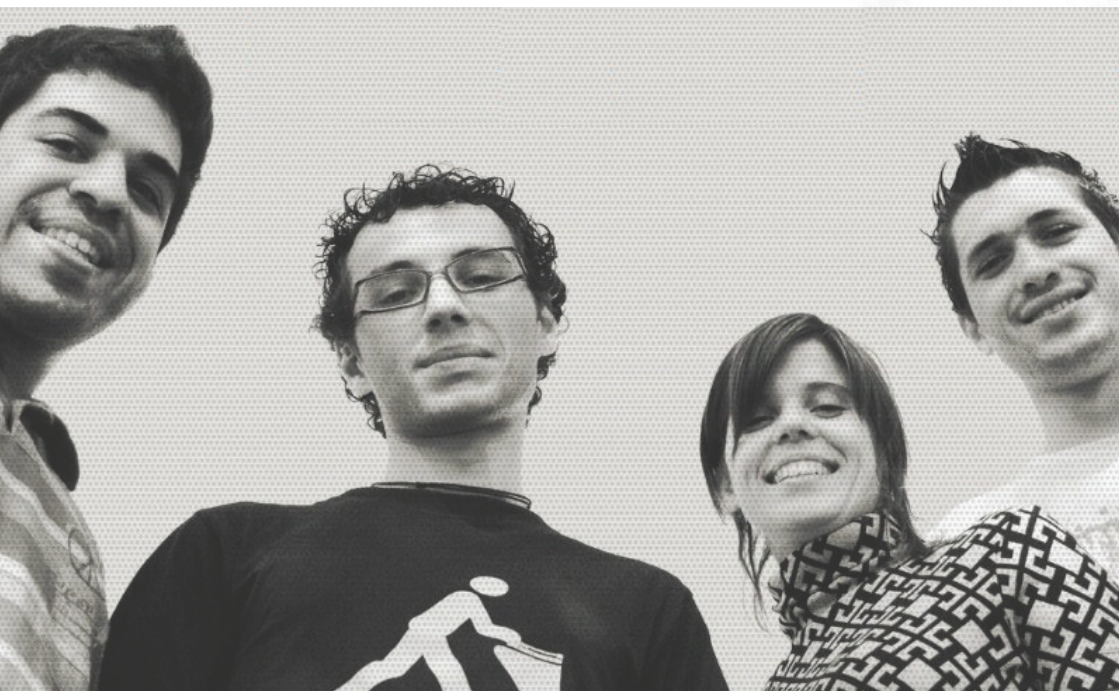


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International Conference

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# The Higher Short Term. The CET and the Future.



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## TECHNICAL FORM

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## Conclusions

We live at a competitive society with challenges beyond regular skills or regular course programs. Students, professionals or any other working in competitive environment are exposed to a XXI century professional challenge: versatility.

At this context, since they need to develop different competences at different levels and contexts, a student of TSC course has a profile far beyond the regular academic (students that had made their secondary school).

Thus, regarding TSC students profile they are better prepared for new challenges, probably unlike undergraduate students. At undergraduate courses, these students may be better receptive than other students, since they already got their academic profile, practical and professional experience. Moreover, such students will be better aware and focused on practical issues regarding labor market and professional terms. Besides, TSC students would need additional training as many others since they already took an internship.

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## POLYTECHNIC INSTITUTE OF LEIRIA'S TECHNOLOGICAL SPECIALIZATION COURSES UNDER COMPETENCE BASED TRAINING AND LEARNING MODELS: A LEONARDO DA VINCI PROJECT STUDY

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Antónia Barreto . Filipe Santos

### Abstract

The Polytechnic Institute of Leiria has been participating since 2009 in project TrainFrame, a Leonardo da Vinci project where 12 institutions from 9 countries aim to create a competence based training and learning model for vocational training contexts. In this model the partners aim to take into account the differences of the partner institutions and the Polytechnic Institute of Leiria participates in this project with their Technological Specialization Courses.

In this article we present some results of the Portuguese partnership concerning its Technological Specialization Courses concerning the first phase of the project, aimed at knowing the conceptions of both trainers and trainees of these courses on competence based learning and training (CBL/CBT) and how well the trainers used them in their practices. The results obtained suggest that the Technological Specialization Courses of the Polytechnic Institute of Leiria meet these vocational training methodologies and that both trainers and trainees know their objectives and roles in the course.

### Keywords

Competence Based Training, Competence Based Learning,

### Introduction

The Polytechnic Institute of Leiria (IPL) has been participating since 2009 in an European Leonardo da Vinci project – project TrainFrame – where 12 institutions from 9 countries aim to better know their practices of Competence Based Training and Learning (CBT/CBL). The goal of this project is, and based on current theoretical framework on CBT/CBL, to propose a model that take into account the institutional perspectives, figuring how their differences (as institutional size, geographical location, financial stand, administrative capacity, services and technical equipment) influence training and learning and how these differences can be framed in a new framework (TrainFrame, 2010). This project also aims at developing tools and instruments that allow partners to study their institutions.

The Polytechnic Institute of Leiria entered this project through its Technological Specialization Courses (CET - *Cursos de Especialização Tecnológica*). In

one of the first stages of the project, two questionnaires have been elaborated to be passed on the trainers and trainees to know the training/learning context of each institution concerning courses that adopt CBT/CBL methodologies. Therefore, IPL passed this questionnaire (available online) to CET trainers and trainees. 19 trainers and 34 trainees answered these questionnaires.

We will show, in the next sections, some of the questions made, answers we got and an interpretation of the results.

### CET courses and the development of competences: the trainer perspective

Nineteen CET trainers answered the questionnaire where their opinion was asked on several dimensions on their teaching practice. In a first dimension we aimed to know their vision on the work based on competences and its implementation in the CET courses. We began by asking them to give us their ideas on competence based education. The results obtained are shown in table 1.

Which of the descriptions below fits best to your idea of Competence Based Education?	Nº	%
Knowledge, Skills and Attitude are integrated elements of the learning process and assessment.	12	63%
There is a permanent reflection on the profession and the professional attitude.	12	63%
Learning-, career-and citizenship competences of the participants are stimulated.	12	63%
The participant is the main focal point of education.	11	58%
Learning in and learning from practice is the starting point of the education program.	11	58%
The (content) supervision is varied and fine-tuned on the learning requirements of the participants.	10	53%
Participants are assessed continuously throughout the learning process.	8	42%
Learning activities take place in different meaningful practical situations.	7	37%
The curriculum is constructed in such a way that the 'self-guiding' of participants increases continuously.	6	32%
Core Tasks, Work Processes & Competences are the starting point for the development of the educational program.	6	32%
Other	2	11%

Table 1

We also wanted, under this scope, to know "What kind of 'educational concept' is leading in your organization / in your way of teaching?". The results obtained are show in figure 1.



Figure 1

These answers seem to indicate that trainers are familiar with the theoretical concepts/framework of the CET courses (D.R, 2006).

In one other dimension, we tried to know the kind of teaching elements/methods of instructions/styles of learning the trainees used. The results obtained are show in figure 2.

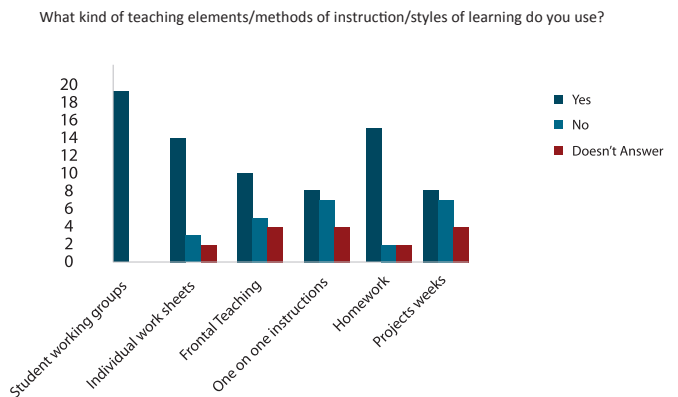


Figure 2

Figure 2 shows us that there is individual and (collaborative) group work (answer given by all trainers). We also see an importance given to projects, under a process development methodology, which points to the development of learning competences. We also emphasize one-to-one instruction (tutorial) methodology answered by almost a half of the trainer's sample.

Next we tried to know the degrees of freedom given to the trainees on several parameters. These parameters and modal values of the answers are given in table 2. Do students have freedom of choice concerning the following topics:

Do students have freedom of choice concerning the following topics: 1 = No freedom of choice, 5 = complete freedom of choice	Mode (19 questionnaires)
The decision of learning targets	1
The choice of place of education (in school/ in company)	1
The choice of learning environment (digital/contact hours/independent work)	3
The choice of guiding and assessment (shape/point in time)	2

Table 2

These results can be explained by the fact that CET courses are inside a national legislative framework that defines a number of classes, practical and theoretical hours, course objectives, etc., and thus don't depend on the trainers or trainees. Nevertheless, the trainer has freedom in the definition of the learning environment and assessment methodology and we see in Table 2 that the trainer adopt and pass to students that freedom.

We also tried to know if the 'freedom of choice' changes during the course of the educational program. The answers given are indicated in Figure 3.

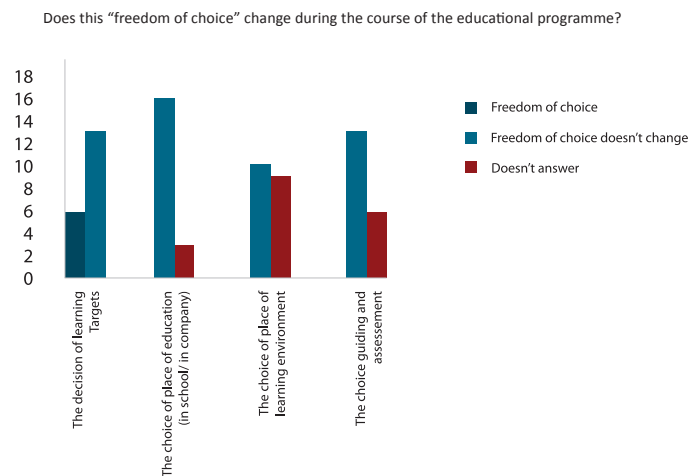


Figure 3

This question is raised on the assumption that through the course learning competences are developed that give trainees more responsibility and autonomy in the management of their learning. This concept is clearly associated with flexibility. Still, and by the specificity of the CET courses, the flexibility margin in some parameters is not changed. CET courses, by their legislative framework are not adapted to the client.

We then tried to know the kinds of evaluation that the trainers do. The answers are show in figure 4.

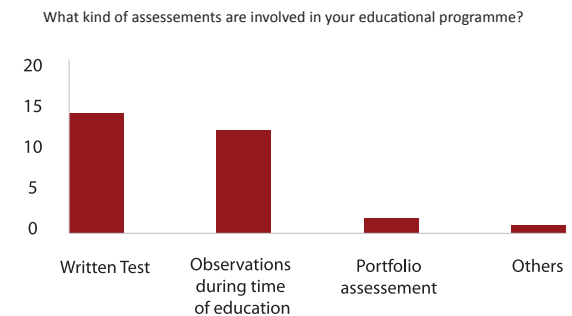


Figure 4

We consider that assessment by portfolio is the one that more clearly answers to the demands of CBT/CBL. As Figure 4 show, portfolios are not very used in CET courses. Still, trainers give great importance to observations, which is, effectively, a common evaluation procedure in labor context. Yes, we see that the most used technique is the written test which is the one that is least adequate to a CBL/CBT model.

On the period that the trainer evaluates the knowledge, skills and attitudes of the trainees, trainers answer as shown in figure 5.

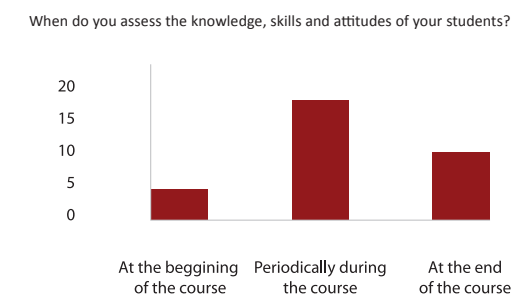


Figure 5

We see that all trainers assess during the course but only some assess at the beginning. In a process of development of competences, trainers should look to early diagnose competences to work on their evolution.

The partnership also tried to obtain other indicators, although not in such an exhaustive way, that would allow knowing the relation between the trainer and the corporate world. With this the partnership aimed to know if market needs and the answers provided by the training institutions to those needs are synchronized. The question and answers are in figure 6.

Do you keep contact with companies/organizations from you region that are related to your training?

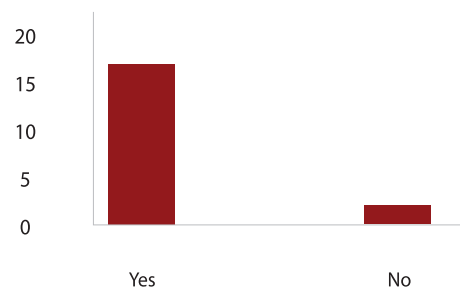


Figure 6

All trainers confirm a relation with the labor market, which allow us to affirm that there is a concern with the constant update of competences demanded by that labor market and the ones offered by CET courses of IPL.

### CET courses and the development of competences: the trainee perspective

Concerning the questionnaires build for the trainees, we got answer from 34 of our students from several courses (“Administrative Practices and Public Relations”, “Conservation and Restoration of Buildings” and “Technic of Social Intervention and Drug addiction”). This group constitutes a convenience sample.

We began by inquiring trainees’ opinion concerning competences, profession and pertinence of CET courses. The answers to one of the questions, “Are you aware of the competences that are relevant / necessary in your vocational profession / or in society in general” are indicated in figure 7.

Are you aware of the competences that are relevant/necessary in your vocational profession/or in society in general?

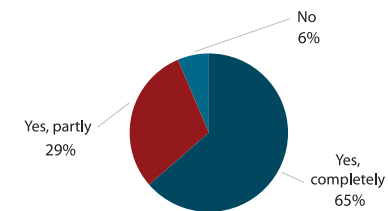


Figure 7

Only 2 trainees (6% of the sample) said that they were no aware of the relevant competences for their professional competences which lead us to conclude that, under a model of learning by competences, there must have been a pertinent strategy of disclosure of competences connected to the profession. Or, on the other side, as CET courses are frequented by many students that already work in the course area, we may assume that such awareness may already be acquired.

When questioned on if the majority of objectives and program content are relevant to their work in the future, most of them also recognize it. This answer may be interpreted as existing an adequacy on contents and methodologies that take trainees consider relevant apprenticeships.

Next, and when questioned on how well they knew the course learning objectives, we got also positive answers, as seen in figure 8. This means that has been a concern of the coordination of the course on communication with students and that it has been successful.

Are you aware of your own learning objectives/aims?

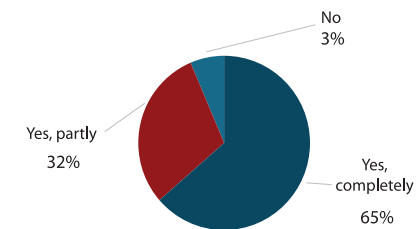


Figure 8

When questioned on the relevance of the objectives and contents for their future work, trainees also responded affirmatively, as shown in figure 9, which allows us also to deduce that the course is coherently organized to allow the acquisition of the necessary competences.

Most of the objectives and content of the teaching programme are relevant for my future work?

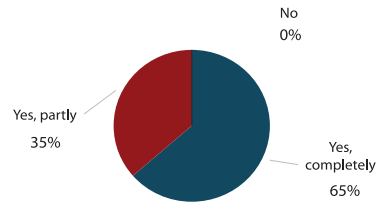


Figure 9

We then aimed at knowing the course coherence on the professional competences. When questioned about if the contents of the classes are related to the course learning objectives, most trainees recognize this relation, as shown in figure 10.

The content of the teaching program connects with the learning objectives

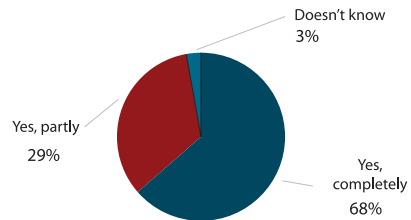


Figure 10

Equally, when asked on the relation of the assessment and what was learnt, trainees recognize the adequacy of what was taught and what was assessed, as show in figure 11. This reinforces the internal coherence of these courses.

The content of the assesment connects to what i have been taught

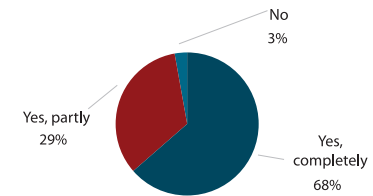


Figure 11

Every trainee (100%) recognized that there is a variety of learning methodologies. Yes, there are some that are more predominant, as show in figure 12. This way, we see that methodologies such as role play are not very used and the same happens with tutorial work. Work and individual work are indicated by 100% of the trainees.

What kind of teaching elements/methods of instructions/styles of learning are used in your course?

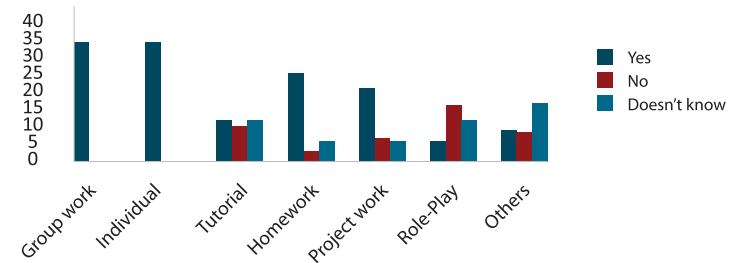


Figure 12

We also aimed to know the trainer-trainee relation. By analyzing the results of figures 13, 14 and 15, we see that there is a high level of satisfaction concerning trainer support and time they make available to that support. Every trainee also said that there is a concern by the trainer in adapting the contents to the individual profile of the trainer.

I am content about the supervision and coaching of the teacher

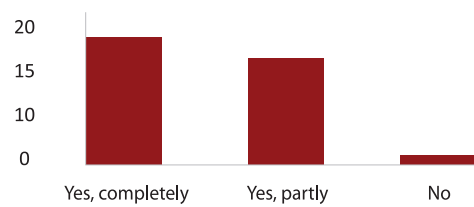


Figure 13

The amount of contact between teacher and students is sufficient

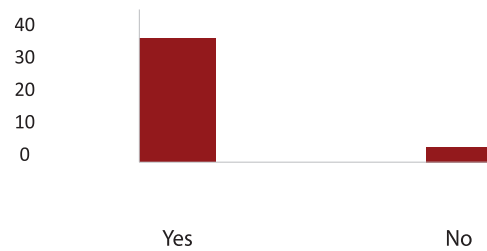


Figure 14

The teaching content is adjusted to individual needs

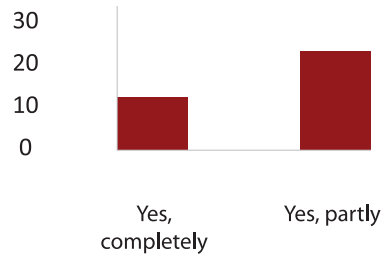


Figure 15

At last, we wanted to know if students knew their role as trainees. When questioned on their role concerning the course objectives, trainees answered affirmatively, as show in figure 16. This led us to conclude that trainees assume themselves as active participants in the management of their apprenticeship.

Are you aware of your own learning objectives/aims?

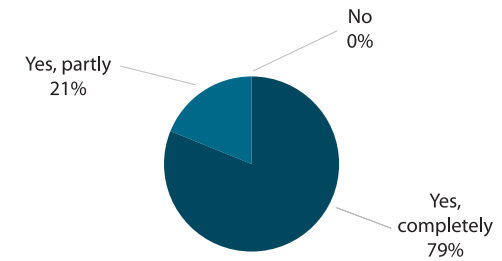


Figure 16

## Final considerations

Given the wide scope of the TrainFrame project, where 11 partners from 9 countries participated, and organizations of different sizes and cultures, the questionnaires were designed in a very comprehensive way to be applied in heterogeneous vocational training contexts. Therefore, the authors are aware that some of the domains could be more deepened in the national context. Yet, these questionnaires allow us an interpretative reading of a non-representative sample of the CET universe population on their involvement in the work by competences. For reasons that are related to the application of the questionnaires, we didn't match trainers and trainees of the same courses. But, for one side, if this procedure brings us methodological limitations, for other side, and as most opinions go into the same conclusions, we may put the hypothesis that there is an effective relation between the CET courses and work by competences.

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