



ECHOES: Extended Classrooms for Higher Opportunities Enhancing Skills

R1.A2.2 - NATIONAL RESEARCH R1.A3.1 – NATIONAL REPORT



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1. Methodological premise

This document is configured as the logical union of the two deliverables provided for R1.A2.2 - NATIONAL RESEARCH and R1.A3.1 - NATIONAL REPORT. The two deliverables are closely related and the entire development methodology saw the simultaneous construction of the document taking into account the common factors useful for a complete and coherent understanding of the phenomenon analyzed in the various national frameworks.

The DESK analysis (R1.A2.2 - NATIONAL RESEARCH) saw the investigation of the phenomenon from the point of view of the national strategic framework, the adoption of typical national policies and the most used instruments at national level. The second part of document R1.A3.1 – NATIONAL REPORT instead saw the analysis of the national state through the questionnaires and focus groups developed during the project phases (see deliverables A2.3 SURVEY and A2.4 ONLINE TRANSNATIONAL FOCUS GROUPS). All the aggregated data and considerations have led to the development of this deliverable.

R1.A2.2 - NATIONAL RESEARCH

2. Aims of the National State of Art and Research Report

Result 1 (R 1) is the analysis of the skills gaps of trainers and staff in the field of virtual training and mentorship programs for VET projects, based on best practices (environments, programs, methodologies, and tools) in place in the EU and selected Member States, specifically MS represented by the partnership (Italy, Austria, Slovenia and Spain). R1 will serve to meet the right conditions and pre-requisites for the implementation of the Echoes Toolkit (R2) and the Pilot Course (R3) in the countries of the partnership.

The aim of **the State-of-the-Art** report is, therefore, to provide:

- context analysis, classification and analysis of virtual/online environments for different kind of VET projects,
- trainers/mentors' requirements in terms of skills and competencies, training needs and associated methodologies and tools,
- classification and selection of the training programs and the didactical and technology resources, available systems for the recognition of the competencies acquired by online trainers and mentors and potential for improvement.

This Report is the **“National State of Art and Research”** for Italy, jointly developed by the two Italian partners of the Echoes project, and namely: Ass.For.SEO, Lead Partner, and T2i.

After having presented the methodology followed for the collection of data and information (Chapter 2), an overview of the state of the art on distance/online learning in Italy is presented (Chapter 3). Based on data and information made available by research centers and the main institutional or non-institutional actors implied, national and regional diffusion of the distance and online training in the VET sector, distinguished by the main areas of application, are analyzed and discussed. Some experiences and best practices on distance learning, mainly implemented in Italy in response to the emergency from COVID-19, are listed and commented on. Finally, the chapter contains a focus on the most used platforms for distance learning, and mainly LMS (Learning Management Systems) and LCMS (Learning Content Management Systems).

Results from a survey (questionnaires administered to VET professionals) are presented and discussed as well (Chapter 4). The questionnaire was addressed to a group of selected professionals (teachers, coaches/mentors, tutors, etc.) with the aim to complement data and information collected through the desk research and go in-depth with the identification of the needs and skills gaps in view of the designing of the Toolkit (Result 2) and the Training Course (Result 3) foreseen as main results of Echoes project.

Two Focus Groups with professionals of the VET system have been organized for the same purpose. Results of the focus groups, combined with the results of the desk research and the survey, have offered the ground for the identification of the areas of the “gaps” and “needs” (Chapter 5), and for the User Analysis (Chapter 6).

Finally, through the “Personas Analysis”, some “targets” of the Toolkit and the Training Course have been identified, so to make sure that Result 1 and Result 2 will be useful and enjoyable for our intended users: teachers, coaches/mentors, tutors and other professionals involved in VET courses.

3. Methodology

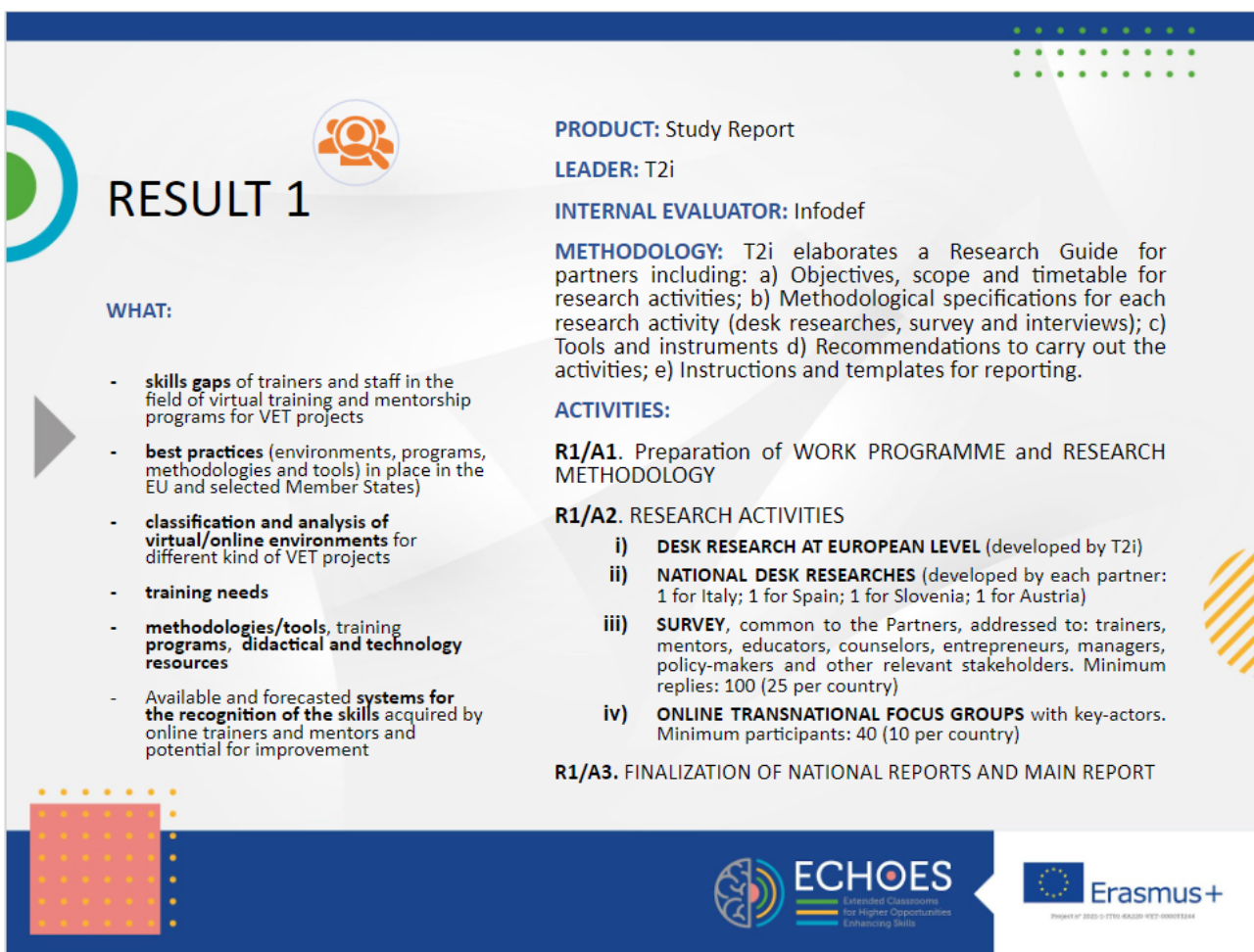
The Report is based on a methodology based on the completion of three main, progressive tasks:

- Desk Research,

- Survey (questionnaires),
- Focus Groups.

All the tasks which form part of the methodology have been conceived by T2i and Ass.For.SEO and shared with the Partners. The same methodology has been adopted by the Echoes Partners for the National Reports related to the countries of the partnership, which are: Austria, Slovenia and Spain.

The methodological workflow for Result 1 and for research activities is described in the following table.



RESULT 1

WHAT:

- **skills gaps** of trainers and staff in the field of virtual training and mentorship programs for VET projects
- **best practices** (environments, programs, methodologies and tools) in place in the EU and selected Member States)
- **classification and analysis of virtual/online environments** for different kind of VET projects
- **training needs**
- **methodologies/tools, training programs, didactical and technology resources**
- Available and forecasted **systems for the recognition of the skills** acquired by online trainers and mentors and potential for improvement

PRODUCT: Study Report

LEADER: T2i

INTERNAL EVALUATOR: Infodef

METHODOLOGY: T2i elaborates a Research Guide for partners including: a) Objectives, scope and timetable for research activities; b) Methodological specifications for each research activity (desk researches, survey and interviews); c) Tools and instruments d) Recommendations to carry out the activities; e) Instructions and templates for reporting.

ACTIVITIES:

R1/A1. Preparation of WORK PROGRAMME and RESEARCH METHODOLOGY

R1/A2. RESEARCH ACTIVITIES

- DESK RESEARCH AT EUROPEAN LEVEL** (developed by T2i)
- NATIONAL DESK RESEARCHES** (developed by each partner: 1 for Italy; 1 for Spain; 1 for Slovenia; 1 for Austria)
- SURVEY**, common to the Partners, addressed to: trainers, mentors, educators, counselors, entrepreneurs, managers, policy-makers and other relevant stakeholders. Minimum replies: 100 (25 per country)
- ONLINE TRANSNATIONAL FOCUS GROUPS** with key-actors. Minimum participants: 40 (10 per country)

R1/A3. FINALIZATION OF NATIONAL REPORTS AND MAIN REPORT

ECHOES
 Extended Classrooms
 for Higher Opportunities
 Enhancing Skills

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As for the Desk Research, available official data, statistics and reports issued by National/Regional/EU Bodies or Research Centers have been considered for the analysis of the national states of art concerning distance learning in the countries of the partnership.

As for the Survey, a questionnaire (common to the Partners) has been used (Annex I).

In Italy, the questionnaire has been administered to a sample of 105 VET training operators (trainers, mentors, coaches), of which 65 selected by Ass.For.SEO and 40 selected by T2i.

Out of the total number of questionnaires sent, 56 replies were received and analyzed (KPI: 25).

Requirements to be included into the sample were as follows:

- previous experience in professional training (VET and / or WBL), preferably for more than one year;
- previous experience in distance learning, preferably for more than one year;
- experience in distance WBL or training including practical parts (such as practical exercises, laboratory, mentoring, etc.) or experience gained (successfully or not) in WBL or practical training during the period of the pandemic from Covid-19.

The Focus Groups have been selected as a useful methodology to get further information by the “users” (VET trainers, coaches/mentors, and other VET professionals) on their current and future needs with respect to the topics already analyzed with the questionnaire sent to the trainers.

In particular, the main objective of the focus groups was to hear from the voices of those directly involved and to collect further feedbacks to structure the Toolkit (Result 2) and the Training Modules (Result 3), by investigating 4 main areas: “Activity”, “Needs”, “Ambitions”, “Difficulties and Frustrations” experienced by the people involved in providing distance learning.

In fact, the Focus Groups explored the phenomenon of distance learning with a particular focus on VET and WBL, based on a list of questions (Annex II: “Questions for the Focus Group”) prepared in advance.

Information on recurring themes and skill gaps of the participants, in line with the “DigCompEdu”, the European reference framework on the digital skills of teachers and trainers, were collected.

Focus Groups have been implemented based on the methodology and guidelines jointly developed by Ass.For.SEO and T2i (Annex III).

Data and information collected from the Survey and the Focus Groups served to the “Users Analysis”, which finally led to the definition of the “Personas”: prospective users of the Echoes Toolkit (R2) and the Training Course (R3).

4. State of the art and development of online/distance learning in Italy

4.1 National and regional diffusion of online/remote training and the main areas of application

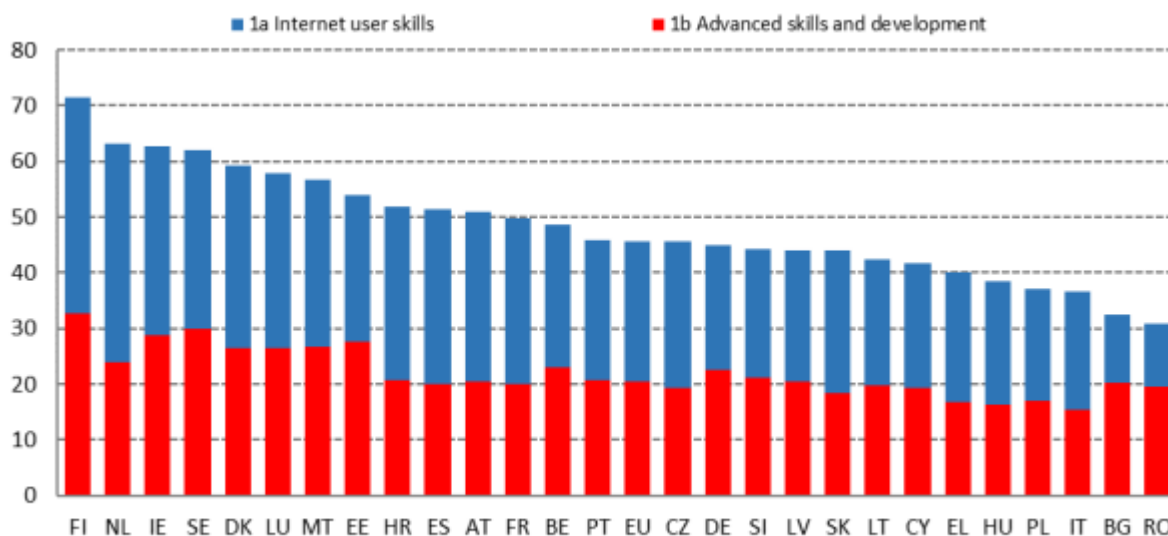
The vision of a proactive education system, with smarter policy choices, capable of anticipating innovation and supporting the process of digitalization, has been leading European policies in the last 10 years. Considering the impact on VET, innovation could trigger a virtuous circle leading to the adoption of more and more advanced technologies and methodologies. But innovation needs a new approach to teaching and training through collaborative platforms, new hybrid professional models.

The COVID-19 pandemic has given an unmistakable signal of confirmation and evolution of the role and perception of digitization in education and training systems in Europe.

In Italy, the switching of scheduled courses from face-to-face to distance learning highlighted the bureaucratic obstacles of the education and VET system and the more general Criticalities of the delay in the country's digitalization. Data available¹ show 54 % of Europeans have at least basic digital skills, while Italy is among the eight Member States where the share of individuals with at least basic digital skills is lower than 50 %. Italy ranks the lowest together with Romania and Bulgaria. Furthermore, Italy ranks the lowest for advanced skills and development.

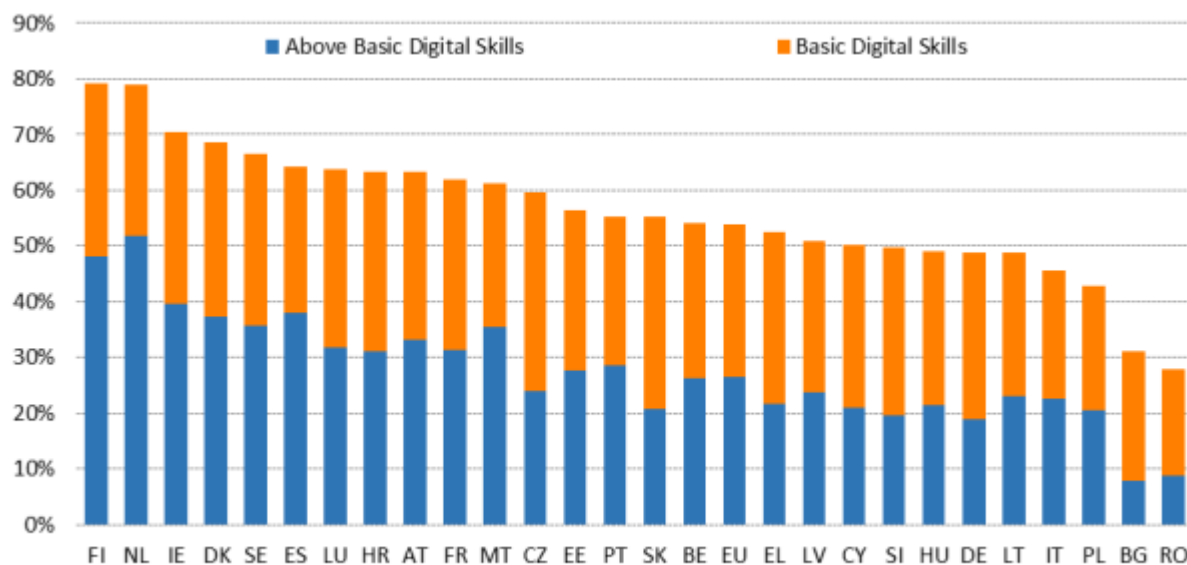
¹ European Commission, *Digital Economy and Society Index 2022*

Human Capital Dimension (Score 0-100), 2022



Source: DESI 2021, European Commission

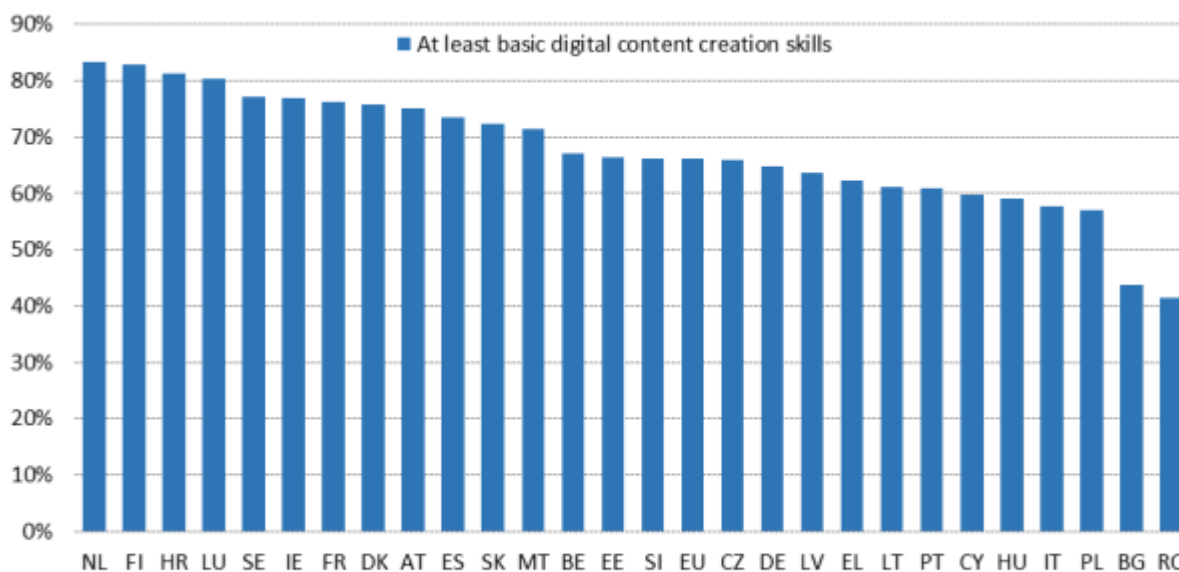
Basic and above basic digital skills (% of all individuals), 2021



Source: Eurostat, Community survey on ICT usage in Households and by Individuals

As for the individuals' skills in content creation, another key indicator of DSI 2.0 included in DESI, the distance from Italy and the Member States ranked at the top of the ranking is very high: Romania, Bulgaria, Poland and Italy have, in fact, the lowest share of individuals with activities accounting for at least basic content creation skills in 2021.

At least basic digital content creation skills (% of all individuals), 2021



Source: Eurostat, Community survey on ICT usage in Households and by Individuals.

Digital skills gaps, especially among adults, is one of the major existing barriers to effectively implement distance learning in Italian education and the VET system.

The Report on the “Fair and Sustainable Well-Being in Italy”² highlights that, in 2019, among Italian individuals aged 16-74, only 22 % declared to have high digital skills (compared to 31 % in the EU27), i.e. to be able to carry out various activities in the 4 domains of information, communication problem solving and content creation. The majority of individuals have low (32 %) or basic (19 %) skills, while 3.4 % have practically no skills and 24 % declare that they have not used the internet in the last 3 months. Age remains an important factor: 41.5 % of 20–24-year-old have advanced levels of skills and 36.2 % of 16–19-year-old, while the share decreases as age increases and reaches 20.3 % among people aged 45-54 and 4.4 % among the older aged 65-74. 11 78.5 % of the schools responded to the survey

The latest Eurostat data³ on attendance to online courses highlights that, in 2021, only 20 % of people aged 16 to 74 in Italy reported that they did an online course or used online learning material in the last three months prior to the survey, which is well below the EU average (27 %).

Based on the OECD (TALIS 2018)⁴ data, only 36.6 % of the teachers is prepared to use ICT effectively in teaching. Teacher education and training is a major driver of teachers’ adoption of digital technology for their

² BES, Fair and Sustainable Well-being in Italy 2020, Istat (National Institute of Statistics).

³ <https://ec.europa.eu/eurostat/documents/4187653/13722714/EU-ONLINE-COURSE.png/>

⁴ OECD (2020), TALIS 2018 Results (Volume I): Teachers and School Leaders as Lifelong Learners, Oecd Publishing, Paris.

teaching activities. Teachers can only integrate technology into their teaching if they acquire basic digital skills and are competent enough to tailor technology use to their own teaching⁵.

European Commission noted that “Italy has made limited progress and that no significant measures have been taken, beyond the recruitment of new teachers (with an extremely limited number of hires of digitally literate teachers)⁶.”

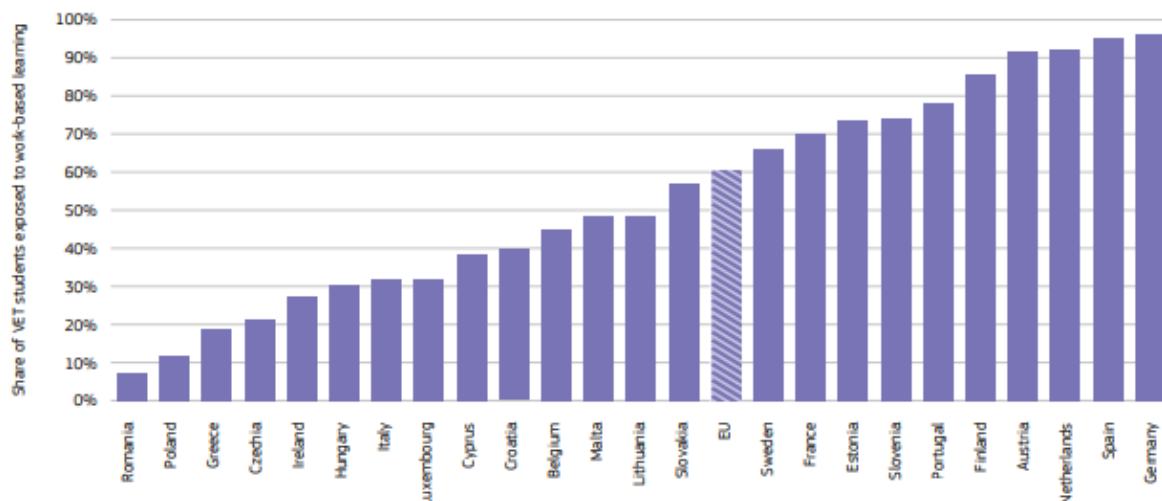
Digital skills gaps are also one of the keys to understanding the hardness encountered by teachers and students when they approach Work-Based Learning (WBL) in remote training.

The 2020 Council Recommendation on VET sets out key principles to ensure VET provides quality learning opportunities for young people and adults. The Recommendation is strongly focused on increased flexibility, increased opportunities for work-based learning and apprenticeships, and improved quality assurance. The Recommendation also sets three EU level objectives to be achieved by 2025: (1) at least 60 % of recent VET graduates benefit from some form of work-based learning during their studies; (2) at least 8 % of VET learners study abroad; and (3) at least 82 % of VET graduates are employed.

VET pupils and students’ participation in work-based learning varies strongly across Member States

⁵ The figure is confirmed by the OECD TALIS 2018 Survey, which shows that training on the use of ICTs is among the professional development topics that teachers report as having a strong need (17 % in Italy vs. 18 % on average across OECD countries). From the OECD survey “Measuring innovation in education 2019” it also emerges that in Italy there is a level of innovation in learning practices slightly below the average for OECD countries. The Italian growth rate is higher than the OECD average for the index related to educational resources and IT tools made available by schools, the use of ICT in teaching and the use of active learning practices in science disciplines. The brakes on the overall index of educational innovation are instead the training processes for teachers, which remain more tied to traditional methodologies.

⁶ Recommendation 2 called on Italy to take action in 2019 and 2020 to, inter alia, improve educational outcomes, including through targeted investments, and promote skills upgrading, in particular by strengthening digital competences. Italy 2020 Country Report of 26 February 2020, European Commission.



Source: Eurostat (EU Labour Force Survey 2021)

Notes: the indicator captures the share of 20-34 year-olds who had a work experience of at least 1 month as part of the curriculum and have graduated from medium level VET (upper secondary or post-secondary non-tertiary) in the last 3 years. Low reliability of data for Germany, Cyprus and Hungary. Data are not available for Bulgaria, Denmark and Latvia

Only around 30 % of learners are exposed to WBL. By contrast, in Germany, the Netherlands, Spain and Austria, over 90 % of learners in VET have gained work experience as part of their curriculum.

Remote training could greatly improve the potential to reach these objectives by smartly integrating digitalisation: use of immersive technologies through virtual and augmented reality and artificial intelligence. Some best practices are being experimented in the Italian VET system, and mostly in the field of initial training or IVET, the difficulty linked to practical training activities remains, especially for dual learning and VET.

4.2 Distinguishing features of VET in Italy

The Italian context is characterized by the presence of multiple institutional actors at national and regional level, as well as by the significant role of the social partners.

Title V (art. 117) of the Constitution provides for the ownership of the State, the Regions or cooperation mechanisms between the various institutions, in relation to the type of training offer:

the State establishes the general norms and determines the fundamental principles of education;

regions have legislative power on VET;

education falls within the scope of the concomitant legislation, without prejudice to the autonomy of educational establishments.

In the light of the interweaving of the various areas of intervention, the Ministries of Education and Labor and the Regions defines formal agreements within the framework of the State-Regions conference. The aim is to define issues of common interest, albeit at different levels of responsibility.

The implementation of Title V has not yet been completed; this increases the interweaving and complexity of the different levels of governance of the system.

VET in Italy includes the following main features:

- the ministries of education and labor dictate the rules and general principles, but the regions and autonomous provinces are responsible for vocational training programs and apprenticeship-type programmes;
- there are three types of apprenticeships with one type not corresponding to any level of education, but only leading to professional qualifications recognised by the labor market
- continuing VET is aimed mainly at the employed;
- The recent adoption of the national qualifications framework (January 2018) acts as a catalyst for the redesign of qualifications.
- Challenges that the VET system has to face
- integrating youth training and employment into a dual system by strengthening apprenticeships;
- strengthen apprenticeships for higher education/training;
- Simplify current legislation and increase the attractiveness of apprenticeships for businesses;
- Develop innovative pedagogical methodologies;
- reduce early leaving from education and training;
- trainers and trainers;
- promote the evaluation of outcomes (processes and outcomes) of education and training through the implementation of a national plan for quality assurance in education and training and in line with the recommendation of the European Quality Assurance Reference Framework quality for vocational education and training;

Train staff involved in all stages and procedures of validation of non-formal and informal learning;

- create public awareness of the potential benefits of validating non-formal and informal learning, especially for those target groups who are likely to benefit the most;
- improve the cost-effectiveness of validation of non-formal and informal learning procedures;
- improve monitoring of VET outcomes and tailor VET provision to the training needs of each learner;
- Develop analytical tools for evaluating the impact of training policies.
- With regards to CPD specifically, the following challenges and issues should be addressed:
- further develops existing skills forecasting tools and methods and better tailor training provision to skills needs;
- support workers' participation in training, remove barriers that prevent them from training and motivate the most vulnerable workers, especially low-skilled and over-50s workers to participate in training activities;
- improve the capacity of training institutions to offer programs that improve technological and especially digital skills;
- strengthen the involvement of the social partners in company decisions relating to training;
- consolidated the certification of skills acquired through continuous professional training;

- improve coordination and networking between the various stakeholders involved in lifelong learning at national and regional level.

At upper secondary level, the following VET programs are offered:

- five-year programs (EQF level 4) in technical schools leading to technical education diplomas; in vocational schools leading to vocational education diplomas. The programs combine general education and VET and can also be delivered in the form of alternance training. Graduates have access to higher education;
- three-year programs leading to a professional qualification (EQF level 3);
- four-year programs leading to the professional technician diploma (EQF level 4).
- At post-secondary level, VET is offered as higher technical education for graduates of five-year upper secondary education programs or four-year vocational education and training pathways who have passed the entrance exams:
 - higher technical education and training courses (IFTS): one-year post-secondary non-academic programs leading to a certificate of higher technical qualification (EQF level 4);
 - Higher Technical Institutes (ITS) programmes: two- or three-year post-secondary non-academic programs leading to a top-level technical diploma (EQF level 5).
- VET for adults is offered by a number of different public and private providers. It includes programs leading to upper secondary VET qualifications to ensure advancement opportunities for low-skilled people. These programs are provided by the Provincial Centers for Adult Education (CPIA) under the ministry of education.
- Continuing VET is mainly aimed at employed people. Most of the resources for continuous training have been planned and managed by the regions and autonomous provinces (which mainly used the regional operational programs of the European Social Fund as a source) and by the social partners (through the inter-professional funds).

Continuing education programs pursue three objectives:

- maintaining/updating skills and skills;
- business competitiveness and innovation;
- Mandatory Training.

Compulsory training includes compulsory courses relating to specific job requirements, for which the employer must ensure that a worker receives appropriate training to the needs and conditions of the workplace. This is mandatory workplace training (mandatory for the employer by law, for all employees in certain professions, e.g. health and safety). There are also some legally required training courses for some dangerous or potentially dangerous tasks (driving a forklift), training for preventive services (e.g. occupational doctors may be required by law to undergo regular training,

In VET there are:

- VET teachers;
- VET trainers;
- company tutors.

The professional profile of teachers is much more clearly defined and regulated than trainers as regards training, recruitment, tasks and competences. Furthermore, when it comes to the actual didactic part of their

activities, teachers are mainly defined as ‘content experts’, while trainers are ‘process experts’ who can play a variety of roles depending on the situation (e.g. tutors, trainers, group leaders, coaches, etc.). In fact, trainers are mainly required to support the learning process by guiding and motivating the trainees, to strengthen the link between training and work and to update the work skills of the trainees.

Teachers are nationally regulated and are employed by the ministry of education. They work in state vocational schools and adult education centres. Some also work at higher technical institutes. The minimum requirement for access to the teaching profession is now a five-year degree in specific teaching subjects (mathematics, chemistry, foreign languages, etc.); followed by a One-Year Placement (Active Teaching Traineeship (TFA)) at Schools. Active teaching traineeship courses last 1 500 hours, are equivalent to a European Qualifications Framework level 7 qualification and access to them is limited. The number of students is determined on the basis of vacancies in teaching each subject and on an admission test.

The trainers work mainly in the professional training centers managed directly by the Regions and Provinces, as well as in private centers of professional training accredited by the Regions. Some trainers also work in companies, consulting agencies, non-profit organisations and public employment services. There is no nationally recognised register of trainers or formal recruitment procedures, with the exception of public training centers for which a public examination is required. As regards the requirements for access to the training profession, the national collective labor agreement only establishes

minimum requirements: degree or secondary school diploma and professional experience in the reference sector. Furthermore, it establishes that — regardless of the role played in the different training contexts (tutor, counsellor, coordinator of trainers, etc.) — trainers regularly participate in professional updating programmes, both inside and outside the institutions where they work.

The company tutor is the key figure for the apprentice in workplace training. According to the consolidated text on apprenticeship (Legislative Decree 167/211) the company tutor must possess ‘suitable training and skills’, according to national legislation or, failing this, a national collective labor agreement. The minimum skills that the company tutor must possess are:

- know the regulatory contact person interested in Alternation systems;
- understand their functions within their role and the contractual elements of the sector and/or company in terms of training;
- manage the reception of apprenticeships, promoting their inclusion in the company environment;
- manage relations with people outside the company involved in the training of the apprentice, in order to favor a positive integration between non-company training and work experiences in the company;
- design and support learning and socialisation paths at work, Favoring the acquisition of the skills required by the job and facilitating the apprentice's learning process during the entire training course;
- Evaluate the learning and skills acquired, as well as the progress and results achieved by the young apprentice during his professional integration and development, with a view to issuing the relevant certificate by the company.

4.3 Experiences and Best Practices in Distance and Online Learning in Italy

The virtuous cue on the theme of Distance Learning in general was born in Italy regarding the emergency COVID crisis and was implemented by "Digital Solidarity" initiative launched by the Minister for Technological Innovation and Digitalization in collaboration and with the technical support of Agid (Agency for Digital Italy), with the aim of reducing the social and economic impact of the coronavirus emergency thanks to innovative services and solutions offered to citizens and businesses in our country.

The initiatives, services and solutions made available by companies and associations have the common goal of improving the lives of people who at this time are forced to change their habits by allowing:

- Work remotely, through fast and free connectivity
- Use advanced smart working platforms;
- Read a newspaper for free without going to newsstands or a book without going to the bookstore on your smartphone or tablet;
- Keep up with school and training courses.
- Among the free services provided, categorised as eLearning, emerge, free language courses, Greek and Latin courses that consist of free videos in Latin to help teachers prepare lessons and online material for students and lovers of classical languages, GrecoLatinoVivo.

There is also free access, an aid made available to schools that have difficulties in moving from traditional to digital teaching and that provides students of schools in difficulty, access free of charge to the e-learning platform Futura L.M.S. of iScuola®;

Perlego offers unlimited access to over 300,000 academic and university degrees for 6 weeks while university libraries remain closed. Readers can read both online and offline and on any device.

Alpha Test offers free of charge for 14 days AlphaTestAcademy.it, the e-learning platform for preparation for university admission tests.

Mondadori provides access for 3 months to the New Devoto-Oli Digitale Edition 2020, FEM Distance Didactics, offers new digital challenges and online learning educational experiences, authentic tasks, entirely manageable online to integrate teachers' distance lessons or to be carried out in Home Schooling for students and parents.

Amazon offers free one-hour and thirty-hour training webinars on STEM subjects for primary and secondary school teachers. The courses cover the opportunities of Creative Learning and Coding applied to teaching, Free Course "How to face and overcome the crisis" and 1 live business coaching session with one of our coaches to analyse the scenario and make a business plan to face and overcome the crisis.

EF English Live provides all its English courses online. The service is aimed at private individuals and by accessing the school you can take advantage of 2000 hours of free multimedia content for learning English and improving reading, writing and speaking.

YouProf offers the advice and support of experts in favor of the school and its teachers, to help them create and manage their own YouTube channel, upload their educational contributions and take lessons from a distance;

Teyuto is the video on demand platform in Saas mode (Software as a service) that allows you to create and manage a proprietary channel whose technology allows the creation of a proprietary video channel on demand for schools and universities;

JobFarm provides free e-learning on digital skills for a month.

eDocendo offers a social eLearning platform based on the structure of the Italian school. Pupils are divided into classes and each class has its own subjects to which teachers can access. There is also support teacher functionality. Teachers are automatically placed in Class Council groups to manage internal communications, and cross-cutting communication groups (e.g. departments) can be created.

Interlingua Formazione provides free language courses, webinars, videoconferencing lessons in English conducted by trainers and native-speaking coaches, on particularly topical issues such as change management and resilience;

Math Camp allows you to learn mathematics through quality content, explained exercises and interactive graphs to visualise the most complex concepts. Online classes are completely free and are aimed primarily at secondary school students.

Axios provides the "COLLABORA" Platform for Distance Teaching, which offers the possibility of interaction for the sharing of lessons, assignment and correction of tasks remotely.

POK Scuola Digitale is an online teaching platform for Italian secondary schools and secondary schools, designed to support teachers, students and their families. For school closures, PoK Scuola Digitale provides free access to all.

Data 360.It offers a free online training course on Privacy/GDPR with quiz and certificate issued valid for the purposes of European Regulation 679/2016. Suitable for professionals, collaborators and employees who process personal data, for whom training is required. Digital360 also makes available the registration of the webinar "Smart Working at the time of the Coronavirus: the testimony of companies and how to transform it into real change" and 2 video courses, one for private companies and one for public bodies, to support people in the adoption of Smart Working, available upon registration. The video course for public bodies "Smart Working | Practical tips to enable agile work" can be accessed on the FPA Digital School platform (always necessary to register).

Docety allows the free use of the platform that provides all the tools for the digitisation of a professional, with: Counseling one by one, Interactive seminars for handshake, Video courses, Gamification, Certifications.

Cambridge University Press makes available free of charge to Italian teachers and students all their digital books for teaching the English language in the secondary school of first and second degree. The National Agency for Digital Transformation provides schools and universities with its infrastructure, eLearning platforms, remote working tools and the necessary support to ensure the continuation of distance school education. Cisco and IBM for schools of every order

and degree, make access to Cisco Webex available for free: the platform that allows you to give lessons remotely, make students and teachers interact, collaborate and share documents and data. Support and support from IBM volunteers. Cisco also offers a series of Cisco Networking Academy courses that you can enroll for free and that you can follow with an online platform.

4.4 The most used platforms

Among the various ways of “doing e-learning” we have chosen to analyze the LMS (Learning Management System) and LCMS (Learning Content Management System) platforms because they are specifically designed and structured to manage online teaching activities and are the tools closest to traditional teaching. The difference between LMS and LMCS lies in the fact that the learning management system oversees the distribution of online courses, the enrollment of students, the tracking of online activities while the learning content management systems manage the contents directly. As can be deduced, therefore, the two systems often work in association.

In this report we have considered some of the most popular platforms in the world and different aspects have been highlighted for each one. First, we wanted to frame each platform from a chronological and geographical point of view, indicating if it is developed, thanks to which and highlighting the social context and the underlying philosophy. A second analysis aims to draw a map of the diffusion of each platform. This factor is very important both because the number of users is directly proportional to the possibility of interaction between them, and because (especially for Open-Source software) solving technical problems, questions, software Malfunctions (if there are any) becomes very easy if millions more users use the same LMS.

The structure of the platform deserves further study: how the interface looks like, such as the didactic or personal spaces, how courses can be implemented or followed. To help us in this we have used some images that show the environment under analysis. Then we examined the tools in favor of teaching: if there is the possibility of uploading/downloading audio, video, pdf files, etc., if tests and questionnaires can be created, if glossaries, wikis, links to other websites are available, what are the reporting tools (questionnaires, surveys). This section also shows the type of communication used: whether it is synchronous or asynchronous. The accessibility analysis will be directly consequential: the possibility of effectively accessing

a website, to its interface and its content in different situations (ultra-fast connection, from home, by a blind person, use of an old browser). To evaluate this aspect, it is important to know whether the services provided by the software can be accessed both from fixed technology and from mobile devices: iPhones, smartphones and tablets. Finally, we explored the social aspect: collaboration plays a key role in teaching. Creating discussion forums, groups and blogs allows individuals to interact, collaborate and exchange content making the creative and stimulating environment. From here you can also guess the type of training provided: self-learning, assisted or collaborative. The self-learning typology is based on the provision of content and minimal support from tutors: it is oriented towards individual learning.

Assisted training includes both moments of individual study and moments of interaction with an expert, in order to assist and answer any questions. The third modality is presented as an evolution of the second and is completely centralised on sharing and collaboration: collaborative learning occurs when there is a real interdependence between the members of the group and is based on communication activities. In this case the teacher becomes the moderator and animator of a learning community The third modality is presented as an evolution of the second and is completely centralised on sharing and collaboration: collaborative learning occurs when there is a real interdependence between the members of the group and is based on communication activities. In this case the teacher becomes the moderator and animator of a learning community The third modality is presented as an evolution of the second and is completely centralised on sharing and collaboration: collaborative learning occurs when there is a real interdependence between the members of the group and is based on communication activities. In this case the teacher becomes the moderator and animator of a learning community

Among the various platforms on the market, we have selected the most widespread among Training Institutions, discarding the platforms created to satisfy business needs. We have considered the classics made by Capterra (<https://www.capterra.it/>), Academy of mine (<https://www.academyofmine.com/>), Wikipedia (◀) to choose which platforms to consider.

A list of ten platforms is presented below.

Ilias



ILIAS is undoubtedly one of the first Open Source LMS systems ever developed; the first prototype was born in Germany, in the University of Cologne, in 1997, while the final version of the product saw the light in 1998. The basic concept of this platform is that of an open LMS: the goal is not to limit offer a product for organising and structuring content in courses and classes as a traditional training model would like, but rather to create a library of content of various kinds to be shared with the open world, i.e. with anyone and not just with users of the system, as a common knowledge platform would like.

Ilias has tools for designing and creating educational content, for student verification (such as exercises and tests) and a series of collaboration and sharing tools such as forums, chats, wikis, internal messaging (email) and sharing of documents. Teaching staff, authors, tutors and administrators have the so-called "Personal Desktop", an environment through which they can organise and structure courses using the tools and contents available. The evaluation process takes place 10 through surveys, questionnaires and exercises. Arrived in Italy in 2003, today Ilias is a multilingual product and supports the SCORM 1 standard. It also has a SOAP2 interface for communication and integration with external systems. As for technical support, there it is only the possibility of contacting the Italian coordination team of Ilias by email. Despite this, the software is used by important companies and public institutions all over the world and among the Italian ones we mention the Copernicus Institute, Adige Spa, University of Bergamo, Santander Consumer Bank and the National Forsense Council.

Dokeos



The history of Dokeos is quite jagged. Thomas De Praetere, originally a philosopher at the Catholic University of Louvain (Belgium), created an e-learning system he called Claroline. Since the University patented the name, he broke away and founded Dokeos. Other Universities and Programmers will want to develop a project with different characteristics compared to the ideas of Professor De Praetere, then in 2010 they will found Chamilo. This impoverished the number of Dokeos programmers who, at the time of the development of version 2.0, will avoid publishing the new code in advance (which will still be open source). From version 2.0 there will be two versions of the program: Dokeos Community and Dokeos Suite. In the first case we will have free software, the result of the work of hundreds of developers in more than 5 countries, distributed in more than 20 languages and 60 countries worldwide. The second solution is only available in the cloud, providing an integrated, powerful and easy to use service. It contains additional features and services compared to the Community Edition: convert PowerPoint presentations into training modules, conduct video conferences, organisation assessments and exam certifications. Dokeos is a distance learning management tool that is structured not only as a virtual classroom but also as a networking. Dokeos is a distance learning management tool that is structured not only as a virtual classroom but also as a networking. Dokeos is a distance learning management tool that is structured not only as a virtual classroom but also as a networking.

Among the main features:

- Documents: a sort of customizable archive of teaching materials, to be made visible to one's students only when it is educationally useful;
- Projects: constitute a point of reference for the students for the upload of their products;
- Test: allows the teacher to administer tests of various types, with the advantage of an automatic and immediate correction;
- Questionnaires: allow you to manage surveys;
- Links: manages a collection of links that the teacher can also sort into categories;
- Announcements: allow the teacher to reach all course users via e-mail and, in any case, to keep a copy of the announcement in memory;
- Forum and chat: they are interaction tools that allow students to interact with the teacher in the typical ways of these tools;
- Email exchange: allows you to manage the exchange of e-mails and attachments;
- Educational paths: a sort of container where the teacher can insert different types of materials, including tasks to be carried out.

The software is compatible with AICC, SCORM 1.2, SCORM 2004, tested on Linux, Windows, Unix and Mac OS X. It is possible to request online assistance for any technical or functional problems, however assistance is guaranteed only for Dokeos tools Suite.

Chamilo



is an Open Source product that was developed thanks to the support of a non-profit organisation founded in Belgium in 2010, the Chamilo Association. This relatively new e-learning platform just 5 years after its debut has seen the continuous growth of its community at a constant pace (already 11 million users worldwide) based on one concept: make e-learning easier to use for all institutions. As regards the educational aspects, Chamilo is implemented in such a way as to allow the teacher to choose his own teaching method: the teacher can take control or simply disappear so that the contents acquire by themselves a significant place in the experience of the student. Supporting the software is a growing list of documentation available on websites: YouTube, SlideShare, Twitter, Vimeo. Chamilo is used by students from 6 years to 80 years of age, in public and private settings, within educational and business institutions. The latest version of Chamilo introduces more than 100 new features compared to the previous one and among these are particularly useful: the gamification features that allow students to receive points and badges, a search page to find certificates issued by the institution, a report in PDF format of the gradebook, one-to-one videoconferencing of work from mobile devices, online store, online editor of mathematical formulas powered by JavaScript, a Skype plugin, a plugin for sending SMS to students, the ability to export/import surveys/quizzes/tests, a new progress report on learning paths. There is also a support forum to respond to any problems and needs from users. The level of accessibility satisfied is the highest (WAI/WCAG AAA level); it is possible to import and export SCROM content, it is translated into 58 languages and portability is tested on Linux, Windows and Mac systems. Although the social aspect is not entirely neglected, the mobile application is not currently available. Despite this, the institutions that have adopted Chamilo are numerous, an example is the University of Grenoble (France). It is possible to import and export SCROM content, it is translated into 58 languages and portability is tested on Linux, Windows and Mac systems. Although the social aspect is not entirely neglected, the mobile application is not currently available. Despite this, the institutions that have adopted Chamilo are numerous, an example is the University of Grenoble (France).

Clarolines-CLAssROom onLINE



Claroline is an Open Source LMS technology platform, licensed under the GPL (General Public License) and responsive design interfaces. This particular design makes it possible to adapt the contents of the platform to any resolution and orientation of the screen on which one is browsing and therefore if the user switches from his computer to an iPad, the site should automatically adapt to the new resolution. However, in case you want to access the platform from mobile devices, there is the Claroline Mobile application with which you can download or view les uploaded by teachers and receive the latest notifications from the platform. Unfortunately, the reviews on the mobile application are not very positive — the overall rating is low. The platform is used in approximately 101 countries and is available in 35 languages. The Claroline project was initiated by the Université Catholique du Louvain (Belgium) in 2001; developed initially by a few pioneers and supported by the Foundation Louvain, the Claroline project is now controlled by the Claroline Consortium, which brings together dozens and dozens of institutions and universities from countries around the world, within an international non-profit association, which every year organises a convention with the developers and users of the product to discuss and improve. The real innovation initially brought about by this platform concerned the way of teaching. In fact, for fifteen years most educational platforms have developed following the classic training model: a teacher who has the knowledge and transmits it in different ways to the students in order to promote their learning. That is to say that the tools were all in favor of the teacher, to create and manage courses. Claroline Connect was created in a different way: even the student will have his own personal space, similar to that of the teacher. Users, students or teachers, can propose activities, forums, wikis, blogs, manage their interactions and resources, manage access based on learning needs and objectives. Claroline Connect leaves room for the student to learn and make him the protagonist of his learning. The platform is based on three pillars: That is to say that the tools were all in favor of the teacher, to create and manage courses. Claroline Connect was created in a different way: even the student will have his own personal space, similar to that of the teacher. Users, students or teachers, can propose activities, forums, wikis, blogs, manage their interactions and resources, manage access based on learning needs and objectives. Claroline Connect leaves room for the student to learn and make him the protagonist of his learning. The platform is based on three pillars: managing its interactions and resources, and managing access based on learning needs and objectives. Claroline Connect leaves room for the student to learn and make him the protagonist of his learning. The platform is based on three pillars: the “actors” and the groups they represent; Activity spaces including multimedia documents, forums, wikis, video conferences, wikis, concept maps, exercises; Activities such as projects, quizzes, polls. The actors (students, teachers and collaborators) can perform many types of activities such as: exercises, projects, evaluations, research, discussions, debates, collaboration, sharing. Each user has a personal office and activity area.

Schoology



was developed by a startup in the New York City area, which received a large grant in 2009 from the Venture Capital firm Meakem Becker, and has become a point of reference in the context of Scuola Normali Superiore for educational purposes. The platform was created on the inspiration of Facebook: interface and functions follow its appearance with the presence of posts, status updates, sharing and instant updates. The upload capacity of the service is discreet and provides 15 Gb free for every 100 students; registration is simple and immediate and has no cost for the basic version. Teachers can enter the name of the school and create the courses they want, involving more or less numerous groups of students. The students, in turn, they will be able to register using a specific code that will associate them with the course that the teacher has prepared for them. There is also an application thanks to which it is possible to access the contents of the platform even from a mobile device.

The service is provided free of charge, with special features that are added if you subscribe to a monthly or annual subscription. Schoology's premium features allow you to manage additional types of learning activities and create a variety of detailed reports for evaluating the course and individual student performance. Paid features also include a mobile messaging system to communicate with students' families, electronic records, increased storage space, an always-on call center for problem solving, customisation of the platform with the theme and the graphics of the school and other small tricks that allow you to create a truly complete learning environment. Among the main functions: the events calendar, the possibility of managing different courses and assigning different scores to the participants, the evaluation of online training experiences, the uploading of documents, audio and video. To date, the Italian version of Schoology is not yet available and this is the reason why it has not caught on in Italy; instead it is available in English, Spanish, French, Japanese and Malaysian, reaching 8 million users (mostly schools) in 200 countries. We decided to include this platform in the thesis work because various trials conducted in the United States show the effectiveness and usefulness of Schoology, which ranks as an excellent tool to keep under close observation while waiting for it to be made available in other languages. To cite two examples above all, Schoology has been employed inside the Cleveland Institute of Art where it led to a significant improvement in student involvement and participation, contributing to the creation of a more interactive and enjoyable teaching. Even the Minnetonka Public Schools have recorded considerable benefits regarding the level of collaboration and involvement in school activities with the introduction of the platform: in particular, the great simplicity of use and the immediacy of Schoology are stressed both from the administrator side and from the user side.

Sakai



2003, four US universities (MIT, Michigan, Stanford and Indiana) agreed to pool their human and financial resources to create the Sakai project. It is a completely open source collaboration learning platform; with an ECL12 license, it is intended for university environments, both for public and private research institutions, and supports both the activities of students, teachers and researchers. It is currently available in more than 20 languages, including Italian, and is adopted by 1.25 million students in the United States and 4 million students globally. Further, Sakai makes use of SCROM standards enabling interoperability and accessibility of web-based learning content; also uses a SOAP architecture in order to create interoperability and sharing between Sakai and other software. The Sakai community is committed to ensuring that all features are accessible and usable by the largest number of potential users, including people with disabilities: the software meets the WCAG accessibility levels (A,AA). Emerging standards and best practice design techniques (such as the WAI-ARIA Suite) that support emerging adaptive technologies are also used.

Sakai includes all the learning tools and its flexibility allows you to use the software according to your needs: for courses, for individual and group study, for research activities or for collaborative projects; it is software that can support virtually any type of teaching approach or learning style. You can customise the environment according to your needs: with a flexible and open design, you can change the look, functionality and tools according to what teachers and students want to have. The software provides a lot of tools in favor of teaching: gradebook, tests and quizzes, assignment tools (evaluations, recognitions, awards), lesson generator, syllabus (publish a summary of the content and requirements of the course). Instead, as communication tools we will have: calendar, chat tools for both private and group communications, forums, dropboxes for sharing files, podcasts from audio or video files, survey tools, wikis, blogs. It is possible to view web content through the Firefox, Safari, Chrome and Internet Explorer search engines, however the site does not contain information about the possibility of downloading educational content such as videos, files and audio. For assistance and support, you can turn to the Sakai User Community or you can opt for different levels of service, hosting and support provided by commercial affiliates, depending on your needs and preferences. Although in Italy this platform has not found yet a thriving ground to develop, some of the best universities in the world have decided to adopt this software; examples are the Universities of Amsterdam, Newcastle, Madrid and Yale.

EFront



efront began to be developed in 2001 in Greece, however the first version of the product was released only in mid-2002. The software was designed as a content manager oriented towards the creation of online courses, with multiple interaction possibilities and an interface graphics based on an intuitive icon system. Currently available in 39 languages, it is compatible with the SCORM 1.2 and SCORM 2004 specifications. Various characteristics of the platform (for example, management capabilities and organizational structure) make it particularly suitable for use in management environments, particularly in Human resources management. It stands out for the extreme simplicity of configuration and start-up, for the innovative and user-friendly graphical interface. Currently eFront is available in three versions:

Open Source: assisted by Systema Consulting;

Educational: dedicated to training companies;

Enterprise: dedicated to businesses.

Systema Consulting distributes and implements solutions based on eFront Learning but it is a paid service. With the eFront learning software it is possible to build eLearning courses through documents, presentations, videos, images (all SCORM content). With the eFrontPro version it is also possible to consult web material from YouTube, Wikipedia and other sources. In addition to the ability to manage users, lessons, courses, assessment tests, les, surveys, there are also some useful communication tools: Forums, chats, access to social networks. You can award certifications and awards or activate student support modules. At the forefront is the notification system that can be customised via email. EFront is designed with a responsive design to be usable from any mobile device; although detailed information on the effective usability of the product via mobile technology is not available online.

Among the Universities that have adopted eFront we mention the University of South Carolina which manages more than 2000 participants through this platform.

Atutor

ATutor is an LMS born from a project developed in 2002 with the collaboration of the Research Center for Adaptive Technologies of the University of Toronto. This center is known internationally as a leader in the development of technologies and standards that ensure people with disabilities have access to the opportunities provided by e-learning. Today ATutor is used worldwide and is available in more than 30 languages.

ATutor is unique for its accessibility features: it is the most widely used e-learning by the blind and visually impaired thanks to the state-of-the-art interactive whiteboard. ATutor, compliant with international accessibility specifications and considered suitable for educational use according to software evaluation criteria established by the American Society for Education and Development (ASTD), is widely used in national and international projects. Furthermore, courses can be accessed from a wide range of mobile devices: it is tested on iPhone, Android, Blackberry and various tablets. With regard to teaching, the ATutor system contains a list of all courses present and accessible, called Browse Courses. If a course is Public, it can be accessed without having to log in first, as opposed to Protected and Private courses. Private courses are only accessible to those who have been approved and enrolled in the course through a Master List. Only teachers can implement courses. Students, if enabled, can request the teacher to create a course. With the creation of a course, the tools to support teaching, the Course Tools, are also configured. Among these we will have: Forum, glossary, site-map, links to websites, questionnaires, tests & surveys, content export, chat, administration, inbox (private messaging) and various additional packages. In this regard, the possibility of inserting multimedia content is particularly important, through a link to youtube or vimeo or by uploading audio or video content with FlashMedia; Furthermore you can insert captions in the video contents, add further information visible with the detailed view (this is the case of links to forums, web pages, words and phrases in the glossary, formulas). Through the Enrollment list (list of enrolled students) a teacher can decide who has access to a particular course and who doesn't. The teacher can grant one, two or more students administrative privileges such as: administering contents, creating or carrying out tests, forming groups, intervening in forums and chats. These tools are particularly useful for teaching assistants or when there are multiple teachers for the same course. The teacher can also report students who have completed the course as "Alumni". These can participate in activities to support new students. The gradebook function provides access to the class register with which a teacher can enter test grades and assignments. You can also implement student lists and export them. Other properties are instead managed directly by the administrators of the ATutor system, such as the updating of the limitation on the uploaded les and the space limited to the course. An ATutor administrator should be contacted if these properties need to be changed in any way. As far as communication between users is concerned, there is an environment entirely dedicated to networking: ATutor Social is a "social" environment in which users can develop a network of contacts, create and participate in groups and insert a public profile. It is possible to insert photos in different contexts: personal albums (private or shared) or related to courses. It is possible to connect the contents of ATutor Social to other social networks such as Facebook, Twitter, LinkedIn, via links. You can choose from hundreds of widgets, games and applications to create a truly personalised networking space.

Furthermore, it is possible to exchange private messages with other course users through the Inbox, communicate through the forums and export the latter to create an archive of discussions and facilitate the learning of future students. Teachers can hold both individual and group video conference lessons. In support of administrators and teachers there is the Handbook, a guide with all the necessary information for the use of ATutor, visible on the internet or printable. Furthermore, a YouTube channel is available for the use of multimedia material and some support forums.

Docebus



docebo, from the Latin docet, to teach, was founded in 2005 by Claudio Erba, still today the company's managing director. According to the data reported on the platform's website, there is an annual percentage increase of 50 %, it is distributed in companies such as Mediaset and the Sky television group and far exceeds the 300,000 users being trained through its E-Learning platform. Sold in over 70 countries and available in over 30 languages, funded by venture capital funds, Docebo has offices in Europe, Asia and North America. Docebo was named one of the top 10 SaaS eLearning platforms in the world, and one of the top 3 in the corporate training industry. It is a GPL V2.0 licensed software and the cost to obtain the latter varies according to the number of active users per month. With Docebo there is the ability to customise the platform by inserting your company or project logo, customise the graphics by aligning them with those of your company, change the layout of the Home Page, customise styles, formatting, layouts and graphic effects for documents, activate and deactivate the platform modules. In the User Management area it is possible to insert new users and manage the previously inserted ones; you can add as many users as you want. Some very useful tools in user management are: Activate and deactivate platform modules. In the User Management area it is possible to insert new users and manage the previously inserted ones; you can add as many users as you want. Some very useful tools in user management are: Activate and deactivate platform modules. In the User Management area it is possible to insert new users and manage the previously inserted ones; you can add as many users as you want. Some very useful tools in user management are:

The "organisation chart" function to divide users into branches according to their role or geographical origin;

- Additional fields to enrich the user profile with information such as gender, scale code, nationality, date of birth or by uploading a file;
- For a limited number of users it is sufficient to upload a file containing all their data. In the courses section it is possible to create e-learning, classroom or webinar courses and manage the options for each course. 15 layout of a text and placement of the various graphic elements.

Classroom courses are an additional paid option and require the new Classroom Training APP to be activated. It allows you to develop a training program that integrates e-learning with traditional training. You can plan, manage and track a course that will be taught in different sessions and locations. You can create a webinar course using the videoconferencing systems integrated with Docebo (Adobe connect, GoToMeeting, WebEx, SkyMeeting) or create the session with alternative systems. With this type of course you can also add written tests and questionnaires. E-learning courses, which are the most used by teachers, are highly customizable. It is possible to organise the course environment by adding comments, lessons, video conferences, forums, blogs, teachers. Everything is displayed on one page and users will easily find what they need. Even students have the possibility to create blogs through an application of the basic package. The reports function allows you to analyse the activities performed by users of the platform. Docebo is compatible with the SCORM 1.2 and SCORM 2004 standards and offers the possibility to connect to some video conferencing services, such as Teleskill, Dimdim and Intelligere. In addition, the Docebo Mobile Application, for iOS and Android systems, was developed with Open Source tools and is released under the Open Source BSD license. It allows you to follow courses created specifically for smartphones and tablets. All student actions are tracked by the software,

Moodle



The first free version of Moodle was released in 2001 by Martin Dougiamas, however in 2004 the Moodle Partner Program was launched and this time the platform expanded to 70 other partners, spreading to many parts of the world. From now on Moodle is expanding like wildfire: translated into more than 120 languages, with its own official application. Moodle enjoys a vast user base which includes: Universities, High Schools and Primary Schools, Government Departments, Health Organisations,

Military Organisations, Airports, Freelancers. It is open source software with the GNU-GPL license, therefore free and modifiable by any program. This philosophy has led to the formation of an international community of people who work on the platform and use it for their own activities, ensuring constant updating. Furthermore, for questions, problems and Malfunctions of the software there is an international community that provides excellent support for using the program. Moodle's structure is organised around courses. Usually the material is presented in macro-blocks and the courses may contain information concerning a year of study, individual sessions, depending on the teacher's needs. The student can enroll in different ways: he can self-enroll, he can be enrolled manually by the teacher or automatically by the administrator. The courses are organised according to the categories: Physics, Chemistry, For example, biology may fall under the science category. With regard to users, it must be specified that you do not access Moodle as a student or teacher; everyone accessing Moodle has no special privileges until assigned roles by the admin, based on individual needs. A teacher can implement the material in three different ways: Activities, Resources and Blocks. An activity is a tool through which students learn by interacting with each other or with the teacher (forum, quiz questions, collaboration in a wiki). Some activities are standard but you can implement extra activities downloadable from the administrator. A Resource is an item that a teacher can add to a Moodle course to support learning, for example a file, a video or a website link: the student can simply watch or read rather than participate. Even in the case of resources, there are both standard and extra ones. A Block is an element that the teacher usually adds to the side of the course and provides additional information or links to facilitate learning (a sort of widget). Implementation lessons and collaborative learning activities in the form of handouts, activities, and exercises using Book and Page resources, or by inserting drafts or presentations. Each didactic component can be inserted through the "subjects": real constituent parts that guarantee the modularity of their contents and improvement according to the teacher's needs. Topics can be added or removed at the discretion of the teacher. You can also use modules such as: forum, wiki, blog, glossary, database. Organise the evaluations through the modules: quiz (with which you can choose multiple choice questions, short answer, numerical answer), task (which consists of correcting an essay presented by a student or by a group). Student evaluation can take place through the setting of objectives, i.e. levels of knowledge that can be associated with the execution of a task or the completion of an activity. Manage the class in subgroups; in this regard, Moodle now offers teachers the possibility to distribute badges to students: these are virtual certificates (not legally valid) of successful participation in the course, which can be obtained by completing a course or an activity related to it. Plan teaching activities thanks to the calendar. On the student side, what they can be traced back to the concept of active learning, which means being able to: Build (i.e. represent what they know) through blogs, wikis, glossaries, tests, databases; Communicate, collaborate, share through forums, blogs and wikis. To make teaching activities even more participatory, it is possible to locally (i.e. limited to a single environment/course) give students some of the permits typical of the role of teacher.

4.5 Comparison between platforms

All the platforms listed above have been adopted both by companies, but also and above all by public institutions and also by a varied public such as that of the unemployed/looking for a new job. Another evaluation criterion will be two to the difference between open source or paid offer: although sometimes deciding to adopt one or the other solution is not really a “choice” because if you don't have the funds you are forced to opt for the free version, other times it can be a well-reasoned and conscious preference. Let's start by clarifying that in general the tools and functions of Open Source platforms are as valid and efficient as those of paid software, however the aesthetic aspect, usability and user experience are parameters which, in the first case, tend to be overlooked and this makes browsing generally chaotic. Also, compared to commercial platforms that usually don't require an installation, Open Source requires a good deal of technical skills. So, if we can consider the aesthetic aspect of secondary importance and take for granted the presence, within the project, of partners who understand IT, then we can also exclude paid platforms. This is the case of Blackboard and Docebo, both widespread in Italy, usable by both fixed and mobile technology, with an excellent assistance system, advanced social collaboration systems and which comply with the level of accessibility standards (AAA) but with costs that are at least thousands of euros a year. Furthermore, excluding the paid options of Dokeos and eFront, we will have basic versions that are poor in content and not very expendable. In particular, PowerPoint presentations, certification assessments, exams, video conferencing cannot be implemented in Dokeos and the support forum is not the best. Instead, as far as eFront is concerned, the Free version cannot be used by Training Institutions to which the Educational version is entirely dedicated, with all the necessary tools for teaching. Another fundamental aspect for a platform to develop in our country is that it has been translated into Italian: although knowledge of the English language is now a necessary condition for any student and professor residing in Italy, this can never completely replace our mother tongue. This explains why Schoology, despite the large audience reached in a few years in America, has not developed in our country. We must also add that Schoology, however advanced, does not support technology other than iOS and that storage space is limited (it is granted based on the number of

students). So, it needs further development before being compared to global giants such as Moodle or Blackboard. In conclusion,

A first comparison criterion will be the type of training provided by the platform: self-learning, assisted or collaborative. Let's immediately clarify that at the basis of Ilias there is the desire to provide an open LMS: the goal is not to limit oneself to offering a product for the organisation and structuring of contents in courses and classes as a traditional training model would like, but rather you want to create a library of content of various kinds to share with the open world. The situation is different for Chamilo and Sakai who structure teaching according to the will of the teacher: he can take control or simply disappear in such a way that the contents acquire by themselves a significant place in the student's experience. The positions of Claroline and ATutor are clearer in which the student has his own personal space, similar to that of the teacher and can propose activities, create forums, blogs, and interact with other users as much as the teachers. Finally we have Moodle, whose design and development are guided by a particular philosophy of learning which can be defined as "social constructionist pedagogy". It is based on the idea that people actively construct new knowledge when interacting with their environment. Social constructivism extends the idea of constructivism to a group of people building knowledge for each other, collaborating in creating a small culture of shared objects/concepts with shared meanings. For this reason, no roles are assigned when joining Moodle; There are no teachers in Moodle. They are all teachers within Moodle." (Mark Drechsler, one of Australia's major Moodle Partners).

Equally important is comparing the accessibility of the products: you may have the best software in the world in your hands but if it is not accessible it will be of little use. The WAI directives define three levels of site accessibility (A, AA, AAA) which are identified by increasingly restrictive standards on the technical characteristics of the sites themselves. These standards are established on the basis of two main concepts: the first leverages the ability to transform documents according to the browser's own characteristics or those set by the author for reading; the second on ease of orientation, navigation and understanding within documents. As regards Ilias and Claroline, an explicit reference to the question of accessibility standards was not detectable in the online documentation, while for Moodle this parameter varies according to the

template used. Despite this, for each template it is possible to add an interactive whiteboard between teachers and students and the accessibility WCAG never drops below the AA level. Sakai currently fulfills A, AA levels while Chamilo reaches max level. It should be noted that in this area ATutor has for years maintained the primacy of platform with the highest level of accessibility: developed under the impetus of the Research Center for Adaptive Technologies, it has the full functionality of the interactive whiteboard that allows users to draw without using the mouse and all the functions presented a written text and an audio file to give the possibility for the visually impaired to listen to it. Another comparison criterion related to portability and the use of mobile applications: the possibility of using software even from mobile devices has become a truly important resource in recent years. With Chamilo, Ilias and ATutor you can connect from both fixed and mobile technology, however the actual application for smartphones, tablets and iPhones is not active. Instead, Caroline Mobile is available with which it is possible to download or view i.e. uploaded by teachers and receive the latest notifications from the platform. Reviews about this app are not very positive — the overall rating is 2.1/5 points. Enhance features and user opinions related to Sakai Mobile, available for both iOS and Android devices. Finally there is the official Moodle application (Moodle Mobile) whose reviews, available on the web, are very conflicting: some evaluate it excellently, others less so. However, it is certainly the most downloaded and used application of all. Let's now move on to the evaluation of the assistance services provided by the various platforms. Being free software, the assistance service is never guaranteed; however, we could consider the vastness of the number of users that a software has to know if it has a simple support forum or a real community of users.

To avoid misunderstandings, let's clarify the differences between forums and communities. The discussion forum is a meeting point on the net in which internet users, by inserting messages in succession, can discuss various topics, reading the opinions of others and intervening to express their own. The Community, on the other hand, is made up of a series of areas each dedicated to a different topic: they are similar to small sites located within the portal where users can find everything concerning their favorite topics. So, the more extensive the Community, the greater the possibility of finding an answer to any problems. As seen in the table, Moodle holds the record for the best support provided, with an international community of 80 million

users. Ilias is supported by a Community of users but there is also the possibility of receiving paid assistance by contacting the Italian Ilias coordination team via e-mail, while paid services are available for Sakai and Claroline in addition to the Community. An online guide is available for Chamilo and the support forum has around 11 million users. On ATutor there is no current information about the number of users registered in the Community. Also relevant are the communication and social media tools that have developed extensively in almost all the platforms analysed in recent years. Among the various communication tools, we consider discussion forums particularly useful, the possibility of exchanging emails/private messages, synchronous and asynchronous audio and video communication and real-time chats. ATutor provides a separate space, all dedicated to users who want to create a network of contacts; it is a real social network: each user can create his own profile, participate in groups, share photos and discussions. The situation is different for Claroline and Ilias which have a Community through which teachers can occasionally interact to discuss the best way to teach through the use of the platform. Dokeos also has an enabled forum but there is little use by its users, except to ask for instructions when installing the software. The situation regarding Moodle is different: there are four main forums, all very active, entirely aimed at supporting students and allowing the exchange of ideas between teachers, through the publication of comments and the organisation of teamwork. About the exchange of files and asynchronous messages, for ATutor there is an inbox to send and receive private emails. The messages are automatically deleted by the system after short periods, there is the possibility to export and save them externally. No information is provided on Claroline in this regard, while Chamilo, Ilias and Sakai have an internal messaging system thanks to which e-mails can be sent both to individuals and to whole groups of people. Moodle, on the other hand, offers the possibility of exchanging messages in real time and synchronously with the progress of a course, in addition to the opportunity to call via Skype and add an interactive whiteboard between teachers and students. It also provides teachers with an easy way to exchange content with their students: Les can be uploaded and downloaded through Moodle. All that students need to have acquired the rights to the software (be enrolled).

About Sakai, Claroline and ATutor, websites do not contain information about the possibility of downloading educational content such as video and audio, but all three have web links to other sites (YouTube, Twitter,

Vimeo). Instead in Ilias and Chamilo documents can be shared and imported. 38 Last but no less important aspects to consider are the tools in favor of teaching. In this regard, there are actually no major differences: the six platforms we are analysing are all very technologically advanced and with almost similar functions. In fact, they all have assessment tools such as tests, questionnaires, surveys and reporting tools (questionnaires, surveys); in all of them lessons can be implemented through pdf, audio, video; all (with the exception of Claroline of which this aspect is not specified) have functions relating to gamification and therefore acknowledgments, “prizes” can be assigned; all offer a glossary, widgets, wiki, links to other websites, calendar with appropriate notification system. The only differences that can be found in this regard are minimal: for example, with some software it is possible to make videoconferences (Moodle, ATutor) while in others it is not (Ilias, Caroline).

Following the considerations made, it can be noted that a platform is clearly distinguished by the vastness of diffusion, support provided, technology, tools in favor of teaching and communication: Moodle aims to offer the user the possibility of making the platform and the courses created on it as rich and complete as possible, with ample possibilities for customisation and expansion through the integration of external software and tools. With this we are not stating that Moodle is the best platform in absolute terms, it simply turns out to be the one that best responds to the need we set ourselves at the beginning of this journey. tools in favor of teaching and communication: Moodle aims to offer the user the possibility of making the platform and the courses created on it as rich and complete as possible, with ample possibilities for customisation and expansion through the integration of software and external tools. With this we are not stating that Moodle is the best platform in absolute terms, it simply turns out to be the one that best responds to the need we set ourselves at the beginning of this journey. tools in favor of teaching and communication: Moodle aims to offer the user the possibility of making the platform and the courses created on it as rich and complete as possible, with ample possibilities for customisation and expansion through the integration of software and external tools. With this we are not stating that Moodle is the best platform in absolute terms, it simply turns out to be the one that best responds to the need we set ourselves at the beginning of this journey.

R1.A3.1 – NATIONAL REPORT

5. Survey administered to professionals

Total 105 professional training operators, selected by Ass.For.SEO (65) and T2i (40), received the questionnaire (Annex I).

Total 56 replies with questionnaires duly filled in were received.

Characteristics and composition of the group of respondents are presented in the following paragraph, separately for the sample selected by Ass.For.SEO (Centre-South Italy) and that selected by T2i (Northern Italy).

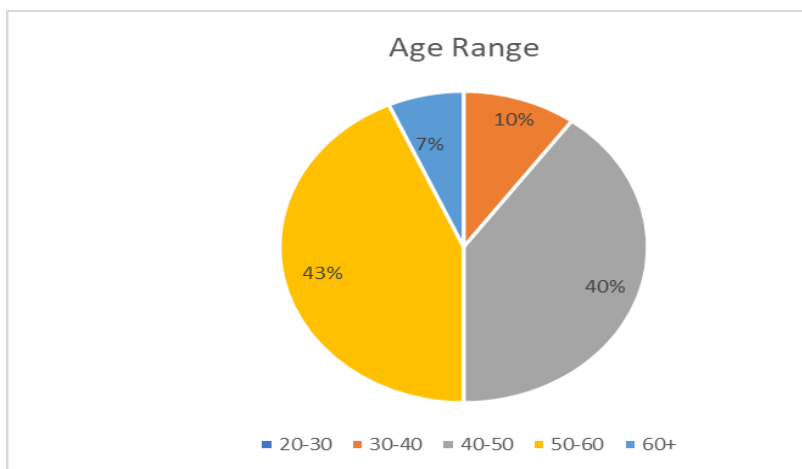
5.1 Characteristics of the group of respondents to the questionnaires

Section I of the Questionnaire was aimed at defining the profile and main characteristics of the respondents.

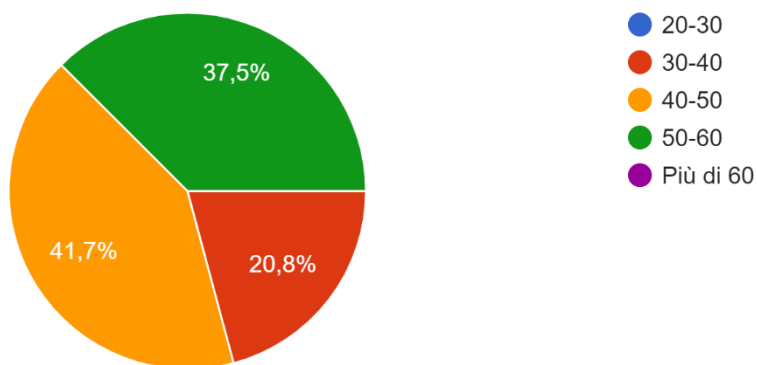
Results from the answers received are analyzed hereinafter by highlighting the main characteristics emerged and, when relevant, the differences between the group of respondents from Centre-South Italy and those from Northern Italy.

Age Range: Around 40% of the respondents from Centre-South Italy were between 50 and 60 years old, reflecting the average age of the Italian teachers. In Northern Italy the average age is lower, ranging from 30-40 (20.8%), 40-50 (41.7%) and 50-60 (37.5%).

Centre-South Italy

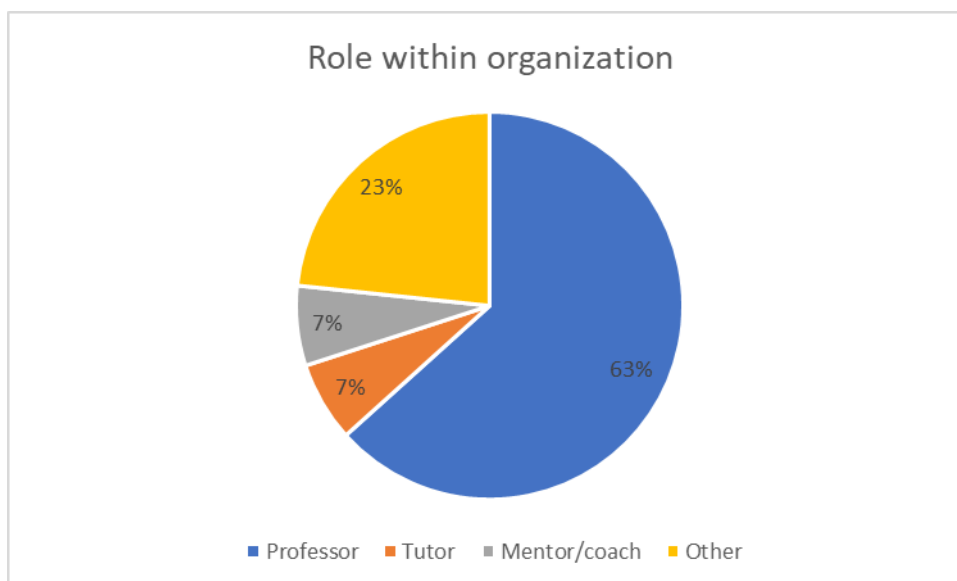


Northern Italy



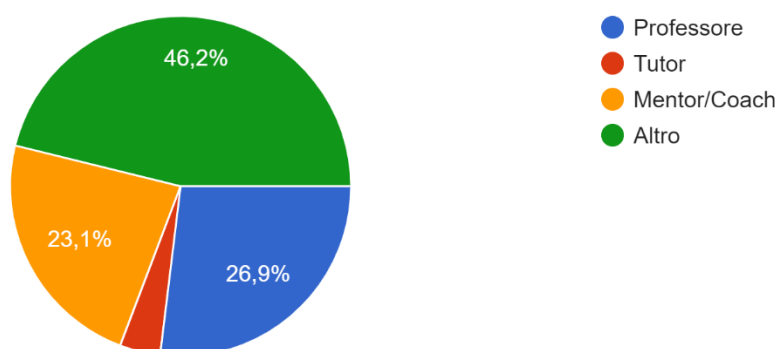
Role within the organisation: In Centre-South Italy, 63 % of the sample who responded to the interview play the role of Professor within their organisation, 6.7 % that of mentor/coach and the same percentage of tutors, while 23.3 % play other roles.

Centre-South Italy



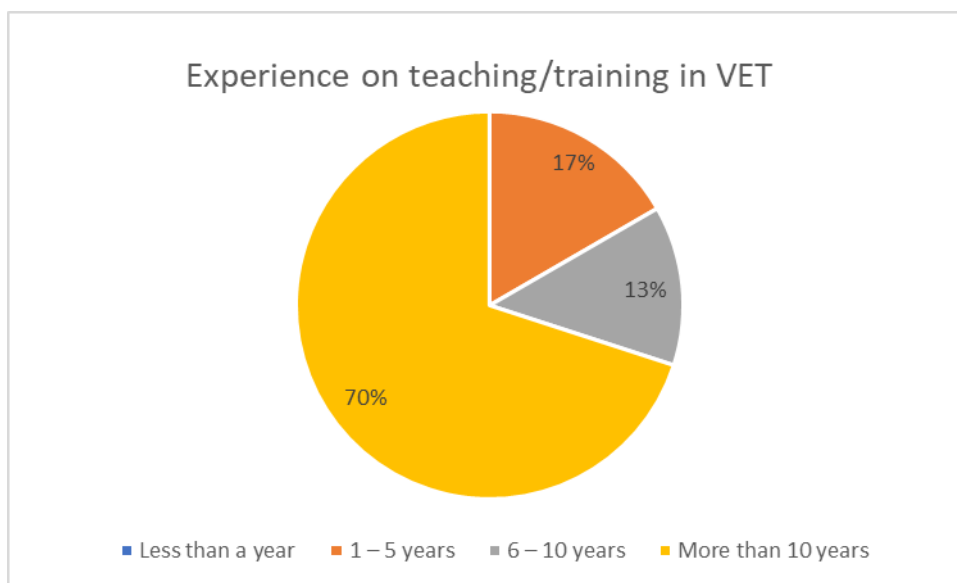
In Northern Italy, 46.2 % of the sample have another role in the company different from teacher, tutor, or mentor/coach. Anyway, they are all involved directly in training: 26.9 % play the role of Professor/Teacher, 23.1 % that of mentor/coach and 3.8 % are tutors.

Northern Italy



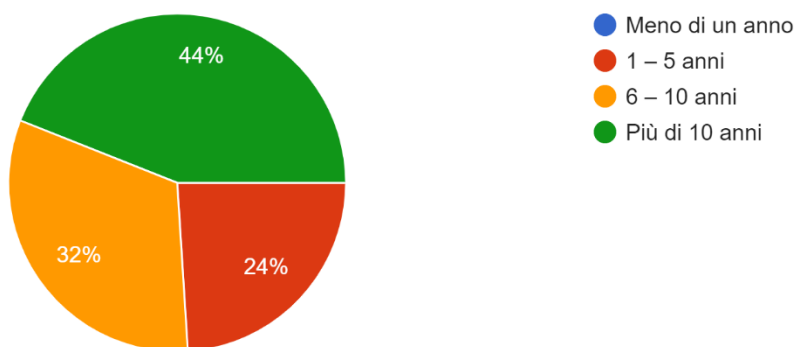
Experience on teaching/training in VET: 70 % of respondents from Centre-South Italy have 10 years' experience or higher, 16.7 % have between 1 and 5 years of experience and 13.3 % have between 6 and 10 years of experience in VET.

Centre-South Italy



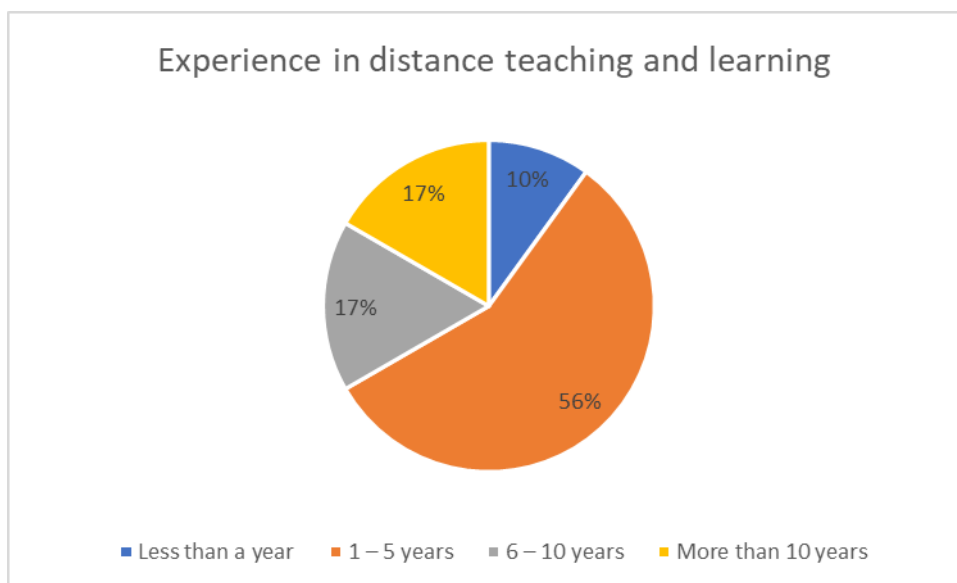
As for Northern Italy, the percentage of people who have 10 years’ experience or more in the field is quite low (44 %), reflecting the youngest average age of the respondents. 32 % have between 1 and 5 years of experience and 24 % have between 6 and 10 years of experience in VET.

Northern Italy



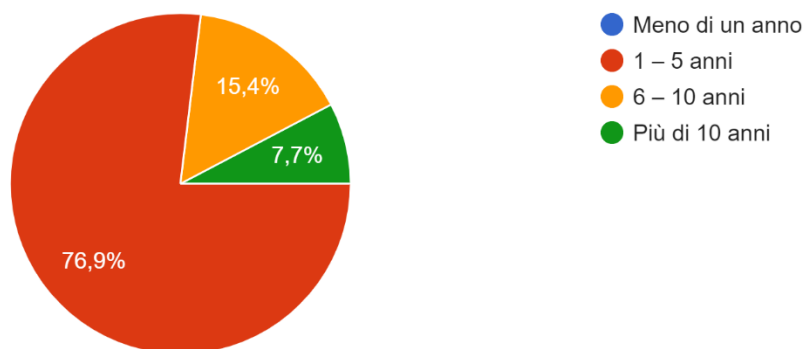
Experience in distance teaching and learning: Most of the respondents (56.7 %) from Centre-South Italy have between 1 and 5 years of experience.

Centre-South Italy



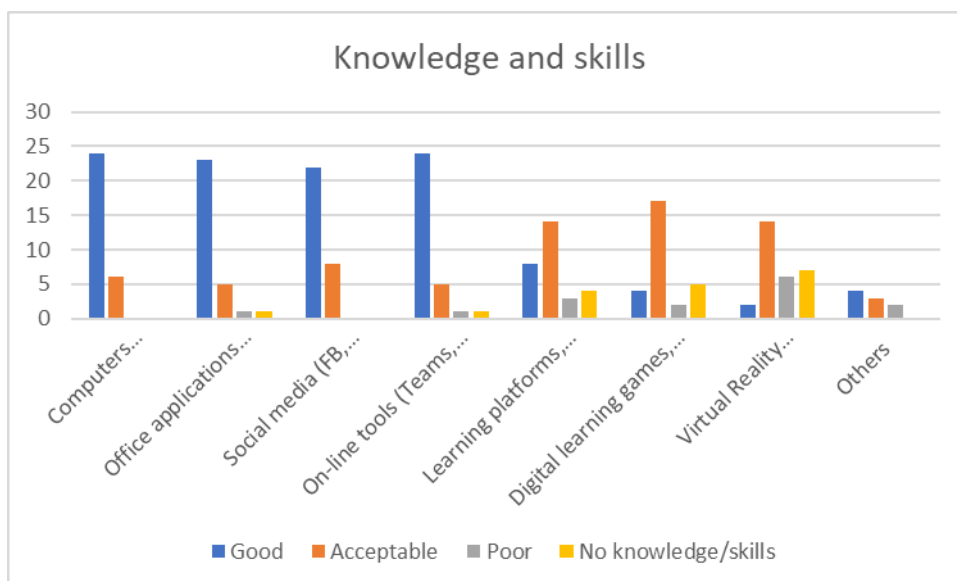
The situation is quite different in Northern Italy where 76.9 % of respondents have between 1 and 5 years of experience.

Northern Italy



As for the **knowledge and skills in technologies and tools**, both respondents from Centre-South and Northern Italy reported the following degree of confidence with the proposed tools: Computers (Workstation and Laptops); Office applications (like MS Office, Open Office, other); social media (FB, Messenger, WhatsApp, etc); On-line tools (Teams, Zoom, Google Classroom); Learning platforms, LMS (Moodle); Digital learning games, learning apps; Virtual Reality equipment and tools, Others.

Italy



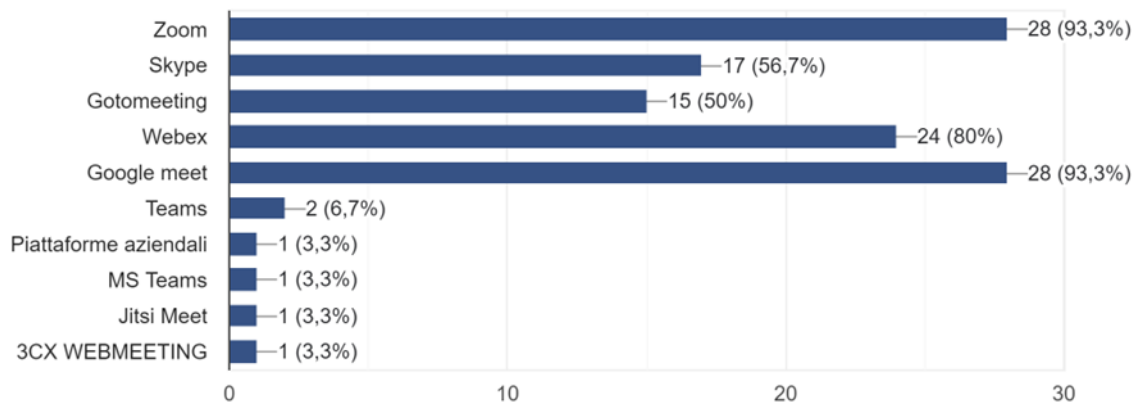
While all the respondents declared a good or very good knowledge of the general ICT tools, software, social media and video-conferencing systems, only few among them declared to have a good or acceptable knowledge of the Learning Platforms, Digital Learning Games or Apps and Virtual Reality.

When asked about their own **attitudes as teachers or VET professionals**, they indicated the following characteristics as predominant:

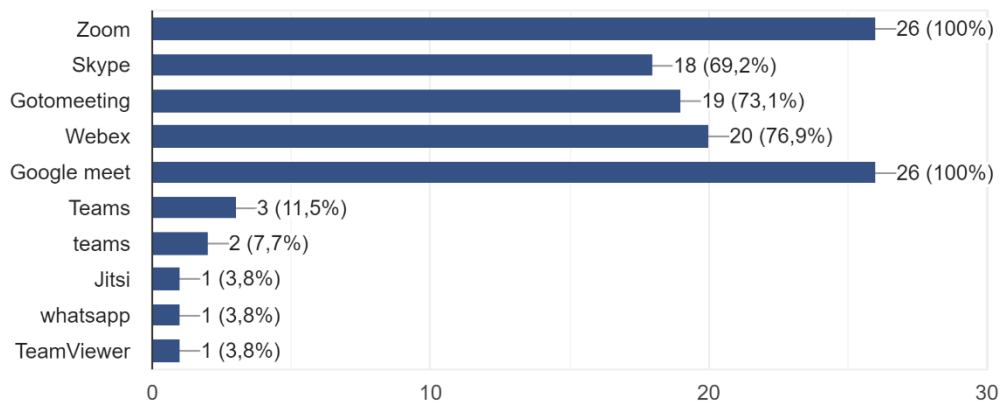
- *I encourage my students to work together/help each other to achieve a work task*
- *I am able to inspire my students on specific topics*
- *I support my students in exploring and applying innovative approaches for solving problems and to achieve work tasks*
- *I support my students in implementing their ideas*
- *I am able to motivate my students*
- *I use methods that promote the problem-solving*
- *I support and enable my students to define priorities.*

The selected sample was then questioned about **the main tools (video-conferencing systems and software) that they know and use in distance training.**

Centre-South Italy



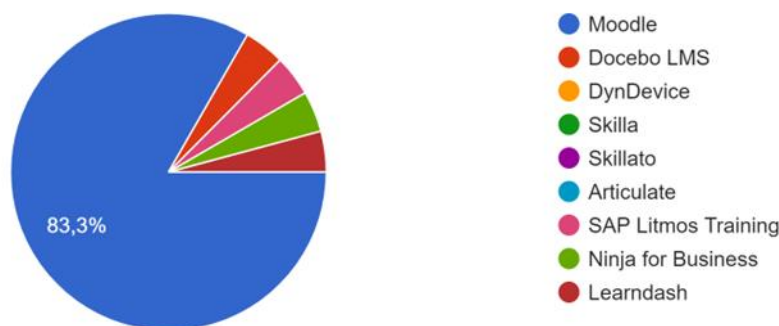
Northern Italy



Regardless of the geography, the results are very similar in Centre-South and Northern Italy: Zoom, Google Meet, Skype and Webex are the most known and used video-conferencing tools, while customized platforms and proprietary software are practically not known or used.

Open source, not proprietary and not specifically equipped for e-learning platforms are those preferred by most respondents to the questionnaire. Moodle is indicated as the best-known e-learning platform

Centre-South and North Italy



A specific part of the questionnaire was intended to get a self-evaluation from the professionals on their competences/abilities needed to provide online/distance training courses. Around 75% of the respondents declared to have such abilities/competences, while most of them declared to need rather “specific” competences (linked to some functionalities of the platforms) than “hard” competences such as how to access or use the platform.

It is worth noting that over 60% of the respondents, both in Centre-South Italy and Northern Italy, think that the “blended” modality (partly online and partly in presence) is the most performing and learning-effective way to provide the training.

Respondents are interested in finding solutions to bring the following aspects of the live training into the distance training:

- Possibility of carrying out practical activities or laboratories (over 50%),
- Interaction between teacher and student (over 35%).

5.2 Use of the Platforms for Distance Learning

Section II of the Questionnaire aimed at investigating the following topics:

1. Main and desired characteristics that a good platform for distance learning may have,
2. Main and desired functionalities that a good platform for distance learning may offer,
3. Main resources and tools offered by the platforms for distance learning and considered as most relevant having regard to the users of VET and WBL.

As for the topic 1., the questionnaire investigated the following items:

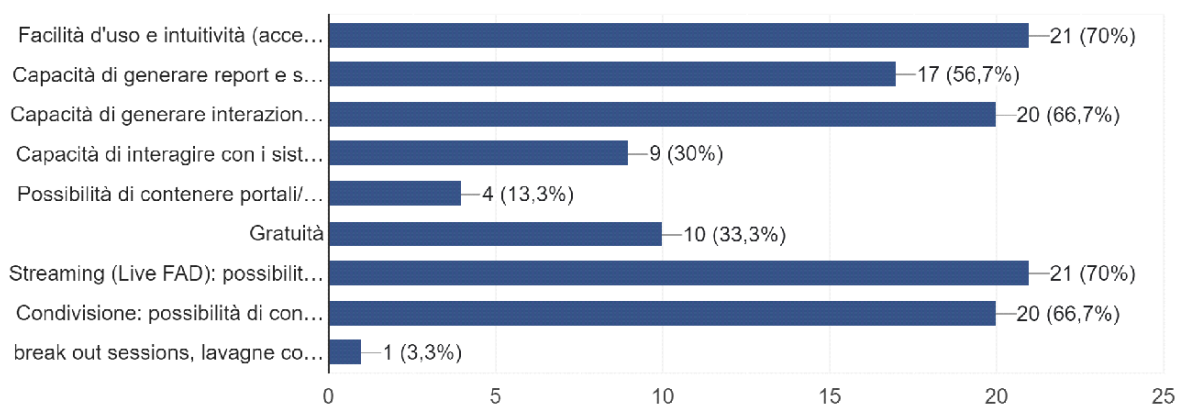
- Ease of use and intuitiveness (access and management of features)

- Ability to generate reports and statistics on courses, contents, materials, and learners (percentage of courses completed, tests passed, material downloaded, etc.)
- Ability to generate interaction with users
- Ability to interact with company systems (CRM, Calendars, touch points)
- Ability to contain customizable portals / thematic areas
- Free services/open source
- Streaming (Live FAD): possibility to receive information with multimedia contents (PowerPoint presentations, enriched with Flash animations and transitions, 3D objects and video streaming, etc.)
- Sharing: possibility of sharing information and multimedia contents
- Other

Centre-South Italy (30 replies)

Considerando il tipo di attività che svolgi, quali sono, secondo te, le caratteristiche che una buona piattaforma di apprendimento a distanza dovrebbe offrire?

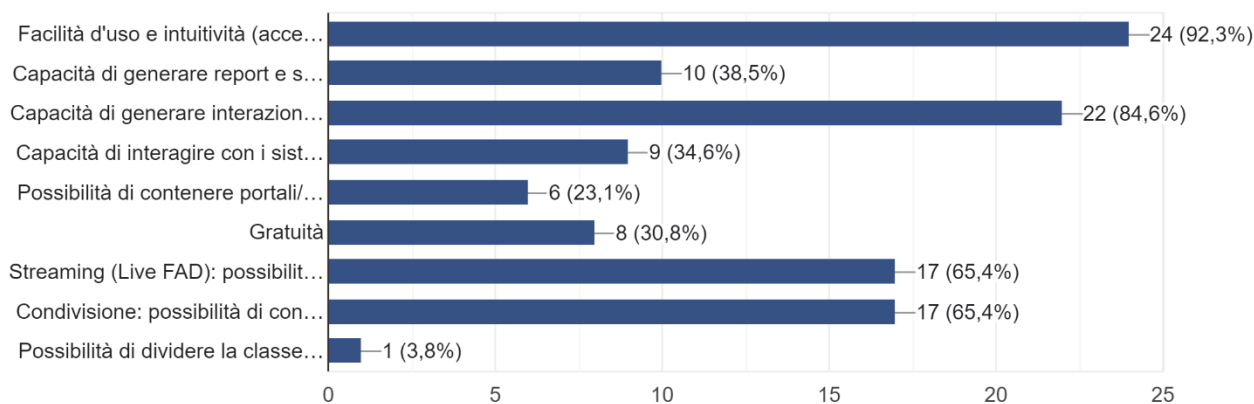
30 risposte



Northern Italy (26 replies)

Considerando il tipo di attività che svolgi, quali sono, secondo te, le caratteristiche che dovrebbe offrire una buona piattaforma di formazione a distanza?

26 risposte



Out of the 56 respondents, 55 selected the “Ease of use and intuitiveness” as the main characteristics that a good platform for distance learning may have, followed by the “Ability to generate interaction with users” (42). “Streaming (Live FAD): possibility to receive information with multimedia contents” (38) and “Sharing: possibility of sharing information and multimedia contents” (37) are the other most important characteristics selected by the respondents. It is worthy to be noted that the results don’t change significantly when the geographical origin of the respondents is concerned.

Topic 2 was aimed to investigate the following items:

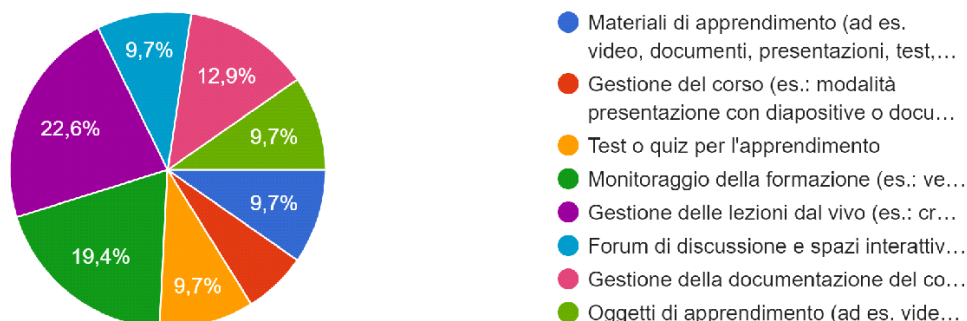
- Learning objects (e.g. videos, documents, presentations, tests, questionnaires, etc.)
- Course management (e.g. : presentation mode with slides or documents)
- Test or quiz for learning
- Monitoring of training (e.g. : verification of access, permanence and use of contents by learners)
- Live Lesson Management (e.g. : creation of integrated paths between e-learning and live lesson)
- Discussion forum and interactive spaces (e.g. : chat)
- Management of course documentation (e.g. : teaching and in-depth materials; other documentation, including administrative)
- Other

The question posed was aimed at complementing the previous question, by adding the area of the “wishing” to the characteristics of a good platform. The results vary greatly from Centre-South Italy and Northern Italy.

Centre-South Italy (30 replies)

Considerando il tipo di attività che svolgi, quali caratteristiche pensi che dovrebbe offrire una piattaforma di formazione a distanza?

31 risposte

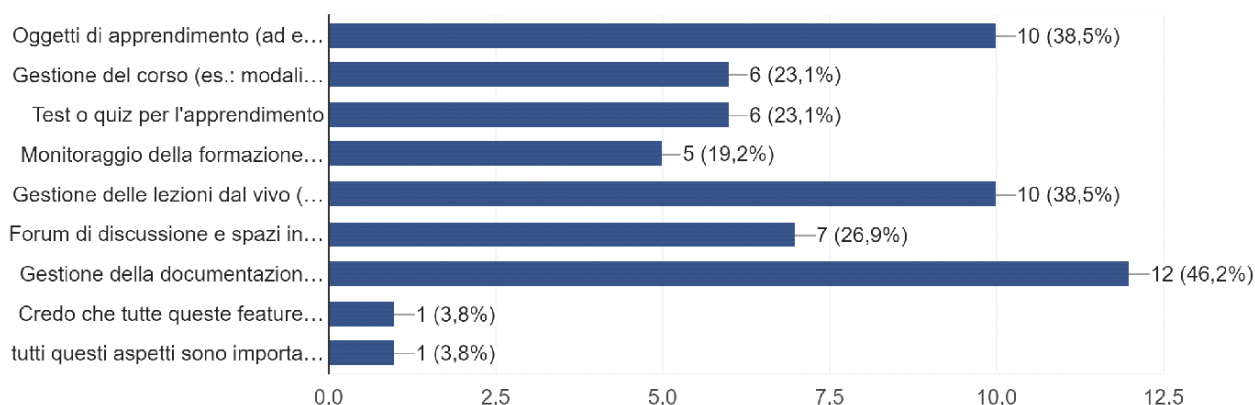


All the items proposed are considered quite relevant by the respondents, with the largest part of the declared preferences attributed to “Live Lesson Management” (22.6%) and “Monitoring of training” (19.4%). “Management of course documentation” is the least interesting item for the respondents.

Northern Italy (26 replies)

Considerando il tipo di attività che svolgi, quali caratteristiche pensi che dovrebbe offrire una piattaforma di formazione a distanza?

26 risposte



Unlike the Centre-South of Italy, in Northern Italy the most selected item was the “Management of course documentation” (46%), while the interest for the “Learning objects” (38.5%) is very high. Similarly to respondents from Centre-South Italy, the area of the “Live Lesson Management” is rather important in terms of declared preferences.

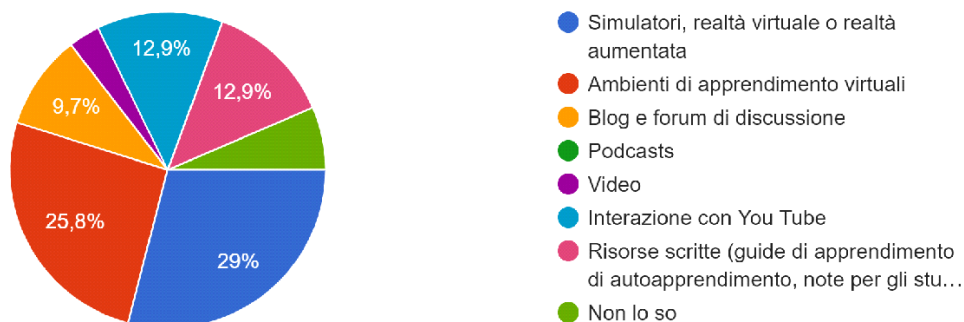
Topic 3 was intended to investigate the tools and resources that respondents retain as the most important to develop and to include in an online / distance learning platform aimed at users of vocational training and work-based training. The items considered are the following:

- Simulators, virtual reality, or augmented reality,
- Virtual learning environments,
- Blog and discussion forum,
- Podcasts,
- Video,
- Interaction with YouTube,
- Written resources (self-paced learning guides, learner notes),
- I do not know,
- Other.

Centre-South Italy (30 replies)

Quali sono gli strumenti e le risorse che ritieni siano più importanti da sviluppare e includere in una piattaforma di apprendimento online/a distanza riv...ione professionale e della formazione sul lavoro?

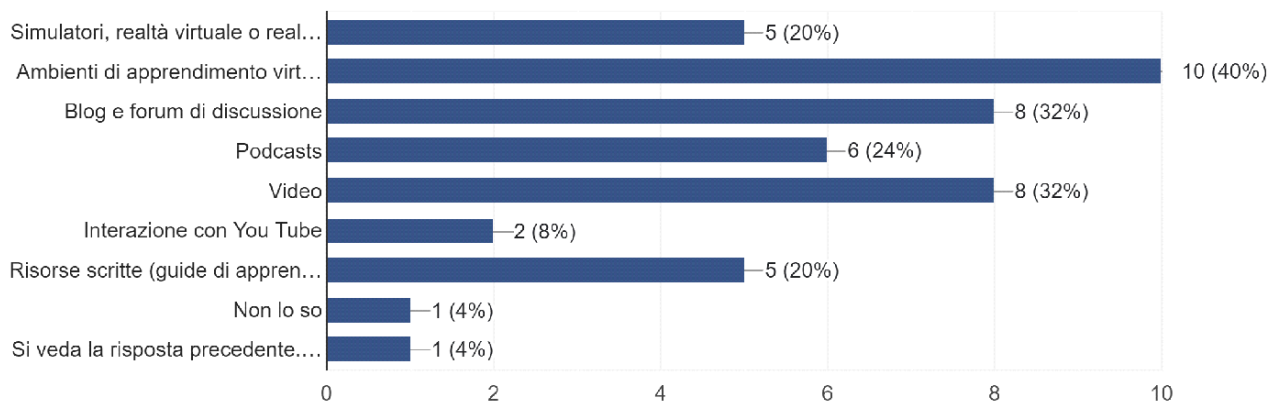
31 risposte



Northern Italy (26 replies)

Quali sono gli strumenti e le risorse che ritieni siano più importanti da sviluppare e includere in una piattaforma di apprendimento online/a distanza riv...ione professionale e della formazione sul lavoro?

25 risposte



The preferences of the respondents (over 50%) are clearly oriented towards the “Simulators, virtual reality or augmented reality” and “Virtual learning environments”. This is perfectly in line with the answers given to the question on the aspects of the live learning that professionals wish to bring into the distance learning, and namely: the possibility of carrying out practical activities or laboratories and the interaction between teacher and students.

5.3 Target Groups and kind of activities

Section III of the Questionnaire aimed at investigating the following topics:

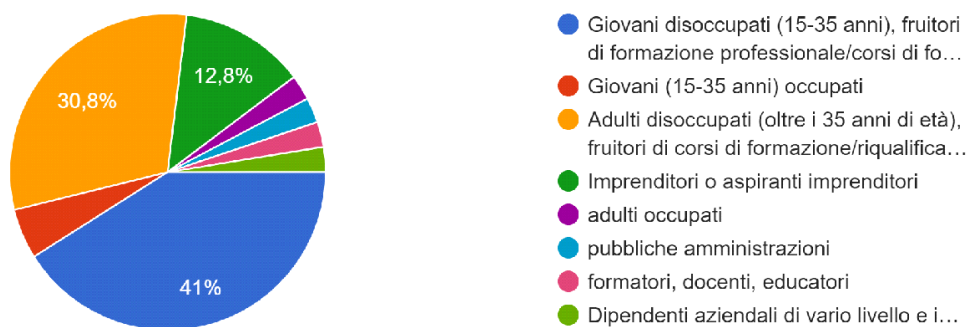
1. Reference targets for the distance learning and their characteristics,
2. Kind of activities and main contents for which the distance learning is more often used or preferred,
3. Difficulties and frustrations detected when distance learning is used, having regard to different target groups.

The questionnaire aimed at investigating the target audience for which the respondents use distance / online training most often.

Unemployed young people (15-35 years), users of vocational training / work-based training courses, are the main target group for the respondents in Centre-South Italy (41%), followed by unemployed adults over 35 years old (31%), entrepreneurs or aspiring entrepreneurs (13%).

Centre-South Italy (31 replies)

Qual è il pubblico di destinazione per il quale utilizzi più spesso la formazione a distanza/online?
 31 risposte

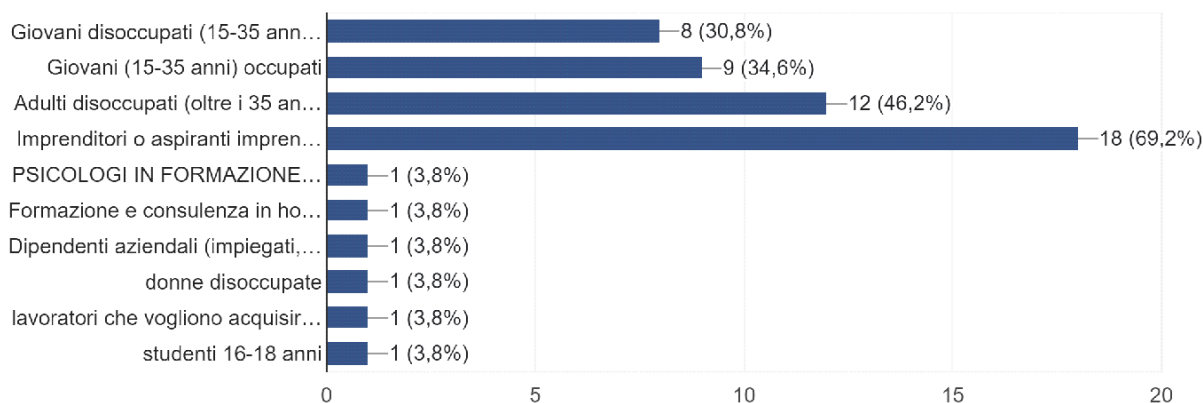


In Northern Italy, the category of entrepreneurs or aspiring entrepreneurs represents the main target: 18 respondents out of 26. Unemployed young people (15-35 years) and unemployed adults over 35 are the other most populated categories, followed by employed young people.

Northern Italy (26 replies)

Qual è il pubblico di destinazione per il quale utilizzi più spesso la formazione a distanza/online?

26 risposte



Coming to the Topic 2., over 50% of the respondents make recourse to distance learning both for theoretical and practical learning. Distance learning for coaching/mentorship is used only by a very little number of respondents (1).

Finally (Topic 3.), most of the respondents declared that their users experiences difficulties related with the distance learning (64% in Centre-South; 50% in Northern Italy), mainly linked to:

- “methodological” issues, when the users are young (employed or unemployed people),
- operational issues, related to the management of specific platform functions, when the users are adults.

Technological / Technical issues, related to access and use of platforms, appear to be less important and only related to adults in different categories: employed, unemployed, entrepreneurs.

A specific question was dedicated to practical training (laboratory). The question was: “If you use / have used distance learning for practical training (laboratory, practice, exercises, work-based learning), how did you manage to transfer the content to the online experience?”.

The possible answers were:

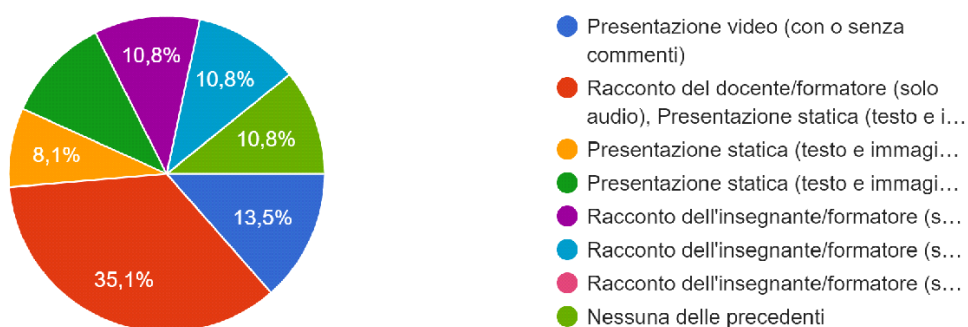
- Video presentation (with or without comments)
- Teacher’s/trainer’s story telling (only audio)
- Static presentation (text and images, commented by teacher/trainer), Video presentation (with or without comments)

- Static presentation (text and images, commented by teacher/trainer)
- Teacher's/trainer's story telling (only audio), Video presentation (with or without comments)
- Teacher's/trainer's story telling (only audio), Static presentation (text and images, commented by teacher/trainer)
- Teacher's/trainer's story telling (only audio)
- None of the above

Centre-South Italy (27 replies)

Se utilizzi/hai utilizzato la formazione a distanza per la formazione pratica (laboratorio, pratica, esercitazioni, apprendimento basato sul lavoro), com...ito a trasferire i contenuti all'esperienza online?

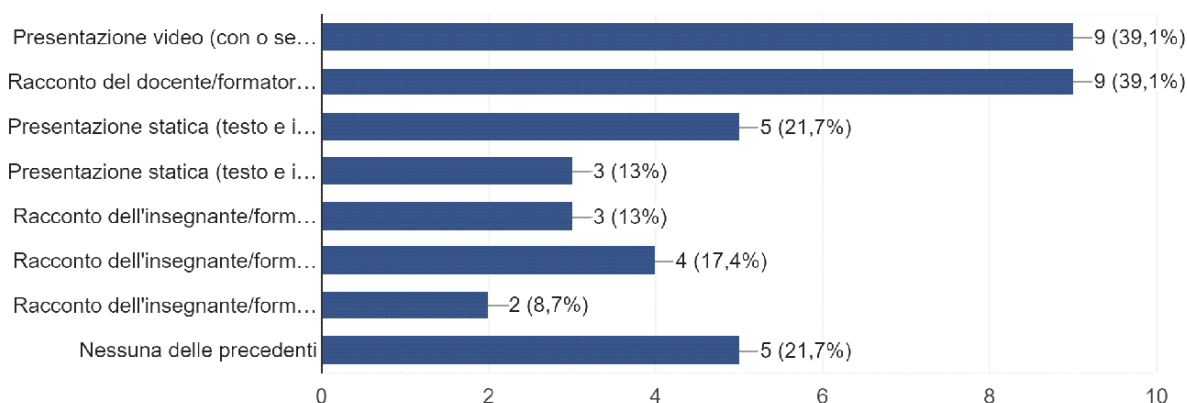
27 risposte



Northern Italy (23 replies)

Se utilizzi/hai utilizzato la formazione a distanza per la formazione pratica (laboratorio, pratica, esercitazioni, apprendimento basato sul lavoro), com...ito a trasferire i contenuti all'esperienza online?

23 risposte



Video presentation and storytelling are the preferred options.

Around 90% of the respondents declared that they don't use advanced digital tools to simulate reality in their distance training courses. Over 75% of the respondents (56) are interested in testing such tools in their training courses.

5.4 Experience made and lessons learnt

Section IV of the Questionnaire aimed at investigating the following topics:

1. Knowledge on best/good practices in the field of distance learning,
2. Lessons learnt during the pandemic from COVID 19 when the training activities were possible only in online or distance learning modalities,
3. Knowledge and use of handbooks, guidelines, methodologies supporting distance learning.

As for Topic 1., the following question was proposed to the respondents:

"Are you aware of tools, practices or systems of vocational training and work-based training that can be considered "good practices" and, therefore, that are replicable or useful in other European contexts / countries (for training providers and / or for public decision makers)?"

Only few of the respondents (less than 10%) declared to know some good practices.

As for Topic 2., the following question was proposed to the respondents:

"What are the lessons you learned following the implementation of distance / online training, before and after the COVID-19 pandemic, in relation to the delivery processes, the role of trainers and the new skills needed?"

The following main lessons learnt – in the form of "needs" - can be extrapolated from the answers received (25) on this topic:

- need to be trained on technologies, methodologies and tools specific for distance learning (theory and practical learning);
- need of platforms/tools specifically designed for collaboration (between teachers and students and between colleagues);
- need of specific tools for enabling active learning processes in distance learning.

As for Topic 3., the following questions were proposed to the respondents:

"Do you know / refer to specific guides or manuals to support the provision of distance / online training, to the trainers / teachers you want to share?"

"If you answered "Yes" to question XXI, could you please provide a short description below? You can also indicate links to online projects / materials / guides that may be useful to trainers and providers of vocational and / or work-based training courses".

Almost all the respondents declared that they don't know any specific guides or manuals.

6. Gaps and Needs emerged from the desk research and the survey

6.1 Area of the “Needs” and “Gaps”

Based on the results of the desk research and the questionnaires administered to the VET professionals, the following “Needs” and “Gaps” related to distance and virtual learning for VET and WBL projects in Italy have been identified.

Preliminary identification of the main “Needs” and “Gaps” in Distance and Virtual Learning for VET and WBL in Italy

Area	Needs	Desired Status	Gaps Description
Platforms for distance learning	Access and use of the platforms	Ease of use and intuitiveness	Only few professionals have a good or acceptable knowledge of the Learning Platforms
	Interaction with users	Interactive lesson	Interaction is limited to simple tools typical of the video-conferencing platforms, such as: raise of hand, chat, etc.
	Effective streaming sessions (Live Distance Learning)	Possibility to receive information with multimedia contents, such as: audio, video, images, text, etc.	It is not possible or rather difficult to receive multimedia contents during streaming sessions
	Improve sharing of contents	Possibility of sharing information and multimedia contents during and outside the living lessons or the webinars	Since most of the courses are implemented by video-conferencing systems, it is rather difficult to share information or multimedia contents
	Live Lesson Management	Easy management of the live training sessions	Since video-conferencing tools, not customized for training, are the most used in distance learning courses, management of the training sessions is rather difficult
	Monitoring of training	Complete and easy monitoring of the training (process and learnings)	Since video-conferencing tools, not customized for training are the most used in distance learning courses, monitoring of the training is rather difficult and very often managed offline

Area	Needs	Desired Status	Gaps Description
	Management of course documentation	Complete and easy management of the documentation from the training	Since video-conferencing tools, not customized for training are the most used in distance learning courses, document flow is managed offline
	Use of Learning objects	Availability of effective Learning Objects to facilitate, evaluate and verify the study process or create a course in the digital / virtual environment	Lack of knowledge on Learning Objects available
Competences / abilities to provide online / distance training courses	Designing, planning and implementing the use of digital resources in the different stages of the learning process	Effectively orchestrating the use of digital resources in the different phases and settings of the learning process	Lack of knowledge on learning resources (provided or not provided by the platforms) specific for distance learning
	Interaction with learners and their active engagement in a subject matter	Use of digital resources to enhance the interaction with learners, individually and collectively, within and outside the learning session	Lack of knowledge of learning resources (provided or not provided by the platforms) specific for distance learning
	Practical activities, laboratories and Work Based Learning (WBL)	Effective use of simulators, virtual reality, and augmented reality in Virtual Learning Environments (VLE)	Only few professionals have good or acceptable knowledge of the Digital Learning Games or Apps and Virtual Reality

6.2 Preliminary definition of the “Personas”

Proceeding from the identification of the “Needs” and “Gap”, the “Personas” methodology has been used to grouping and classifying them in relation to characteristics, attributes, and behavior of VET professionals.

This is the first step in the analysis of user personas who are meant to represent a collection of people that fit these categories, and represents the featured users (in general, but in a quantifiable way) of the “Toolkit” (Result 2) and the “Training Course” (Result 3).

Once a first version of the “personas” has been produced, then the analysis is completed with the complete them with the results of the Focus Group.

PERSONAS 1

Activity

Mario is 52 years old. He is a teacher / trainer also in professional training courses in the last 8 years. He has 4 years of experience in online / remote training, for which he uses a non-proprietary and non-customized platform. He knows how to use the office package and social media. It uses, but very rarely, simple digital resources (e.g., video), selected on the internet, to support the lessons and can create simple digital content (e.g., slides). It makes limited use of digital learning assessment formats. He attaches importance to the relational and motivational aspect of his work with the students. He often delivers practical training and WBL projects, but he has a very limited knowledge of Virtual Learning Environments (VLE), digital learning games and virtual reality.

Goals and ambitions

Mario would like to be able to use a greater number of digital resources. He would like to be able to create more complex digital contents, for arousing the interest and motivation of his students, even in online or distance learning processes. He would like to be able to manage the entire training process (design, delivery, and assessment of learning) by remote. Finally, he would like to deliver effective practical/WBL distance learning to his students.

Needs

Mario would like to know how to find and use formats and software that facilitate the creation of digital contents, and to create internet paths for his students attending distance learning courses. He would like to know how to use platforms equipped with tools able to manage the entire training process online, in a simple and intuitive way. Since he is engaged in practical VET and/or WBL projects, he would like to know how to use simulators, virtual reality, and augmented reality in his training courses.

PERSONAS 2

Activity

Bianca is 35 years old. She is a teacher / trainer also in professional training courses in the last 5 years. She has 2 years of experience in online / remote training, for which she uses a non-proprietary and non-customized platform. She knows very good how to use the office package and social media. She provides distance vocational training mainly for young unemployed people aged 15 and 35. She mostly uses video presentations but does not use any advanced digital tools.

Goals and ambitions

Bianca would like to improve the interaction between student and teacher in distance learning, which she considers a valuable training tool. She would like to have more tools to improve the content and share it with other teachers, to improve the quality of training provided. She would like to have tools for an objective evaluation of the learning to facilitate and improve the flow of feedbacks provided to students or received from them.

Needs

Bianca would like to have a shared database to make formats and content more uniform and user-friendly, as well as an intuitive platform to use for distance training courses. She attaches importance to the discussion forums and interactive spaces (such as chats, simulators, etc.). Bianca would like to have the tools to allow the collaboration between teachers and students (and with other teachers) on the content to be delivered, so to facilitate the coordination in the programming and delivering of trainings.

PERSONAS 3

Activity

Alice is 32-year-old. She has been teaching in education for about 4 years and has good knowledge of technology and online tools (computers, office package, social media, video conferencing and e-learning platforms). She is often close in age to the students she teaches, so she finds it easy to integrate with students. In fact, she has a good ability to encourage them to collaborate with each other, trying to inspire and support them in creating innovative approaches

to solve problems, promoting their work, and motivating them. He has often used video conferencing platforms and e-learning platforms (Moodle and Docebo LMS). Alice is very often involved in 100% distance learning courses, but she prefers the hybrid teaching mode, especially when practical learning is concerned. She makes recourse to videos, images, and slide presentations for his trainings, but she would like to use digital simulation tools.

Goals and ambitions

Alice would like to provide teaching for online training regardless of the course type and the users involved.

Needs

Alice would like to know better effective Virtual Learning Environments (VLE), especially those characterized by ease of use and intuitiveness. When Live Distance Learning is concerned, she would use a platform where interaction is allowed and sharing of information and multimedia contents (presentations enriched with Flash animations and transitions, 3D objects and video streaming, etc.) is enabled during and outside the training sessions.

PERSONAS 4

Activity

Davide is a 58-year-old professor who has been working VET for more than 10 years. He has a more than acceptable technological and internet tool expertise. He often uses video conferencing and e-learning platforms and has the skills to inspire and interact with his pupils, urge them to complete assignments, and encourage them to collaborate. Anyway, he prefers in-presence training than distance training because he experiences some issues in managing specific platform features and in delivering contents when the practical learning is concerned. He only uses video and images, slides and personal stories based on experience for this purpose.

Goals and ambitions

Davide would like to find easy-to-use sharing and collaborative tools in platforms used for distance learning, such as: blogs and discussion forums, podcasts and videos. He would also like to learn how to use simulation tools.

Needs

Davide needs ease of use and intuitiveness platform equipped with tools stimulating collaboration and interaction among teachers and students and among students, especially when practical learning is concerned.

7. User “Personas” analysis

7.1 Focus Groups

The main objective of the Focus Groups was to obtain information on current and future needs with respect to the topics already analyzed with the questionnaire sent to the trainers.

In particular, the goal was to hear from the voices of those directly involved and to collect further feedbacks to structure the Toolkit (Result 2) and the Training Modules (Result 3), by investigating 4 main areas: “Activity”, “Needs”, “Ambitions”, “Difficulties” and “Frustrations” experienced by the people involved (VET trainers/trainers/professionals) in providing distance learning.

Starting from the results of the Desk Research and the Survey, the Focus Groups focus was on recurring themes and skill gaps of the VET professionals, in line with the “DigCompEdu”, the European reference framework on the digital skills of teachers and trainers.

Two Focus Groups have been held in Italy, based on the methodology shared with the partners (Annex xx): one with participation of VET professionals working in Northern Italy and held by T2i; and one with VET professionals working in Centre-South Italy (held by Ass.For.SEO).

The following specific goals were set for the Focus Groups:

- to complement the area of the “Needs” and “Gaps”,
- to investigate the areas of “Difficulties” and “Frustrations” experienced by the VET professionals when distance learning is concerned.

Two Reports of the Focus Groups have been elaborated with the answers given by the participants (Annex xx and xx).

The questions posed to participants have been elaborated by considering the structure of “DigCompEdu”, and namely the following scheme:



Source: European Framework for the Digital Competence of Educators - DigCompEdu, JRC Science for Policy Report, 2017. EUR 28775 EN

⁷ <https://publications.jrc.ec.europa.eu/repository/handle/JRC107466>

Results of the Focus Groups held with participation of VET professionals from Centre-South Italy and Northern Italy are presented below, separately for the area of the “Needs” and “Gaps” and for the area of “Difficulties” and “Frustrations”.

7.2 Focus Groups: Area of the “Needs” and “Gaps”

QUESTION: *based on your experience in distance/online training pathways, which are the most important/urgent needs you would like to satisfy to increase the impact of the trainings?*

- 1) *Have a better knowledge of the digital environments (websites, cloud servers, search engines, social media outlets, mobile apps, audio and video, and other web-based resources)*
- 2) *Make recourse to a “customized” platform for the management, protection and sharing of the digital resources for the didactics to use in distance/online learning courses*
- 3) *Have a better knowledge of the digital education resources (video) and tools to be able to select the most appropriate*
- 4) *Capacity to make recourse and use of formats and software for creation (adjustment) of the education contents for the students*

ANSWERS:

Participants	Option Selected	Comments by Participants
CENTRE-SOUTH ITALY		
Participant 1	Option 2)	The platform should contain Learning Objects specifically conceived for distance learning. Content items, practice items, and assessment items combined based on a single learning objective would be very useful. Special attention should be devoted to the designing phase of the distance learning: teaching units, training components, duration and slots, reusable information objects, etc. Guidelines would be very useful for this purpose.
Participant 2	Option 2)	To make recourse to a distance learning platform tailored for the selection, management, protection and sharing of the digital didactical resources specifically conceived for distance learning courses will be greatly helpful. The planning phase should include criteria of selection and implementation of the most appropriate didactical resources to use in each distance training course.
Participant 3	Option 1), 2) and 3)	Better knowledge of digital environments, customized distance learning platforms and tailored digital resources for distance learning.
Participant 4	Option 4)	The main need is to be able to make recourse to templates and software for the creation or adjustment of educational contents for the students. This would favor the process of “standardization” of the courses and the shape of the contents. It could be useful to this aim to have databases or Mooc shared among teachers and VET professionals. This would favor any comparisons between courses and collaboration among teachers and other professionals operating on distance learning in VET sector.

Participants	Option Selected	Comments by Participants
Participant 5	Option 4)	The main need is to be able to make recourse to templates and software for the creation or adjustment of educational contents for the students. This would improve collaboration among teachers and would facilitate the knowledge of the digital environments for distance learning,
NORTHERN ITALY		
Participant 6	Option 2)	I would like a platform that includes all technologies. A software that integrates everything, in the sense of all forms of information exchange and interaction that facilitate learning
Participant 7	Option 4)	Maybe have a platform that digitally helps to stimulate them, such as instagram polls, without me asking the question directly
Participant 8	Option 2)	A necessity that any platform should have is the element of gamification
Participant 9	Option 2)	I agree with Part. 6 having a platform that brings together different interactive tools
Participant 10	Option 2)	Have a tool that allows you to save everything you send directly
Participant 11	Option 2)	Tool to monitor user attention

7.3 Focus Groups: Area of “Difficulties and frustrations”

Sub-Area 1: Digital resources and teaching and learning practices

QUESTION: based on your experience in providing online/distance training pathways, which difficulties/frustrations have you encountered in the process of searching/selection/uses of digital methodologies and resources to use in distance/online learning?

- 1) *Difficulties in finding digital contents to support the courses/lessons (long searching times and/or inadequacy of the contents found)*
- 2) *Impossibility/difficulties in modifying the digital resources available*
- 3) *Difficulties in the creation of new digital resources customized for the online/distance learning*
- 4) *Impossibility/difficulties in the process of integration and sharing of the digital resources into the training platform*
- 5) *Scarcity/lack/no-knowledge of methodologies and tools customized for distance learning to support the students in the completion of collaborative tasks and/or in improving their communication skills and/or in the supporting their collaboration and the creation of sharing knowledge*
- 6) *Scarcity/lack/no-knowledge of methodologies and tools to support students in the process of planning, monitoring and self-assessment of the level of learning acquired and in highlighting the progress made, in sharing knowledge and in setting out and propose creative solutions*
- 7) *Other*

ANSWERS:

Participants	Option Selected	Comments by Participants
CENTRE-SOUTH ITALY		

Participants	Option Selected	Comments by Participants
Participant 1	Options 3), 4) and 5)	Most of the difficulties are linked to the creation of new personalized digital resources for online/distance learning (option 3). This will result in the lack of tailored methodologies and tools for distance learning aimed at: supporting students in the completion of collaborative tasks; improving students' communication skills; and fostering shared knowledge (option 4). Another difficult arises from the lack of knowledge in the field of methodologies and tools aimed at supporting the designing, monitoring and evaluation (or self-evaluation) of the students' learnings (option 5).
Participant 2	Options 4) and 5)	Lack of methodologies and tools tailored for distance learning. (Options 4 and 5). It would be helpful to involve the tutors in the process of acquisition of knowledge and skills on distance learning. Collaboration between teachers and tutors in the field is rather important.
Participant 3	n.a.	No specific difficulties reported
Participant 4	Options 4) and 5)	Lack (or little knowledge) of methodologies and tools aimed at supporting students involved in distance learning courses.
Participant 5	Option 1)	To check the relevance and reliability of the contents and learning objects found online is particularly difficult and time-consuming.
NORTHERN ITALY		
Participant 6	Option 5)	To get to know certain applications, interaction with colleagues was fundamental for me, I have not found an online place where to have all the information necessary to learn about the various platforms
Participant 7	Option 1)	Information sharing is crucial
Participant 8	Option 4)	Kahoot known thanks to my daughter's school activity, now I use it all the time
Participant 9	Option 4)	It would be nice if the platform sent you a video, notifications, a small manual that could explain the functionality of the platform itself
Participant 10	Option 1)	Information sharing is crucial
Participant 11	Option 6)	Mini-courses for the functioning of the platforms

Sub-Area 2: Evaluation of the learning acquired (use of digital tools and strategies aimed at improving evaluation practices):

QUESTION: based on your experience in online/distance learning, which difficulties/frustrations you encountered when you faced with the assessment of the students' learning?

- 1) *Lack/no-knowledge of methodologies and tools specific for the assessment of the competences acquired in distance learning courses*
- 2) *Lack of integration of the learning assessment/evaluation systems into the training platform and/or deficiencies in the tools for the analysis of the learning data and/or in the tools to provide feedbacks to the students and other concerned persons*
- 3) *Other*

ANSWERS:

Participants	Option Selected	Comments by Participants
CENTRE-SOUTH ITALY		
Participant 1	Option 2)	It would be very useful that an evaluation system (strategies, analysis and feedbacks) aided by digital technologies was integrated into the distance learning courses as a specific phase/step of the training process. Improving knowledge and skills on this topic is quite important.
Participant 2	Option 2)	Assessment of learning is a crucial phase and should be included into the design and planning of the distance training courses based on specific criteria, methodologies, and tools. Training professionals should acquire specific knowledge and skills on assessment of distance training courses.
Participant 3	Options 1) and 2)	No specific comments provided.
Participant 4	Options 1) and 2)	It is necessary to have tools specifically tailored for an objective assessment of the distance training and to provide targeted and timely feedback to learners.
Participant 5	Options 1) and 2)	Any assessment tools should consider also the best available way to enable learners to understand the evidence provided and use it for decision-making and for getting motivated.
NORTHERN ITALY		
Participant 6	Option 2)	If we talk about satisfaction with the lesson, I ask you to answer a questionnaire/form, if we talk about teachings, I ask targeted questions
Participant 7	Option 2)	In most of the courses I take, at the end, there is a test
Participant 8	Option 2)	All those programs that serve to check the participants can be useful, and more "safe" if a result has to be released, a vote that has legal value, but they create a lot of anxiety and are stressful for the student who is doing the examination
Participant 9	Option 2)	I request a double output, both the written test and the oral part (review registration for this point).

Participants	Option Selected	Comments by Participants
Participant 10	Option 2)	The fact of sharing the answers to the participant showing him what he did right and what he did wrong, would be very useful to have in a software.
Participant 11	Option 2)	Online it was problematic to share and receive the tests they had filled out and evaluate them.

Sub-Area 3: Enhancement of students' potential (Using digital technologies to foster greater inclusion, personalization and active involvement of students)

QUESTION: Based on your experience in online / distance learning courses, what difficulties / frustrations have you encountered in enhancing the potential of students, in terms of:

- 1) Accessibility and inclusion?
- 2) Differentiation and personalization of the paths?
- 3) Active participation?

- ANSWERS:

Participants	Option Selected	Comments by Participants
CENTRE-SOUTH ITALY		
Participant 1	Option 3)	To get students' active participation is rather difficult in distance learning and frustrating for the teacher. Active participation is, in fact, not adequately considered in the designing phase, so no or few tools are available to the teachers and VET professionals.
Participant 2	Option 2)	No specific comments provided.
Participant 3	Option 3)	No specific comments provided. He agrees with what has been reported by participant 1.
Participant 4	Option 2)	Digital technologies embedded in distance learning processes should address learners' diverse learning needs, by allowing learners to advance at different levels and speeds, and to follow individual learning pathways and objectives. This is rather difficult even when in-presence learning courses are concerned, also because personalization of the learning pathways is not included into the designing and planning of the training courses.
Participant 5	Option 3)	Interaction is very difficult in distance learning. If interaction and sharing are not allowed, then getting accessibility and inclusion is not possible.
NORTHERN ITALY		
Participant 6	Option 1)	Accessibility is to break down the barriers due to distance, but then there are problems relating to distance learning given by the devices.

Participants	Option Selected	Comments by Participants
Participant 7	Option 3)	In accord with Part 6
Participant 8	Option 2)	With the inclusiveness of the devices, in addition to the distance factor that the digital world has allowed to eliminate, it has allowed students with disabilities (visually impaired, blind, deaf, etc.) to participate in any case using specific means.
Participant 9	Option 2)	With larger groups rooms should be created, but I can't split. So it depends both on the level and also on the size of the group.
Participant 10	Option 1)	However, from my point of view, distance learning has allowed very high levels of accessibility and functionality for different targets. Also to reconcile work, study, family, to allow participation for people who live far away, etc...
Participant 11	Option 1)	It is difficult to transmit warmth via the web, create interaction, get others to talk, it takes some time to unblock them, even if in any case the interest in the course does a lot.

The following table contains the summary of the answers received by thematic areas.

Area of the Needs	N° of replies	Score
<i>QUESTION: based on your experience in distance/online training pathways, which are the most important/urgent needs you would like to satisfy to increase the impact of the trainings?</i>	<u>ANSWERS</u>	
1) <i>Have a better knowledge of the digital environments (websites, cloud servers, search engines, social media outlets, mobile apps, audio and video, and other web-based resources)</i>	1	Not very urgent
2) <i>Make recourse to a "customized" platform for the management, protection and sharing of the digital resources for the didactics to use in distance/online learning courses</i>	7	Urgent
3) <i>Have a better knowledge of the digital education resources (video) and tools to be able to select the most appropriate</i>	1	Not very urgent
4) <i>Capacity to make recourse and use of formats and software for creation (adjustment) of the education contents for the students</i>	3	Medium
Sub-Area 1: Digital resources and teaching and learning practices	N° of replies	Score
<i>QUESTION: based on your experience in providing online/distance training pathways, which difficulties/frustrations have you encountered in the process of searching/selection/uses of digital methodologies and resources to use in distance/online learning?</i>	<u>ANSWERS</u>	
1) <i>Difficulties in finding digital contents to support the courses/lessons (long searching times and/or inadequacy of the contents found)</i>	3	Medium
2) <i>Impossibility/difficulties in modifying the digital resources available</i>	0	Not very urgent


3)	<i>Difficulties in the creation of new digital resources customized for the online/distance learning</i>	1	
4)	<i>Impossibility/difficulties in the process of integration and sharing of the digital resources into the training platform</i>	5	<i>Urgent</i>
5)	<i>Scarcity/lack/no-knowledge of methodologies and tools customized for distance learning to support the students in the completion of collaborative tasks and/or in improving their communication skills and/or in the supporting their collaboration and the creation of sharing knowledge</i>	4	<i>Urgent</i>
6)	<i>Scarcity/lack/no-knowledge of methodologies and tools to support students in the process of planning, monitoring and self-assessment of the level of learning acquired and in highlighting the progress made, in sharing knowledge and in setting out and propose creative solutions</i>	1	<i>Not very urgent</i>
7)	<i>Other</i>	0	
Sub-Area 2: Evaluation of the learning acquired (use of digital tools and strategies aimed at improving evaluation practices):		N° of replies	Score
QUESTION: based on your experience in online/distance learning, which difficulties/frustrations you encountered when you faced with the assessment of the students' learning?		<u>ANSWERS</u>	
1)	<i>Lack/no-knowledge of methodologies and tools specific for the assessment of the competences acquired in distance learning courses</i>	3	<i>Medium</i>
2)	<i>Lack of integration of the learning assessment/evaluation systems into the training platform and/or deficiencies in the tools for the analysis of the learning data and/or in the tools to provide feedbacks to the students and other concerned persons</i>	11	<i>Urgent</i>
Sub-Area 3: Enhancement of students' potential (Using digital technologies to foster greater inclusion, personalization and active involvement of students)		N° of replies	Score
QUESTION: Based on your experience in online / distance learning courses, what difficulties / frustrations have you encountered in enhancing the potential of students, in terms of:		<u>ANSWERS</u>	
1)	Accessibility and inclusion?	3	<i>Medium</i>
2)	Differentiation and personalization of the paths?	4	<i>Urgent</i>
3)	Active participation?	3	<i>Medium</i>

7.4 Definition of the “Personas”


Based on the results of the Focus Groups, the preliminary definition of the “Personas” (par. 5.2) has been completed with the areas of the “Difficulties” and “Frustrations”.

The final “Personas” are presented below.


PERSONAS 1

<p>Name: Mario Age: 52 Profession: VET Teacher</p>	
<p>ACTIVITY</p>	<p>Mario is 52 years old. He is a teacher / trainer also in professional training courses in the last 8 years. He has 4 years of experience in online / remote training, for which he uses a non-proprietary and non-customized platform. He knows how to use the office package and social media. It uses, but very rarely, simple digital resources (e.g., video), selected on the internet, to support the lessons and can create simple digital content (e.g., slides). It makes limited use of digital learning assessment formats. He attaches importance to the relational and motivational aspect of his work with the students. He often delivers practical training and WBL projects, but he has a very limited knowledge of Virtual Learning Environments (VLE), digital learning games and virtual reality.</p>
<p>GOALS AND AMBITIONS</p>	<p>Mario would like to be able to use a greater number of digital resources. He would like to be able to create more complex digital contents, for arousing the interest and motivation of his students, even in online or distance learning processes. He would like to be able to manage the entire training process (design, delivery, and assessment of learning) by remote. Finally, he would like to deliver effective practical/WBL distance learning to his students.</p>
<p>NEEDS</p>	<p>Mario would like to know how to find and use formats and software that facilitate the creation of digital contents, and to create internet paths for his students attending distance learning courses. He would like to know how to use platforms equipped with tools able to manage the entire training process online, in a simple and intuitive way. Since he is engaged in practical VET and/or WBL projects, he would like to know how to use simulators, virtual reality, and augmented reality in his training courses.</p>
<p>DIFFICULTIES AND FRUSTRATIONS</p>	<p>Mario encountered difficulties in finding appropriate digital content. He spends a lot of time on the internet looking for content and support for his lessons. Every time he must find the best ways to manage the training process at the same time online and offline, because the platform he uses does not have all the necessary tools.</p>


PERSONAS 2

<p>Name: Bianca Age: 52 Profession: VET Trainer</p>		
<p>ACTIVITY</p>	<p>Bianca is 35 years old. She is a teacher / trainer also in professional training courses in the last 5 years. She has 2 years of experience in online / remote training, for which she uses a non-proprietary and non-customized platform. She knows very good how to use the office package and social media. She provides distance vocational training mainly for young unemployed people aged 15 and 35. She mostly uses video presentations but does not use any advanced digital tools.</p>	
<p>GOALS AND AMBITIONS</p>	<p>Bianca would like to improve the interaction between student and teacher in distance learning, which she considers a valuable training tool. She would like to have more tools to improve the content and share it with other teachers, to improve the quality of training provided. She would like to have tools for an objective evaluation of the learning to facilitate and improve the flow of feedbacks provided to students or received from them.</p>	
<p>NEEDS</p>	<p>Bianca would like to have a shared database to make formats and content more uniform and user-friendly, as well as an intuitive platform to use for distance training courses. She attaches importance to the discussion forums and interactive spaces (such as chats, simulators, etc.). Bianca would like to have the tools to allow the collaboration between teachers and students (and with other teachers) on the content to be delivered, so to facilitate the coordination in the programming and delivering of trainings.</p>	
<p>DIFFICULTIES AND FRUSTRATIONS</p>	<p>Bianca finds out a scarcity of digital tools to support students in general, to make lessons more interactive and dynamic. She finds a lack of knowledge on methodologies and tools tailored for distance learning to support students in completing collaborative tasks and/or improving their communication skills and/or supporting their collaboration, and in creating knowledge sharing as well. She is very frustrated by the lack of tools specifically tailored for an objective assessment of the distance training and to provide targeted and timely feedback to learners.</p>	

PERSONAS 3


<p>Name: Alice Age: 32 Profession: Coach / Mentor</p>	
<p>ACTIVITY</p>	<p>Alice is 32-year-old. She has been teaching in education for about 4 years and has good knowledge of technology and online tools (computers, office package, social media, video conferencing and e-learning platforms). She is often close in age to the students she teaches, so she finds it easy to integrate with students. In fact, she has a good ability to encourage them to collaborate with each other, trying to inspire and support them in creating innovative approaches to solve problems, promoting their work, and motivating them. She has often used video conferencing platforms and e-learning platforms (Moodle and Docebo LMS). Alice is very often involved in 100% distance learning courses, but she prefers the hybrid teaching mode, especially when practical learning is concerned. She makes recourse to videos, images, and slide presentations for his trainings, but she would like to use digital simulation tools.</p>
<p>GOALS AND AMBITIONS</p>	<p>Alice would like to provide teaching for online training regardless of the course type and the users involved.</p>
<p>NEEDS</p>	<p>Alice would like to know better effective Virtual Learning Environments (VLE), especially those characterized by ease of use and intuitiveness. When Live Distance Learning is concerned, she would use a platform where interaction is allowed and sharing of information and multimedia contents (presentations enriched with Flash animations and transitions, 3D objects and video streaming, etc.) is enabled during and outside the training sessions.</p>
<p>DIFFICULTIES AND FRUSTRATIONS</p>	<p>Alice finds very difficult to deliver the practical courses effectively when distance learning is concerned. She is frustrated from the fact that the platforms she uses are not user-friendly and don't allow any interactions or collaboration among teacher and students and among students.</p>


PERSONAS 4

<p>Name: Davide Age: 58 Profession: Professor</p>	
<p>ACTIVITY</p>	<p>Davide is a 58-year-old professor who has been working VET for more than 10 years. He has a more than acceptable technological and internet tool expertise. He often uses video conferencing and e-learning platforms and has the skills to inspire and interact with his pupils, urge them to complete assignments, and encourage them to collaborate. Anyway, he prefers in-presence training than distance training.</p>
<p>GOALS AND AMBITIONS</p>	<p>Davide would like to find easy-to-use sharing and collaborative tools in platforms used for distance learning, such as: blogs and discussion forums, podcasts and videos. He would also like to learn how to use simulation tools.</p>
<p>NEEDS</p>	<p>Davide needs ease of use and intuitiveness platform equipped with tools stimulating collaboration and interaction among teachers and students and among students, especially when practical learning is concerned.</p>
<p>DIFFICULTIES AND FRUSTRATIONS</p>	<p>Davide experienced difficulties delivering 20–34-year-oldsng, mainly because he uses video-conferencing platforms not equipped for distance learning. So, he is frustrated by the lack of tools for management, protection and sharing of the digital didactical resources. Delivering of contents is difficult for him when the practical learning is concerned. In fact, he doesn't use simulations, gamifications, augmented or virtual reality, but only videos and images, slides and storytelling.</p>

7.5 Identification, selection and classification of the «recurring themes»

<p>Mario, 52 years old</p> <p><i>Experienced Trainer with ambitions to create digital contents and manage easier the whole training process by remote</i></p>	
<ul style="list-style-type: none"> - Teacher - Upskilling <p>(Low knowledge of Virtual Learning Environments)</p>	<ul style="list-style-type: none"> - to be able to create more complex digital contents - to be able to use open digital resources to stimulate motivation and participation in his students - to be able to manage the entire training process (design, delivery and assessment of learning) by remote
<p>Bianca, 35 years old</p> <p><i>Young trainer with ambitions to improve interactions with students and other teachers, the assessment of the training provided and the feedbacks provided to students</i></p>	
<ul style="list-style-type: none"> - Coach / Mentor - Upskilling <p>(Low knowledge of Virtual Learning Environments)</p>	<ul style="list-style-type: none"> - to be able to use effective sharing and collaboration tools - to be able to use effective tools for the assessment of trainings provided - to be able to facilitate and improve the flow of feedbacks provided to students or received from them

<p>Alice, 32 years old</p> <p><i>Young trainer with ambitions to provide effective teaching in distance / online training regardless of the course type and the users involved</i></p>	
<ul style="list-style-type: none"> - Trainer - Upskilling <p>(Knowledge of Virtual Learning Environments)</p>	<ul style="list-style-type: none"> - to know and be able to use user-friendly and intuitive Virtual Learning Environments (VLE) for distance living training sessions - to be able to use effective tools for sharing and collaboration with other teachers and students, during and outside training sessions - to be able to know and effectively use simulation tools, augmented reality, and virtual reality when practical training / WBL is concerned

<p>Davide, 58 years old</p> <p><i>Professor with ambitions to improve interactions and collaborations with students and delivery practical distance training effectively</i></p>	
<ul style="list-style-type: none"> - Teacher - Upskilling <p>(Low knowledge of Virtual Learning Environments)</p>	<ul style="list-style-type: none"> - to know and be able to use user-friendly and intuitive Virtual Learning Environments (VLE) - to be able to use effective sharing and collaboration tools - to be able to know and use some simulation/virtual reality tools when practical training / WBL is concerned

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