taactic

ICT SKILLS FOR ALL

INTELLECTUAL OUTPUT 4

Training low-skilled adults for digital occupations: paths and recommendations

Co-funded by the Erasmus+ Programme of the European Union

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1. Introduction

The TAACTIC project aims to identify, develop and recognise the **basic digital skills of low-skilled people /** vulnerable adults in order to **facilitate their sustainable access to the labour market**.

These groups are particularly affected by digital inequality and have difficulty adapting to the rapid changes in the labour market. Moreover, the rapid digitalisation of society and of all aspects of our daily lives (public and private services, leisure activities, administrative procedures, shops, etc.) implies many inequalities for these groups as well, who find themselves even more marginalised.

TAACTIC aims to provide practical and operational responses to training and education centres in order to identify develop and make visible the learning of digital skills for better social inclusion, further training and sustainable access to quality employment for learners.

In order to achieve its objectives, the TAACTIC team is working on:

1. Create a **positioning tool** to identify and locate learners' digital skills (deliverable 1);
2. Define a **common reference framework** for basic digital skills training, including a basic digital skills training module (deliverable 2);
3. Developing **innovative pedagogical activities** for VET professionals and their learners - VET (deliverable 3) ;
4. **Developing recommendations for training low-skilled adults for digital occupations (deliverable 4)**;
5. Provide a **toolkit**, gathering existing educational resources to help organise training courses for digital occupations (deliverable 5).

The first phase of the project focused on basic digital skills and their acquisition by the target groups. The first three deliverables are available (on the project website). With this fourth production, the project moves into its second phase, the one that focuses on the labour market in digital occupations, and the training needed to access them.

It seems undeniable today that digital technology is revolutionising the labour market. For years, official forecasting agencies and other research consultancies have been projecting the evolution of the labour market linked to digital developments. Professionals argue that a growing number of occupations and functions linked to digital technology will open up, to the detriment of occupations that are gradually becoming obsolete.

With a growing demand from employers in the digital sector, training operators are inevitably led to question training courses organisations and programmes geared towards the digital sector.

From this point of view, it is interesting to provide professionals involved in the survey, with some hints and recommendations to foster, in medium and long term, development of innovative training courses, geared towards employment reality and expectations, in order to better equip low-skilled people for sustainable integration into employment or into specialised training courses.

This fourth production should be seen as complementary to the fifth production of the TAACTIC project (https://taactic.eu/forum/). This last production consists of a toolbox gathering all types of resources useful for the reflection, development and implementation of training programmes and pathways leading to digital literacy.

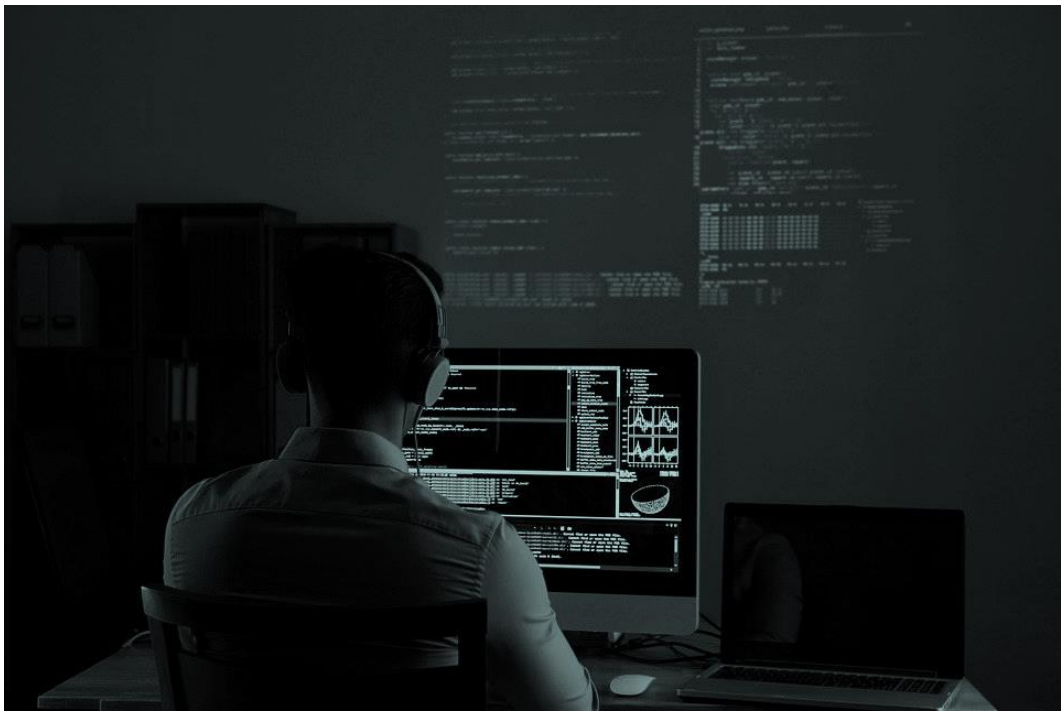
These recommendations are organised in two main parts:

A 1st part presents the overall framework of the project and the skills needed to access the 12 digital occupations selected by the partners, including:

- a brief presentation of the twelve digital occupations for low-skilled people (Section 2);
- a presentation of the surveyed professionals profiles (Section 3);
- the skills needed to access the 12 digital occupations selected by the partners, with
    - a reminder of DIGCOMP, the European reference for digital skills (Section 4.1.);
    - A presentation of the essential skills for the targeted occupations according to survey respondents (Section 4.2.).

A 2nd part that puts forward recommendations:

- for training operators (Section 5.) ;
- specific to the professional integration of vulnerable groups (Section 6.).



2. Twelve digital occupations for low-skilled persons

Industry 4.0 and the digitalisation of society are bringing new employment opportunities. Indeed, a series of occupations and occupations are emerging, others are specialising and/or becoming growth occupations, in demand or even in shortage. Amongst these, it is certain that low-skilled adults will also be able to find their place.

Socio-professional integration actors, training operators, can then see this as an interesting way of guiding these people.

Thus, in the TAACTIC project, the partners chose to explore these opportunities. To do this, partners have targeted the work and research. Indeed, faced with the multitude of occupations, occupations and functions linked to digital technology, operators in the field can quickly find themselves at a loss. What new training pathway should be favoured? Which occupations are accessible to vulnerable groups via non-formal training schemes*? Where should be directed learners who want to go digital?

To develop this resource, partners started by making a **selection of occupations**, targeting certain sectors and areas of activity, in the form of job clusters, and then identifying occupations and occupations for which:

- There is a demand for employment, now and in the future, for low-skilled people (i.e. those without high school qualifications or diplomas) on one hand;
- There are opportunities for access to employment after training through non-formal training organisations, on the other hand.

* A course is said to be non-formal if none of the following conditions are met:
- presents a hierarchical, step-by-step learning process;
- requires pre-requisites for admission;
- lasts at least one semester (or 30 European Credits Transfer Scale);
- has a programme recognised by the national education system (or equivalent authority).

These are the criteria of the 2016 Classification of learning activities (CLA) for determining whether a course is formal or non-formal.
(https://ec.europa.eu/eurostat/documents/3859598/7659750/KS-GQ-15-011-EN-N.pdf/978de2eb-5fc9-4447-84d6-d0b5f7bee723)

This selection resulted in **a list of twelve "digital occupations"**, for which we see an interesting opportunity for the targeted audiences:

1. **Computer technician**

The computer technician is responsible for the management and maintenance of hardware and software (preparation, installation, maintenance). He/she helps users on a daily basis (software use, troubleshooting). They provide advises on equipment purchase and installation. He/she work with customer service and sales departments.

2. **Computer repair technician**

The computer repair technician replaces defective part and performs upgrades, hardware cloning (from a mechanical hard drive to a solid state drive (SSD), etc.).). He/she installs, repairs and tests computer equipment; installs, maintains and replaces parts of personal computers and their peripheral components.

3. **Web Developer**

The web developer deals with the technical part of Internet sites. According to client or companies 'needs and on the basis of a set of specifications, they design customised sites or adapt existing technical solutions. As a specialist in computer languages, he or she is responsible for all the site's functionalities, its architecture, data access and the writing of lines of code containing text, sound and images.

4. **Web designer**

The web designer is responsible for the graphic design of projects for various types of digital media (websites, intranet, etc.). He/she harmoniously arranges texts, illustrations and photos, and arranges the whole in accordance with the client's request. He/she has a good technical knowledge of computer graphics tools. He/she knows how to create a style, a "look" adapted to the product to be produced. The web designer is the "artist".

5. **Community Manager**

The community manager creates and/or runs digital networks (social media, websites, blogs, forums, specialised applications) on behalf of companies or other organisations. He/she is responsible for animating communities to develop the relationship of customers/users with a company or brand. He/she works with the marketing and communication departments and is aware of these areas. The community manager develops the structure's e-reputation by improving its reputation and image. He/she contributes to the analysis of the effectiveness of communication actions (reporting) and monitors emerging platforms and the competitive environment.

6. **Digital mediator**

The digital mediator, which is not officially recognised in Spain, aims to make ICT spaces more dynamic by developing training actions in the use of digital technologies, community

revitalisation and employability improvement. The digital mediator has a profile halfway between the social and the technological in order to be able to carry out the pedagogical tasks of accompanying all types of groups, through personalized and collective attention.

7. **Web Communicator**

The Web Communicator contributes to improve the company's brand image in relation to the competition. Thus, it is his or her responsibility to organise and design the digital communication strategy with internal and external partners.
The Web Communicator's field of action includes both internal and external communication. Internally, he/she works on the intranet, internal newsletters, the company blog, etc. Externally, they manage the company's website, the purchase of advertising space, the company's accounts on social networks, etc. The analysis of his/her actions leads him/her to reflect on future projects to be set up.

8. **FTTH (*fibre at home*) connection fitter installer**

The FTTH (Fiber To The Home) Fitter participates in the installation of fiber optic communication networks. Within a team and under the instructions of the team leader, he/she is involved in the preparatory phase and implements the deployment of the optical cable, both horizontally and vertically, until the optical fibres are connected to the floor boxes. He/she will carry out the fibre optic welding and will take part in quality control of the fibre optic link under the responsibility of a team leader or a measurement technician, in order to record the optic measurement curve on a digital medium.

9. **Network Installer**

The network installer or PC and network technician deals with tasks related to connecting, configuration, installation, maintenance, problem solving and user support of computer infrastructures (hardware), applications (software) and networks. In this context, he/she manages cabling, wireless networking, installation and configuration of equipment, network security against hacking or viruses, and the choice of equipment.

10. **ERP technician/agent**

The ERP technician/agent translates the functional requirements of a client's information system according to the objectives of the business area and the economic and logistical constraints. He/she negotiates the components of a software tool with the IT specialists, assists the project owner and participates in information system implementations.

11. **Database officer/technician**

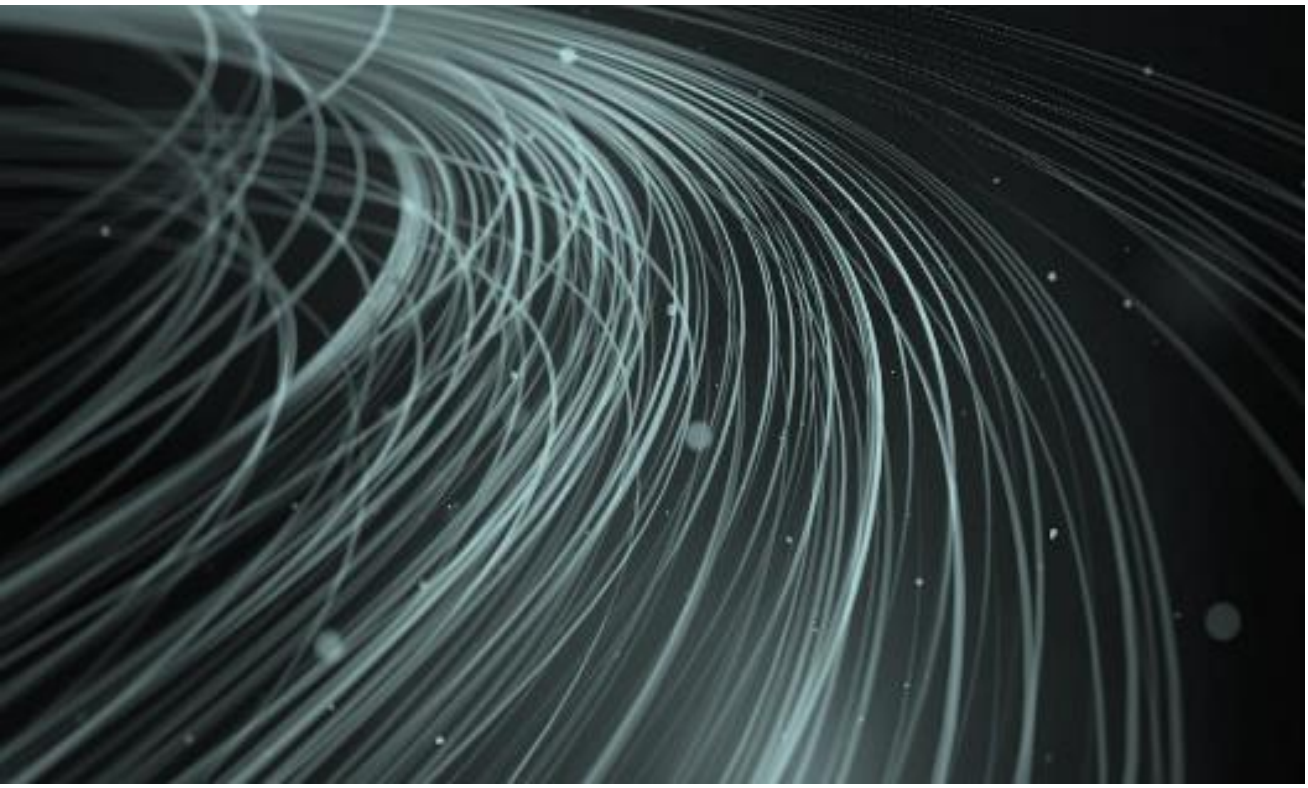
The computer systems technician implements and ensures the availability of the physical and logical resources necessary for the operation of the company's computer and telecommunications production and operating systems.

He/she monitors the operation of systems and networks and ensures cyber security. He/she may be required to coordinate a team or work alone.

12. Technical and commercial support officer (call centre, helpdesk, etc.)

The IT support technician is usually developed by professionals with skills and experience in the use of computer systems and digital tools and in assisting others in resolving incidents, doubts, questions related to a specific technology, and guidance regarding the type of solutions they can choose in the development of their professional or personal activity by using digital technology. Assistance can be provided remotely through a computerised incident management system, by telephone or in person, offering help and support at the workplace according to the specific need.

These twelve occupations therefore constitute relevant and interesting avenues for the development of new training courses for the TAACTIC project target groups.



3. The profile of the professionals approached

In order to issue recommendations and information on the twelve-targeted occupations, we decided to survey field professionals. Their opinion was gathered by means of questionnaire survey sent to IT professionals or trainers for the preselected digital occupations. Most of this report is therefore based on the opinion of digital professionals.

The survey had several objectives:

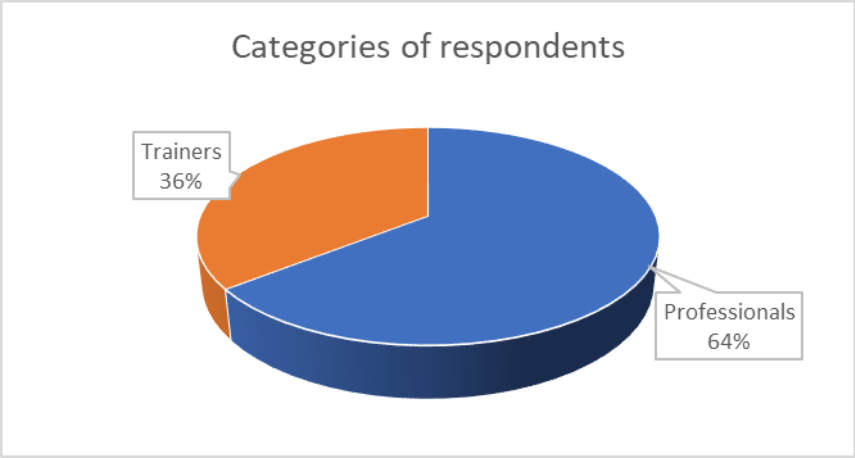
- Identify the skills needed for the occupations pre-selected by the partners;
- to survey what are the occupations potential in digital occupations for low-skilled jobseekers / far from employment;
- provide training operators with information to build future training programmes aimed at acquiring technical and transversal digital skills.

3.1. Methodological clarifications

- **Who?** Partners interviewed professionals in the selected occupations in one or two partner countries (chosen according to the distribution agreed between them): Belgium, France, Italy or Spain.
- **How can we do this?** Face to face, by phone or via an online form.
- **Timing:** The survey was administered individually and anonymously from November 2021 to January 2022.

3.2. The profiles of the respondents

Number of respondents: **100 people responded to the questionnaire.** The 100 participants **provided 120 responses** (some people responded to more than one occupation).



Good distribution can be noticed among participants in the survey. Indeed **professionals and trainers both answered the questionnaire,** with 64 professionals and 36 trainers.

The range of respondent profiles is representative of several business functions:

- trainers in one of the targeted occupation;
- professionals in one of the targeted occupation;

- management staff (senior managers, administrative/HR managers, etc.);
- directions (such as the General Director of the Digital Campus, the President of *Objectif Fibre*, the Commercial Director of Prysmian Telecom Solutions, ...);
- independent/entrepreneurs.

In terms of their professional background, **respondents reported a variety of educational backgrounds, not necessarily related to the digital occupations:**

- On-the-job training
  - Self-taught + additional training;
  - On-the-job training;
  - Lifelong training.

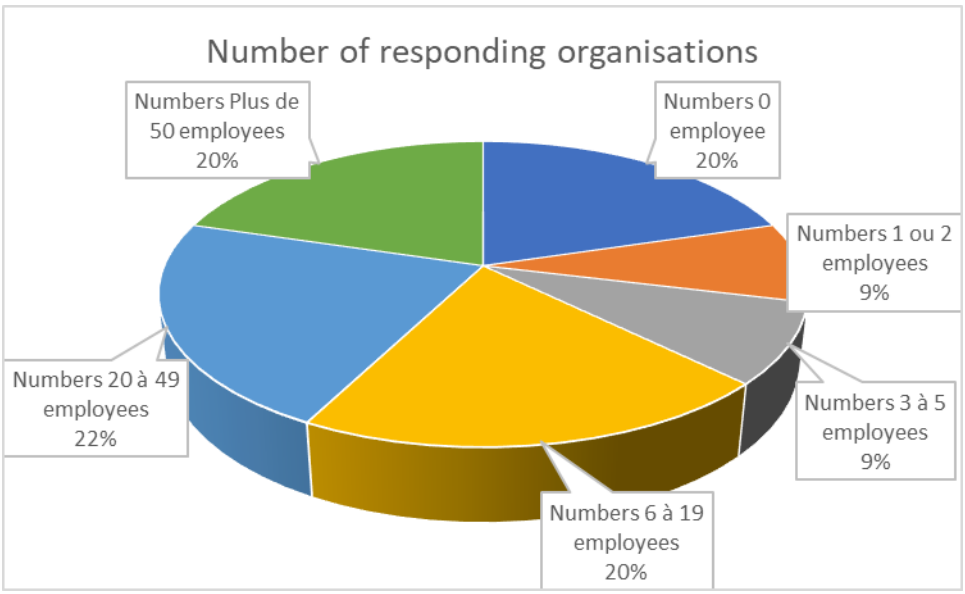
- Higher education of short or long type
  - University and/or various higher education courses.

Respondents to the questionnaire had **access to their** current **occupation** through different channels:

- or via their initial training;
- either by external progression, in majority, and internal, partly.

A number of respondents had a wide range of professional experiences before reaching their current position.

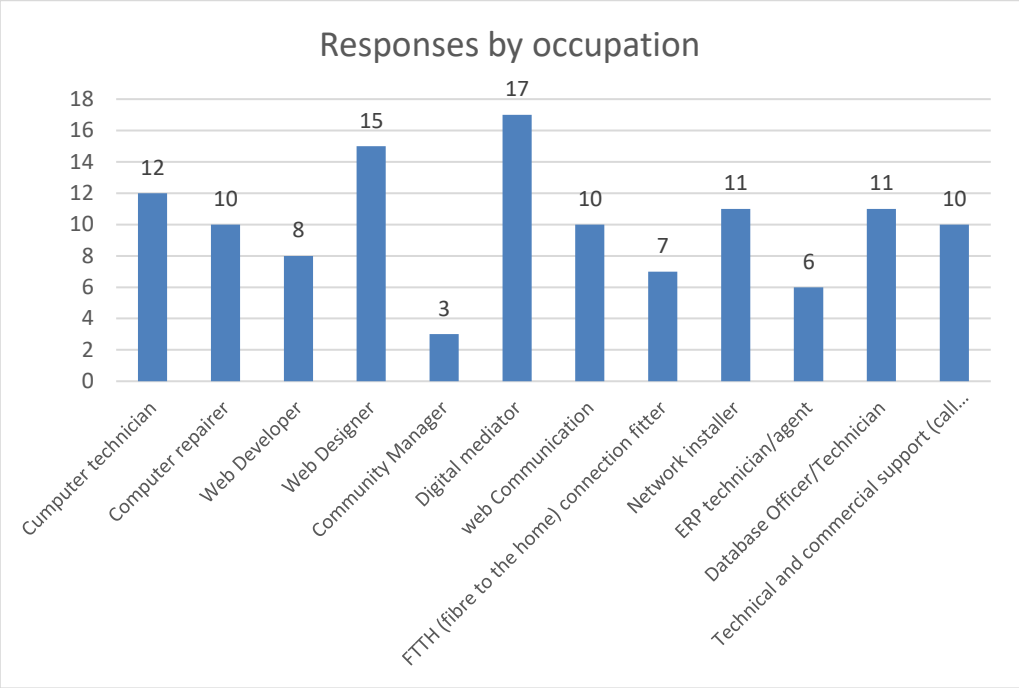
The respondents to the questionnaire are **currently working in small companies.**



Within these companies, respondents perform a variety of functions that relate to one of the twelve targeted occupations /occupations**.**

The distribution of responses by occupation is broadly consistent and homogeneous.

Some occupations received a greater number of responses (digital mediator, website designer, computer technician). However, it was difficult for partners to contact *Community Manager* professionals and trainers, as well as *ERP Technician/Agent*


Responses by occupation
18
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Cumputer technician
Computer repairer
Web Developer
Web Designer
Community Manager
Digital mediator
web Communication
FTTH (fibre to the home) connection fitter
Network installer
ERP technician/agent
Database Officer/Technician
Technical and commercial support (call...

4. Skills for digital occupations

4.1. The DIGCOMP, a European reference for digital skills

At the dawn of the digital age, we are facing a major collective and societal challenge, by bringing all citizens into the digital world and fighting the digital divide. All this in order to have everyone benefiting from new technologies in a world where it seems to be becoming an essential part of everyday life.

Several years ago, the European Union therefore undertook a project to provide itself with a common reference: the DigComp reference framework, for *European Digital Competence Framework for Citizens* **DigComp, the European digital skills reference framework** (https://publications.jrc.ec.europa.eu/repository/handle/JRC106281). The DigComp framework has been developed to improve the understanding of digital skills across the European Union. In a European context where many unemployed adults have significant digital literacy gaps, this key resource links skills, training, employment and citizenship. Its aim is to provide member states with a common standard for designing policies, programmes and schemes to support the development of digital skills.

As it has become the unavoidable reference in terms of digital skills, any training organisation must, from now on, integrate DigComp into its usual resources, almost in the same way as the reference frameworks and resources geared towards occupations and technical skills. This is all the truer for organisations wishing to position themselves in digital sectors.

DigComp identifies 21 competencies, within 5 skill areas:

1. Information
2. Communication and collaboration
3. Content creation
4. Security
5. Problem solving

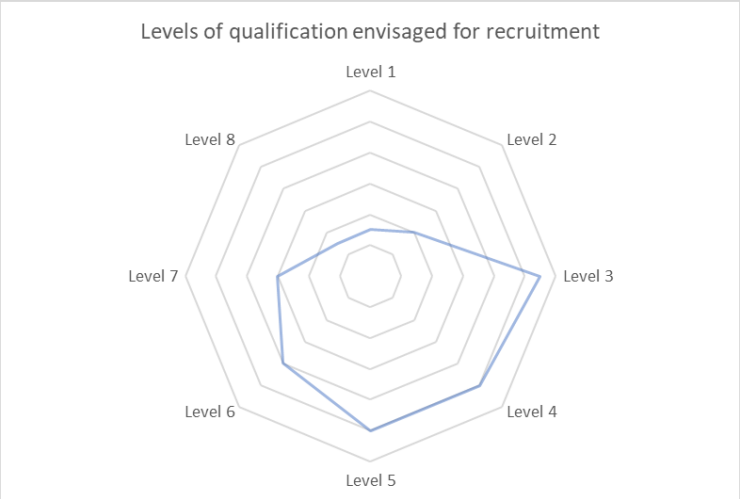
With this tool, the idea is to develop digital literacy among all European citizens so that they can:

- Mastering current software and programs, useful for private, civic and professional life (office automation tools, online communication and sharing, access to digital public services, etc.);
- Acquire a critical approach to digital technology, with a view to media education, in order to adopt thoughtful uses of digital technology;
- To acquire an algorithmic logic enabling them to understand and use digital technology.

In its most recent version, DigComp 2.1 (2017), the 21 competences are divided down into 8 levels of mastery, echoing the eight levels of European Qualifications Framework (https://europa.eu/europass/fr/european-qualifications-framework-eqf). The eight DigComp levels, from beginner to expert, are determined according to the degree of **tasks complexity** to be performed and the **level of autonomy** of the person performing the tasks. The more complex the task will be, the higher the level of mastery will be required. For example, at levels 1 and 2, one would find the fact of opening an application on a smartphone, while at higher levels; one would be able to develop such an application. The autonomy dimension covers the ability to

carry out a task with guidance at levels 1 and 2, and at higher levels, to be able to accompany and train someone on the task oneself.

In this production, the occupation chosen by the project partners are on the intermediate and high DigComp levels. Within the framework of the targeted occupations, the DigComp level of the training courses is therefore from level 3 and above. According to the survey respondents and the partnership's research, the targeted occupation, in their accessible version toward the target groups, are at levels 3 to 6.



Indeed, when asked at what level they were planning to work in their company on occupations involving digital technology, the answers were mainly distributed between levels 3, 4, 5 and 6.

As a reminder, the knowledge for each level is defined as follows:

- *Level 3*: knowledge of general facts, principles, processes and concepts in a field of work or study;
- *Level 4*: Factual and theoretical knowledge in general contexts in a field of work or study;
- *Level 5*: Detailed, specialised, factual and theoretical knowledge in a field of work or study, and awareness of the limitations of this knowledge;
- *Level 6*: Advanced knowledge in a field of work or study requiring a critical understanding of theories and principles.

It is understood that, in the field of the labour market, this variable will always depend on the reality on the ground: company structure, organisation chart and decision-making and implementation scheme, specific missions, etc.

4.2. Essential skills for targeted occupations

For the targeted occupations, there are certainly, in each country, reference frameworks of competences and occupation profiles that serve as a standard, or norm, for building training programmes.

As an introduction to these references, we surveyed the professionals in the targeted occupation to identify **the key specific skills most essential to their occupation**. This selection acts as an introduction to the specific references, to understand better the targeted occupation, and therefore the core of the training programmes to be built, for both technical skills and soft skills:

Technical skills	Soft skills
Computer Technician	
1. Install, maintain and troubleshoot computer equipment (1st) 2. Provide technical assistance to employees 3. Perform a standard configuration on a workstation 4. Install or configure a device in the customer's environment	1. Autonomy 2. A sense of responsibility 3. Efficiency
Computer Repairer	
1. Replace a computer's hard drive to install and configure the operating system according to the specifications provided 2. Update and maintain hardware components and the operating system, performing the necessary configurations and data transfers, according to standard procedures 3. Replace a system component, find and install drivers for the operating system in use and update the system	1. Perseverance 2. Adaptability 3. Efficiency
Web Developer	
1. Writing lines of computer code (Coding languages and web design) 2. Transcribing a specification 3. Create and develop programs and applications	1. Analytical skills 2. Organisational skills 3. Autonomy
Web designer/designer	
1. Graphic design of projects for various types of media (websites, intranet, etc.) 2. Harmonious arrangement of texts, illustrations, photos, and layout in accordance with the client's request 3. Create a style, a "look" adapted to the product to be made	1. Efficiency 2. Intellectual curiosity 3. Organisational skills

Community Manager

1. Animating a community 2. Monitor and analyse exchanges within communities 3. Apply the rules for disseminating information and communication	1. Communication 2. Adaptability 3. Autonomy

Digital mediator

1. Implementing mediation actions with users in a digital environment 2. Ensuring the reception and information of the various publics within the framework of a structure or during a digital mediation action 3. Provide technical assistance to different audiences and companies in the use of machines and digital tools	1. Intellectual curiosity 2. Analytical skills 3. Innovation

Web Communicator

1. A good grounding in graphic arts and communication (notions of ergonomics and design, etc.), 2. Mastering image editing and graphic design software 3. Create communication materials: brochures, posters, visuals for social networks	1. Communication 2. Initiative 3. Autonomy

FTTH (fibre to the home) connection fitter

1. Carrying out the work of pulling and unrolling optical fibre 2. Carrying out the work of connecting the optical fibres to the user boxes, 3. Carry out tests and measurements / Prepare and set up the site	1. Autonomy 2. Communication 3. Efficiency

Network Installer

1. Connecting, configuring, installing, and maintaining hardware, software and network infrastructure. 2. Managing cabling, wireless networking, equipment installation and configuration, network security against hacking or viruses, hardware selection. 3. Establish a diagnosis and provide an appropriate response.	1. Efficiency 2. Organisational skills 3. Analytical skills

ERP Technician/Agent

1. Defining the evolution of an information system 2. Identify strategic choices for the evolution of the company's information systems 3. Coordinating the different stages of a project	1. Analytical skills 2. Autonomy 3. Organisational skills

Data officer/technician (basic)

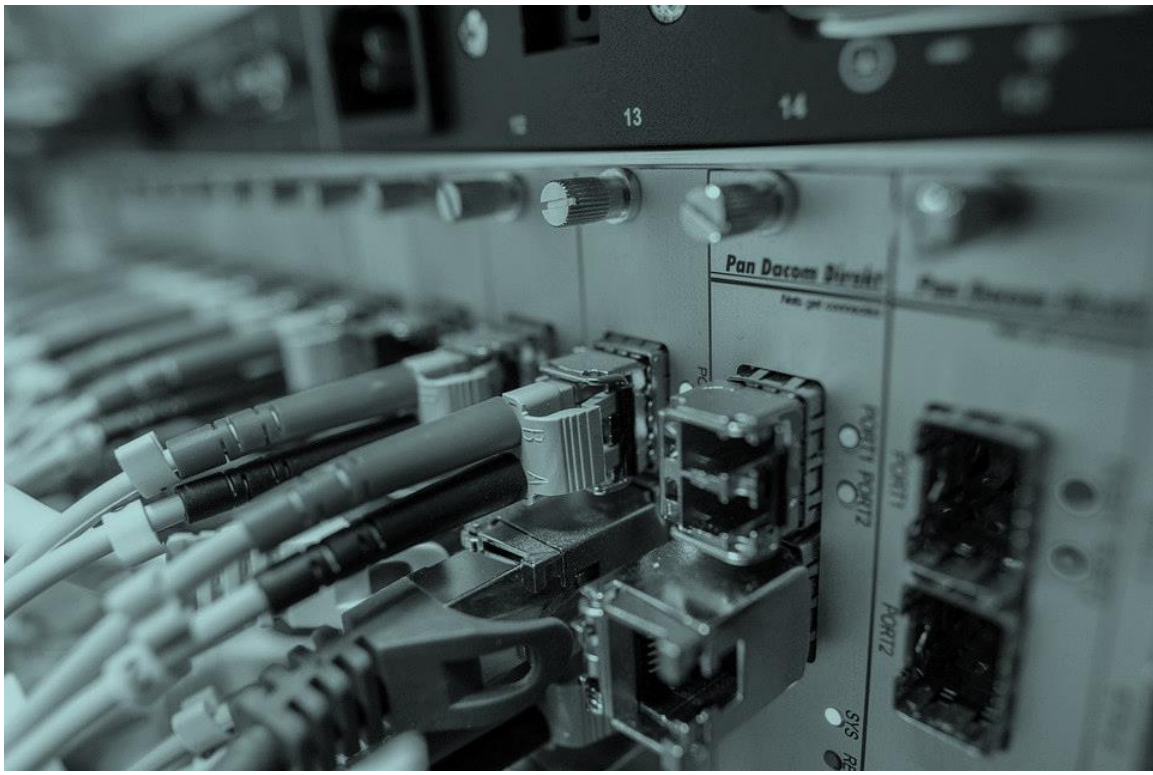
1. Working with databases (database query theories, data manipulation techniques, SQL language)
2. Apply procedures to ensure data security, confidentiality and efficiency
3. Use and mobilise data processing tools

1. Analytical skills
2. Autonomy
3. Sense of responsibility

Technical and commercial support officer (Call centre, Helpdesk...)

1. Provide technical assistance
2. Handle litigation files (disputes, complaints, etc.)
3. Transferring a complex technical problem to a specialist

1. Analytical skills
2. Team spirit
3. Communication



5. Digital industries: recommendations to training operators

The professionals surveys, combined with various research and analyses, has led the TAACTIC partnership to draw up a **list of recommendations for operators wishing to orient their courses towards the digital occupations.** This advice, combined with the expertise of the field personnel, will certainly make it possible to provide innovative training prospects adapted to the needs and profiles of the target groups.

5.1. Orienting the low-skilled towards digital technology

The low-skilled public, the project's target group need to know about the opportunities offered by digital technology. In this context, non-formal training operators, who often have the task of receiving these target groups, certainly have a role to play in guiding these groups in determining their digital career plans. Here are a few avenues of work in this respect:

- Participate in the **popularisation of the disciplines**, so that the low-skilled public has a better vision of the opportunities and occupations of the digital world. Indeed, it is not uncommon for these persons, and particularly low-skilled adults, to be unaware of digital occupations.

- Allowing the professionals involvement to facilitate the transfer of know-how from peers (internships, mentoring, on-site interventions, knowledge-sharing meetings, etc.). This also allows learners to **meet professionals in the sector**, to anticipate the future and to be inspired by diverse backgrounds.

- Raise awareness among **public and institutional employment and training bodies in** order to work with them on setting up systems to guide the low-skilled public towards digital technology.

- Work on badge[1] implementation system in field of self-training or validation by professional or private experience.

- To encourage the **playfulness** of learning, to make the subject matter more accessible. For people who, in some cases, left the school system at an early age.

- Develop partnerships with **training organisations and operators to** develop bridges that facilitate the continuation of the training pathway towards more advanced vocational training. This can be achieved by organising **pre-training courses or preparation for entry into** training leading to qualifications.

[1] Created in 2011 by the Mozilla Foundation, Open Badges provide an accreditation system that aims to create new career and educational opportunities by promoting the recognition of skills and achievements gained through formal and informal learning.

5.2. For profession-oriented courses of study

- Integrate a stronger link with local businesses and **employers**, in order to identify the needs of businesses more accurately. In addition, building and maintaining strategic relationships with employers makes it easier to find internship and apprenticeship places for learners, or even a direct route to employment.

- Paying attention to orientation and to the **phases of determining and validating the professional project** before starting the vocational training itself. This enables the discovery of the various aspects of the profession, but also encourages self-knowledge and the **definition of a professional project**, which is very useful for the subsequent retention of the training.

- Integrate **distance learning** into the courses, where relevant. In fact, several digital occupations offer remote working methods. Integrating this dimension into training courses allows learners to practice and to be immersed in real working conditions, to exercise their autonomy.

- Integrate **practical training** time **"in the field"**, and work situations. Following the example of training-through-work organisations or integration through economic activity, this can be done either through workcamps or by carrying out orders on behalf of clients.

- Work on **soft skills throughout the** training, as these are a key element that is becoming increasingly important to employers.

    - A major lesson from the survey is the importance of soft skills in the digital sector, perhaps even more than in other sectors. Respondents emphasised that these skills are essential for sustainable integration into, and retention in, employment. Indeed, technologies evolve very quickly and technical skills must be continually updated. In order to develop their versatility and increase their chances of keeping their occupations in the long term, learners must be prepared to evolve in this constantly (r)evolving sector. Thus, training programmes should emphasise **autonomy**, **intellectual curiosity**, **adaptability**, the ability to learn (***learning to learn***) and to self-train, etc.

    - Soft skills can be addressed in particular by means of professional situations but also through teaching activities inspired by **project-based teaching** or teaching by objectives. Through the implementation of a project, learners are led to use various faculties and transversal skills in a professional situation: entrepreneurship, organisational skills, rigour, search for the right information and resources, teamwork skills, not to mention the exploitation of a hitherto unsuspected potential that promotes self-confidence and self-esteem.

- Integrate working and project management methodologies such as **Agile, Scrum** ... that are very popular in digital workplaces.

- Provide for **recognition of learning outcomes, and preparation for validation and/or certification** of skills. This has the effect of enhancing the value of learning outcomes and facilitating, where appropriate, access to certain occupations or training courses requiring particular prerequisites.

    - Another important lesson from the survey is that, as in other sectors, digital employers are less interested in educational qualifications than in the skills and

attitudes of applicants. However, many occupation applicants come from higher education backgrounds. Faced with these "competitors", people from socio-professional integration programmes sometimes find it difficult to interest recruiters in their CVs. Validations and certifications are then a relevant means to remedy this.

- For some occupations, create a **portfolio of the** learner's achievements (logos, websites, content, programmes, etc.) to enable them to keep valuable records when looking for an occupation. This implies training or upgrading the skills of learners in the methodology of creating a portfolio.

- Because technologies are constantly evolving, it is important to set up a **constant technological watch on** the developments in the targeted occupations. In the same way, it is necessary to focus on the **lifelong training** of technical trainers on the occupation tools.

- Explore the opportunities and realities of **entrepreneurship**. Digital occupations are often practised by self-employed people or consultants. The training programmes leading to these occupations must therefore integrate this aspect. In this respect, as a complement to DigComp, mentioned above, it is interesting to look at EntreComp (https://ec.europa.eu/social/main.jsp?catId=1317&langId=en), the European reference framework designed to illustrate the skills that constitute entrepreneurial competences.

5.3. Other recommendations

- Work towards **gender diversity** in the digital sector and the **feminisation of occupations and sectors**. At training operators' level, this starts with recruitment and orientation, with particular attention paid to getting closer to associations for the integration and support of women, and even to the opening of courses dedicated to women.

- Facilitating **access to computer equipment,** in particular through the loan of equipment at home. This allows learners to do reinforcement or additional work according to their wishes and needs, and to become even more familiar with digital technology.

- To make **the existing specialised training offer more visible**. Indeed, the number of training courses available to jobseekers and employees is very high in all the project's partner countries. However, this training offer is quite unknown either by the interested persons or by the companies. This requires, in particular, collaboration with public institutions that provide support for jobseekers and workers undergoing retraining, as well as with employers and their human resources management units for the ongoing training and retraining of workers.

- Once again, one of the keys to success is the development of **occupation coaching** activities **and support for learners**' **professional projects**; in particular through occupation search workshops, fairs and meetings with employers in the region, the setting up of business incubators, etc.

6. Finding a digital occupation: information on employment

Once the training has been completed, there remains the issue of integration into the occupation market. Here are a few ideas for promoting access to digital employment for vulnerable groups.

When asked about the upcoming occupation openings in their companies, the respondents to our survey consider that recruitment will be rather difficult.
The responses point to various reasons that make recruitment difficult:

- lack of knowledge about the occupation;
- lack of candidates, in general, and qualified candidates in particular;
- growing needs of companies outstrip the number of available candidates: companies seek to poach employees from other companies;
- lack of soft skills such as autonomy, self-learning, perseverance, mobility, writing skills, etc.

Moreover, contrary to what one might think, employers agree that there is a glaring lack, or even a shortage, of labour in the digital sectors worldwide. This shortage seems to be explained by several things: lack of knowledge of digital opportunities (existing occupation and occupations, occupation market, etc.), mismatch between the skills learned in training and the requirements of employers, etc.

Digitalisation leads to the creation of new occupations, but also, to the obsolescence of certain functions. There is therefore a twofold challenge at this level: training future workers for the new occupations available and working on the retraining of people who risk losing their occupations. In addition, this double challenge is *ultimately* met, since workers who lose their occupation will swell the ranks of job seekers looking for training.

Therefore, there seems to be room for innovation and improvement of training, on the one hand, but above all room for our audiences in the digital labour market on the other.

6.1. Access to digital employment for low-skilled people

For adults who are far from employment and vulnerable, the digital occupations may seem almost inaccessible. However, it seems to us that there is a real opportunity for them. And experiences in the field prove this all over Europe, following the example of BeCode or Molengeek in Belgium, or the Grande Ecole du Numérique in France (https://www.grandeecolenumerique.fr/).

For the organisations supporting these people in their socio-professional integration process, there is therefore a great need for guidance and training for these people, so that they can discover that digital technology as a career is within their reach.

Once this stage has been completed, their pathway must give important place to post-training support. In this respect, we offer here some thoughts and recommendations to be explored further, in the hope of improving access to digital employment for these groups.

- **Thinking about the training centre's pedagogical project, to favour learners during recruitment:**

It is not easy for an employer to find the right profile even if many candidates apply. As for the target group, they will have to make a difference in the face of candidates with diplomas.

However, a jobseeker who has completed a vocational training course can convince the employer that he or she can meet the company's needs. The latter can value the application in a different way. The training centre's educational project already makes it possible to convince oneself of this through the following elements:

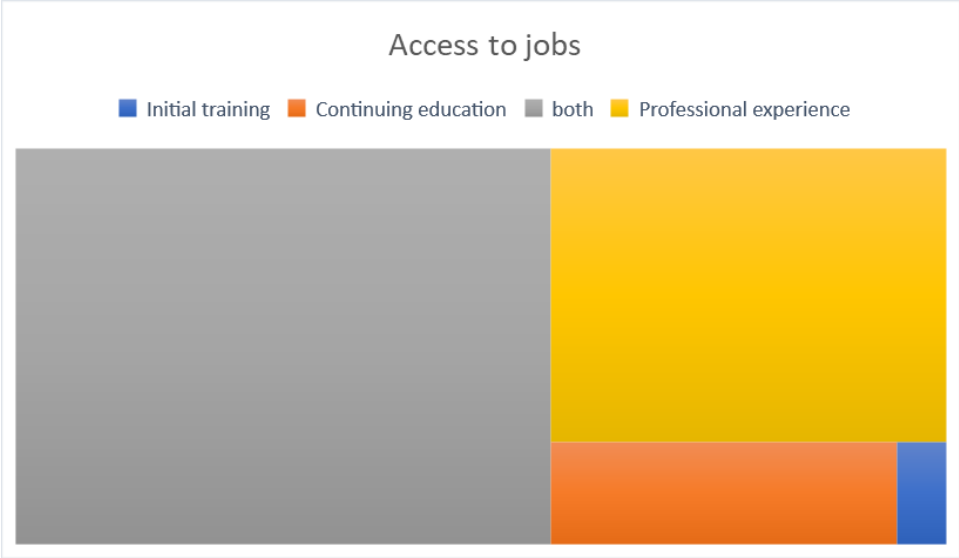
- Competency-based approach;
- Continuous assessment;
- Alternating practice and theory;
- Flipped learning;
- Objective-based pedagogy, inspired by project-based pedagogy;
- Differentiated teaching, individualised support;
- Consideration of soft skills in training objectives;
- Workplace situations;
- Active occupation search workshops and attention to the definition of the professional project;
- Internships in companies;
- Validation of skills.

As for the jobseeker who applies, he or she can put forward a certain number of assets: technical skills, of course, but above all the soft skills that he or she may have acquired throughout his or her training or which was revealed through it. This can be further enhanced by recognition systems such **as open badges and other digital recognitions**, which are very popular in digital-oriented professional environments.

Finally, we must not forget the work placement, which is often a crucial stage in the integration process. Often decisive, it allows the learner to confront the reality of work and to refine his professional project. Well supported by the company and the training centre, it can end in an occupation. There are therefore strategies and partnerships to be developed with the places hosting the work placement.

- **Promoting lifelong learning :**

For $^{2}/_{3}$ of the respondents to our questionnaire, access to occupation that require digital skills and that are recruiting is mainly through lifelong training and on-the-job training ("Both").



Thus, acquired professional experience is a good pathway to employment. Lifelong learning alone seems insufficient. Initial training alone is clearly insufficient for accessing an occupation.

If the learner has a solid background at the end of his or her training, he or she must therefore also be encouraged to continue training throughout his or her career. In addition, as mentioned above, to awaken their intellectual curiosity and their capacity to learn and train, or even self-train, throughout their lives, via ERASMUS + for example.

6.2. Recommendations for jobseekers

The digital sector currently offers many occupation opportunities, available to all. Tomorrow, even more occupations will be available. Jobseekers interested in a career in this field therefore have an interesting opportunity.

However, how can you find your way around? Above all, how to make a difference to employers? In this section, we provide a few tips that should help them take their first steps towards the digital occupations. These elements may also be useful to training and guidance providers who wish to help their clients find their way into digital occupations.

Before being able to work in the digital sector, it is often necessary to mark out a path through three main stages, possibly accompanied by a training/guidance/coaching professional:

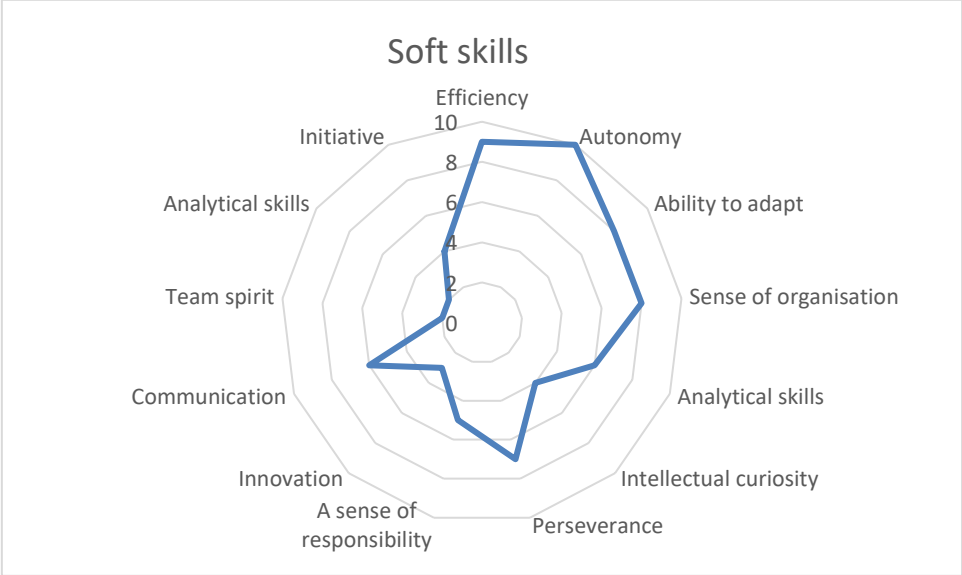
- **Building a professional project :**
  - **Discover**: What occupations and functions exist? Is this occupation for me? Which companies are hiring? And what are the working conditions?
  - **Understanding digital skills**: what are the expected soft skills and competencies?
  - **My position:** what are my digital skills? Where do I stand on DigComp, the European reference for digital skills? What are my skills and training needs to get into the digital world?
  - **Positioning yourself**: How can I value my past professional experiences, even if they are not directly related to digital technology?
- **Work on employment prospects in the digital occupations :**
  - Identify occupation opportunities in my geographical area, find out which companies are potentially looking for *junior* digital profiles;
  - Analyse and scrutinise published occupation offers: what do employers expect in terms of profiles: qualifications, skills, soft skills etc.? And, in return, what can I expect from the labour market: types of functions, contracts, salary, responsibilities, etc.
  - Identify employers' recruitment procedures: what are the steps for recruitment? What do I have to send or prove, what kind of selection tests are organised?
  - And, based on all this, see what to do to match the reality of the labour market, identify possible training and reinforcement needs, ...

- **Adapting to employers' skill needs**

Throughout this report, we have emphasised the importance of soft skills in digital training programmes. Increasingly, this is being emphasised by employers, especially those in the digital sector.

The TAACTIC project partners therefore surveyed professionals in the field on this subject, via our survey, which they conducted. The respondents to the questionnaire specified, occupation by occupation, the **soft skills or competences** that they considered the most important. Some skills were cited more often than others were by the respondents.

Skills that relate to **autonomy**, the **ability to adapt** to a situation that may be different from the one seen in training, and the concern for **efficiency** are skills that were particularly emphasised by respondents to the questionnaire.



Respondents also highlighted certain professional "postures" or "attitudes" common to several occupations that employees must possess:

- Compliance with **safety** regulations, including site safety where applicable;
- **Know-how** in the presence of the client and the company's image;
- The human contact, **the commercial attitude;**
- **Listening to** the customer, the ability to identify needs;
- **Care of** the work;
- Openness and **acceptance of criticism.**

7. Conclusion

There are many studies, in different sectors and in different countries, which show that for many occupations, digital skills are necessary today and will be even more necessary tomorrow.

These skills are and will be more and more transversal to many occupations. For example, the use of collaborative tools in the company will continue to develop.

In summary, these competences:

- Come from **the core business** for IT and telecommunication occupations
- Are **peripheral** to the occupation for new or profoundly transformed profession due to digital technology, which require a skill adaptation;
- Or they are **pervasive** for occupation where digital tools are used without changing the profession but constitute an essential support for the activity.

The human resource needs of employers, which are expected to be increasingly important, could therefore, as a knock-on effect, open up employment opportunities for all, especially for low-skilled adults.

But occupation forecasting has its limits.

It is not always easy to identify the future skills needs of employers, given the demographic, technological and economic changes in societies.

As a result, the project partners wished to favour a more operational and concrete approach. This is why the TAACTIC deliverable n°4 is extended by a specific work on **the** theme of **innovation in training processes**.

TAACTIC's 5th deliverable will thus aim at supporting training operators to build new, innovative and updated pathways in the digital sector. Innovative and relevant educational resources are presented for each of the 12 digital occupations identified by the partners, and are available on the website (https://taactic.eu). .

8. Annexes

1. Questionnaire for the survey of field professionals
2. Questionnaire results

1. Questionnaire

The occupation to be analysed

Among the following occupations, choose one that you know well and for which we would like your opinion:

- Computer technician
- Computer repair technician
- Web DeveloFper
- Web designer
- Community Manager
- Digital mediator
- Web Communicator
- FTTH (fibre to the home) connection fitter
- Network installer
- ERP technician/agent
- Data officer/technician (basic)
- Technical and commercial support officer (Call centre, Helpdesk…)

Skills related to the selected occupation

For the selected occupation, rank the following technical skills in order of importance:

- *The respondent chooses from a drop-down list one of the 12 occupations for which his or her opinion is required to identify technical skills.*
- *The respondent prioritizes the most important technical skills for digital occupation*
- *The technical skills are those identified by the partners in the occupation descriptions drawn up beforehand by the project partners*

For the selected occupation, rank the following soft skills in order of importance:

Soft Skills	Not important at all	A little important	Neutral	Important	Very important
Analytical skills *I analyse problems to find solutions*					
Team spirit One for all, all for one!					
Perseverance I make the effort to complete my work					
Adaptability I'm tuning in					
Autonomy *I'm in charge*					
Organisational skills *I plan, prepare and organise my work to meet deadlines*					
Initiative *I dare to be proactive*					
Communication *Message received! Transmitter ok receiver ok*					
Innovation I solve problems in an original and effective way					
Sense of responsibility I take responsibility for the consequences of decisions related to my tasks					
Intellectual curiosity I am intellectually curious about my occupation.					
Efficiency *I achieve my objectives on time with the given means*					

Desired innovations in training

For your chosen profession, would you say that the content of the training courses for accessing it should, in the future, be :

Training content	Not necessarily	A little	Neutral	Rather	Many
Closer to the needs of companies					
Common to several occupations					

For your chosen occupation, would you say that the training arrangements for accessing it should, in the future, be:

Modalities of training	Not necessarily	A little	Neutral	Rather	Many
Online learning					
On-the-job training					
Peer-to-peer training					

For your chosen occupation, would you say that the length of training for access to it should, in the future, be:

Duration of training courses	Not necessarily	A little	Neutral	Rather	Many
Shorter courses					
More regular training					

In your chosen profession, what other areas should training organisations innovate in the future? (Open question)

Employers' future skills needs

For occupations that require digital skills, how many employees do you plan to recruit in 2022?

- No
- From 1 to 3
- More than 3.
- I don't know

Which occupations that require digital skills do you plan to recruit for in 2022? (Open question)

Regarding occupation that require digital skills, do you think recruitment will be difficult?

- Yes
- No
- I don't know

What are the specific skills for this/these occupation(s)? (Open question)

At what level of qualification do you recruit for these occupations?

- Level 1: General basic knowledge
- Level 2: basic factual knowledge in a field of work or study
- Level 3: knowledge of general facts, principles, processes and concepts in a field of work or study
- Level 4: factual and theoretical knowledge in general contexts in a field of work or study
- Level 5: detailed, specialised, factual and theoretical knowledge in a field of work or study, and awareness of the limits of this knowledge
- Level 6: Advanced knowledge in a field of work or study requiring a critical understanding of theories and principles
- Level 7: highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, underpinning original thinking or research; critical knowledge of knowledge in a field and at the interface of several fields
- Level 8: knowledge at the most advanced frontier of a field of work or study and at the interface of several fields

Regarding occupations that require digital skills, for which you are considering recruiting, access to the position will be possible by using?

- Initial training
- Lifelong learning
- Both

In your opinion, are these occupations that require digital skills accessible to low-skilled jobseekers / those far from employment?

- Yes
- No
- I don't know

Identification of the respondent (Company or Training Organisation)

Size range of the structure

- 0 employees (no staff at 31/12)
- 1 or 2 employees
- 3 to 5 employees
- 6 to 19 employees
- 20 to 49 employees
- More than 50 employees

NACE code:

Occupation title/current function:

2. Questionnaire results

Respondents	*Category*		TOTAL	Workforce						TOTAL
	Professionals	*Trainers*		0 employees	1 or 2 employees	3 to 5 employees	6 to 19 employees	20 to 49 employees	More than 50 employees	
	64	36	100	19	12	9	21	20	19	100
AID	10	6	16	1	2	3	5	5	0	16
EVT	8	3	11	3			1	2	5	11
ESPLAI	14	9	23	2	3	1	5	6	6	23
AID FORMATION	13	2	15	4	3	0	3	3	2	15
AGFE	9	11	20	4	2	2	4	3	5	20
SENSCOP	10	5	15	5	2	3	3	1	1	15
Objective	*70%*	*30%*		*19%*	*12%*	*9%*	*21%*	*20%*	*19%*	*100%*
Realized	*64%*	*36%*								

The positions analysed

No response for the occupation of "order picker / logistics support".

Number	Computer technician	Computer repairer	Web Developer	Web designer	Community Manager	Digital mediator	Web communicator	FTTH (fibre to the home) connection fitter	Network installer	ERP technician/agent	Database Officer/Technician	Technical and commercial support officer (call centre, helpdesk, etc.)	TOTAL
Response	**12**	**10**	**8**	**15**	**3**	**17**	**10**	**7**	**11**	**6**	**11**	**10**	**120**
Objective	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**120**
AID	0	0	6	6	0	4	0	0	0	0	0	0	16
EVT	10	10									11		31
ESPLAI	0	0	1	1	0	12	0	0	0	0	0	9	23
AID FORMATION	0	0	0	7	0	0	0	0	8	0	0	0	15
AGFE	2		1	1	3	1		7	3	1		1	20
SENSCOP							10			5			15

Desired innovations in future training programmes

The content of training for access to occupations

Number	Closer to the needs of companies					TOTAL
	Not necessarily	A little	Neutral	Rather	Many	
	4	8	16	55	37	120
	3%	*7%*	*13%*	*46%*	*31%*	*100%*
AID	2	1	1	8	4	16
EVT	0	2	5	15	9	31
ESPLAI	1	2	3	9	8	23
AID FORMATION	0	2	1	10	2	15
AGFE	1	1	4	5	9	20
SENSCOP			2	8	5	15

Number	Common to several occupations					TOTAL
	Not necessarily	A little	Neutral	Rather	Many	
	7	17	45	31	20	120
	6%	*14%*	*38%*	*26%*	*17%*	*100%*
AID	1	1	3	9	2	16
EVT	0	3	11	11	6	31
ESPLAI	1	9	12	1	0	23
AID FORMATION	1	3	4	5	2	15
AGFE	2	1	6	2	9	20
SENSCOP	2		9	3	1	15

Training arrangements to access the occupation

Number	Online learning					TOTAL
	Not necessarily	A little	Neutral	Rather	Many	
	22	13	33	29	23	120
	18%	*11%*	*28%*	*24%*	*19%*	*100%*
AID	6	0	8	0	2	16
EVT	3	7	7	10	4	31
ESPLAI	0	0	0	12	11	23
AID FORMATION	3	2	4	5	1	15
AGFE	9	2	5	1	3	20
SENSCOP	1	2	9	1	2	15

Number	on-the-job training					TOTAL
	Not necessarily	A little	Neutral	Rather	Many	
	2	3	14	43	58	120
	2%	*3%*	*12%*	*36%*	*48%*	*100%*
AID	1	0	1	5	9	16
EVT	1	1	5	13	11	31
ESPLAI	0	1	3	9	10	23
AID FORMATION	0	1	3	5	6	15
AGFE				3	17	20
SENSCOP			2	8	5	15

Number	peer training					TOTAL
	Not necessarily	A little	Neutral	Rather	Many	
	2	8	33	46	31	120
	2%	*7%*	*28%*	*38%*	*26%*	*100%*
AID	0	0	6	5	5	16
EVT	1	5	5	14	6	31
ESPLAI	0	2	7	9	5	23
AID FORMATION	0	1	3	5	6	15
AGFE	1		6	5	8	20
SENSCOP			6	8	1	15

Duration of training to access the occupation

Number	Shorter					TOTAL
	Not necessarily	A little	Neutral	Rather	Many	
	17	20	47	25	10	119
	14%	*17%*	*39%*	*21%*	*8%*	*100%*
AID	4	1	6	4	1	16
EVT	0	7	10	13	1	31
ESPLAI	2	9	11	1	0	23
AID FORMATION	2	0	6	5	1	14
AGFE	5	3	4	1	7	20
SENSCOP	4		10	1		15

Number	More regular					TOTAL
	Not necessarily	A little	Neutral	Rather	Many	
	2	3	32	59	24	120
	2%	*3%*	*27%*	*49%*	*20%*	*100%*
AID	0	0	5	8	3	16
EVT		1	1	16	13	31
ESPLAI	0	1	9	10	3	23
AID FORMATION	0	1	3	9	2	15
AGFE	2		7	10	1	20
SENSCOP			7	6	2	15

Recruitment in 2022

Number	No	From 1 to 3	More than 3	I don't know	I am self-employed and work alone	TOTAL
	28	17	8	28	14	95
	29%	*18%*	*8%*	*29%*	*15%*	*100%*
AID	2	6	0	7	1	16
EVT	17	3	0	9	2	31
ESPLAI	0	0	0	0	0	0
AID FORMATION	3		1	7	2	13
AGFE	2	4	6	2	6	20
SENSCOP	4	4	1	3	3	15

10. Difficult recruitment

Number	Yes	No	I don't know	TOTAL
	45	24	28	97
	46%	*25%*	*29%*	*100%*
AID	1	2	13	16
EVT	11	14	6	31
ESPLAI	0	0	0	0
AID FORMATION	14	0	1	15
AGFE	13	5	2	20
SENSCOP	6	3	6	15

Degree levels

Number	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8	TOTAL
	3	4	11	10	10	8	6	3	55
	5%	*7%*	*20%*	*18%*	*18%*	*15%*	*11%*	*5%*	*100%*
AID	0	0	1	1	2	2	1	0	7
EVT	0	1	7	3	4	4	4	3	26
ESPLAI	0	0	0	0	0	0	0	0	0
AID FORMATION	0	0	0	1	1	0	0	0	2
AGFE	3	3	3	5	3	2	1		20
SENSCOP									0

Access to posts

Number	Initial training	Continuing education	Both	Professional experience	TOTAL
	1	7	42	23	73
	1%	*10%*	*58%*	*32%*	*100%*
AID	0	0	2	2	4
EVT	0	5	18	8	31
ESPLAI	0	0	0	0	0
AID FORMATION	0	0	2	1	3
AGFE		2	13	5	20
SENSCOP	1		7	7	15

Soft skills

Efficiency	9
Autonomy	10
Adaptability	8
Organisational skills	8
Analytical skills	6
Intellectual curiosity	4
Perseverance	7
A sense of responsibility	5
Innovation	3
Communication	6
Team spirit	2
Analytical skills	2
Initiative	4