Turning university professors into competent learners
(or how to interweave a new educational methodology with a tool for Lifelong Learning)

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Abstract: This paper presents the results of a pre-pilot experiment offered in Bulgaria for teachers’ trainers who have to update their skills using ICT in teaching. The pre-pilot became a synergy of results of two European projects – the Leonardo Innovative Teacher (I*Teach) project and the FP6 TenCompetence project. The methodology for building ICT-enhanced skill, developed in the frame of the I*Teach project, was applied for training teachers how to use ICT, using the provided by TENCompetence project tools and infrastructure.

Keywords: ICT-enhanced skills, Teachers training, Virtual community

1. Introduction

Lifelong competence development is a crucial need identified for the contemporary information society. In order to provide adequate conditions for everyone to participate in the lifelong competence development, we need to introduce a lot of changes in society – political, social, technological, etc. In order to stimulate these changes, European Commission launched several research programs, aimed to support the process of change.

The TENCompetence project [1] is one of the major responses of the research community towards finding a solution to the above mentioned society need. It is an Integrated Project in the 6th FP of the EC, in the IST – Technology Enhanced Learning priority. The project has three main objectives:

1. To research and develop an easy-to-use, integrated, open-source, standards-based, extensible and sustainable European infrastructure for lifelong competence development.
2. To ensure the validity and viability of the approach during the project by performing real-life pilot implementations in different organisational and international settings.
3. To ensure the sustainability of the infrastructure by creating opportunities and training for new innovative European organisations in the field of lifelong competence development.

This paper presents main achievements related to the second main objective, during the pre-pilots in Bulgaria for teachers’ trainers who have to update their skills in applying ICT in teaching. The pre-pilot was organized in July in Sofia and becomes a synergy of results of two different but related European projects – FP6 TenCompetence project [2] and Leonardo project Innovative Teacher (I*Teach) [3].

We are presenting the main pre-pilot characteristics, the main challenges for the trainees, and main results from the pre-pilot.

The main research questions addressed during the TenCompetence pre-pilot were the following:

1. To discover the optimal way to interweave both mastering the I*Teach methodology and an application of the new tool Personal Competence Manager (PCM);
2. To search for appropriate methods to present the new methodology and the new tool to trainees with a high professional level in the context of both ICT and teaching;
3. To find the right balance between the face to face and distance training, enabling training on-the-job learning to be implemented.

By finding the right solutions of above mentioned questions we have been prepared for
the real implementation of the TENCompetence pilot training experiments.

2. The pre-pilot setting

2.1. The I*Teach methodology and the PCM

The methodology for building ICT-enhanced skills [4] is implemented through continuous, repeatable activities and gradually accumulated experiences leading to concrete goals by performing specific tasks. This methodology tries to find the balance between the full freedom of the learners, as one extreme, and the strict following of detailed directions, as another. A series of sample educational scenarios have been designed to support the methodological framework. An I*Teach scenario represents a composition of tasks (to be implemented in the context of an active learning environment) leading the students to an educational goal by covering intermediate objectives (milestones of the learning process). The metaphor behind such a scenario is a path (the process) traced by landmarks (the milestones) leading to the peak (the goal).

Why is it useful to apply the tools, developed in the frame of the TENCompetence project for the I*Teach trainings?

PCM is a tool with the main goal to support peoples’ personal and Life Long Competence Development. It is a system which gathers competence related information drawn from sources at multiple levels and is used to present and edit this information in a context, structure and format which is determined by the user [2].

Our observation shows that the knowledge and competencies gained during the course do not finish with the end of the course [5]. Most of the teachers face new challenges during their work in the class. They feel the need of continuing the exchange of good practices in the professional community formed during the course. Thus we identified a strong need of the trainees to continue their further competence development preserving all the information channels built during the initial training. After short introduction of PCM [6] the I*Teach trainers made the hypothesis that this new tool will provide teachers with a relevant support and ensure their lifelong learning. We considered PCM to be a tool for converting an established professional community in a virtual one, rather than just a tool for communication. In addition, we could place through PCM learning materials and other resources at teachers disposal, as well as to prepare distance training for I*Teach scenarios. But most of all, our expectation was to use successfully the PCM for teachers’ competence development and to give them a chance to continue work on eLearning materials in collaboration with other colleagues and students.

A tool like PCM is a perfect platform for putting the idea of collective intelligence [8] in action.

2.2. The Trainers

The main problem with introducing a new toolkit is that often the emphasis is on the tools rather than on the context in which they could be used and on the didactical strategies. With this in mind training was carried out by two teams of trainers: one in charge of applying the I*Teach methodology, and the other - of the TENCompetence infrastructure.

Since it was not possible to upload any learning resources at the then current version of PCM, we proceeded as follows:

- The I*Teach team prepared the instance of the course in Moodle where the Methodology was presented as a group of several word documents, describing the I*Teach methodology and explaining how best it can be used with 3-4 examples, which are called learning scenarios, consisting of several learning tasks, all described in a well predefined templates.
- The TenCompetence team developed a set of units of learning [7] presenting the main ideas of the I*Teach methodology, accessible through the SLED server.

2.3 Selecting the right participants

There were several important arguments determining the selection of the participants in the pre-pilot experiment:

- it was scheduled for the summer (when most of the secondary school teachers are in vacation)
- the participation was on voluntary basis
- in order to promote a new methodology we believed that we had to apply it to teacher trainers first (“you teach as you were taught”)
- we needed people open to new challenges and prepared to learn every day something new
- the PCM functionalities were not fully developed yet and any qualified and constructive recommendation would be helpful

The easiest solution was to invite university lecturers involved in pre-service teachers’
education who already had excellent computer skills.

42 participants were involved in the pre-pilot. The youngest was 21 years old, while the oldest was 67 years old. The ratio between males and females was roughly 1:1 (22:20). Most of them were University lecturers specialised in teacher training (from areas like computer science, language learning, educational technology, etc.) but there were also 12 secondary school teachers.

We, the trainers, faced serious challenges with such a choice, though:

• the setting was reverse – university professors were trainees of high school teachers (3 out of 4 in the I*Teach team!). These teachers were open-mind, active young people, trained to use I*Teach methodology and very well performed as trainers in past I*Teach workshops.
• the high professional level of the participants required a special approach in order to convince them in the applicability of the new methodology
• The trainers were expected find an appropriate context for a motivated introduction of a tool with which they themselves didn’t have sufficient experience
• It was not an easy task for the TenCompetence trainers to provide invisible help (an important feature of I*Teach methodology);
• The goals of both the trainers and the trainees should be put in harmony.

3. The way to the competence

The duration of half a-day face-to-face training followed by two weeks distant collaborative work and a half a day workshop at the end turned out to be sufficient for the pre-pilot testing.

Unlike all previous I*Teach training [5], the idea was to put the main load of the training on flexible self-adapted distance work, without close supervision of the trainers.

The biggest challenge for the trainers was to put in action a methodology, new for the trainees, in a technical setting, new for both the trainees and the trainers, for a very short time in a natural way, i.e. to interweave the concepts of competences and communities with the interests of the participants.

The intense training started with a 3 minute introduction of each participant, followed by grouping by interests and hobbies and identifying (via brainstorming) topics for competence development.

The next step for the trainees was to create communities based on the intersection of the expressed interests in developing concrete competencies followed by designing a competence development plan (by means of PCM) and finally - to present their work to all the participants.

All these steps were in fact the so called milestones of a typical I*Teach scenario which they had to go through during the face-to-face stage of the training.

During the whole process we relied on the good proficiency level of our trainees and provided them with invisible assistance only when needed. Thus we let them discover the I*Teach methodology by means of PCM functionalities.

3.1. The teams

The process of building teams was moderated by trainers. After asking the initial questions (“In which area I feel I’m an expert?”; “In what I’d like to become expert?”) groups were formed according to the interest of participants: each team was responsible for development of one of the competences gathered by the brainstorming. The moderators supported forming teams and looked for that in each team to participate at least one “expert” and at least one “amateur” in chosen competence. The good balance of available skills in the group is essential for the success of the training. Two trainers (one in using PCM and other in I*Teach didactics) supported each team. The trainers were screened by the roles of regular members of the teams.

The following teams were formed:
1. The team with competence in Arts, with special emphasis on dancing.
2. Communication in natural language.
3. Time management.
4. The family life, with special emphasis on how to become better parents.
5. The development of e-learning courses.

3.2. The first challenge

After the teams were formed in I*Teach style of meta-training [5] the challenge was posed: To develop Community according their interests. Each community to create competence development plan for the competences they decide to work. To propose activities, appropriate to develop required skills, to find
adequate resources for each activity. Teams are asked to use PCM for completion the task.

The challenge provides good relationship between I*Teach ideas and PCM tool:
- The team members should distribute their tasks (working on skill working-in-a-team)
- For a short period of time (20 minutes) they should develop joint result - competence development plan (like working-on-a-project) with support of technologies
- The groups had to search and find learning resources (working on information skills) for the learning activities

During the presentation of the results phase we saw good examples of interweaving of both ideas.

Each team had 5 minute to present its results without limit of used presentation tools. We were pleased to realize that within the given 20 minutes all teams succeed to develop community in PCM, to prepare draft competence development plan and to find appropriate resources for planned learning activities.

Participants and mediators discussed what skills were used during performance of the tasks, what problems arose, what methods for the skills development was applied. The participants shared the opinion that challenge was main motivation factor. Finally I*Teach idea was jointly rediscover and all participants feel it is like their “child”.

3.3. Distance work

After the first challenge the second one was presented. During the next two weeks teams were asked to perform distance work. Each group should:
- Fully elaborate the competence development plan in chosen area.
- Describe the scenario and all its learning activities and tasks according I*Teach methodology.
- Collect and develop learning resources

The competence development plan should be described at PCM and should include:
- Learning activities for all intermediate skills and way of action.
- Roles (what are the main roles of participants in learning, which activity to which role is appropriate, which resources are accessible for each role).

The final project (I*Teach scenario) should be developed and presented to the other teams using the native PCM characteristics and components (competence development program, competence, community, learning plan, learning activity, learning resources).

3.4. Final results and feedback

Two weeks later (in the heart of the summer) the participants in TenCompetence PCM pre-pilot put on the table their results.

The date and time for the final face-to-face meeting was initiated by one of the teams – Time management group, which sent an invitation to the other groups. The message was not just an invitation, it carried out two more hidden goals: 1) to encourage the rest of the teams to work more actively; 2) to demonstrate the skills of the team to work in collaboration and to produce short presentation (the invitation was one perfect sample of already good competence in working-in-a-team and short presentation skills built through I*Teach methodology).

All teams answered to the invitation coming ready to present their results (Figure 2). The results surprised all the participants and mostly us, the trainers, with their originality.
The teams showed very good understanding of I*Teach methodology and mastering the skills according it, as well as its implementation in PCM.

Some of the teams had ideas which could not be realised with current version of PCM. Participants gave their recommendations for future development and expressed their interest in some new features.

- More of participants expressed their willing to have hierarchy/ontology of competences;
- Some participants worried because the forum and chat were not yet available and communication was realized by other software; and currently there was no option in PCM to describe repetitive activities (such as a cycle of actions with conditions) as done in Figure 3.

![Action Plan](image)

**Figure 3.** A learning path in the form of a 3D spiral difficult to presented in PCM

One of the most difficult questions arose from the Arts team - how to measure competence development level in such skills like dancing, singing, etc. The team suggested some possible methods for self-evaluation, but question remained open.

4. Conclusions

The most important result of the pre-pilot experiment was that the trainees managed to improve concrete competences of their own in a chosen area — not just to have one more tool, not just to know how to implement one more methodology, but to improve your self-confidence by proving to yourself that you could be a long-life learner. The enthusiasm shown by all the teams encouraged us to perform the real pilot training with secondary school teachers two months later by using the same strategy.

The understanding that the synergy between I*Teach Methodology and TenCompetence ideas produces promising results raised our confidence during the next pilot experiments.

Another important finding for the participants was that each one of them learned a new thing not only in a relatively new field but even in a field he/she felt an expert.

So finally all the participants were in the roles of both— teachers and learners. Something every teacher (even a university professor) should be comfortable with if he wants to educate life long learners.

Our next step is to test the PCM in the real school settings, where the trained teachers have to apply what they learned so far.

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5. References