

SHare, Improve, develop: today's excellenCe for tomorrow's HVET
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Intellectual Output 1 – National surveys

Italy

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Intellectual Output 1: National Survey Best Practice – Italy (Veneto)

1. Summary	4
1.1 English Summary	4
2. Description of context, economic, social features	5
2.1 Veneto Region	5
3. Structure of EQF 5 level in Veneto region.....	6
3.1. The governance model in Veneto	6
4. Methodology for identification of best practices	7
4.1 ITS Meccatronico	7
4.2 ITS Turismo	8
5. Description of each practice identified	9
5.2 ITS Meccatronico	9
5.3 ITS Turismo	11
5.4 Opportunities and challenges toward HVET excellence in Veneto	11
6. List of references	13

1. Summary

1.1 English Summary

The summary should include:

- A) the type of 2 best practices (learning pathway, degree, etc.) and the corresponding EQF levels (ideally 4-6), highlighting the reasons for considering them best practices
- B) the description of methodologies that are applied in the best practices and outputs
- C) the involvement of players: training institutions and business/ economic players, positive results of cooperation among them (in terms of enhancement and innovation)
- D) critical factors and weaknesses
- E) opportunities for future development

In Veneto two practices were selected according to the consistency of the track with the economy context, the public-private governance system, the innovative mix of learning methodologies and the level of employability attained by students. Both practices are post-diploma professional higher education institutions, EQF level 5, the first specialised in Mechatronics and the second in Tourism.

2. Description of context, economic, social features

2.1 Veneto Region

Veneto region is among the most industrialised in Italy and it contributes to the 9.2% of the national GDP (1,545,000 mio Euros in 2015). Regional GDP slightly increased in 2014 and 2015. The population of 4,927,596 inhabitants (2014) is steadily increasing, thanks to the 10.4 % of migrants. Immigration decreased in 2015, although the number of new citizens account for the 2% of population. Moreover, the region recorded an increased brain drain

In 2014, according to Unioncamere 436,698 enterprises were active, out of a total registered 439,307. Therefore, 1 out of 11 inhabitants is an entrepreneur. Such a high rate of entrepreneurship is nonetheless counterbalanced by the small size of companies, which hinders access to credit, R&D resources for innovation and internationalization.

In 2015, unemployment rate slightly increased to 7%, while the employment rate remains stable at 64%. Unemployment of 15-29 years old is only 18%, compared to Italy's 31.6%.

The foreign revenues of Veneto's companies increased by 2.7%. Veneto ranked second in Italy for the total value of exports, 54.1 billion euro, with a 13.6% share of the national total.

The trend increase in Veneto's exports in 2014 involved mainly EU countries (+3.9% compared to 2013 and a 57.7% regional share) in almost all sectors. Veneto's main export sector remained *mechanics*, followed closely by fashion. *Tourism* is an important resource. In 2014 the flow of visitors was rising (+1.7%) and exceeded 16 million arrivals, mainly foreigners. Non-EU tourists began to decrease from December 2015 onwards, due to the effects of the attacks in Paris in November. The economic downturn 2008-2014 impacted on the construction and manufacturing industries, -2.1% and -1.4% compared to 2013.

Manufacturing industry was more aggressive with respect to other sectors, geared toward internationalization of markets, looking for partnerships to improve competitiveness and strengthening its investment in innovation and R&D. However, the region is a moderate innovator according to the Regional Innovation Scoreboard 2014. Probably because of the preponderance of SMEs, companies consider business networks as a mean of reducing costs and reaching new markets. Investments in marketing and design are still a prerogative of large enterprises.

Smart Specialization and RIS3-strategies in the region focus on Smart Agrifood, Sustainable Living, Smart Manufacturing and Creative Industries. Four universities and several research centres contribute to the regional growth and competitiveness. Higher education is integrated by level 5 EQF Technical Higher Education Institutes, six public-private Foundations whose programmes and learning methodologies are connected to the regional economic specializations and strategies (Logistics, Mechatronics, Agrifood -Winery, Fashion-Shoes, Energy and Sustainable Buildings, Tourism).



3. Structure of EQF 5 level in Veneto region

3.1. The governance model in Veneto¹

The Istituti Tecnici Superiori (Technical Higher Education Institutes) are post-diploma professional higher education institutions, legally constituted as Foundations participated by public and private stakeholders (Provinces, Municipalities, Universities, companies). After a two-years programmes, participants achieve a level 5 EQF qualification.

In the Veneto region, ITS were defined considering the most relevant economic sectors and the real needs of the companies, thus ensuring the full employability of students.

The Chairmen of six Foundations are entrepreneurs. Currently a seventh Foundation has been formally recognized by the government of the Region of Veneto, although courses will start in 2016.

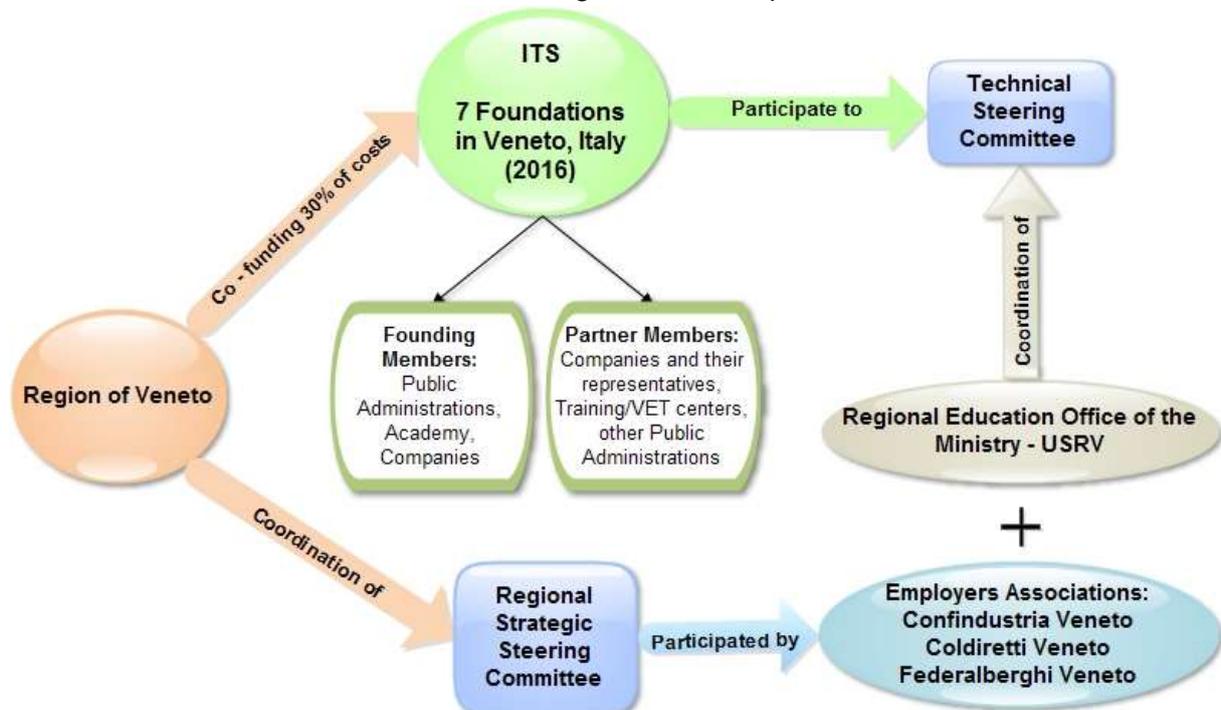
The Region established a permanent Steering Committee to define the ITS' strategies, participated also by the Ministry of Education, University and Research through its regional Education Office (Ufficio Scolastico Regionale del Veneto - USRV), and the most relevant Employers' Association of industry, agriculture and tourism, namely Confindustria Veneto, Coldiretti Veneto and Federalberghi Veneto.

The Region of Veneto co-funds the 30% of each ITS' costs through dedicated calls for proposal and coordinates the activities planning over a three-years period.

The USRV also support the coordination of the ITS through dedicated periodical technical meetings, not compulsory for Employers Associations.

Confindustria Veneto proactively supported the constitution of the ITS, the involvement of the entrepreneurs as Chairmen, as well as the promotion of the ITS initiatives and the continuous cooperation with the Region of Veneto and USRV.

Four local industrial associations (Venice-Rovigo, Vicenza, Verona, Padua) are members of six Foundations and contribute to the management and implementation of local activities.



Elaboration: Confindustria Veneto SIAV, 2016

¹ Please note: the description of the National Education and Training system, together with the definition of HVET are included in the Survey presented by the Lead partner IFOA.

4. Methodology for identification of best practices

4.1 Selection criteria

In Veneto two practices were selected according to the consistency of the track with the economy context in Veneto, the public-private governance system, the innovative mix of learning methodologies and the level of employability attained by students.

ITS Foundations activities are monitored by INDIRE, an agency of the Italian Ministry of Education, which evaluates a set of indicators (Attractiveness. Employability, Cooperation with companies, Active participation to the local labour market, Participation to interregional networks), such as:

- the number of applicants in the selection procedure
- the number of students obtaining their post-secondary diploma
- their employment situation and correspondence with their qualification
- the teachers' background (school, university, enterprise sector)
- the quality of laboratories
- any connection with other Italian regions and with the European Union.

Monitoring results contribute to the definition of a “performance award share”, in addition to state contributions, for those ITS institutions that reached the top rankings in the monitoring process.

According to the INDIRE rating, both practices were included into the best performers. Respectively, the ITS Mechatronics ranked 6th and the ITS Tourism 25th. Both are the 2nd best performers at national level within their own category “mechanics /automation” and “culture/ tourism”.

The type of industries represented are respectively relevant in the Veneto context for:

- *Mechanics/ Mechatronics*
 - Number of enterprises
 - Number of workers
 - Degree of innovation
 - Added value / contribution to regional GDP
 - Connection with the smart specialisation “Smart Manufacturing”
- *Tourism*
 - Number of enterprises
 - Number of workers
 - Added value / contribution to regional GDP

4.1 ITS Meccatronico

The relevant course concerns a production area that makes up the “backbone” of the Italian manufacturing sector, especially in the Veneto region, as the management of production plants by means of information systems and electronic equipment is an indispensable organisational pattern in order to ensure competitive manufacturing processes, and it is the fundamental basis for implementing the management criteria of “Industry 4.0”.

Surveys on the requirements of professional qualifications expressed by Italian and Veneto enterprises confirm the strong demand of these professional profiles, which companies often have difficulties in finding.

Employment levels of technicians with a post-diploma qualification at ITS Meccatronico Veneto are as high as 90%.

A few organisational and learning programmes implemented by Fondazione ITS Meccatronico Veneto are particularly significant to acquire outstanding technical skills coupled with a good share of transversal skills. These programmes include the implementation of apprenticeship schemes envisaged in the specific regulations, the experimentation of the dual system with the alternation of school and training at work, typical of North European countries, and the introduction of teaching by competences in the Learning Units through the implementation of Team Working groups. During team working activities, students are grouped in teams of five or six members each, sorted by competences, and they are given a set of ideas implying a design phase and an implementation one to be conducted in a laboratory with the use of lean techniques. The team working project consists of 240 hours in total over the two-year higher education period, alternated with the theoretical lectures of the course. At the end of the activities, projects produced by students are evaluated by a committee. Their assessment is part of the general evaluation of the course year. Projects are presented by the students during a final public event. Team working relies on the following strengths:

- the student works in a team and deals with the relevant problems (taking of responsibility);
- the student has to solve problems of the practical implementation type;
- the student is directly involved and is the author of his/her own work;
- the student acquires organisational skills;
- the prolonged summer session allows to experience a more permanent presence within the company;

Monitoring and evaluation activities by the tutors (both supervisors within the company and course tutors) allow to constantly evaluate the work in progress of the project and possibly implement any corrective measures “on the run”.

ITS Meccatronico Veneto is an accredited post-secondary institution of the ECHE (Erasmus Charter for Higher Education) system. It provides its students with the opportunity to work as apprentices in foreign companies, and its teaching staff with professional updating trips.

4.2 ITS Turismo

5. Description of each practice identified

5.1 General features of the practices

Both practices share some general features.

Ownership and management

The ownership structure includes an active triple helix composed by Public Administrations, Academy, Companies.

The Foundations, established in 2011, relies on the following management bodies: the Board of members, the Chairman, the Executive Council, the Steering Council, the Scientific and Technical Committee (STC), and the Auditor.

The *Board* is made up of the founding members and participating members, it issues consultative opinions and proposals on the activities, programmes and aims of the Foundation, as well as on its budget and balance sheet. It internally elects the members of the Steering Council, representatives of the participating members and a member of the Executive Council.

The *Chairman* is the legal representative of the Foundation.

The *Executive Council* is in charge of the ordinary and extraordinary administration, of running the activities of the Foundation according to the principles of cost reduction, effectiveness and efficiency, in order to implement the three-year activity plan approved by the Steering Council. The Executive Council prepares the budget and the balance sheet submitted to the Steering Council for the relevant approval.

The *Steering Council* is entrusted with the exclusive right of deliberating on deeds that are necessary for the activities of the Foundation and the achievement of its goals.

The *Scientific and Technical Committee* is an internal body of the Foundation, drawing up proposals and recommendations to the Steering Council concerning programmes and activities of the Foundation, and defining the technical and scientific details of the activity plans.

The *Auditor* is the accounting advisory authority of the Foundation, supervising financial management activities, controlling the draft budget and balance sheet documents, auditing them and drawing up the relevant reports, as well as performing cash auditing operations.

5.2 ITS Meccatronico

ITS Meccatronico Veneto is a higher education institution included in the field of “new technologies for made in Italy”. It provides courses in four different towns in Veneto located in different provinces, to obtain the following two post-secondary qualifications:

- Master technician for automation and mechatronic systems
- Master technician for mechanical process and product innovation.

Italian ministerial regulations state that foundation members must be public institutions (province administrations, schools) as well as private bodies (enterprises, universities, VET centres). The distinction is made between founding members (as far as ITS Meccatronico is concerned, they are three state schools, three provincial administrations, the University of Padua, the Industrial Manufacturers' Association - Confindustria of Vicenza, a VET centre and an enterprise) and participating members (25 schools and 23 enterprises).

Fondazione ITS Meccatronico Veneto started its activities in 2011. Until today, three post-secondary education cycles (two-year courses) have been completed, and the resulting rate of employability has exceeded 90%.

Please note that the funding share of ITS Meccatronico Veneto is 75% of public nature (state and regional contributions) and 25% private.

ITS Meccatronico is taking part in an initiative by Fondazione Nordest with the joint collaboration of the educational partner, Technical High School (ITIS) "Rossi" in Vicenza, for the creation of a FabLab to support the dissemination of the culture of innovation.

As already pointed out, at the end of the training programme students obtain a higher education technical diploma, corresponding to EQF level 5, by taking a state examination supervised by a ministerial examination board. The main goal defined in the planning of training activities was to differentiate this training programme both from high school and from university curricula, by providing participants with an in-depth analysis of sector-specific skills (including English language and safety procedures), as much as possible by means of interactive lessons and laboratory activities, thus aiming at providing training units also with transversal skills that are fundamental in the enterprise world. Project work activities developed during the apprenticeship period are actually an on-the-job programme, i.e. an element of primary importance in this interaction with working environments, and it is also a major component of the final oral examination.

The course is articulated in 2,000 hours - of which 896 of training as far as ITS mechatronic specialisation is concerned (408 in the first year and 488 in the second year) – subdivided in four semesters, with exams at the end of each one. Further examinations are also scheduled at the end of each programme.

The training programme complies with the general project guidelines defined by the Italian Ministry of Education in collaboration with ITS foundations. It is then implemented with full autonomy on the basis of the STC guidelines. The STC has the utmost importance in the content definition, as among its members there are also representatives of the enterprise sector, hence its considerable experience in directly identifying professional requirements expressed on the workplace. Teaching activity planning is articulated into Training units based on skills and abilities, and on the experience deriving from participation in the Be Twin 2 EU Project. Be-TWIN 2 intends to respond to EU policies by setting the overarching aim to facilitate a common implementation of ECVET and ECTS for improving learners' and workers' mobility, linking the benefits of both credit systems, fostering mutual understanding and promoting the transferability and recognition of qualifications in Europe. The proposal is aimed at transferring, reviewing and adapting the methodological tools developed in one project funded in the framework of LLP LdV ECVET by making improvements and integrations in contents and potential usages, while at the same time ensuring their consistency mainly with the ECVET Technical Specifications as one of the core objectives of the proposal.

ITS teachers are professionals from different academic and working environments (schools, universities and the enterprise sector) also by virtue of a ministerial decision. The national monitoring system sets specific percentage thresholds for each type of background, which must be respected in order to receive further awarding in the above-mentioned funding mechanism. All those who wish to teach at ITS courses can apply by sending their candidature to the trainers' register on the relevant website; CVs are then reviewed by the STC. Teachers are also evaluated by means of satisfaction questionnaires filled in by the

students, by the supervisors of local ITS premises, as well as through scores obtained by the students in competence tests on the relevant teaching programmes. Finally, a list of updating opportunities is annually submitted to ITS teachers concerning specific topics (e.g. lean principles and technical issues), with refreshment courses that are free of charge for teachers working in partner schools of the Foundation. In the academic year 2015/2016, school establishment coordinators have set up Google groups among teachers as well as with students, and a Google Drive platform for uploading teaching materials is currently under construction.

5.3 ITS Turismo

In progress

5.4 Opportunities and challenges toward HVET excellence in Veneto

Links with universities, industries and institutions are adequately provided by the organisational structure of ITS institutes, as the rules provide that at least one university, company or public body must be among the founding members. All these components are represented in the ITS management bodies, with the consequent suitable exchange of information and fair involvement of all parties.

A point still needing improvement is probably the involvement of enterprises, as the need for close cooperation with the world of production is still considered a non-priority, unlike for other countries in Europe. The old saying “First study, then work” still predominates in Italy, and this attitude certainly needs to be tackled at institutional level.

The recent establishment of ITS institutes (the first ones were created only in 2011) accounts for a few challenges concerning the number of ITS students that cannot be ignored. However, at the same time several factors must be taken into consideration as the major cause of these *challenges*:

- The first ITS institutes, whose number was definitely lower than the currently existing 86 foundations, started their activities only in 2011-12, i.e. in very recent times compared to other European countries taken as a reference (suffice it to say that STS and IUTs have been operating in France for 50 years); by way of example, the first meeting to define their general framework in the field of mechanics was held on 27th April 2011 at the Italian Ministry of Education, University and Research (MIUR);
- No information campaign was conducted for enterprises and high schools, leaving each foundation with the task of organising orientation activities;
- A strategy of enhancing the role and qualification of the Master Technician is still missing in regulations and in the certification procedure
- The MIUR has only recently started monitoring activities on the efficiency and effectiveness of organised courses;
- A few Italian regions have seen the springing up of foundations that often organise too few courses, whose insufficient number does not allow to implement the effective management of available resources;
- Management bodies are still too often school-based authorities, with the consequent mistake of replicating this model also in the ITS courses
- Discontinuity and time restraints in the allocation of funds often make it difficult to schedule activities in the long run;

- Courses have been activated exclusively on the basis of their effective funding, as available resources have influenced the recruitment choices of foundations.

The following is a list of the *successful factors* reported in European higher education training programmes similar to those implemented by ITS:

- strong presence in the institutional system
- difference from traditional academic courses
- focus on applied research
- enhancement of better opportunities provided by this qualification in the labour market.

However, these factors of success are not listed in the organization of Italian ITS institutes. Finding a strategy for *creating effective collaboration with the academic world would be of vital importance*: on several occasions, universities have looked smugly at training opportunities provided by ITS; at other times, they have seen them as unfair competitors in the enrolment of students. On the contrary, a reflection should be made on the appalling university dropout rates in the first two years, and the attempt should be made to provide adequate solutions to this problem, which certainly contributes to increasing the percentage of Italian NEETs, among the highest in Europe. A few attempts have been made by ITS foundations to establish contacts with universities in order to reach students dropping out from their academic courses, offering them a higher education alternative better matching their personal needs and characteristics. Unfortunately, these dialogue attempts have fallen on the deaf ears of contacted universities.

Other *challenges* are mentioned below, however their solution can only be found within the Italian political and institutional organisational context:

- several existing foundations organise an insufficient number of courses, thus making it impossible to reach economies of scale, and the worrying trend is emerging that the number of foundations is increasing, rather than the number of courses
- the organisational management of ITS is sadly becoming a field of dispute between the central level of state authority (Ministry of Education) and the regions (Conference between state and regions), thus inevitably generating confusion as to the management criteria and causing uncertainty in the activities undertaken by foundations.

As far as specific future development prospects are concerned for the activities of ITS Meccatronico Veneto, a Quality assurance process is being undertaken, and the possibility of adding a third year of studies is under consideration. This additional year could be focused on the skills that are necessary for Industry 4.0, among which better competence in English language and in the lean organisation, as well as topics related to robotics and “IT of things”. The link with universities will then become extremely necessary, as also the recent Italian legislative measure La Buona Scuola (the “Good School” Act of 13th July 2015, no. 107) grants the recognition of a significant number of university credits for students who will enrol at university with the post-secondary diploma of Master Technician.

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