

THE “ABC-COMPETENCE” MODEL FOR NON-FORMAL COMPETENCES CERTIFICATION

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ABSTRACT

The paper proposes a model, called “*ABC - Competence: Analysis, Balance and Certification of Competences*”, for certifying the competences acquired in non-formal contexts, according to the criteria established by the “Council Recommendation of 20 December 2012 on the validation of non-formal and informal learning” (2012/C 398/01).

In the model application, the following aspects are very important:

- the identification of the trainer figure; he becomes the guarantor of contents and training methodologies choice and evaluates the actual acquisition of competences;
- the classification of competences (*knowledge/ability; hard/soft*);
- the identification of competence levels, according to the European Qualifications Framework for lifelong learning.

After the professional profile identification (i.e.: ESCO - European Skills/Competences, qualifications and Occupations classification), the model allows certifying the competence level acquired by learners as a result of participation in a training course.

Keywords:

INTRODUCTION

The **model for non-formal competence certification** permits to evaluate and certify the competences acquired by learners of a vocational training course (CEDEFOP, 2009b).

Non-formal learning is different from formal learning because it takes place outside the formal school/vocational training/university system, through planned activities (i.e. with goals and timelines) involving some forms of learning support, for example:

- programmes to impart work-skills, literacy and other basic skills for early school-leavers;
- in-company training;
- structured online learning;
- courses organised by civil society organisations for their members, their target group or the general public.

Instead, informal learning is not organised or structured in terms of goals, timelines or procedures. That covers skills acquired (sometimes unintentionally) through life and work experiences, for example:

- project-management or IT skills acquired at work,
- languages and intercultural skills acquired during a stay abroad,
- IT skills acquired outside work,
- skills acquired through volunteering, cultural activities, sports, youth work and through activities at home (e.g. taking care of a child).

To develop a model for competence certification, you need a reference framework (Robinson, 2007), currently not yet defined, but it's possible to follow the criteria dictated by the "Council Recommendation of 20 December 2012 on the validation of non-formal and informal learning" (2012/C 398/01) (European Parliament; Council of the European Union; 2007; European Parliament; Council of the European Union; 2008; Council of The European Union, 2012).

The model for non-formal competence certification is applicable to different types of competences, both manual/operational/craft and organizational/managerial/intellectual.

In general, it is possible to differentiate between **Hard and Soft skills** (ISFOL, 2013).

Soft skills are personal attributes that enhance an individual's interactions, job performance and career prospects. Unlike *hard skills*, which are the technical requirements of a job and many other activities, soft skills relate to a person's ability to interact effectively with co-workers and customers and are broadly applicable both in and outside the workplace (*Spencer&Spencer* and *Goleman Emotional Intelligence* models).

Competence certification must enable you to recognize and evaluate in an individual the acquisition of theoretical knowledge and practical skills, both highly technical and related to a specific work context, and transversal and useful in different contexts.

Competence certification allows obtaining a whole profile certification or part of it (Franceschetti, 2012).

A partial classification of profiles and skills is already used in the European job mobility portal EURES and PLOTEUS (EURES, 2013; PLOTEUS, 2013). It exists in many languages and currently contains thousands of skill descriptions and job titles. It will be updated and enriched with additional descriptions of occupations, skills/competences and qualifications to become an important part of ESCO (European Skills/Competences, qualifications and Occupations classification) (ESCO, 2011).

The professional profile definition also helps to understand labour market needs and to connect education/training outcomes with jobs (Westerhuis, 2011).

COMPETENCE CERTIFICATION PROCESS

Systematic validation mechanism is an enhancement tool for making clear which skills are available in the European workforce (UNIONCAMERE, 2013):

- facilitating a better match between skills and labour demand, addressing skills shortages in growing sectors;
- promoting better transferability of skills between companies and sectors;
- helping citizens mobility around the EU to study and work.

As previously mentioned, the competence is a structured set of knowledge (to know) and skills (to know how) to be used independently in work or study situations and for professional and personal development. Therefore, certify a professional profile (set of competences) means attest knowledge, skills or "*the ability to use knowledge and skills independently in real-life contexts*" (competence), depending on the profile characteristics.

Conceptually, a person could be skilful but not competent, in the sense of lacking the necessary theoretical knowledge in a particular field.

Wanting to restrict the certification of skills in non-formal learning contexts, the model for competence certification will aim the investigation, according to the specific course characteristics, of [Figure 1]:

- theoretical concepts acquisition (*knowledge certification*);
- practical abilities acquisition (*skills certification*);
- the joint acquisition of theoretical concepts and practical abilities, knowing how to use independently in work situations (*competence certification*).

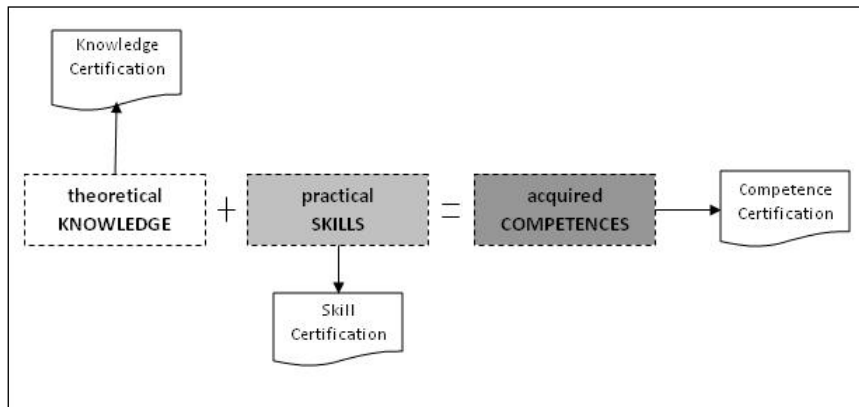


Figure 1: Certification process

“ABC-COMPETENCE” MODEL: ANALYSIS / BALANCE / CERTIFICATION OF KNOWLEDGE / SKILLS / COMPETENCE

The proposed model, called ABC-Competence (Analysis/Balance/Certification of Competences) provides three possible investigations (Silvestri et al. 2013) [Figure 2]:

1. **Certification of acquired competences:**
Assessment of matching between the proven competences and the reference standard.
2. **Balance of competences, input and output:**
Assessment of the competence level growth as a result of participation in the course.
3. **Training requirements, satisfied and to satisfy:**
Evaluation of learners expectations and their satisfaction.

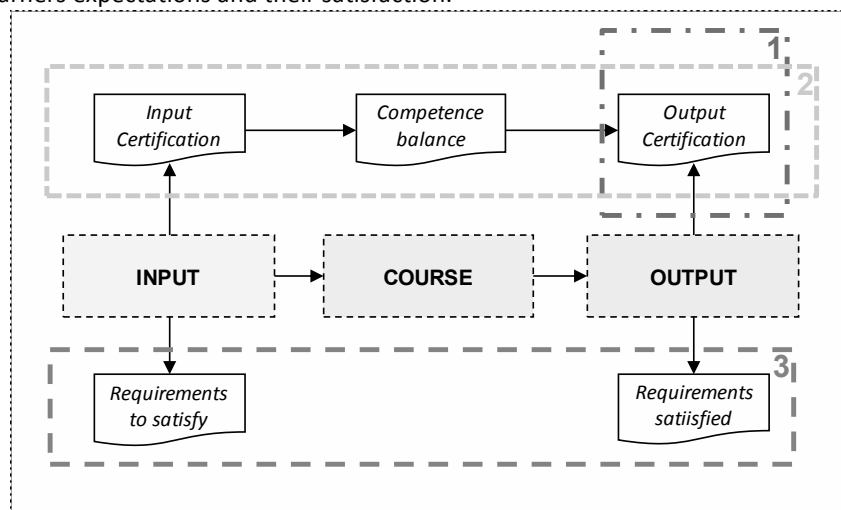


Figure 2: Certification model scheme

1. Certification of competence

The competences assessment of a candidate is based on the comparison between the proven skills and a reference standard.

If a conformity between the assessed competences and the reference exists, the certification process is successful and the learner can obtain a certificate of competence with the evaluation of the possessed level.

Therefore, the major difficulty for the competence certification is the definition of competence indicators (an element or a set of elements, able to report or provide information about the property of a particular competence).

The set of indicators attributed to a competence, defines distinctive and ascertainable criteria that make clear the competence acquisition, in reference to the application context.

On the basis of the Council Recommendation 2012/C 398/01, cited above, each certification process takes shows the following four steps:

- **Identification** phase aims to identify and define the competences amenable to a certifiable standard;
- **Documentation** phase allows to document the competence possession through evidence gathering and/or testing;
- **Evaluation** phase permits to verify the competence possession (according to criteria and indicators referring to predefined standards) and to assess the achieved level;
- **Certification** phase concludes the certification process. It consists in releasing standardized documents that certify the competences assessed, according to defined rules.

The following flowchart [Figure 3] shows the activities to be performed within the different phases and related responsibilities.

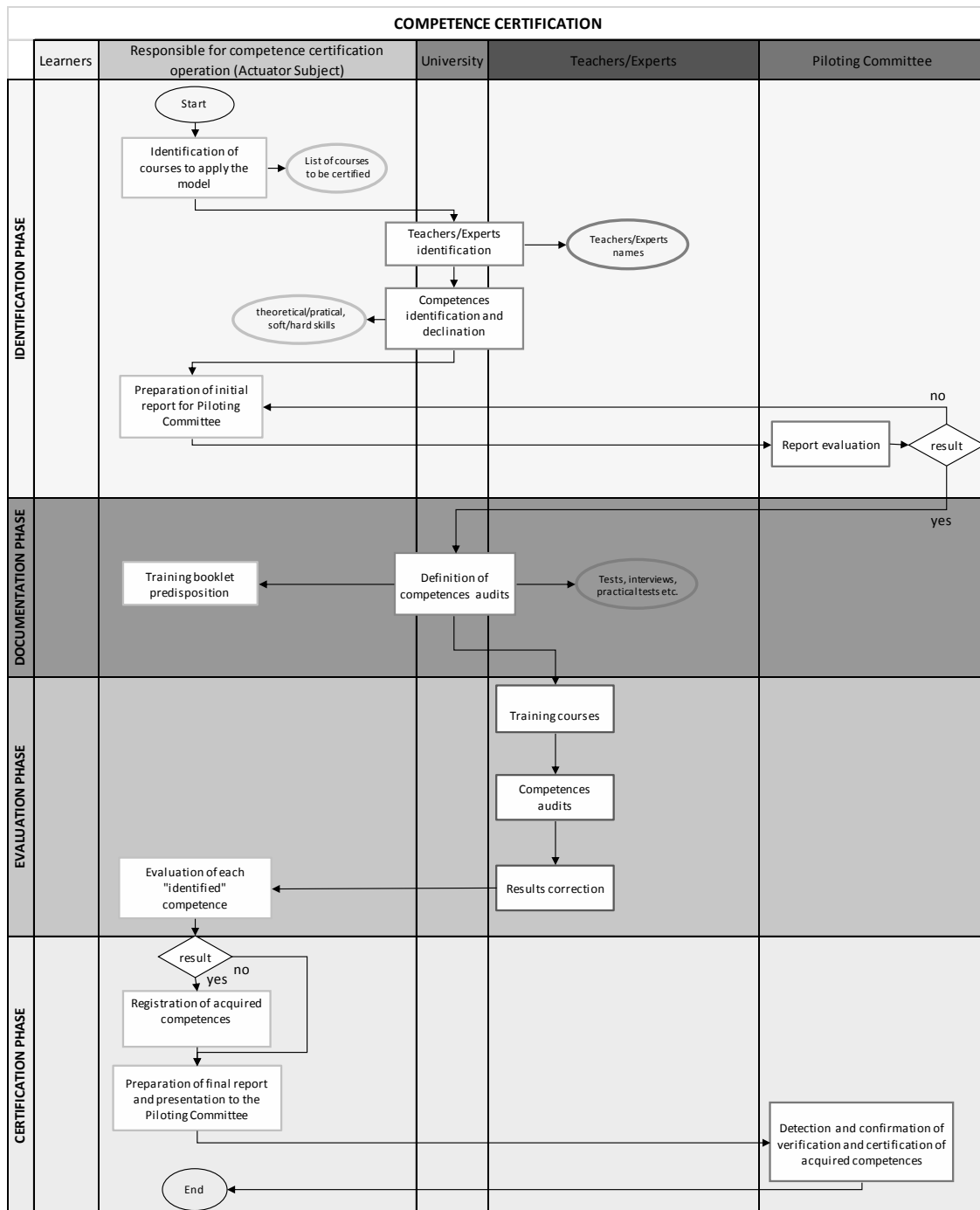


Figure 3: Flowchart of skills certification (phases-activities-responsibilities)

Given the absence of a framework to evaluate the acquired competences, it becomes essential entrusting the non-formal

education and, consequently, its effectiveness evaluation, to **trainers experienced** in the specific professional profile.

Furthermore, only “an authorised body confirms that an individual has acquired learning outcomes (knowledge, skills and competences) measured against a relevant standard” (*Council Recommendation on the validation of non-formal and informal learning*) (UNESCO, 2011).

Therefore, the qualified teacher becomes the guarantor of contents and training methodologies and evaluates the actual acquisition of competences by the learner (Dreyfus et al., 1980).

The trainer qualification (as in other areas, such as Health and Safety at Work) is based on his documented and provable previous experience.

To qualify the teaching staff, you can refer to the guidelines for the European Social Fund 2007-2013 reporting, which identify three levels of teaching:

Group A: requires at least ten years of experience and includes university professors, senior researchers (research managers, early researchers), business executives, entrepreneurs, industry experts and professionals;

Group B: requires a minimum of three years of experience and includes university researchers, industry experts and professionals;

Group C: includes university researchers, industry experts and professionals with less than three years of experience.

The University could ensure that trainers have the necessary technical and professional requirements (Teachers of Group A, B or C).

The presence of such expert figures will produce a training course adequate to the profile to be formed and, consequently, will certify the acquisition of specific skills, whether theoretical/practical (*knowledge/ability*), technical/transversal (*hard/soft skills*).

In order to base the competence assessment on correct and reliable data, expert trainers will adopt audit tools (questionnaire, test, interview, practice test etc.), opportunely defined.

For example, if the chosen tool is the questionnaire, a question with three answers (only one correct), for every two hours of training, will be prepared by the teacher, who will also have to provide information about the characteristics of each question:

- **Valence: theoretical / practical** (assessment of knowledge or ability, respectively);
- **Nature: transversal / technical** (assessment of soft or hard skills, respectively).

The criteria to be satisfied in order to demonstrate the competence, will be implicitly defined by the questions, inextricably linked to the course contents.

In particular, soft skills are generally grouped into four main macro-categories (Personal, Relational, Cognitive and Organizational), instead, technical ones will be identified according to the professional profile considered.

The question structure could be as follows:

Table 1: Scheme of question

1 question with 3 answers (only one correct), per every 2 hours of training	QUESTION: ○ Answer 1 ○ Answer 2 ○ Answer 3	VALENCE: <input type="checkbox"/> Theoretical (<i>knowledge</i>) <input type="checkbox"/> Practical (<i>ability</i>)	NATURE: <input type="checkbox"/> Transversal (<i>soft skills</i>)* <input type="checkbox"/> Technical (<i>hard skills</i>)**
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Choose the investigated **COMPETENCE**:

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PERSONAL: awareness of strengths and weaknesses, target orientation, own emotions, behaviours and stress management.

RELATIONAL: listening skills, social skills and empathy, communication skills, persuasiveness and influencing skills;

COGNITIVE: analysis and synthesis skills, problem solving, logical and / or mathematical reasoning, creativity;

ORGANIZATIONAL: planning skills, time management, control ability, flexibility.

**

TECHNICAL/PROFESSIONAL SKILL (PROFILE) _____

Table 2: Example of question for the assessment of a transversal knowledge

1 question with 3 answers (only one correct), per every 2 hours of training	QUESTION: <i>What is 2+2?</i> <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	VALENCE: X Theoretical (knowledge) <input type="checkbox"/> Practical (ability)	NATURE: X Transversal (soft skills)* <input type="checkbox"/> Technical (hard skills)**
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Table 3: Example of question for the assessment of a transversal ability

1 question with 3 answers (only one correct), per every 2 hours of training	QUESTION: <i>If two boys have two sandwiches each one, how many sandwiches together?</i> <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	VALENCE: <input type="checkbox"/> Theoretical (knowledge) X Practical (ability)	NATURE: X Transversal (soft skills)* <input type="checkbox"/> Technical (hard skills)**
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X * *COGNITIVE: logical and / or mathematical reasoning*

The choice of the questions allows defining the region of competence investigated, valence (knowledge / ability) and nature (soft / hard skills); then, by analyzing the answers given by each learner, it is possible to value his level of possession.

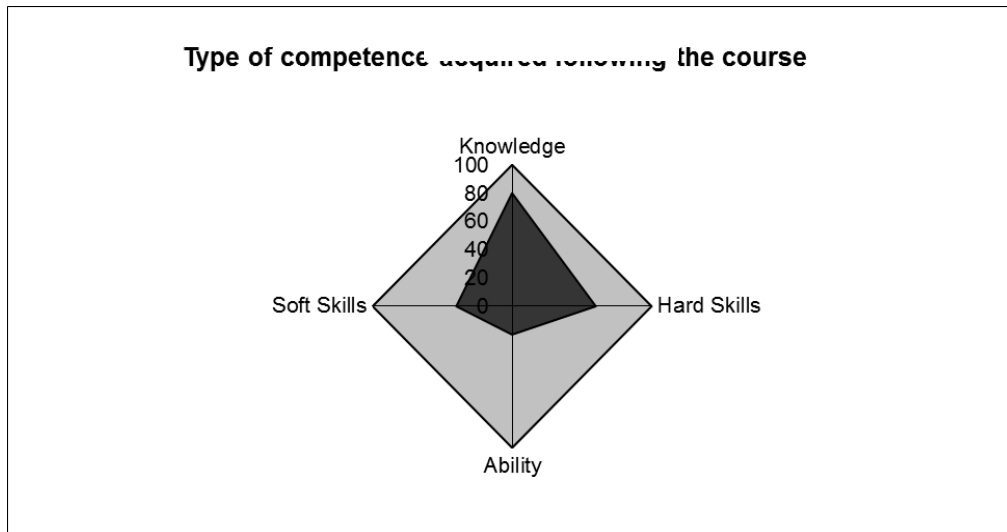
For the definition of the possession levels, we referred to the descriptors of the *European Qualifications Framework* for lifelong learning (EQF) (European Commission, 2008a; European Commission, 2008b). According to that framework, we can establish 8 levels, related to the learning outcomes and to the possession of knowledge, skills and competences. The rating scale suggests the levels and ratings listed below:

- **Excellent (score 9-10):**
critical and in-depth knowledge of the topics, commendable competence level.
- **Outstanding (score 8-9):**
extensive knowledge of the topics, very good competence level.
- **Good (score 7-8):**
satisfactory knowledge of the topics, discrete / good competence level.
- **Average (score 6-7):**
essential knowledge of the topics, just enough competence level.
- **Mediocre (score 5-6):**
fragmentary knowledge of the topics, modest competence level.
- **Insufficient (score 3-4):**
incomplete knowledge of the topics, level of competence not sufficient.
- **Poor (score 2-3):**
very sketchy knowledge of the topics, grossly inadequate competence level.

- **Null (score 0-2):**
no knowledge of the subjects, competence level very low or nil.

In agreement with the European Qualifications Framework (EQF), all Member States are in the process of developing National Qualification Frameworks (NQFs), which describe qualifications in terms of learning outcomes (CEDEFOP, 2013a; ISTAT, 2009; Coles, 2007).

It is interesting to evaluate the kind of competences investigated, linked to the course contexts; therefore the distribution of questions can be summarized through a Radar graph, which allows delineating the region of the skills acquired thanks to the training course [Figure 4].



<i>Question type</i>	<i>% total</i>	<i>% questions</i>
Knowledge	100%	80%
Ability	00%	20%
Hard Skills	100%	60%
Soft Skills	00%	40%

Figure 4: Definition of the region of competence investigated

The darker polygon indicates how many questions compared to the total (clearer polygon), refer to knowledge rather than ability or hard skills rather than soft skills.

For example, in the case of questions half and half theoretical and practical, rather than half and half transversal and technical, the radar graph will be as follows [Figure 5].

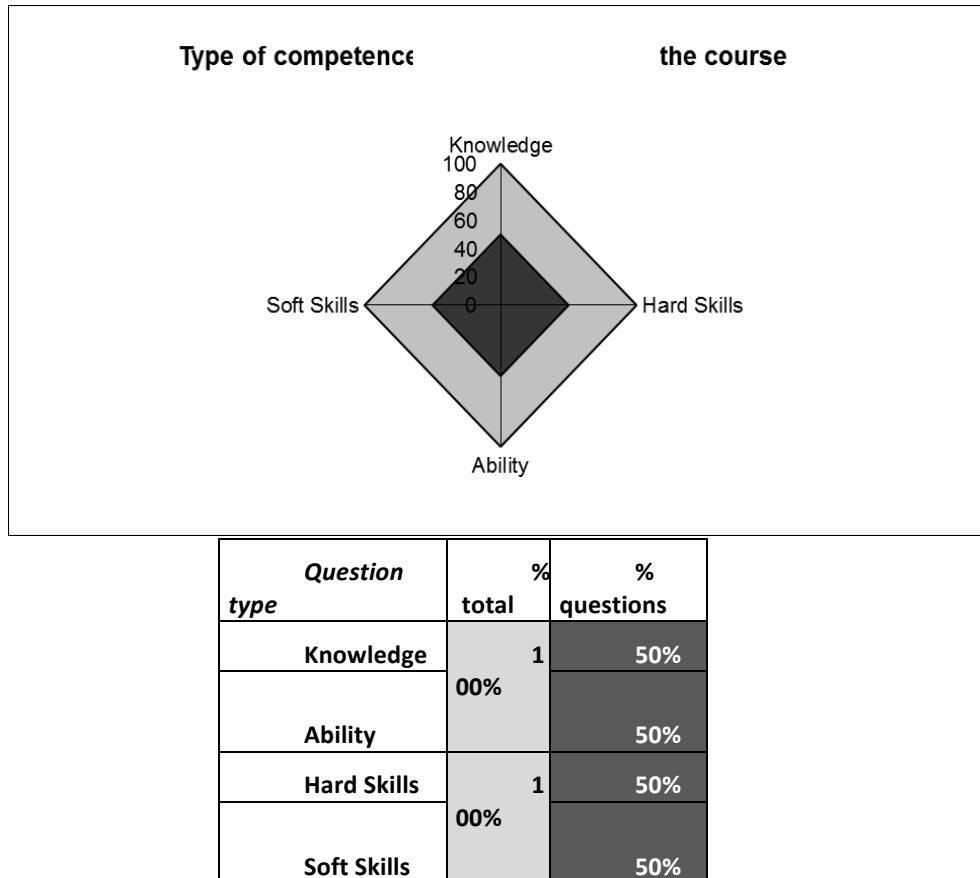
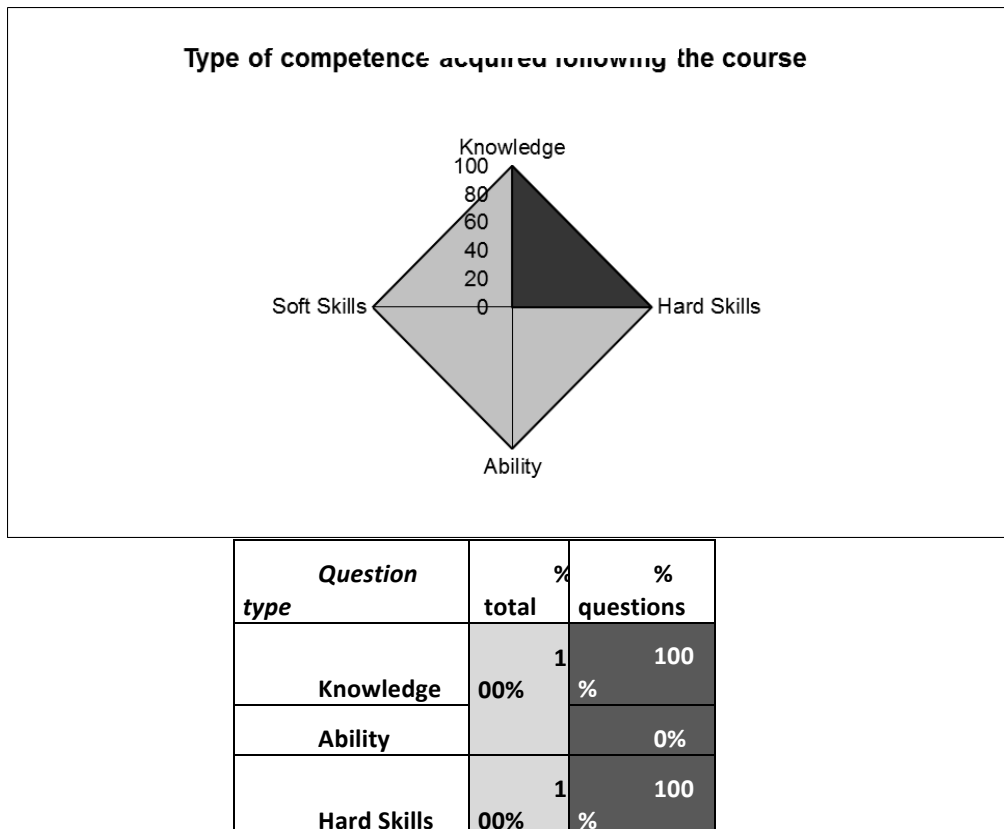


Figure 5: Example of Representation 50-50, theoretical-practical and transversal-technical

Instead, in the case of questions only theoretical and technical, we have the following representation [Figure 6]:



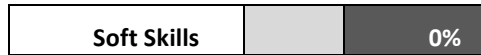


Figure 6: Example of representation only theoretical and practical questions

In the same way, it is possible to represent the level of skill possessed / acquired by each learner [Figure 7].

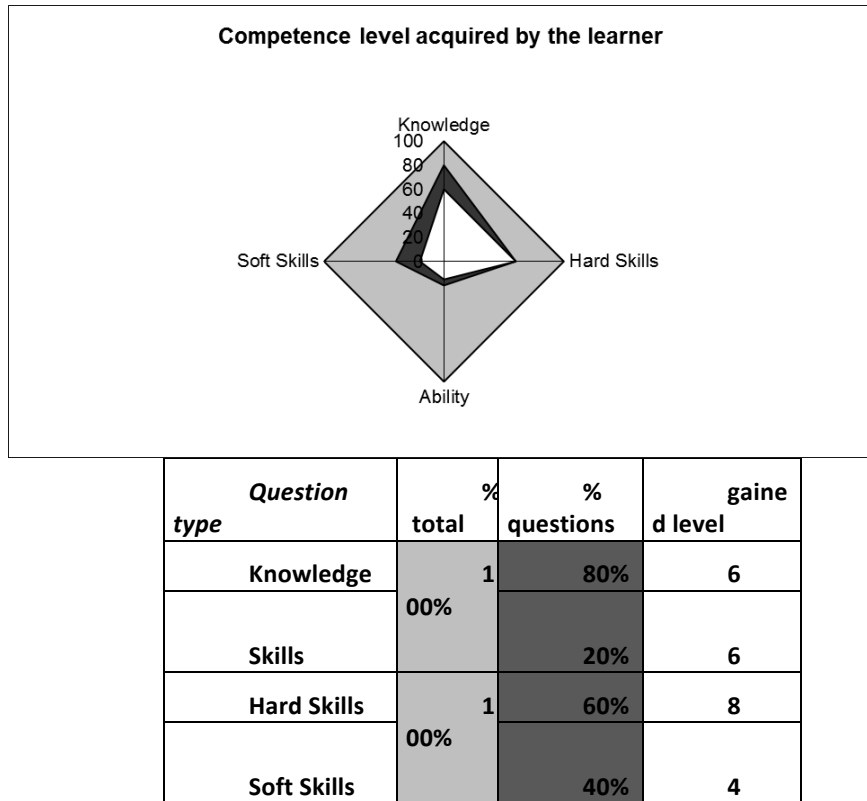


Figure 7: Representation of the level of skill possessed / acquired by the learner

The innermost polygon (white color) indicates the level of skills possessed / acquired by the learner, referring to the competence region of the course (darker polygon), calculated on the basis of the correct answers for the different types of investigated skills. If all answers are correct, the white polygon overlaps the darker one.

Obviously, thanks to the information about the question type, provided by the teachers, it is possible to make a more detailed assessment and proceed to the **certification of specific skills**, to be included in the certificate which will be issued to the learner.

For example, you can evaluate and represent which types of soft skills are investigated and owned by the learner [Figure 8].

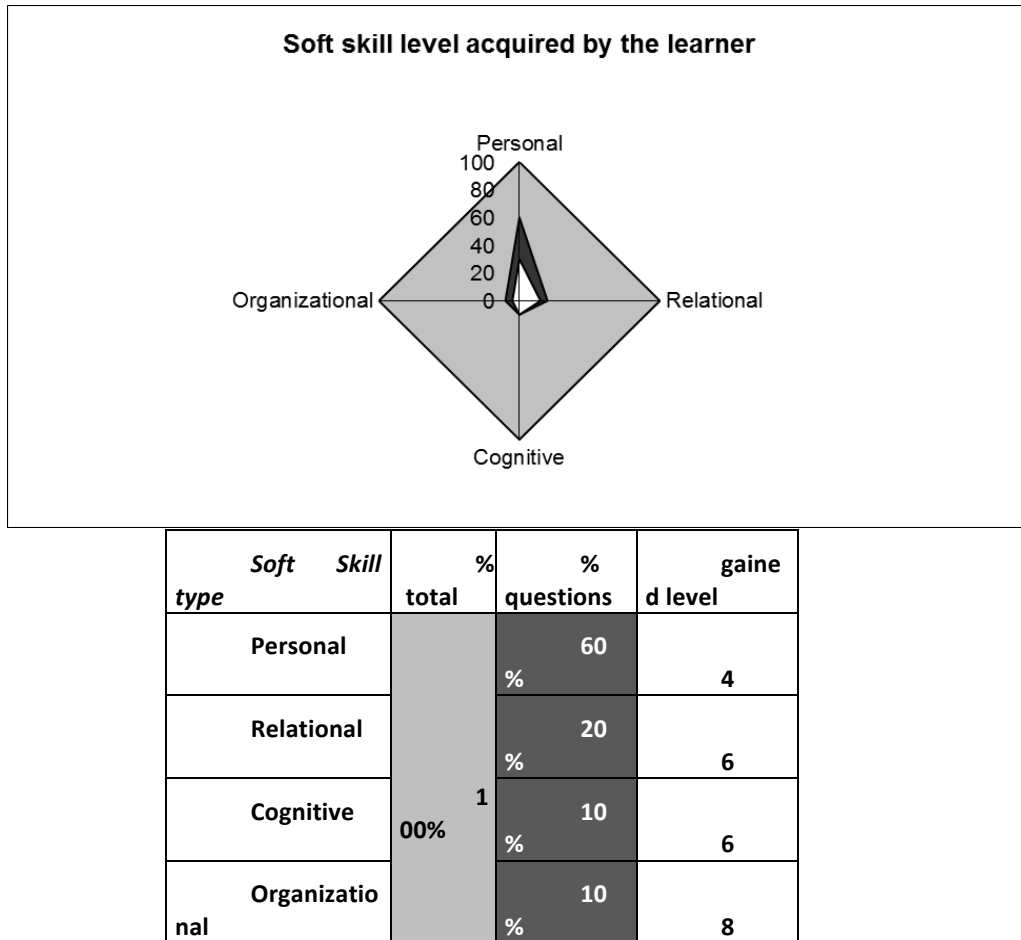


Figure 8: Representation of the soft skill level possessed /acquired by the learner

The same analysis can be done for technical skills, related to the particular professional profile.

In fact, the type (valence and nature) of questions to be asked, can either be chosen by the teacher both defined in the design phase to force the contents towards the development of specific skills.

2. Balance of input and output competences

A further aspect of the assessment could investigate the growth of the learner knowledge/skill/competence level, as a result of attending a specific course.

For this purpose, the questionnaire introduced in the previous paragraph should be made before starting the course and administered in both at the beginning and at the end.

By the collected results, the effectiveness of the training in competences increase and, consequently, the value of the trained person will be monitored.

The possibility of evaluating the competence increase, will obviously depend on the specific course duration.

In the case of short courses, less than 40 hours, it's expected a single check at the end of the training.

In the case of long courses, exceeding 40 hours, it will be possible to evaluate the growth, for example, through the administration of two questionnaires, at the beginning and at end of the course, achieving an "in and out" competence balance.

The questions will be similar for both tests, so you can really evaluate the effectiveness of the training activities. The order and wording of the questions will be changed and some will be even redundant, so you can verify the effective knowledge of the answer by the learner.

The expected results will then be analyzed in order to understand potentialities and limitations of the ABC-Competence model.

The generality of the methodology allows adapting it to the current evolution of the European regulatory framework.

CONCLUSIONS

In the present work a methodology for the certification of competences acquired in non-formal contexts has been proposed, in a framework constantly evolving.

The "ABC-Competence" model, after identifying professional profile (set of competences to be investigated), permits to certify the level of competence achieved by a training course participant.

Three different certifications of acquired competences are proposed, depending on the survey you want to lead (Analysis / Balance / Certification); a possible certification module, based on EQF Levels has been also presented.

The development of specific competences (theoretical and practical, rather than transversal and technical), can be followed through the creation of a personal training booklet, constantly updated.

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