

Developing competences on non routine tasks: matching skills to labour market needs in the light of new technologies' opportunities

Brunella Botte, CATTID-LABeL, SapienzaUniversity of Rome,
brunella.botte@gmail.com
Giada Marinensi, CATTID-LABeL, Sapienza University of Rome,
g.marinensi@gmail.com
Carlo Maria Medaglia, CATTID, Sapienza University of Rome,
carlomaria.medaglia@uniroma1.it

Abstract

Work world and university world are in search of a point of contact able to encourage the creation of a synergy since ever. However, the recent evolutions of the working contexts, set also by the global financial crisis, led, in a rapid and significant way, to the arise of new needs in relation to companies' requests of professionals as well as to workers' expertise. Therefore, how can university face those new needs?

First of all, to answer this question we have to proceed to the identification of the key competences needed by the labour market, as well as we will see through the analysis of the European project "Labour Market Intouch".

Afterwards, we'll see how the "competence-based learning" paradigm can be used to deliver those skills to future workers in an appropriate way, especially in the light of new technologies capabilities.

Introduction

Last years have seen change becoming increasingly protagonist in world's events: all fields have been involved and, as a consequence of this, all the processes has been sped up to keep up.

The hard world-leading financial crisis has caused a massive shake to relationships' balances and stability reshaping the economy and its work dynamics.

The need to handle the work market new requests led companies to search both a different expertise and a more proper and continuous training for workers.

To achieve this aim, Cedefop performed in 2010 a survey to analyse skills, qualities and jobs most wanted in the work market (according to ISCO classification) among the European Union Countries: the report highlights that the most important skills are the ones which allow the managing of non-routine tasks, namely the ones not manageable only through technology.

What said suggests how important cross competencies like problem solving, self management and communicational skills are.

But which are, exactly, the skills able to manage non-routine tasks?

At the present time a classification of those skills, in the European context, is not available although Europe is moving in this direction.

An example of this trend in the European Union is the "Labour Market In Touch: new non routine skills via mobile game based learning" project, started in 2010 and sponsored by the Leonardo da Vinci Program for Development of Innovation.

The In Touch Project

The aim of the In Touch project is to define an innovative approach useful to the new generations of workers in order to improve their non-routine key competences in a flexible and technologically advanced way as well as in line with work market new needs.

Source of inspiration is the European strategy summarized in the "New competences for new jobs" document: according to this study the In Touch European partners will set up an innovative training kit for adult workers based on mobile learning.

The first step towards this goal have been the spotting of the most significant non-routine skills in each country involved, through a research work composed of a preparatory Desk Research and of a following Field Research.

The aim of the Desk Research was to identify, through the gathering of significant work scenarios in small and medium enterprises, the most relevant non routine skills involved.

Afterward, in order to identify the ten non-routine skills most needed in Europe, every partner have identified ten subjects among office workers and managers involved in decision-making activities.

The method used was the semi-structured interview: in the first phase of the field research every respondent was asked to score from 1 (not relevant) to 4 (very relevant) every presented skill, in order to clarify the relevance degree of every skill.

After that, every skill have been subdivided into its basic components (from 4 to 6 for every skill) each one to be voted in range from 1 to 4

according to its importance. A description of the motivation that led to the score chosen was also required to the respondents.

In the next step all the gathered data were examined and combined in order to reach a global evaluation of the relevance of every skill.

The identified skills were: initiative, innovativeness, strategic thinking, openness to change, inspiring motivation, teamwork, leaning improvement, decision making, planning, conflict management, communication, flexibility.

But how can those skills be learned?

The Competence Based Learning (CBL) methodology can be an answer to this question: it is a learning paradigm able to build a bridge between the educational and training world and the work market.

In that way would become possible to describe qualify not only in terms of university qualifications but also in terms of competence.

The Competence Based Learning

For the work world it's important not only to know how many years you spent on books, but also, and most of all, what are you able to perform and to understand: this is the Competence Based Learning concept.

This paradigm was born in USA in 1970 and is referred to an educational movement supporting the definition of learning goals in terms of accurate and measurable description of knowledge, skills and behaviours that students should have at the end of their course of study.

Unlike traditional learning systems, which use time as progress unit and have a teacher-centred, Competence Based Training has its own unit of measurement in the achievement of a certain skill and moreover is student-centred.

In this case is essential to choose skills and competences to be learned with accuracy and to put the theory about those skills into practice. It is also important to provide adequate structure to training aid in order to put into practice the learned theory.

But even Competence Based Training, like every other learning paradigm, has its lights and shadows.

The acquisition of competences and skills easily workable in the work market and the optimization of the learning time thanks to the new role of the teacher are two of the advantages of this learning strategy.

However, what is an advantage can count against if not adequately thought-out: for instance, a wrong specification of skill and competencies to be taught can lead to a bad training outcome.

Therefore, it is important for the course goals to be made clear since the beginning in order to structure training in a proper way.

Lastly, we want to remember the leading role of the economic side of this kind of training: to build a training course based on Competence Based Training is more expensive than to build a classic learning course because of the practical elements.

To promote the adoption of a competence based learning paradigm: the new technologies opportunities

In the previous paragraphs we considered the European context in terms of the most wanted non-routine skills in the work market and we proposed an adequate learning paradigm to achieve the mastery of those skills. What we haven't considered yet is which are the more appropriate learning tool for this purpose.

Well, in the Competence Based Training field the practical elements are essential: to recreate every environment in which we want to experience real situations, however, can be really expensive considered the required amount of resources.

A solution for this impasse can be found in the use of simulations: thanks to them, like Francesco Antinucci says, we can be able to study those phenomenon that usually are too far in time or space, too dangerous, too big or too small, that have evolutions times too long or too short compared to our biological times, that are abstract or not perceptible with our senses.

There are many different kinds of situations and they can have also different purposes: they can be used to study scientific events, or behaviours, and they can be founded on mathematical engine or a on a simple branching structure.

Simulations are usually used when the topics of the training are not theories but skills and the leading paradigm is Learning by Doing.

In particular, referring to the topic of this paper, what we want to suggest as tool to put into practice the Competence Based Training theory is a peculiar kind of simulation, born from the interception with the game world: the Serious Game.

Serious games can be defined as interactive experiences presenting the look and feel of an actual game and having different purposes like training, educational and awareness campaigns, promotional activities and social campaigns. Moreover, they reproduce real situations in which using knowledge and acting with strategy could help to reach a final goal.

Using Serious Games in a Competence Based Training context lead not only the typical advantages of simulation and Learning by Doing but also the involving power of videogames.

More in detail, as we said before, the non-routine skills needed in the European work market are soft-skills: this is important in order to choose the appropriate kind of serious game; according to the classification made by Botte, Matera and Sponsiello (2009) the right kind of serious game to teach soft-skills are the TaleSim.

In TaleSim the user "lives" and "acts" on the inside of a real story.

Starting from an initial background the user has to make choices in order to achieve a final goal. This achievement, however, is not the only aim: to have significance is all the course of the user.

In this case the interface represents the elements and the scenarios of the story in an highly involving way thanks to what Ronsivalle calls "direct manipulation".

The complexity of TaleSim depends on the kind of scenarios we want to represent: we can use a simple branching structure or a complex System Dynamic engine.

Conclusions

In this document we have tried to draw a possible way for university to be followed in order to find a new point of contact with work world. We have also seen how the professionals needed have changed as a consequence of the hard world-leading financial crisis through the analysis of the European project In Touch.

To match professional and educational needs is important to choose the right learning paradigm: in our case we thought that Competence Based Learning could be the right choice.

Through practical experiences the students can achieve the mastery of the needed skills: this can be possible thanks to serious game, an affordable and effective way to "act" into real scenarios.

It would be a great experience for university to try a new way for students education: the involving power of games combined with theory can give a better and more complete grounding, also with a better understanding of real work dynamics.

This can be a very good way to decrease the real distance between work world and university world.