence-oriented. As mentioned above, the FMM will be run two times (Cycle 2 in 2008 and Cycle 3 in 2009) using the TC infrastructure.</p>
<p>COMPETENCE PROFILES AND COMPETENCES INVOLVED</p>	<p><b>Competence Profile:</b> FMM – Flood Modeller for River and Urban Floods (see also Appendix 2)</p> <p><b>Competences and sub-competences:</b></p> <ol style="list-style-type: none"> <li><b>1. Understanding the Competence concept</b></li> <li><b>2. Understanding the context of flood modelling</b> <ul style="list-style-type: none"> <li>o Knowing the context of flood modelling within the society and the environment</li> <li>o Knowing the context between Hydroinformatics and Flood Modelling – learning</li> <li>o Judge, consider and weight ecological issues related to flood management – learning</li> <li>o Learn how to locate flood resources on the web</li> </ul> </li> <li><b>3. Ability to identify causes of floods</b> <ul style="list-style-type: none"> <li>o The ability to identify meteorological inputs leading to floods</li> <li>o Knowing what aspects of and in what way rainfall – runoff processes influences flood generation</li> </ul> </li> <li><b>4. Ability to analyse and understand flood processes</b> <ul style="list-style-type: none"> <li>o Knowing to formulate mathematically the free surface flow processes</li> <li>o Knowing the principles of modelling river floods</li> <li>o Knowing the principles of modelling urban floods</li> </ul> </li> <li><b>5. Ability to model floods</b> <ul style="list-style-type: none"> <li>o Being able to model rainfall-runoff</li> <li>o Knowing how to model catchment processes</li> <li>o Being able to identify the flood routing technique to be applied for a specific case study</li> <li>o Knowing the principles of data-driven modelling</li> </ul> </li> <li><b>6. Ability to simulate floods</b> <ul style="list-style-type: none"> <li>o Being able to do hydrological simulations (HEC-HMS + flood routing)</li> <li>o Being able to do hydrodynamic modelling (Mike11)</li> <li>o Being able to simulate urban flooding</li> <li>o Being able to simulate floods using data-driven modelling</li> </ul> </li> </ol>

	<ul style="list-style-type: none"> <li>○ Being able to do flood forecasting</li> </ul> <p><b>7. Ability to interpret and evaluate impacts of flood</b></p> <ul style="list-style-type: none"> <li>○ The ability to assess uncertainties of model predictions</li> <li>○ Knowing to develop and apply a DSS for flood management</li> </ul>
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### 2.1.2 Implementation of the pilot

The implementation plan of the first “Flood Modelling for Management” pilot was carried out as follows:

- April-August 2008, the announcement of the pilot on the UNESCO-IHE website and call for applications, for water professionals from all over the world
- First half of September 2008, analysis of application, admittance and registration
- In parallel with the two above mentioned activities during April-June 2008 the Flood Modelling for Management (FMM) module was mapped into competences
- July-September 2008, the content and actual implementation/integration of the FMM activities into the TENCompetence tools ( PCM and PDP) was realised along with the development of the required resources and units of learning, and creation of competence development plans
- 3<sup>rd</sup> week of September 2008: learner registration and announcement of the registration details (user names and password was sent out to participants)
- 22-23 September 2008 – conducting pre-evaluation questionnaire
- 22 - 23 September 2008 sent out, by e-mail material for the participants on how to install and use the TENCompetence tool (PDP)
- 24 September 01 December – the FMM pilot run
- 01-02 December - conducting post evaluation questionnaire
- 05 December 2008 data collection for evaluation.

#### Registration of the participants:

The registration of the participants took place one week before the start of the pilot (15- 22 September) and it has been realised by the UNESCO-IHE team. The participants registered to the pilot were required to have a background in Civil Engineering, Agricultural Engineering or Environment in particular in water related fields, or in Mathematics or Physics, and with work experience in Water related areas. More than 110 people from 43 countries, applied for the pilot and 90 of them were granted access to the PDP.

#### Actual number of participants:

- 90 participants registered to the pilot in order to develop Flood Modelling for Management competences.
- 4 experts provided technical and content support to the users.
- 3 other UNESCO-IHE staff collaborated and gave content and provide expert support to the participants.

All of the pilot participants are highly trained professionals, minimum at BSc level and mastering the use of the PDP was not a problem. Their level of English was good.

#### Training sessions:

There were no training sessions per say offered. The entire content was made available according with a learning path, and the learning resources were made available through the PDP, to the participants. They perform the learning plan using the PDP. In case they needed support they contacted the UNESCO-IHE pilot coordinator, who gave them support or asked the other experts involved in the pilot to provide guidance.

Dates of actual implementation:

22/09/2008: Start of the first FMM Pilot

02/12/2008: End of the Pilot

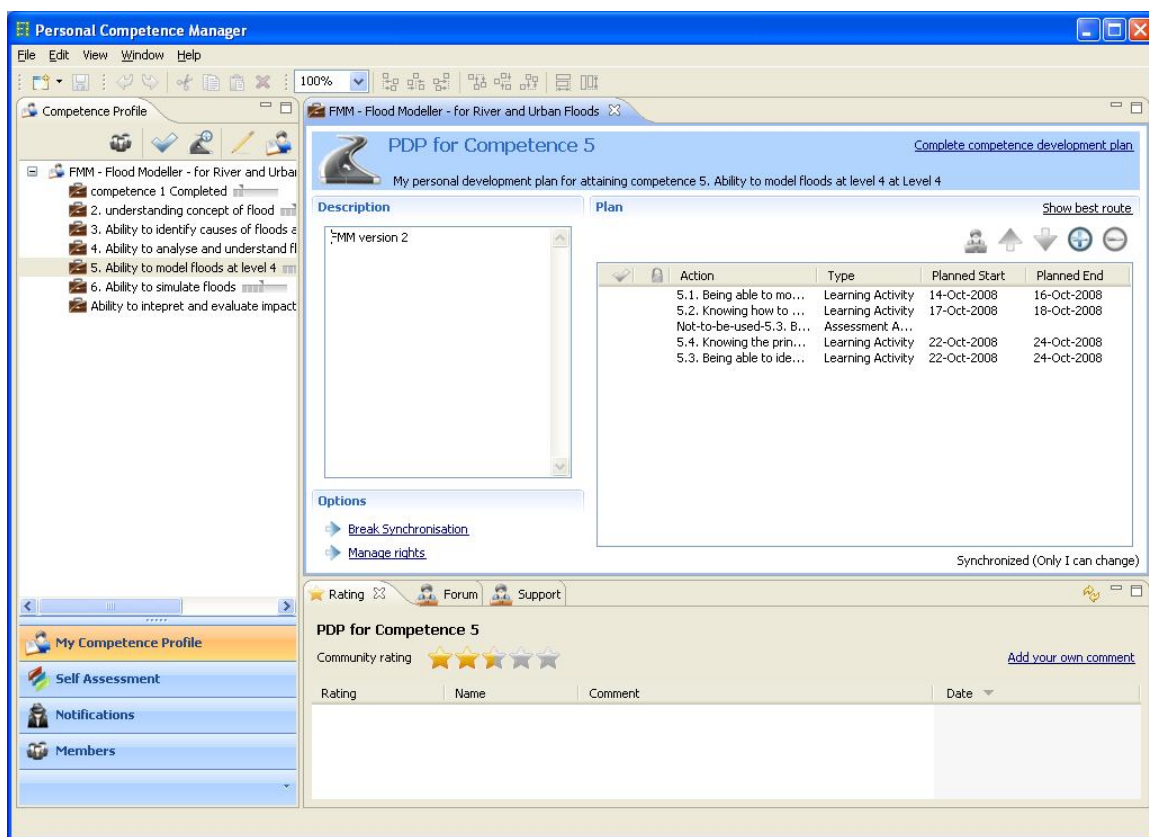
The second pilot is expected to run in 2009 (around May) for a period of 10 weeks.

Workload of learners:

According to the European standards the pilot is evaluated to an equivalent of 5 ECTS and a Study load of 140 hours.

Tools used:

*PCM (Personal Competence Management)*: This tool was used by the pilot coordinator to create the competence profiles and competences, define the activities for each competence as well as a tool for uploading the resources associated with each activity (see Figure 2).



**Figure 2. Screenshot of PCM tool**

*PDP (Personal Development Plan)*: This tool was used by the content developers to describe the content of each activity and to point out which resources will be used during the activity. The participants used the PDP as the central tool for planning their learning process and accessing the different activities available (see Figure 3 and Figure 4). All participants were encouraged - and for certain activities it was obliged - to make use of the blogging facility. See Figure 3 for the view on Activity blogging within the PDP, and Figure 5 for the webpage showing (part of) the overview of all Bloggings within the pilot.

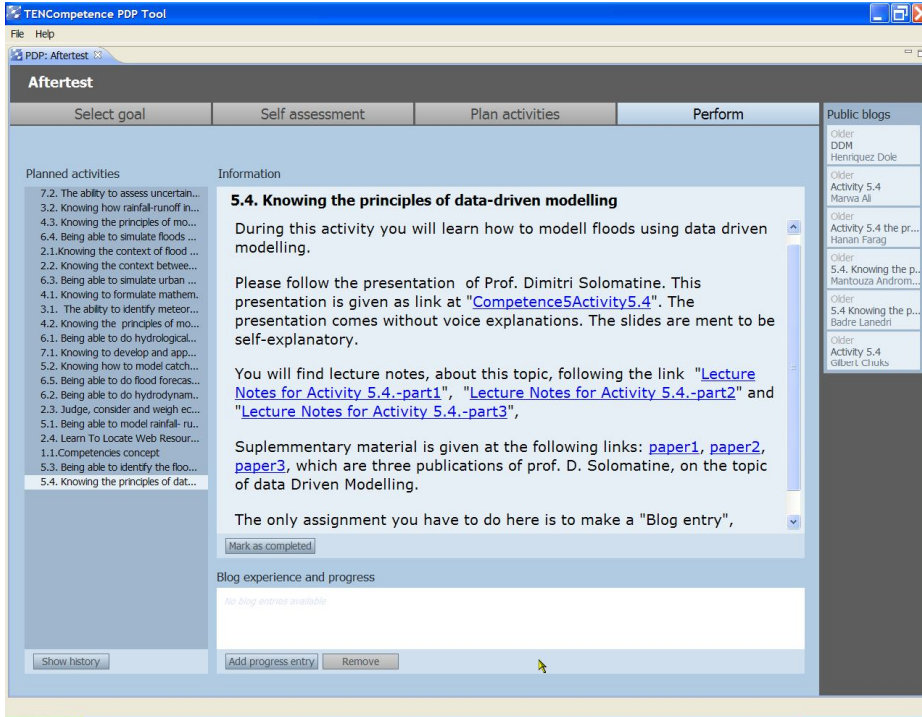


Figure 3. Screenshot of PDP tool

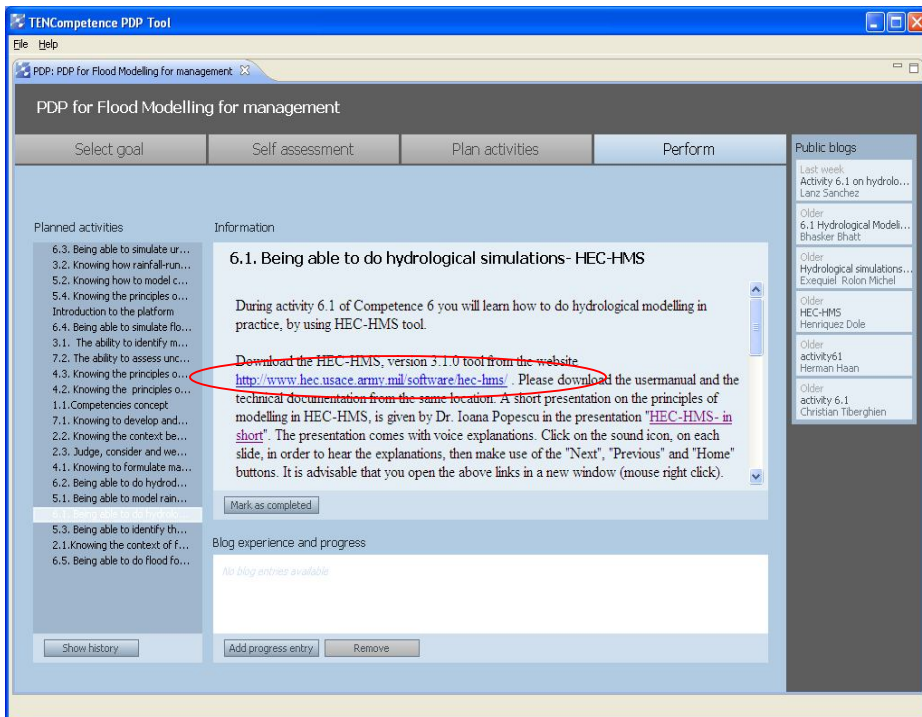


Figure 4. Screenshot of PDP tool that shows the link to a resource that will be carried out during that activity



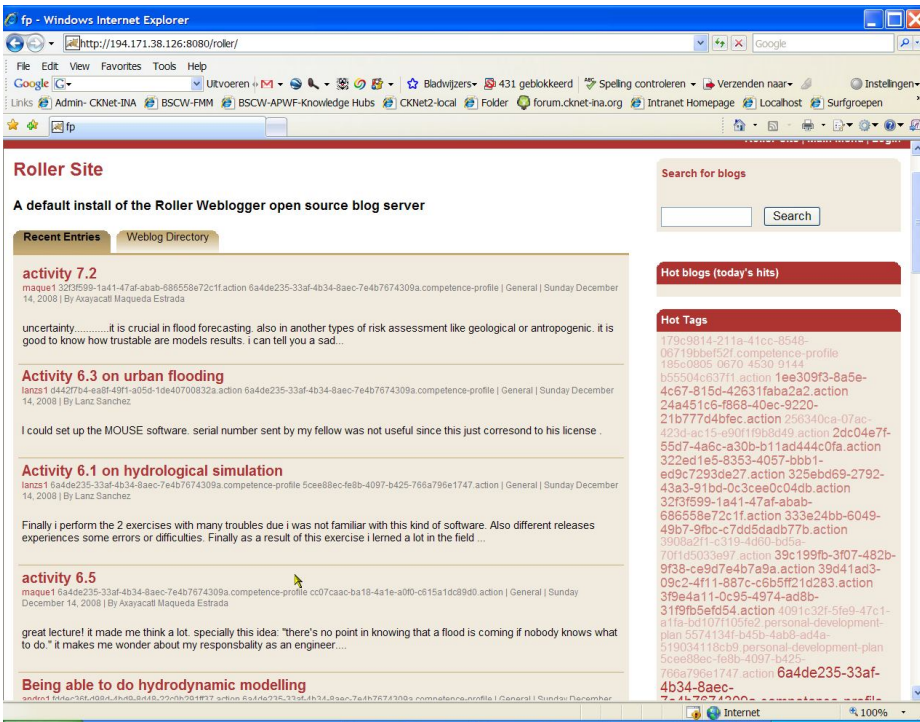


Figure 5. Screenshot of Blog overview screen

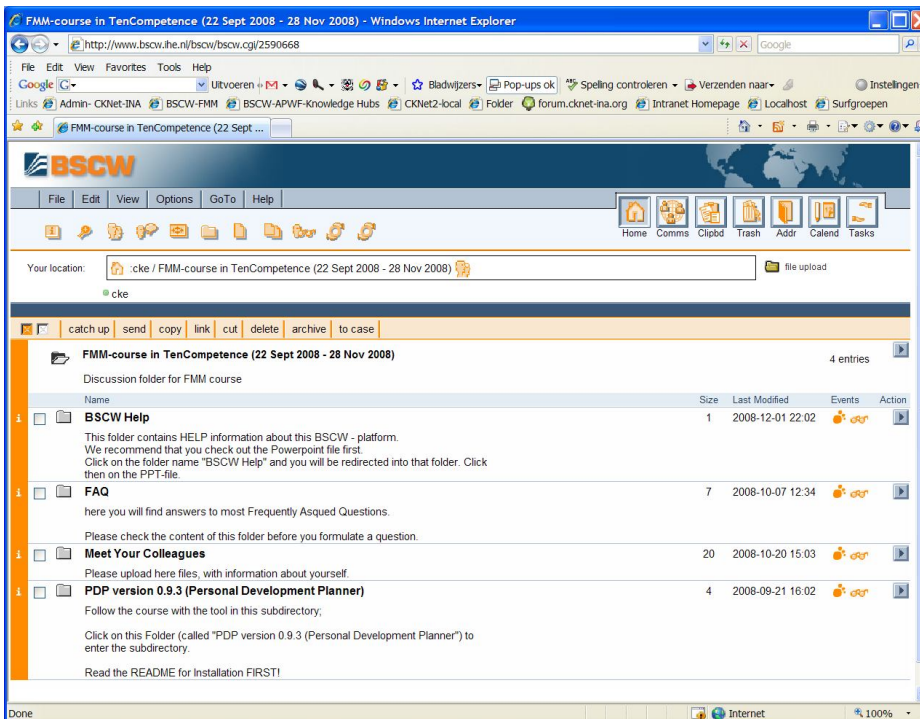


Figure 6. Screenshot of BSCW collaborative platform overview screen

The original 'forum' functionality that was available in PCM, but not in PDP, was really missed by the pilot implementers. These kind of functionalities supports the community building and knowledge exchange. It appeared that some participants created an email list (out of the addresses that were received through the email of the pilot coordinator), and started to send around emails to everyone in order to get to know each other and to communicate about the pilot start. In order to redirect this inefficient communication channel, and to fill up this gap, as well as to have a dedicated location for specific downloads, a collaborative platform site (BSCW) was developed at the last moment, based on an existing platform license within UNESCO-IHE (see Figure 6). This had though the uncomfortable issue of extra login.

#### Problems

- During the first three weeks there were quite some troubles for participants relating to downloading PDP, use of JAVA, firewall settings and (invisible) use of proxy server. But almost all were fixed. Only very few decided to stop with their participation in the pilot, due to insufficient internet bandwidth or unreliable connections.
- At the beginning, there were some database inconsistencies that lead to all kinds of different errors, e.g. not being able to save activities descriptions and resource links in PDP.
- PDP only showed a max of 6 blogs per activity, although there were sometimes many more bloggings. It is therefore that the pilot coordinator sent an email, during the pilot, to all participants to inform them on the possibility to go to the overview webpage (see Figure 5).
- In general it is highly uncomfortable not to be able to delete competence profiles, competences, activities or resources from the database.
- In some of the countries the internet connection was low and therefore participants were not able to benefit from the pilot.
- When a participant added evidence of her/his mastering of a competence this appeared in the evidence window of all participants. This bug has been reported in Bugzilla.

#### Finalisation

The pilot is rich in content and in requirements to be fulfilled in terms of assignments. The assignments had to be finalised by the learners in form of reports, which are then checked by the experts involved in the pilot. Only those participants who finalised all their assignments did receive the *certificate* of successfully completing the pilot. Out of 90 participants 30 could not have access to the whole pilot due to their low Internet connection and 10 could not finalise their assignments, therefore 50 received the certificate.

## 2.2 Àgora pilot

The following sections include a description of the Àgora pilot as finally executed and the main issues related to the implementation of the pilot.

### 2.2.1 Description of the pilot implemented

Table 2 collects the summary of the Àgora pilot description.

**Table 2. Summary of the Àgora pilot description**

<b>Àgora pilot</b>	
<p><b>SHORT DESCRIPTION:</b> The general goal of the Àgora pilot is to test and validate the TENCompetence infrastructure and pedagogical concepts in their ability to support the competence development and lifelong learning of adults in languages and information and communication technologies (ICT), which are key areas in Àgora education. In this sense, Àgora intends to facilitate the inclusion of adults into the active fabric of current society, in which ICT and languages are of the utmost importance in order not to be left out. In the first version of the pilot which was carried out between 19/09/2008 and 31/10/2008, Àgora participants had the opportunity to reinforce and improve their competence level in ICT and English (basic and advanced levels) according to their needs and interests. A second version of the pilot will run in the first quarter of 2009. It will further develop competences related to ICT and English language. In addition, this pilot will focus on the development of competences in Spanish language in order to enable the high numbers of immigrants in the school to take advantage of TENCompetence infrastructure and thus guarantee a broader diversification in the user profiles.</p>	
<b>USER GROUPS</b>	<p>The Association of Participants Àgora as part of La Verneda School for Adults is an organization dedicated to the non-formal training of adults. Àgora participants are typically organized in groups who want to share knowledge, points of view to develop their insights and competences in the field. The individual people involved are mainly characterized by their intrinsic motivation to learn and develop competences. The wide range of adult learners who participated in the first pilot varies in terms of age, gender, but also in the variety of needs and interests. In the second version of the Pilot, the diversity of the user groups will be accentuated as the Spanish competences to be developed are especially addressed to immigrants in order to acquire new competences to find a job, to perform their job better or basically to be better integrated in Spanish society.</p>
<b>SETTING</b>	<p>Àgora pilot takes place in the computer room of the La Verneda, which was reserved for TENCompetence users from September 19<sup>th</sup> to October 31<sup>st</sup> 2008 every day and during a total of 14 weekly hours. A TENCompetence expert was in charge of each of the self-training session to assist the users with any technical or content issue. In addition, the participants are allowed to use the computer room whenever it is free, including week-ends and after the end of the pilot. Besides, the majority of the participants who have Internet installed the PDP tool at home in order to continue developing their competences.</p>
<b>ROLES</b>	<p>The roles involved in the pilot include:</p> <ul style="list-style-type: none"> <li>• Staff installing the software in the school: two people from UPF</li> <li>• Content developers: four people from Àgora and three supporting people from UPF</li> <li>• Competence providers: two people from Àgora</li> <li>• Competence assessment provider: same as content developer</li> <li>• Staff providing technical support to learners: two people from Àgora</li> <li>• Participants in the first Pilot: <ul style="list-style-type: none"> <li>- 120 learners developing English or/and ICT competences.</li> <li>- 7 experts (Àgora staff) received TENCompetence training in order to provide technical and content support to the users in the different weekly sessions.</li> <li>- 13 ICT collaborators (members of the ICT school commission) and other Àgora staff interested in using the tool.</li> </ul> </li> <li>• Staff collecting data from questionnaires: one person from Àgora</li> <li>• Researchers observing the usage of the software in the computer room and</li> </ul>

	<p>conducting focus groups: three people from UPF and five people from Àgora.</p> <ul style="list-style-type: none"> <li>• Experts or study advisors: the persons from Àgora that develop the content</li> <li>• Pilot evaluators: mainly persons from UvA, UPF and OUNL</li> </ul>										
TOOLING	<p>The tooling that was used for the first pilot is: the PCM (to create the competence profiles and the competences), ReCourse (to create the UoLs), PDP Rich Client (to create activities and associate them to the competences and also for the users to create their Competence Development Plans) and the LDRuntime (to run the different UoLs proposed). In the second version of the pilot the Overview tool and the LearnWeb2.0 will be also applied. We are also planning to use the LinkTool in order to manage the user accounts for the UoLs.</p>										
USAGE PROFILES	<p>The usage profiles applied in the first version of the Pilot are as follows:</p> <table border="1"> <thead> <tr> <th>Usage profile</th> <th>Description of the usage profile</th> </tr> </thead> <tbody> <tr> <td><b>Create competence profiles and simple activities</b></td> <td> <p>Creating / editing competence profiles within a community context. Create simple activities within competence development plans which do not require IMS Learning Design (LD).            Author perspective:            - Setting up a Community.            - Providing a Community with information on Competence profiles and/or Competences            - Providing a Competence with a Competence Development Plan or separate Actions.            - Providing Actions with Resources.</p> </td> </tr> <tr> <td><b>Personal development plan</b></td> <td> <p>Creating personal development plan for a specific user. Competence development plans are associated to competences and competence profiles using the PDP. Users may adopt and adapt competence development plans existing in the system.</p> </td> </tr> <tr> <td><b>Create LD course</b></td> <td> <p>Creating / editing LD level A courses.</p> </td> </tr> <tr> <td><b>Follow LD course</b></td> <td> <p>Playing LD courses with extended functionality for chat implemented as "widgets"</p> </td> </tr> </tbody> </table>	Usage profile	Description of the usage profile	<b>Create competence profiles and simple activities</b>	<p>Creating / editing competence profiles within a community context. Create simple activities within competence development plans which do not require IMS Learning Design (LD).            Author perspective:            - Setting up a Community.            - Providing a Community with information on Competence profiles and/or Competences            - Providing a Competence with a Competence Development Plan or separate Actions.            - Providing Actions with Resources.</p>	<b>Personal development plan</b>	<p>Creating personal development plan for a specific user. Competence development plans are associated to competences and competence profiles using the PDP. Users may adopt and adapt competence development plans existing in the system.</p>	<b>Create LD course</b>	<p>Creating / editing LD level A courses.</p>	<b>Follow LD course</b>	<p>Playing LD courses with extended functionality for chat implemented as "widgets"</p>
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AIM AND EXPECTATION OF THE PILOT	<p>Participants are expected to reinforce and improve their competence level in English language (Basic and Advanced) and ICT according to their interests and needs. In the second Pilot, the users are expected to continue developing their competences in English and ICT and in addition in Spanish language. They are also expected to share knowledge and views with the aim of practicing and developing new knowledge.</p>										
CONTEXT	<p>The general motivation of Àgora is to promote social and educational inclusion of those adults who have been excluded from formal education. To solve this situation, in 1986 the Association of current participants Àgora was created with the main aim to provide useful education to those people who had been left out from formal education. One of the main challenges of the School is to explore new ways to support a wide range of competence development and knowledge sharing for adult lifelong learners (Pérez-Sanagustin et al., in press).</p> <p>On the one hand, Àgora promotes diverse learning activities addressed to people without basic academic degrees. These activities include language learning (Catalan, Spanish, German, Arabic, French, English, etc.), preparation for university access tests, basic literacy and literary gatherings among many other workshops. On the other hand, it offers a wide range of cultural activities for people with no higher education degrees. Among all these activities, Àgora specifically focuses on the development of activities which aim at promoting Information and Communication Technologies (ICT). Àgora has extensive experience in the ICT sector, and since 1999 the association administers an OMNIA Point (computer labs distributed over Catalonia by the government to facilitate access to ICT for those with difficulties to make use of them). ICT are used both for learning about ICT and as a tool to study other topics. Another key objective of the lab is to facilitate access and promotion within the labour market starting from the training (e.g.; learning to write documents, use the e-mail and search for information on the Internet efficiently) and the professional re-training (e.g.; keeping people with some professional experience up-to-date about recent</p>										

	<p>developments in ICT). Through these actions, people not only learn how to use and deal with ICT which give them access to the labour market but also enable them to participate more widely in society. ÀGORA is based on democratic participation, opening all decision-making spaces to any participant of the organization.</p> <p>The following scenarios (linked to the use cases attached in appendix 4 of D4.3.) illustrate this context:</p> <ul style="list-style-type: none"> <li>• Ana is a mother of three. Ana was born in the 1940s in the south of Spain. She suffers from traditional age-related changes in functional abilities, lacks computer experience and has a low level of education. She currently lives in Barcelona. However, most of her adult children live in the Canary Islands, because of work prospects. Her adult children use computer technologies on a daily basis. Nevertheless, Ana does not use them at all. They are attempting to win Ana over the use of computers, especially for communication purposes. Her adult children urge Ana to use the email and other ways of computer-mediated communication, because it is far cheaper than giving them a call. Ana has little acquaintance with computer-related technologies. Nevertheless, she has a vested interest in learning how to use computers, especially the email and the Messenger, in that she wishes to talk more often to her nearest and dearest. Ana is participating in La Verneda adult centre in order to satisfy her need. She has recently bought a computer and has learned how to use the basics of emailing, which lives up all her expectations.</li> <li>• Pedro started to use computers 5 years ago. He started to learn how to use computers because he found them to be interesting, on the grounds that many people use them. After taking several courses in La Verneda adult centre, he can use a broad array of computer applications with little or no support from expert users. He has recently uploaded his personal web page to a public web server. He spends lots of hours working on his web page, which contains a lot of information about Spanish National Garden and wildlife. Pedro loves forests and animals, because it brings him abiding memories of his childhood. Nevertheless, he has some difficulties in conducting specific tasks; most of them related to web design, such as working with tables and links. He has also problems in carrying out other tasks in a way in which he is not familiar with. Nevertheless, Pedro aims to learn more and new things because he wants to reCycle his knowledge about computers. Pedro feels that he got stuck; this is why he is still participating in La Verneda activities, as well as being in touch with his friends, with whom he shares his projects (e.g.; information related to his web page: photos, text).</li> </ul>
<p>COMPETENCE PROFILES AND COMPETENCES INVOLVED</p>	<p>In the area of ICT training for adults the competence profiles and associated competences used in the first version of the pilot are the following:</p> <p>Competence Profile: File management</p> <ul style="list-style-type: none"> <li>• Being able to create file</li> <li>• Being able to rename a file</li> <li>• Being able to delete a file</li> <li>• Being able to Copy &amp; Paste a file</li> </ul> <p>Competence Profile: Windows management</p> <ul style="list-style-type: none"> <li>• Being able to open a window</li> <li>• Being able to close a window</li> <li>• Being able to minimize a window</li> <li>• Being able to maximize a window</li> </ul> <p>Competence Profile: Emailing</p> <ul style="list-style-type: none"> <li>• Being able to send an email</li> <li>• Being able to send an e-mail to several people</li> <li>• Being able to reply to an email</li> <li>• Being able to forward an email</li> <li>• Being able to send an email with a photo</li> <li>• Being able to create an email account</li> </ul> <p>Competence Profile: Internet</p> <ul style="list-style-type: none"> <li>• Being able to understand what Internet is and what we use it for</li> <li>• Being able to enter in Internet</li> <li>• Being able to search for information on Internet</li> <li>• Being able to download texts and programmes from Internet</li> </ul>

	<p>Competence Profile: Blogs</p> <ul style="list-style-type: none"> <li>• Being able to understand the uses of blogs</li> <li>• Being able to create a blog</li> <li>• Being able to add a comment on a blog</li> <li>• Being able to manage a blog</li> </ul> <p>Competence Profile: MS PowerPoint</p> <ul style="list-style-type: none"> <li>• Being able to create a presentation with several slides</li> <li>• Being able to insert an image into a slide</li> <li>• Being able to create a link between 2 slides</li> <li>• Being able to create an animated presentation</li> <li>• Being able to save the presentation as a web page</li> </ul> <p>Competence Profile: MS Word</p> <ul style="list-style-type: none"> <li>• Being able to create a Word document with several pages</li> <li>• Being able to use Heading 1, 2 and 3 to give a formal structure to the document</li> <li>• Being able to insert an image in a page</li> <li>• Being able to create a table with several rows and columns</li> <li>• Being able to delete a row</li> <li>• Being able to delete a column</li> </ul> <p>In the area of developing English language competences, the competence profiles and associated competences are :</p> <p>Competence Profile: Basic level of English</p> <ul style="list-style-type: none"> <li>• Being able to use the basic English verbal tenses</li> <li>• Being able to introduce yourself in English</li> <li>• Being able to count in English</li> <li>• Being able to formulate and answer simple questions in English</li> <li>• Being able to use basic English vocabulary</li> <li>• Being able to use basic English grammar</li> </ul> <p>Competence Profile: Advanced level of English</p> <ul style="list-style-type: none"> <li>• Being able to use advanced basic English verbal tenses</li> <li>• Being able to read English texts</li> <li>• Being able to write English texts</li> <li>• Being able to understand videos/audios in English</li> <li>• Being able to use advanced basic English vocabulary</li> <li>• Being able to use advanced basic English grammar</li> </ul> <p>In the forthcoming version of the Pilot, the existing competence profiles in ICT and English language will be further explored and in addition in the area of Spanish language, the competence profiles and associated competences to be developed are the following:</p> <p>Competence Profile: Basic level of Spanish</p> <ul style="list-style-type: none"> <li>• Being able to introduce yourself in Spanish</li> <li>• Being able to perform a call in Spanish</li> <li>• Being able to use Spanish public transport</li> <li>• Being able to visit the doctor in Spain</li> <li>• Being able to go shopping in Spain</li> </ul>
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### 2.2.2 Implementation of the pilot

The implementation plan of the first version of Àgora pilot was carried out as follows:

- June-July 2008: implementation, integration of TENCompetence tools in Àgora's own learning system
- June-September 2008: development of the required resources and units of learning, creation of the competence profiles, competences and competence development plans
- 1<sup>st</sup> week of September 2008: learner registration
- 16/17 September 2008: training for the experts and ICT collaborators on the TENC infrastructure

- 19/09/2008-31/10/2008: Àgora pilot duration (including learners' training on the PDP tool)
- November 2008: data collection for evaluation.

#### Registration of the participants:

The registration of the participants took place during the first week of September 2008 in the framework of the enrolment period for all Àgora participants. During those days, more than 1200 people came by Àgora to receive information about the different trainings offered. Flyers promoting the TENCompetence pilot and self-training sessions were handed out to everyone. Interested people received personalized information regarding the pilot and had the possibility to register to the different self-training sessions.

#### Actual number of participants:

- 120 participants registered to the pilot in order to develop English or/and ICT competences.
- 7 experts received TENCompetence training in order to provide technical and content support to the users in the different weekly sessions.
- There were 3 (FBM-UPF) training providers.
- 13 ICT collaborators (members of the ICT school commission) and other Àgora staff also received the training in order to know more about the pilot and be able to provide extra support to the experts.

Most of the pilot participants (and of the school in general) have low academic levels as they used to be excluded from formal education. They are characterized by their intrinsic motivation to learn. The learners wanting to acquire competences in English language are typically aged between 30 and 60 whereas those wanting to develop ICT competences are mainly aged between 40 and 65.

#### Training sessions:

Two types of training were offered:

- Training for experts and ICT collaborators  
2 sessions of 2 hours training on September 16<sup>th</sup> and 17<sup>th</sup> 2008.  
The training included 30 minutes presentation of the Integrated Project, Àgora pilot and its characteristics and 90 minutes training on TENCompetence tooling.  
In total, 20 people attended the training sessions.
- Training for learners  
The training included a presentation of the project at the beginning of each self-training sessions (10 minutes) and 1h training on how to use the PDP tool.  
In total, 120 participants attended the training sessions.

A quick-start guide on how to use the PDP tool was given to all participants. It was translated to Spanish. The language and the format were simplified in order to make it more user friendly and suitable for the learners. Another guide on how to install the software was handed out to those participants who wanted to use the PDP at home.

#### Dates of actual implementation:

19/09/2008: Start of the first version of Àgora Pilot in the school

31/10/2008: End of the Pilot

The second version of the pilot is expected to run during 3 months (February/April 2009)

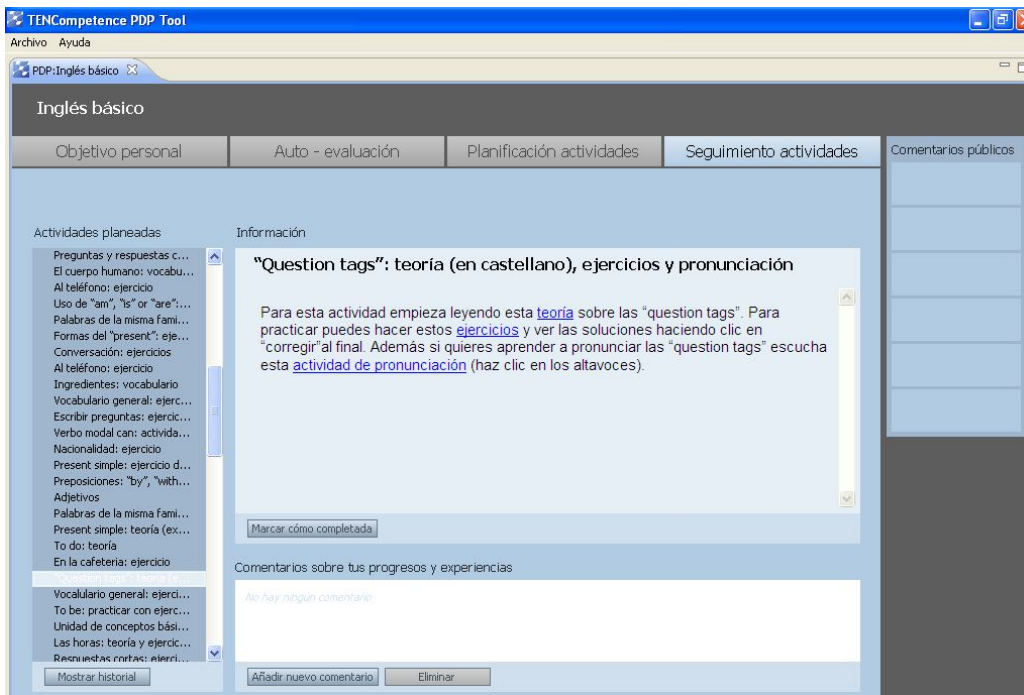
#### Workload of learners:

On average, the users have worked 5 hours on their PDP in the framework of the self-training sessions. They are also using the tool during the free-access hours of the computer room. In addition, the great majority of the users who have Internet connection are also using the PDP tool at home.

Tools used:

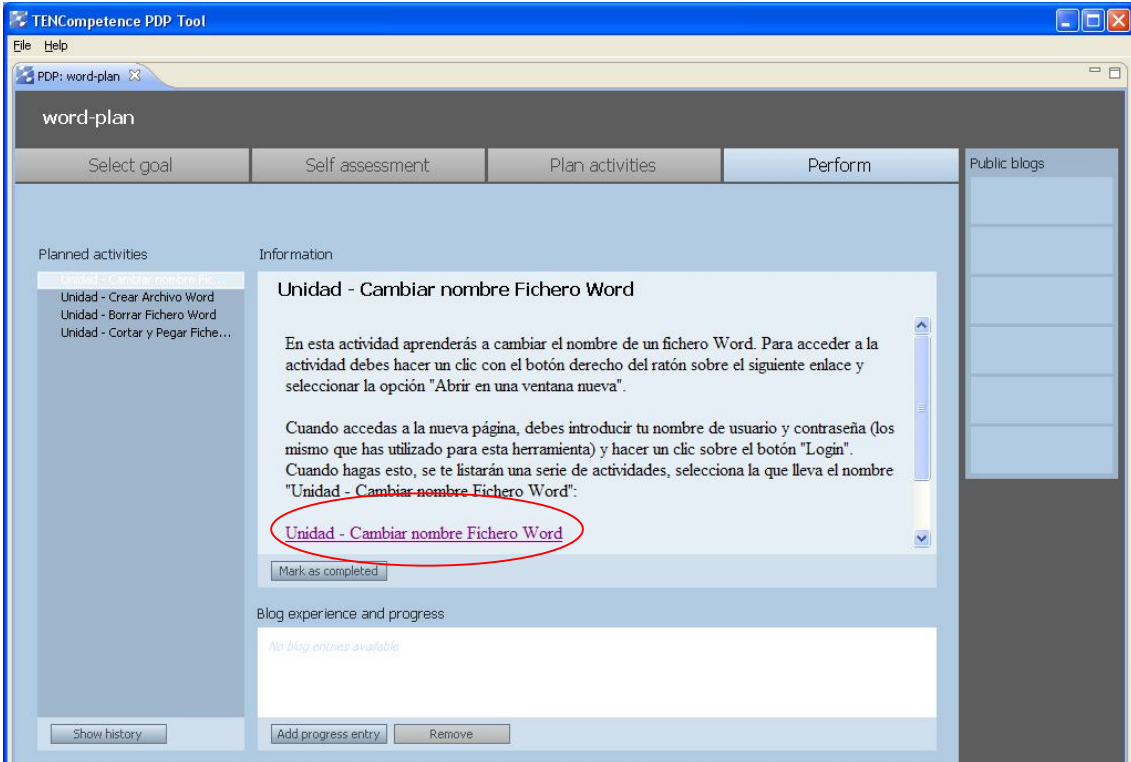
*PCM (Personal Competence Management):* This tool was used by the experts to create the Competence Profiles and Competences.

*PDP (Personal Development Plan):* This tool was used by the content developers to create some activities and to associate the resources and the activities to the different competences of the pilot. The participants of the pilot used it as the central tool for planning their learning process and accessing the different activities available in the pilot (see Figure 7 and Figure 8).



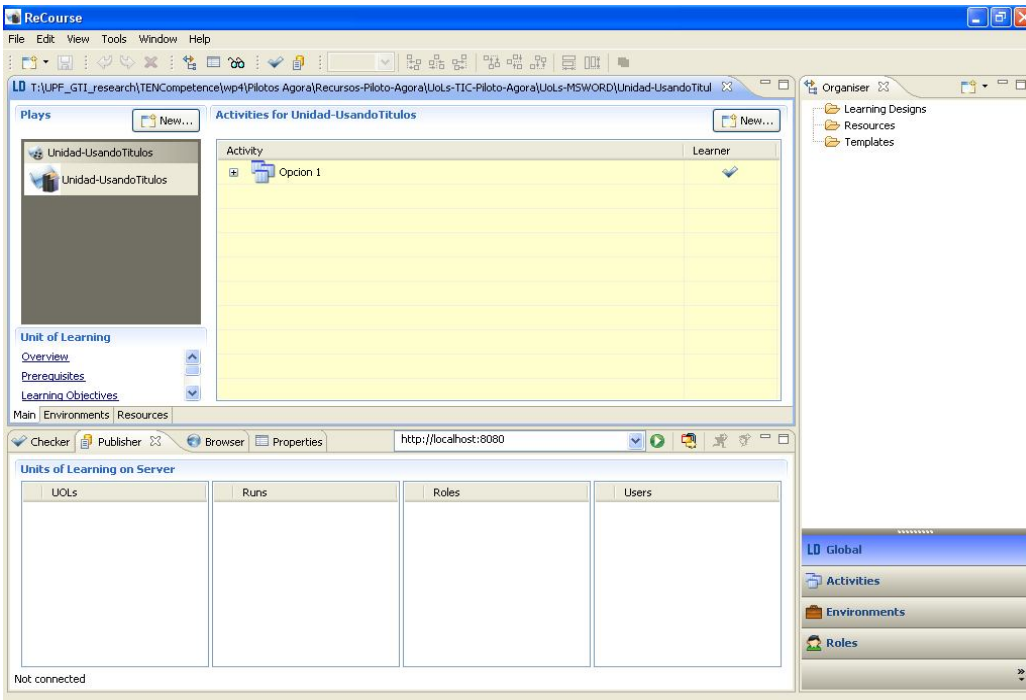
**Figure 7. Screenshot of PDP tool**





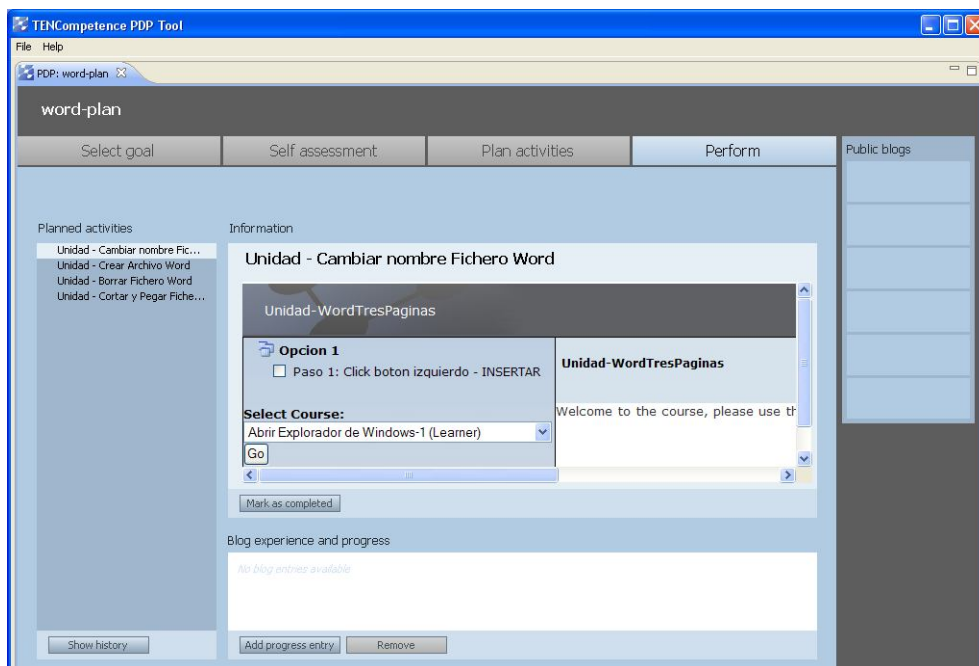
**Figure 8. Screenshot of PDP tool that shows the link to a UoL that will be carried out using the *LDRuntime* tool**

*ReCourse*: This tool was used by the content developers to create some of the Units of Learning (UoL) that the pilot contained. It was also used to create a different *run* for each UoL and create the accounts for the participants of the pilot (see Figure 9).



**Figure 9. Screenshot of the ReCourse tool while creating a UoL**

*Runtime:* This tool was used by the users to carry out the different UoLs proposed. The user accessed through the PDP to the Sled Player, log in and perform the activity.



**Figure 10. Screenshot of the PDP when accessing a UoL and executed by the *LDRuntime* player**

### 3. Providers: analysis of the Àgora and Water Management pilots

After summarizing the situation of the providers in the Àgora and the Water Management pilots, we analyze and compare them.

#### 3.1 Àgora pilot

##### **Competence profiles and competences in the Àgora pilot**

In the Àgora pilot, learners could perform learning activities with three different competence profiles: Basic English, Advanced English and ICT skills. For details see section Table 2 in Chapter 2. Also, Appendix 2 exposes the characterization of the competence profiles and the competences of interest in the context of Àgora (A.2.1) as well as the competence development plans tackled in the pilot (A.2.2).

##### **Tools in the Àgora pilot**

The Àgora pilot made use of the Personal Development Planner for accessing resources and of a SLeD server for providing structured resources. Social interaction was supported by the shared blogs within the PDP, although the participants did not make much use of this functionality. Participants used the PDP tool in Àgora computer room, and thus an important form of social interaction is face-to-face contact during the opening hours of the computer room.

#### 3.2 Water Management FMM pilot

##### **Competence profiles and competences in the Water Management pilot**

In the Water Management pilot, learners could develop competences related to flood modelling and simulation. For details see section Table 1 in Chapter 2. Besides, Appendix 1 exposes the competence development plans tackled in the pilot (A.1.2).

Section A.1.1 of Appendix 1 describes the characterization of the competence profiles and competences of the Water Management FMM pilot. A summary of the process followed to formulate training in terms of competences (vs. content-based training):

Step 1: A discussion was held with the pilot coordinators (experts) and a decision was made on the main competences and the competence profiles involved. Three competence profiles were identified, one based on Catchment Modelling, and two more advanced, one on River basin Modelling and one on Urban Flood modelling. The two advanced competence profiles were based upon existing professional working fields. The professional working field of Flood Modeller was interpreted with the Occupational Competence mix – diagram from Cheetham and Chivers (1996, 1998). This created the constituents for the FMM pilot (see Appendix 1 for more details).

Step 2: The existing division of the topic-based training was matched onto the Cheetham/Chivers model. It turned out that the division is based upon the knowledge/cognitive competence, sub-component: technical/theoretical knowledge. The Cheetham-Chivers model was further complemented with the other competence types (see Appendix 1 for more details).

Step 3: The competences were formulated and a competence-based learning plan was set up.

During the FMM01 pilot all participants were guided through the competence development plan defined by the experts, called ‘FMM – Flood Modeller for River and Urban Floods’. They developed competences around catchment, river basin and urban flood modelling. During FMM02 (in 2009) participants will be enabled to make their own choices of application area(s).

### **Tools in the Water Management Pilot**

The PDP was used for providing access to the activities belonging to specific competences. The blogging facility of the PDP was used by participants to comment on lectures they have watched and activities they have performed, and for asking questions on lectures and activities. All participants were encouraged to make use of the blogging facility as a mean for the experts and other learners to learn from their experiences and progress. Blogging was explained as one of the assessment criteria to all participants.

Further, BSCW, a collaborative platform for document sharing and discussion, was used for:

- introduction of each participant
- instructions on use of the PDP
- asking technical questions
- asking general questions (however, the impression is that the blog of the PDP is used for this purpose instead).

### **3.3 Comparison of the Àgora and Water Management pilots**

A first research question is *how providers formulate competences, competence development plans, actions and resources*. Regarding the type of competences in the classification of Cheetham and Chivers, we see a clear difference between the two pilots. The competences in the Àgora Pilot are mostly functional competences of the subcategory cerebral; these competences are related to literacy, including IT literacy. Communication competences are also developed in the Àgora pilot, especially in the competence profiles related to English language. The competences of the Water Management Pilot are of the following types:

- knowledge/cognitive competence, sub technical/theoretical, procedural
- functional, sub cerebral
- personal or behavioural, sub social/vocational
- values/ethical competences.

The Àgora Pilot did not directly involve development of values or ethical competences, but they are very relevant in the context of Àgora as it can be seen in the characterization reported in Appendix 2 that also follows the Cheetham and Chivers framework.

A second research question is *how providers support social interactions related to competence development*. Again, we see differences between the two pilots. In the Àgora pilot, social interaction occurred mainly face-to-face between the participants in the computer room from which they worked on the pilot. Additional support is provided by the shared blogs. In the Water Management pilot, the blogs play a more crucial role in the social interaction, as participants work all at a distance.

A third question is *what the change from a content-based perspective to a competence-based perspective entails*. Àgora has recently started to follow a competence-based orientation in their training program. Therefore, there has not been a substantial change in the organization in this respect. However, the pilot has provided Àgora an opportunity to make more explicit this competence orientation (e.g., actual use of the terminology: “competence profiles”, “competences”, etc.). The emphasis of the changes has been more on the possibilities to create personal competence development plans depending on each participant needs. However in the case of the Water Management FMM pilot, UNESCO-IHE needed to follow a progress (see

previous section) to translate their topic-oriented training perspective into competence profiles and development plans.

In summary, the Àgora pilot and Water Management pilot used two different scenarios:

- One (Àgora) in which the emphasis was on providing participants with an individualized learning path, which is based upon (1) the specific competence profiles that they wish to master and (2) the levels based upon self-assessment. In this scenario both the background, competences, levels of expertise among participants were completely different. Although their backgrounds were vastly different, the acquired competences will be useful to participants, as they are very generally applicable skills.
- One (Water Management) in which the emphasis were on learning together. In this scenario, participants were selected for their interest in the same competence profile, and their level of expertise. The group was quite homogeneous, composed of professionals in the area of water management, aiming at becoming an expert in flood modelling. The competence profile acquired was very specific, but it will be useful to this specific group. In this model people were working towards a certificate in flood modelling. Working together was central, and can be done well, as these professionals will encounter similar problems in their own practice.

## 4. Learners: Evaluation results of the Àgora pilot

### 4.1 Implementation of the evaluation plan

Table 3 indicates the different data sources considered to evaluate the pilot according to the evaluation plan (see D4.3, Hernández-Leo et al., 2008). In the Àgora pilot, learners with varying backgrounds and characteristics worked on their competence development in a developing context, which changed from session to session. As a result a simple pre- and post test would not be sufficient to capture this complex process of change. Therefore, an observational method in which data is collected as the pilot develops was applied (Zelkowitz & Wallace, 1998). In particular, a mixed evaluation methodology, combining qualitative and quantitative data gathering techniques, was followed. Quantitative data were considered useful for showing tendencies. Besides, qualitative results were used to confirm or reject those tendencies, to understand them, and to identify emergent outcomes in the specific situation under study (Oates, 2006).

**Table 3. Data sources for the evaluation of Àgora pilot and labels used in the text to quote them**

<b>Data source</b>	<b>Type of data</b>	<b>Labels</b>
<i>Pre-test, post-test questionnaires</i>	Quantitative participant characteristics, expectations and evaluation.	[pre-test] [post-test]
<i>Observations during the pilot</i>	Record of observations (technical issues, about the activities, interactions with experts and other participants, behaviour, other incidents, etc.) The observations were done by 6 different experts (Àgora staff, UPF researchers)	[observerX-date], where X represents different observers (from 1 to 6) and date is the specific date when the observations were done
<i>Focus group with participants</i>	Qualitative: participants' opinions two weeks before the end of the pilot (Oct. 16)	[focus-participants]
<i>Focus group with experts</i>	Qualitative: experts' opinions two weeks before the end of the pilot (Oct. 16)	[focus-experts]
<i>Log files</i>	TENCompetence server logs, analysis of 512 sessions (a session is considered one usage period of a user from login to logout)	[logs]
<i>Àgora context</i>	Qualitative descriptions of the context characteristics in which the pilot is framed (see section 2.2 and Appendix 2)	[context]
<i>Observations post-pilot</i>	Records of opinions and observations of what was being perceived in Àgora once the pilot had finished (collected by Àgora staff)	[observations-post]

Quantitative data were collected in two questionnaires: a pre-test answered at the launch of the pilot dealing with the participants' characteristics and expectations of the pilot; a post-test evaluation of the pilot, which was completed by the participants the last week of the experience (see Appendix 2, A.2.4). The log files generated by the TENCompetence infrastructure also provide quantitative data for the analysis. This information is complemented by the qualitative observations gathered by different (6) observers during the whole pilot in Àgora computer room (see Figure 11). Post-observations were also collected in order to understand the informal reactions of the participants when reflecting about the pilot outcomes. Two different focus groups addressed to participants and to experts were conducted two weeks before the end of the pilot following the critical communicative methodology (typically used in Àgora (Flecha, 2005). In this way, the focus group consisted in a group of people discussing in equalitarian terms towards understanding and consensus. The researcher is one more person in the group and

adopts a listening attitude. The general context of Àgora was also taken into account when interpreting the pilot results. The use of these different types of data sources enabled us to reach valid conclusions by triangulating the data from the different sources (Guba, 1981; Oates, 2006). For each separate aspect of our research question, the available data from the various sources was compared, and conclusions were drawn from the comparison. Four different researchers have participated in the analysis and interpretation of the data. The results were compared and discussed among the researchers (investigator triangulation). The results are discussed in the next section.



**Figure 11. Àgora computer room where participants could use the TENCompetence tooling**

## **4.2 Participants characteristics**

A total of 104 participants, comprising 68 women and 36 men, started with competence development in the Àgora pilot [pre-test]. The high proportion of women in the pilot is even higher in Àgora in general. However, the competence profiles covered in the pilot are typically of men's interest [context]. Their mean age is 58, with a standard deviation of 10 years; all participants are between 35 and 78 years old, except for one person of 28 years [pre-test]. All but three participants are born in Spain [pre-test]. While this is true for this pilot, it is not representative of Àgora usual participant profile due to the high percentage of immigrants [context]. Since the Cycle 3 version of this pilot will include a new competence profile "Spanish for foreigners", the number of immigrants participating in the pilot will increase.

The educational level of the participants is very diverse: did not complete primary school (5 %), primary school (22 %), secondary school first stage (12 %), secondary school (20 %), secondary vocational education (12 %), higher vocational education (18 %), and university degree (12 %) [pre-test]. Despite Àgora is mainly addressed to people without any academic degree, the competence profiles developed in the pilot (ICT and English) have shown to interest a wide range of educational profiles [context]. 30 participants are retired, 14 do administrative work, 10 are housewives, and the rest works in a wide range of professions. Most participants did not provide information on their current job function [pre-test].

Participants' proficiency level regarding the competences (ICT or English) is very diverse. 18 % of the participants consider themselves novices, 37 % beginner, 38 % intermediate and 10 % advanced [pre-test].

In general, all goals for competence development investigated are relevant to the participants. When asked which of the goals were most important to them, they answered to improve my social skills (90 %), to acquire practical skills (89 %), to find out what things I will be able to learn/improve in the future (82 %) and to acquire theoretical knowledge (72 %) [pre-test]. Probably the high percentage of participants who answered that the social skills were most important is because the majority of them were interested in developing English language skills.

The experience with competence-based training is low. 61 % of the participants either had never followed a competence-based training, or didn't know what competence-based training was. The remaining 39 % had followed competence-based training either once (14 %) or two or three times (25 %) [pre-test]. It is important to mention that many participants are not aware that they have been developing competences in other Àgora training activities (as Àgora did not explicitly use the term "competence").

#### *Experience with web-based learning*

Participants have a very divergent experience in using the computer to learn to communicate, with all ranges from never to very often being equally represented [pre-test]. In general, some of the pilot participants (in particular ICT learners) had very little computing experience. It happened that few of them realized that they needed an ICT literacy course in order to be able to participate in the pilot (as aforementioned 18% of the participants consider themselves novices in the selected competence profile [pre-test]). As one participant mentioned "...*basic knowledge in the use of ICT is needed to be able to use the PDP tool and create the plans* [focus-participants]."

Experience with using a virtual campus to learn is very low, with 87 % having used it either never (64 %) or occasionally (23 %). Of several Internet functionalities, the use of Google for searching information is most popular: 99 % of the participants have ever used this; 51 % have ever shared music, photographs or other documents, and 33 % have ever used a chat. The way participants understood "sharing" is associated with the use of the e-mail ("receiving photographs by e-mail" or "sending documents") and not in the sense of the Web2.0 (by means of using Flickr) [observations-post].

#### *Facilities*

57 % of the participants have Internet access at home, whereas 43 % have not.

#### *Motivation*

A large majority were intrinsically motivated: 78 % wanted to learn more just because they like it [pre-test]. Àgora participants are mainly adults who have been excluded from formal education and are characterized by their intrinsic motivation to learn [context].

For 43 % of the participants, communication with family and friends living in a different place was a reason for registering. Around 38 % had a reason related to acquiring better skills with the competence at hand (support in something which is difficult for me, improve my level in something I already know). 28 % wanted to be better integrated into their city, and only around 20 % had a reason related to their job: 10 % wanted to get a better or new job and 9 % wanted to improve in their current job [pre-test]. Due to the high percentage of retired people in the pilot, only a low number of participants did follow the training in order to get a better or new job, or improve their current job.

#### *Learning style*

84 % of the participants have a preference for one learning style. 66 % prefer to learn with the assistance of a system that guides them step by step, 38 % prefer to choose themselves in the system what they wanted to learn according to the learning suggestions made by the system, and only 14 % prefer to learn by using documents only and not through the system [pre-test].

### **4.3 Results of the experience**

82 of the 104 participants filled in the post-test. This does not mean that they stopped participating in the pilot from the beginning. After verifying with the participants themselves (22 in total), the reason why they decided not to attend the remaining training sessions, and thus were not present for the completion of the post-tests, were typically one of the followings [observations-post]:

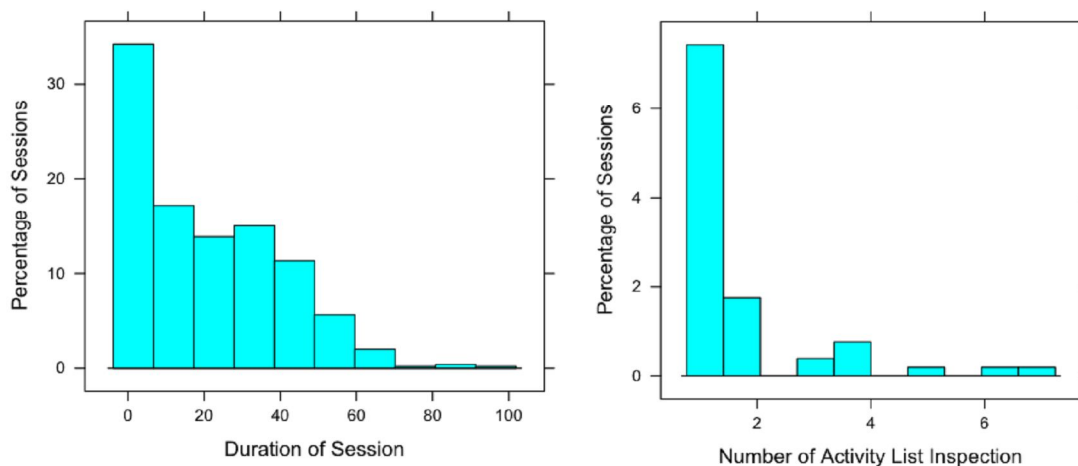
- preference for using the PDP tool at home,



- health problems (use to happened in Àgora with adult participants, especially the elderly), or
- drop out (on a trip, difficulties using the computer but not as a rule, etc.).

*General*

The average time that participants spent on competence development was 5.32 hours. A large majority of 74% spent between 4 and 8 hours [post-test]. To this number of hours has to be added the time participants spent on competence development at home [observations-post]. This is in line with the results of the log files analysis, which indicates that most user accounts were used for six sessions. There were very active users with 20 sessions and quite some rare users with only one, two or three sessions. The average duration of a session was 20 minutes while the longest session was 98 minutes [logs]. These results are hindered by the fact that in 35% of the sessions the participants logged out by mistake within the first 5 minutes which decreases the session duration average (participants probably mistake the close button of the PDP tool for the close button of an activity or for the minimize – maximize options [context]). The main elements of the PDP tools were used quite often in the sessions. For example, the “description of a competence” tab was inspected an average percentage of 90% of all sessions or the “description of an activity” tab (action) was checked an average percentage of 93% of all sessions [logs]. Users inspected an average of 2.5 learning activities per session [logs] (see Figure 12).



**Figure 12. Log files data analysis: duration of sessions and number of activity list inspection**

The extent to which their learning process was hindered by technical problems differed among participants. 35 % was hardly hindered or not at all, 41 % was moderately hindered and 24 % was largely or completely hindered [post-test]. Observations showed that the main technical problems encountered were:

- **Internet down** (2 days with the same participants, which had consequences in their motivation).

It was observed during the pilot: *"Internet was down during the whole training session and therefore it was not possible to work on the PDP [observer1-30/09/2008]"; "Due to the technical problems of last week training, there were no many participants... At the beginning of today's training, the Internet was down again for 15 minutes [observer1-07/10/2008]"; "...the participants showed great interest today as there were no technical problems that hindered the realization of the activities... [observer1-28/10/2008]."*

A participant also expressed in the focus group *"...the problem is when Internet is down [focus-participants], and suggested "It would be nice if the PDP could work without the need of Internet."*

- **“Search activity” button failure** (the PDP got stuck during 5 minutes or more when pressing on the "search activity" button).  
As the observers noted down “... it takes 5 minutes for the system to search activities [observer4-01/10/2008]”; “the participants loose their patience when pressing “search activity” and the system get frozen [observer2-20/10/08].”
- **Activities open in a very small window in the PDP “perform” tab.**  
A technical issue with the viewing of the activities in the “perform” tab made difficult the realization of the activities: when opening an activity, it appears in a small frame within the “perform” tab of the PDP, which make it almost unreadable (too small for regular screens). Therefore the participants need to open the activity in a new window to view the activity in full-screen.  
“Due to the little computer experience of Agora participants, it is complicated for them to assimilate quickly the right button functionalities. They get confused on when to use the left or right button of the mouse. This is one of the most reported issues, which has largely hindered the usability of the tool. This problem was not observed only at the beginning of the training but throughout the whole process [observer-all, context].”  
“The big issue for the participants is to open another window with the right button [focus-experts].”  
“It is very complicated to open another window with the right button of the mouse [focus-participants].” (Several participants agreed)  
“It is very hard for the participants to get used to open the activities in a new window with the right button [observer2-20/10/2008].”

“The participants asked each other how to open the window as a full screen [observer6-26/09/2008]”, “...the participants still asked the experts how to maximize the activity window [observer6-10/10/2008]

“They asked each other how to open the activity window as a full screen [observer5-25/09/2008].”

“They don't know how to maximize a window [observer4-14/10/2008].”

“They still try to perform the activities in a small window. They don't remember that they need to right click to open a new one. [observer1-14/10/2008]

However, the participants in general understood that technical problems may occur: “...in general, the participants show satisfaction and are in favour of continuing to learn despite of the technical failures that may occur. They assume it is a pilot and that errors might happened [observer3-08/10/2008]”

63 % of the participants use the Personal Development Planner at home. 37 % do not use the Personal Development Planner at home: 31 % because they don't have internet access at home, and 6 % because they don't like it [post-test]. (Note that the percentage is calculated according to the 82 participants that answered the post-test and not the 104 of the pre-test.) The majority of the participants with Internet have asked to install the PDP tool in order to continue working on the competences at home. This fact shows the participants' high level of interest in the pilot [observations-post, observers-all].

#### *Competence development*

Table 4 lists the percentage of participants that undertook learning activities for each of the ten competence profiles. Most popular are English, both basic and advanced level, and Internet. Only one person performed activities on using blogs.

**Table 4. Percentage of participants that undertook learning activities for each of the ten competence profiles**

<b>For which of the following competence profiles did you perform one or more activities?</b>	<b>%</b>	<b>No of activities available</b>
Advanced level of English	50	>20
Basic level of English	39	>20
Internet	33	6
Handling (computer) folders	23	6
Email use	17	9
Handling (computer) files	13	4
Handling (computer) windows	13	4
MS Power Point	13	3
MS Word	10	5
Blogs	1	4

Table 5 gives an overview of how much participants have learned with respect to the different competence types: knowledge, functional skills, social skills, and reflective skills [post-test]. According to the quantitative results, most of the participants have learned "little" or "not little not much" with regards to knowledge, functional skills and social skills, which is mainly due to the fact they spent an average of 5 hours on their PDP (at the time of the post-test). However, the majority of the participants have discovered what things they can learn and/or improve in the future [observations-post]. As the participants stated *"It is fabulous, it opens the door to different learning possibilities..."*; *"It enables us to discover more training opportunities..."* [focus-participants].

**Table 5. Percentage of participants indicating how much they have learned with respect to the different competence types**

<b>How much have you learned with respect tot the following types of competences</b>	<b>(almost) nothing</b>	<b>little</b>	<b>not little, not much</b>	<b>much</b>	<b>very much</b>
Knowledge	8	34	48	10	0
Functional skills, know how to do things	6	32	50	12	0
Social skills	11	25	30	29	5
Knowing how to guide my future use by reflection on current practice	4	21	24	34	6

Around half of the participants (54 %) enjoyed this way of learning (very much). 7 % did not enjoy this way of learning and 39 % held a neutral position [post-test]. A large majority of 83 % wants to continue to develop this competence further in the future, 15 % don't know, and only 2 % do not want to develop the competence further [post-test]. The participants' appreciation of the pilot is supported by their interest in using the tool at home. The great majority of the participants not only want to continue developing a concrete competence in the future but also other competences that they did not think of before starting the training. Besides, they found out at an early stage of the training sessions that they could develop more competences thanks to the competence profile list of the PDP tool. Many of them decided to open several plans. Moreover, it also happened that some participants discovered that they want to learn more about a specific competence which was not provided in the current competence profile:

*"After the end of the pilot participants continue asking for the PDP programme to be installed at home [observations-post]."*

*"All participants asked when the next pilot will be. They want to continue developing competences [observer6-31/10/2008]."*

*"2 participants who registered to develop English competences also decided that they would learn about ICT when they found out about that opportunity [observer2-29/09/2008]."*

*“Participants who started with developing English related skills now decided to switch to ICT activities and vice-versa [observer2-20/10/2008].”*

*“Another participant who completed all the activities related to Powerpoint found out that she wanted to learn how to send the presentations by email” [observer2-06/10/2008]*

*“A participant who completed all activities of a competence profile (email) wanted to learn more advanced things about it, which were not available in the current PDP tool [observer2-13/10/2008].”*

*“We want more competence profiles in the PDP [focus-participants].”*

*“Three of the participants who attended the 9h30 training stayed in the next group session in order to practice more [observer2-20/10/2008].”*

*“We want to go on... At the beginning it was hard but now I am starting to enjoy this way of learning [focus-participants].”*

#### *Appreciation of learning resources*

Participants differed largely in how difficult the learning resources were to them. They found them (very) difficult (37 %), neutral (33 %) or (very) easy (29 %) [post-test]. The diversity in the resources used in the different competence profiles and the diversity in the participants' background may explain how the participants differed in their appreciation of learning resources [pre-test, observations-post].

For the large majority of the participants, the learning resources were (very) interesting (81 %). 15 % held a neutral position, and 4 % found them uninteresting. Similarly, 69 % of the participants considered the learning resources (very) useful, 27 % held a neutral position and 4 % considered them (very) useless [post-test].

It was observed that the participants had a preference for the interactive activities compared to the activities they had to perform separately (on a separate sheet, printing it out, etc.). This is especially relevant for the ICT-related competences:

*“The participants who are working on ICT competences encounter difficulties as they need to go outside the tool in order to put the theory into practice, i.e. on the desktop, separate power-point document, etc. [observer1-25/09/2008].”*

*“Some participants find it difficult to understand how to perform the activities related to ICT skills as they cannot practice directly on the screen where the explication is given, including the different steps to follow [observer3-02/10/2008].”*

Similar opinions emerged regarding the English language competence profiles:

*“I prefer when the materials are interactive [focus-participants].”*

*“Regarding the activities in a PDF format, the participants ask for the possibility to fill in directly their answers [observer5-25/09/2008].”*

*“They do not like to have to write down on a separate sheet the answers to an exercise and thereafter checking the answers in the solution part [observer6-26/09/2008].”*

*“In the PDF documents it is not possible to do the activities directly [focus-participants].”*

*“The activities have different formats, which is confusing.[focus- participants].”*

*“The exercises you need to do separately on a sheet are a bit confusing [focus-participants].”*

Almost half of the participants (47 %) thought the learning resources matched their learning needs moderately. For 38 % of the participants the learning resources matched their learning needs largely or completely, and for 15 % they matched hardly or not at all [post-test]. It has to be taken into account that the participants spent a limited number of hours on their competence development. As many of those participants will continue with their training in the second version of the pilot (Cycle 3), we will be able to confirm or reject this tendency.

### *Control of own learning*

Several questions on this, one summarizing question: I felt in control of my own learning:

We measured six aspects related to control of own learning. These were:

- In the beginning, I quickly got an overview of the competences involved and my current proficiency level
- I had a good overview on what I had done and what I had to do
- I had insight into how my learning progressed
- I had the feeling that I learned exactly what I wanted to learn
- I had the feeling that I could plan my own learning
- I felt in control of my own learning

Answers to these six questions correlated strongly, thus that we can say that together they measured the extent to which participants felt in control of their own learning. When rounded to the most nearby round value, we obtained the following scores: agree (completely) (38 %), neutral (53 %), disagree (9 %) [post-test]. Qualitative statements offer a more positive view as participants found useful the PDP functionalities, i.e. being able to work at their own rhythm, being able to choose the activities, etc. as will be pointed out later in this document (see *Self-assessment and planning*, *Marking activities as completed*, etc.).

### *Collaboration with other participants*

Four questions were asked on the appreciation of collaboration with other participants, namely:

- I had lively and stimulating discussions with other participants in the pilot
- I learned a lot from other participants in the pilots
- Other participants in the pilot were able to answer my questions
- I provided useful help to other participants in the pilot

As the answers to these four questions correlated very strongly, we can say that together they measure one thing, namely the appreciation of collaboration with other participants. When asked whether participants were involved in these activities, we obtained the following scores: agree (completely) (36 %), neutral (27 %), disagree (38 %) [post-test].

A general observation is that the pilot participants had a tendency to collaborate less than in the regular training courses in Àgora, which is mainly due to the fact that they were focusing on developing their own personal development plan and resolving doubts with the help of the experts.

The qualitative results confirm the differences in the level of participant collaboration which were appreciated in the quantitative analysis. In addition, the observations stress that this difference in collaboration is especially high depending on the participants that frequently met in the Àgora computer room (participants shared the computer room on a regular basis).

*“There were almost no interaction between the participants in the room [observer1-28/10/2008]”; “In this last training session, there is still little interaction between participants [observer1-28/10/2008].”*

*“2 participants were doing the same activity together and resolving doubts while a participant with good computer skills was helping other 2 participants with lower skills [observer2-29/09/2008]”; “After learning how to send a text document by email, the participant helped 2 other participants to do the same [observer2-06/10/2008]”; “Another participant who knows more helps another with lower knowledge and doing so he also has the opportunity to revise something he had forgotten [observer2-13/10/2008]”; “The important thing is the mutual help, which is the philosophy of the school [focus-participants].”* It is worth mentioning that dialogic learning is the main educational methodology used in Àgora [context].

*“When the expert is busy, there is more collaboration between the participants [observer3-20/10/2008].”*

*“They ask each other how to maximize the window, which exercise they are doing and how to do it [observer5 -25/09/2008].”*

#### *Self-assessment and planning*

The majority of the participants used the self-assessment functionality for most or all of their competences (78 %); 22 % used it for half or less of their competences.

Participants differed widely in how easy they found it to determine their own competence proficiency level. 36 % found it (very) difficult, 38 % took a neutral position, and 26 % found it (very) easy [post-test]. Participants hardly ever used the PDP facility that allows them to attach information about evidences associated to competences, as it can be seen in the [logs] (participants used “evidences” in an average percentage of 3% of all sessions).

The large majority of 88 % the participants let the system generate a plan based upon their self-assessment; 12 % let the system generate a plan, but not based upon their self-assessment [post-test]. However, the observations showed that this functionality is not taking into account the proficiency level assigned by the participants to the different competences. Indeed, the generated list of activities recommended by the system is the same for all participants (except in the case that the indicated proficiency level is equal or higher than the required, the first time that the plan is generated) [observations-all]. According to the quantitative results, as 88% of the participants did generate a plan based on their self-assessment, they had high expectation with regards to this functionality and this may explain the difficulty some of them felt in determining their own competence proficiency level.

*“The participants found it difficult to determine their own competence proficiency level because they didn't have any reference to help them. The explanation given by the system to define each level of competences is too complicated and not understandable considering Ágora participants' profile [observer3-8/10/2008].”*

*“The same activities appear for the participants who have chosen level 1 or 2 [focus-experts].”*

*“It doesn't match up with your level. When you add a level what happens? You don't see the difference [focus-participants].”*

*“One thing to be improved in the system is that it generates a plan in accordance with the self-assessment [observer4-1/10/2008]”*

*“After the self-assessment, participants have a high expectation of obtaining a personalized plan [focus-experts].”*

*“It promotes autonomy. Participants are their own teacher: create their plan, self-assess... But it would be nice that the generated plan actually takes into account the profile of the participants, i.e., what they already know [focus-experts].”*

Other conclusions regarding the self-assessment functionality are:

- It had an effect on the participants' motivation. Ágora experts agreed in the focus group on the following statement *“...the functionality of self-assessment is motivating for the participants who think they don't know anything [focus-expert].”*
- It encouraged the participants to reflect on their own learning. Several participants stated in the focus group *“we find it useful to be able to reflect on our own level of proficiency [focus-participants].”*
- Some participants also requested an additional functionality enabling a prior test in order to define more objectively the proficiency level (e.g., taking a test in the self-assessment phase). As one participant mentioned *“a more objective evaluation is also needed... [focus-participants].”*

74 % of the participant used one method to select the next activity to perform from the list of activities, 26 % used more than one method. Most popular method, used by 62% of the participants, was to start with the activities thought to be easiest and then progress to the activities thought to be most difficult. A minority of the participants performed the activities in the order in which they were listed (34 %), they started with the activities that they liked most, and then progressed to the activities that they liked least (22 %), or choose activities arbitrarily, randomly (13 %). There were hardly any participants who first performed all activities related to one of the required competences, and then all activities of a second required competence and so on (6 %), or who started with the activities they thought were most difficult and then progressed to the activities they thought were easiest (4 %). Only one participant started with the activities that he or she liked least, and then progressed to the activities that he or she liked most.

As reported in the quantitative results, a majority of participants performed the activities they thought to be easiest and then progressed to the activities thought to be most difficult. Though, this process was hindered by the fact the activities were not organized in any logical order and therefore the participants spent a lot of time in trying to identify the content of the activity and their level of difficulty. The activities did not have any level assigned, which also made it more complicated to search for the easiest activities [observations-all]. This is a key issue for future improvements as can be seen in the following qualitative observations:

*“In the Basic English competence profile, there are about 100 activities which have different sub-levels of Basic English. As there are no level assigned to each of the activities and no order among them, the participants find it very complicated to choose between the activities in the “plan activity” tab as they have no reference [observer2-01/10/2008].*

*“Disorder in the activities suggested in the perform tab [observer4-01/10/2008]”*

*“A general comment is that it is complicated to chose the activities to perform as they are many of them and they are totally mixed without any order [observer6-01/10/2008]”*

*“The participants asked each other where to find the activities with audio as they are not ordered in a specific way [observer6-31/10/2008].”*

*“We experienced difficulties in the “perform” tab as the activities listed have no real meaning between them. The participants were expecting that the activities generated would be logically linked together (in a certain order or by category). Another organization of the plan is necessary [observer1-18/09/2008].”*

*“The participants asked why the activities are not ordered in a logical way o by alphabetic order. They explain it would be a good way to improve the tool [observer3-15/10/2008]”*

*“There should be an index [focus-participants].”*

*“The subjects are quite disorganized. It would be easier to find what you want if it was organized by competences [focus-participants].”*

*“It’s a mess. A thing related to pronouns appears underneath...the newspapers above (...) [focus-participants].”*

*“It would be better if organized by theme and specifying if the activities have audio [focus-participants].”*

*“The activities should be organized by levels [focus-participants].”*

*“There was no real organization in the system. The participants had to organize the activities. There is disorder between the activities [focus-experts]”*

#### *Resources at the SLeD server*

Only 24 % of the 82 post-test participants indicated that they had made use of the resources at the SLeD server. Of these 20 participants, 58 % performed all activities in these courses in the order in which they appeared, 37 % selected part of the activities in these courses, and the remaining 5 % performed all activities in these courses but chose their own order [post-test]. There are different reasons why only 24% of the participants made use of the resources at the SLeD server:

- The majority of the participants were interested in English activities, which were not SLeD server resources.
- The most popular ICT activities (as shown in the quantitative results), i.e. Internet, handling folders, Email use, handling files. MS PowerPoint were not SLeD server resources.

18 participants answered the question to compare the structured courses on the SLeD server to performing single activities directly from the PDP. Of these participants, 14 preferred the structured courses, and 4 didn't know or had no preference.

#### *Marking activities as completed*

69 % of the participants made use of the possibility to mark activities as completed. 31 % of the participants did not use this possibility, of which 11 % because they hadn't noticed the possibility or didn't know how to use it, and 3 % because they didn't think this was useful. 17 % had another, but unknown reason for not using marking as completed.

The participants who marked activities as completed did so when they had performed the activity, regardless of how well they performed it (59%), or when they had performed the activity and thought they had mastered it well enough (35 %). 6 % mastered the activity as completed when they had the feeling from the description of the activity that they had mastered it, and needn't perform the activity.

The possibility to mark activities as completed was evaluated by participants as (very) useful (86 %), neutral 25 % or useless 4 %. Although this functionality was not largely used in the pilot due to time limitation and the context of the pilot (participants need more time to be familiar with all the tool functionalities), it has potential. The positive quantitative results are also supported by the qualitative data:

*“The option to mark the activity as completed has shown to be very positive (...) the participants appreciate this possibility [focus-experts].”*

*“It is motivating for them since they can see their progress [focus-experts].”*

*“I find it useful to follow my own personal plan and to see the record of my achievements [focus-participants].”*

*“I like the possibility of seeing my plan and my history. How can I put something that it is already in my history back to my plan? [focus-participants].”*

#### *Private blogs*

Private blogs were used by 15 % of the participants, for all except one participant to reflect on their progress.

#### *Shared blogs and communication*

Table 6 lists the type of communication participants were engaged in, and the use of shared blogs for these purposes. 90 % of the participants were engaged in only one type of communication. 63 % of the participants communicated with other participants: most popular were working together on an assignment (27 %) and seeking help on course content (17 %) and other types of communication (26 %). Few participants provided help on course content to others (6 %), discussed course content (2 %), discussed the competences that they had to master and their progress (6 %) or shared knowledge and learning resources (4 %).

A minority of the participants made use of the shared blogs for their communication; this applies to 43 % of the participants who worked together on an assignment and 60% of the participants who sought help on content. 5% of the participants that made use of another type of communication used the shared blogs. One participant provided help on content to others by means of shared blogs.



**Table 6. Type of communication in which participants are engaged**

Ways of communicating	%	Of which shared blogs %	N shared blogs
I didn't communicate with other participants	37	na	na
I worked together on an assignment	27	43	9
Other, namely _____	26	[5]	1
Seek help on course content	17	60	8
Provide help on course content to others	6	[21]	1
Discuss course content	2	na	4
Discuss the competences that I had to master and the progress	6	-	-
Share knowledge and learning resources	4	[not asked]	

Communication with blogs was supplemented by face-to-face meetings (34 %), email (15 %) and chat (1 %). 55 % of the participants did not use other means for communication with other participants [post-test].

89 % of the participants did not read blogs from others; 78 % because there were (almost) no blogs from others, 11 % indicated there were blogs from others but they didn't read them. 7 % read (almost) all blogs from others and 5 % read only those blogs from others that seemed relevant to them.

67 % of the participants rated the use of the blog as (very) useful, 25 % as neutral, and 8 % as (very) useless.

Although the quantitative data suggest that quite some participants made use of the shared blogs, the qualitative analysis shows that the participants used the share blogs only to practice with this functionality more than for real use. The infrequent use of it is due to the little technical experience of participants [context] who were focusing more on how to use the PDP and perform the activities. The participants also put the utility of the blog into question. This is probably related to the contextual characteristics of the pilot (see *Collaboration with other participants*). However, many users have shown interest in using a chat/forum for other purposes than those envisaged in the pilot.

*“The utility of the blog in the “select goal” tab window is not clear [observer4 /10/2008].”*

*“The participants don't use the blog. It is too early for them [focus-experts].”*

*“Participants mentioned other utility the blog may have. Some participants indicated the need to use a chat to be able to pose technical or content-based questions to a specialist [observations-post].”*

*“When using the PDP at home, the blog might be used to resolve doubts... [focus-participants]”*

*“It would be great using the tool to contact English native speakers, to chat with them, etc. [focus-participants].”*

*“Comments or advice of other participants of how to use the tool would also help us to use it [focus-participants].”*

*“It would be nice to see what other participants are doing, sharing experiences (plans, histories)... [focus-participants].”*

*Observations during the pilot related to the preferences about the learning style*

The evolution of the pilot showed interesting indications, related to the learning style, which enable us to interpret participants learning style preferences (see “*Learning style*” in pre-test data). It was observed during the pilot that the participants feel more comfortable when they are guided by the system through the learning activities. However, they also appreciate the opportunity to choose themselves what activities they want to perform according to the

suggestions given in the PDP. The positive results in the post-test regarding the appreciation of the structured activities (sled) compared to the simple activities also confirm this tendency. In any event, according to the observations it is not fully clear to which extent the preference for guidance is due to convenience reasons. As one expert mentioned "*they are totally capable but they prefer the simplicity of having an expert to guide them instead of being completely autonomous...*" [focus-experts]."

#### *Other technical issues*

Apart from the technical issues mentioned previously, other general concern is that the participants get confused whether to perform the activities in the "plan activities" tab or in the "perform" tab as it has been observed that they try to do the activities after generating the plan without moving to the following tab (and they found the window for editing the activities):

*"The users continue mixing up the "plan activities" tab and the "perform" tab. They keep making the same mistake and try to perform the activity in the "plan activities" tab and they believe that they need to click on "create activities" to perform them or get stuck in the "search activity" bottom [observer6-31/10/08]."* (Note that 31/10/08 is the last day of the pilot.)

*"Although the pilot is finishing and the majority of the participant understands how the PDP tool works, they continue mixing up the tabs "plan activities" and "perform", which lead to confusion. The participants themselves recommended the use of colour codifications or symbols to enhance the usability of the tool and make it accessible for all the participants [observer3-21/10/08]."*

The log files also give evidence of this confusion. Per session users created an average of 2 new activities [logs], although it was not their intention [context].

## **4.4 Conclusions**

In this first version of the Àgora pilot, the participants were mainly women, born in Spain and had an average age of 58 years. Their profiles varied with regard to their educational level, their proficiency level in the competence involved and their experience with using the computer for learning. Their experience with competence-based learning and use of a virtual campus was low. Though, a large majority had used Google to search information on the Internet. The PDP tool offered short learning activities (diverse duration) related to English (basic and advanced) and ICT competence profiles. Pilot participants who in general worked on the learning activities between 4 and 8 hours were characterized by their intrinsic motivation to learn. Few of them registered in the pilot due to a reason related to their job.

The large majority of the participants answered the post-test. The reasons for not completing the pilot were diverse. It is not a surprise that a relatively large part of the participants indicate that they did not learn much due to the hours spent on competence development. However, other data indicate that following the pilot was a motivating experience as a large majority of the people wants to continue to develop this competence further in the future and found the learning resources interesting and useful. It is also an encouraging conclusion that the pilot made the participants discover new learning possibilities. Not only the participants used the PDP tool in the Àgora computer room during the pilot but the large majority of those who have Internet have installed the tool at home.

The learning resources provided in the Àgora pilot are mainly related to functional skills, e.g. how to send an email, how to write a text in English, etc. However, as explained previously, the participants did not learn much about functional skills due to the time spent on their competence development and they feel that they have learned more with regards to reflective and social skills. On one hand, participants reflected on new learning opportunities and on their previous experiences (writing about their motivation, self-assessment and marking as completed functionalities), and on the second hand they perceived that being able to speak English increases their socialization opportunities.

Regarding the PDP facilities, “self-assessment”, “generation of a plan” and “marking as completed” were used (and when asked valued) by a large majority of the people. This is remarkable given the fact that participants differed widely in how difficult they found using these tools. The “shared blogs” option was far less used as the participants were focusing on other functionalities (see Àgora context) and the blog utility was not fully clear to them. It was used in order to test it more than to really communicate. Social interaction occurred mainly face-to-face between the participants in the Àgora computer room. Besides, some participants mentioned the need to create a chat/forum in order to submit questions to experts regarding technical and competence-related issues and also to communicate between them.

One important outcome is that a pilot can be successful despite the diversity in the participants’ background even when most of them have low educational levels. There were also large differences in how difficult the pilot was perceived by the participants: they differed widely in the degree in which their learning was hindered by technical problems, in how difficult the learning resources were to them, and in the difficulty of determining their proficiency level in the self-assessment. Finally, disparities in the difficulty experienced by the users is also related to the differences found in the extent to which participants enjoyed this way of learning, felt in control of their own learning, and the extent to which the learning resources matched their need.

All in all, these results envisage an interesting second version of the pilot, which will involve current and new participants and thus allow TENCompetence to understand in depth the effect of its outcomes in the challenging context of Àgora.

## 5. Learners: Water Management FMM Pilot

### 5.1 Implementation of the evaluation plan

Table 7 indicates the different data sources considered to evaluate the Water Management FMM pilot according to the evaluation plan (see D4.3, Hernández-Leo et al., 2008). Quantitative data were collected in two questionnaires: a pre-test answered at the launch of the pilot dealing with the participants' characteristics and expectations of the pilot; a post-test evaluation of the pilot, which was completed by the learners after the experience (see Appendix 1, A.1.4). The log files generated by the TENCompetence infrastructure also provide quantitative data for the analysis. This information is complemented with context of the pilot, the observations of the tutors and pilot implementers and the final outcomes of the participants (see final part of section 2.1.2). Again, with the aim of reaching valid conclusions the data from the different sources is triangulated, i.e. comparatively analysed (Guba, 1981; Oates, 2006). Three different researchers have participated in the analysis and interpretation of the data. The results were compared and discussed among the researchers. The next section discusses the results.

**Table 7. Data sources for the evaluation of Water Management FMM01 pilot and labels used in the text to quote them**

<b>Data source</b>	<b>Type of data</b>	<b>Labels</b>
<i>Pre-test, post-test questionnaires</i>	Quantitative participant characteristics, expectations and evaluation.	[pre-test] [post-test]
<i>Observations during the pilot</i>	Record of observations (technical incidents, about the activities, etc.) as reported in section 2.1.2	[observations]
<i>Log files</i>	TENCompetence server logs, analysis of 4095 sessions sessions (a session is considered one usage period of a user from login to logout)	[logs]
<i>Context</i>	Qualitative descriptions of the context characteristics in which the pilot is framed (see section 2.1.1 and Appendix 1)	[context]
<i>Final learners' outcomes</i>	See "Finalisation" part of section 2.1.2	[learners-outcomes]

### 5.2 Participant characteristics

A total of 90 participants, 69 men and 21 women, started with the Water Management Pilot. Their mean age is 34, with a standard deviation of 7,5 years.; all participants are between 23 and 54 years old, except for one participant who is 63 years old. Three quarter of the participants are 38 years or younger. As Table 8 shows, participants come from all over the world (47 different countries) [pre-test].

**Table 8. Countries in which participants live**

Australia	5	France presently, Trinidad mostly	1	Mexico	3	Tanzania	1
Bangladesh	1	Germany	1	Nigeria	5	The Netherlands	1
Brazil	1	Ghana	3	Pakistan	3	Trinidad and Tobago	1
Cameroon	2	Greece	2	Peru	2	Turkey	1
Canada	4	India	9	Qatar	1	Uganda	1
Chile	1	Indonesia	1	Romania	2	United Kingdom	2
Costa Rica	1	Iran	1	Rwanda	1	United States	1
Côte d'Ivoire	1	Ireland	1	Scotland	1	Uruguay	1
Ecuador	1	Jamaica	1	Senegal	1	Vietnam	1
Egypt	6	Kenya	4	Spain	2	Zambia	1
Ethiopia	5	Malawi	1	Sudan	1	Zimbabwe	1
France	1	Mauritius	1	Sweden	1		

As a Bachelor's degree is a requirement for participating in the pilot, all participants are highly educated [context]. 29 % has a Bachelor's degree, 52 % has a Master's degree, and 19 % has a PhD degree.

Table 9 shows that the majority of the participants (62 %) are engineers, and 13 % have a degree in earth sciences or life sciences. The remaining participants mentioned a profession which is related to their current job function. Of these participants, 12 % have a profession related to research and teaching, and 9 % are working 'in the field' as a consultant, manager or planner [pre-test].

**Table 9. Participants' profession**

	%
Civil Engineer	26,7
Hydraulic engineer	22,2
Engineer diverse	10,0
Earth scientist	7,8
Life sciences	5,6
Lecturer	5,6
Consultant	4,4
Environmental Engineer	3,3
Master or PhD Student	3,3
Researcher	3,3
Other	3,3
Manager	2,2
Planner	2,2

Their experience in the professional field of Flood Modelling is very diverse. 43 % of the participants have 0 years of experience with flood modelling, 5 % have 2 to 6 months of experience, 25 % have 1 to 2,5 years of experience, 21 % have 3 to 6 years of experience and the remaining 6 % have 7 to 18 years of experience. Correspondingly, 17 % consider themselves a novice, 47 % a beginner, 26 % intermediate and 7 % advanced [pre-test]. Note that most probably '0 years' of experience does not necessarily mean no experience at all, as the number of people with 0 years of experience is almost three times as large as the number of people who consider themselves novices.

All different types of competences that can be acquired, are considered important by the participants. But there is a difference in how important they are. Table 10 shows that knowing how to find creative solutions is considered most important: 82 % of the participants consider this very important, and the remaining 18 % consider this important. The lowest mean score and the largest variation is found on Social skills, which is considered unimportant by 1 participant, not important nor unimportant by 15 % of the participants, important by 47 %, and very important by 38 % of the participants [pre-test].

**Table 10. Importance of the different competence types**

How important is it for you to acquire the following types of competences?

1 = completely unimportant, 5 = very important

	Mean	SD	Min	Max	N
Knowing how to find creative solutions for problems related to this competence	4,82	,39	3	5	89
Functional skills (to know how to do Flood Modelling)	4,70	,49	3	5	90
Cognitive knowledge (to know what Flood Modelling is about)	4,53	,67	2	5	90
Knowing how to guide my future use of flood modelling tools by reflection on current practice	4,52	,68	2	5	89
Knowing how to behave according to the rules and values of the profession	4,36	,73	2	5	88
Social skills	4,20	,73	2	5	90

*Experience with web-based learning*

Over half of the participants (54 %) have not followed a distance learning training before. 24 % have followed one distance learning training, 15 % have followed two distance learning trainings, and 4 % has followed three or four trainings. Three participants (3 %) are experienced distance learners with 11 or 15 trainings followed [pre-test].

Regarding the use of web tools, 75 % of the participants use search functions such as google very often; 12 % use the search function often, and only 3 % uses this sometimes or occasionally. The use of the other tools is much more diverse. A substantial part of the participants use the tools never (ranging for each tool from 9 to 28 %) and only 4 to 13 % uses any of these tools very often (see Table 11) [pre-test].

**Table 11. Use of tools related to web-based learning**

Use of tools related to web-based learning

1 = never, 5 = very often

	Mean	SD	Min	Max	N
How often have you used / do you use search functions for finding information, such as google or database search?	4,80	,53	2	5	89
How often have you shared / do you share sharing data and files with other people in online communities for professional purposes?	3,00	1,30	1	5	89
How often have you used / do you use ratings by others for selecting information for your own use?	2,92	1,01	1	5	89
How often have you participated / do you participate in online chats?	2,85	1,39	1	5	89
How often have you shared / do you share sharing data and files with other people in online communities for leisure (free time) purposes?	2,66	1,26	1	5	89
How often have you participated / do you participate in online (web-based) discussion forums?	2,31	1,18	1	5	89

### *Facilities*

Almost all participants have a computer which is either less than one year old (48 %) or less than a few years old (47 %). Only 5 % of the participants have a computer that is more than a few years old. The speed of their internet connection is rated by most participants as either fast (42 %) or medium (42 %). 8 % have a very fast connection and 5 % have a slow connection [pre-test].

### *Motivation*

Participants had reasons related both to learning and to their job for following the Flood Modelling for Management pilot. Related to learning, 78 % wants to improve their proficiency level of a specific competence, and 52 % wants to explore the possibilities in a new field (learning network) to help define new learning goals. Related to their job, 66 % wants to study for a new function or job or improve their current job level, 47 % wants to keep up to date within my existing function or job, and another 47 % wants to reflect on their current competences to look which functions and jobs are within their reach or to help them define new learning goals. Only 14 % wants some support on a non-trivial learning problem [pre-test].

### *Learning preferences*

74 % of the participants prefer to be given an outlined learning path, but also the possibility to choose their own learning path. 21 % prefer to be given a learning path that they have to follow, and 5 % prefer to be given the learning resources only [pre-test].

### *Involvement of employer*

With the majority of the participants (65 %), their employer is not involved in their following this pilot. For other participants, following the pilot successfully is necessary either to obtain a new job function with their current employer (23 %), or to keep their current job function (17 %). The employer of 12 % of the participants has obliged them to follow the pilot, and 25 % of the participants have been allocated part of their working hours for following the pilot. 14 % of the participants follow the pilot as part of a trajectory for people who are unemployed or who are in danger of becoming unemployed [pre-test].

## **5.3 Results of the experience**

65 of the 90 participants filled in the post-test questionnaire. This is in line with the [outcomes] obtained at the end of the pilot. According to the pilot implementers, out of 90 participants 30 could not have access to the whole pilot due to their low Internet connection and 10 could not finalise their assignments, therefore 50 received the certificate of successfully completing the competence development plan.

### *General*

As can be seen from Figure 13, the number of hours spent differs wildly among participants. Numerically, the mean effort spent is 110 hours, but the standard deviation from this mean is 95 hours. One participant indicated to have spent 1600 hours, but we deleted this observation, as this is physically impossible [post-test]. The mean effort of 110 hours is consistent with the workload (140 hours) expected by the pilot implementers [observations]. From the analysis of the log files, it becomes visible that the median of user sessions was around 40, so most users had 40 sessions (see Figure 14). The average duration of a session was 25 minutes while the longest session was 290 minutes [logs].

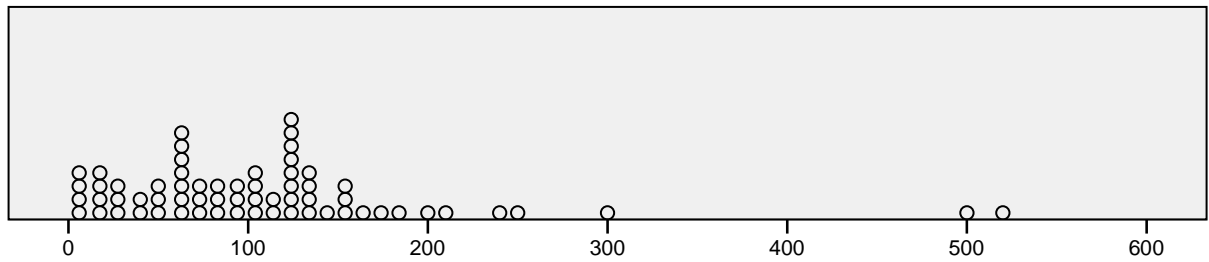


Figure 13. Hours spent on the Water Management pilot; each dot is one participant

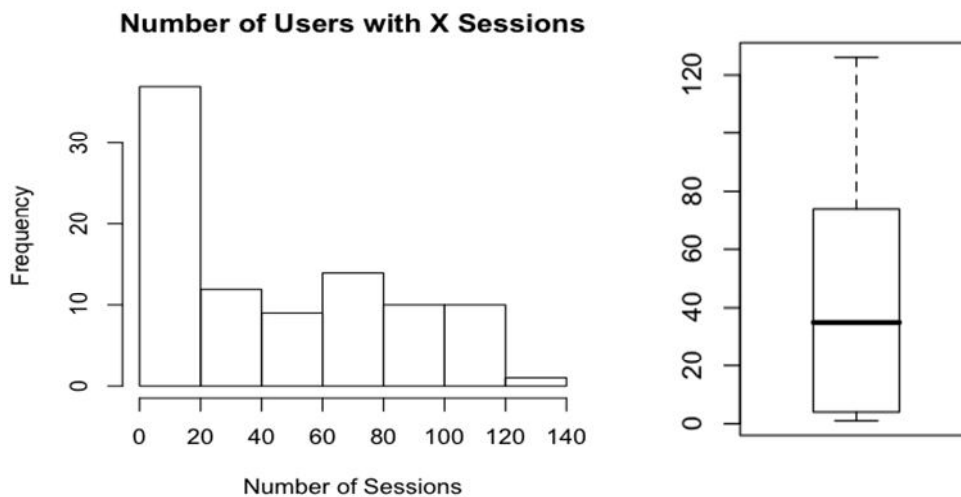


Figure 14. Session per user

The extent to which their learning process was hindered by technical problems differed among participants. 18 % was hardly hindered or not at all, 36 % was moderately hindered and 11 % was largely or completely hindered [post-test]. The main technical incidents observed by pilot implementers were internet problems or limitations for downloading and using the PDP, initial bugs in the database assessed by the PDP (which were solved), and that the “evidence” PDP functionality was not working properly [observations].

*Competence development*

Table 12 shows participants do not differ very much in how much they have learnt with respect to the various competence types, which in generally is much.

Table 12. How much participants have learnt with respect to the various competence types

How much have you learned with respect to the following types of competences?	(Almost) nothing	Little	Not little, not much	Much	Very much
Cognitive knowledge (to know what Flood Modelling is about)	3	8	3	53	33
Functional skills (to know how to do Flood Modelling)	2	11	17	59	11
Knowing how to guide my future use of flood modelling tools by reflection on current practice	8	4	22	44	22
Knowing how to find creative solutions for problems related to this competence	5	9	24	48	14
Knowing how to behave according to the rules and values of the profession	5	20	25	44	6
Social skills	9	24	29	25	13



The large majority of the participants (84 %) enjoyed this way of learning (very much). 11 % held a neutral position and 5 % did not enjoy this way of learning.

A large majority of 89 % want to continue to develop this competence further in the future, and 11 % doesn't know [post-test].

#### *Appreciation of learning resources*

Four questions were asked on participants' appreciation of the learning resources:

- What is your opinion on the easiness or difficulty of the learning resources?
- What is your opinion on the compellingness of the learning resources?
- What is your opinion on the usefulness of the learning resources?
- Did the learning resources match your learning needs?

The answers to these four questions correlated strongly, thus we can say that together they measured the participants' appreciation of the learning resources. When rounded to the most nearby round value, we can say that 89 % of the participants appreciated the learning resources (very) much, 9 % appreciated them moderately, and 1 participant had little appreciation of the learning resources [post-test].

#### *Control of own learning*

Six questions were asked on the control that participants experience of their own learning:

- In the beginning, I quickly got an overview of the competences involved and my current proficiency level.
- I had a good overview on what I had done and what I had to do.
- I had insight into how my learning progressed.
- I had the feeling that I learned exactly what I wanted to learn.
- I had the feeling that I could plan my own learning.
- I felt in control of my own learning.

The answers to these question correlated strongly, thus together they measured the extent to which participants felt in control of their own learning. To the overall question then whether they felt in control of their own learning, participants answered (values rounded to nearest round number): agree (completely) (69 %), neutral (26 %), disagree (5 %) [post-test].

#### *Learning preferences*

In retrospect, 44 % of the participants prefer the expert/tutor to define the whole sequence of learning activities, and they just follow this learning path. 30 % prefer to be given some freedom in choosing between learning activities, and 27 % want to be able to define as much as possible their own learning path [post-test].

#### *Collaboration with other participants*

Four questions were asked on the appreciation of collaboration with other participants, namely:

- I had lively and stimulating discussions with other participants in the pilot.
- I learned a lot from other participants in the pilots.
- Other participants in the pilot were able to answer my questions.
- I provided useful help to other participants in the pilot.

As the answers to these four questions correlated very strongly, we can say that together they measure one thing, namely the appreciation of collaboration with other participants (as it was also an important requirement posed by the pilot implementers [context]). When asked whether participants appreciated these activities, we obtained the following (rounded) scores: agree (completely) (34 %), neutral (36 %), disagree (completely) (5 %) [post-test].

### *Self-assessment and planning*

A minority of the participants used the self-assessment functionality for most or all of their competences (42 %); a majority of 58 % used it for half or less of their competences.

Half of the participants (52 %) found it not difficult, nor easy to determine their own proficiency level with each competence. 28 % found it (very) difficult, and 20 % found it (very) easy. Understanding the labels attached to each competence level was considered (very) easy by 47 % of the participants, 28 % took a neutral position and 14 % found this (very) difficult. 11 % did not notice the labels.

Most of the participants (72 % of the participants indicated so in the [post-test]) performed the activities in the order in which they were described in the Activity Plan from the expert. It happened as expected since in this version of the pilot (FMM01) experts were making available the activities as the pilot progressed [context]. Here, it is also important to mention that since the current version of the PDP does not order or classify the activities in a particular way (in the 'perform' tab), FMM pilot implementers numbered the competences and the activities involved in the associated competence development plan (see section 2.1.1) [observations].

According to the [logs], per session mostly 5 different PDP functionalities were used, minimum number of functionalities was 1, maximum was 13 per session. In the sessions where the functionalities were used, the following average usage statistics could be observed: the users inspected around 9 learning activities per session but worked mostly on 2 learning activities per session. Mostly 3 competences were inspected per session. The list of available activities was visited around 2 times per session; mostly around 20 resources were inspected per user session [logs].

### *Marking activities as completed*

64 % of the participants indicated that they made use of the possibility to mark activities as completed. 36 % indicated that they didn't use this possibility, either because they didn't consider marking activities as completed as helpful (9 %), or they didn't know how to use the possibility (9 %) or they didn't notice that the possibility was available (3 %). 14 % had another reason for not using the possibility to mark activities as completed.

When participants marked activities as completed, 34 % did so when they had performed an activity, regardless of how well they performed it, 38 % when they had performed the activity and thought they mastered it well enough and 10 % when they had the feeling from the description of the activity that they mastered it, and did not need to perform the activity. Although participants could tick off more than one strategy for marking elements as completed, only two participants (=3%) did this.

The completed marks that participants had added were used by 36 % of the participants to see how many activities they already mastered, using the 'Show history' button. 32 % of the participants used the marks to see how many activities I still had to perform, using the 'Show plan' button. 27 % used the marks to see how far they had progressed by comparing the number of activities performed to the number of activities they still had to perform. 27 % indicated they did not use the 'Show' button.

Marking activities as complete had several effects on participants' learning. 27 % of the participants progressed more efficiently, 40 % enjoyed having this type of overview. And 14 % reported another effect.

The possibility to mark activities as completed was evaluated by participants as (very) useful (66 %), neutral (27 %), or (very) useless (6 %).

Note that there is a discrepancy between the number of participants who indicated that they made use of the possibility to mark activities as completed (N=41) and the number of people who mentioned one or more strategies for marking activities as completed (N=51). This means that ten participants indicated that they did not use this option, but nevertheless provided a strategy on how they used it [post-test].

*Private blogs*

Private blogs were used by 14 % of the participants to reflect on their progress, and by 11 % for other reasons. 75 % of the participants did not create and use private blogs [post-test].

*Communication and shared blogs*

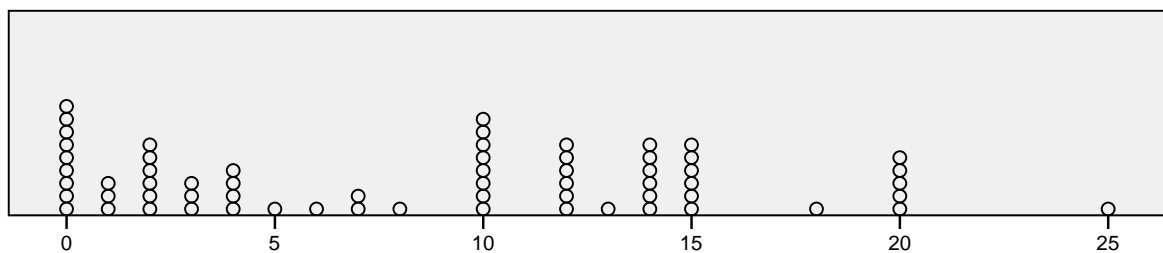
Table 13 lists the type of communication participants were engaged in, and the use of shared blogs for these purposes. Almost half (48%) of the participants did not communicate with the other participants. The most popular types of communication are sharing knowledge and learning resources (28 %) and seeking help on course content (23 %). Between 10 and 20 % of the participants provided help on content to others (16 %), discussed content (16 %), or discussed the competences that they had to master and the progress (13 %). The other communication types are used by less than 10 % of the participants. Table 13 also indicates that in general, a large proportion of the participants used the shared blogs for their communication purpose. The interpretation of the numbers in Table 13, however, is hindered, as in some cases the number of participants who indicated that they used the shared blogs for a specific communication type is larger than the number of participants who indicated that they used that type of communication, which is logically impossible [post-test]. It is also true, that some of the assignments posed by the tutors were related to making post in the blogs [context, observations].

**Table 13. Types of communication between participants**

	%	N	Of which shared blogs	%
I didn't communicate with other participants	48	31	na	na
I shared knowledge and learning resources	28	18	20	111
I sought help on course content	23	15	12	80
I provided help on course content to others	17	11	8	73
I discussed course content	16	10	16	160
I discussed the competences that I had to master and the progress	13	8	6	75
I sought help on course organisation	9	6	5	83
I socialized with other participants	9	6	4	67
I communicated with other participants in another way	9	6	na	na
I worked together on an assignment	3	2	1	50
I provided help on course organisation others	3	2	1	50
I made appointments, e.g. for chat meetings	3	2	0	0
I made organisational decisions	2	1	2	200
I used shared blog entries for other communication purposes	na	na	3	5

Communication with blogs was supplemented by other means for a majority of the participants. 44 % of the participants indicated that they did not use other means with the other participants. The remaining 56 % all used email. The use of other means was rare: skype (6 %), discussion forum in BSCW (6 %), chat (5 %), telephone (3 %), face-to-face meetings (3 %) and video-conferencing (2 % = 1 participant).

Figure 2 shows that participants differed widely in the number of times that they created a new shared blog entry or updated an existing one. While 9 participants did not create or update any entries, one participant created and updated 25 blogs [post-test].



**Figure 15. Number of times participants created a new shared blog entry or updated an existing one; one dot is one participant**

Most participants (more than 80%) read blogs from others. 16 % of the participants did not read blogs from others; 5 % because there were (almost) no blogs from others, 11 % indicated there were blogs from others but they didn't read them. 26 % read (almost) all blogs from others and 58 % read only those blogs from others that seemed relevant to them.

81 % of the participants also rated the use of the blog as (very) useful, 16 % as neutral, and 3 % as useless.

To enable participants to know who the other participants were, all participants of the Water Management pilot were asked to put their profile in the BSCW learning environment. 58 % of the participants read none or a few of these profiles, 3 % read half of them, and 39 % read most or all of the profiles. 25 % of the participants read the profiles to get an impression of who the other people in the course were, 6 % read the profiles to look for specific expertise, and 5 % read the profiles before they contacted a specific person. 19 % read the profiles for other reasons [post-test].

## 5.4 Conclusions

The group of participants who followed the Water Management Pilot are a very homogeneous group on some aspects: they are relatively young, they are highly educated, they know how to search for information, and with many of them their motivation is a combination of intrinsic motivation to develop their Flood Management competence and job-related motivation. In other respects they are a very heterogeneous group: participants come from all over the world, the number of years of experience in the profession differs widely, and the same applies to their experience with web-based learning other than searching for information.

The post-test and log files show that the number of hours spent on the Water Management Pilot is very divergent. In spite of this, participants do not differ very much in how much they have learnt with respect to the various competence types, which in general is much. When compared to how important they valued learning on the various competence types, we can see that most important to them was how to find creative solutions related to the competence, but this was not the competence type on which they indicated they learned most. They learned most on cognitive knowledge, which in the pre-test was considered less important than finding creative solutions. Social skills were considered least important. This was also the competence on which they learned least, and, in line with this, the collaboration with other participants was valued moderately positive, but not as high as other aspects of the pilot.

A large majority appreciated the learning resources, enjoyed this way of learning and wishes to continue to develop this competence further. As the learning path was basically planned by the experts, it is not surprising that participants felt moderately positive in control of their own learning, and that there was a moderate use of self-assessment and the possibility to mark activities as completed. In line with this, most participants followed the plan as indicated by the

expert. But it is also clear that the relatively small amount of freedom and the possibilities to engage in self-assessment and choosing part of the order of the learning activities, was largely appreciated by the participants. Learners also expressed the usefulness and potential of the possibility to mark activities as completed.

## 6. Recommendations for future developments and general conclusion

This final chapter describes the main conclusions and recommendations for future developments resulting from the evaluation of the Àgora and Water Management pilots.

### 6.1 Recommendations for future developments

The main recommendations for future developments derived from the first version of the Àgora pilot and the Water Management Pilot (FMM01) are to solve the following problems:

- **Activities open in a very small window in the PDP “perform” tab:** When opening an activity, it appears in a small frame within the “perform” tab of the PDP, which make it almost unreadable (too small for regular screens). Therefore the participants needed to open the activity in a new window to view the activity in full-screen.
- **No logical order in the generated list of activities:** As reported in the Àgora quantitative results, a majority of participants performed the activities they thought to be easiest and then progressed to the activities thought to be most difficult. Though, this process was hindered by the fact the activities were not organized in any logical order and therefore the participants spent a lot of time in trying to identify the content of the activity and their level of difficulty. The activities did not have any level assigned, which also made it more complicated to search for the easiest activities. This issue was solved in the Water Management pilot by numbering the competences and its associated activities.
- **Confusion on whether to perform the activities in the “plan activities” tab or in the “perform” tab:** It was observed that participants tried to do the activities after generating the plan without moving to the following tab (and then the window for editing the activities appeared). The participants themselves recommended the use of colour codifications or symbols to enhance the usability of the tool and make it accessible for all the participants.
- **Self-assessment utility:** This functionality is not taking into account the proficiency level assigned by the participants to the different competences. Indeed, the generated list of activities recommended by the system is the same for all participants (except in the case that the indicated proficiency level is equal or higher than the required, the first time that the plan is generated).
- **List of activities in the “perform” tab does not appear in full (cut by the system):** It would be easier for the participants to have an overview of the available activities and to select them if the title of the activities would appear in full.
- **Existence of a chat/forum/system to be able to submit assignments and posing questions:** Many participants have asked to be able to submit online (through the tool) their technical or content based questions to an expert and by the same mean receive their answers. Because it was not available in the PDP tool, the Water Management FMM pilot tackled this problem by using the BSCW environment as a complement.

Specifically for the Àgora Pilot the following problem was observed and needs solving:

- **“Search activity” button failure:** PDP gets stuck during 5 minutes or more when pressing on "search activity" button.

Particularly for the Water Management FMM pilot the following problem was observed:

- **Seeing profiles of the participants:** Since this facility is not available in the PDP, the FMM pilot implementers asked participants to add their profile in the BSCW environment and almost half of the participants made use of this functionality (i.e., read other participants' profiles).
- **Evidence functionality:** it does not work properly since it does not have a private character. When a learner uploads an evidence of her/his competence proficiency level, the evidence is shown to all the learners.

This latest issue has been already posted as a bug in Bugzilla. The rest of the issues have been communicated to the “testing” task force so that they communicate them to the appropriate WP’s and developers (to be done probably also by means of the Bugzilla system established by WP3).

## 6.2 *Global conclusion*

The pilots conducted in cycle 1 of the project mainly served as “proof of concept”. The results showed that a competence centred approach to learning is beneficial to the learners. From the experiences of the pilots conducted in cycle 1 we also learned that more experiences about didactical, social, and organizational conditions have to be acquired in order to improve the effectiveness and efficiency of the approach. The shift from a course or a group perspective on learning to a focus on competences was a challenge, which required fundamental rethinking of the curricular and educational structures in the mostly formal context in which the pilots were conducted.

Cycle 2 usability pilots have shown that TENCompetence provides usable solutions to real problems in authentic contexts. The 'Water Management' pilot has been executed with 90 participants from 47 countries; the Agora pilot has addressed the topic of 'ICT and English language for adult learners and has reached more than 100 participants; the Digital Cinema and the 'ICT teacher training' pilots has extended their first phase, while the 'Special Education Bulgaria' pilot supported 15 participants in the development of the competences required to educate learners with special needs (e.g., dead-blindness).

The Agora pilot has investigated the benefits of the TENCompetence infrastructure for supporting the development of competences in a non-formal context where adult learners have low educational levels but an intrinsic motivation to learn. The pilot has shown that the TENCompetence can be successfully applied in this challenging context. Contrary to the expectations, it turned out that participants (even if they did not have the advanced computer skills or the necessary self-confidence) were able to acquire and use these skills, and enjoyed it. The PDP offered participants a new way of learning which fostered their self-organization and increased their motivation. The tool made participants discover competence development opportunities, which led them to create several competence development plans associated to different profiles of competences. The pilot meant a relevant change in the Agora context. It was observed how participants’ confidence to take the responsibility for the planning and performance of learning activities increased along the pilot. Moreover, the potential of the PDP support for goal setting, self-assessment and progress control was seen as particularly positive for promoting participants’ reflection and awareness of their own learning. It was this change not only in abilities, but also in mindset that enabled participants to continue their activities in the pilot. Their reward was large, not only and not primarily by what they actually learned, but by discovering a world of further competence development opportunities that was opened up for them.

In the case of the Water Management FMM pilot, participants were highly educated, relatively young, know how to search for information, and for most of them the motivation to join the pilot was job-related. The majority of the participants were very active in the pilot and more than a half of them were able to complete it and received a certificate evidencing the competences developed. The participants also recognized that they learnt with respect to the various competence types. It is also encouraging that a large majority appreciated the way of learning provided by the TENCompetence infrastructure and wished to continue to develop these competences further. As the learning path was basically planned by the experts, it is not surprising that participants felt moderately positive in control of their own learning. However, the relatively small amount of freedom and the possibilities to engage in self-assessment and choosing part of the order of the learning activities were largely appreciated by the participants.

The possibility of marking activities as completed and being able to see the history (of activities completed) was found by many learners as a useful strategy to manage their learning progress. This fact might lead to the conclusion that more sophisticated ePortfolio-like functionalities would be relevant for this type of scenarios.

The organizational implications of competence centred learning for Àgora and UNESCO-IHE were different. Àgora recently started to follow a competence-based orientation in their training program. Therefore, there has not been a substantial change in the organization in this respect. However, the pilot has provided Àgora an opportunity to make more explicit this competence orientation. The emphasis of the changes has been more on the possibilities to create personal competence development plans depending on each participant needs. However in the case of the Water Management pilot, UNESCO-IHE needed to follow a progress of translating their topic-oriented training perspective into competence profiles and development plans. Both organizations have used the framework of Cheetham and Chivers to formulate the competences. The social interactions related to competence development have been supported differently in each pilot and depended on the characteristic of each setting and their general context. While in Àgora the mediation of interactions was mainly face-to-face, the support provided by UNESCO-IHE has been based on the blogging facility of the PDP and the BSCW environment.

WP4 will keep testing and validating the new integrated TENCompetence solutions and its wider applicability during 2009 in the four main scenarios of the TENCompetence pilots (Digital Cinema, ICT teacher training, Àgora, and Water Management). The effect of being able to replicate the usage of TENCompetence in previous scenarios is an important sign of sustainability. TENCompetence is also working towards more business relevant trial scenarios. The larger consortium partners are preparing and implementing business demonstrators executed at Associate Partner organizations, or within the parent organization. To assist this process, WP4 has delivered a pilot implementation methodology in D4.5, which also includes the planning of the business demonstrators. Furthermore, WP4 will continue collaborating closely with WP9 to secure relevant training and with WP10 to assist partners in implementing viable business models.



## References

- Cheetham, G. & Chivers, G. (1996) "Towards a holistic model of professional competence", *Journal of European Industrial Training*, 20(5), 20-30.
- Cheetham, G. & Chivers, G. (1998) "The reflective (and competent) practitioner: a model of professional competence which seeks to harmonise the reflective practitioner and competence-based approaches", *Journal of European Industrial Training*, 22 (7), 267-276.
- Council for Exceptional Children (1995) "What Every Special Educator Must Know: the International Standards for the Preparation and Certification of Special Education Teachers", Council for Exceptional Children, Reston, VA.
- Council for Exceptional Children (2003) "What Every Special Educator Must Know: the International Standards for the Preparation and Certification of Special Education Teachers", Council for Exceptional Children, Arlington, VA.
- Elgg community (2008) "Elgg", Retrieved November, 2008, from <http://elgg.org>
- European Parliament (2008) "Recommendation of the European Parliament and of the Council (April 2008) on the establishment of the European Qualifications Framework for lifelong learning" Retrieved November, 2008, from <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:111:0001:0007:EN:PDF>
- Flecha, R. (2005). *Sharing Words*. (3 ed.). Lanham, M.D: Rowman & Littlefield.
- Griffiths, D., et al (2007) "TENCompetence D4.1 Pilot evaluation plan" Retrieved November, 2008, from <http://dspace.ou.nl/handle/1820/684>
- Guba, E.G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational Communication and Technology: A Journal of Theory, Research, and Development*, 29(2), 75-91.
- Martens, H., & Vogten, H., (2008). TENCompetence Personal Development Planner 0.9.3. TENCompetence software and documentation, retrieved December 15, 2008 from <http://dspace.ou.nl/dspace/handle/1820/1545>.
- Hernández-Leo, D., et al (2008) "D4.3 Implementation and evaluation plan of Cycle 2 pilots" Retrieved November, 2008, <http://dspace.ou.nl/handle/1820/1310>
- Koper, R. (2008). Building The European Network for Lifelong Competence Development. Keynote Presentation at the 5th TENCompetence Open Workshop "Stimulating Personal Development and Knowledge Sharing". Sofia, Bulgarian. Retrieved December 15, 2008 from <http://dspace.ou.nl/handle/1820/1529>.
- Koper, R., & Olivier, B. (2004). Representing the Learning Design of Units of Learning. *Educational Technology & Society*, 7 (3), 97-111.
- McLetchie, B.A.B., & Riggio, M. (1997) "Competences for Teachers of Learners Who are Deafblind: Perkins National Deafblind Training Project", Perkins School for the Blind, Watertown, MA.
- Moghnieh, A., et al (2008a) "TENCompetence D4.2 Evaluation of Cycle 1 pilots" Retrieved November, 2008, from <http://dspace.ou.nl/handle/1820/1153>
- Moghnieh, A., Hernández-Leo, D., Navarrete, T., Santos, P., Blat, J. (2008b) "Supporting Distance Learning Activities and Social Interaction: a Case Study, Proceedings of the 8th International Conference on Advanced Learning Technologies in Santander", Spain, June 1st-5th, 2008.
- Oates, D.B.J. (2006) *Researching Information Systems and Computing*. Sage Publications.
- Schoonenboom, J., Sligte, H., Moghnieh, A., Hernández-Leo, D., Stefanov, K., Glahn, C., Specht, M., Lemmers, R., (2008) "Supporting life-long competence development using the TENCompetence infrastructure: a first experiment", *International Journal: Emerging Technologies in Learning*, Vol. 3 (2008) pp. 53-59
- Sharples, P., Griffiths, D., & Scott, W. (2008). Using Widgets to Provide Portable Services for IMS Learning Design. *Proceedings of the 5th TENCompetence Open Workshop "Stimulating Personal Development and Knowledge Sharing"*. Sofia, Bulgarian.

Stefanova E., Sendova E., Nikolova I., Nikolova N. (2007) “When I\*Teach means I\*Learn: developing and implementing an innovative methodology for building ICT-enhanced skills”, Proceeding of the IFIP IMICT 2007 Conference, Boston, USA, June 2007. Retrieved November, 2008, <http://dspace.ou.nl/handle/1820/1065>

Zelkowitz, M. V., & Wallace, D.R. (1998). Experimental models for validating technology, *IEEE Computer*, 31 (5), 23-31.

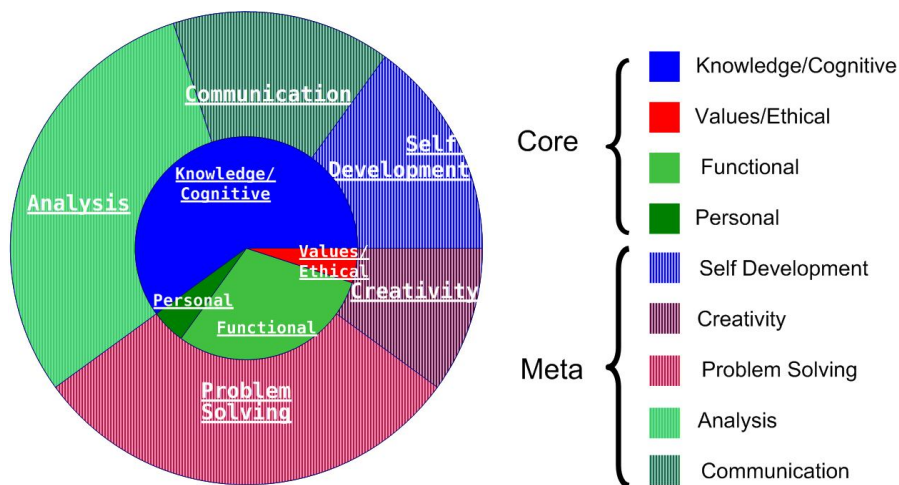
## Appendix 1: Additional material related to the Water Management FMM pilot

### A.1.1 Characterization of the competence profile and the competences

The characterization of the competences involved in the Water Management pilot has been already detailed in D4.3 (section 3.1.4) following the model of Cheetham and Chivers (1996, 1998). For reading purposes we will describe here the different steps from topic-driven to competence-based approach for the FMM competence development.

#### Step 0: Redefinition of professional work field of FMM into competences

With regard to the Cheetham and Chivers Occupational Competency Mix, the professional working field of the Flood Modelers with a role to advise on water management, was interpreted.



**Figure 16. Cheetham and Chivers Occupational Competency Mix for FMM workforce**

The Competence Profile is the cluster of abilities learners should have when finishing the FMM pilot. The descriptions of the Competences should be very ‘understandable’ for them because they have to work with them and will have to do self-assessments on them.

#### Step 1: Redefinition of expert-defined topics into competence elements of Competence Model

The TENCompetence concept approach entails – besides the integration of different competence development tools - an understanding and transformation of the content of a topic driven course into a competence development based course.

The original Module FMM was based on the following topic structure:

The module consists of four related, and sequential topics:

- Flood management and information technology
- Flood processes
- Flood modelling: methods and techniques
- Flood modelling: advanced features.

The learning path is defined by the experts. Participants have to follow the topic and sequence of the sub parts.

In this phase the course and its content were de-constructed according to the core competence model elements of Cheetham and Chivers (Cheetham & Chivers, 1996; Cheetham & Chivers, 1998).

**Main Competences**, belonging to the Competence profile of a Flood Modeller for Management:

1. The ability to identify the cause of a flood
2. The ability to identify the type of a flood
3. The ability to simulate a type of flood
4. The ability to interpret and evaluate the impacts of a flood
5. The ability to prepare and advise/communicate on possible flood prevention and mitigation actions, including technical and ethical considerations.

Basic/compulsory: Catchment modeller

Specialised: River basin modeller, Urban modeller

### **FMM constituents for the proposed model**

Then a subdivision was made in subcomponents according to the Cheetham and Chivers Competence model. After a discussion with the experts it became clear that the course will support two competence (sub)profiles: River basin Flood Modeller and Urban Flood Modeller. These are actual professional working fields. As a generic basis though Modelling knowledge of a catchment is a pre-requisite. Therefore competence development in Catchment Modelling is compulsory and precedes the two focussed competence profiles.

As a next step all course components were categorised into the sub-components of the Occupational Mix Model. In Table 14 the first columns holds the Cheetham and Chivers Occupational Competency Mix components that have been mapped to the needed competences of the FMM professional. The second column (FMM Competence) refers to the matching FMM Course competences.

**Note** – Each constituent material has a letter in front indicating if it is Catchment (C)/ Compulsory (C), river (R) or urban (U) related, or both (RU) for river and urban. There is also the General (G) indication. To fulfill one competence all the C components must be selected and at choice R or U components. The G components are advisable to be selected, however some of them, depending on learner choice can be skipped.

SLU stands for study load units and represents the estimation on the number of hours needed to learn a particular topic.

**Table 14. Towards the Water Management FMM competences**

Cheetam and Chivers competences	FMM competence
<b>1. Knowledge / Cognitive competence</b>	
a. Tacit/Practical ( knowing in action)	
i. G-Identification of a problem to be solved: Choose a river basin, analyse it and identify the problems	2.1.
ii. G-Find minimum two solutions to the identified problem in 1-a-i	2.1., 2.2.
iii. G- Analyse the best economical solution from 1-a-ii	2.1
iv. G- Predict which is the best engineering	2.2, 2.3
v. solution from 1-a-ii and justify why	2.2, 2.3
vi. G- Identify possible future problems in the case defined at 1-a-i	2.3, 2.4
b. Technical/ theoretical (linked to underlying knowledge base)	
i. G- Introduction to the course – movie file by Roland + lecture note	2.1
ii. G – Flood management and information technology	2.2
1.1 Floods and flood management (6 SLU)	
1.2 Hydro-informatics for flood management (6 SLU)	2.2
1.3 Ecological issues in flood management (6 SLU)	2.3
iii. Flood processes	
2.1 C-Meteorological inputs (6 SLU)	3.1
2.2 C- Rainfall-runoff processes (6 SLU)	3.2
2.3 RU-Free-surface flow (8 SLU)	4.1, 4.2
2.4 U-Flooding in urban areas (6 SLU)	4.3
iv. Flood modelling methods and techniques	
3.1 C-Rainfall-runoff modelling (8 SLU)	5.1
3.2 C- Catchment modelling (6 SLU)	5.2
3.3 C-Hydrological modelling (with HEC-HMS) (16 SLU)	6.1
3.4 R-Flood routing (10 SLU)	5.3
3.5 R-Hydrodynamic modelling (with MIKE11) (12 SLU)	6.2
3.6 U-Urban flood management (10 SLU)	6.3
3.7 U-Urban flood modelling (with MOUSE) (12 SLU)	6.3
v. C-Flood modelling- advanced features	
4.1 Data-driven modelling (14 SLU)	5.4
4.2 Flood modelling and DSS (12 SLU)	7.1
4.2 Uncertainty in flood modelling (12)	7.2
4.4 Exercise on data-driven modelling for flood management (12 SLU)	6.4
4.5 Flood forecasting and warning (12 SLU)	6.5
c. Procedural (how, what, who, when)	
i. G-Modelling protocols	6.1, 6.2, 6.3, 6.4
ii. G- Best practices for flood management	7.1

<b>Cheetam and Chivers competences</b>	<b>FMM competence</b>
d. Contextual (sector, industry, organisation, profession) i. NONE (FOR NOW)	NONE
<b>2. Functional Competence</b>	
a. Occupation –specific (range of occupation specific tasks) i. CRU- Problem position and analysis	6.1, 6.2, 6.3, 6.4
ii. C - Data analysis	6.1, 6.2, 6.3, 6.4
iii. C - Model selection ( HEC-HMS, HEC-RAS, MOUSE, SWAT)	6.1, 6.2, 6.3, 6.4
iv. CRU - Model building- step by step	6.1, 6.2, 6.3, 6.4, 7.2
v. CRU - Running simulations	6.1, 6.2, 6.3, 6.4, 7.2
b. Organisation process (planning, monitoring, implementing, delegating, evaluating) i. G- Calibrate, validate the model run in 2-a-iv	6.1, 6.2, 6.3, 6.4
ii. G- Report/Interpret the result of the model	6.1, 6.2, 6.3, 6.4
iii. G- Field work, if possible	None YET
c. Cerebral (literacy, numeracy, IT literacy, diagnosis) i. G- Write an article for a conference on a chosen topic	2.4
ii. G- Write an article for a journal	2.4, 7.1
iii. G- Write an essay on a given topic	7.1
iv. G- Assess existing resources on the internet, at the library, in the news	2.4
v. G- Create a selected list of own resources, from those identified in 2-c-iv, using learnWeb or Amazon	2.4
vi. G- use a unit converter	6.1, 6.2, 6.3, 6.4
d. Psychomotor (manual dexterity, keyboard) i. NONE FOR THE MOMENT	NONE
<b>3. Personal behavioral competence</b>	
a. Social/ Vocational (self-confidence, thinking on feet, calmness, control of emotions, interpersonal, listening, task-centredness, presentation) i. G – Public presentation (article presentation)	Partly in 2.4, 7.1
ii. a conference or a lecture, based on the essay from point 2-c-i, or 2-c-ii, or 2-c-iii)	Partly in 2.4, 7.1
iii. G- Attending a HI or IAHR conference or seminar (for example in 2009 there are both these conferences)	Hopefully some of them will do it, we can not insure that, we can only advise
b. Intra-professional (collegiality, sensitivity to peers, conformity to professional norms) i. CRU - Groupwork	Through blogging, throughout the whole course
ii. CRU- Opening a discussion on the forum	Through blogging, throughout the whole course
iii. CRU- Answering a question of a colleague on the forum	Through blogging, throughout the whole course
iv. CRU-Share the list created in 2-d-i, with a group of colleagues	Through blogging, throughout the whole course

Cheetam and Chivers competences	FMM competence
<b>4. Values/ Ethical competence</b>	
a. Personal (adherence to law, social/ moral sensitivity, adherence to personal moral/ religious codes) i. NONE FOR THE MOMENT	NONE
b. Professional ( adherence to professional codes, self regulation, environmental sensitivity, client centerdness, ethical judgement) i. C- Water resources sharing	Through blogging, throughout the whole course
ii. C- Water related problems	Through blogging, throughout the whole course
iii. G-Conflict resolution	Through blogging, throughout the whole course
iv. G- Transboundary issues	Through blogging, throughout the whole course
v. G- Water law, local and international	Through blogging, throughout the whole course

## Step 2: Identification of the Subject-based ‘FMM course’-units into the (sub) Competence Model

FMM pilot implementers started classifying the Units of the Subject-based FMM course to Cheetham Core- and Meta- components after which they could select the right verbs. Table 15 shows in *italics* how the original unit title is re-written as a sub-competence using the verbs from the related Cheetham Core Component. Meta competences are used and needed for all Core Competences. That is why each Competence (Unit) can have several Cheetham Meta Components. Some sub-competences that are in the Functional Cheetham Core Component have the Meta Components Analysis, Creativity and Problem-solving because they contain a real exercise/workshop.

**Table 15. Unit-titles rewritten to sub-competences**

Main Competence (Step 1)	Original Course Unit Name <i>Competence Descriptor</i>	Cheetam Core Component	Cheetam Meta Components	New (sub) Competence (Step 3)	
Flood management and information technology					
2	Introduction to Flood Modelling for Management	Knowledge	Self Development		
	<i>1. Having an overview of the competences needed as well as of the learning paths to understand flood modelling for management</i>				1.1
	<i>2. Being able to synthesize Flood Modelling for Management</i>				1.2
2	Floods and flood management	Knowledge			
	<i>Knowing the contexts of flood modelling within the society and the environment</i>				2.1

2	Hydroinformatics for flood management <i>Knowing the context between Hydroinformatics and Flood Modelling</i>	Knowledge		2.2
2	Ecological issues in flood management <i>Being able to Judge, consider and weigh Ecological Issues, related to flood management</i>	Ethical	Analysis	2.3
2	Flood resources on the web <i>Being able to find and decide on the relevance of resources on the web</i>	Functional	Self development, Analysis	2.4
<b>Main Competence</b>	<b>Original Course Unit Name</b>	<b>Cheetham Core Component</b>	<b>Cheetham Meta Components</b>	<b>New (sub) Competence</b>
Flood processes				
1	Meteorological inputs <i>Being able to identify Meteorological inputs leading to floods</i>	Knowledge		3.1
1	Rainfall-runoff processes <i>Knowing what aspects of and in what way rainfall-runoff processes influence flood generation</i>	Knowledge		3.2
1	Free-surface flows <i>Knowing to formulate mathematically the free surface flow processes</i>	Knowledge		4.1, 4.2
Flood modelling: methods and techniques				
3	Rainfall-runoff modelling <i>Being able to model Rainfall-runoff</i>	Functional	Analysis, Creativity, Problem-solving	5.1
3	Catchment modelling <i>Knowing how to model catchment processes</i>	Knowledge		5.2
3	Hydrological modelling (with HEC-HMS) <i>Being able to do Hydrological simulations</i>	Functional	Analysis, Creativity, Problem-solving	6.1
3	Flood routing <i>1. Being able to identify the flood routing technique to be applied for a specific flood case study.</i> <i>2. Being able to apply knowledge of flood routing (exercise)</i>	Knowledge		5.3
3,5	Hydrodynamic modelling (with MIKE11) <i>1. Being able to do</i>	Functional	Analysis/ Creativity /Problem-	6.2



	<i>Hydrodynamic modelling</i> 2. <i>Being able to apply knowledge of hydrodynamic modelling (exercise with MIKE 11)</i> 3. <i>Being able to evaluate the results of hydrodynamic modelling (report)</i>		solving	
3,5	Urban flood management <i>Knowing the Principles of modelling Urban Flood</i>	Knowledge		4.3
3,5	Urban flood modelling (with MOUSE) 1. <i>Being able to apply knowledge of Urban Flood modelling (exercise with MOUSE)</i> 2. <i>Being able to evaluate the results of urban flood modelling (report)</i>	Functional	Analysis/ Creativity /Problem-solving	6.3
<b>Flood modelling: advanced features</b>				
3,5	Data-driven modelling <i>Knowing the principles of Data-driven modelling</i>	Knowledge		5.4
4,5	Flood modelling and DSS <i>Knowing to develop and apply DSS for flood management</i>	Knowledge		7.1
4,5	Uncertainty in flood modelling <i>Being able to assess the Uncertainties of model predictions</i>	Functional	Analysis/ Creativity /Problem-solving	7.2
<b>Main Competence</b>	<b>Original Course Unit Name</b>	<b>Cheetham Core Component</b>	<b>Cheetham Meta Components</b>	<b>New (sub) Competence</b>
4,5	Exercise on data-driven modelling for flood management 1. <i>Being able to model floods using data driven methods (exercise)</i> 2. <i>Being able to evaluate the results obtained with data-driven techniques (report)</i>	Functional	Analysis/ Creativity /Problem-solving	6.4
4,5	Flood forecasting and warning systems <i>Being able to do flood forecasting and to incorporate the results into warning systems</i>	Knowledge/Personal		6.5

### A.1.2 Competence development plans

The basic Competence development plan “FMM – Flood Modeller – for River and Urban Floods” that was made available to the learners consisted of the following details. During the pilot the start- and end dates were updated by new versions, depending on the developments.

Competence (Required. level -RL)	Activity (to be uploaded in the PDP)	SLU	Start- end date	Resource description	Remark	Assignment
		Level points (L)				
<i>Pre-evaluation questionnaire</i>			22-23 Sept.		Compulsory	Submit pre- evaluation questionnaire Due date:24:09.08
<b>1. Competences and platform (RL=2)</b>	Introduction to the platform	0	22-23 Sept.	Step-by- step.pdf	All Compulsory	-
	1.1. Competences concept	0 (L=2)	22-23 Sept	1. Website		
	1.2. Introduction to the flood management competences		24-25 Sept	2. Lecture		
<b>2. Understanding the context of flood modelling (RL=3)</b>	2.1. Knowing the context of flood modelling within the society and	6 (L=0.5)	26-27 Sept	1. Audio lecture + ppt 2. Lecture notes 3. Supplementary	All Compulsory	-
	2.2. Knowing the context between Hydroinforma tics and Flood Modelling	6 (L=0.5)	28-29 Sept	1. Audio lecture + ppt 2. Lecture notes 3. Supplementary		
	2.3. Judge, consider and weight ecological issues related to flood.	6 (L=0.5)	30 Sept- 01 Oct	1. Ppt lecture 2. Lecture notes 3. Supplementary reading.		
	Learn how to locate flood resources	6 (L=1)	01-03 Oct	1. Ppt assignment description 2.		<b>Assignment 1.</b> Due date 06.10.2008
<b>3. Ability to identify causes of floods (RL=2)</b>	3.1. The ability to identify meteorologica l inputs leading to floods.	6 (L=2)	04-05 Oct	1. Ppt lecture 2. Supplementary reading materials	All Compulsory	

	3.2. Knowing what aspects of and in what way rainfall – runoff processes influences	6 (L=2)	06-08 Oct	1. Ppt lecture 2. Supplementary reading materials		
<b>4. Ability to analyse and understand flood processes (RL=3)</b>	4.1 Knowing to formulate mathematical y the free surface flow processes	8 (L=3)	09-10 Oct	1. Ppt lecture 2. Supplementary reading materials	Compulsory	
	4.2. Knowing the principles of modelling river floods	8 (L=2)	11-13 Oct	1. Ppt lecture 2. Supplementary reading materials		O1
	4.3 Knowing the principles of modelling urban floods	6 (L=2)	11-13 Oct	1. Ppt lecture 2. Lecture notes 3. Supplementary	O2	
<b>5. Ability to modell floods (RL=4)</b>	5.1. Being able to model rainfall-runoff	8 (L=1.5)	14-16 Oct	1. Ppt lecture 2. Lecture notes		
	5.2. Knowing how to model catchement processes	8 (L=1.5)	17-18 Oct	1. Ppt lecture 2. Lecture notes 3. Supplementary reading materials		
	5.3. Being able to identify the flood routing technique to be applied for a specific case study	10 (L=2)	19-21 Oct	1. Ppt lecture 3. Supplementary reading materials		
	5.4. Knowing the principles of data-driven modelling	12 (L=2)	22-24 Oct	1. Ppt lecture 2. Lecture notes 3. Supplementary reading materials	All Compulsory	

<b>6.</b> <b>Ability to simulate floods (RL=4)</b>	6.1. Being able to do hydrological simulations (HEC-HMS + flood routing)	14 (L=2)	25 Oct 02 Nov	1. Ppt lecture 2. Lecture notes 3. Supplementary reading	Compulsory	<b>Assignment 2 +3.</b> Due date 06.11.2008
	6.2. Being able to do hydrodynamic modelling	10 (L=1.5)	03-20 Nov	1. Ppt lecture 2. Lecture notes 3. Supplementary reading	O1	<b>Assignment 4.</b> Due date 22.11.2008
	6.3. Being able to simulate urban flooding (use MOUSE)	10 (L=1.5)	03-20 Nov	1. Ppt lecture 2. Lecture notes 3. Supplementary reading	O2	<b>Assignment 4.</b> Due date 22.11.2008
	6.4. Being able to simulate floods using data-driven modelling	10 (L=1.5)	03-20 Nov	1. Ppt lecture 2. Lecture notes 3. Supplementary reading	O3	<b>Assignment 4.</b> Due date 22.11.2008
	6.5. Being able to do flood forecasting	10 (L=1)	20-23 Nov	1. Ppt lecture 2. Supplementary reading materials	Compulsory	
<b>7.</b> <b>Ability to interpret and evaluate impacts of floods (RL=5)</b>	7.1. Knowing to develop and apply a DSS for flood management	8 (L=2+1)	24-26 Nov	1. Ppt lecture 2. Supplementary reading materials	All Compulsory	<b>Assignment 5. - Optional</b> Due date 26.11.2008
	7.2. The ability to assess uncertainties of model predictions	8 (L=2+1)	25-27 Nov	1. Ppt lecture 2. Lecture notes 3. Supplementary reading materials		<b>Assignment 6. - Optional</b> Due date 26.11.2008
<b>Post-evaluation questionnaire</b>			27 - 28 Nov		All Compulsory	Submit post-evaluation questionnaire Due date:28:11.08

Note:

1. Remarks : O1, O2, O3 - Option 1 , Option 2 or Option 3. One or two of the options has to be chosen, as follows:

- In case of Competence 4, either Option 1 or Option 2 has to be completed;
- In case of Competence 6 two out of three options have to be completed.
- All options can be done as well to achieve the full level of the competence, but it is not compulsory to do all.

2. SLU- Study load units
3. The assignment column indicates when learners have to do an assignment. The due date for the assignment is indicated as well.

### **A.1.3 Updates to use cases in D4.3**

*There are no further updates of the use cases of the pilot.*

### **A.1.4 Evaluation instruments**

The evaluation instruments employed in the FMM01 pilot which are presented in this section are the following:

- Pre-test questionnaire
- Post-test questionnaire

The following **post- and pre-test questionnaire** were used by the participants, provided via a web-survey tool, and communicated via a personal email.

### **Pre-test Questionnaire**

## TenCompetence-FMM Course - Pre-test Questionnaire

### 1. Introduction

Dear participant in the Flood Modelling for Management Course Pilot (FMM),

Thank you for participating in this Pilot. The Flood Modelling for Management On Line Course is a Pilot project. It is part of the TenCompetence project, an European Research Project, which aims to establish an infrastructure for life-long learning and competence development. As the infrastructure is under development, it is very important for us to evaluate how the infrastructure is used in this Pilot.

As part of the evaluation, we have set-up this questionnaire. Your participation in this evaluation is a compulsory part of the course and is highly appreciated, as feedback from the pilot participants is our main source for improving the infrastructure. We therefore ask you to fill in the full questionnaire.

We like to stress that by returning this questionnaire, you only grant the researchers permission to use your answers for the evaluation of the pilot. The data you provide will be made completely anonymous before data analysis. They will be used by the evaluation researchers only and not be distributed to anyone else. Thank you for your participation!

The questionnaire contains 29 short questions in total; Please answer all the questions.

Thank you for your attention and good luck!

The FMM-Course Research Team

### 2. Background information

**\* 1. What's your age?**

**\* 2. What's your gender?**

Female

Male

**\* 3. Country in which you live in?**

**\* 4. Highest educational degree that you earn:**

Bachelor's degree

University master's degree

PhD

**\* 5. Profession: I am a**

**\* 6. Current job function:**

**\* 7. Number of years of experience in the professional field of Flood Modelling:**

### 3. Competence Development

**TenCompetence-FMM Course - Pre-test Questionnaire**

**\* 8. How would you describe your current proficiency level with respect to Flood Modelling for management?**

- Novice
- Beginner
- Intermediate
- Advanced
- Expert

**\* 9. How important is it for you to acquire the following types of competences?**

	Completely unimportant	Unimportant	Not unimportant nor important	Important	Very important
* Cognitive knowledge (to know what Flood Modelling is about)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Functional skills (to know how to do Flood Modelling)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Social skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Knowing how to behave according to the rules and values of the profession	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Knowing how to guide my future use by reflection on current practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Knowing how to find creative solutions for problems related to this competence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**\* 10. How often have you followed a training or course which was competence-based?**

- Never
- Once
- Two or three times
- Four or more times
- I don't know what competence-based training is

**4. Experience with web-based learning**

**\* 11. How would you describe your experience with distance learning? The total number of courses / modules etc. that I have followed through distance learning is:**

**\* 12. How often have you participated / do you participate in online (webbased) discussion forums?**

- Never
- Occasionally
- Sometimes
- Often
- Very often

### TenCompetence-FMM Course - Pre-test Questionnaire

**\* 13. How often have you participated / do you participate in online chats?**

- Never
  Occasionally
  Sometimes
  Often
  Very often

**\* 14. How often have you used / do you use search functions for finding information, such as google or database search?**

- Never
  Occasionally
  Sometimes
  Often
  Very often

**\* 15. How often have you used / do you use ratings by others for selecting information for your own use?**

- Never
  Occasionally
  Sometimes
  Often
  Very often

**\* 16. How often have you shared / do you share data and files with other people in online communities for leisure (free time) purposes?**

- Never
  Occasionally
  Sometimes
  Often
  Very often

**\* 17. How often have you shared / do you share sharing data and files with other people in online communities for professional purposes?**

- Never
  Occasionally
  Sometimes
  Often
  Very often

**18. Which of the following reasons for following the Flood Modelling for Management pilot apply to your situation?**

**Tick all of the answers listed below that apply to your situation.**

- I want to keep up to date within my existing function or job  
 I want to study for a new function or job or improve my current job level  
 I want to reflect on my current competences to look which functions and jobs are within my reach or to help me define new learning goals  
 I want to improve my proficiency level of a specific competence  
 I want some support on a non-trivial learning problem  
 I want to explore the possibilities in a new field (learning network) to help define new learning goals

**\* 19. Which of the following describe(s) the involvement of your employer?**

**Tick all of the answers listed below that apply to your situation**

- My employer is not involved in my following this course  
 My employer would have paid the fee for this course  
 My employer has obliged me to follow this course  
 My employer has allocated part of my working hours for following this course  
 Following this course successfully is necessary for me to keep my current job function  
 Following this course successfully is necessary for me to obtain a new job function at my current employer.  
 I follow this course as part of a trajectory for people who are unemployed or who are in danger of becoming unemployed.



**TenCompetence-FMM Course - Pre-test Questionnaire**

**\* 20. The course will provide you with a diversity of web-based learning resources. In addition, your learning can be supported in several ways: We can outline a learning path for you, we can ask you to follow a specific learning path, or we can give you the freedom to follow your own learning path.**

**What would be most supportive for your learning:**

- Support me with learning resources only
- Support me with learning resources + an outlined path + the possibility to choose my own learning path
- Support me with learning resources + a path that I need to follow

**5. Facilities**

**\* 21. The computer you use most for accessing the course is best described as**

- New (less than one year old)
- Neither new nor old
- Very old (more than a few years old)

**\* 22. The Internet connection you use most for accessing the course can best be described as**

- Slow
- Medium
- Fast
- Very fast

**23. Your Username in the FMM course:**

## Post-test Questionnaire

### TenCompetence-FMM Course - Post-test Questionnaire -v2

#### 1. Introduction

Dear participant in the Flood Modelling for Management Pilot Course (FMM),

Thank you for participating in this Pilot Course from UNESCO-IHE within the TenCompetence project. We have set-up this questionnaire for evaluating the used digital infrastructure, as well as the course organisation. Your participation in this evaluation is obligatory but also highly appreciated, as feedback from the pilot participants is our main source for improving the infrastructure and the course. We would therefore like to ask you to fill in this questionnaire as soon as possible. We like to stress that by returning this questionnaire, you only grant the researchers permission to use your answers for the evaluation of the pilot. The data you provide will be made completely anonymous before data analysis. They will be used by the evaluation researchers only and not be distributed to anyone else. Thank you for your participation!

In the questionnaire, we will start by asking a few questions on your overall appreciation, and after that we will zoom in on the separate elements of the Personal Development Planner, which was used to follow the course. The questionnaire contains 38 questions in total; answering the questions will take about 20-25 minutes.

Please consider some patience, sometimes it takes a few seconds for a page to load before your clicking on an answer is captured!

Thank you for your attention and good luck!

The FMM-Course Research Team

#### 2. Background information

**\* 1. What's your age?**

**\* 2. Your Username in the FMM course:**

**\* 3. What's your gender?**

Female

Male

**\* 4. How many hours did you spend on the FMM course ? (best guess)**

Total number of hours:

**\* 5. Was your learning process hindered by technical problems?**

	Not at all	Hardly	Moderately	Largely	Completely
I experienced the following level of hindrance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

#### 3. Overall appreciation

This part of the questionnaire is aimed at your overall appreciation of your learning experience.

**Competence development**

**TenCompetence-FMM Course - Post-test Questionnaire -v2**

**\* 6. How much have you learned with respect to the following types of competences?**

	(Almost) nothing	Little	Not little, not much	Much	Very much
* Cognitive knowledge (to know what Flood Modelling is about)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Functional skills (to know how to do Flood Modelling)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Social skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Knowing how to behave according to the rules and values of the profession	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Knowing how to guide my future use of flood modelling tools by reflection on current practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Knowing how to find creative solutions for problems related to this competence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**\* 7. What is your opinion on this way of learning?**

	I agree completely	I agree	I neither agree nor disagree	I disagree	I disagree completely
I enjoyed this way of learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**\* 8. What is your opinion on further development of this competence?**

	Certainly	Yes	Perhaps, perhaps not	No	Certainly not
I wish to continue developing this competence / these competencies further	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Appreciation of learning resources**

**\* 9. What is your opinion on the easiness or difficulty of the learning resources?**

	Very difficult	Difficult	Not difficult, nor easy	Easy	Very easy
The learning resources were:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**\* 10. What is your opinion on the compellingness of the learning resources?**

	Very interesting	Interesting	Not interesting, nor uninteresting	Uninteresting	Very uninteresting
The learning resources were:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**\* 11. What is your opinion on the usefulness of the learning resources?**

	Very useful	Useful	Not useful, nor useless	Useless	Very useless
The learning resources were:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**\* 12. Did the learning resources match your learning needs?**

	Not at all	Hardly	Moderately	Largely	Completely
The learning resources matched my learning needs:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Appreciation of control**

## TenCompetence-FMM Course - Post-test Questionnaire -v2

**\* 13. What is your opinion on the level of control you experienced over your learning process?**

	I agree completely	I agree	I neither agree nor disagree	I disagree	I disagree completely
* In the beginning, I quickly got an overview of the competences involved and my current proficiency level.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* I had a good overview on what I had done and what I had to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* I had insight into how my learning progressed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* I had the feeling that I learned exactly what I wanted to learn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* I had the feeling that I could plan my own learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* I felt in control of my own learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Appreciation of collaboration**

**\* 14. What is your opinion on collaborative aspects during the course?**

	I agree completely	I agree	I neither agree nor disagree	I disagree	I disagree completely
* I had lively and stimulating discussions with other participants in the pilot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* I learned a lot from other participants in the pilots.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Other participants in the pilot were able to answer my questions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* I provided useful help to other participants in the pilot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* I had feedback that this help to other participants in the pilot was useful.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### 4. Use of PDP (1)

In the second part of the questionnaire we ask you about your use and appreciation of the several elements of the Personal Development Planner and BSCW.

**Self-assessment**

**\* 15. For how many of the required competences that your personal development plan contained did you fill in your competence level in the self-assessment?**

	None	A minority	Half	Most	All
I used it for	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**\* 16. What is your opinion on the ease-of-use of the competence levels?**

	Very difficult	Difficult	Not difficult, nor easy	Easy	Very easy
In general, how easy was it for you to determine your own level with each competence?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**\* 17. When pointing at a level of a competence, a label shows up that gives information about the level (such as 'Level 4: a) factual and theoretical knowledge in broad contexts within a field of work or study; b) a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study').**

	Very difficult	Difficult	Not difficult nor easy	Easy	Very easy	I did not notice the labels - N/A
How easy was it for you to understand the labels attached to each level?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**TenCompetence-FMM Course - Post-test Questionnaire -v2**

**\* 18. In this FMM course UNESCO-IHE provided you with an activity plan (the plan and sequence of learning activities). Would you prefer to have more freedom yourself in choosing the sequence of activities?**

- I prefer to be given some freedom in choosing between learning activities. So, e.g. I can choose to work on 3.2 or 4.1 whenever I like, instead of 'first 3.2 and later 4.1'.
- I want to be able to define as much as possible my own learning path. The lecture should only inform me if certain learning activities have specific requirements (e.g. you cannot do 4.3 before you finished 3.2)
- I prefer the lecturer to define the whole sequence of learning activities. I just follow his/her learning path

Select activities from those still to be done

**\* 19. How did you select the next activity to perform from the list of activities?  
Please tick all that apply**

- I performed the activities in the order in which they were described in the Activity Plan from the lecturer.
- I performed the activities in the order in which they were listed.
- I started with the activities that I thought were easiest and then progressed to the activities I thought were most difficult.
- I started with the activities that I thought were most difficult and then progressed to the activities I thought were easiest.
- I started with the activities that I liked most, and then progressed to the activities that I liked least.
- I started with the activities that I liked least, and then progressed to the activities that I liked most.
- I first performed all activities related to one of the required competences, and then all activities of a second required competence and so on.
- None of these options

Marking activities as completed

The PDP allows learners to mark activities completed. Activities that are marked as completed are removed from the list of activities that you still need to complete

**\* 20. Did you make use of the possibility to mark activities as complete? If not, why not?**

- Yes
- No, because I didn't notice that the possibility was available
- No: I noticed that this possibility was there, but I didn't know how to use it
- No, because I didn't consider marking activities as complete as helpful
- No, for another reason

My other reason (please specify)

**5. Mark activities as complete**

TenCompetence-FMM Course - Post-test Questionnaire -v2

**\* 21. When did you mark activities as complete? Please tick all that apply:**

- When I had performed the activity, regardless of how well I performed it
- When I had performed the activity and thought that I mastered it well enough
- When I had the feeling from the description of the activity that I mastered it, and needn't perform the activity
- I did not use the button

**\* 22. How did you use the possibility to mark activities as completed? Please tick all that apply:**

- I used it to see how many activities I already mastered through the 'Show history' button
- I used it to see how many activities I still had to perform through the 'Show plan' button
- I used it to see how far I had progressed by comparing the number of activities performed to the number of activities I still had to perform
- I did not use the button

**\* 23. What effect did the button to 'mark activities as complete' have on your learning? Please tick all that apply**

- I did not use the button
- I used the button and I progressed more efficiently
- I used the button and I enjoyed having this type of overview
- A different effect, namely

The other effect was (please specify)

**\* 24. How would you rate the possibility to mark activities as complete?**

	Very useful	Useful	Not useful nor not useless	Useless	Very useless
The possibility to mark activities as complete is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**6. Use of PDP (2)**

Private blog entries

**\* 25. Did you create and use private (non-shared) entries? For what purpose? (Please tick all that apply)**

- I didn't create and use private blog entries
- I used private blog entries to reflect on my progress
- I used private blog entries for other reasons, namely.....

Namely (please specify) ....

Social activities and the use of shared blog entries

**TenCompetence-FMM Course - Post-test Questionnaire -v2**
**\* 26. Did you communicate with other participants in the pilots? In what ways?  
(Please tick all that apply)**

- I didn't communicate with other participants
- I worked together on an assignment
- I sought help on course content
- I provided help on course content to others
- I discussed course content
- I discussed the competences that I had to master and the progress
- I shared knowledge and learning resources
- I sought help on course organisation
- I provided help on course organisation others
- I made appointments, e.g. for chat meetings
- I made organisational decisions
- I socialized with them
- Other, namely ....

Namely (please specify)

**\* 27. Did you create and use shared blog entries for any of these communication purposes? For which purposes? (Please tick all that apply)**

- I didn't create and use private blog entries
- I didn't communicate with other participants
- I worked together on an assignment
- I sought help on course content
- I provided help on course content to others
- I discussed course content
- I discussed the competences that I had to master and the progress
- I shared knowledge and learning resources
- I sought help on course organisation
- I provided help on course organisation others
- I made appointments, e.g. for chat meetings
- I made organisational decisions
- I socialized with them
- Other, namely ....

Namely (please specify)



**TenCompetence-FMM Course - Post-test Questionnaire -v2**

**\* 28. How often did you create a new shared blog entry or update an existing blog entry?**

My estimated number of new shared blog entries or updates of existing blog entries is:

**\* 29. Did you read blogs from others?**

- No, there were (almost) no blogs from others.
- No, there were blogs from others, but I didn't read them
- I read (almost) all blogs from others
- I read only those blogs from others that seemed relevant to me.

**\* 30. Did you use means other than the blog for communication with other participants? (Please tick all that apply)**

- No
- Email
- Chat
- Skype
- Telephone
- Video-conferencing
- Face-to-face meetings
- The discussion forum in BSCW
- Other, namely ....

Namely (please specify)

**\* 31. What is your overall rating of the blog facility?**

	Very useful	Useful	Not useful nor not useless	Useless	Very useless
My overall rating:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**7. Use of BSCW**

**Profiles in BSCW**

**\* 32. How many of the participants' profiles in BSCW did you read?**

	None	Few	Half	Most	All
From the participants' profiles in BSCW I read	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**TenCompetence-FMM Course - Post-test Questionnaire -v2**

**38. If you would like to make a comment, on how we could make this course better, please add it here:**

Thank you for your participation!



## Appendix 2: Additional material - Àgora pilot

### A.2.1 Characterization of competences

The approach of Àgora is based on learning in terms of competences. The activities offered are learner-centered rather than topic based. Therefore the set up of the Pilot didn't suppose a transformation in Àgora learning perspective.

In the case of Àgora pilot, the learners are not referred to as professionals as in other pilots but as participants, which is the definition mainly given to those learners who have been excluded from education and do not have any academic degree. In addition, the participants are the founder of Àgora association and are represented in all decision-making spheres of the school.

Àgora participants are mainly adults who have been excluded from formal education and are characterized by their intrinsic motivation to learn. They will not achieve a formal degree. The general aim of the school is to promote their social and educational inclusion through the dialogic learning methodology.

According to the framework of Cheatham and Chivers (1996, 1998), the characterization of the competences related to Àgora participants is described as follows:

#### **Core competences of Àgora participants** (see Figure 17):

**Knowledge / Cognitive Competences:** *Tacit/Practical (knowing in action); Technical/theoretical (linked to underlying knowledge base); Procedural (how, what, who, when); Contextual (sector, industry, organization, profession)*

Despite the non-academic profile of Àgora participants, the knowledge they have acquired previously in informal learning contexts is taken into account in order to define their learning path. In this sense, Àgora promotes learning opportunities presented to the participants in a way that is negotiated with them and is based on their prior informal learning contexts.

The recognition of the importance of the participants' prior experience acquired in informal learning contexts is outlined in the Article 12 of the *Participants' Bill of Rights*<sup>1</sup> as follows: "the participants have the right to recognition of capacities, knowledge and abilities, which have been acquired from experience throughout life."

Àgora participants are expected to share knowledge and views with the aim of practicing and developing new knowledge. The school provides a good environment to design scenarios where participants learn from peers sharing knowledge accumulated in real-life situations.

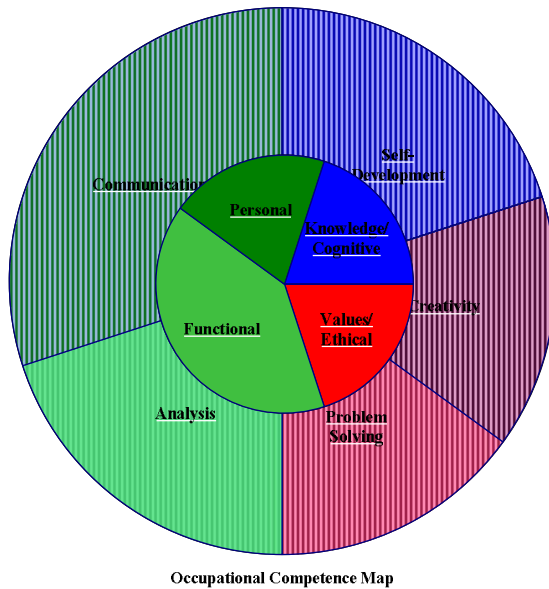
**Functional competences:** *Occupation-specific (range of occupation specific tasks); Organisation process (planning, monitoring, implementing, delegating, evaluating); Cerebral (literacy, numeracy, IT literacy, diagnosis); Psychomotor (manual dexterity, keyboard)*

Àgora participants are offered a wide range of activities which enable them to develop functional competences. Indeed, Àgora offers courses which focus on acquiring cerebral skills, such as literacy and numeracy courses, IT literacy, etc. Participants also have the opportunity to

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<sup>1</sup> The participants' Bill of right is an international reference document defining the social, democratic and participative model of adult education. Àgora uses this reference model in all its spheres.

develop psychomotor skills in the courses related to how to use a computer and its components, i.e. manual dexterity and keyboard, etc.



Competency mix - Àgora participant profile

**Figure 17. Agora participant competence profile**

**Personal Competences:** *Social/Vocational competences (self-confidence, thinking on feet, calmness, control of emotions, interpersonal, listening, task centredness, presentation); Intraprofessional (collegiality, sensitivity to peers, conformity to professional norms)*

Àgora participants are required to adopt appropriate behaviours in the school, i.e. personal and behavioural skills such as interpersonal listening, tolerance, self-esteem etc. This is highlighted in Article 10 of the *Participants’ bill of rights*: “The education of adults has to reinforce **the self-esteem, tolerance, respect to diversity, and changes in society** from the development of a critical spirit”.

Participants share knowledge and ideas in the different spheres of the school, including through the existence of a virtual campus forum. The interaction between participants is also ensured through the existence of several work groups.

It is also worth mentioning the informal solidarity networks appearing in Àgora and which result from the dialogic learning applied in the school. This solidarity not only exists at an educational level, e.g. participants who meet to view a video and better understand a specific course but also at a more social level, e.g. two participants who go with an unattended participant to the doctor, etc.

**Values / Ethical Competences** *Personal (adherence to law, social/moral sensitivity, adherence to personal moral/religious codes); Professional (adherence to professional codes, self regulation, environment sensitivity, client centredness, ethical judgment)*

The values and ethical competences of Àgora are based on the adherence to the *Participants' Bill of Rights*, which is an international reference document defining the social, democratic and participative model of adult education aimed at overcoming social inequalities. Àgora uses this reference model in all its spheres.

For instance, it is mentioned in the article eleven of the *Participants' Bill of Rights* that: “All cultures have to receive the same egalitarian treatment. Adults’ education has to collect the history and experiences of all the cultures in the community with a view to an intercultural dialogue.”

### **Meta-competences:**

#### ***Self-Development***

One of the main objectives of Àgora is to foster and promote the autonomy and freedom of people in all the fields and spheres of society.

Àgora participants learn to be autonomous especially by the existence of the **self-training sessions** and the existence of a “Virtual Campus” which enables them to create their own learning path and continue developing competences in the computer room or at home.

Moreover, the principles of dialogical learning used in Àgora entail a transformation process and thus a self-development process of the participants, such as illiterate participants that give a talk or make a presentation; some of them access university, etc. Àgora tries to help surpassing all the barriers that prevent accessing cultural and educational spheres through an egalitarian treatment among all participants, including people with special needs, immigrants, etc. In this sense, Àgora offers to the participants the opportunity to develop high autonomy and a transformation in the learning environment as this coexistence entails equality among all participants.

#### ***Communication***

Another main concern of Àgora is to give voice especially to those who have been silenced until now and make the inclusion of all adults possible.

Moreover, communication through dialogical learning is fundamental in Àgora and a transversal component in all the school spaces.

Likewise, equality in dialogue is present in all spaces and over any subject: how to make the classes, the activities to be carried out, the module contents, etc. All the proposals are discussed and negotiated. For instance, it was decided to create a module although the coordinators did not agree at the beginning. Moreover, the deliberative democracy used in Àgora involves all participants in the decision-making spheres in egalitarian conditions. All decisions are made through a consensus among participants, which also encourages the communication between them.

Through the use of dialogic learning, the participants share knowledge and ideas rather than practicing individual learning. Language courses, such as Spanish for foreigners or Basic English, and the transversal practice of learning in interactive groups are some examples of the communications skills that are developed in the school.

### *Creativity, Analysis and Problem solving*

The critical communicative methodology used in Àgora has proved to develop the participants' critical spirit and thus their analysis potential but also their creativity and problem solving capacity. The deliberative democracy practiced in Àgora and the knowledge sharing between all the actors enhance this process.

### **Competences developed in the Àgora pilot**

The learning resources provided in the Àgora pilot are mainly related to functional skills, especially in the ICT competence profile. The participants learn how to open an email account and to send an email including attached documents, how to search for information on the web, how to create a file, etc.

The English competence profile also offers the possibility to develop functional skills such as learning how to write a text in English, how to read a text, etc.

The participants can also develop their communication skills performing activities related to the English language such as being able to formulate and answer simple questions, being able to use Basic English vocabulary, etc.

According to the quantitative and qualitative analysis of the pilot evaluation (see Chapter 4), the participants seem to have learned mainly about reflective skills (by discovering new learning opportunities, using the self-assessment functionality, etc.) and social competences (how to speak English, etc).

### **A.2.2 Competence development plans**

The following section includes the list of the competence profiles and associated competences used in the first version of Àgora pilot. Note that the list of activities provided is not exhaustive but gives an overall view of the type of activities involved.

<b>Competence profile</b>	<b>→ Competences</b>	<b>→ Activities</b>
<b>- Advanced level of English</b>	→ Being able to use advanced basic English verbal tenses	- Conditional: teoría (en castellano), ejercicios y pronunciación - Past participles: Juego interactivo de rapidez - Past tense: lectura de libros
	→ Being able to read English texts	- Periódico: “Times online” - Pronunciación: página web de la BBC sobre la pronunciación - Texto: “A setter from London”: lectura (con audia) y traducción
	→ Being able to write English texts	- Creación de subtítulos - Escribir su propia historia: actividad interactive
	→ Being able to understand videos/audios in English	- Noticias internacionales de la BBC (audio) - Tráiler: “Cometas en el cielo” (video) - Videos de la Comisión Europea
	→ Being able to use advanced basic English vocabulary	- Aeropuerto: sopa de letras - Dar orientaciones: actividad interactiva (vocabulario y ejercicio) - Diccionarios monolingües y multilingües
	→ Being able to use advanced English grammar	- Demostrativos: this, that, these, those (ejercicios) - Fonética: ejercicio con audio (canción de Bob Dylan) - Repaso de gramática
<b>- Basic level of English</b>	→ Capacidad de utilizar los verbos básicos	- Estructura de la oración: teoría (en castellano) ejercicios y pronunciación - Present simple: teoría (en castellano) ejercicios y pronunciación - Verbo modal can: ejercicio interactivo

**D4.4: Report on the results of the evaluation of the Cycle 2 pilots**

- |  |  |
|--|--|
| → Capacidad de presentarse en inglés                                     | - Ejercicio de conversación<br>- Vocabulario: expresiones sociales   |
| → Capacidad de contar en inglés  | - Números de 1 a 6<br>- Números de 1 a 20: juego animado<br>- Las horas: actividad interactiva                     |
| → Capacidad de hacer preguntas simples y contestar a preguntas sencillas | - Orden de la pregunta: ejercicio<br>- Preguntas y respuestas cortas: teoría, ejercicios y pronunciación           |
| → Capacidad de utilizar el vocabulario básico                            | - Hacer un pedido al restaurante: diálogo interactivo y ejercicios<br>- El cuerpo humano: vocabulario y ejercicios |
| → Capacidad de utilizar la gramática básica                              | - Artículos: teoría (en castellano, ejercicios y pronunciación)<br>- Singular y plural: ejercicios                 |
| <b>Emailing</b>  |  |
| → Capacidad de mandar un correo electrónico                              | - Enviar un correo electrónico   |
| → Capacidad de enviar un correo electrónico adjuntando una foto          | - Enviar un correo electrónico adjuntando una foto   |
| → Capacidad de reenviar un correo electrónico                            | - Reenviar un correo electrónico   |
| → Capacidad de responder un correo electrónico                           | - Responder un correo electrónico  |
| → Capacidad de crear una cuenta de correo electrónico                    | - Crear una cuenta de correo electrónico<br>- Entrar en una cuenta ya creada                                       |
| <b>MS Word</b>   |  |
| → Todas competencias   | - Conceptos y funcionalidades de MS Word<br>- Web sobre aspectos de MS Word  |
| <b>MS PowerPoint</b>   |  |
| → Todas competencias   | - Guía completa de MS Word<br>- Crear una presentación PowerPoint<br>- Entrar en MS PowerPoint                     |

<b>Blogs</b>	→ Capacidad de comprender los usos del Blog	- Usos del Blog
	→ Capacidad de crear un Blog	- Crear un Blog
	→ Capacidad de añadir un comentario en un Blog	- Añadir un comentario en un Blog
	→ Capacidad de gestionar un Blog	- Gestionar un Blog
<b>Internet</b>	→ Capacidad de entender Internet y para que sirve	- Explicación básica de Internet
	→ Capacidad de entrar en Internet	- Entrar en Internet
	→ Capacidad de buscar información en Internet	- Buscar información en Internet
	→ Capacidad de bajar textos y programas de Internet	- Bajar textos de Internet - Bajar imágenes de Internet - Bajar programa de Internet
<b>Folder Management</b>	→ Capacidad de crear una carpeta	- Crear carpetas - Crear subcarpetas
	→ Capacidad de cambiar el nombre a una carpeta	- Cambiar el nombre a una carpeta
	→ Capacidad de crear un documento dentro de una carpeta	- Crear documento dentro de una carpeta
	→ Capacidad de mover una carpeta	- Mover una carpeta
	→ Todas las competencias	- Explicación de “carpetas”

### **A.2.3 Updates to use cases in D4.3**

On the basis of D4.3 *Appendix 4: Use scenarios for Àgora pilot*, the use scenarios 1, 2, 3 and 4 were carried out in the pilot using PCM, ReCourse, SLeD and PDP tools whereas use scenarios 4 and 5 were not applied for this version of the pilot.

**Use case 1** was carried out as planned. It consisted in the definition of the competence opportunities offered and thus the creation of competence profiles and simple courses by the use of the PCM tool. Note that the LearnWeb 2.0. was not used as it was considered in the first place.

**Use case 2** was also implemented providing guided courses for some of the competences involved in the pilot. The ReCourse tool was used for this purpose. In order to follow the structured courses (LD course) to develop a specific competence, the use **case 3** was also carried out using the SLeD tool.

**Use case 4** was followed through focusing on the selection of competences, competence development plans and follow simple actions through the use of the PDP tool.

Note that **use case 5 and 6** were not implemented in Àgora pilot, i.e. the LearnWeb 2.0 and Overview were not used (the tools were not ready for the actual pilot implementation) but are considered to be employed in the next version of Àgora pilot.



### **A.2.4 Evaluation instruments**

The evaluation instruments employed in Àgora pilot which are presented in this section are the following:

- Pre-test questionnaire
- Post-test questionnaire
- Observation grids

The following **pre-test questionnaire** was handed out to the participants at the beginning of the pilot. It was translated to Spanish and Catalan.

## **Welcome to the Àgora pilot!**

This self-training session is part of the Àgora pilot, which was set up in the framework of the European Integrated Project TENCompetence. The main objective of the project is to create an infrastructure for life-long competence development.

You will be using this new infrastructure during the pilot to support your learning. As the infrastructure is under development you may encounter some technical problems and we will ask you for information and feedback in order to improve it. As part of the evaluation, we would also like to ask you to fill in the following questionnaire as your answers will help us to improve the infrastructure.

Your answers will only be used by the researchers for the evaluation of the project. The data you provide will be made completely anonymous before the data analysis.

The questionnaire contains 20 short questions in total; answering the questions will take about 10 minutes.

### *Explanation on the questionnaire*

The questionnaire includes several question types:

- \_\_\_\_\_ indicates you can type in a short answer
- \_\_\_\_\_ indicates that you can type in longer text.
- \_\_\_ / \_\_\_ indicates that you have to choose one of several answers; Please mark with an “X” the correct answer.
- Regarding other question types, follow the instructions.

**Thank you for your participation!**



<b>Background information</b>		
P001	(1)	Date: ___ / ___ / 2008
P006	(2)	Name: _____ Note: your name is needed only to combine the information you provide before and after the pilot; your answers will be processed anonymously.
P007	(3)	Age: _____ years
P008	(4)	Sex: [1] Female / [2] male
P009	(5)	Country of birth: _____
P010	(6)	Highest educational degree that you earn: (Tick the right answer) <input type="radio"/> [8] Primary school not fully completed <input type="radio"/> [1] Primary school <input type="radio"/> [9] Secondary school 1 <sup>st</sup> stage <input type="radio"/> [2] Secondary school 2 <sup>nd</sup> stage <input type="radio"/> [3] Secondary vocational education <input type="radio"/> [4] Higher vocational education <input type="radio"/> [5] University degree
P011	(7)	Profession: I am a _____
P012	(8)	Current job function: _____
<b>Competence development</b>		
P010	(9)	How would you describe your current proficiency level with respect to this course competence (ICT or Spanish or English)? [1] Novice / [2] beginner / [3] intermediate / [4] advanced
	(10)	In general, what is the most important for you? Tick all of the answers listed below that apply to your situation.
P017		<input type="checkbox"/> To acquire theoretical knowledge [2] yes / [4] no
P018		<input type="checkbox"/> To acquire practical skills [2] yes / [4] no
P019		<input type="checkbox"/> To improve my social skills [2] yes / [4] no
P021		<input type="checkbox"/> To find out what things I will be able to learn/improve in the future [2] yes / [4] no
P110	(11)	How often have you followed a training or course which was competence-based? [1] Never / [2] Once / [3] Two or three times / [5] I don't know what competence-based training is
<b>Experience with web-based learning</b>		
P111	(12)	How often have you used a computer to learn or to communicate? [1] Never / [2] occasionally / [3] sometimes / [4] often / [5] very often
P023	(13)	How often have you used a virtual campus to learn? [1] Never / [2] occasionally / [3] sometimes / [4] often / [5] very often
P025	(14)	Have you ever used a chat? [3] yes / [1] no / [6] I don't know
P026	(15)	Have you ever used Google to search for information? [3] yes / [1] no / [6] I don't know
P028	(16)	Have you ever shared music, photographs or other documents on Internet? [3] yes / [1] no / [6] I don't know
P029	(17)	Describe in a few lines your own experience with the above mentioned tools? _____ _____ _____
P030	(18)	Why did I register for this course? Tick all of the answers listed below that apply to your situation. <input type="checkbox"/> [1] I want to improve in my current job <input type="checkbox"/> [2] I want to get a new/better job <input type="checkbox"/> [4] I want to improve my level in something I already know <input type="checkbox"/> [5] I want to get support in something which is difficult for me <input type="checkbox"/> [7] I want to learn more just because I like it <input type="checkbox"/> [8] I want to be able to communicate with my family/friends who live in a different place <input type="checkbox"/> [9] I want to be better integrated in my city
P032	(19)	Do you prefer: <input type="checkbox"/> [1] To learn by using documents only and not through the system? <input type="checkbox"/> [2] To learn with the assistance of a system which guides you step by step? <input type="checkbox"/> [3] To choose yourself in the system what you want to learn according to the learning suggestions made by the system?
<b>Facilities</b>		
P112	(20)	Do you have Internet access at home? [1] yes / [2] no

The participants filled in the following post-test questionnaire the last week of Àgora pilot. It was translated to Spanish.

<b>Background information</b>	
(1)	<b>Date:</b> __ / __ / 2008
(2)	<b>Start date:</b> __ / __ / 2008
(3)	<b>Name:</b> _____ Note: your name is needed only to combine the information you provide before and after the pilot. Your answers will be processed anonymously.
(4)	<b>How many hours did you spend on your personal development plans?</b> __ hours
(5)	<b>Was your learning process hindered by technical problems?</b> [1] Not at all / [2] hardly / [3] moderately / [4] largely / [5] completely
<b>Desarrollo de competencias</b>	
(6)	<b>For which of the following competence profiles did you perform one or more activities?</b> <input type="checkbox"/> [1] Advanced level of English <input type="checkbox"/> [2] Blogs <input type="checkbox"/> [3] Gestión de Carpetas <input type="checkbox"/> [4] Gestión de Ficheros <input type="checkbox"/> [5] Gestión de Ventanas <input type="checkbox"/> [6] Internet <input type="checkbox"/> [7] MS Power Point <input type="checkbox"/> [8] MS Word <input type="checkbox"/> [9] Uso del Email <input type="checkbox"/> [10] Nivel básico de inglés
(7)	<b>How many activities did you complete within each competence profile (estimation)?</b>
	<b>Advanced level of English :</b> [1] 0 [2] 1-4 [3] 5-9 [4] 10-19 [5] 20 and more
	<b>Blogs:</b> [1] 0 [2] 1- 2 [3] 3-4
	<b>Gestión de Carpetas:</b> [1] 0 [2] 1-2 [3] 3-4 [4] 5-6
	<b>Gestión de Ficheros :</b> [1] 0 [2] 1- 2 [3] 3-4
	<b>Gestión de Ventanas:</b> [1] 0 [2] 1- 2 [3] 3-4
	<b>Internet:</b> [1] 0 [2] 1-2 [3] 3-4 [4] 5-6
	<b>MS Power Point:</b> [1] 0 [2] 1 [3] 2 [4] 3
	<b>MS Word:</b> [1] 0 [2] 1-2 [3] 3-4 [4] 5
	<b>Uso de Email:</b> [1] 0 [2] 1-3 [3] 4-6 [4] 7-9
<b>Nivel básico de inglés:</b> [1] 0 [2] 1-4 [3] 5-9 [4] 10-19 [5] 20 and more	
<b>How much have you learned with respect to the following types of competences?</b>	
(8)	- Knowledge: [1] (Almost) nothing / [2] little / [3] not little, not much / [4] much / [5] very much
(9)	- Functional skills, know how to do things: [1] (Almost) nothing / [2] little / [3] not little, not much / [4] much / [5] very much
(10)	- Social skills [1] (Almost) nothing / [2] little / [3] not little, not much / [4] much / [5] very much
(11)	- Knowing how to guide my future use by reflection on current practice

	[1] (Almost) nothing / [2] little / [3] not little, not much / [4] much / [5] very much
(12)	<b>I enjoyed this way of learning</b> [1] Agree completely / [2] agree / [3] neither agree nor disagree / [4] disagree / [5] disagree completely
(13)	<b>I wish to continue developing this competence / these competences further</b> [1] Certainly / [2] yes / [3] perhaps, perhaps not / [4] no / [5] certainly not
<b>Appreciation of learning resources: The learning resources were:</b>	
(14)	- [1] Very difficult / [2] difficult / [3] not difficult nor easy / [4] easy / [5] very easy
(15)	- [1] Very interesting / [2] interesting / [3] not interesting nor uninteresting / [4] uninteresting / [5] very uninteresting
(16)	- [1] Very useful / [2] useful / [3] not useful nor not useless / [4] useless / [5] very useless
(17)	<b>The learning resources matched my learning needs</b> [1] Not at all / [2] hardly / [3] moderately / [4] largely / [5] completely
<b>Appreciation of control</b>	
(18)	<b>In the beginning, I quickly got an overview of the competences involved and my current proficiency level</b> [1] Agree completely / [2] agree / [3] neither agree nor disagree / [4] disagree / [5] disagree completely
(19)	<b>I had a good overview on what I had done and what I had to do</b> [1] Agree completely / [2] agree / [3] neither agree nor disagree / [4] disagree / [5] disagree completely
(20)	<b>I had insight into how my learning progressed</b> [1] Agree completely / [2] agree / [3] neither agree nor disagree / [4] disagree / [5] disagree completely
(21)	<b>I had the feeling that I learned exactly what I wanted to learn</b> [1] Agree completely / [2] agree / [3] neither agree nor disagree / [4] disagree / [5] disagree completely
(22)	<b>I had the feeling that I could plan my own learning</b> [1] Agree completely / [2] agree / [3] neither agree nor disagree / [4] disagree / [5] disagree completely
(23)	<b>I felt in control of my own learning</b> [1] Agree completely / [2] agree / [3] neither agree nor disagree / [4] disagree / [5] disagree completely
<b>Appreciation of collaboration</b>	
(24)	<b>I had lively and stimulating discussions with other participants in the pilot</b> [1] Agree completely / [2] agree / [3] neither agree nor disagree / [4] disagree / [5] disagree completely
(25)	<b>I learned a lot from other participants in the pilots</b> [1] Agree completely / [2] agree / [3] neither agree nor disagree / [4] disagree / [5] disagree completely
(26)	<b>Other participants in the pilot were able to answer my questions</b> [1] Agree completely / [2] agree / [3] neither agree nor disagree / [4] disagree / [5] disagree completely
(27)	<b>I provided useful help to other participants in the pilot</b> [1] Agree completely / [2] agree / [3] neither agree nor disagree / [4] disagree / [5] disagree completely
<b>Self-assessment</b>	
(28)	<b>How much have you used the self-assessment functionality?</b> <b>I used the self-assessment functionality for _____ of my competences:</b>

	[1] None / [2] a minority / [3] half / [4] most / [5] all
(29)	<b>In general, how easy was it for you to determine your own level with each competence?</b> [1] Very difficult / [2] difficult / [3] not difficult nor easy / [4] easy / [5] very easy
<b>Plan activities: How did you plan your activities? Please tick all that apply</b>	
(30)	<input type="checkbox"/> [1] I let the system generate a plan, based upon my self-assessment <input type="checkbox"/> [2] I let the system generate a plan, but I didn't fill in the self-assessment
<b>Select activities from those still to be done</b>	
(31)	<b>How did you select the next activity to perform from the list of activities? Please tick all that apply</b> <input type="checkbox"/> [1] I performed the activities in the order in which they were listed <input type="checkbox"/> [2] I started with the activities that I thought were easiest and then progressed to the activities I thought were most difficult <input type="checkbox"/> [3] I started with the activities that I thought were most difficult and then progressed to the activities I thought were easiest. <input type="checkbox"/> [4] I started with the activities that I liked most, and then progressed to the activities that I liked least. <input type="checkbox"/> [5] I started with the activities that I liked least, and then progressed to the activities that I liked most. <input type="checkbox"/> [6] I first performed all activities related to one of the required competences, and then all activities of a second required competence and so on. <input type="checkbox"/> [7] Arbitrarily, randomly
<b>Please answer question 32 – 34 ONLY if you work with competence profiles related to ICT</b>	
From the Information on activities in the PDP, you can access the learning resources attached to that activity. Some of these resources are special, in that you had to log in, and they consisted of a number of other activities, sometime even a complete course, instead of a single one.	
(32)	<b>Did you log in to this type of courses?</b> [1] <input type="radio"/> Yes [2] <input type="radio"/> No ► <b>go to question 35</b>
(33)	<b>How did you proceed in these courses?</b> <input type="radio"/> [1] I performed all activities in these courses in the order in which they appeared <input type="radio"/> [2] I performed all activities in these courses but I chose my own order <input type="radio"/> [3] I selected part of the activities in these courses <input type="radio"/> [4] I did not perform activities in these courses.
(34)	<b>How did you appreciate performing activities in these courses compared to performing single activities directly from the PDP?</b> <input type="radio"/> [1] The same – I hardly noticed the difference <input type="radio"/> [2] The same – I can work well with both unstructured activities (PDP) and more structured courses <input type="radio"/> [3] I preferred the structured courses <input type="radio"/> [4] I didn't like the structured courses, because they added another layer, they were activities within activities <input type="radio"/> [5] I preferred the activities that I accessed directly from the PDP as I do not need or like structured courses <input type="radio"/> [6] I don't know
<b>Marking activities as completed:</b> The PDP allows learners to mark activities as completed. Activities that are marked as completed are removed from the list of activities that you still need to	

complete.	
(35)	<b>Did you make use of the possibility to mark activities as completed? If not, why not?</b> <ul style="list-style-type: none"> <li><input type="radio"/> [1] Yes</li> <li><input type="radio"/> [5] No, because I didn't notice that the possibility was available</li> <li><input type="radio"/> [2] No: I noticed that this possibility was there, but I didn't know how to use it</li> <li><input type="radio"/> [3] No, because I didn't consider marking activities as complete as helpful</li> <li><input type="radio"/> [4] No, for another reason</li> </ul>
(36)	<b>When did you mark activities as complete? Please tick all that apply:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> [1] When I had performed the activity, regardless of how well I performed it</li> <li><input type="checkbox"/> [2] When I had performed the activity and thought that I mastered it well enough</li> <li><input type="checkbox"/> [3] When I had the feeling from the description of the activity that I mastered it, and needn't perform the activity</li> </ul>
(37)	<b>How did you use the complete marks? Please tick all that apply:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> [1] To see how many activities I already mastered through the 'Show history' button</li> <li><input type="checkbox"/> [2] To see how many activities I still had to perform through the 'Show plan' button</li> <li><input type="checkbox"/> [3] To see how far I had progressed by comparing the number of activities performed to the number of activities I still had to perform</li> </ul>
(38)	<b>How would you rate the possibility to mark activities as completed?</b> [1] Very useful / [2] useful / [3] not useful nor not useless / [4] useless / [5] very useless
<b>Private blog entries</b>	
(39)	<b>Did you create and use private (non-shared) entries? For what purpose?</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> [1] I didn't create and use private blog entries</li> <li><input type="checkbox"/> [2] I used private blog entries to reflect on my progress</li> <li><input type="checkbox"/> [3] I used private blog entries for other reasons, namely.....</li> </ul>
<b>Social activities and the use of shared blog entries</b>	
(40)	<b>Did you communicate with other participants in the pilots? In what ways? Please tick all that apply</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> [1] I didn't communicate with other participants</li> <li><input type="checkbox"/> [13] I worked together on an assignment</li> <li><input type="checkbox"/> [2] Seek help on course content</li> <li><input type="checkbox"/> [3] Provide help on course content to others</li> <li><input type="checkbox"/> [4] Discuss course content</li> <li><input type="checkbox"/> [5] Discuss the competences that I had to master and the progress</li> <li><input type="checkbox"/> [6] Share knowledge and learning resources</li> <li><input type="checkbox"/> [7] Other, namely _____</li> </ul>
(41)	<b>Did you create and use shared blog entries for any of these communication purposes? For which purposes?</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> [1] I didn't create and use shared blog entries</li> <li><input type="checkbox"/> [13] I worked together on an assignment</li> <li><input type="checkbox"/> [2] Seek help on course content</li> <li><input type="checkbox"/> [3] Provide help on course content to others</li> <li><input type="checkbox"/> [4] Discuss course content</li> <li><input type="checkbox"/> [5] Discuss the competences that I had to master and the progress</li> <li><input type="checkbox"/> [6] Other, namely _____</li> </ul>
(42)	<b>How many shared blog entries did you create?</b> [1] None / [2] a couple / [3] several / [4] many
(43)	<b>Did you read blogs from others?</b>

	<ul style="list-style-type: none"> <li>○ [1] No, there were (almost) no blogs from others.</li> <li>○ [2] No, there were blogs from others, but I didn't read them</li> <li>○ [3] I read (almost) all blogs from others</li> <li>○ [4] I read only those blogs from others that seemed relevant to me.</li> </ul>
(44)	<input type="checkbox"/> <b>Did you use means other than the blog (public comments) for communication with other participants? Please tick all that apply:</b> [1] No <input type="checkbox"/> [2] Email <input type="checkbox"/> [3] Chat <input type="checkbox"/> [7] Face-to-face meetings
(45)	<b>What is your overall rating of the blog?</b> [1] Very useful / [2] useful / [3] not useful nor not useless / [4] useless / [5] very useless
<b>Usability</b>	
(46)	<b>The user quick-start guide I was given at the beginning of the course was:</b> [1] Very useful / [2] useful / [3] not useful nor not useless / [4] useless / [5] very useless
(47)	<b>Will you use the PDP at home?</b> [1] Yes / [2] No, because I don't like it / [3] No, because I don't have Internet at home

The **observation grid** used by the 6 observers (5 from Àgora and 1 from UPF) is as follows (in Spanish):

**PLANTILLA DE OBSERVACIONES**  
**Autoformación TENCompetence**

Fecha: \_\_\_\_\_  
Experto: \_\_\_\_\_  
Observador/a: \_\_\_\_\_  
Autoformación: \_\_\_\_\_

**Pregunta técnica:**

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**Pregunta sobre la actividad (contenido):**

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**Pregunta al experto:**

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**Pregunta a los compañeros:**

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**Percepción por parte de los participantes del plan individualizado de formación:**

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**Actitud general de los participantes respecto al sistema (positiva, etc):**

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**Actitud general de los participantes respecto a la actividad:**

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**Otros comentarios:**

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## Appendix 3: Progress on the ICT Teacher Training pilot, Special Education Bulgaria and Digital Cinema pilots

### A.3.1 ICT Teacher Training pilot

The following sections include an executive description of the ICT Teacher Training pilot and the main issues related to the implementation of the pilot.

#### Description of the pilot implemented

Table 16 collects the summary of the ICT Teacher Training pilot description.

**Table 16. Description of the ICT Teacher Training pilot**

<b>ICT Teacher Training pilot</b>	
<p><b>SHORT DESCRIPTION:</b> This pilot shows how the TENCompetence framework and approach can be used in the lifelong competence development of teaching professionals. The TENCompetence approach has been used in combination with a methodology developed in the frame of The Innovative Teacher Leonardo project (I*Teach). An important issue is that while in Cycle 1 pilot we trained mostly ICT teachers, the participants of the Cycle 2 pilot include teachers from all subjects and levels. All these teachers need to develop competences related to the application of ICT in their professional activities. During the pilot we realized two types of training: blended learning (starting 1 day face-to-face training, followed by 4 weeks distance learning and finishing with one day final face-to-face session); and one week face-to-face training on field.</p> <p>Two pedagogical approaches were applied: 1) bottom-up where learners were “immersed” in the competence development process and then experts helped them to clarify the achieved results and the process of professional competence development; 2) top-down – learners were familiarized with competence development terminology and tools, they follow the activities and after that they had assignments to develop their own professional development plan. A new version of the PCM is used both as a tool for the personal competence development and as a “meta-tool” that professional teachers used to train the creation of competence profiles, etc.</p>	
<b>USER GROUPS</b>	<p>The main target groups are experts on teacher training and teaching professionals who are willing to learn how to apply ICT in their subject domains. As the Ministry of Education encourages teachers to apply ICT in education it is very important for them to know how to do this and how to use ICT not only to implement more attractive lessons but also to broad the learners’ culture and their readiness to be members of information society. Teachers participate in the training both individually or as a group of professionals coming from the same educational organization. Their ages covered broad interval: from 22 to 65 years. Most of them were female.</p>
<b>SETTING</b>	<p>The pilots were organised in two modes: 1) short one day introductory and final workshops, and one month self-study from the workplace; 2) one week intensive training in the workplace, where experts were in the respective organizations and spent there one week for this intensive training. Each organization provided a computer room where there was a computer available for each learner. Furthermore all trainees were encouraged to continue their self-study, resulting in a final project (devoted to competence assessment). In both modes forming new communities was an essential element.</p>
<b>ROLES</b>	<p>Following roles of persons were involved:</p> <ul style="list-style-type: none"> <li>• Server administrators – two persons</li> <li>• TENCompetence tools facilitators – four people</li> <li>• Competence developers – three people</li> <li>• Content developers – four people</li> <li>• Help desk – two people</li> <li>• I*Teach methodology experts – four people</li> <li>• TENCompetence pilot evaluation providers – four people</li> <li>• Pilots marketing and logistic organisation – three people</li> <li>• Learners –317 people</li> </ul>

TOOLING	<p>Personal Competence Manager was mostly used during the trainings. All learning activities and resources were published in the PCM tool in correspondence with created in advance competence development plan for teaching ICT-enhanced skills. All learners used the I*Teach competence profile to improve their ability to teach ICT-enhanced skills. Learners were free to choose their learning path according their learning style, etc. In the final three groups trained in November, the PDP tool (web version) was also used. In this way, learners can choose between PCM and PDP in their future trainings, depending on their goals and conditions.</p> <p>The Moodle platform was used as a web tool for managing the organizational process (timetable, internal communications, materials like PCM and PDP user guides, PCM software installation bundles). Learners published there also the final reports and power point presentations for their final task – to develop a competence development programs appropriate to their subject. Moodle was also used to publish the pre-test and post-test questionnaires.</p>
USAGE PROFILES	<p><b>Create Competence profiles and simple courses, personal development plan, follow course</b></p>
AIM AND EXPECTATION OF THE PILOT	<p>This pilot offers practical methodologies, approaches and tools targeted at day-to-day utilization by the teaching professionals around four identified ICT-enhanced competences. These four ICT-enhanced competences are targeting information skills, presentation skills, abilities to work on a project, and abilities to work in a team. We aim to prove the significance, usability and effectiveness of TENCompetence software platform and approach, being used for complex competence development programs in authentic learning settings. At this stage there is no suitable software platform and tools able to support the I*Teach Methodology, so we expect that the use of the TENCompetence platform will significantly improve the way teaching professionals learn, share experiences and apply the I*Teach methodology.</p>
CONTEXT	<p>The domain of teacher training in the application of ICT to their professional tasks provides rich opportunities for testing the TENCompetence system. This pilot has established a strategic partnership with the Leonardo project I*Teach, which is addressing the field of teacher training, identifying enhanced ICT skills, development of methodology handbook, and rich set of training programmes and resources. The main goal of the pilot is to adapt the training methodologies and curricula in order to use the TENCompetence framework, and to evaluate both the I*Teach methodology, as well as the TENCompetence framework. (See the <i>Setting</i> for further information on the context.)</p>
COMPETENCE PROFILES AND COMPETENCES INVOLVED	<p>The main competences involved are so-called “Enhanced competences/skills”, which are an extension of soft skills, where ICT is used to enhance the ordinary skill. So ICT is used as a means to improve the skill.</p> <p>There are four main competence development programmes included in this pilot:</p> <ol style="list-style-type: none"> <li>1) How to teach information skills using ICT</li> <li>2) How to teach presentation skills using ICT</li> <li>3) How to teach working on a project skills using ICT</li> <li>4) How to teach working in a team skills using ICT</li> </ol> <p>Each one is further sub-divided in other sub-competences:</p> <p>The first one – how to teach information skills - includes the following sub-competences:</p> <ul style="list-style-type: none"> <li>• teaching the ability to determine the information problem</li> <li>• teaching the ability to identify the relevance of the various information sources</li> <li>• teaching systematic search by application of relevant searching techniques</li> <li>• teaching how to localize and acquire the found information</li> <li>• teaching how to evaluate the found information and (if necessary) to readjust the search</li> <li>• teaching how to process the found information effectively, in order to reach the preset goal</li> <li>• teaching how to use the found information ethically and legally</li> </ul> <p>The second one – how to teach presentation skills – includes the following sub-competences (skills):</p> <ul style="list-style-type: none"> <li>• teaching how to order and select information</li> <li>• how to teach language proficiency</li> </ul>

- how to teach the building of a presentation
- how to teach presentation design
- how to teach the ability to account for information
- how to teach the ability to use the proper tool properly

Four **sub-domains** have been identified with specifics of the presentation skills.

- Written presentation
- Oral presentation
- Short presentation
- Web presentation

Here follows a specification of the presentation skills per domain:

Written presentation:

- how to teach the ability to order and select information
- how to teach the command of the language
- how to teach the ability to build up a report
- how to teach the ability to lay-out a report
- how to teach the ability to make correct references and citations
- how to teach the ability to use a word-processor properly

Oral presentation:

- how to teach the ability to order and select information
- how to teach the fluency in the language
- how to teach the ability to build up an oral presentation
- how to teach the ability to design an oral presentation
- how to teach the ability to make correct references and citations
- how to teach the ability to use a presentation tool properly
- how to teach the ability of public speaking

Short presentation:

- how to teach the ability to order, select, and compress information
- how to teach the command of the language
- how to teach the ability to build up an short presentation
- how to teach the ability to lay out a short presentation
- how to teach the ability to make correct references and citations
- how to teach the ability to use a desk top publishing tool properly
- how to teach the ability to focus on the target group

Web presentation:

- how to teach the ability to order and select information
- how to teach the command of the language
- how to teach the ability to build up an web presentation
- how to teach the ability to design a hyper structure
- how to teach the ability to make correct references, citations, and links
- how to teach the ability to use a web publishing tool properly
- how to teach the ability to select and use multi media

The third one – how to teach working-on-a-project skills – includes the following sub-competences (skills):

- how to teach the ability to identify tasks and subtasks
- how to teach the ability to make a planning
- how to teach the ability to divide tasks
- how to teach the ability to communicate internally
- how to teach the ability to communicate externally
- how to teach the ability to keep track of the progress
- how to teach the ability to integrate results
- how to teach the ability to use the proper tools properly

The fourth one – how to teach working-in-a-team skills – includes the following sub-competences (skills):

- how to teach the ability to communicate internally

	<ul style="list-style-type: none"> <li>• how to teach the ability to communicate externally</li> <li>• how to teach the ability to give feedback</li> <li>• how to teach the ability to receive feedback</li> <li>• how to teach the ability to resolve conflicts</li> <li>• how to teach the ability to support the team loyally, as a good colleague</li> <li>• how to teach the ability to take responsibility</li> </ul> <p>The learners went through an orientation phase where they select the competences they need to develop with the help of the TENCompetence tooling and the experts. The learners had the possibility to choose their own competence development plan (activities, resources, etc.), they also developed by themselves additional learning activities and resources. Each participant acquired the level best suited to her/his efforts, background and motivation. In addition participants learned how to support each other in their professional development process. Designing competence development plans and providing appropriate learning resources were also new competences acquired by learners.</p>
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## Implementation of the pilot

The implementation of the ICT teacher training pilot was carried out in the period of **May-November 2008**.

Actual number of participants who took part in the ICT pilot is 317 teachers.

The participants are teaching professionals specialized in different subjects: mathematics, physics, chemistry, biology, ICT, vocational education teachers, primary school teachers, etc. They are all interested in developing their competences related to the use of ICT in their work. More than 95% of the participants have BSc and MSc degree. The learners' age is between 22 and 65, average age 48.

### Training sessions

There are two forms of delivery:

- More than 80% of learners (the teaching professionals) participated in five days 40 hours face-to-face sessions
- The rest of 20% of learners participated in one day training seminar followed by on-line activities and finished with face-to-face session.

Both modes of delivery were supported by Moodle as described in Table 16 (see Tooling). In order to participate in the competence development training all participants were registered in the system. In the Moodle a short guide in Bulgarian on how to install the TENCompetence software and how to use the PCM/PDP tool was available as resource for the participants. The language and the format of the user guides (versions in English provided by WP9) were adapted in order to make it more user-friendly and suitable for the learners' needs. Pre- and post-test questionnaires were available in Moodle.

During the pilot two different scenarios were followed:

- The first scenario started with a presentation of the competence development terminology (usually 1 hour), followed by groups forming (~ 30-45 minutes). As learners work on different subjects, teams were formed in correspondence of their professional interests. The next stage was development of competences in ICT-enhanced teaching. Each learner used the competence development plan available in the PCM tool and had the opportunity to adapt it according to their previous knowledge, preferences, professional needs, etc. Then, learners had to use the PCM/PDP to design competence profiles and development plans in

such a way that they apply the methodology of teaching ICT-enhanced skills. This was a practical assignment whose result had to be submitted for evaluation.

- The second scenario started with an introduction of participants followed by grouping them on a base of their interests. One common broad topic was defined in advance (“Communication”, “Ways for studying”, “School out doors”, etc.). Using brainstorm technique teams extracted different points of view, formed subtopics and specified the most common problems related to their subtopics. Each team had a task to developed competence development plan for problem solving, create or search for resources and then to use TENCompetence tools to describe the competence development process. In this phase participants had tasks to install PCM/PDP; to register to PCM/PDP server; to explore I\*Teach community and resources; and, based on experience with it, to develop their own communities. Finally, participants presented their results and summarized the ideas of communities and competence development. Analyzing the whole process and results they got picture of competence development process and they were able to continue with their lifelong learning using developed communities and provided tools. Participants working on second scenario were more motivated to use PCM/PDP.

Depending of the delivery form the components of the scenarios had different duration: e.g. practical work in teams continued from 2-3 days (24-36 hours) to 2-3 weeks.

Dates of actual implementation (face-to-face sessions only):

27 June 2008, Sofia, Bulgaria (2 groups)  
 1-5 July 2008, Haskovo, Bulgaria (1 group)  
 7-11 July 2008, Sofia, Bulgaria (2 groups)  
 8-12 July 2008, Sliven, Bulgaria (1 group)  
 22-26 July 2008, Varna, Bulgaria (1 group)  
 27-31 July 2008, Dobrich, Bulgaria (1 group)  
 7-11 September 2008, Dobrich, Bulgaria (1 group)  
 17-21 September 2008, Pazardjik, Bulgaria (1 group)  
 1-5 October 2008, Sliven, Bulgaria (1 group)  
 13-17 October 2008, Sofia, Bulgaria (2 groups)  
 20-31 October 2008, Sofia, Bulgaria (1 group)  
 8-16 November 2008, Vratza, Bulgaria (2 groups).  
 1 group is ~19-20 participants.

Workload of learners:

The participants workload in 40 hours face-to-face pilots was: ~5 hours for planning the team activities and searching information, ~1 hour installing PCM, ~24 hours work in PCM/PDP – exploring existing communities and resources, creating own communities, development plans, resources, ~6 hours work in Moodle, ~4 hours presentations and studying PCM guides.

Tools used:

*PCM (Personal Competence Management):* This tool was used by the learners to develop communities, competence development plans, activities and resources (see Figure 18, Figure 19, Figure 20 and Figure 21).

*PDP (Personal Development Plan):* This tool was used by the trainees to develop competence development plans, activities and resources (rich client).

Moodle – This system was used to deliver resources (guides, pre- and post-tests, JDK, PCM tool, etc.) to the trainees (see Figure 22).

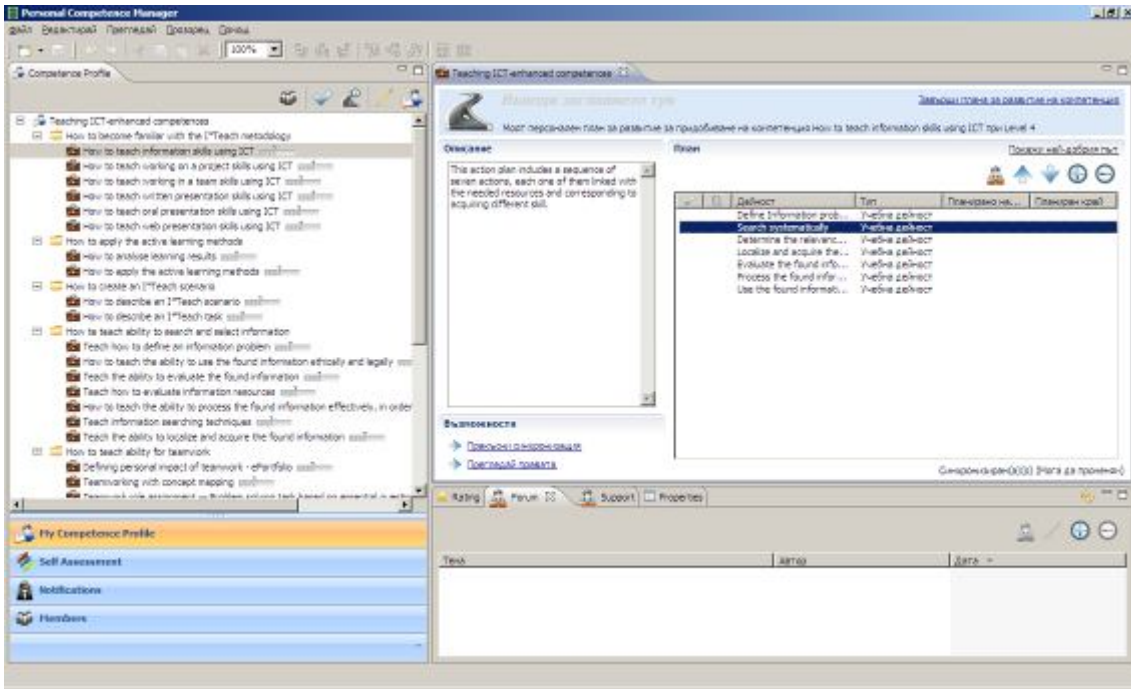


Figure 18. Screenshot of PCM – I\*Teach Methodology

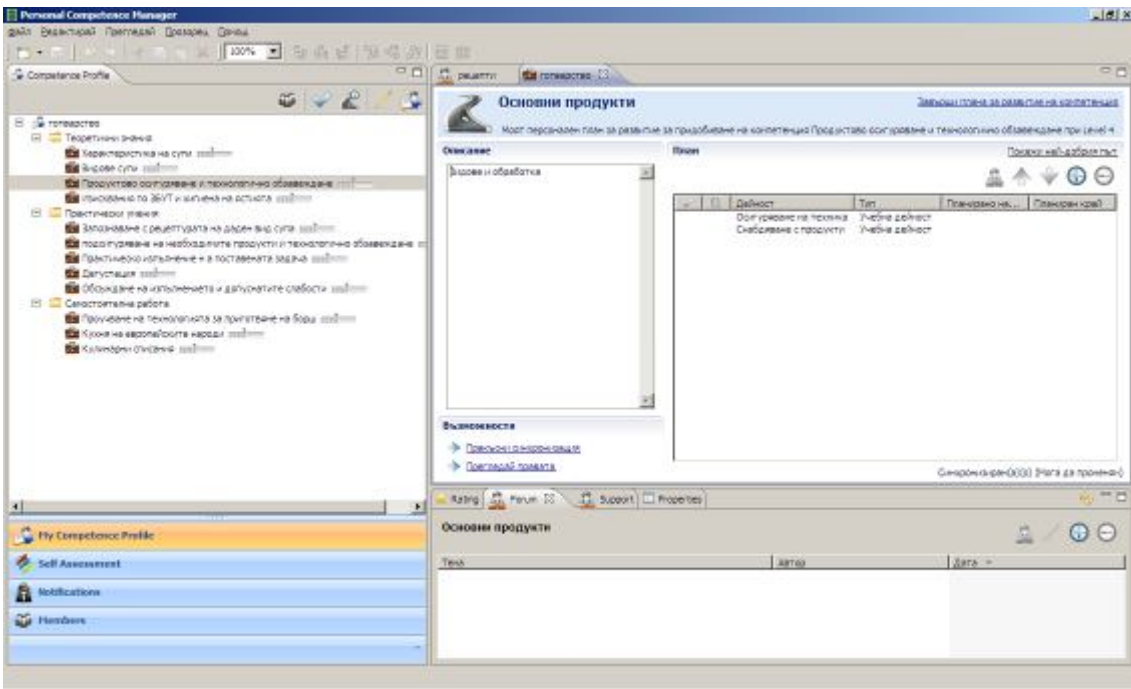


Figure 19. Cooking development plan, created by trainees

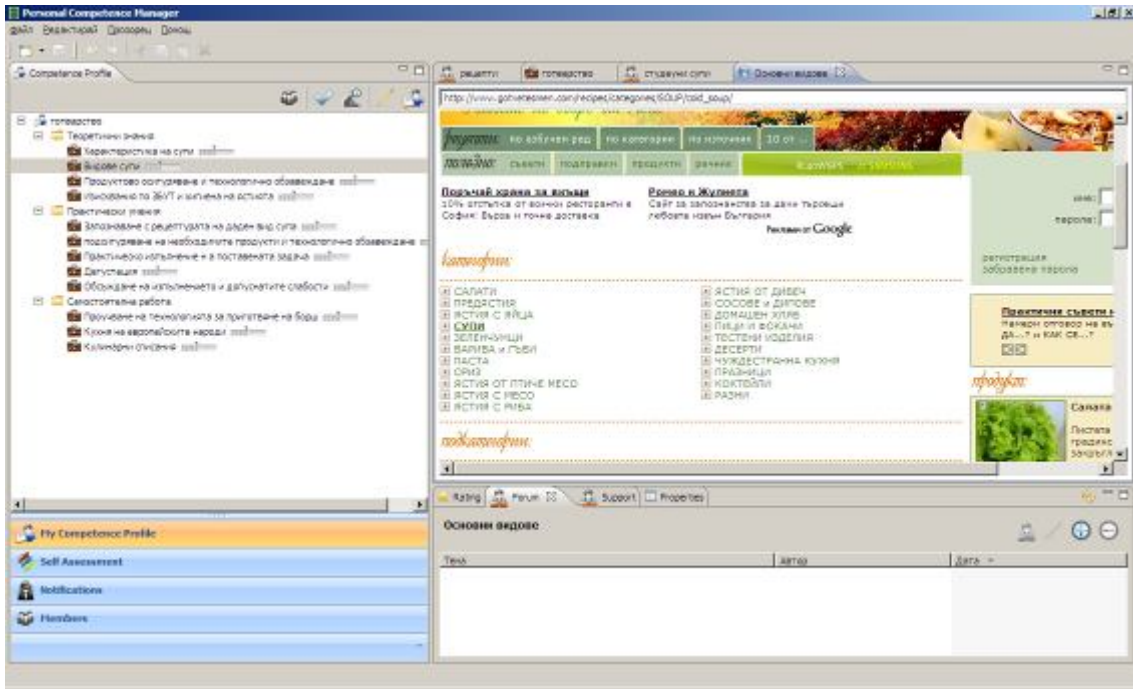


Figure 20. Resources for Cooking development plan



Figure 21. PCM virtual community



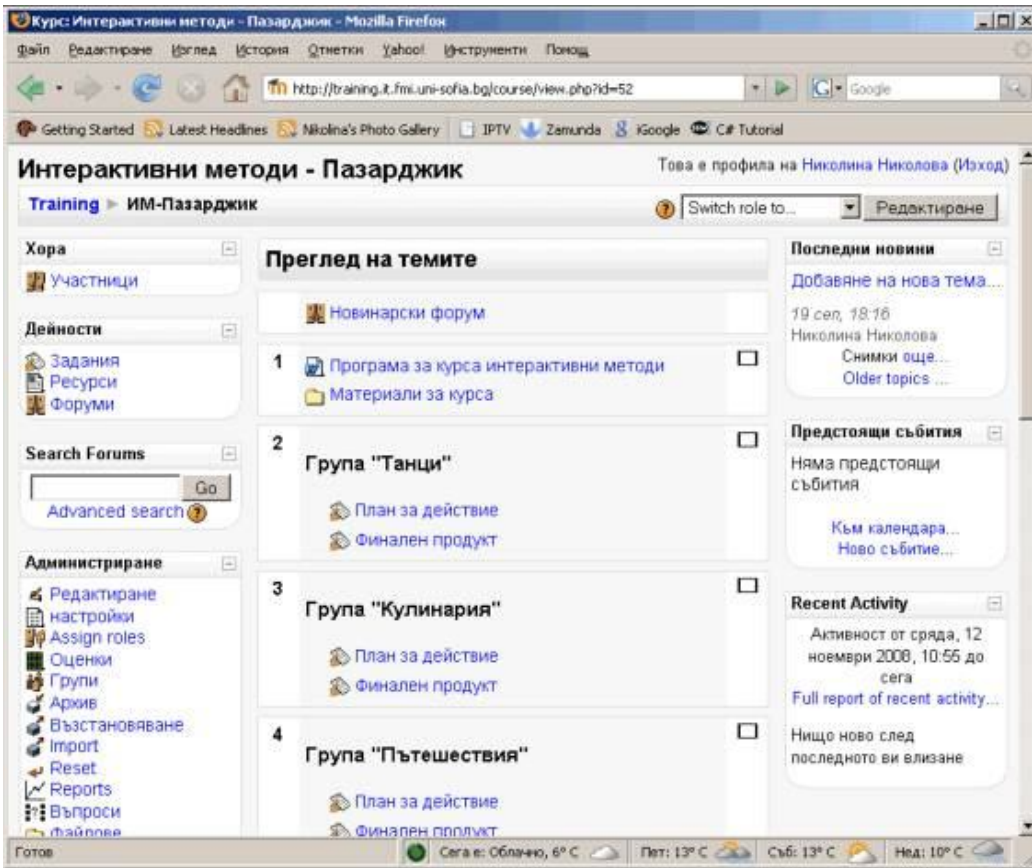


Figure 22. Moodle – sharing intermediate products



Figure 23. Team work

## Some initial ideas on the evaluation of the ICT Training

Because of the large amount of data from the different pilots needed to be analyzed, there has not been time to complete the whole analysis yet. As Water Management and Agora pilots are the new pilots in Cycle 2 and use the new tooling available, their evaluation was prioritized. The evaluation analysis of ICT Teacher Training pilot and SEB pilots will be done in January. However, next paragraph provides some initial ideas on the ICT pilot's results as expressed by the pilot implementers.

Regarding the **ICT Teacher Training pilot**, the evaluation plan defined in (Hernández-Leo et al., 2008) has been followed. The main methods applied have been: 1) Participants were given the same pre- and post-test questionnaires as in the Cycle-1 pilots (see Moghnieh et al., 2008a), 2) To provide a more detailed picture of the hierarchical structure of the competence profiles (that are hypothesized to affect the access to knowledge resources), a description has been given on how the competence profiles are modelled and organized. After the pilot, most of the learners shared that they feel more comfortable in the use of ICT in their teaching process. They are glad to meet people in the same lifelong learning situation, and they notice that working in teams each problem becomes more straightforward. The majority of the learners continue using PCM communities for discussing professional problems and finding the most appropriate decision.

### A.3.2 Special Education Bulgaria pilot

The following sections include an executive description of the Special Education Bulgaria (SEB) pilot and the main issues related to the implementation of the pilot.

## Description of the pilot implemented

Table 17 collects the summary of the SEB pilot description.

**Table 17. Description of the Special Education Bulgaria pilot**

<b>Name of the business demonstrator</b>	
<p><b>SHORT DESCRIPTION:</b> Special Education Bulgaria (SEB) pilot is framed in the TENCompetence project and in another two-year research project designed to create a sustainable nation-wide community of practice (CoP) for special education competence development in Bulgaria via the Internet. It is addressing Internet-based competence development and lifelong learning for special educators in Bulgaria. SEB's central purpose is to connect extant geographically-dispersed special education communities in Bulgaria.</p>	
<b>USER GROUPS</b>	<p>Special Education Bulgaria (SEB) is a CoP for the following target group: special education researchers, practitioners, teachers in training, and parents. All of them are involved during the SEB life-long formal learning activities. Teachers and educators, willing to be trained via the competence development opportunities, are people with a need to develop new competences related to the special education field, in order to perform their job better, or to change their current job. For this to happen, they need to be able to solve some types of specific problems or to learn to cope with specific situations, related to special education.</p> <p>In this training special groups are formed, who have to solve complex problems and tasks related to special education (including parents, teachers, social workers). They need to work in collaboration in order to increase the chance of successful performance. They need to share knowledge, skills and points of view to develop their insights and competences in the field of special education. This target group also includes several specific organizations: Training organizations, Public organizations and Social organizations all targeting to solve the problems of the people with special needs.</p>

SETTING	<p>This pilot will coincide in the beginning with a month-long professional development program offered by Sofia University’s Department of Special Education. The pilot specifically targets unemployed Bulgarian teachers interested in retraining as special educators. About fifteen learners are anticipated to enroll for each pilot instance and attend five days a week sessions for four weeks (two competence profiles whose suggested plans have an approximate duration of 150 hours). The competence profiles available include education of the hearing impaired; education of the visually impaired; education of the intellectually disabled; and speech therapy. Besides, 300-hour additional competence development plans are available for adapted physical activities; and social work. The total number of hours / activities depends on the personal needs and preferences of each learner.</p>
ROLES	<p>The roles involved in the SEB pilot are:</p> <ul style="list-style-type: none"> <li>• two people installing the software</li> <li>• one content developer</li> <li>• two competence providers</li> <li>• one competence assessment provider</li> <li>• one community creator</li> <li>• two people providing technical support</li> <li>• 15 learners</li> <li>• one person involved as a tutor/coordinator/mentor/study advisor</li> <li>• two pilot evaluators</li> </ul>
TOOLING	<p>According to the timing of the implementation plan of this pilot, as well as the main usage scenarios, the tool used in this pilot was the PCM.</p>
USAGE PROFILES	<p>Create Competence profiles and simple courses, follow course</p>
AIM AND EXPECTATION OF THE PILOT	<p>This pilot is demonstrating the partnership between two research projects: SEB and TENCompetence. Both projects seek to engage Internet technologies, e.g., e-portfolio, online course management, and Web 2.0 social networking software, to facilitate professional development and lifelong learning. If successful, similar approaches may be taken for the professional development of special educators in other countries, especially those new to or soon to enter the EU.</p>
CONTEXT	<p>SEB project requires tools to support the competence development of teaching professionals in the context of special education, and TENCompetence requires long-term associate partners. Moreover, both projects expect that early and continual focus on sustainability will lead to long-term adoption of a number and diversity of associate partners. For SEB, sustainability will depend on the quality and relevance of professional development tools and resources provided to its members. Hence, the development of a SEB test pilot for TENCompetence is a win-win opportunity.</p>
COMPETENCE PROFILES AND COMPETENCES INVOLVED	<p>SEB is targeting the education of the visually and multiply impaired. The principle standard that is adhered is from the United States, and titled, Perkins School for the Blind Competences for Teachers of Learners Who Are Deafblind (McLetchie &amp; Riggio, 1997). The following competences are addressed by the Perkins document:</p> <ol style="list-style-type: none"> <li>(1) Effects of deaf-blindness</li> <li>(2) Personal identity, relationships, and self-esteem</li> <li>(3) Concept development</li> <li>(4) Communication</li> <li>(5) Auditory and visual systems</li> <li>(6) Orientation and mobility</li> <li>(7) Environment and materials</li> <li>(8) Professional issues</li> </ol> <p>The Perkins document lists a comprehensive set of competences essential for all beginning special education teachers regardless of their specialization. It is in fact subset from an international standard published by the Council for Exceptional Children (1995; 2003). The additional competences addressed include:</p> <ol style="list-style-type: none"> <li>(1) Philosophical, historical and legal foundations of special education</li> <li>(2) Characteristics of learners</li> <li>(3) Individual differences</li> </ol>

	<p>(4) Instructional strategies</p> <p>(5) Learning environments and social interactions</p> <p>(6) Language</p> <p>(7) Instructional planning</p> <p>(8) Assessment</p> <p>(9) Professional and ethical practice</p> <p>(10) Collaboration</p> <p>In particular the following competences will be addressed in the pilot:</p> <p>(1) Understanding of the models for development of the visually impaired</p> <p>(2) Ability to evaluate level of visual impairment</p> <p>(3) Understanding of teaching differences for all levels of impairment</p> <p>(4) Ability to prepare individual education plans</p> <p>(5) Knowledge of textbook methods, strategic and technical</p> <p>(6) Proficiency with Braille</p> <p>(7) Integrating visually impaired students</p> <p>(8) Early intervention</p> <p>(9) Proficiency with technical resources</p> <p>(10) Interdisciplinary knowledge of special education, collaboration</p> <p>(11) Application of rehabilitation models</p> <p>(12) Legal knowledge and application</p> <p>(13) Effects of blindness</p> <p>(14) Personal identity, relationships, and self-esteem</p> <p>(15) Human anatomy: visual systems</p> <p>(16) Orientation and mobility</p> <p>(17) Professional issues</p> <p>(18) Philosophical, historical, and legal foundations of special education</p> <p>The Special Education Bulgaria (SEB) competence development community is designed to help Bulgarian special educators develop, assess, and track their professional competences. The competences tracked by this community are linked to competence-development resources available on the SEB website. The areas of professional competence targeted by this community are:</p> <p><b>I.</b> Deaf blindness</p> <p><b>II.</b> Visual impairment</p> <p><b>III.</b> Hearing impairment</p> <p><b>IV.</b> Speech impairment</p> <p><b>V.</b> Intellectual disability</p> <p><b>VI.</b> Foundations of special education</p> <p>We will target in this pilot the first two major competences:</p> <p><b>I. Deaf blind (professionals devoted to teaching deaf blind students)</b></p> <p>This competence can be attained by completion of a professional development plan for Bulgarian teachers interested in being able to teach learners who are deaf blind. Successful completion of this 150-academic-hour plan and requisite assessments leads to a certificate of proficiency to teach deaf blind students. The level of proficiency awarded by this development plan will depend on competence assessment results as well as prior teaching experience and training; and supervisor and peer review. Prerequisite competences: (1) teachers of learners who are visually impaired (2) teachers of learners who are hearing impaired. Waiver of prerequisites to be assessed on an individual basis.</p> <p>Competences:</p> <p>1. Effects of deaf-blindness</p> <p>2. Personal identity, relationships, and self-esteem</p> <p>3. Concept development</p> <p>4. Communication</p> <p>5. Auditory and visual systems</p> <p>6. Orientation and mobility</p> <p>7. Environment and materials</p> <p>8. Professional issues</p> <p><b>II. Visually impaired, (professionals devoted to teaching visually impaired students)</b></p>
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	<p>This competence can be attained by completion of a professional development plan for Bulgarian teachers interested in teaching learners who are visual impaired. Successful completion of a 150-academic-hour plan and requisite assessments leads to a certificate of proficiency to teach visually-impaired learners. The level of proficiency awarded by the development plan will depend on competence assessment results as well as prior teaching experience and training; and supervisor and peer review.</p> <p>Prerequisite competences: (1) foundations of special education. Waiver of prerequisites to be assessed on an individual basis.</p> <p>Professional competences for special educators of the visually impaired include the following specific competences:</p> <ol style="list-style-type: none"> <li>1. Knowledge on Models for the development of the visually impaired</li> <li>2. Evaluating the level of visual impairment using formal and non-formal procedures</li> <li>3. Teaching all levels of visual impairment, including most severe cases</li> <li>4. Designing, choosing and adapting Individual education plans</li> <li>5. Demonstrating the ability to apply the right textbook methods, strategic and technical</li> <li>6. Teaching the Braille system</li> <li>7. Being able to assist the integration of the visually impaired in the educational system</li> <li>8. Being able to make early interventions and to consult parents of the visually impaired</li> <li>9. Using special technical resources, choosing the right resources for each case</li> <li>10. Interdisciplinary knowledge for working in a mixed teacher-doctor teams</li> <li>11. Being able to apply different models for rehabilitation of elderly people</li> <li>12. Knowledge and application of legal issues</li> </ol>
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## Implementation of the pilot

For this pilot a special interdisciplinary group of experts was founded. It included experts in Special Education field, in using ICT in Education, as well as experts in using TENCompetence models and tools. They first developed a detailed training plan, gather all the needed training and learning materials and prepared the computer rooms. A video lecture summarizing the main tasks of the learners (professional teachers) was shot in advance and made available to all learners using a Moodle site complementing the PCM tool.

Fourteen learners, one Special Education instructor, and three TENCompetence experts participated in the pilot. The average age of participants was 40 and their average years of experience were 20. Learners travelled to Sofia from cities across Bulgaria. The first face-to-face session started on 15th of June 2008 and lasted for two days. The pilot was run in conjunction with a professional development set of events for educators interested in retraining as teachers of students with vision impairments.

The competences addressed by the video were knowledge-based, covering such areas as the philosophical, historical, and legal foundations of special education; characteristics of learners; and individual differences. The proficiency level or qualification level for each of the competences were rated at four out of a possible eight as defined by the European Qualifications Framework. Qualification Level 4 indicates “factual and theoretical knowledge in broad contexts within a field of work or study; a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study”. For comparison, Level 1 indicates “basic general knowledge” and skills and Level 8 indicates knowledge and skill at “the most advanced frontier of a field of work or study” (European Parliament, 2008, pp. 5-6).

For the pilot, the Special Education Bulgaria (SEB) website was opened through the TENCompetence personal competence manager’s (PCM’s) integrated browser. SEB’s learning

resources could then be directly linked to competences and learning paths defined in the PCM. The PCM allowed participants to track competences attained and communicate with other participants regarding ways to improve defined competences or the learning paths, resources, and activities for attaining competences. SEB’s forum and chat features were used for communication while completing learning resources and activities. The PCM interface is made of resizable and moveable frames. In each frame, a different tool can be accessed. For example, as shown in Figure 24, the ratings tool can be accessed in the frame at the bottom centre of the PCM. By clicking and holding the “Rating” tab with the mouse, the entire window can be dragged to a different location on the interface. This feature allows users to arrange the PCM interface to best suit their current needs.

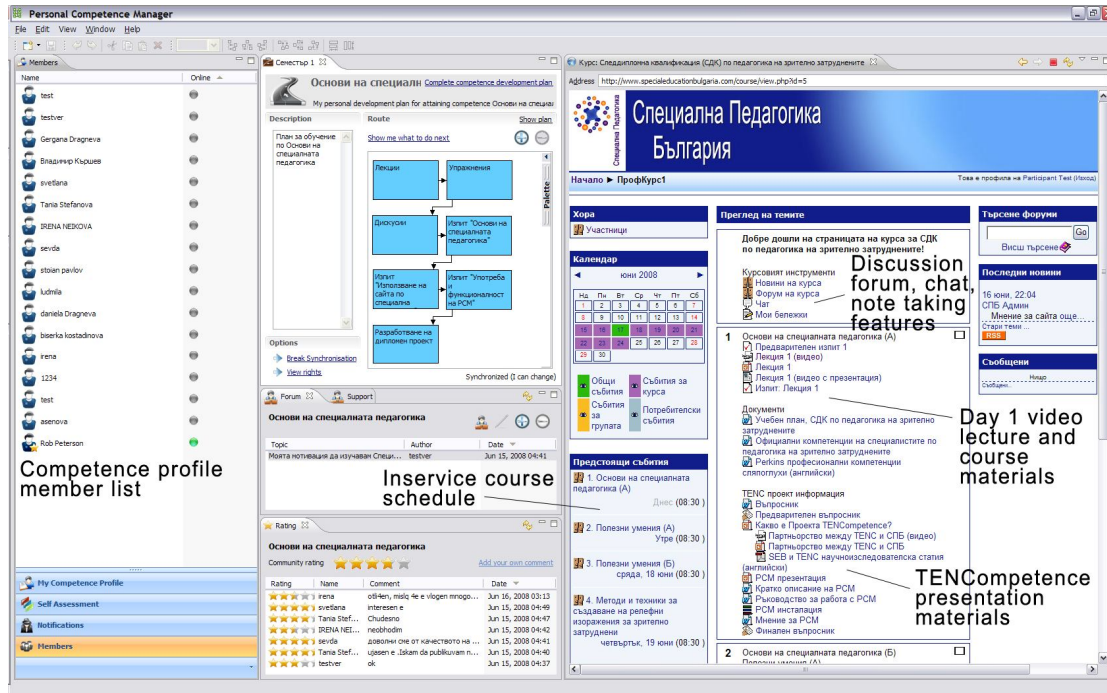


Figure 24. SEB course website opened with PCM’s integrated Web browser

With the arrangement illustrated in Figure 25, while reviewing a video hosted by an external website, the user is set up to view their progress on a map of the competence development plan and to discuss and rate the quality of the video learning resource with other participants.

After the face-to-face session, learners continue their training using distance learning mode during July and August 2008. Final face-to-face session was organised in September 2008, when all participants presented their project – creation of a competence development plan intended for a chosen topic from their overall competence development programme.



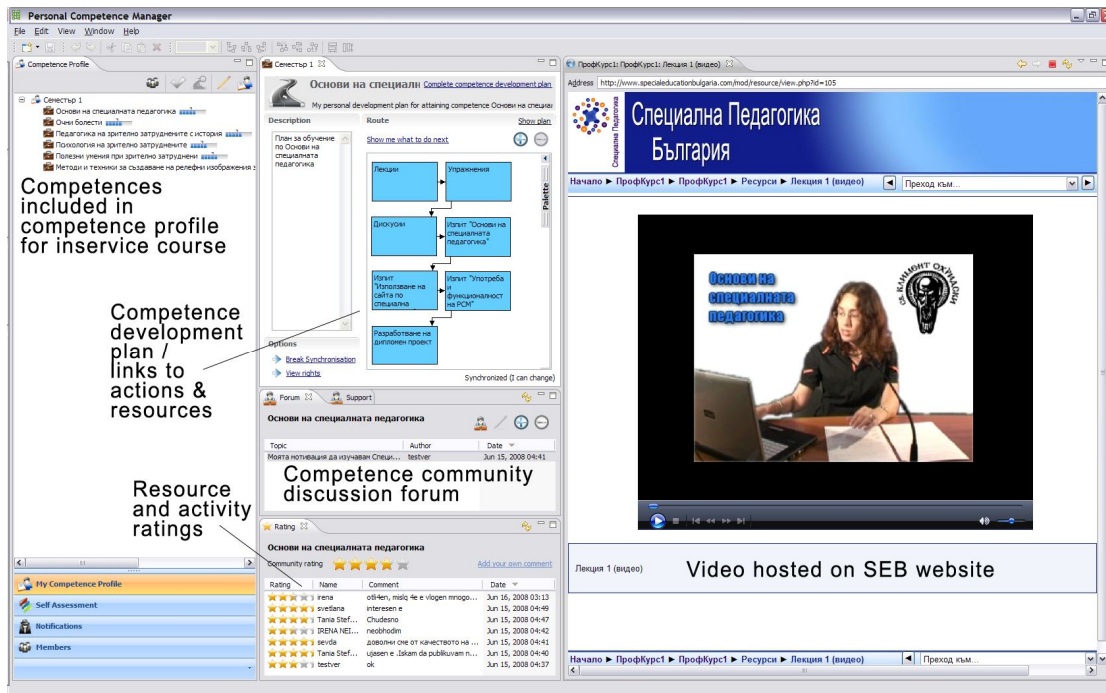


Figure 25. SEB video presentation page open in TENCompetence PCM software

### Some initial ideas on the evaluation of the SEB pilots

Because of the large amount of data from the different pilots needed to be analyzed, there has not been time to complete the whole analysis yet. As Water Management and Agora pilots are the new pilots in Cycle 2 and use the new tooling available, their evaluation was prioritized. The evaluation analysis of ICT Teacher Training pilot and SEB pilots will be done in January. However, next paragraph provides some initial ideas on the SEB pilot's results as expressed by the pilot implementers.

In the case of the SEB pilot, pre-test questionnaires assessed participant levels of ICT experience. They also assessed willingness to acquire knowledge and functional, communication, and creative problem-solving skills via ICT-based training. Perceived ability for attitudinal change via ICT-based training was also assessed. On the whole, participants reported that they were very willing to acquire such competences via ICT. Pre-test questionnaire responses suggested that participants were divided equally as to their preference to follow their own learning path based on previous experience and knowledge or a fully predetermined course of instruction. Post-test questionnaire responses, however, indicated the participants preferred to follow their own path rather than a predetermined or fixed path. Post-test questionnaires assessed the degree to which participants attained the types of competences described in the pre-test questionnaire and their level of satisfaction with ICT features, learning paths, resources, and activities provided. Most participants reported technical difficulties with accessing learning resources. It was inferred, based on researcher observation of technical difficulties, that most problems were related to the participants' limited experience with ICT.

Researcher observations and questionnaire results indicated that participants successfully navigated and used the SEB website. Participants demonstrated knowledge gained about the special education topics presented as well as skill development in using SEB and PCM features. The participants had very limited prior experience using information and communication technologies (ICT). Participants found that the discussion forums were useful, but they would

have preferred only one forum for the entire system rather than separate forums for each competence area. They used the forums when seeking help about how to access and use resources or to express opinions about the quality of resources. They found that the PCM rating system was appropriate and useful. Participants reported their level of knowledge and skills gained as average, high, or very high. None responded low or very low. Participants agreed that the learning format was very attractive and useful. They found their participation in the pilot rewarding and interesting and a refreshing opener to the 10-day in-service. Participants commented that the learning path and resources provided for the “foundations of special education” plan of the in-service profile, which relied on a video and pre-test and post-test activities as well as a small group activity, were highly appropriated.



### A.3.3 Digital Cinema pilot

The following sections include an executive description of the Digital Cinema pilot and the main issues related to the implementation of the pilot.

## Description of the pilot

**Table 18. Description of the Digital Cinema pilot**

<b>Name of the business demonstrator</b>	
<p><b>SHORT DESCRIPTION:</b> This pilot is a revised extended version of the Digital Cinema pilot carried out in Cycle 1. Its main goal is to test the TENCompetence infrastructure and pedagogical models in their ability to support competence development of busy professional in the area of Digital Cinema and 3D. The competences supported in this pilot are tool-oriented. In Cycle 1 the focus was on the Brainstorm software which enables the creation of Virtual Sets. In Cycle 2 competences related to effectively using the new NINOS infrastructure for automatic audiovisual production will be incorporated in the pilot. The aim is trying to increase the number of potentially interested participants, having in mind again that the domain is quite specific and the target users are busy professionals. The pilot was planned to start by the fall of 2008 but because of the delivery of tooling and the interests of the project it has been re-planned. The new plan is that it will start in February 2009 and will probably continue until July 2009. The tooling applied will be updated when available and the evaluation data will be collected at different moments along the pilot.</p>	
USER GROUPS	<p>The user groups of this pilot are professionals of the digital cinema and 3D areas; practitioners from the commercial world, academics and future designers in graduate schools. They are typically individuals with a need to develop competences to perform their job better.</p> <p>The Brainstorm Company (developer of the Brainstorm software) and the SALERO project (EU project developing the new NINOS infrastructure) represent organizations that produce knowledge and want to manage and disseminate the knowledge delivered in the form of these tools.</p>
SETTING	<p>The pilot is open to any national or international person interested in the topic of the pilot. The pilot does not constrain the setting; it depends on the circumstances of each person. Participants could develop their competences through the pilot infrastructure from different settings: their workplaces, their homes, training sessions arranged by the organization producing the tools.</p>
ROLES	<p>The roles involved in the pilot included</p> <ul style="list-style-type: none"> <li>• developer of the GUI container linking to TENC tools: one person from UPF</li> <li>• content developer: four persons from UPF, two of them deeply involved in the SALERO project, experts on the competences needed to effectively use the NINOS infrastructure</li> <li>• competence provider: the two persons involved in the SALERO project</li> <li>• competence assessment provider: same as content developer</li> <li>• staff providing technical support: two persons, one expert</li> <li>• learners: see User Groups, the number of participants cannot be known in advance since the pilot is not directed to a specific group / community that already exists. The pilot will be publicized in different specialized forums, etc.</li> <li>• expert: same as competence providers</li> <li>• researchers and pilot evaluators: persons from UPF, UvA and OUNL</li> </ul>
TOOLING	<p>PDP tool (web client), TENTube or LearnWeb 2.0 and SLeD (as well as the PCM and the ReCourse for the expert). Also GUI portal for integrating the tools, it was initially planned to use the ELGG platform but the approach will be adapted now to Liferay.</p>
USAGE PROFILES	<p>Personal Development Plan, Follow Course</p>
AIM AND EXPECTATION OF THE PILOT	<p>From the point of view of the individual learners, they are expected to develop competences associated to the use of new tools in the area of digital cinema and 3D according to their professional needs. From the perspective of the organizations, the expectation is to train professionals in the use of their tools (so that they disseminate the knowledge they are producing) and to achieve a complete training package enhanced iteratively according to the professional feedback obtained in the pilot.</p>
CONTEXT	<p>The context of the pilot shares the ideas summarized in section 1.2 and detailed in (Moghnieh et al., 2008a; Moghnieh et al., 2008b) regarding the Digital Cinema pilot. Moreover the new version of the pilot adds the context around the SALERO project (<a href="http://www.salero.eu/">http://www.salero.eu/</a>). SALERO aims at making cross media-production for games, movies and broadcast faster, better and cheaper by combining computer graphics, language technology, semantic web technologies as well as content based search and retrieval.</p> <p>SALERO will define and develop 'intelligent content' for media production, consisting of multimedia objects with context-aware behaviours for self-adaptive use and delivery across</p>

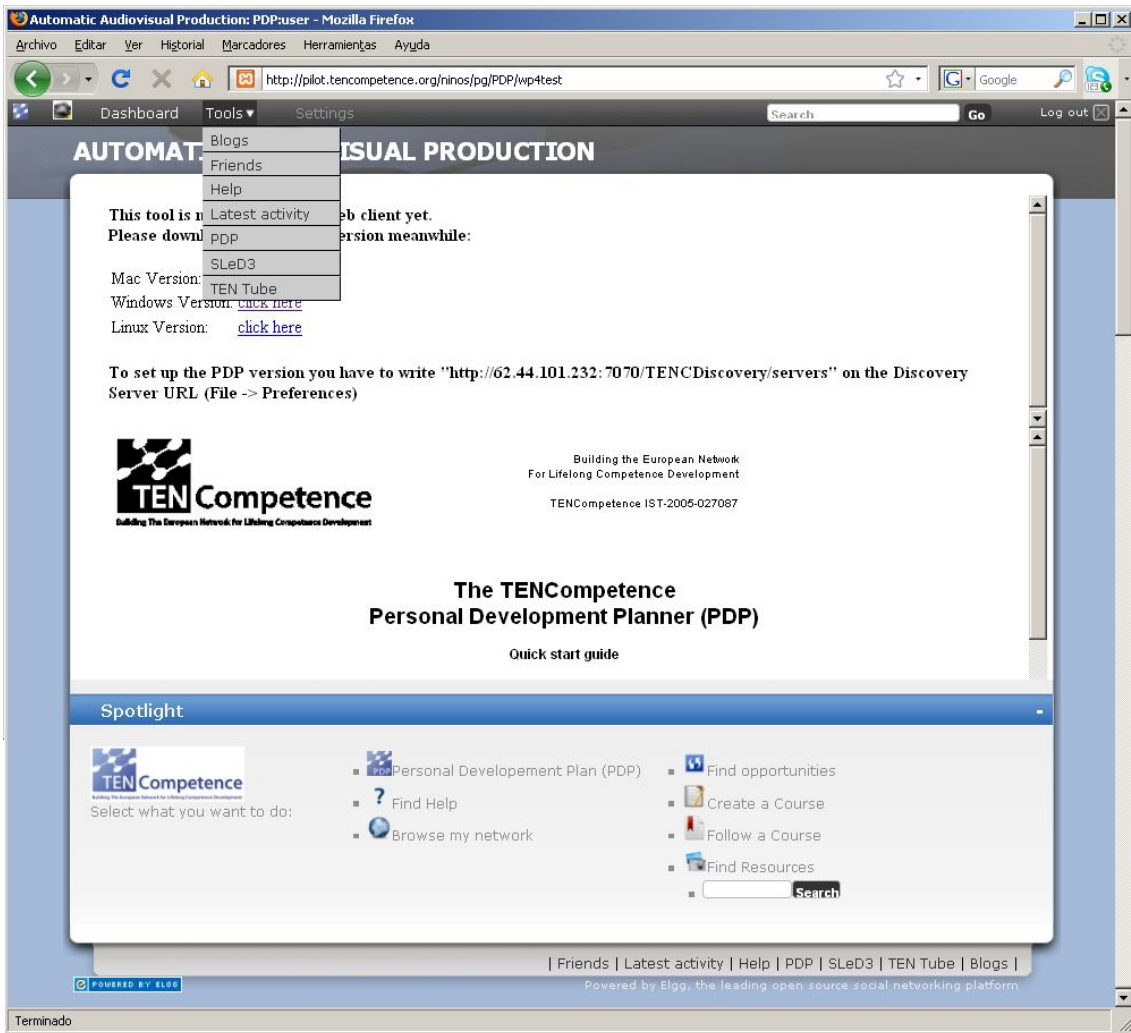
	<p>different platforms. 'Intelligent Content' should enable the creation and re-use of complex, compelling media by artists who need to know little of the technical aspects of how the tools that they use actually work. Based on research into methodologies for describing, creating and finding intelligent content, SALERO will develop toolsets to create, manage, edit, retrieve and deliver content objects, addressing characters, objects, sounds, language sets, and behaviours. The toolsets developed and the concept of intelligent content will be verified by experimental productions.</p> <p>The pilot plans to build on the first Training for Professionals workshop for tools created within SALERO that took place at the University of Art and Design Helsinki (Taik) 13.-15.5.2008. The event was intended for professionals in the 3D area; practitioners from the commercial world, academics and future designers in graduate schools, who were interested in learning about SALERO experimental software and also to try out the software for themselves. The object of the training session was to teach working tools to the participants - and gain experiences from the process for future training events. The tools being presented had to have reached a stage in their development, where they could viably be taught to the outside community.</p> <p>The training event included a one day introduction session, and two days of hands-on training. The purpose of the first day was also to allow busy professional practitioners to get some idea of the tools, even if they could not attend the whole 3-day event. One of the objectives of this course was to compile training information for the course and for future use. For this first training session, FBM-UPF as the tool developer had created a temporal information website: <a href="http://ninoscompetence.wordpress.com/">http://ninoscompetence.wordpress.com/</a> The website includes a video that explains the main features of the Program Editor, showing some results obtained with the system. There is also a link to download Program Editor, should the viewers want to test it. This website will be replaced by the TENCompetence infrastructure as soon as the implementation for Cycle 2 is ready. A total of 17 professionals participated in the event. Lecturers from all Universities of Applied Science with 3D education in the greater Helsinki area attended, as well as 3D lecturers, designers and researchers from the University of Art and Design Helsinki and representatives of 3D industry.</p>
<p>COMPETENCE PROFILES AND COMPETENCES INVOLVED</p>	<p>This pilot involves the competences promoted in the Cycle 1 Digital Cinema pilot (see D4.2) and the new competences around the tools involved in the NINOS infrastructure (see D4.3). This new competences are mostly of type functional of knowledge (as considered in the classification of Cheetham and Chivers) and are in the frame of the “<b>Automatic Broadcasting Programme Editor</b>” competence profile:</p> <ul style="list-style-type: none"> <li>• Using multiple tracks to compose the proper sequence of video and audio assets and produce an audiovisual piece</li> <li>• Blending over two or more clips on different tracks in order to produce transitions, fade-in and fade-out</li> <li>• Knowledge of common formats used for broadcasting in terms of resolution, frame rate and fields</li> <li>• Knowledge of the state of the art codecs for video and audio compression</li> <li>• Editing XML scripts that define the programme's content</li> <li>• Recognizing and setting events that could be associated to automate the production</li> <li>• Knowledge of the different elements of a 3D scene. Ability to choose lights, cameras, characters and animations to produce the desired scene</li> <li>• Knowledge of the different file formats for video.</li> <li>• Knowledge of the different file formats for audio.</li> </ul>

## Implementation of the pilot

**This pilot was initially planned to use ELGG as a GUI container, but because the web client of the PDP, the “link” tool and the TENTube were not in the desired stage so as to be used in the pilot and due to the new integration strategy agreed in the project (using Liferay), the plans for the DC pilot has been revised and its execution has been postponed to February 2009.**

In any event, Figure 26 shows how the ELGG system can be used as a GUI container of the TENCompetence tools<sup>2</sup>.

<sup>2</sup> The system can be accessed at <http://pilot.tencompetence.org/ninos/>, user: wp4test, password: testwp4



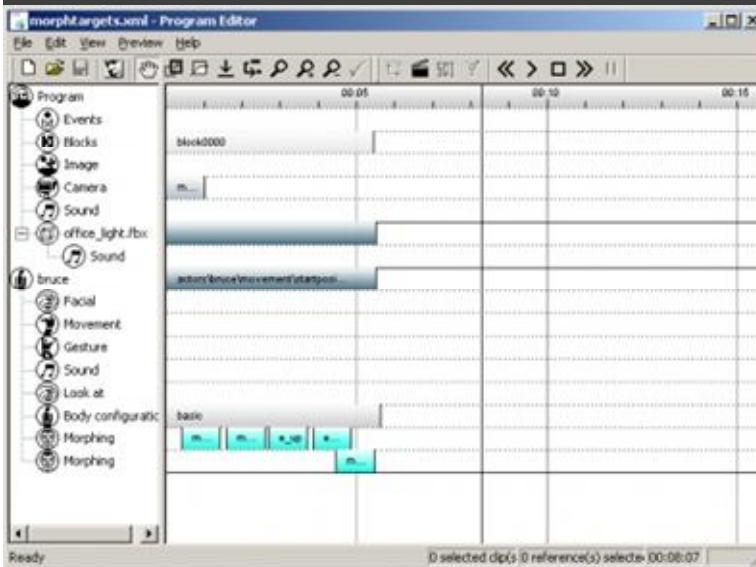
**Figure 26. ELGG as GUI container of TENCompetence tools (using iframes)**

Some new learning activities and resources developed for the “Automatic Broadcasting Programme Editor” competence profile (see previous section) are shown in Figure 27.

## Morph (using the Morphing track)

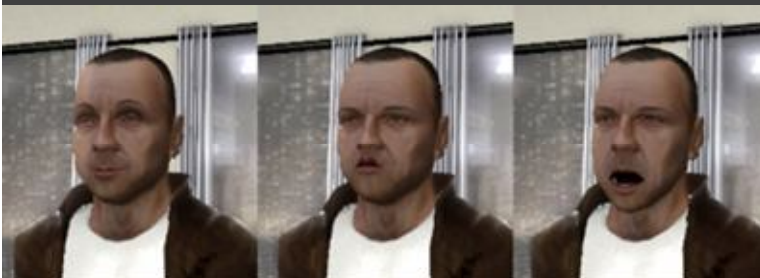
Program Editor allows using morph-targets to enhance the visual quality. It helps the artist to give more expressivity to the actor in those context where is not enough with the skeletal animation. Using morph targets we can deform the mesh.

To do this we need to right-click on the actor name and select “add morph target track”. This will create a new track inside the actor called “Morphing” which allows activating a specific morph-target from the FBX. When we create a clip inside this track the program will ask us the name of the morph-target we want to use to deform the mesh.



We can have several morph targets active at the same moment, the result will be the sum of all of them.

Remember you can use the “fade clips” tool to make the transition smoother.



**Figure 27. Sample of new learning activities and resources for the Digital Cinema pilot**