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Competence-based analysis of needs in VET teachers and trainers: an Italian experience

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Abstract

Purpose – The aim of the research presented here was to detect, in line with the European Union's "Education and Training 2020" work program, the training needs of teachers and trainers working in the vocational education and training (VET) system in the Italian Region of Veneto to design courses, experiences and other training programs tailored to meet the needs emerged.

Design/methodology/approach – Four focus groups were including VET teachers and trainers were created, two before the construction and two after the online administration of an *ad hoc* questionnaire asking teachers and trainers to rate 67 competencies (43 for teachers, 24 for trainers) on the two dimensions of self-assessment (explicitly defined as the current level of mastery) and importance (explicitly defined as the expected level of mastery). Eight hundred twelve teachers and 166 trainers filled in the questionnaire which also asked them to give suggestions about the courses, experiences and other training programs to be designed.

Findings – In questionnaires, teachers and trainers declare they are competent enough to do what they do (self-assessment always obtains higher ratings than importance, except in one competence for teachers), even if in focus groups they say they want to be trained. Accordingly, they express a clear preference for short or very short courses, tailored on their specific needs and for training experiences and programs which are alternative to classroom training.

Practical implications – The research is a preliminary action to a European Social Fund project named "Training for trainers", whose main aim is to give birth to courses, experiences and other training programs, specifically dedicated to VET teachers and trainers, to allow them to develop or refresh the competencies they feel they need for work. Besides, it allowed testing of the benefit of using mixed methods for a competence-based analysis of needs.

Originality/value – Data will be used to design courses, experiences and other training programs that really meet the needs of VET teachers and trainers in Veneto to tackle those aspects they consider really important for work in a lifelong learning perspective.

Keywords Lifelong learning, Competencies, Education and training 2020, Vocational education and training

Paper type Research paper

Introduction

Activities dedicated to adult employees and workers such as training and development aim at promoting learning based on the analysis of their professional needs.

As for learning, over the years, scholars dealing with the topic have coined different expressions referring to different modes of adult learning, such as *organizational learning* (Argyris and Schön, 1992; Fulmer and Keys, 1998; Senge, 1990), *knowledge-creating learning* (Gherardi *et al.*, 1998; Nonaka and Takeuchi, 1995), *action*

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learning (Mumford, 1997; O'Neil, 1999; Jones, 1990), *transformative learning* (Mezirow, 1991; Hobson and Welbourne, 1998), *implicit learning* (Reber, 1993; Stadler and Frensch, 1998), *reflective learning* (Boud and Walker, 1991; Williamson, 1997), *self-directed learning* (Candy, 1991; Merriam and Caffarella, 1991), *flexible learning* (Jakupec and Garrick, 2000; Lundin, 1999) and, above all, *lifelong learning* (Maehl and William, 2000; Moreland and Lovett, 1997; Oliver, 1999). Different kinds of learning are considered to be promoted by different kinds of training activities and would allow the development of different kinds of competencies.

As for analysis of needs, it is believed it should be the first step of training programs that really want to be designed to meet the needs of adult employees and workers and promote their development throughout lifelong learning. Thus, even if it is sometimes neglected or even skipped (Moore and Dutton, 1978; Ostroff and Ford, 1989; Brown, 2002), it should be carried out with special care when the aim is to understand what competencies the future trainees need to develop to feel more confident in their professional activities. Competencies, in fact, play a key role from the point of view of the general lifelong learning perspective (Descy and Tessaring, 2001).

The article presents an empirical study dealing with the analysis of needs carried out with 978 teachers ($n = 812$) and trainers ($n = 166$) belonging to the Vocational Education and Training (VET) system in Veneto, a Region in the north east of Italy. It is neither a theoretical paper nor does it aim at reporting a study carried out by starting from the results obtained in other studies or descended by a specific theoretical framework. Instead, the analysis of needs the article will give account of was a preliminary action to an European Social Fund (ESF) project named "Training for trainers", whose main aim is to give birth to courses, experiences and other training programs, specifically dedicated to VET teachers and trainers, to allow them to develop or refresh the competencies they feel they need for work in a lifelong learning perspective. We report this experience because we believe that it may be of interest both for professionals and scholars dealing with the issues linked to analyses of needs. There is conflicting evidence about the best way to conduct an analysis of needs, as advocates of a quantitative approach support standardized and closed methods, while those who prefer a qualitative approach are more in favor of more flexible and open instruments (Creswell, 2003). In line with previous research (Sartori, 2010; Sartori and Ceschi, 2013), our choice was to make use of both. In fact, in the case of the present research, the analysis of needs was conducted by means of two preliminary focus groups, the construction of an *ad hoc* questionnaire administered online and other two final focus groups carried out after data from questionnaire were collected and analyzed, which means that the analysis of needs we are going to talk about in this paper was conducted by making use of *mixed methods* (Creswell and Clark, 2007).

The questionnaire asked respondents to rate a list of 67 competencies (43 for teachers, 24 for trainers) on the two dimensions of *self-assessment* (explicitly defined as the current level of mastery) and *importance* (explicitly defined as the expected level of mastery) and to give suggestions about courses, experiences and other training programs to be designed. The first two focus groups were used to develop the questionnaire, while the last two ones had the function to read and interpret the data collected with the online survey.

Results show that, even if VET teachers and trainers in Veneto want to be trained and are grateful for the opportunity represented by the ESF project "Training for trainers", they also

fear to have to attend the *usual and useless* long courses at the end of which they do not know much more than before. Moreover, according to a concept such as *action learning*, they want to be involved in learning experiences which are different from the usual training courses delivered in classrooms. So they clearly express a preference for short or very short training courses (in the classroom, workplace, outdoor, etc.), and experiences and other training programs that, according to *self-directed learning*, focus on very specific and work-related competencies which can be developed and spent within their work contexts. As we are going to explain later, these results were achieved thanks to the application of both qualitative and quantitative approaches to the analysis of needs in question.

The paper is divided into two parts. The first part deals with the VET system in Italy, education and training for teachers and trainers (EU's "Education and Training 2020" work program) and lifelong competence-based learning. The second part gives account of the research conducted to carry out an analysis of needs of the Italian VET teachers and trainers in Veneto who are target of the ESF project "Training for trainers"

VET in Italy

As already mentioned, VET is the acronym of *vocational education and training*, that is to say education and training for work. In its technical sense, *education* is the formal process by which society deliberately transmits its accumulated knowledge, skills, customs and values from one generation to another, for example, by schooling. On the other hand, *training* is the acquisition of competencies as a result of the teaching of vocational or practical skills and knowledge, for example, in the workplace.

In analogy with works by Weigel and Mulder (2006) and Mulder (2007), who examined the VET systems in England, France, Germany and The Netherlands, the characteristics of the VET system in Italy will be now reported.

According to the amended Constitution, the National Government and the Regional Authorities in Italy shall collaborate to develop a unitary VET system. Over the past years, the Italian education and training system has undergone a deep reform, and the VET system in Italy is now very articulated (Cedefop, 2003).

The National Government is responsible for technical and vocational schools (five years after the students have completed the eight years of the first cycle). The Regional Authorities are responsible for another kind of courses, the "initial vocational education and training" (three or four years after the first cycle), which are run by accredited institutions and provide specific vocational skills. These courses cover almost all sectors of economy, and lead to the award of a vocational qualification certificate recognized at National and European level. The qualification can be used to enter the labor market or to pass into Higher Technical Education and Training.

Both channels (state-run technical and vocational schools, and regional VET centers) are linked to higher education, higher vocational training and the labor market.

The VET system also includes apprenticeship. There are three types of apprenticeship:

(1) a form which is for young people aged between 15 and 18 years and has broader educational aims;

(2) another form for young people aged from 18 to 29 years, leading to the labor market; and

(3) a third form which is for both the award of higher qualification and research.

Finally, in the Italian VET system, continuing vocational training which offers a wide range of training on-the-job and off-the-job is also included.

Education and training for teachers and trainers

In general, scholars agree that the quality of VET is closely linked to the quality of teachers (people working in technical and vocational schools and VET centers) and trainers (people working in the field of apprenticeship, continuing education and training on the job) and the quality of their initial education and continuing professional development (Mulder *et al.*, 2007; Mulder, 2007; Weigel and Mulder, 2006).

Actions to improve VET help to provide the skills, knowledge and competencies needed in the labor market. As such, they are an essential part of the EU's "Education and Training 2020" work program, in which the terms "education" and "training" appear, respectively, 37 and 13 times. It is a new strategic framework for European cooperation in education and training that builds on its predecessor, the "Education and Training 2010" work program, and provides common strategic objectives for Member States, including a set of principles for achieving these objectives, as well as common working methods with priority areas for each periodic work cycle (Mulder *et al.*, 2007; Mulder, 2007; Weigel and Mulder, 2006).

The main aim of the framework is to support Member States in further developing their educational and training systems. These systems should better provide the means for all citizens to realize their potentials, as well as ensure sustainable economic prosperity and employability. The framework should take into consideration the whole spectrum of education and training systems from a lifelong learning perspective, covering all levels and contexts (including non-formal and informal learning) and trying to achieve the following four *strategic objectives*:

(1) *Making lifelong learning and mobility a reality*: Progress is needed in the implementation of lifelong learning strategies, the development of national qualifications frameworks linked to the *European Qualifications Framework* (http://ec.europa.eu/education/pub/pdf/general/eqf/leaflet_en.pdf) and more flexible learning pathways. Mobility should be expanded, and the *European Quality Charter for Mobility* (http://europa.eu/legislation_summaries/education_training_youth/lifelong_learning/c11085_en.htm) should be applied.

(2) *Improving the quality and efficiency of education and training*: All citizens need to be able to acquire key competencies and all levels of education and training need to be made more attractive and efficient.

(3) *Promoting equity, social cohesion and active citizenship*: Education and training should enable all citizens to acquire and develop skills and competencies needed for their employability and foster further learning, active citizenship and intercultural dialogue. Educational disadvantage should be addressed through high-quality inclusive and early education.

(4) *Enhancing creativity and innovation, including entrepreneurship, at all levels of education and training*: The acquisition of transversal competencies by all citizens should be promoted and the functioning of the knowledge triangle (education-research-innovation) should be ensured (Sartori *et al.*, 2013; Ceschi *et al.*, 2014; Sartori and Scalco, 2014). Partnerships between enterprises

and educational institutions, as well as broader learning communities with civil society and other stakeholders, should be promoted.

A set of *principles* is also provided that should be observed when working toward the objectives mentioned above. This includes the implementation of European cooperation in education and training from a lifelong learning perspective (Mulder *et al.*, 2007; Mulder, 2007; Weigel and Mulder, 2006).

Lifelong competence-based learning

Lifelong learning is considered to be an appropriate response to changes (Gibbs, 2007) and a key lever for adaptation and development (Smidt and Sursock, 2011), both individual and organizational (Roland, 2010; Western, 2010), as it can be the means by which people go on to learning new things (Field, 2006); acquiring competencies (Shandler, 2000); making meaning, gaining wisdom and expertise (Jarvis, 2009); adapting to different conditions (International Labour Organization, 2000), and developing while growing up (Commission of the European Communities, 2007).

Lifelong learning is a theoretical and practical concept that refers to the fact that it is both possible and necessary for human beings to keep on getting information, knowledge and competencies throughout their lives for either personal or professional reasons (adaptation, improvement, development, etc.). It involves education and training activities such as reading, studying, attending lessons, working, practicing at home or other places, travelling, gaining experiences of different kind (off and on-line) and, according to the concept of *reflective learning*, reflecting over them (Schön, 1991; Moon, 2004). In fact, according to a classical definition, lifelong learning is a process through which individuals acquire information, knowledge and competencies in a range of formal and informal settings, throughout life. It may occur as part of schooling, education, training, personal development (Brookfield, 1986; Grant and Stanton, 1998) or workplace-based learning (Billet, 2011).

Competence is a key concept within the general lifelong learning framework. From a theoretical point of view, over the years, the term competence has been defined in several ways (Gelman and Greeno, 1989; Elbers, 1991; Ellström, 1997; Mulder, 2007), depending on the context and the perspectives adopted (Fischer *et al.*, 1993), while practically both scholars and laymen acknowledge that it is something related to learning, training, work and organizations (Spencer and Spencer, 1993). Competencies are precisely those personal characteristics (a set of knowledge, abilities and attitudes) that allow people to be effective in the workplace and in everyday life. In this sense, *competence* can be considered synonymous with *capability* (in the sense of having the knowledge, skills and experience to perform). Competencies can be learned (McClelland, 1973; Nuthall, 1999). That is the reason why they tend to be taught through education and training activities.

Several models have been developed to classify competencies and define the most important categories of competencies (McClelland, 1973; Boyatzis, 1982; Spencer and Spencer, 1993). For the aim of the analysis of needs we are going to present, Helakorpi's teacher's expertise model (Helakorpi, 2009) because it deals not only with methodological and pedagogical domains but also with organizational and developmental ones. This better fits the multiplicity of roles contemporarily assumed by teachers and trainers in the VET system. The model covers four competence domains:

(1) pedagogical domain;
(2) substantive domain;
(3) organizational domain; and
(4) developmental and research domain.

Besides, analogous with a study by Paju (2012), each domain has been divided into four sub-domains:

(1) pedagogical domain in pedagogical skills and mastery of educational process;
(2) substantive domain in professional know-how and competence of working life;
(3) organizational domain in know-how of teamwork and network and know-how of economy and administration of education; and
(4) developmental and research domain in: self-education of know-how and development of occupational practice.

The research

Aim

Given this framework, the paper reports the results obtained by the analysis of needs of teachers and trainers working in the VET system in Veneto, an Italian Region composed of seven cities: Belluno, Padua, Rovigo, Treviso, Venice (chief town), Verona and Vicenza. The study is a preliminary action to an ESF project named "Training for trainers" (www.venetoformatori.it:8080/venetoformatori/content/il-progetto-formazione-formatori-0), whose main aim is to give birth to courses, experiences and other training programs, specifically dedicated to VET teachers and trainers, to allow them to develop the competencies they feel they need for work.

Instrument and procedure

An *ad hoc* quantitative questionnaire has been built and administered online. It is the product of the qualitative reflections conducted in a series of two focus groups involving teachers, trainers and managers in Veneto. The focus groups altogether involved something like 25 people in discussions lasting about 3 hours each. At the end of discussions in both the focus groups, it was decided to develop an *ad hoc* questionnaire composed of the following four parts:

(1) First part is responsible for collecting a series of socio-demographic information related to the profiles involved in the VET system (gender, age, education, affiliation, province of residence, years of work in the VET system, contract and role).
(2) Second part specifically deals with the roles and their activities; twelve roles have been defined: teacher (12 activities); trainer (6 activities); tutor (7 activities); designer (11 activities); counselor (8 activities); psychologist/educator (5 activities); manager (8 activities); coordinator (6 activities); technician in the economic and financial management (8 activities); commercial marketing technician (8 activities); computer technician (8 activities); quality technician (8 activities).
(3) Third part asks respondents to give suggestions for the courses, experiences and other training programs to be designed and specifically dedicated to teachers and trainers working in the VET system in Veneto. The alternatives are:

- *Training courses such as*: Short courses lasting up to 32 hours; short courses lasting up to 50 hours; average courses lasting up to 80 hours; and higher training courses/masters of maximum 170 hours.
- *Personalized training activities (workshops, coaching, tutoring, e-learning, etc.) such as*: Training courses and/or formative accompaniment in small groups lasting 8, 16 or 24 hours.
- *Supplementary actions of training/development such as*: Seminars/conferences/round tables lasting up to 8 hours; thematic focus groups of maximum 8 hours; informal meetings; and study visits.

(4) Fourth and final part asks respondents to assess a certain number of competencies developed by referring to Helakorpi's teacher's expertise model (2009) in the declination by Paju (2012). In the questionnaire, the pedagogical domain (composed of Pedagogical skills and Mastery of educational process) is prevalent because it represents the core practice of teachers and trainers. Respondents have been asked to *self-assess* the competencies (*self-assessment* has been explicitly defined as the current level of mastery) and the *importance* (*importance* has been explicitly defined as the expected level of mastery). *Self-assessment* and *importance* have been rated on a 1-7 scale.

For each role, a series of competencies have been listed: 43 in the case of teachers, 24 in the case of trainers, 25 in the case of tutors, 28 in the case of designers, 21 in the case of counselors, 21 in the case of psychologists/educators, 23 in the case of managers, 21 in the case of coordinators, 25 in the case of technicians in the economic and financial management, 18 in the case of commercial marketing technicians, 23 in the case of computer technicians and 23 in the case of quality technicians.

It is interesting to note at this point that respondents do not see themselves as assuming one role only, so that VET teachers and trainers declare they are involved in activities such as tutoring, counseling, design, etc. other than in education and training.

After filling out the questionnaire, other two focus groups were organized with other 25 VET teachers, trainers and managers to discuss the results and better read and interpret the data emerged. The results of these two focus groups in terms of reflections and considerations will be reported in the *Discussion* section.

Because the sample mainly consists of teachers and trainers, which, however, as already mentioned, cover different roles and do different activities, the present paper deals with their competencies, which means that it takes into consideration 67 competencies (43 referring to teachers and 24 referring to trainers). Before presenting the characteristics of participants, it is appropriate to note here that about 80 respondents were neither teachers nor trainers, so they were excluded from analyses.

Participants

Starting from 17,028 employees working in accredited institutions and technical and vocational schools of the VET system in Veneto and coming from all the seven cities of the Region, a sample of 4,559 people has been involved in the survey on the basis of the dimension of institutions and schools and their regional distribution. Respondents were 978 (age between 20 and 60 years), 812 (83 per cent) teachers (358 males, 454 females), 166 (17 per cent) trainers (61 males, 105 females), 603 (61.7 per cent) females and 375 (38.3 per cent) males, distributed as shown in Table I.

	Females							Males						
	Age in years				Years of work			Age in years				Years of work		
	Minimum	Maximum	M	SD	Minimum	Maximum	M	SD	Minimum	Maximum	M	SD	Minimum	Maximum	M	SD
Teachers	26	60	49.9	7.7	3	26	20.1	2.7	31	59	49.7	6.8	3	23	19.2	3.4
Trainers	20	58	40.3	4.6	1	25	11.6	6.2	20	60	44.5	9.1	1	25	13.9	6.7
Total sample	20	60	43.2	6.1	1	26	13.8	6.9	20	60	46.1	9.0	1	25	15.3	5.2

Table I.
Distribution of teachers and trainers according to gender, age (in years) and years of work

Most of the respondents have a master degree (almost 60 per cent) or a diploma (about 30 per cent) and are employed with a regular job (around 85 per cent).

Data analysis

Means of *self-assessment* and *importance* have been computed. *Self-assessment* and *importance* were explicitly defined as *the current level of mastery* the former and *the expected level of mastery* the latter. Respondents knew that because the definitions were reported under the labels *self-assessment* and *importance*. Thus, computing the gaps seems appropriate to determine the direction of the comparison and establish which competencies teachers and trainers feel they master less and, consequently, should be the focus of courses, experiences and other training programs. Moreover, the computation of gaps is also in line with the model by Zeithaml *et al.* (1990) which suggests to compare perceptions and expectations by subtracting expectations from perceptions. Because there are no statistical differences ($p > 0.05$) between males and females or between other groups (defined by residence, age, years of work, etc.) in relation to the means obtained in the competencies, the results will be given for the sample on the whole. As for focus groups, they were recorded and transcribed and the transcripts subjected to content analysis.

Results

Tables II and III show the domain (first column), the competencies (second column), the self-assessment (third column), the importance (fourth column) and the gap (fifth column) between self-assessment and importance in teachers (Table II) and trainers (Table III), sorted by domain.

As it is possible to notice (Table II), average ratings of *self-assessment* vary from 4.0 to 6.0, while average ratings of *importance* vary from 4.1 to 5.2. Besides, in one competence, only *importance* has obtained a higher rating than *self-assessment* (gap = −0.3) and, in another competence, *self-assessment* and *importance* are equally rated (gap = 0.0). In all the other 41 cases, teachers have given higher ratings to *self-assessment* than *importance* (gaps varying from 0.1 to 1.0).

As for suggestions about the training activities to be designed, teachers express a clear preference for short courses lasting up to 32 or 50 hours; training courses in small groups lasting 8, 16 or 24 hours; and thematic focus groups of maximum 8 hours.

As it is possible to notice (Table III), average ratings of *self-assessment* vary from 4.4 to 5.1, while average ratings of *importance* vary from 3.8 to 4.4. Besides, *importance* has never obtained a higher rating than *self-assessment* (gaps varying from 0.3 to 1.2). In all the 24 competencies, trainers have given higher ratings to *self-assessment* than *importance*.

As for suggestions about the courses to be designed, trainers also express a clear preference for short courses lasting up to 32 or 50 hours; training courses in small groups lasting 8, 16 or 24 hours; and thematic focus groups of maximum 8 hours.

Discussion

Research implications

At a first glance, results show that teachers and trainers of this research declare they have enough competencies to do what they do. In fact, as for teachers, average ratings of *self-assessment* vary from 4.0 to 6.0, while average ratings of *importance* vary from 4.1 to 5.2; as for trainers, average ratings of *self-assessment* vary from 4.4 to 5.1, while

Domain	Competence	Self-assessment	Importance	Gap
Competence of working life	Let people know the aims and valuesof the institution/organization both inside and outside	5.0	4.3	0.7
	Make sense of what you do, boosting interest, commitment and passion for what you teach and your work	5.9	5.2	0.7
Developing of occupational practice	Contribute to the development of a multi-annual plan for the professional development of teaching staff	4.2	4.1	0.1
	Give an account of your work in a formalized manner, taking care of the documentation	5.0	4.2	0.8
Know-how of economy and administration of education	Know and understand the rules on accreditation and certification of the quality of educational services	4.2	4.1	0.1
	Develop awareness of the economic components of your business, including the prospect of a social budget of the institution/organization	4.4	4.1	0.3
	Treat periodic reviews of the activities and the initiatives planned in relation to the objectives and the overall training project of institution/organization	4.9	4.4	0.5
	Assume a collective responsibility to achieve the values, purpose and mission of the institution/organization, contributing to the incremental improvement of the quality of the services of the institution/organization	4.8	4.3	0.5
Know-how of teamwork and network	Promote and manage relationships, networks and partnerships with organizations, institutions and other training providers, locally, nationally and internationally, to enrich the educational offer of your organization/institution in the perspective of an integrated training system	4.0	4.3	–0.3
	Coordinate meetings, committees or working groups with colleagues and other professionals involved in training initiatives, managing the process of negotiation and the positive resolution of conflicts	4.4	4.3	0.1
	Carefully organize learning environments in collaboration with colleagues to identify the competencies achievable only with the contribution of several disciplines/areas	4.9	4.5	0.4
	Collaborate with colleagues and other members of the institution/organization in a respectful way, oriented to trust and mutual support to achieve the educational objectives	5.3	4.4	0.9

(*continued*)

Table II.
Domain (first column), competencies (second column), self-assessment (third column), importance (fourth column) and gap (fifth column) between self-assessment and importance in teachers sorted by domain

Table II.

Domain	Competence	Self-assessment	Importance	Gap
Mastery of educational process	Assign tasks that require students to think and test possible solutions to the problems posed by the real world	5.4	4.8	0.6
	Activate and productively manage the communication dynamics in the class, with attention to individual differences (gender, origin, membership, etc.) by fostering a climate of mutual respect and trust	5.4	4.9	0.5
	Enforce clear rules and procedures for classroom behavior	5.6	4.8	0.8
	Organize students into cooperative groups promoting mutual learning	4.9	4.7	0.2
	Set up and manage assessment actions that provide evidence on the levels and the mastery degree of learning	4.9	4.6	0.3
	Manage assessment actions that require to demonstrate "what you are able to do with the knowledge gained" (tasks that simulate practical and real situations)	5.1	4.7	0.4
	Organize the educational activities by competencies and tasks requiring students to apply the different types of knowledge for the creation of a product/task	5.0	4.5	0.5
	Explore prior knowledge to address what students already know with respect to a new topic, indicating the direct links between what they will learn and what they have already learned	5.6	4.8	0.8
	Explain to students the purpose of a learning unit: "what they will learn" and "why they will learn"	5.8	4.8	1.0
	Treat students in the development of a wide range of cognitive and meta-cognitive strategies to enhance learning	4.8	4.8	0.0
	Vary your teaching methods (e.g., dialogued lesson, project work, free work, etc.) according to the educational objectives and drawing on a wide repertoire	5.5	5.0	0.5
	Express yourself in a clear and understandable way, explaining the meaning of technical terms and providing examples related to the experience of the students	6.0	5.0	1.0
	Show students how to represent an argument (diagrams, drawings, mind maps, concept maps, etc.)	5.3	4.7	0.6

(*continued*)

Table II.

Domain	Competence	Self-assessment	Importance	Gap
Pedagogical skills	See the application fields and the opportunities that the information and communication technologies, Internet in particular, offer to didactics	4.8	4.7	0.1
	Recognize and validate the level of competence achieved by students	5.1	4.7	0.4
	Differentiate the tasks of work based on the potential and needs of the students	5.0	4.5	0.5
	Organize the activities of assessment as further learning	5.3	4.6	0.6
	Actively involve all students in the activities, so as to make them autonomous and responsible for their own learning	5.2	4.8	0.4
	Promote a positive attitude towards learning and things to do	5.5	4.9	0.6
	Clarify and make the evaluation criteria and the meaning of grades transparent, helping students to internalize the expected levels of learning	5.4	4.6	0.8
Professional know-how	Know and understand the codes, the statutes, and the methods of your discipline/professional area, in relation to the dynamics of development of the various stages of life and the social context	5.1	4.6	0.5
Self-education of know-how	Use the results obtained by students to reflect on your educational action and plan interventions to improve	5.4	4.7	0.7
	Reflect on teaching practice, systematically exchanging information and experiences with colleagues and participating in research programs	5.1	4.9	0.2

Table III.
Domain (first column), competencies (second column), self-assessment (third column), importance (fourth column) and gap (fifth column) between self-assessment and importance in trainers sorted by domain

Domain	Competence	Self-assessment	Importance	Gap
Competence of working life	Adopt negotiation techniques	4.4	4.1	0.3
	Apply techniques of communication and management of the interpersonal relationships	4.8	4.1	0.7
	Adopt problem-solving techniques	4.6	4.0	0.6
Developing of occupational practice	Identify information about the context and the participants relevant to the teaching program	4.9	3.9	1.0
	Develop and articulate a program of training, in details or individual sessions	5.1	4.0	1.1
Know-how of economy and administration of education	Develop awareness of the economic components of your business, including the prospect of a social budget of the institution/organization	4.4	4.1	0.3
	Treat periodic reviews of the activities and the initiatives planned in relation to the objectives and the overall training project of institution/organization	4.9	4.4	0.5
	Assume a collective responsibility to achieve the values, purpose and mission of the institution/organization, contributing to the incremental improvement of the quality of the services of the institution/organization	4.8	4.3	0.5
Know-how of teamwork and network	Employ techniques of coordinating a working group	4.6	4.0	0.6
	Apply techniques of conduction of a classroom and of management of groups	4.9	4.1	0.8
	Manage group dynamics in learning contexts	4.7	3.9	0.8
	Use methods of socialization and development of the classroom climate	5.0	4.0	1.0
Mastery of educational process	Carry out any assessment of learning and/or competencies in relation to the target and the context	4.5	4.1	0.4
	Apply teaching methods and adapt methodologies and contents according to the needs of the learning group	4.8	4.2	0.6
	Detect any problems regarding the relationship dynamics in the learning process	4.6	4.2	0.4
	Vary your teaching and the type of your approach in line with the educational objectives and the learning outcomes	4.9	4.0	0.9
	Use teaching methods and technologies in relation to the target and the training contents	4.9	4.1	0.8

(*continued*)

Table III.

Domain	Competence	Self-assessment	Importance	Gap
Pedagogical skills	Behave in facilitating the learning processes of individuals and the group	4.8	4.1	0.7
	Encourage the sharing of the educational agreement with the participants and develop interest and motivation for learning	5.0	4.1	0.9
	Adapt and target training programs	4.8	4.1	0.7
	Devise teaching aids and functional tools for a better stimulation and evaluation of learning, *ex ante*, ongoing and final	4.6	3.9	0.7
	Adopt informational and educational media	5.0	3.8	1.2
Professional know-how	Apply the principles and the methodologies of the educational agreement	4.6	3.8	0.8
Self-education of know-how	Promote a positive attitude towards learning and things to do	5.0	4.3	0.7

average ratings of *importance* vary from 3.8 to 4.4. Furthermore, *importance* has never obtained higher ratings than *self-assessment*, except in one competence administered to teachers (gap = −0.3). This means that *self-assessment* is, on average, rated higher than *importance* given to competencies, and this is a fact that can be read either as a tool problem (the competencies included in the questionnaire might be not the appropriate ones, first hypothesis) or as teachers and trainers are saying that they are already properly trained and they are not interested in lifelong learning (second hypothesis).

The first hypothesis is hardly sustainable because the instrument was built by involving VET teachers and trainers in the preliminary two focus groups, so the competencies listed were chosen after appropriate discussion and reflection, and, in this sense, they were inter-subjectively validated. As a matter of fact, teachers and trainers in the focus groups, both the preliminary and the final ones, argued that the questionnaire is a "great tool" to be used as self-diagnostic to reflect on their practices.

As for the second hypothesis, the two focus groups carried out after teachers and trainers have filled in the questionnaires show that they do wish to be trained in a lifelong learning perspective, even if they fear that the courses they might be involved in may be not the right ones to allow them to develop and improve their work characteristics. That seems to be the reason why they express not so much a clear preference for short or very short training experiences, as well as the need for training actions more embedded in their work that overcome the classical format of training classroom courses. This need is clearly linked to a lifelong learning perspective. In fact, they are not only saying that they do not have much time to dedicate to training but also that they want courses, experiences and other training programs to be focused on one or two key competencies at the most (such as "promote and manage relationships, networks and partnerships with organizations, institutions and other training providers, locally, nationally and internationally, to enrich the educational offer of your organization/institution in the perspective of an integrated training system" or "treat students in the development of a wide range of cognitive and meta-cognitive strategies to enhance learning", which are the only ones obtaining a higher evaluation on the dimension of *importance* or the same rating than *self-assessment*).

It is now better to point out that respondents (n = 978) are 5.7 per cent of the 17,028 employees working in accredited institutions and technical and vocational schools of the VET system in Veneto, and 21.5 per cent of 4,559 people involved in the survey on the basis of the dimension of institutions and schools and their regional distribution. This is the main limitation of the research. A larger sample (let's say about 50 per cent of the target population) would have assured more consistent statistical estimations and, possibly, wider variability, which perhaps would have meant further information and confidence about competencies to be developed.

Contamination is the key word emerged in the two focus groups carried out after questionnaires were filled out. Teachers and trainers would like to have the possibility to be put together in training situations where they can express themselves, tell their experiences and benefit from the experiences of others. This means that, even if the quantitative data collected with the questionnaires seem to

suggest that VET teachers and trainers in Veneto consider themselves trained enough to do what they do (or even tired of being considered not enough trained and of being sent to long courses, often perceived as useless), they feel like attending courses and training activities in which they have the possibility to compare notes with others who do the same job in different contexts and with different ways and strengthen the sense of being part of a professional community by gathering and sharing tools.

Further research dealing with the analysis of needs, possibly conducted with wider samples of teachers and trainers belonging to the VET system, should focus on their present situation in terms of acquired and acquirable competencies, so that it becomes possible to meet their needs and allow them to develop their professional skills.

Practical implications

As already mentioned, the research whose main results have been presented in this paper is a preliminary action to the ESF project named "Training for trainers". The main aim of the project is to give birth to courses, experiences and other training programs, specifically dedicated to teachers and trainers working in the VET system and coming from all the seven cities in Veneto (Belluno, Padua, Rovigo, Treviso, Venice, Verona and Vicenza), to allow them to develop or refresh the competencies they feel they need for work.

In line with the results of this research, it seems that VET teachers and trainers would be content with very specific and effective courses, experiences and training programs giving them the appropriate instruments to do their jobs and let them do a little bit of confrontation with one another in a view of mutual contamination. But most of all, they ask for an accompaniment that will help them to connect more and more of their professional activities with professional development, introducing elements of reflexivity in everyday practice.

The needs emerged from the questionnaire and the focus groups can be linked to training activities inspired by the modes of adult learning mentioned in the *Introduction*, in particular *action learning* (the need for training experiences which differ from traditional classroom courses), *self-directed learning* (the need for courses, experiences and other training programs to be focused on very specific and work-related competencies), *reflective learning* (the need for being put together in training situations where people can discuss and reflect on their professional practices), *organizational learning* (the need for strengthening the sense of being part of a professional community) and, of course and above all, *lifelong learning*, which can be considered a concept that includes all the others.

The analysis of needs we have talked about in this paper has been carried out by means of both a quantitative and a qualitative approach. The first one is represented by the online questionnaire, the second has been translated in practice through the use of four focus groups, two conducted to build the questionnaire and two conducted at the end of the online survey to read, discuss and interpret the quantitative data together with the target population.

This seems to have been a successful choice, as the standardized questionnaire only would have not given sufficient data to design courses, experiences and other training programs. Indeed, the two focus groups carried out after the questionnaires

were filled out have allowed researchers to better understand what the data collected by the survey really meant and to collect other data, or perhaps information, to have a clearer idea of what kind of courses, experiences and other training programs would suit the VET teachers and trainers who are the target of the ESF project "Training for trainers". For example, the need for relational experiences where VET teachers and trainers have the possibility to contaminate, compare, talk and narrate their practice is something derived more from the focus groups than from the questionnaire. On the other hand, the questionnaire allowed researchers to understand which specific competencies are of real interest for VET teachers and trainers and which, instead, did not catch their eye, which is certainly useful to design the courses, experiences and other training programs for which the ESF project is responsible.

The first lesson for everyone dealing with learning, training and development is to not neglect or even skip the step of the analysis of needs when designing training courses, experiences and programs, perhaps taking for granted that the training needs are already known. The second lesson is to conduct the analysis of needs by means of both quantitative and qualitative methods to have a deeper view of the needs of the target population for which the training courses, experiences and programs are first thought and will be then realized.

Conclusions

The analysis of needs is a necessary and delicate step of the training process. Every handbook of training and development emphasizes the importance of the analysis of training needs for proper training design. Nevertheless, research on the field is not abundant. What is the best way to carry out an analysis of needs? Which are the methods and techniques that mostly guarantee the best results in terms of needs identified? How can we be sure that the way we intend to use for the identification of training needs is the best way that will tell us what workers and employees really need? These and other questions are important for the practical implications they take with them, but they should be investigated by research.

There is conflicting evidence about the best way to conduct an analysis of needs, as advocates of a quantitative approach support standardized and closed methods, while those who prefer a qualitative approach are more in favor of more flexible and open instruments (Creswell, 2003; Creswell and Clark, 2007). Moreover, it is a step not so rarely neglected or even skipped, as organizations often think they know what their employees and workers need (Moore and Dutton, 1978; Ostroff and Ford, 1989; Brown, 2002) or they think there is not enough time to even deal with this step.

The idea of this article has come up with the consideration that research on analysis of needs is less frequent than research on training methods and design. Results of our research are important not only for the specific aims for which the analysis of needs we have given account of in this article has been carried out (to find out the real needs of teachers and trainers working in the VET system in Veneto to design courses, experiences and other training programs specifically dedicated to them) but also for the considerations it is possible to make regarding the best way to conduct a step which is recognized to be one of the most delicate and important in the training process. The research we have talked about in this article not only has allowed to discover the real professional needs of teachers and trainers working in

the VET system in Veneto but has also dealt with the general issue of how to proceed to detect these real needs.

Without qualitative methods, it would have been impossible for us to discover the real needs of teachers and trainers working in the VET system in Veneto. On the other hand, the questionnaire has allowed picking up the need for short or very short courses specifically focused on one or two competences at the most.

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