Signed Safety at Work

Guidelines for Inclusivity and Diversity in Occupational Health & Safety

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Published by the Partners of the *Signed Safety at Work* project:

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Introduction

In 2018, a coalition of seven organisations from five countries across Europe – Austria, Czechia, Italy, Spain and the UK – came together to work on a project under the title ***Signed Safety at Work (SSaW)***[1]. The project aimed to develop a set of essential words and phrases that would be presented in a signed form for use in the field of Occupational Health & Safety (OHS[2]).

To this end, once the phrases had been identified, the intention was to apply them in facilitating communication between hearing native speakers, D/deaf and hearing-impaired sign language users and hearing non-native speakers who are less familiar with the national spoken language (e.g., migrants) in the workplace for Health & Safety purposes. This was seen by the seven project Partners as a means to promote employment opportunities for D/deaf, hearing-impaired and migrant employees, alleviating concerns about dangerous workplaces not being safe for them.

In defining people who fall within a category of hearing-impairment, we specifically identify people who were born with a usual facility for hearing but have lost that capacity significantly during their lifetime. Due to having speech as a child, their needs and abilities with sign language are likely to be quite different to the Deaf community, who are characterised by native signing skills. Often the loss of hearing capacity takes place due to noise in a work environment, especially when there has been inadequate ear protection as a Health & Safety measure. The Partners consider this to have a particular resonance with the aims and objectives of this project as we seek to enhance and secure adequate Health & Safety provision for all people who should be seen as D/deaf or having impaired hearing.

The stated priorities for the project activities included:
1. Developing VET business partnerships aimed at promoting work-based learning
2. Supporting socially inclusive, open education and innovative practices in a digital era

To this end, the Partners set out to create three specific outputs from the project for use in the workplace in the context of Health & Safety practice:
1. A sign vocabulary of essential words and phrases, derived from commonly accepted International Sign Language, that would naturally be used in the field of Occupational Health & Safety across 14 different areas of application.

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[1] This project was supported and largely funded by the Erasmus+ Programme of the European Union, in recognition of its European frame, strategy and purpose.

[2] 'Occupational Health & Safety' is sometimes referred to as 'Occupational Safety and Health' which uses the acronym 'OSH'. For consistency in this document, the term 'Occupational Health & Safety', along with the acronym 'OHS', will be applied. For readers more familiar with 'OSH', please note the meaning is the same.

2. An online glossary of the key phrases placed in the context of Health & Safety categories as videos that directly show the hand signing to be used to communicate the issue, precaution or appropriate instruction in three European sign languages.
3. An accompanying e-Learning resource that contains a short course developed by the SSaW Partners and applies the glossary videos in the course, which is intended for work-based learning.

All the resources mentioned here are presented and explained in more detail on the project web site, http://www.signedsafety.eu. The site also presents many other elements of the project, including descriptions of the seven Partner organisations (as identified on the title page of this publication) that do not need a detailed presentation here.

Though some of the technical details concerning the resource are presented in the final chapter – 'Technical aspects of the SSaW e-Learning resource' – the Partners wish this set of guidelines primarily to present the value offered in a consciously inclusive application of Health & Safety procedure that is aware of the issues faced by workers who are on the social margins regarding communication and understanding. We publish this to inform members of various sectors, ones that we see as having a stake in a progressive adoption of Health & Safety practice through clear-sighted policy.

One set of professionals we publish these guidelines for include Health & Safety policymakers and professionals working in organisations dedicated to improving practice. If you are connected to this, you may be working in a dedicated Health-&-Safety organisation, a local authority, your national government, for a labour union, or for a network of organisations that have a direct interest in the implementation of Health-&-Safety policy. We feel that our research reveals perspectives that will inform you and that you may see new ways to address the needs of D/deaf people and recent migrants and others with communication challenges in the context of Health & Safety.

Another set of professionals we publish this for include employers that may be seeking new ways to upgrade their Health-&-Safety practice so that it is as inclusive as possible through enhanced training, as well as employer networks that represent such organisations. Here we are also thinking of managers in Human Resources departments in bigger organisations, specifically managers with responsibility for Continuing Professional Development among the organisation's employees. We also have in mind employers that have a noisy work environment that may require ear protection among a high percentage of the employees.

Clearly communicating Health-&-Safety information, especially during an emergency, is a significant issue where we feel our signing approach could bring significant outcomes.

The course was always intended to have a form so that employers are encouraged to disseminate it to members of their staff, though especially to managers in Human Resources with responsibility for training and OHS officers. Naturally, D/deaf, hearing-impaired and migrant employees need to be engaged directly as soon as it is accepted that the vocabulary, glossary and course are useful to the organisation. Through Human Resources and managers with responsibilities in line with this, standards of Health & Safety in the European workplace can continue to improve in workplaces, in line with the European Framework Directive 89/391 on Safety and Health at Work that was adopted by the EU in 1989.

The professionals most connected to training on a full-time basis include the dedicated educators – Vocational Education and Training (VET) course developers, as well as VET providers should an organisation only be acting in one of these areas of activity. Naturally, we especially publish these guidelines for members of this community. People who work in such organisations are dedicated to improving the quality of training, and will readily acknowledge that inclusivity in training programmes is a perpetual goal that VET organisations must strive for all the time.

In applying the e–Learning resource, there is a stated intention for it to have an in-built flexibility. As indicated, it is created to be self-standing, as a course for Continuing Professional Development (CPD) that can be taken by those who are already engaged in a place of work, probably with responsibility for Health & Safety practice at that work. CPD courses are usually short and can be easily integrated into the learner's work patterns. In this way, the SSaW course fits easily with the responsibilities of a dedicated VET provider, but also employers who may do CPD training in-house directly with their own employees.

However, the intention is also to engage VET training bodies who provide broad courses in Occupational Health & Safety so that this course can be implemented as an optional module in a longer, more detailed and comprehensive course that provides formal qualifications for professionals in Occupational Health & Safety. The SSaW Partners are committed to both of these options, and have developed the technical side so that it is highly usable and flexible with this in mind.

It is important to note that we also publish this for the organisers of groups in the voluntary sector who represent the D/deaf and migrant people that we see as the final beneficiaries of the project's work, as well as those people as individuals who are engaged in such groups.

This would include not only groups representing the welfare of D/deaf and hard-of-hearing people and their members, but also campaign groups, working for the rights of D/deaf and hard-of-hearing people, especially regarding labour and employment rights.

Similarly, this would also include groups representing the welfare of people who have recently migrated to an area where there is a new language and their members, as well as campaigners for the rights of people who have recently migrated. Our resources are dedicated to engendering high-quality employment people in these communities especially, though we also see that the resources have value for a range of communities in a range of work settings.

As directives and regulations change, the chapters look at a series of issues around inclusivity and Health & Safety, and so they are likely to interest people from across the sectors identified. To this end, we have created five sections that include 13 chapters across all these sections, with two or three chapters in each section. The research and analysis for these chapters were commissioned in terms of the aims and objectives of the project related to the value being added by the availability of the SSaW resources in the context of the present-day environment for Occupational Health-&-Safety.

We saw it as important to show purpose behind, and the need for, (a) increasing accessibility to Health & Safety procedure, as well as (b) a conscious facilitation of increased workplace inclusion. We wanted to be able to show professionals with a stake in these issues and the organisations for which they work that (a) the SSaW resources could be applied easily, and that there was (b) a process by which the course could gain accreditation. In the context of increased workplace inclusion, we wanted to consider further steps that may be taken for D/deaf and migrant employees to receive full and equal consideration in CPD practice, not least in the context of Health & Safety.

Section 1 covers the Professionalism of Occupational Health & Safety, looking at the practice in the workplace, the responsibilities of employers, and the road to becoming a Health & Safety professional. Together they show that is not an option to take Health & Safety responsibilities in a relaxed casual way in any work-related environment. A professional and comprehensive approach is the only option.

Section 2 covers the recognition of qualifications to enable dedicated knowledge in the practice of Occupational Health & Safety, looking at how an OHS professional can enhance the foundations of their professional knowledge by upgrading their skills, and the

procedures for obtaining one's first OHS professional qualification. Together they show the importance of training in the field of OHS as an area that demands a programme of CPD.

Section 3 covers Health and Safety for D/deaf and hard-of-hearing employees, looking at the ways in which deafness is defined, the support – or lack of support – that may be offered to D/deaf people during their industrial training, and how members of the D/deaf community may engage with Health & Safety responsibilities themselves in the workplace. The D/deaf community is a significant beneficiary of the resources created, and we felt it was important to present a perspective from their point-of-view as to how a workplace can be for them.

Section 4 covers how extending SSaW's approach to Health & Safety training and practice can be embedded more directly, looking at how a course provider may use the SSaW resources for extending the 'soft skills' of OHS professionals. It also explains the process for making the SSaW resources accredited for training OHS professionals so adding weight to issues of inclusivity, and the application of SSaW's resources in the context of the European Credit System for Vocational Education and Training (ECVET) for the transfer of OHS professional experience across national borders in Europe.

Finally, Section 5 covers how we can make learning more effective for an inclusive approach to Occupational Health & Safety, looking at what comprises the suitable training methods, tools and resources that facilitate a rounded professional approach to OHS practice, as well as considering some of the technical aspects of the SSaW e-Learning resource.

Together, the SSaW project Partners hope that these chapters will be able to stimulate new thinking and positive innovation in Health & Safety policy, training and workplace practice. We have consciously sought to ensure that the guidelines here are accessible and able to act as a driver for the application of the resources available for an inclusive approach to CPD in the field of Health & Safety.

Partners in **Signed Safety at Work**:

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Section 1

The Professionalism of Occupational Health & Safety

1   Health & Safety in the Workplace

Employers are required to install measures to make sure that the Health & Safety of employees is not at risk at the workplace. Health & Safety systems and legal requirements differ across Europe as regards their recording, reporting and enforcement (HSE, 2019). Still, the aim of all these systems and laws is to avoid accidents and health hazards at work. Employees are obligated to follow the stipulated Health & Safety instructions to avoid accidents as best as they can. Nevertheless, accidents happen time and again, which can be ascribed to various causes.

Here is a short statistical overview of work-related fatalities, injuries and health issues all over Europe (cf. HSE[3], pp 3–5, 2019; colouring of the project partner countries added to the original solely for ease of interpretation by the reader.).

The following graph shows the percentage of businesses that provide a document explaining responsibilities and procedures on Health & Safety available to the people working in the establishment. (ESENER, 2019):

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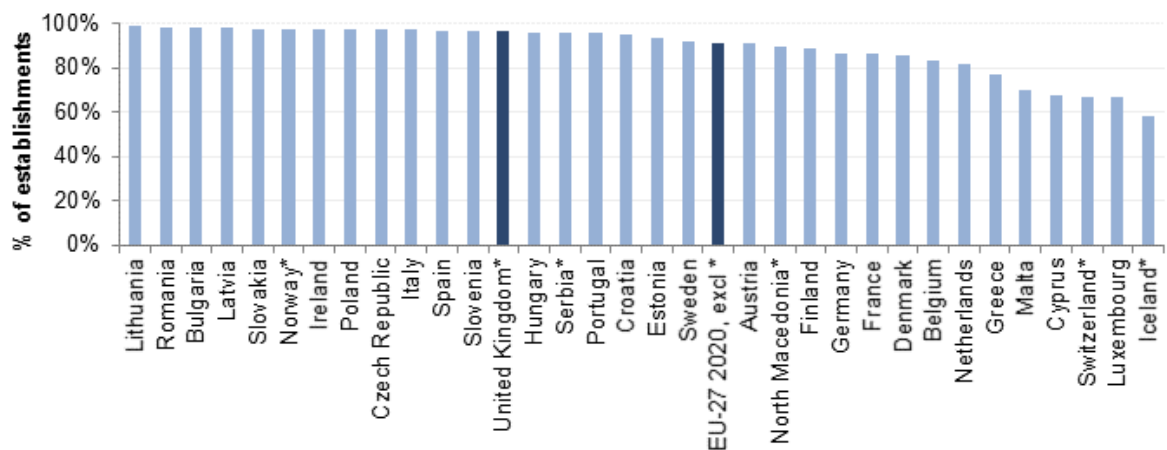
3 For more information about the background of this statistic cf. the online document.

This graph below shows standardised incidence rates (per 100,000 employees) of fatal injury at work for 2017, excluding road traffic accidents and accidents on board transport in the course of work (Eurostat, ESAW, 2017):
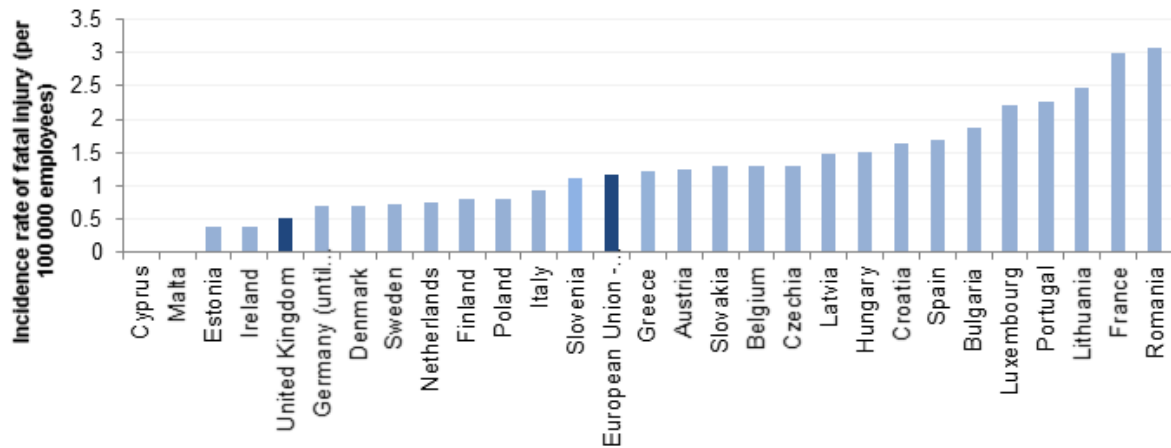
The following image presents the percentage of workers who had an injury resulting in sick leave over the last 12 months (LFS, 2013):
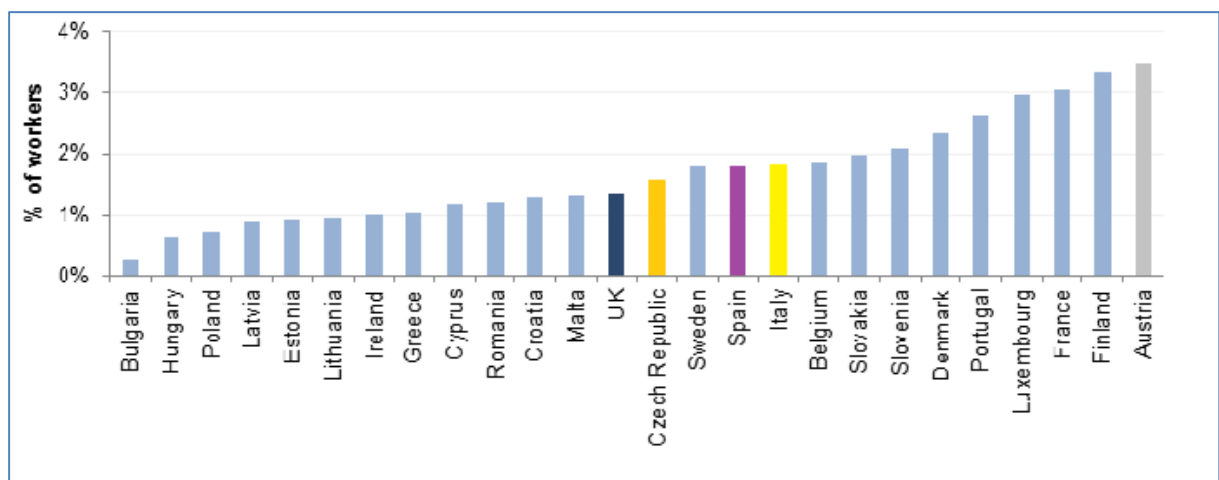
And the fourth graph below shows the percentage of workers with one or more work-related health problem resulting in sick leave (LFS, 2013):
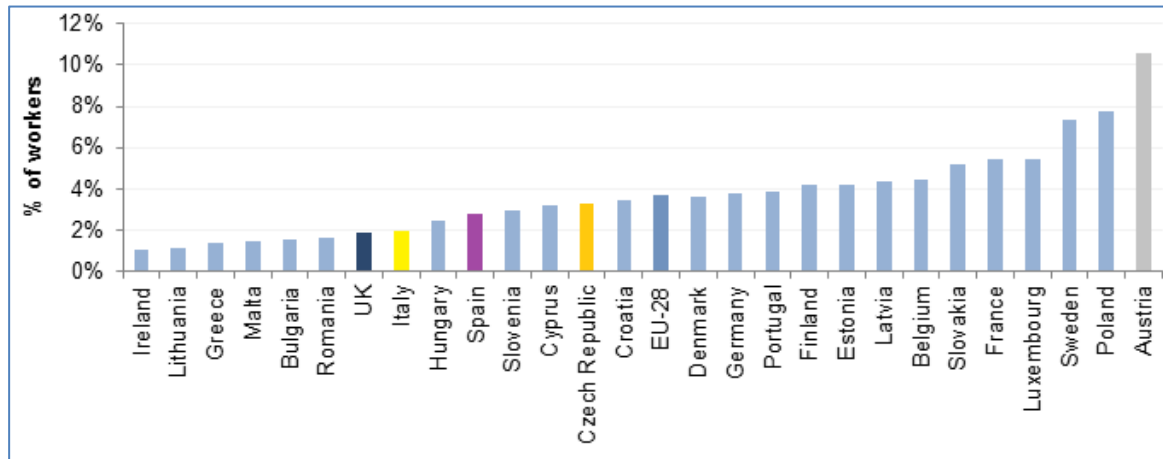
Although most enterprises make great efforts to minimize accidents and work-related health risks, there are still some areas which do not get as much attention as they should. One of these areas is deafness, hearing-impairments and the resulting communication problems (cf. Svinndal et al. 2018), which are often combined with a bad command of the national written/spoken language.

2   Employers and Occupational Health & Safety

The right to safe and healthy work in the European area (in the European Union) is established in the Council directive of 12 June 1989 on the introduction of measures to encourage improvements in the Health & Safety of workers at work. In general, the employer shall have a duty to ensure the Health & Safety of workers in every aspect related to the work.

Under the law of this directive reflected in the national law of the EU Member States, employers are responsible for Health & Safety management. It is an employer's duty to protect the health, safety and welfare of their employees and other people who might be affected by their business. Employers must do whatever is reasonably practicable to achieve this. This means making sure that workers and others are protected from anything that may cause harm, effectively controlling any risks to injury or health that could arise in the workplace.

Employers have duties under Health & Safety law to assess risks in the workplace. Risk assessments should be carried out that address all risks that might cause harm in your workplace.

Employers must give their employees information about the risks in the workplace and how they are protected, also instruct and train them on how to deal with the risks. Employers must consult with employees on Health & Safety issues. A platform for occupational health-and-safety specialists performs an important role in employee Occupational Health & Safety (OHS) implementation. They not only help companies to embed OHS across all hierarchical levels, but they also work to reduce and eliminate fatalities, injuries, occupational illnesses, and property damage. They also provide advice on matters related to health and workplace wellbeing. They are often the ones who train employees in occupational Health & Safety (perform "safety training").

The work done by an OHS specialist makes a key contribution to the level of OHS experienced by employees at their companies. Given the wide range of responsibilities with which employers must engage in order to ensure the Health & Safety of its employees, often with regard to specific, standardised – quite strict – qualification requirements for Health & Safety or risk prevention, it is clear that they are unable to perform these duties in person, and that it is necessary for the employer to have responsible and trained personnel in place to take care of the Health & Safety system and oversee the duties. In summary, these people can be designated as OHS professionals.

Thus, the following professions can perform the tasks in Health & Safety profession/area at one workplace at the same time:

- occupational Health & Safety technician (OHS technician),
- occupational Health & Safety manager (OHS manager), or
- a safety representative
  (e.g., a person professionally qualified in risk prevention, or qualified for performing tasks in risk prevention in the field of occupational Health & Safety).

Due to the diversity of the Health & Safety profession and industry, opportunities for jobs are starting from a Safety Representative, Safety Professional, Safety Manager and Safety Environmentalist who help companies set up a safety system. Every employer nowadays needs to look at Health & Safety and must have a responsible and trained person in place to take care of the Health & Safety system and oversee duties and responsibilities in that respect.

3   Becoming a competent, qualified Occupational Health & Safety Professional

Each of the previously mentioned workers who help the employer to provide Health & Safety at his workplace or to perform tasks in risk prevention, must be adequately qualified for his work.

There are special / specific qualification standards for each of these people. In the European area, the usual professions that are used to fulfil the duty to ensure the Health & Safety of workers in every aspect related to the work are OHS Technician and OHS Manager. These two professions have such a tradition here that European qualification standards have been developed for them (Health Manager and European Occupational Health & Safety Technician and European Occupational Safety). The primary goal is to achieve a common standard of Health & Safety practice throughout Europe and gain easier recognition of equivalent qualifications across member states, an easy way to identify the levels of competence of those offering their services.

At the same time, however, EU Member States have reflected the requirements of European qualifications in their national qualification standards for these professions. This means that the requirements for the knowledge and skills of these workers are largely uniform. This practice is in line with the objective of the European Qualifications Framework for Lifelong Learning (EQF), which is to improve the transparency, comparability, and transferability of people's qualifications. (especially in the frame of the labour market).[4] This is also in line with The European Council Lisbon (Lisbon Strategy) and with the strategic documents for developing a culture of Health & Safety in Europe and for education in this

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4 Qualifications give access to jobs and provide the basis on which careers are built. Getting a job, or moving between jobs, requires qualifications to be understood, fairly judged and correctly valued by employers and other labour market stakeholders. The ability of a qualification to signal what its holder knows, understands and is able to do is therefore essential.

The use of learning outcomes to describe qualifications – and the inclusion of European and national qualifications levels on them – makes it easier for employers to interpret applicants' qualifications.

The EQF also enables employers to better assess qualifications from other countries and institutions not known to them. They can better understand the level of each candidate, compare their qualifications with national qualifications, understand the relevance of those qualifications and see how the learning outcomes match the needs of the company or sector.

Through the EQF, employers can treat Europe as one single qualification area. This reduces the barriers to labour mobility, supports a better use of existing knowledge, skills and competence, and improves the match between labour demand and supply.

field[5] The European Qualifications Framework for lifelong learning (EQF) aims to improve the transparency, comparability and portability of people's qualifications. We all face similar challenges in the workplace (in Europe) requiring similar competencies, such as tackling risk assessment, occupational and major accidents, human error, risk control measures, safety management and policy, musculoskeletal disorders and stress, and dealing with the Health & Safety implications of migration, terrorism, climate change and ageing population.

What should the persons involved in providing occupational Health & Safety for their employer know (what includes their qualification), and what should be the requirements for their knowledge and skills?

In general, the training requirements are in line with those laid down for being a European Occupational Health & Safety Technician (EurOSHT) or a European Occupational Health & Safety Manager (EurOSHM). These are applied by the competent authorities (including national ministries and labour inspection authorities) as well as other important institutions dealing with training – in general or in OHS – such as education and training providers, qualification recognition bodies and government authorities. Other accredited workplaces / bodies as accreditation holders, OHS training providers or OHS qualifications providers also apply the EurOSHT and EurOSHM standards. They transform these into national standards for the qualifications and education of OHS professionals.

The following overviews provide expectations concerning the knowledge and skills of OHS technicians and OHS managers in relation to the relevant topics. Both deal with much the same range of risks and prevention measures, the difference being in the depth and coverage of these topics.

While an OHS technician works in close collaboration with the line management and workforce – resolving the day-to-day Health & Safety issues and applying the relevant legal, professional and technical standards and procedures – OHS managers advise top management, prepare policy, and assist in the implementation, monitoring and evaluation of Health & Safety policy. Such a Manager may also give leadership to a department or consultancy (according to EurOSHT).

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5 The European Council Lisbon Declaration enhanced the status of education and training in Europe, as was also reflected in the EU Community Strategy on Health & Safety at Work 2002-2006. The Strategy defined education and training as key factors for the development of a true prevention culture in Europe. The Community Strategy 2007-2012 also calls for Health & Safety to be integrated into all phases of education and all areas of society by 2012.

European Safety & Health Technician (EurOSHT)

Topic	Details (areas of training and gaining qualifications)
European and national occupational Health & Safety regulation	Relevant European Health & Safety legislation and its translation into national practice; Regulatory rules and practice relevant to Occupational Health & Safety in the public and private (civil law) spheres influencing and responding to regulation.
Health & Safety management	Organising for Health & Safety; Health & Safety Management systems; Health & Safety auditing; Promotion of a positive Health & Safety culture; Supervision of contract works; Monitoring of Health & Safety performance;
OHS risk assessment and management	Risk assessment methods and practice; Identification and successful implementation of specific risk control measures; Safe methods of work, safety instructions, etc; Best practice and legal compliance.
Occupational Health & Safety technical knowledge	Accident investigation, recording and reporting; Occupational Safety practice (for example Machinery and Work equipment safety; Electrical safety; Construction safety; Fire safety; Accident prevention techniques, working at heights); Elementary occupational health and hygiene practice (for example Chemical, Physical and Biological hazards and prevention measures).
Safety training, information and communication	Health & Safety communication techniques; Training assessment, execution and evaluation.
Human and ergonomic factors	Workplace design & layout, incl. computer workplaces incl. posture, manual handling & musculoskeletal disorders; Human behaviour and safety.
Project work	Applying the lessons learned in theory to the practical situations in their own or other workplaces and to report on that process.

European Safety & Health Manager (EurOSHM)

Topic	Details (areas of training and gaining qualifications)
European and national Occupational Health & Safety regulation	Relevant European Health & Safety legislation and its translation into national practice;
	Regulatory mechanisms relevant to Occupational Health & Safety in the public and private (civil law) spheres influencing and responding to regulation.
	Occupational Health & Safety in the context of public policy.
Health & Safety management	Setting and improving policy for occupational Health & Safety;
	Organising for Health & Safety;
	Health & Safety Management systems;
	Health & Safety auditing;
	Organisation of the protection and prevention services;
	Promotion of a positive Health & Safety culture;
	Management of contract works;
	Monitoring, reviewing and auditing of Health & Safety performance;
	Basics of Environmental management.
OHS risk assessment and management	Risk assessment methodologies and implementation;
	Risk management (identification and successful implementation of specific risk control measures);
	Developing safety methods of work, safety instructions, etc;
	Best practice.
Occupational Health & Safety technical knowledge	Accidents and occupational diseases investigation, recording and reporting;
	Occupational Safety science (e.g., Machinery and Work equipment safety; Electrical safety; Construction safety; Fire safety; Accident prevention techniques, working at heights);
	Occupational health and hygiene science (e.g., Chemical, Physical and Biological hazards and exposure limits and prevention measures).
Safety training, information and communication	Health & Safety communication techniques;
	Training assessment, execution and evaluation.
Human and ergonomic factors	Posture, manual handing & musculoskeletal disorders;
	Anthropometry & work physiology;
	Workplace design & layout, incl. computer workplaces;
	Human behaviour and safety.
Advisory and change management skills	The OHS manager as change agent;
	Organisational learning;
	Technical and organisational change management.
Project work	Applying the lessons learned in theory to the practical situations in their own or other workplaces.

We can say that a person is qualified for Occupational Health & Safety (for work in OHS) when he/she meets the competence requirements for the exercise of the profession (simply has the relevant competencies).

There are several definitions of the concept of competence. According to Wikipedia, the free encyclopaedia, competence is the set of demonstrable characteristics and skills that enable and improve the efficiency or performance of a job. If employees are able to do required tasks at the target level of proficiency, they are "competent" in that area.

Cambridge Dictionary considers competence as an important skill that is needed to do a job, emphasising the need for wide-ranging competencies in addition to specific knowledge.

It is indisputable that we include knowledge in the scope of competencies. The definition of Wikipedia, the free encyclopaedia further implies that this includes skills. The requirements for national qualifications are divided into professional knowledge, professional skills and general knowledge, while the whole competence package is complemented by soft skills. The knowledge and skills requirements of OHS workers (namely European Safety & Health Technicians and European Safety & Health Managers) are logically based on the tasks they perform in the workplace or in the field of Health & Safety services.

In order that European, as well as national, OHS technicians and OHS managers are able to perform their tasks, they should have the necessary (required) competencies. General knowledge of an OHS technician includes: legal awareness, language proficiency in the mother language or in the language of the country where the expert works, computer and Internet proficiency, economic awareness, numerical proficiency and (optional) proficiency in driving a car. The general knowledge of OHS managers includes the same + language proficiency in English.

Soft skills are non-technical skills that relate to how people do their work. They include how they interact with colleagues, how they solve problems, and how they manage their work. Soft skills are known also as interpersonal skills which are becoming an increasingly important part of the qualification (i.e., competency as a package). Simply put, it is being able to treat oneself and other people in such a way as to achieve the desired goal (in the field of OHS, this means the prevention of accidents, injuries and occupational diseases).

Soft skills (or rather the types of soft skills that are usually required of OHS professionals) include those:

- at the same qualification level that are common to both OHS-technician and OHS-manager professions: e.g., effective communication, and
- at different skill levels that are common to both professions, the OHS-manager level being a degree or two higher.

For the second point, the range of manager skills would include cooperation, creativity, flexibility, efficiency, independence, problem-solving, as well as planning / organizing work. They would have an active approach, manage workloads, and take on responsibility for the wellbeing of employees: i.e., helping them to cope with stress, including traumas associated with industrial accidents and work-related injuries of other employees – even fatalities. The OHS Manager would be able to obtain information about and provide orientation for the employees, plus have a willingness to learn new things, including the development of existing skills, or acquiring new skills (upskilling, lifelong learning).

To achieve qualification in the OHS field, OHS is identified thematically as a specific area. In the EU member states, universities (especially technical, medical, economic or other specializations) or other tertiary schools may have a share in education in Occupational Health & Safety (occupational safety management, industrial safety, safety engineering, ergonomics of workplaces, ergonomics of products and furniture, chemical safety, accident prevention, etc.) or in some of its areas. Mostly, however, it is possible to obtain this qualification in courses and educational programmes identified as non-formal education and training. Here, candidates for one of the occupations / qualifications in the field of occupational Health & Safety (see above) acquire the necessary professional knowledge and skills.

In order to be awarded the qualification of an OHS professional in the European environment, it is sufficient to acquire professional knowledge of skills (according to the approved educational program of the university or the training standard for the given qualification). The award of a qualification obtained in formal education / learning (university or other school) is expressed as the award of a qualification, usually in the form of a certificate or a diploma. In non-formal education, the achievement of the relevant qualification is conditioned by the achievement of learning outcomes according to given standards. The educational or training standard is here a tool for determining the content of education within a given qualification and also a tool for verifying the knowledge and skills of a candidate for a given qualification.

In this example (see Table 1 below) it is possible to see the areas for providing and verifying knowledge and skills within the qualification standard for OHS Technician and also for OHS Manager.

OHS Technician	OHS Manager
Knowledge and comprehension of the basic legal regulations and technical standards in the field of OHS	Applying national legal and other regulations and European legal regulations in the area of OHS
Keeping records and documentation on preventive inspections in workplaces	Introducing and updating the system of controlling OHS in the company
Implementation of entries into the accident log and filling occupational accident reports	Evaluating and controlling the risks of OHS
Categorization of jobs for a specific employer's workplace in cooperation with the public health authority	Applying the principles of technical safety, when working as an OHS manager
Staff training in OHS	Applying ergonomic attitudes
Searching for the OHS risk factors, OHS risk assessment and designing measures to minimize these risks	Training the management in OHS
OHS documentation management system	Investigation, recording and reporting work-related injuries and work-related illnesses
	Negotiating with inspection bodies
	Inspecting the efficiency of prevention OHS inspections on workplaces
	Inspecting the completeness and topicality of the OHS documentation
	Evaluating the economic efficiency of the OHS control system

Table 1: Qualification standard (professional qualifications)

The introduction of qualification standards (especially in the field of non-formal education) into the qualification systems of individual European countries and their use is primarily a guarantee of the quality of qualifications in relation to the labour market and civil society. It also makes a significant contribution to transparency and a degree of coherence and coordination in their further development. The quality of education, as well as the quality of the resulting qualification, can only be ensured by quality educators and qualification providers. This applies to any fields, including OHS. Therefore, the quality of these educators and qualification providers is an important condition[6]. At the level of national education and/or qualification systems, this condition is addressed by the accreditation of natural or legal entities for education, or through the provision of nominal qualifications. In some

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6 In several cases, educators and qualification providers are one and the same entity.

cases, the path of accreditation of educational programmes (leading to the achievement of the required qualification) is used, combined with the verification of knowledge and skills acquired during education in the form of a final examination (education alone is not enough here). Without the exam, it cannot be stated that the graduate of the educational program has achieved the given qualification.

The specificity of achieving qualifications in the OHS field is that they focus only on expertise (expertise and skills). It is assumed that applicants with some of the qualifications in the OHS field already have general knowledge. It is similar with soft skills. Their peculiarity is that almost every one of us has acquired some soft skills – at least to an extent through day-to-day activities. They can also be learned and developed in specialized courses for acquiring and developing soft skills. When job seekers or workers have them innately, or have acquired soft competencies, this is their great advantage. Among other things, it becomes more desirable – even necessary – for a current or potential employer.

With regard to the standards for OHS qualifications, general knowledge and soft skills are a kind of bonus, i.e., something extra that is not a condition (not obligatory) for obtaining the qualification of an expert in a given field – with exceptions (e.g., computer competence).

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8 National System of Professions (system for the Czech Republic)

Section 2

Recognising Qualifications in the Practice of Occupational Health & Safety

4 Enhancing or upgrading a qualification in Occupational Health & Safety

The requirements for human knowledge and skills in modern society are constantly changing. There is a constant demand for the flexibility of people (including workers) and their readiness to understand and manage these changes. This is related to education and the formation of work skills, which is becoming a lifelong process. The general goal of staff development is to ensure that the organization has the levels of quality invested in people it needs to achieve its performance improvement and growth goals.

Training and development bring benefits for the organization, such as:
- increased productivity and quality of work,
- business development at all levels of the organization,
- easier action and more effective problem-solving,
- an enhanced ability among employees to adapt to change

and for the employees, by:
- improving and increasing their professional / personal profile,
- fulfilling potential,
- enabling them to acquire and apply different sets of knowledge and skills,
- enhancing capacity to solve problems at work –
- allowing a confident influence on their managers
- providing opportunity for career growth through advancement with an employer,
- increasing chances of employment in other segments of the labour market, and
- improving interpersonal relationships and communication in the work team.

Work and workplaces are constantly changing due to the introduction of new technologies, substances and work processes, changes in the composition of the workforce and the labour market, and new forms of employment and work organization. This creates new risks and challenges in the field of Health & Safety at work. The fundamental goal is to be able to face these risks and challenges. This is made possible by (various) timely and effective measures. In the field of occupational Health & Safety, it is highly important to face the challenges successfully as human lives are at stake.

One such measure is a skilled workforce that contributes to ensuring safe and healthy workplaces – OHS professionals. Only an OHS professionals that maintain, supplement, or even expand their qualifications are beneficial for the operation of the company, for a safe working environment, and the safety of its employees.

At the level of national qualification systems, the requirements for the qualification profile of OHS professionals are increasingly being specified and supplemented. It is essential that they have the right education and experience to practice their profession. The driving forces in the process of creating qualifications and training for these professionals are the European Council Lisbon Declaration, the European Qualifications Framework, and the European Policy on Health & Safety at Work, which can be projected into the EU strategic frameworks for occupational Health & Safety for individual periods.[9] These strategies identify a number of levers for change, including the right to a safe and healthy working environment at all levels.

Safety professionals are required to have the following basic knowledge and skills:

- legal awareness,
- risk management,
- business practices,
- IT and data analysis,
- evidence-based practice,
- professionalism, and
- professional communication with management.

There are also other areas of knowledge and skills that relate to compliance specific duties and responsibilities for workplace health & safety, risk management, controls and improvements. In all of these, it is essential for the management to ensure a certain system not only in terms of obtaining (initial) qualifications, but also in terms of maintaining, supplementing, and expanding qualifications, or in terms of maintaining, supplementing, expanding or revitalizing certain competencies. The solution is the practical fulfilment of the idea (and the requirement) of the European Council Lisbon Declaration to improve the status / condition of education and training in Europe in the form of lifelong learning.

Increasing or upgrading qualifications in OHS usually takes place through non-formal learning, within the so-called further (professional) education. It usually takes place (across Europe, but also elsewhere abroad) in the centres that provide non-formal training or as part of lifelong learning programmes at universities. Unlike training programs preparing candidates to obtain an "initial" OHS professional qualification (OHS manager, OHS technician and the other), these are short-term training courses, or sets of seminars, and

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9 Current strategic document for OHS field is EU Strategic Framework on Health & Safety at Work 2014–2020.

lectures, or the other training programmes based in e-Learning or other distance or online forms of delivery, or a combination thereof, with a duration ranked by hours or days rather than months or years.

The choice of form is crucial for whether the participant's knowledge, skills or soft competencies will be formed. Equally important is the role for which an expert (OHS manager, OHS technician, protection and prevention service expert, specialist in ergonomy, specialist in industrial safety, safety engineer, or another safety specialist competent for roles in the OHS field) is intending to fulfil, and whether the training is to bring about an increase in qualification or an extension into a new specialization. The key factor here is the content of the intended learning outcomes.

4.1   Qualification and education systems.

Systems for OHS professionals vary from country to country – even in Europe but also around the world. Indeed, there are many differences between the five European countries represented in the partnership comprising the Signed Safety at Work project. Although European and world countries may follow binding or less binding recommendations for qualifications and related education and training programs, there is greatly differentiated practice. From the point of view of any qualification, it is essential that it was achieved with maximum attention to quality (according to the given national standard), while it does not matter whether it was achieved in the field of formal or non-formal learning.

At present, the requirements for so-called vocational qualifications in both sectors are converging and differ only in the way in which they will be achieved: this guarantees a 'quality of qualification'. It is also essential to ensure improved knowledge, skills and competences within personal, civic, social and / or employment-related fields, throughout one's whole life. Lifelong learning should follow the needs of employees in the given job position, including differences and the need for specializations arising from the content of the work activity (content of the agreed type of work), the work environment in which the employees work or intend to work, the economic sector for which they work, the current level of knowledge and skills of an individual employee and the current length of career. It should therefore always be based on the practising needs, according to enterprise, group, economic sector, country, geographical area, political, economic or other community) and respond to ongoing or expected changes in society and the world of work. The need for personal development of each individual is also inseparable.

5 Procedures for obtaining Occupational Health & Safety professional qualifications

The transfer of professional knowledge and skills takes place in the training process, which results in learning outcomes. Setting up successful training schemes needs careful planning. The content of training, scope, form, tools, technology, and other aspects of training must be planned.

Planning is partly based on existing standards for OHS training and acquisition of qualifications, partly based on conditions set for accredited workplaces providing OHS training, or preparation for obtaining a specific qualification in the OHS field (based on accreditations granted by the accreditation body), or it is based on specific potential in the training subjects (technique, technology, tools, teaching aids…).

The most important issue is how to present the training content because this has an impact on how the learning content will be acquired, which will be its quality and how it will be put into practice. Training methods are used to transfer knowledge and skills in an appropriate way.

Table 2 below shows the common methods used in the field of occupational Health & Safety, including the training methods for safety staff and their properties.

Training methods	Strengths	Limitations	Objectives achieved
Lecture	Presents factual material in direct and logical manner. Contains experiences that inspire. Stimulates thinking to open a discussion. For large audiences.	Experts may not always be good teachers. Audience is passive. Learning difficult to gauge. Needs clear introduction and summary.	Knowledge
Worksheets and questionnaires	Allow people to think for themselves without being influenced by others in discussion. Individual thoughts can then be shared in small or large groups.	Can be used only for short period of time. Handout requires preparation time. Requires literacy.	Knowledge Attitudes/ emotions
Brainstorming	Listening exercise that allows creative thinking for new ideas. Encourages full participation because all ideas are equally recorded.	Can become unfocused. Needs to be limited to 10 to 15 minutes.	Knowledge Attitudes/ emotions
Planning deck	Can be used to quickly catalogue information. Allows students to learn a procedure by ordering its component parts. Group planning experience.	Requires planning and creation of multiple planning decks.	Knowledge
Risk mapping	Group can create visual map of hazards, controls, and plans for action. Useful as follow-up tool.	Requires workers from same or similar workplace. May require outside research.	Knowledge Skills/social action
Audio-visual materials (films, slide shows, etc.)	Entertaining way of teaching content and raising issues. Keeps audience's attention. Effective for large groups.	Too many issues often presented at one time. Too passive if not combined with discussion.	Knowledge/ skills
Audio-visuals as triggers	Develops analytic skills. Allows for exploration of solutions.	Discussion may not have full participation.	Social action Attitudes/ emotions

Training methods	Strengths	Limitations	Objectives achieved
E-Learning	Allows training to be organised anytime and anywhere. Can be tailored to the individual needs of a trainee. Trainees can take the training at their own pace.	Limited possibilities for immediate response, interaction with teacher or other learners. Requires a set of (basic) digital skills from the learner.	Knowledge/ skills
Gamification (as part of e-Learning)	Combines elements of instructional design with competition/fun/ entertainment. Allows trainees to learn by trying, making mistakes and finding adequate solutions (progress to the next level).	Requires a high degree of preparation. Limited in scope.	Knowledge/ skills
Case studies as triggers	Develops analytical and problem-solving skills. Allows for exploration of solutions. Allows students to apply new knowledge and skills.	People may not see relevance to their own situation. Cases and tasks for small groups must be clearly defined to be effective.	Social action Attitudes/ emotions Skills
Role playing session (trigger)	Introduces problem-situation dramatically. Develops analytical skills. Provides opportunity for people to assume roles of others. Allows for exploration of solutions.	People may be too self-conscious. Not appropriate for large groups.	Social action Attitudes/ emotions Skills
Report-back session	Allows for large group discussion of role plays, case studies, and small-group exercises. Gives people a chance to reflect on their experience.	Can be repetitive if each small group says the same thing. Instructors need to prepare focused questions to avoid repetitiveness.	Social action skills Information

Training methods	Strengths	Limitations	Objectives achieved
Prioritising and planning activity	Ensures participation by students. Provides experience in analysing and prioritising problems. Allows for active discussion and debate.	Requires a large wall or blackboard for posting. Posting activity should proceed at a lively pace to be effective.	Social action skills
Hands-on/ Hands-on practice	Provides practise of learned behaviour.	Requires sufficient time, appropriate physical space and equipment.	Behaviours Skills
Coaching	Allows mentoring of individuals. Provides opportunity to tailor approach to the needs of the individual.	Requires sufficient time and specific coaching skills from the mentor.	Knowledge/ skills

Table 2: Training methods and their properties

Current practice and studies on the future of training reveal a trend towards a combination of training methods in the process of further education. A recent study discovered the relative effectiveness of different methods of OHS training. The effectiveness of acquiring knowledge (and skills) were evaluated as:

- least engaging – lecture, pamphlets, videos,
- moderately engaging – programmed instruction, feedback interventions, and
- most engaging – training in behavioural modelling, hands-on/hands-on practice training.

In this context, coaching for some positions/professions among OHS professionals (especially for OHS managers) has a key function as a method of staff development. Coaching focuses on the fact that they not only have to pass on knowledge but increasingly, they must also be able to moderate conflicts, assume leadership roles, clarify tasks, and support participants in adapting what they have learned to their own particular work contexts.

The study concludes training that involves behavioural modelling, a substantial amount of practice and dialogue is generally more effective than other methods of Health & Safety training.

The final, equally important issue is the task of choosing trainers. The European Network Education and Training in Occupational Health & Safety (ENETOSH) some time ago dealt with the quality of education of OHS professionals from another point of view, namely

in terms of what competencies are required of an OHS instructor or trainer who trains the staff. The 'ENETOSH standard of competence for instructors and trainers in Health & Safety' was developed on this basis. The standard allows selecting suitable trainers, developing harmonised high-level training content, and setting up a certification system. The standard allows the selection of suitable trainers who must be able to master the above training methods and use them in practice. In this context, it mentions in particular the ability to use

- methods of adult education:
  i.e., pedagogic methods, mastery of teaching / training methods such as presentation, role plays, group work, etc.
- methods to promote the application of current or new technologies, tools and media through IT skills
- various specific OHS methods and tools:
  i.e., methods of OHS management, OHS co-operation skills, and many others that are similar.

Four areas in which the trainer is to acquire the necessary competencies:

1. training the trainer,
2. basic principles of occupational Health & Safety,
3. occupational Health & Safety management, and
4. workplace health management

suggest the possible content of training for OHS professionals to guarantee quality.

When the training of safety professionals is a part of a standardised qualification process, where the person's qualification is newly acquired or renewed or extended, validation of acquired knowledge and skills – i.e., verification that the person demonstrably acquired the required competencies – is a necessary part of this process and a condition for awarding a qualification or retraining. Validation is carried out in the form of an examination, successful completion of the examination being expressed by the issuance of a certificate or diploma when in the process of formal learning – e.g., at a university.

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Section 3

Health & Safety for Deaf and Hearing-impaired Employees

6 Defining deafness and hearing impairment

6.1 Medical classification of hearing impairments

At this point, it is important to clarify what exactly is meant by hearing impairment and what the consequences are – for a person and for the employer.

The following table shows the grade and value of hearing impairment (left and middle column) and the auditive consequences of this impairment (right column) for a person:

Grade of Impairment	Audiometric ISO value (average of 500, 1000, 2000, 4000 Hz)	Impairment description
0 (no impairment)	25 dBHL or less (better ear)	No or very slight hearing problems. Able to hear whispers
1 (Slight impairment)	26-40 dBHL (better ear)	Able to hear and repeat words spoken in normal voice at 1 metre
2 (Moderate impairment)	41-60 dBHL (better ear)	Able to hear and repeat words using raised voice at 1 metre
3 (severe impairment)	61-80 dBHL (better ear)	Able to hear some words when shouted into better ear
4 (Profound impairment including deafness)	81 dBHL or greater (better ear)	Unable to hear and understand even a shouted voice

Source: www.who.int/healthinfo/statistics/bod_hearingloss.pdf

A **disabling hearing loss** is considered to be greater than 40 dB[10] in the better hearing ear in adults and greater than 30 dB in the better hearing ear in children.

This means that already a slight impairment might have consequences at the work place if instructions cannot be heard correctly or are misunderstood due to the hearing impairment.

6.2 Number of people with untreated disabling hearing loss in the EU

According to the webpage "hear-it", 34.4 million adults with a disabling hearing loss (35 dB or greater) live in Europe. 22.6 million people from this group are suffering from an untreated, disabling hearing loss[11].

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10 This is according to the WHO; in some articles more than 35 dB is already considered a disabling hearing loss.

11 An overview of the EU-countries and the numbers of disabling hearing loss (total and untreated per country) can be found here: https://www.hear-it.org/hearing-loss-in-europe; to open the interactive map,

Furthermore, there is a great number of people, i.e., nearly 10 million, with a hearing loss of 50 dB or greater. 5.5 million of them are not treated for their hearing loss. Hearing loss of this degree isolates a person from friends, family and social environment and makes it very difficult to keep a job.

To improve hearing in everyday life, people with a slight, moderate and in certain cases even a severe impairment should use hearing aids.

However, wearing hearing aids in a noisy working environment could cause additional harm:

"In general, professionals recommend that hearing aids should never be worn in noisy environments characterized by noise levels above 90 dBA (instead, hearing protectors should be worn) and that workers who wear hearing aids must be clinically monitored, even if the sound levels in the workplace do not exceed the established criteria for action." (IRSST, 2018)

Most people with a severe and profound hearing impairment will not profit in any way from hearing aids and many of them use a sign language as a means of communication.

6.3 What are the general consequences of a severe or profound hearing loss for a person[12]?

Depending on the degree of impairment, hearing loss can vary from a minor disadvantage to an outright disability in everyday life and the workplace[13]. Especially people with a severe or profound hearing impairment (deafness) are not able to perceive spoken language through the acoustic channel to the extent that they can understand it; not even with hearing aids, Cochlear-implants or other modern devices[14]. If one cannot perceive a spoken language through the acoustic channel it is impossible to learn it the way hearing people do. If one cannot hear the different sounds of a language this person will not be able to produce these sounds. Hearing people can hear themselves reproduce sounds and know whether or not their pronunciation is correct. Unlike hearing people, deaf people cannot modulate the volume of their voice, because they simply do not hear if they speak too loud or too soft. Due to these facts, most of the acoustic information cannot be perceived naturally

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click on... …this link on the webpage: Interactive map: Number of people with a disabling hearing loss in European countries.

12 As mentioned before, people with mild or moderate hearing loss may use hearing aids to improve their hearing abilities.

13 Even mild and/or moderate hearing loss may cause difficulties at work (cf. Svinndal et al., 2020).

14 This is a very short summary of this subject, stating only the most important points. There is much more to be said on this topic, but this would go beyond the scope of this report.

(i.e., without the use of hearing aids) by people with severe or profound hearing impairment. Therefore, this information cannot be processed cognitively. So, for many people who lesarn to deal with hearing impairment from birth or an early age, sign language[15] is the preferred communication means as it is a visual language, given that deaf people rely on the visual channel to gain information and be able cognitively to process that.

Apart from the above-mentioned problems for deaf people and people with severe hearing impairment (who are using sign language as a means of communication), these groups also encounter other problems. One of these problems is that the national written/spoken language is not their first but their second language. In many European countries, sign language is still not the language of instruction for deaf children in schools. They might get a certain amount of sign language support (differing from country to country), but the spoken/written national language is used as the language of instruction. Due to this, and as already mentioned above, these children will 'lose' a lot of information on their educational path, because they cannot access information through the acoustic channel and therefore are unable to process it cognitively. This leads to serious educational deficits and will have a negative impact on their professional lives and other things. They tend to have lower work participation, less well-paid jobs, as well as an increased risk of sickness-related leave, frequently resulting in a disability pension (cf. Svinndal et al., 2020).

6.3.1   Reading written texts

Hearing people usually think that even though deaf people cannot hear, they at least can read and can get any information they want by means of written texts. Unfortunately, a huge number of deaf people struggle to understand written texts, especially long, complex texts (which is due to their education problems; see above). Information provided in long written texts will not sufficiently solve communication problems when working with deaf people.

6.3.2   Lipreading

The common belief of hearing people is that deaf people have no problem at all lipreading what their conversational partner is saying. Most deaf people might be able to pronounce words of their national spoken/written language more or less accurately and be able to

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15 Sign languages are languages with their own grammar, rules etc. In Europe most of them are recognized by the national governments, with the exception of e.g., Italy.

lipread up to a certain degree what is being said. However, if we take the German language for example, only a third of the sounds are visible at the front of the lips: only O-M-U-E are visible when saying the English word 'computer'. What makes lipreading even more complicated is that many sounds are very similar in their formation, e.g., the German word 'Mutter' looks exactly like the English word 'Butter' when read from the lips. Generally, it can be said even deaf people who are very skilled and good at lipreading only understand around 30% of what has been said. This leaves a gap of 70%, which will be filled in by "maybe, could be, might be …" on the side of the deaf person. Unfortunately, many deaf people are too shy to ask for clarification and the hearing communication partner therefore might think that everything is fine.

What this boils down to is that lip-reading is a source of misunderstanding and must not be relied on when communicating with severe hearing impaired and deaf people.

6.3.3   Social consequences

The majority of hearing people do not know how to react when for the first time confronted with a deaf/severely hearing-impaired person. On account of this uncertainty, they often react in a way that is interpreted as rejection by the deaf person. Deaf and severely hearing-impaired people often have to deal with such behaviour. The more often this happens the more insecure a deaf person will become, resulting in a slow but continuous retreat from the 'hearing world'. This contributes to many deaf and severely hearing-impaired people showing low self-esteem and tending to have more mental and physical health problems than people with normal hearing (cf. Ross 2011; Holzinger et al. 2006). This also may lead to social isolation and very often even stigmatisation of this minority by the hearing majority (very slowly this is changing to the better).

Due to the educational obstacles, deaf and severely hearing-impaired people have problems when seeking a job according to their abilities. If they find a job, these jobs often have low social status and low income.

As studies show, the degree of hearing loss affects the income of a person:

"While the people with the mildest hearing losses show little or no drop in income compared to their normal-hearing peers, as the hearing loss increases, so does the reduction in compensation. This decline is the most rapid and most apparent for the groups with the more severe hearing losses." (Ross, 2011: 27).

These facts show that hearing loss can have negative impacts on many areas of a person's life, such as mental, emotional and physical well-being, social skills, self-esteem, family relationship and, of course, the opportunities on the labour market and at work.

6.4 Hearing difficulties at work: an issue for both employee and employer[16]

6.4.1 Possible impacts of a hearing-impairment for an employee

Individuals with hearing impairment can perform as successfully on the job as hearing people, if they have the support they need. Employers must be aware that some of the deaf employees might perceive only parts of the words (depending on the degree of the hearing loss), e.g., it is very difficult for them to hear and/or distinguish the soft sounds (e.g., t, f, v, s, p). To some extend this might also be true for migrant workers, which are not yet familiar with the pronunciation of letters/words other than their national language. Background noises will further aggravate the difficulties in understanding speech and acoustic signals for these people. Due to this, and in case their work place is not adapted to their needs, deaf employees can be at a disadvantage in different ways, e.g.:

- Failure to have fully access to any information
- Mis-heard information and therefore not following the right procedure
- Not being informed correctly about a safety problem or a dangerous situation
- More stress and fatigue
- False reaction in case of emergency
- Not hearing a warning signal
- Not recognizing a signal (due to lack of information)
- Not able to locate from what direction a sound signal is coming from
- Accidents
- Loss of workplace

Other consequences are very often the isolation of deaf employees within the workforce; they are often mocked, teased and/or bullied by their hearing colleagues. In many cases deaf employees do not have the support of the employer either and therefore they do not articulate their needs. These circumstances put a lot of pressure and stress on a deaf employee which over time could and will lead to negative consequences e.g., maybe making mistakes at work, becoming increasingly frustrated, getting sick more often….

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16 Throughout this part of the report the term "deaf" refers to both people with disabling hearing loss and deaf people.

The following graphic shows the impact of communication problems an employee might have to face:
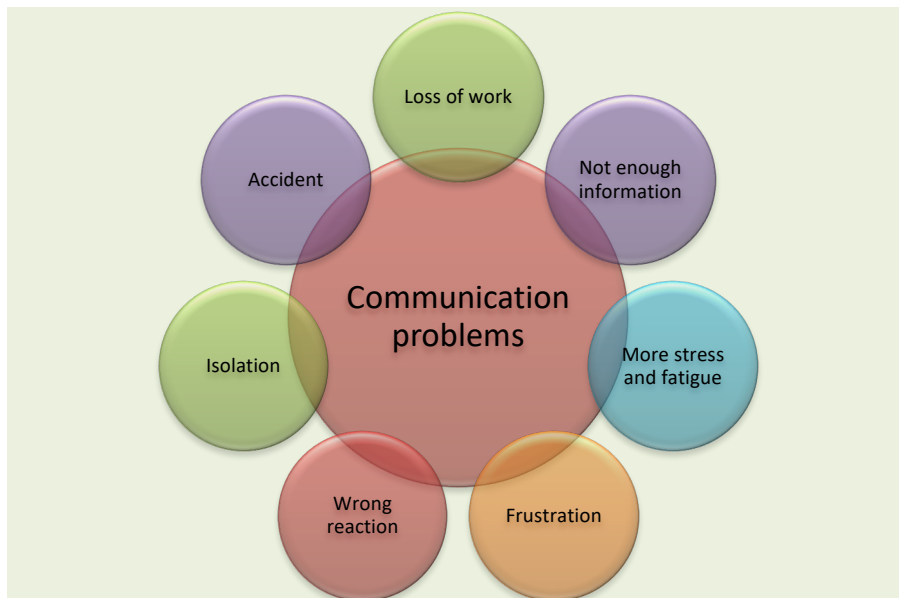
6.4.2 Possible impacts of a hearing-impaired employee for the employer

Hearing-impairment is an 'invisible' disability, but as Ross (2011) puts it: "*For an 'invisible' disability, it's clear that a hearing loss can have some very 'visible' consequences*". In addition, hearing impairment is not mainly a problem among older employees, as many employers might think this. In the USA, 60% of the people with hearing loss are either in the workforce or in educational settings (cf. Ross 2011). In the United Kingdom, more than ten million people are affected by a hearing impairment; in Austria around 1.6 million have some kind of hearing impairment, in Spain the number is estimated around 3.5 million, for Italy no valid data are available for those who are born as Deaf, according to EFHOH (2015).

One of the problems for employers might be that employees often hesitate to tell them about their hearing-impairment for fear of negative reactions (cf. RNID). They also often "*withhold requests for accommodation depending on potential advantages and disadvantages. In particular, it is perceived as difficult to request recurring accommodations. Monetary costs and impositions on others have a negative influence on the likelihood of requesting accommodation for recurring needs*" (cf. Svinndal et al., 2018).

A lack of knowledge about the adaption needs of their deaf employees so they could perform their tasks accurately and efficiently on the one hand, and not knowing exactly how

many on the workforce have some hearing problems on the other hand, can have a variety of consequences for an employer, e.g.:

- Frustration
- Misunderstanding
- Missed deadlines
- Accidents
- Sick leaves
- Frequent staff turnover
- Loss of experienced workers
- Additional costs

The graphic below shows possible problems an employer might encounter due to these communications problems:

In different ways, the above-mentioned communication problems can be costly for an employer e.g., accidents, frustration on both side (employees and employer), frequent staff turnover and more. And very often this is used as an argument not to employ a deaf person. But with an open mind and some financial costs (which might be funded by the government

either partly or fully[17]), employers could improve and adapt the work place to the needs of these employees too and keep good as well long experienced workers in their workforce.

6.5   Needs of people with a severe and profound hearing loss

Workplace accommodation for hearing-impaired employees will improve their working situation and reduce the risk of above-mentioned problems as well as increase Health & Safety at the workplace. It must be mentioned that the accommodations vary depending on the needs of the individual and most certainly none will need all of the below mentioned measures, especially from points *6.5.2. Technical support* and *6.5.3. Sign language*. Some of these accommodation measures should be permanent while others can be temporary. The best way to find this out is to discuss it with the deaf employee and an external expert. The latter will also have information about different possibilities concerning financial support for the employer and other support (cf. *6.6. Support and information links*).

There are different national and international laws which state the right for people with hearing-impairment (or other disabilities) to be part of the labour market and access the necessary support to be able to perform their tasks at work. The kind of support for an employer which is obligatory might differ from country to country: here are some of the most important measures which can be implemented to meet the needs of deaf and other hearing-impaired employees:

6.5.1   Personal communication

- Communicate with the hearing-impaired from a short distance
- Use simple gestures such as pointing or waving to get the attention of a hearing-impaired person
- They should be able to see your face clearly
- Do not shout, speak too fast or unnecessarily slow
- Do not chew anything when talking to a hearing-impaired person
- If you are not understood the first time, don't get impatient; repeat what you said; try to phrase it differently and use simple language and short sentences
- In case of difficulties, despite the aforementioned tips, it might help to write down e.g., key terms, names, technical terms or draw some sketches; but if possible, do not use written dialogues.

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17 There are possibilities for different financial support from the state etc.

6.5.2 Technical support

As mentioned, hearing aids are not the solution to improve the communication for and with a deaf employee. But there are different technical possibilities, which focus on the visual channel. In most European countries an employer might get some financial support from the state for installing one (or more) of these technical supports. Information can be found on the official government homepages (cf. *6.6 Support and information links*).

- Visual warning signals where possible, such as adding a strobe light to e. g. a fire alarm system. Another possibility could be e. g. signalling different degrees of danger by using different colours[18]:

• Colour	• Meaning
GREEN	Everything is normal
YELLOW	Attention
RED	Danger
BLUE	Indicates urgent official required action

- Portable vibrating pagers
- Flashing screen on a mobile device when a sound alert is triggered
- Special phone, such as Ultratec CapTel Phones. Ideal for people with some degree of hearing loss, the CapTel phone works like any other telephone with one important addition: it displays every word the caller says throughout the conversation (cf. https://www.ultratec.com/products/captel/)
- Relay Services
  If a good communication between employer and deaf is to be guaranteed, there is the possibility to contact a Relay-Service. An interpreter will then interpret the sign language of the deaf person to the hearing person into spoken language and the spoken language to the deaf in sign language.
- Subtitles/respeaking services – ideal for those deaf people who choose not to use Sign Language for daily communication.
- Install a webcam at the workplace so that video calls are possible.

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18 Source (table modified from the original solely for ease of interpretation by the reader): https://www.dguv.de/medien/inhalt/praevention/praev_gremien/arbeitsmedizin/produkte/leitfaeden/leit_schwerhoerige.pdf

6.5.3   Sign language

Enterprises have their own policies, procedures, safety and other information, which each employer should be familiar with. As the majority of deaf people who use sign language has greater access to this language compared to the written national language, they might miss out on crucial information.

One way to make important information accessible for this group is by using sign language wherever possible, e.g.:

- Translate all important information into the national sign language with subtitles and make this information available on the homepage of the enterprise. This way deaf employees as well as people with another first language are included and they can access it any time they want or need to do so.
- Engage a sign-language interpreter for important meetings, networking events and the like, to ensure all employees understand at least what subject areas are being covered in any exchanges. Deaf employees miss most of the spoken information and this can have an impact on their ability to do the job as they might miss vital information needed for their task. However, the situation in which a sign-language interpreter is useful should be considered carefully: an interpreter will interpret word for word, so that the deaf person may still struggle to understand what is being discussed. In such cases, for example, it might be better to summarise the content of a meeting or discussion and videotape it.
- Install a system with some basic signs for all employees which should be used in certain situations such as the 'Signed Safety at Work' glossary and e-Learning resource.

6.5.4   Other important measures

Usually, there are not many deaf employees working in an enterprise. In most cases, neither individual co-workers nor the employer is aware of the problems and needs of a deaf person. Due to communication problems this can lead to misunderstandings, negative attitudes or prejudices. There are ways to avoid this and to create a positive atmosphere among the workforce; for instance, through:

- Deaf awareness training
  In each country there are different organisations that offer deaf awareness training events for enterprises. This training will help the hearing majority in an enterprise to understand the problems of a deaf person. They will gain confidence and basic skills for the communication with a deaf colleague and this will have a positive impact on the working atmosphere.

- Diversity Management
  More and more companies install a diversity manager.[19] The task of a diversity manager is to design the optimal work opportunities for employees, the integration of minorities, maintaining equal opportunities in the company, promoting strengths and reducing weaknesses for each employee.
- Information material provided about Deafness
  Have some printed information material about deafness available for hearing colleagues.
- Sign Language courses
  Offer a basic sign-language course to all employees. This too will improve understanding between deaf and hearing workers. For employees who want to learn more there can either be a follow up course at the workplace or they can take one outside the enterprise.
- Workplace Adjustments
  These might include giving a deaf person a workplace where they have a good overview of, say, a production hall.

There are different organisations that offer support for workplace assessment and/or deaf awareness training or who can provide information material about deafness or offer sign-language courses. The easiest way to get more information about these issues is to contact the National Deaf Organization first and the national job service centre. In case they do not offer one (or more) of these measures, they will be able to recommend other organizations who do.

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19 According to Austrian fundamental right no person may be discriminated against on the basis of: Gender, Cultural or National Origin, Religion, Disability, Age, Sexual Orientation and Identity.

6.6 Support and information links in Austria:

Financial support for employers:

Arbeitsmarktservice (AMS):

https://ams.brz.gv.at/arbeitundbehinderung/data/13.html

https://www.sozialministeriumservice.at/Finanzielles/Foerderungen/
Arbeit_und_Ausbildung/Arbeit_und_Ausbildung.de.html

Arbeit und Behinderung:

https://www.arbeitundbehinderung.at/de/
foerderung-unterstuetzung/foerderungen-arbeitgeber/

Netzwerk berufliche Assistenz (NEBA):

https://www.neba.at/

Occupational Integration:

Dabei:

www.dabei-austria.at/mitglieder-von-dabei-austria-auf-einen-blick

Deaf language awareness training:

Equalizent:

www.equalizent.com (Vienna)

WITAF (Vienna):

www.witaf.at

ZGH (Carinthia):

www.aau.at/gebaerdensprache-und-hoerbehindertenkommunikation/

For other states either contact the local deaf organization or the:

National deaf organisation:

ÖGLB:

www.oeglb.at

Relay Service:

ÖGS barrierefrei:

https://www.relayservice.at/

6.7 Benefits for employers and employees

Deaf individuals can perform successfully on the job and should not be denied opportunities because of stereotypical assumptions about hearing loss. Some employers assume incorrectly that workers with hearing impairments will cause safety hazards, increase employment costs, or have difficulty communicating in fast-paced environments. With an open mind, a positive workplace culture regarding hearing loss, understanding and a couple of measures from the employer's side, deaf employees can develop their full potential at their workplace. Specific (reasonable) workplace accommodations or changes, together with better understanding and support when a deaf employee needs it, will not only increase the productivity of an employee, but will also have a positive impact on the workplace atmosphere, relations between employer and employees, as well as among the employees themselves.

Once appropriate measures are established, there will be long-term profit for the enterprise:

- Employees feeling safe in their work environment
- Employees feeling respected
- Satisfied employees (hearing and deaf) as well as a satisfied employer
- Good atmosphere in the workforce
- Less accidents (meaning also fewer sick leaves)
- Less staff turnover
- Employees motivated by work satisfaction will stay in the enterprise
- Long-time experienced employees will also stay with the enterprise
- Less costs for employer
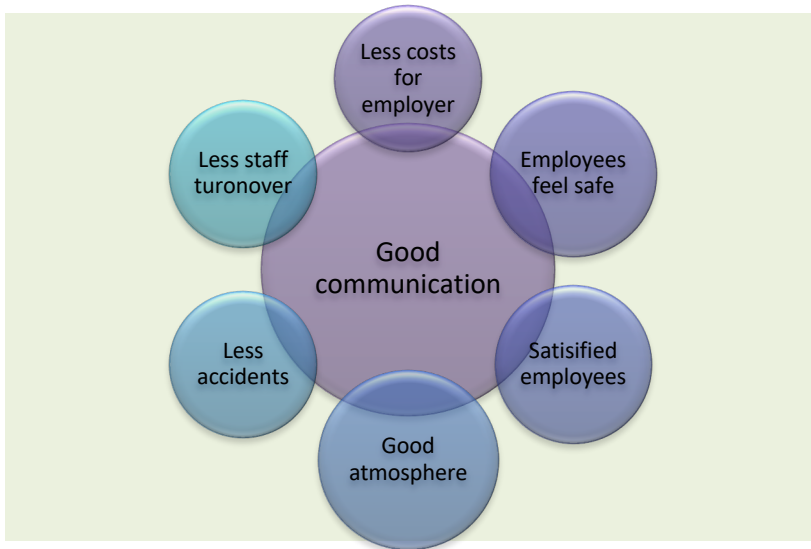
A lack of understanding about hearing loss, combined with a lack of support at the workplace (but not only there), can have considerable negative consequences for deaf people. As explained above, there are some measures that can ensure that deaf employees can fully develop their abilities and thus be a valuable part of a company. Being respected and accepted at work due to one's abilities and not only be defined as a person with a disability is a booster for self-esteem with positive consequences on several levels, e.g., the employee gets more involved in the workplace and becomes more secure, which leads to fewer problems, which includes dealing with fewer health problems.

7 Support during industrial training and at the workplace for deaf and hearing-impaired people

The support for deaf and hearing-impaired employees is given to varying degrees: there are enterprises which a very committed, some are fairly committed, others are much less committed – and many have no real interest at all. In this section some examples for best as well as 'not-so-good' practise will be given. The focus will be put mainly on the situation in Austria with some additional examples from the UK, but the most important feature is that all enterprises across Europe can learn and usually implement the best practice, as well as learning from mistakes and the poor judgement of organisations that take a negative and regressive approach to this issue.

7.1 Conventions Upholding Employment Standards

The United Nations Convention on the Rights of Persons with Disabilities (henceforth referred to as the 'UN Convention') and its Optional Protocol was adopted in December 2006. By December 2015, 25 EU countries, plus the EU itself, had ratified the UN Convention, which meant that they were committed to being bound by its articles in international law. Article 27 covers 'Work and Employment' with 11 directives to secure "the right of persons with disabilities to work, on an equal basis with others".

7.2 Legal regulations in Austria

7.2.1 Industrial workplace

According to the Austrian Behinderteneinstellungsgesetz (Disabled Persons Employment) Act (§1 (1)), all employers who employ 25 or more people are obliged to employ one disabled person for every 25 people they employ. If this employment obligation is not completely fulfilled, the employer has to pay a compensatory tax per open compulsory position according to the number of months that it remains open. In the year 2019 the amounts involved were as follows[20]:

- €262 for 25 to 99 employees per open compulsory position per month
- €368 for 100 or more employees per open compulsory position per month
- €391 for 400 or more employees per open compulsory position per month.

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[20] Source: https://www.koordinationsstelle.at/wp-content/uploads/2019/05/20190508-Zusammenfassung-Infonachmittag-Behinderteneinstellungsgesetz.pdf

Although companies who employ people with disability are entitled to different financial advantages[21], the majority of Austrian companies prefer to pay the compensatory tax, as the amount is rather small. This must be considered as a worst-practice scenario. But fortunately, there are also some big and smaller companies that take their responsibilities on inclusive practice seriously[22].

Best practice

Companies in this category take active care of the needs of deaf and hearing-impaired people. One of these companies is the ÖAMTC (www.oeamtc.at; Austrian Automobile, Motorcycle and Touring Club). For example, in the Vienna region they have 10 deaf employees. Deaf-awareness training is given at all hierarchy levels, barrier-free work places were created and some of the hearing employees have taken external sign language courses. There are other companies that pay close attention to the needs of the deaf by implementing different measures, one of them even has made a video in sign language for the internal safety. Here are some of these companies:

- H&M (https://www2.hm.com/de_at/index.html; clothing company),
- L'Osteria (ww.losteria.net; chain of restaurants),
- McDonald's (www.mcdonalds.at; fast food chain)
- REWE (www.rewe-group.at; food chain)
- Firma Reiswolf (https://www.reisswolf.at/; destruction of data and documents),
- Sonnentor (www.sonnentor.com; organic products)
- Fa. Ströck (www.stroeck.at; bakery)

A list with examples of best practice can be found here: www.arbeitundbehinderung.at/de/best-practice.

From a drop-down menu one can chose the category "Sinnesbehinderung" (Sensory disability) and examples of deaf and hearing-impaired employees (among others) can be found.

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[21]Details cf. https://www.sozialministeriumservice.at/Finanzielles/Foerderungen/Arbeit_und_Ausbildung/Arbeit_und_Ausbildung.de.html or https://www.arbeitundbehinderung.at/de/foerderung-unterstuetzung/foerderungen-arbeitgeber/)

[22]The following information was mainly given by Equalizent and WITAF.

Less committed companies

There are companies with deaf employees, but some of them have to be reminded time and again not to forget the needs of their deaf employees. According to the personal experience of a person working as an assistant , after their organisation is reminded, things become better for some time, but this does not last as they need regular reminders.

Worst case

In this category you will find the following two approaches:

1. Companies that have no intention to employ a deaf person and prefer to pay the compensatory tax. According to the experience of auTark, even companies that have their diversity guidelines on their homepage sometimes fall into this category.

2. Companies who will employ a deaf or hearing-impaired person but do nothing at all about inclusion. This is a very stressful situation for the employee and might eventually lead to job loss.

Both cases must be considered as discrimination and social exclusion.

7.2.2 Industrial training

The situation of deaf trainees during vocational training is similar to the one of deaf employees. There are companies who feel obliged to accommodate the needs of their deaf trainees, others are doing so, but with little effort, while the majority does not even want to think about the issue.

Here, as well, companies have different options for including a deaf trainee into the workforce: they may implement one or more of the above-mentioned measures – either temporarily or permanently – but they may also ask for external help, e.g.,[23]

- Work assistance:
  one focus of work assistance is to support the professional (initial) inclusion of persons in need of assistance. Work assistance is offered from different companies such as WITAF (Vienna); auTark (Carinthia)

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23 For more information in German cf.:
https://www.sozialministeriumservice.at/Arbeitsmarktprojekte/NEBA/Arbeitsassistenz/Arbeitsassistenz.de.html

- Job coaching:
  employees with disabilities are individually trained in the company by external supervisors, thus relieving the burden on in-house staff. The new employee is introduced to the company structure and culture, and contact is established with colleagues.
- Vocational training assistance:
  vocational training assistance supports young people with disabilities or other placement obstacles during internal training. It supports training both in the company and at school.

Before employing somebody, companies also have the option to test for a certain period of time whether or not the employee is personally and professionally suited for a particular job. On the other hand, the employee can test whether a job is suitable for them. The goal of this testing period is to finally achieve a permanent position. Job testing is organized by the job service centre.

One best-practise example in this area is Siemens AG (www.siemens.com). Since 1996 they have been training hearing-impaired young people as electronics technicians, adopting the model of a fully integrative apprenticeship. In order to avoid comprehension difficulties, four sign language interpreters are available at all times during the first two years of training. From the third year of apprenticeship onwards, this support is being increasingly withdrawn. For special technical expressions that were not included in the sign language repertoire, special signs were developed which have since become standard.

A class comprises a maximum of nine deaf participants. Since the start of this kind of vocational training in 1996, some 90–95 apprentices with hearing impairment have successfully completed the training to become skilled electronics workers.

It is important that an employer who wants to hire a hearing-impaired person should turn to external experts when doing do, such as support from Work Assistance. Their expertise in this field on the one hand helps employers to access the various (financial) support systems available, and on the other hand to understand the problems of hearing-impaired people. This will have a positive long-term effect on the work ethics of the employee as well as improve the atmosphere among the workforce.

7.3   Situation in the UK - Legal regulations

The Government's Access to Work scheme provides financial support for the cost of workplace adjustment for people with a disability or health condition. More information about this scheme can be found here: https://www.gov.uk/access-to-work.

The general situation in the UK seems to be quite similar to the one in Austria. There are companies which try to meet the needs of their deaf and hearing-impaired employees, as well as those who make little or no effort at all.

Here are some practical examples from the UK,[24] including some of the problems which have been encountered by the responsible person from Doncaster Deaf Trust during her work in this area:

Employer issues

A common theme here is that employers are unaware of language barriers. Therefore, training fails to take into account a BSL user's level/understanding of the English language. At fast-paced workplaces, there is no time to personalise support needs during training. When companies provide training for all employees, they usually fail to take a deaf person's learning support needs into account. One example:

Problem: A potential employee needed to complete a Health & Safety site induction assessment prior to the start date of the employment. The workbook was lengthy and used a lot of words describing hazards and safe practices – a lot of the wording deaf people usually do not understand.

Solution: The content was adapted by Doncaster Deaf Trust to make it deaf-friendly by changing certain wordings and adding pictures as descriptors.

Employee issues

Often, employees are unable to progress in training because they do not understand the English language content. As already mentioned before, various measures can be taken to remedy the situation:

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24 This information was given by the responsible person from Doncaster Deaf Trust

<u>Sign language interpreters</u>

Training organizations need to adapt their learning material and use BSL user words/pictures. While this is not a difficult process it may be time consuming, depending on the size of the learning material. Doncaster Deaf Trust has adapted a 98-page Health & Safety Booklet using one hearing and one deaf person.

<u>Deaf Awareness training for all staff</u>

Depending on the situation, use alternative ways of communication, e.g., pen and paper, text, short but to the point sentences in emails, and encourage both deaf and hearing people to use these alternative ways. As a beneficial side effect hearing people may become interested in wanting to learn some signs.

The responsible person from Doncaster Deaf Trust also has listed some of the consequences bad communication has for a deaf employee, ones which match those mentioned in this report:

- deaf staff feeling isolated due to a lack of communication with colleagues
- less chances of progression
- in the worst of cases, job loss
- a lack of training and communication, which may result in the deaf person being considered as "not being able to undertake duties relevant to the job".

There is a wealth of information to be found on the internet on how to support people with hearing impairment. However, it seems, even employers with a positive attitude towards inclusion are often not aware of the full impact a hearing impairment may have on a person. As Svinndal at el. (2020) show in their study, even employers who are aware of the oral communication difficulties with their hearing-impaired employees, these employees "were seen as very well-functioning, and thus their communication needs were easily forgotten".

To have a good start in a new work relationship,

- hearing-impaired people should tell their employer during the job interview about their hearing problems and needs.
- employers should benefit from the expertise of external experts and services to fully understand what loss of hearing entails – however mild or severe it might be. This will have a positive effect on the entire work force.

In conclusion, if the right support/materials are provided, deaf people can be integral members of any workforce.

8 Career development in Occupational Health & Safety: defining paths for employees with hearing impairment

8.1 Introduction

Specific information on the career development for the Deaf[25] and hearing-impaired people are extremely difficult to collect, especially in fields such as construction and manufacturing. Data are scattered and Deaf representative bodies are constantly struggling to achieve these sets of information from national organizations who are supposed to collect statistical data on disability. In Italy, one such body is the Italian National Institute of Statistics (Istituto Nazionale di Statistica – ISTAT) which nonetheless reports little to no data concerning Deaf adults and their employability. Something is made available through the National Work Insurance Company (INAIL –Istituto Nazionale Assicurazione Infortuni sul Lavoro) which mainly collects data on people turning deaf because of workplace accidents. The situation seems to be better covered in the UK, where data reports that only 48% of D/deaf people are currently employed (see section below – "other references").

These guidelines are built starting from the experience of the State Institute for the Deaf (ISSR) in employing Deaf people, as well as the collaboration with external associations and available online information on safety procedures for the D/deaf. Since 2010, ISSR has increased the number of Deaf people employed in all levels of activities (researchers, technicians, SL teachers, administration and front office, communication specialists), For this, ISSR has gradually adapted and transformed the working environment, procedures and methodologies in order to grant the best possible level of inclusion to all Deaf people working in the building.

The network of people and associations built around ISSR also includes Emergenza Sordi as the only national association founded and run by Deaf people whose main focus is within the field of Health & Safety, specifically oriented to Deaf people. The association was created in 2016, the same year in which Amatrice (a small but famous town in the region of Lazio, Italy) was destroyed by a series of very strong earthquakes, causing damage and death in all parts of the town. At the time, people in the region of Lazio were moved to help and support people struggling for their lives in Amatrice, but nothing was done to inform and update D/deaf people living the same desperate situation. Luca Rotondi and Marta Zuddas

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25 Wherever the word is used with capital 'D', we intend, as used in the specialized literature, people who were born deaf and relate to a specific culture using sign language in daily communication.

started to inform people from the site of the earthquake, through small but regular videos uploaded on a YouTube channel. In 2018, what was once a small group of people willing to help in a single situation became a formal association whose vocation is now to dedicate time and energy to the inclusion of D/deaf people in all emergency-related communications. Special attention was given to first-aid education (heart revival and defibrillator use), fire control with low/medium/high risk and training on how to "Stop the Bleeding".

The group is mainly coordinated by three deaf people:

- Luca Rotondi is the president: he is also a CBRN biology specialist, an expert advisor in deaf-people emergency, as well as working in the field of institutional communication and public administration.
- Marta Zuddas is a biologist, specialising in microbiology and virology.
- Davide Mauri is a BLSD operator and volunteer in Corpo Italiano di Soccorso dell'Ordine di Malta – CISOM, based in Monza and Brianza.

This association (quite unique currently, in 2021) has been supporting and providing its expert consulting to Signed Safety at Work (SSaW) project since its beginning in November 2018, and specifically for this important part of the project, providing their own experience as Deaf professionals in the field. In fact, each of them has contributed to this report by answering a small set of questions regarding their experience as Deaf people and Health & Safety experts.

The following are replies to questions our project raised with them when we were seeking to define the paths for career development for employees with hearing impairment. There is also some input from Emergenza Sordi.

The table overleaf presents the obstacles to career progression for D/deaf and hearing-impaired people and how members of the community overcome the obstacles.

Obstacle	Community Overcoming the Obstacle
Most working environments are not deaf-aware; thus, they do not consider visual access to oral/sound contents; difficulty in multitasking, especially when part of it involves being aware of acoustic signals; different time management and need for accessibility to all spoken contents, in any possible situation.	When acquainted with the working environment/boss, the D/deaf may want to ask for improvement in creating alternative visual signalling systems. However, considering the professional hierarchy and the fear of losing their jobs, many D/deaf people just accept the situation as it is or refer to their representative bodies to speak in their place. Also, providing visual access and/or changing work procedures represents a cost for the employer, in terms of time and human resources[26].
Contents are provided exclusively through speech, audio or non-subtitled videos; thus, they are not accessible;	Traditionally, asking for friends/families to explain contents to them through sign language or by writing the contents. More recently, asking representative bodies to argue for more accessibility and, especially by younger generation, providing alternative access to contents by either re-distributing the same contents in SL or by subtitling them. This is often an activity covered by interpreting students too, as volunteers. However, the latter cannot be considered as a professional and constantly reliable service.
Live conferences are often without an Italian sign language interpreter or live transcription system;	
Toll-free numbers/emergency phone numbers are not accessible to Deaf people;	
In the classroom, teachers writing on the whiteboard or walking while speaking gives blind spots to students during their learning;	Asking for colleagues or friends to share their notes; applying for SL interpreters or lip-reading services. If teacher is deaf-aware, the lesson is normally organized around visual contents, also providing extra support for the deaf person, if needed.
In meetings and social gatherings, information about career progression is shared orally. D/deaf people may miss this information, thus the opportunity.	Deaf aware colleagues inform their peers of the opportunity. However, this may not be the case when competing for the same position or progression opportunity. The deaf employee insists on getting information about the available opportunities.
In the case of pre-verbal deaf people, written language could also be an obstacle, as many do not reach the same literacy level as their hearing peers.	D/deaf people often accept lower-skilled work profiles and/or employ their real skills only in D/deaf-driven environments.
In the case of post-verbal or post-traumatic deafness, difficulties in coping mechanisms could be the base for social exclusion.	Deaf people isolate themselves from the greater hearing group

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26 United Kingdom offers a special grant for these kinds of costs:
https://www.gov.uk/government/publications/access-to-work-guide-for-employers/access-to-work-factsheet-for-employers

8.2 Questions that the Deaf community stakeholders raise about their career development that workplaces and institutions can address.

- Increase access to information by improving horizontal communication in any possible alternative way to spoken language (written texts, messages, signed alternatives);
- Increase access to emergency signalling by improving visual emergency communication such as emergency lights, camera in elevators connected to screens in emergency providers rooms, add visual communication systems where possible, or other;
- Train deaf and hard of hearing people to know about emergencies and how to respond;
- Emergency communication systems should be "redundant": the message should be sent out to as many people and in as many formats as possible (by television, radio, phone/TTY, computer, cell phone, text messaging, pager, and other means). These systems can offer quick transmission of critical information to people with the appropriate devices and updated contact information. Regularly inform all employees about the available devices;
- If possible, train local emergency services about how to manage D/deaf people in emergency situations.

8.3 Current and potential use of visual language in the workplace and educational institutions.

Official data is not available. In our experience, visual language is mostly used among Deaf people and only in dedicated workplaces mostly populated by Deaf people and/or signers. In deaf-aware contexts, the use of sign language interpreters for the mediation of important information also increases the amount of visual language in use. In mainstream educational institutions, there is the possibility for students to apply for a 'communication assistant' or an 'educational interpreter' for access to lessons contents. When in higher education, D/deaf people can apply for interpreters to mediate for them in the classroom; however, the number of interpreter hours available to the D/deaf are often below the total amount of hours attended by the student, causing distress when interpreters are not available and only partial access to most contents.

8.4 How *Signed Safety at Work* offers a pathway to maximizing the potential of Deaf and hearing-impaired people through accessible and formalized training.

Providing all employees with the same contents referred to emergency procedures and sentences to use in case of need puts all workers on the same level, also by providing a common shared language to use among a community of colleagues.

The learning system grants access to information – that would be otherwise difficult to access – in a visual and intuitive way. In fact, Health & Safety regulations are often left to specialized professional profiles and are not comprehensible to the D/deaf. Offering an automated education system is a good way to provide both hearing and deaf employees of a first access tool to the language and Health & Safety lexicon. Best practice would be to improve the system and upgrade it to a full educational path that is fully accessible to both D/deaf and hearing people. This is because the platform provides access to specialised contents for the D/deaf, in conjunction with a visual language as well as the contents for the hearing people working with them.

8.5 How the e-Learning output can be applied as a module for D/deaf and hearing-impaired people as learners.

The e-learning module holds a great amount of visual information and is designed so that navigation is visual as well, which makes it a good example of the way in which automated education systems and contents can be made fully accessible for the D/deaf. For all other circumstances, see 8.4 above.

The creation of a more accessible working environment for the D/deaf should include the creation of Deaf Awareness training to the professional-development training program offered by the employer, to empower existing staff. This way, they will develop the confidence to use different forms of communication and be more at ease in case of real emergencies.

People who become deaf due to accidents at work could suffer from living in a moment of transition from their hearing habits to deaf-coping strategies. As such, they may not be ready to welcome adaptive strategies used for native deaf people and so may suffer a form of isolation coming from not being able to cope with other hearing colleagues in the way that they used to do. Deaf awareness training could also help in these situations as well.

Three Emergenza Sordi inputs on the experience of Deaf people regarding Health & Safety
(Age range: 40–50 years)

What is your education level?

1. *Graduate in biological sciences, specialising in microbiology and virology, Masters' degree in international security, global strategies and maxi-sanitary emergencies:*
   Analysis and management in non-conventional events (ISSMM delta)
2. *Graduate in biological sciences,*
   Masters in: (1) Clinical Testing, (2) Forensic Genetics,
   (3) protection from CBRN events, (4) quality control,
   (5) international security, global strategies and maxi-sanitary emergencies:
   Analysis and management in non-conventional events (ISSMM delta);
3. *Bachelor degree in accounting.*

How many deaf people do you know working in the field of Health & Safety on the workplace?

   1. *'Zero';*   2. *'Zero';*   3. *'Zero'*

How many deaf people do you know who are familiar with the necessary procedures for Health & Safety on the workplace?

   1. *'Three';*   2. *'Very few';* 3. *'Zero'*

How many deaf people do you know who work in construction?

   1. *'Zero';*   2. *'Zero';*   3. *'Zero'*

How many deaf people do you know working in manufacturing?

   1. *'One';*   2. *'About 10';* 3. *'Two'*

What have you studied to become an expert in the field of H&S in the workplace?

   Vocational training on the law 81/2008 [stated twice];
   No formal studies [stated once]*.*

What main difficulties have you met in your education?

   I met no difficulty, in general, except for those moments when the educator's lips were not completely visible [stated twice];
   I had no difficulty as I had support at school [stated once]*.*

Section Literature

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Further Resources (in English Language)

Access Ambassadors (UK)
https://www.access-ambassadors.co.uk/deaf-employees

Resources and Funding for Inclusion (UK)
https://www.gov.uk/government/publications/access-to-work-guide-for-employers/access-to-work-factsheet-for-employers

Deaf Emergency Information in AUSLAN (Australia)
http://deafemergencyinfo.com.au/

National Association of the Deaf (U.S.A.)

https://www.nad.org/resources/emergency-preparedness/

Viscardi Center (U.S.A.)

https://www.viscardicenter.org/6-ways-to-create-a-welcoming-productive-workplace-for-employees-with-hearing-loss/

Inclusive Communication Systems

https://inclusiveasl.com/top-reasons-to-hire-deaf-employees/

Websites

auTark:

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Section 4

An Inclusive Approach to Occupational Health & Safety

Training and Practice

9 A plan for training course providers to use the SSaW e-Learning resource for extending soft skills among safety professionals

The subject of development with the aim of enriching the offer of education for Occupational Health & Safety (OHS) professionals in order to increase their competencies is the e-Learning resource prepared by the consortium of the Signed Safety at Work project.

The project strives for employers to gain better communication with their employees, so they gain happier workers who know what to do in an emergency. Signed Safety contains a sign vocabulary glossary of essential Health & Safety instructions and warnings, a vocabulary that facilitates effective communication between hearing native speakers, hearing non-native speakers, the Deaf, and the hearing-impaired in the workplace. These terms are learnable through the project's e-Learning course, designed for OHS professionals and all other staff, that will reinforce high standards, maximise recruitment and retention opportunities, and support an inclusive work environment.

This is an online (desktop and mobile) e-Learning resource, with scenario-based learning activities, taking videos from the online glossary in order to teach the sign vocabulary.

The Signed Safety e-Learning contains 14 modules in three different languages that show learners the best way to help colleagues in dangerous and hazardous situations at work. Those interested will learn how to act safely through the videos of international signs, as well as improve the communication with deaf / hearing-impaired workers and colleagues with different first languages.

The e-Learning is available on desktop, laptop, smartphone, or tablet for free. The result is a set of videos in IS which are universally accessible, based on simple configurations, built on iconicity and cultural gestures and ready to be taught.

This e-learning tool / resource is primarily intended for safety professionals. It can contribute to broadening the scope of their communication skills and, therefore, to the overall broadening of their professional profile and skills. How people manage to meet the set goals of the organization depends on the communication skills of employees of this profession and other managers. The goal of interpersonal communication is usually not just the exchange of information, but the exchange of information in order to influence further actions and activities of the counterpart. In the work environment (and in the relationship of safety professionals to other employees) it is about influencing behaviour in order to ensure a safe and non-hazardous work environment, minimizing incidents or accidents at work and

occupational diseases, ensuring a high level of Health & Safety. At the same time, the optimal level of Occupational Health & Safety is the goal of the organization / company for which OHS experts work.

Communication comprises communicating information and listening. People communicate information verbally, non-verbally and via actions; they listen with their ears and eyes. Successful communication requires people to understand each other. Obstacles in the communication between two or more people, when communication cannot take place as it should, are seen as communication barriers. Communication barriers can be lingual (when people cannot express or understand one another's languages), they can be mental, or they can be educational. They can take the form of senses that we normally use to communicate (sight, hearing) being absent or impaired. There may be physical limitations that lead to what we know as speech defects. The communication barrier can be 'removed', – for example, by using an interpreter – but in practice this is often too inflexible and often not a realistic or usable solution that can be applied with permanence.

In the workplace and workplace environment, we also come across a specific vocabulary that the interpreter does not always know; immediate interaction might be also highly needed. If OHS professionals have the skills to enable them to communicate immediately (operationally) and effectively with employees who do not know well the national language of the country in which they work (such as foreign workers and migrants), or are hearing impaired, they will be much more valuable to their employer and gain an advantage for employment in the labour market. This capacity increases the professional's portfolio, especially in the area of specific soft skills, which are highly sought-after as competence in the current labour market.

The e-learning course created as part of the Signed Safety at Work project (which teaches sign language) is a resource that allows safety professionals to communicate with special vocabulary from the work environment and workplaces (common and risky situations, accidents, etc.). As noted previously, the group that the project Partners intend to reach comprises people who are, mainly, not familiar with sign language, which makes learning it necessary. The Signed Safety e-Learning enables fast and easy visual communication. The creators recommend it for safety professionals, for managers and other workers who communicate with employees in a noisy work environment or with the hearing impaired, or even with foreign-speaking workers. It can also be used by other stakeholders.

Acquiring soft skills is usually not a mandatory part of achieving most qualifications. It is similar with OHS professionals. This also applies to the area of communication skills. Nevertheless, the creators recommend the inclusion of Signed Safety e-Learning for training providers in the spectrum of their training courses portfolio.

This is a significant innovation that expands the professional profile of OHS experts in a suitable way. The new competence they acquire can have a significant positive effect on the creation of increasingly safer workplaces: it will also enable an increase in the number of workers from disadvantaged or other minority groups in the labour market.

E-Learning makes the sign vocabulary more accessible for training OHS professionals. One of the aims of creating e-Learning modules is to enhance inclusion for people with hearing impairment in the workplace. The result of the SSaW project is e-Learning module which is developed in three languages (English, German, Italian). In these countries of SSaW Partnership (United Kingdom/Great Britain, Austria, Italy) the e-Learning can be used as a module within their occupational Health & Safety courses.

Transferability after the end of the project:
- Using of the e-Learning in European countries where these languages are also spoken, e.g., Germany; Australia etc.;
- Possibility to translate the e-Learning to other European languages (e.g., Spanish and Czech language or others).

However, with the issue of using e-Learning in national education and qualification systems, a voluntary approach is essential (but the e-Learning resource might become an optional module within educational and training courses).

It is necessary to consider the impact as a consequence of integrating the e-Learning module into the education of safety professionals and employees, especially for the deaf, hearing impaired and migrants as beneficiaries of the project's work.

The guideline will enable the e-Learning resource to be transferred for an augmented purpose where it can be applied in specific work settings so that (1) a much wider group within the workforce would learn the sign vocabulary, and (2) people with hearing impairment would be especially appropriate to take on the role of a Health & Safety professionals rather than just be receivers of the sign vocabulary in Health & Safety situations. The guidelines will then define a potential career development path for employees with hearing impairment within the Health & Safety field.

In a number of manufacturing industries, it is very noisy, often requiring ear protectors, making hand signals appropriate for communications of all kinds. A sign vocabulary could be especially valuable in these environments, not just for people who are hearing impaired in their day-to-day lives, but for all employees. The need for effective Health & Safety in this case, by enhancing communications for everyone, would be valuable. It would mean that such an employer may want as many people as possible in their workplace to learn the sign vocabulary, and that it could be a pre-requisite for Health & Safety experts.

While a person living with hearing impairment could carry out Health & Safety responsibilities in any workplace, it would be especially appropriate in an environment where a large proportion of the workers become hearing impaired due to their use of ear protectors. The Partners would wish the guidelines to include a defined career development path for employees with hearing impairment to access and flourish within the Health & Safety field, especially though not exclusively in the heavy manufacturing field.

The guideline will also assist managers in bodies operating in heavy manufacturing to implement Health & Safety procedures in an improved form for their employees. It could also act as a point for discussion and cooperative engagement between the partners and people with special responsibilities. These would include those responsible for organisational policy, VET curriculum development, Health & Safety regulation as well as bodies supporting social inclusion for people with disability.

Innovation

These elements of impact are particularly innovative in their approach to the project's objectives. The first opens new opportunities for people with hearing impairment for professional development, so enabling higher levels of social inclusion. The second acts on the resource's potential for transferability by re-orienting its purpose in an additional direction, and so contributing to the exploitation of results. This innovation is directly connected to its potential impact on behalf of the beneficiaries, enabling them to display their abilities and capacities.

The Signed Safety e-Learning is due to be available early in 2021.
There is access from: http://www.signedsafety.eu/e-learning

10 Exploring the process for the SSaW e-Learning resource to be accredited as a recognised element in training Occupational Health & Safety Officers

10.1 United Kingdom

 The United Kingdom (UK) is a union of Great Britain (England, Scotland, Wales) and Northern Ireland; and there are differences between each of them; but in this point we will try to explain in general terms which could be applied to the whole country.

The UK has a number of accreditation options. This will enable the different programmes to be recognised in a number of regulated and industrial ways – adding value through a flexible approach. These options are:

10.1.1 Being accredited by a Certification Service.

The organisations acting in partnership within the Signed Safety at Work project (hereon, the Partners) analysed the possibility of accrediting the e-Learning course by Continuing Professional Development (CPD) Certification Service (https://cpduk.co.uk), which is an independent accreditation centre working across all sectors, disciplines and further learning applications established in 1996. They evaluate learning activities with the highest standards, and their certified symbol is recognised by hundreds of thousands. Their quality marks are protected by international copyright legislation. Submissions are assessed and accredited against the universally accepted structured checklist which CPD Service has developed over the past 20+ years. The process takes an impartial and objective overview of structure and value to ensure full conformity to CPD guidelines.

It is considered by the consortium that the e-Learning course is a learning activity which is developing and enhancing professional abilities and it could be matched with recognition as continuing professional development. Moreover, it is structured as a mainly 'practical' form of training, focused on real learning to be used at a professional level. The idea of the consortium is to prepare the content so that it may be accredited beyond the lifetime of this project. To this end, such a process may take the following steps:

- Completed Submission for CPD Certification Form.
- Course structure/outline so that it is apparent how the course will be structured.
- Scripts/Storyboard for online training.
- Delegate feedback mechanism.
- Delegate Evaluation if offered.

- Knowledge tests/quizzes that include all the questions and correct answers and any overall pass/fail criteria.
- When course is to be made live - Access details – assigned to: assessments@cpduk.co.uk.
- When course is to be made live - Navigation guide for easy access to the screens (if available).

Though CPD accreditation is outside the scope and budget of the project, Partners are nonetheless exploring options currently in order to achieve this. An external CPD accreditation body has advised the Partners that it should be possible to seek such accreditation as the course has been structured appropriately and is of suitable quality.

However, decisions would have to be made on the basis of its necessarily flexible course structure, so this is potentially time-consuming and simply could not be completed in the project lifetime. The Partners hope that an organisation committed to its application in the long term may wish to use that time to follow through on this process should it assist with their internal training objectives, in the context of the positive feedback we have received already on a positive result on accreditation in time.

10.1.2 Regulated Qualification

This is when a qualification forms part of UK National Register of Qualifications. Initially, the outputs of the SSaW project cannot, in its own right, be included or converted into a National Qualification in the UK, for more than one reason. First, it has not been created only by an awarding body, and second, it does not set out competencies, skills and knowledge requirements.

However, there is the option to develop regulated vocational modules in the future with the content developed in this project. Moreover, we can take into account that the project coordinator is an important English educational institution (University of Wolverhampton) and also an awarding organisation. This means it is possible that the University could decide to implement the course as one of its own, following their usual internal procedure.

10.1.3 Contribution to Regulated Qualifications

The outputs from the SSaW project can provide invaluable sources of learning materials that could be used by students who are carrying out studies on Occupational Health & Safety, or on a range of related qualifications. The SSaW material can be seen to cover some necessities for Occupational Health & Safety experts. Indeed, one of the activities

undertaken by the Partners in the project has been to identify which qualifications would be most relevant (from over 15,000 UK technical and vocational qualifications plus 6,000 or more academic qualifications) for using the Signed Safety at Work e-Learning resource as a part of the curriculum.

An additional issue is that while this material will be useful for students as part of a formal occupational qualification, nothing forces teachers to use the SSaW material or to include it as part of their teaching as each institution in the UK is free to design and use whatever content they like in order to meet the learning outcomes, and even students are free to choose any learning resources they may want in order to gain the knowledge required. Usually, in the UK the learning materials or approaches are not prescribed, only the skills and knowledge that they must gain. In order to be used, it will be sent to the different Qualification Owner Organisations that have a Qualification title related with Health & Safety in the UK, already identified by the Partners, with instructions for how it may be applied for use on the development of their courses,

10.1.4 Employer bodies and trade unions

Organisations outside the educational sector can use the content of the SSaW programme. The SSaW materials can be applied in any relevant, non-regulated training courses that organisations have available for their members and their workers. This means that this material could be practically implemented in different sectors and their members can use it to gain knowledge as a part of those courses.

In addition, these organisations would be able to disseminate the material appropriately and well. For this, the project Partners have been able to create a record of representative organisations who could use the material in this way. Those stakeholder organisations could even prepare a whole or modular programme which they certificate. This would not be a regulated qualification in a non-regulated training programme, but it could be accepted and recognised by the sector.

In order to include the knowledge and use of sign language as a skill need in Health & Safety courses of each type, it would be significant if the Department for Education or Department for Innovation, Universities and Skills, in conjunction with the Department for Work and Pensions (DWP), would include this skill requirement in their own list. Usually, they are responsible for collecting and analysing labour market databases on a national and local level and they are responsible for evaluating specific training programmes and policy initiatives. The Departments even carry out some analysis of labour market data, but also

commission research by other organisations, including forecasts of future labour market demand.

10.2 Spain

In Spain, there are different levels in risk prevention training. Basically, there are VET courses, which could be considered intermediate level; and there are university courses (different in each university), which could be considered as the advance level.

Considering VET, Spanish Public Employment Service (SEPE) has a catalogue of vocational training formative specialities which is valid throughout the State and is divided by professional families. Within this catalogue, the autonomous communities are in charge of the competence of proposal and registration / accreditation of new training specialities through the Regional Employment and Training Services. Once the specialisation is included in the catalogue, it can be used and recognised at a national level. In this catalogue, there is a type of specialization called "experimental specialization", which is a training specialty that is proposed by regional services for registration in the national catalogue, due to the special linkage with economic sectors linked to the different autonomous communities. First, the professional family to which the program is to be homologated, and to which it comes to belong, must be specified. Once this professional family has been defined, the SEPE is requested to register the specialty or part of it with its content through a specific form.

The steps to follow in this procedure for the Spanish case are the following:

1. Complete a document with all the data of the specialization related to the training program.
   (This annex must include in detail all the requirements of the teachers, the students as well as the breakdown of the training modules that make up the specialty.)
2. Once the document has been completed, the regional employment service sends the registration request to SEPE after signing the Deputy Director of Training.
3. SEPE is in charge of studying the proposal and will request any modifications it deems appropriate to the regional employment service, which would be in charge of adapting the programme to the requests and sending it back.
4. Once accepted, the programme acquires a new SEPE specialty code and is inscribed in the National Catalogue.

When considering university, it is necessary to make contact with the different universities with a Masters' Degree in Occupational Risk Prevention (Murcia University, Universitat Oberta de Catalunya, Miguel Hernández University, Universidad a Distancia, Universidad Europea, University of Malaga, Nebrija University, International University of Valencia, Isabel I University…) to make the case for the modules to be inside their training course.

In each university, the procedures to accept a suggestion like this and modify their training contents are different from one another, according to the way in which their statutes or rules of organization and operation are set. In line with this, so are the corresponding regional regulations that must preserve the academic autonomy of the universities.

In the event that the suggestion is accepted, Royal Decree 1393/2007 of October 29 regulates the organization of official education in its Articles 25 to 28, where the verification procedure and modifications for official university degrees is established. If any necessary modifications affect the content of the entries related to official degrees registered in the Registry of Universities, Centres and Titles (RUCT), these will be notified to the Council of Universities through the secretariat of that body. The Council will then send them for its report to the National Quality Assessment and Accreditation Agency of Spain (ANECA) (http://www.aneca.es). That report will be mandatory and decisive.

In the case that such modifications do not imply a change in the nature and objectives of the registered title, ANECA or the corresponding evaluation body will accept the proposed modifications and inform the applicant university, the Ministry of Education and the corresponding autonomous community within three months from the date of receipt of the request for modification. After that period, in the absence of any expressed pronouncement, the university will consider their proposal accepted.

If the accepted modifications are important and affect crucial elements, it will be necessary for a new official publication of the study plan to be developed in accordance with the provisions of article 26.3 of Royal Decree 1393/2007. In the case that the accepted modifications are affecting the title name contained in the resolution of verification, the rector must order the publication of those modifications in the Official State Bulletin (BOE) and in the Official Bulletin of the corresponding autonomous community.

In the case that the modifications are not accepted or are only partially accepted, ANECA or the corresponding evaluation body, will send the appropriate report to the University Council within a maximum period of three months, which will act in accordance

with the content of that report and notify the corresponding resolution to the university, the corresponding autonomous community and the Ministry of Education.

After this process, The Ministry of Education will transfer to the RUCT all the modifications accepted in the study plans in order to proceed with their corresponding registration. Official university Masters' degrees must renew their accreditation within a maximum period of four years.

In case that the official university Masters' degree about risk prevention is new (for instance, by adding the content that was developed in SSaW project), the procedure accords with Royal Decree 1393/2007 where universities must send official degree projects for verification to the Council of Universities. In order to publish a verification report, the Council of Universities requests an evaluation report of the official degree project from ANECA. For this purpose, ANECA has their evaluation commissions. Once the evaluation process is completed, ANECA will send the report to the applicant university, the Council of Universities and the Ministry of Education. Once the report is received by the Council of Universities, it will issue a verification resolution. Against the verification resolution, the University may appeal to the Presidency of the Council of Universities. After the authorization of the Autonomous Community and the verification of the study plan by the Council of Universities, the Ministry of Education will submit to the Government the proposal for the establishment of the official character of the course and its registration in the Registry of Universities, Centres and Titles (RUCT).

10.3 Italy

In **Italy**, the national and regional institutions involved in the qualification system (Ministry of Education, Universities and Research, Ministry of Labour and Social Policy, Regions) have tried on several occasions to establish a legal set of standards to share and harmonise validation practices. There have been important institutional documents and engagements about this since 1996, as well as numerous specific initiatives related to certain sectors, Regions or target groups.

The system of professional standards of reference for the integrated regional system of education and vocational training and employment services comprises regional Directories of Professional Figures. The regional directory of professional figures contains the regional professional standards declined in terms of professional figures organized by sectors of economic activity and areas of activity.

Each professional figure is identified through areas of activity and, for each of these, by units of competence, intended as a combined set of knowledge and skills, and by descriptors related to the context and the level of complexity in the activity.

The establishment and updating of the repertoire are the responsibility of the region that is commonly using a technical committee. Subsequent to its adoption, any change in content within the Regional Directory of Professional Figures must be developed and formalised according to defined technical-scientific procedures and methods.

Proposals for amendments to the professional standards required by the Directory must follow the procedures and forms established by the competent regional Sector.

It is possible to request the establishment of a commission that evaluates the merit of the proposal of a new professional figure or even the integration or modification of an existing figure in the professional profiles' directory with new skills or knowledge. This request must be accompanied by a description sheet of the proposal to modify and integrate the repertoire on the basis of a specific form.

Another route is through ISFOL (National Research institute for vocational education and training employment and social policies), which acts on behalf of the Ministry of Labour and Social Policies. ISFOL has been managing and promoting an information system to support actions designed to prevent skill mismatches. It could be suggested that Occupational Risk prevention could use sign language as a tool to improve the communication in noisy environments.

Apart from these options, the increased use of the training market in Italy is worth noting, particularly its private non-State-regulated sector. The increase is because of a higher proportion of enterprises with at least 10 employees are offering training to their workers directly. This course could be implemented in a non-formal way by VET providers.

11 Giving direction to the application of ECVET and other elements of European learning standards

First, it is valuable to understand what is ECVET and its objectives.

ECVET is the **European Credit System for Vocational Education and Training**, and it is a European initiative. It allows for the accumulation and transfer of **learning Credits** gained through the recognition of learning outcomes in vocational education and training (VET) across Europe. ECVET has been developed to facilitate the recognition of achievements in vocational education and training, in formal, informal and non-formal learning.

Although ECVET is underpinned by European legislation, participation is voluntary and national protocols are respected.

Its objectives are:

- Development of a common language to be used by different VET stakeholders and the promotion of mutual trust within the wider VET community.
- Provision of a framework for the assessment, validation and recognition of learning outcomes and to make easier the validation and recognition of the skills and professional knowledge acquired in different systems and countries, so that the interested parties can properly include them in their professional qualifications.
- Promoting the integration of mobility into existing learning pathways, so improving the attractiveness of mobility between different countries and educational environments.
- Increasing the compatibility between the different European vocational education and training systems and the qualifications. ECVET facilitates cooperation between VET providers and companies: this means that ECVET can strengthen the link between education and training and the labour market.
- Improving the employment possibilities for graduates in vocational training and to give confidence to employers that each qualification in vocational training has required the acquisition of specific skills and knowledge.

It is not the objective of ECVET to replace national qualification systems, but it is given a system for appropriate comparisons and facilitating the compatibility between them. In fact, ECVET recommends its invitation to all European countries to create the necessary conditions and adopt measures to make it possible.

The levels of ECVET implementation in each European country in 2015 are identified in the Table below. This accords with the last monitoring report about ECVET developed by the **European Centre for the Development of Vocational Training** (CEDEFOP).

Country	Direction of ECVET development	Do the answers apply to CVET?
Countries with a credit system in IVET that allows accumulating and/or transferring learning outcomes of individuals		
Belgium-French Community	The system is ECVET-compatible.	No
Denmark	Some ECVET technical components are tested	Yes
Estonia	The system is ECVET-compatible.	Yes
Finland	The system is ECVET-compatible.	Yes
France	The system is ECVET-compatible.	Yes
Iceland	The system is ECVET-compatible.	No
Ireland	It may be possible to map elements of the well-established credit system to ECVET principles.	Yes
Luxembourg	The system is ECVET-compatible.	Yes
Malta	The system is ECVET-compatible.	Yes
Romania	Some ECVET technical components are tested.	No
Slovenia	The system is ECVET-compatible.	No
Spain	The system is ECVET-compatible.	No
Sweden	The system is ECVET-compatible.	No
UK-England	The system is ECVET-compatible.	Yes
UK-Northern Ireland	The system is ECVET-compatible.	Yes
UK-Scotland	The system is ECVET-compatible.	Yes
UK-Wales	The system is ECVET-compatible.	Yes
Countries where credits are used in some qualifications		
Austria	Some ECVET technical components are tested.	Yes
Bulgaria	A credit system compatible with ECVET is being developed.	Yes
Croatia	A credit system compatible with ECVET is being developed.	Yes
Czech Republic	A credit system compatible with ECVET is being developed.	No
Italy	Some ECVET technical components are tested.	Yes
Lithuania	Some ECVET technical components are tested.	Yes
Norway	Some ECVET technical components are tested.	Yes
Countries with no credit system		
Belgium-Flemish Community	Any initiative on ECVET implementation at system level is on hold.	Yes
Cyprus	A credit system compatible with ECVET is being developed.	No
Germany (*)	Some ECVET technical components are tested.	Yes
Greece	Any initiative on ECVET implementation at system level is on hold.	Yes
Hungary	Any initiative on ECVET implementation at system level is on hold.	Yes
Latvia	Some ECVET technical components are tested.	Yes
Liechtenstein	Any initiative on ECVET implementation at system level is on hold.	Yes
Netherlands	Some ECVET technical components are tested.	No
Poland	Some ECVET technical components are tested.	No
Portugal	Some ECVET technical components are tested.	Yes
Slovakia	Any initiative on ECVET implementation at system level is on hold.	Yes
Switzerland	Any initiative on ECVET implementation at system level is on hold.	Yes

Table 1. Credit systems for transfer and accumulation of learning outcomes and ECVET development in 2015.

According to CEDEFOP analysis, there are three groups of countries that currently implement the ECVET principles, showing that there is not homogeneity across the continent yet.

With regard to the SSaW-Partner countries, in Group 1 are countries that have learning Credit systems that are compatible with ECVET. Here one finds UK (England, Scotland, Wales and Northern Ireland) and Spain. In Group 2 are countries where credits are used in only some qualifications: here one finds Austria, Czech Republic and Italy. In Austria and Italy some ECVET technical components are tested, while in Czech Republic a learning Credit system compatible with ECVET is being developed.

EU institutions in Brussels recommend that European countries should apply because ECVET brings a range of benefits to all those involved in geographical worker mobility and lifelong learning. ECVET provides a framework for the assessment, validation and recognition of learning outcomes, alongside a series of common tools and instruments able to support quality in mobility. ECVET relies on a series of common goals, principles and technical components that centre on the recognition of learning outcomes and achievements for European citizens undertaking vocational education and training, irrespective of the learning context, location or delivery method.

The European Qualifications Framework (EQF) works hand-in-hand with ECVET to provide greater transparency in European qualifications, promoting the mobility of workers and learners, and facilitating lifelong learning. Its purpose is to make qualifications more readable and understandable across different countries and systems. Covering qualifications at all levels and in all sub-systems of education and training, the EQF provides a comprehensive overview of qualifications in 39 European countries.

The core of the EQF is its eight reference levels, defined in terms of learning outcomes and widely known as the 'EQF levels'. These express what individuals know, understand and are able to do at the end of a learning process. Each of the eight levels is defined by a set of descriptors indicating the learning outcomes relevant to qualifications at that level in any system of qualifications, described in terms of knowledge, skills and competence. The EQF does not describe specific qualifications, however, relying instead on the levelling of qualifications and awards against existing **National Qualifications Systems and Frameworks** (NQFs).

	Knowledge In the context of EQF, knowledge is described as theoretical and/or factual.	Skills In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments).	Responsibility and Autonomy In the context of the EQF, responsibility and autonomy is described as the ability of the learner to apply knowledge and skills autonomously and with responsibility
Level 1	Basic general knowledge.	Basic skills required to carry out simple tasks.	Work or study under direct supervision in a structured context.
Level 2	Basic factual knowledge of a field of work or study.	Basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools.	Work or study under supervision with some autonomy.
Level 3	Knowledge of facts, principles, processes and general concepts, in a field of work or study.	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information.	Take responsibility for completion of tasks in work or study; adapt own behaviour to circumstances in solving problems.
Level 4	Factual and theoretical knowledge in broad contexts within a field of work or study.	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study.	Exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change; supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities.

Table 2a. Descriptors defining levels in the European Qualifications Framework (EQF) – Levels 1–4

	Knowledge In the context of EQF, knowledge is described as theoretical and/or factual.	Skills In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments).	Responsibility and Autonomy In the context of the EQF responsibility and autonomy is described as the ability of the learner to apply knowledge and skills autonomously and with responsibility
Level 5	Comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge..	A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems.	Exercise management and supervision in contexts of work or study activities where there is unpredictable change; review and develop performance of self and others.
Level 6	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles.	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study.	Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups.
Level 7	Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research. Critical awareness of knowledge issues in a field and at the interface between different fields.	Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields.	Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches; take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams.
Level 8	Knowledge at the most advanced frontier of a field of work or study and at the interface between fields.	The most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation, and to extend and redefine existing knowledge or professional practice.	Demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research.

Table 2b. Descriptors defining levels in the European Qualifications Framework (EQF) – Levels 5–8

EQF was officially launched in 2008 and is now guided by a more recent Recommendation of the European Parliament and of the Council (2018), which states:

1. the need to reference and compare all types and levels of qualifications,

2. the importance of renewed or revised referencing of national frameworks, and

3. the ambition for including references to the appropriate EQF level

regarding all newly issued qualification documents.

The referencing of different national qualifications systems and frameworks to the EQF is ongoing, with some countries having completed this activity and other countries continuing to work on development and referencing actions. Where referencing has been completed, results have been uploaded to the European Commission's **Learning Opportunities and Qualifications in Europe** Portal at
https://ec.europa.eu/ploteus/search/site?f[0]=im_field_entity_type:9
to allow the comparison of different NQFs – to the EQF but also to each other.

The EQF shares common transparency goals with ECVET, with each of these instruments making use of learning outcomes. In ECVET, learning outcomes are used as a basis for learning Credit transfer and accumulation. ECVET does not, however, provide a template or taxonomy for the development of learning outcomes, relying instead on models already in use at national, regional or systemic levels (for example, as a part of existing NQFs).

What is essential for ECVET is ensuring that learning outcomes are clearly identified and described to enable the mutual understanding of qualifications and judgments on whether:

- the qualifications covered in the framework of a partnership for geographical mobility led to the same or similar occupation.
- learning outcomes described in one setting or context are comparable with those able to be achieved in another setting or context.

With a view to promoting synergy between these two important instruments, many European countries have designated the same body or organisation to act as a national contact point for EQF and ECVET. Both initiatives make it possible for citizens of the European Union to see their training, skills and knowledge more easily recognized in an EU country other than their own.

In essence the ECVET principles and technical components are the following:

1. Qualifications should be described in units of **Learning Outcomes** (LO), a central concept of ECVET principles, with associated **ECVET Points**;

2. There should be a process for units of LO to be assessed, validated and recognized, and for their transfer and accumulation;

3. ECVET partnerships are supported by complementary documents, such as **Memoranda of Understanding** (MoU), or **Learning Agreements** (LA).

Successful ECVET implementation requires that qualifications be described in terms of learning outcomes, with learning outcomes brought together in units, and units often accumulated to form the basis of qualifications or awards. Assessment, validation and recognition processes must also be agreed, among all those participating, and should respect existing national, regional, sectoral or institutional practice.

ECVET Points are a numerical representation of the overall weight of learning outcomes in a qualification and of the relative weight of units in relation to the qualification. Together with units, descriptions of learning outcomes and information about the level of qualifications, ECVET Points can support the understanding of a qualification. The number of ECVET Points allocated to a qualification, together with other specifications, can indicate (for example) that the scope of the qualification is narrow or broad. The number of ECVET Points allocated to a unit provides the learner with information concerning the relative weight of what the learner has accumulated already. It also provides the learner with information concerning what remains to be achieved.

To enable a common approach for the use of ECVET Points, a convention is used according to which 60 points are allocated to the learning outcomes expected to be achieved in a year of formal full-time Vocational Education Training. In ECVET, the allocation of points usually has two phases: ECVET Points are allocated first to a qualification as a whole and then to its units. For a given qualification, one formal learning context is taken as a reference and, on the basis of the convention, the total number of points is assigned for that qualification. From this total, ECVET Points are then allocated to each unit according to their relative weight within the qualification.

ECVET Points are not to be confused with learning **Credit**. While learning Credit designates the learning outcomes the learner has achieved (see section below on **Credit Transfer and Accumulation**), ECVET Points provide information about the qualification and the units. In other words, while learning Credit is related to a person and his/her personal achievement

(learning Credit does not exist on its own without someone having achieved it), ECVET Points are linked to the qualification structure and description (independent of whether someone has achieved the qualification or not).

Learning Credit can be transferred and accumulated if the competent institution recognises that the Credit the learner has achieved is relevant and can be taken into account as part of the qualification for which the learner is preparing (or seeks recognition for the achieving). ECVET Points provide information about the Credit the learner has transferred and accumulated (e.g., what is the relative weight of units the learner has already achieved).

The relative weight of a unit of learning outcomes, with regard to the qualification, should be established according to the following criteria or to a combination thereof:

- the relative importance of the learning outcomes which constitute the unit for labour market participation, for progression to other qualification levels or for social integration,
- the complexity, scope and volume of learning outcomes in the unit,
- the effort necessary for a learner to acquire the knowledge, skills and competence (i.e., learning outcomes) required for the unit.

In the SSaW e-Learning course, The Partners are applying the third criteria, using the effort needed in time to acquire the knowledge, skills and competence in each unit inside the course, and the convention of 60 ECVET Points per full year, with the usual consideration that a year is 1500 hours.

Learning outcomes are statements of what a learner knows, understands and is able to do on completion of a learning process. They are used for a wide range of purposes, directly influencing the way we define and write outcome statements. The European definition of learning outcomes, which uses the terms of knowledge, skills and competence (see the Recommendation on the European Qualifications Framework – EQF of 2008), is the common denominator that fits with the diversity of approaches to describing learning outcomes:

- 'Knowledge' means the outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study.
- 'Skills' means the ability to apply knowledge and use know-how to complete tasks and solve problems.
- 'Competence' means the proven ability to use knowledge and skills together with personal, social and/or methodological abilities, in work or study situations and in professional and personal development.

Usually, qualifications frameworks indicate the overall level of learning outcomes in a qualification. For ECVET purposes, the European Qualifications Framework (EQF) is used as a reference for levels.

Learning outcomes can be used for various purposes such as to establish descriptors of qualifications frameworks, define qualifications, design curricula, assessment, etc. The outcomes are set out in various levels of detail depending on their purpose and context: they may be acquired through a variety of learning pathways, modes of delivery (school-based, in-company, workplaces, etc.), in different learning contexts (i.e., formal, non-formal and informal) or settings (i.e., country, education and training system).

To implement ECVET it is necessary that qualifications are described using learning outcomes and learning outcomes are grouped to create units. A unit is a component of a qualification, comprising a coherent set of knowledge, skills and competence that can be assessed and validated. Units enable progressive achievement of qualifications through transfer and accumulation of learning outcomes. They are subject to assessment and validation which verify and record that the learner has achieved the learning outcomes expected.

Depending on the existing regulations, units may be common to several qualifications or specific to one particular qualification. Units are accumulated based on the requirements to achieve qualifications. These requirements may be more or less restrictive depending on the tradition and practice of the qualifications system and the way qualification standards are designed.

Units should be constructed and organised in a coherent way with regard to the overall qualification. To group the learning outcomes into units it is necessary to identify those outcomes that relate to each other. The same learning outcome is normally not integrated into several different units.

Source: https://www.ecvet-toolkit.eu/ecvet-toolkit/identify-units-learning-outcomes.
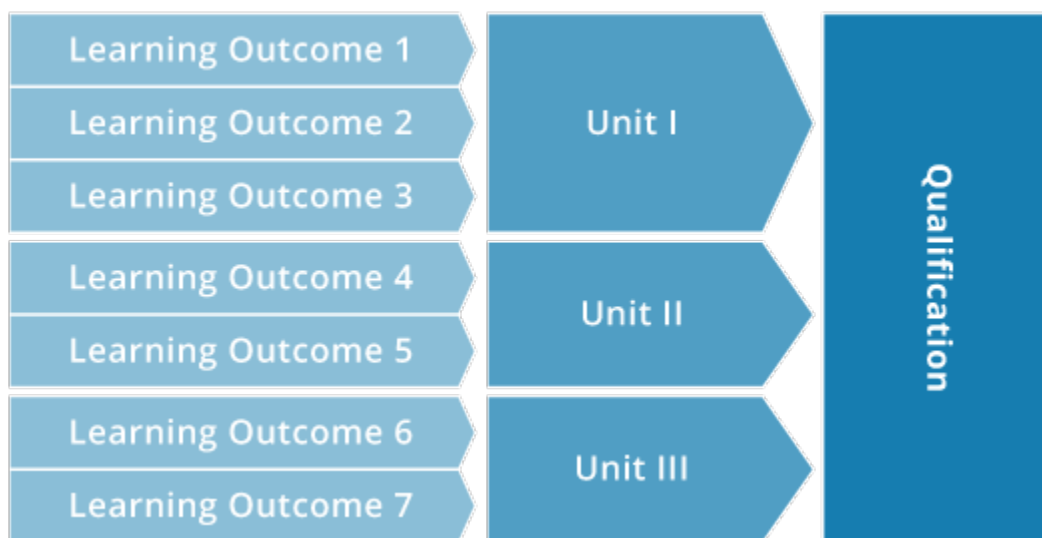
The learning Credits referred to earlier identify that the learner has achieved the expected learning outcomes which have been assessed positively and the outcome of the assessment has been documented in a personal transcript. Based on this documentation, other institutions can then recognise an individual learner's' Credit and any 'Credit Transfer', which is the process through which learning outcomes achieved in one context can be taken into account in another context. Credit Transfer is based on assessment, validation and recognition.

Related to this, there is significant value in a Memorandum of Understanding (MoU): a voluntary agreement between competent institutions, one which sets out the framework for Credit Transfer and accumulation. The MoU formalises the ECVET relationship by confirming mutual acceptance of the status of, and the procedures put in place by a 'competent institution'. This term means an institution that is responsible for designing and awarding qualifications, or recognising units or other functions linked to ECVET. This could include an allocation of ECVET Points to qualifications and units, assessment, validation and recognition of learning outcomes, under the rules and practices of a participating country.

Regarding the **Signed Safety at Work (SSaW) e–Learning course**, a range of the elements outlined here have been implemented by the SSaW project Partners in order to ensure that the course fulfils all the requirements in accordance with ECVET and EQF recommendations made by the European Commission.

1. Units are described in the way of learning outcomes addressed, on knowledge, skills and competences. It is structured in 14 different units.
2. The course has been weighted in terms of time (hours) for each of the units. Taking into account the defined weight for each unit, the ECVET Points for each one has been estimated, and for the course as a whole.
3. SSaW address the EQF Level 3 in accordance of the comparison made with the European Qualification Framework.

ECVET credits are transformed based on the assumption of 1 full course being equal to 60 ECVET credits, 1 ECVET is equal to one ECTS learning Credit, 1 ECTS is equal to 25 hours of total learning, and 1 full course is equal to 1500 hours. These assumptions are made by the ECVET secretariat and most of the National Authorities. This runs in parallel to the system used in ECTS and Higher Education Qualifications and therefore instils a further degree of comparability and possible permeability. The total hours of learning include study hours, 'going deeper', doing practical exercises, then preparation for assessment and the assessment itself.

In recognition that the course is supposed to be available first for learners with no experience of signed communication with members of the Deaf community, or of learning a signed code adapted from International Sign Language, the SSaW training course is currently estimated to require a minimum of 75 hours of study time, for a learner to master the hand positions, movements and sequences so they can recall the phrases during emergencies and be understood by others. This estimate corresponds with an allocation of three ECVET Points.

At the time of publishing these guidelines, a detailed evaluation of the hours required is taking place drawing on the experience of experts who are not engaged in SSaW project on a day-to-day basis. The figure of 75 hours is made from the experience of those who have developed the course within the project, and those people have confidence in this estimate. In the near future, a more categorical figure for the number of hours will be made available.

Regarding this, it is important to identify the stated intention that this course is created to be self-standing as a course for **Continuing Professional Development** (CPD), as

pointed out in the Introduction, but that it can also be easily implemented as an optional module in a longer, more detailed and comprehensive course that provides formal qualifications for professionals in Occupational Health & Safety. The allocation of ECVET Points applies equally in either case.

The following table presents the course training units in detail. From this, it is possible to check how the course creators reach this conclusion through the description of the course (learning outcomes and units) and the relative weight and number of ECVET Points per unit.

COURSE:	SSaW		
TRAINING UNIT	**OBJECTIVE**	**LEARNING OUTCOMES**	**DURATION (HOURS)**
1. HEIGHT	The aim of this unit is to learn which signs could communicate the risks, necessary PPE (Personal Protective Equipment), and challenges related to related working at height.	**Knowledge:** Signs in International Sign Language (ISL) that could be used for communicating the risks, necessary PPE and problems that it could arise when working at height. **Skills:** Recognize, understand and produce signs that are derived from ISL about height risks and the appropriate use of related PPE. **Competences:** Appropriate and suitable use of ISL in situations of risks related with working at height in order to understand or communicate with other members of staff.	5 pieces of Vocabulary & 9 exercises
2. EXCAVATION	The objective in this unit is to learn which signs could be used for communicating warning advice or asking for help in tasks related with site excavation.	**Knowledge:** Signs in International Sign Language (ISL) that could be used for communicating warning advice or asking for help in tasks related with site excavation. **Skills:** Recognize, understand and produce signs that are derived from ISL related with Health & Safety at sites of site excavation. **Competences:** Appropriate and suitable use of ISL in tasks related with site excavation, to receive or give warning advice, or ask for help from colleagues.	2 pieces of Vocabulary & 2 exercises

TRAINING UNIT	OBJECTIVE	LEARNING OUTCOMES	DURATION (HOURS)
3. CONFINED SPACE	The aim of this unit is to learn which signs could be used for communicating different problems about Health & Safety in confined spaces to other members of the staff.	**Knowledge:** Signs in International Sign Language (ISL) that could be used for communicating different problems about Health & Safety in confined spaces to other members of the staff. **Skills:** Recognize, understand and produce signs that are derived from ISL about Health & Safety issues in confined spaces. **Competences:** Appropriate and suitable use of ISL in situations related with Health & Safety problems in confined spaces.	1 piece of Vocabulary & 1 exercise
4. WORKPLACE	The objective in this unit is to learn which signs could be used for giving advice to leave the workplace and meeting challenges in doing this.	**Knowledge:** Signs in International Sign Language (ISL) that could be used for giving advice to leave the workplace and meeting challenges doing this. **Skills:** Recognize, understand and produce signs that are derived from ISL related to advice about leaving a workplace, evacuations, & related issues. **Competences:** Appropriate and suitable use of ISL related with giving or receiving advice from other members of the staff as to leaving the workplace and other connected problems.	2 pieces of Vocabulary & 3 exercises
5. WATER	The aim of this unit is to learn which signs could be used in Health & Safety problems related with working close to water.	**Knowledge:** Signs in International Sign Language (ISL) that could be used in Health & Safety problems related with working close to water. **Skills:** Recognize, understand and produce signs that are derived from ISL about Health & Safety issues related with work in or around water **Competences:** Appropriate and suitable use of ISL in situations of risks related with working close to water, to understand or communicate with other staff members sets of Health & Safety instructions.	2 pieces of Vocabulary & 3 exercises

TRAINING UNIT	OBJECTIVE	LEARNING OUTCOMES	DURATION (HOURS)
6 (Pts 1&2). FIRST AID	The objective in this unit is to learn which signs could be used for communicating different concepts related to administering first aid in an extensive way.	**Knowledge:** Signs in International Sign Language (ISL) that could be used for communicating different concepts related with administering first aid in an extensive way. **Skills:** Recognize, understand and produce signs that are derived from ISL concerning the range of issues relating to applying first aid. **Competences:** Appropriate and suitable use of ISL in situations involving the use of first aid in order to understand or communicate certain information about Health & Safety.	Part 1 – 5 pieces of Vocabulary & 9 exercises Part 2 – 6 pieces of Vocabulary & 10 exercises
7. ELECTRICITY	The aim of this unit is to learn which signs could be used for giving advice about electricity and risks related to welding activity.	**Knowledge:** Signs in International Sign Language (ISL) that could be used for giving advice about electricity and risks related to welding activity. **Skills:** Recognize, understand and produce signs that are derived from ISL about risks when near electricity and risks related to welding activity. **Competences:** Appropriate and suitable use of ISL in situations of risks related with electricity and welding activity in order to understand or communicate with other member of the staff different Health & Safety instructions.	2 pieces of Vocabulary & 3 exercises

TRAINING UNIT	OBJECTIVE	LEARNING OUTCOMES	DURATION (HOURS)
8. WEATHER	The objective in this unit is to learn which signs could be used to communicate incidences, risks, advice or weather conditions	**Knowledge:** Signs in International Sign Language (ISL) that could be used for communicating the incidences, risks, advice or weather conditions. **Skills:** Recognize, understand and produce signs that are derived from ISL about incidence, risks, advice or the status of weather conditions. **Competences:** Appropriate and suitable use of ISL in situations, incidences, possible risks related with weather to understand or communicate with other members of the staff.	5 pieces of Vocabulary & 8 exercises
9. WARNINGS	The aim of this unit is to learn which signs could be used for giving or receiving warnings related with a range of different situations (e.g.: extreme weather, flying material, dangerous machinery, natural phenomena…).	**Knowledge:** Signs in International Sign Language (ISL) that could be used for receiving or giving warnings related with a range of different situations (for example: extreme weather, flying material, dangerous machinery, natural phenomena…). **Skills:** Recognize, understand and produce signs that are derived from ISL about giving and taking heed of warnings when there is heightened risk. **Competences:** Appropriate and suitable use of ISL for receiving or giving warnings related with a range of different situations.	7 pieces of Vocabulary & 12 exercises

TRAINING UNIT	OBJECTIVE	LEARNING OUTCOMES	DURATION (HOURS)
10. PPE	The objective in this unit is to learn which signs could be used for communicating the necessity of using Personal Protective Equipment and some rules or related advice.	**Knowledge:** Signs in International Sign Language (ISL) that could be used for communicating the necessity of using Personal Protective Equipment and some rules or related advice. **Skills:** Recognize, understand and produce signs that are derived from ISL about Personal Protective Equipment (PPE) and related advice. **Competences:** Appropriate and suitable use of ISL in situations where it is needed the use of Personal Protective Equipment and receiving or giving advice or instructions about rules in this matter.	5 pieces of Vocabulary & 9 exercises
11. HAND SIGNS	The aim of this unit is to learn which signs could be used for communicating some basic information with hand signs, such as commands, stop-and-start, speed, distance and the like.	**Knowledge:** Signs in International Sign Language (ISL) that could be used for communicating some basic information (commands, stop and start, speed, distance…) that is normal to do with hand signs. **Skills:** Recognize, understand and produce signs that are derived from ISL which could be used for communicating basic information. **Competences:** Appropriate and suitable use of ISL in basic situations where is normal to do with hand signs.	3 pieces of Vocabulary & 5 exercises

TRAINING UNIT	OBJECTIVE	LEARNING OUTCOMES	DURATION (HOURS)
12. FIRE	The objective in this unit is to learn which signs could be used in Health & Safety risks related with fire.	**Knowledge:** Signs in International Sign Language (ISL) that could be used in Health & Safety risks related with fire. **Skills:** Recognize, understand and produce signs that are derived from ISL about Health & Safety related with fire and the risk of fire. **Competences:** Appropriate and suitable use of ISL in situations of risks related with fire risks in order to understand or communicate with other member of the staff appropriate Health & Safety instructions.	2 pieces of Vocabulary & 2 exercises
13. CHEMICALS	The aim of this unit is to learn which signs could be used in risks related with chemicals substances.	**Knowledge:** Signs in International Sign Language (ISL) that could be used in risks related with chemicals substances. **Skills:** Recognize, understand and produce signs that are derived from ISL about risks related with chemical substances. **Competences:** Appropriate and suitable use of ISL in situations of risks related with chemical substances in order to understand or communicate dangers with other member of the staff.	2 pieces of Vocabulary & 4 exercises

TRAINING UNIT	OBJECTIVE	LEARNING OUTCOMES	DURATION (HOURS)
14. MACHINES & VEHICLES	The objective in this unit is to learn which signs could be used for communicating different risks, dangers or instructions to other members of the staff in situations arising when working with machines or vehicles	**Knowledge:** Signs in International Sign Language (ISL) that could be used for communicating different risks, dangers or instructions in situations arising when working with machines or vehicles **Skills:** Recognize, understand and produce signs that are derived from ISL about risks, dangers or instructions in situations arising when working with machines or vehicles. **Competences:** Appropriate and suitable use of ISL in situations of risks related with machines or vehicles to understand or communicate different risks, dangers or instructions with other member of the staff.	7 pieces of Vocabulary & 11 exercises

The following table represents the key data for each Unit in order to assess the Level.

SSaW e-learning course			
EQF Level 3			
Training Units	**Training Unit Duration (Hours)**	**Relative weight in the frames of the qualification (in %)**	**Accumulation of ECVET Points**
Unit 1. Height	7	9.33	
Unit 2. Excavation	2	2.67	
Unit 3. Confined space	1	1.33	
Unit 4. Workplace	2.5	3.33	
Unit 5. Water	2.5	3.33	
Unit 6. First aid	15	20	First
Unit 7. Electricity	2.5	3.33	
Unit 8. Weather	7	9.33	
Unit 9. Warnings	10	13.33	Second
Unit 10. PPE	7	9.33	
Unit 11. Hand signs	4	5.33	
Unit 12. Fire	2	2.67	
Unit 13. Chemicals	3	4	
Unit 14. Machines & Vehicles	9.5	12.67	Third
Total	**75 Hours**	**100%**	

It can be considered a Level 3 course in European Qualifications Framework because it delivers learning so trainees reach the following skill and capability requirements., e

	KNOWLEDGE	SKILLS	RESPONSIBILITY AND AUTONOMY
Level 3	Knowledge of facts, principles, processes and general concepts, in a field of work or study	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	Taking responsibility for completion of tasks in work or study; adapting one's own behaviour to circumstances when solving problems

Section Sources

Documents and Articles:

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Section 5

Effective Learning for Inclusive Occupational Health & Safety

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12 Developing suitable training methods, tools and resources for achieving qualifications as an Occupational Health & Safety professional

Human society and the world of work are constantly changing and active. Especially in the 21st century, they are undergoing many changes. In the world of work, in addition to healthy workers, it increasingly includes disadvantaged workers: it is common for a labour force to migrate, either within its own country or within other countries, different communities or even across continents. Thus, workers and employees of different cultures and nationalities, speaking different languages, move within a broad globalised labour market. The current world of work is connected by technologies, but technologies other than information communication also affect personal and professional life.

In particular, the work area is experiencing challenges during the fourth industrial revolution, such as robotics, digitization, and other technological innovations. Technology is changing the world in general, specifically the way workplaces and the global workspace operate. Dynamic areas for this in the world of work include:

- legal regulations and standards,
- work activities and work organization (including management and control processes),
- materials,
- means of production and technology, and
- the working environment.

These are associated with the previously mentioned risks and challenges, which force employers to change their current approach to Health & Safety in the workplace.

Flexibility – of all kinds – thus becomes the most sought-after commodity on the labour market. Among other capacities, it is the worker's ability to respond to such changes during working life that is of especially high value. This can be within the scope of one's current profession, as a voluntary change of work focus, or a forced change of job position. It can also be a change of profession, involving a new qualification with a whole new specialization.

The connection with the corresponding flexibility within OHS qualifications and with changes regarding training content, training methods, tools or resources for achieving OHS professional qualifications is clear. The choice of training methods, tools or resources always depends on the training content. In this context, there are other important factors:

- the target group
  (whom we educate and with what goal),
- the type of education
- the level of skill, knowledge and competence of its participant or candidate
- the degree of need for the intensity of innovation of educational content.
  (gradation of difficulty, inclusion of new information etc.),
- its relation to the practice to be undertaken by the participant
  (the need for more theory, practice or both), and
- the form of education
  (full-time, distance, online or a combination of some).

A strongly / heavily globalized and ICT-connected society (world) increasingly uses online forms of education, together with the online form of communication. These can take the form of online broadcasts of individual lectures, speaking at remote professional events, referring to other sources of information (texts, audio and video documents or combined). In technology, they can include software tools on the Internet, category logs, databases of other repositories of data, documents or information, or various forms / variants of e-learning.

The development of these tools and solutions, which can also be used with the help of mobile applications (i.e., via smartphones and tablets), is practically a daily part of our lives. The younger generation learns about them at school, others learn to know and use them intuitively, with the help of friends and acquaintances or in regular educational programs. A standardized level of qualification for working with digital technologies[27] can be obtained in special educational programs[28.] This partially fulfils the level of general competence, which include language skills or the ability to drive a car, together with computer internet skills. However, OHS professionals increasingly need to know and be able to use innovative and efficient methods of Health & Safety management, as well as special methods and tools:

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27 Using common desktop computers, laptops, tablets or mobile phones, various operating systems, commonly used applications, local networks and the Internet.

28 The most well-known and widely used concept in Europe there is the ICDL (International Certification of Digital Literacy) concept, formerly known as the ECDL (European Computer Driving License). ICDL certificates (ECDL) have been recommended and used for many years as a de facto international standard, not only in the European Union.

- Methods, tools and software for preventing and reducing occupational risk in the working environment,
- Tools and software for data acquisition on accidents and injuries and for their evaluation,
- New methods of ergonomics,
- Applications related to the Internet of Things, or
- Applications related to the safety of workers who use devices equipped with electronics, software, sensors, moving parts and network connectivity that enable interconnection and replacement data over the Internet[29] etc).

This explains the growth of such qualifications and for developing innovative training programmes aiming at the development of human resources, technologies, and management methods and systems. Implementation in the workplace will help reduce the number of workers exposed to harmful, dangerous and onerous factors, and reduce the related number of work accidents, occupational diseases and resulting economic and social losses. Institutions that strive to increase the level of Health & Safety in individual European countries and throughout the community systematically emphasise the need for innovation in methods of communication in the Health & Safety field.

A new developing tool (and a training method for acquiring especially professional skills) is training through the use of a Virtual-Reality space for the training. This is where the participant individually tries out various actions or patterns of behaviour in a simulated workplace or workplace. Through Virtual Reality, it is also possible to design a safe or ergonomic solution for the workplace. Also, some soft skills, including those that we classify as meeting OHS professional competence, can be acquired and developed with the help of innovative tools and methods. E-Learning is especially widespread here: as a rule, its use concerns those soft skills that can be acquired through memorising or mechanical learning: e.g., planning and organising work or communication. They certainly cannot be fully used to manage the resilience of mental stress.

From the above, it is clear that a number of innovative training methods and tools are already widely used in practice (e-Learning), while others are subject to development or

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29 The Internet of Things (IoT) uses wearable electronics such as bracelets, goggles, hard hats and wearable workwear fabrics with sensors that detect workplace hazards and protect against risks. These IoT applications are assigned to each employee based on their individual role. The sensors identify potential safety issues, such as proximity to danger, worker fatigue, or heat stress. He then initiates a precautionary measure, which is before an adverse event occurs. Subsequently, information about each event is sent to the security panel, which monitors risks and warns of long-term problems.

innovation, and some are still a question for the future. As everything is evolving, there is still room for improvement in the field of training: there should still be space for methods and tools that have proven themselves and bring the necessary effect for participants in training programmes (e.g., methods described in the Table presented in Section 5 above).

The subject of this Section concerns knowledge and skills that almost everyone should have in order to best protect the health of employees and safety in the workplace, often applying knowledge and skills in relation to a particular specialisation. Professionals deal with:

- occupational Health & Safety management systems,
- search and evaluation of risks and protection of employees,
- safety of machinery and equipment,
- safety of dedicated technical equipment,
- factors of the working environment,
- work pace,
- job position, and
- physical activity etc.

The training or coverage of OHS professionals and the full range of their competence must take into account the sector or area in which the OHS professional works, be it engineering, construction, agriculture, energy, chemical, healthcare, education, social welfare / labour, waste management, or anything else. This is because each sector has its specific risks in work and working environment and works with various work tools, different substances and materials, as well as different equipment and technologies, all carrying different levels of risk. These aspects of qualifications should also be reflected in national qualifications systems, as well as in continuing and expanding training programs for achieving the correct qualification to operate as a an OHS professional.

Although the offer may include traditional and innovative training methods, tools and resources, it is always up to the qualification providers or educators as to which one they choose for the given target group.[30]

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[30] If this choice is not established / predetermined by binding national (or European) requirements for ensuring training of achieving qualifications OHS professionals.

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13 Technical aspects of the SSaW e-Learning resource

13.1 Technical requirements

One of the key advantages for accessibility to the SSaW e-Learning course is that there are no specific technical requirements other than having a good internet connection.

13.2 What devices can be used for the e-Learning course?

The e-Learning course is accessible on desktop, smartphone and tablet.

13.3 How can the e-Learning course be installed/used?

This e-Learning course, as well as the Glossary, can be easily accessed by a link on the website of the interested entrepreneur, or directly via the SSaW homepage:
https://www.signedsafety.eu

13.4 The Training Resource in its e–Learning Format

13.4.1 Choosing a Program

As Signed Safety at Work includes an e-Learning resource for teaching and practicing the various safety signs, the partners had to make a choice about which program to use for that. Soon, this choice had narrowed down to two possible programs: **Articulate Storyline** or **LearnDash**. Both programs and their advantages and disadvantages were presented to the SSaW project Partners. It was agreed to do some test exercises with both programs in order to find out which one would be more suitable for the e-resource.

The Partners chose **Articulate Storyline** because it was less text-based and more visual – a distinct advantage with a view to the target groups (i.e., D/deaf people and migrants, who might both have trouble with too much text). Another definite bonus was that Articulate Storyline comes equipped with an in-built translation feature. Within the player, the designer can switch between different languages for labels and feedback messages with a mouse click. As for the course texts, these can be exported to a Word file. The texts can then be translated into the respective partner languages and re-imported into the course, where the texts will be changed automatically.

13.4.2 Using the Versatility

Articulate Storyline was chosen for its versatility: figures and objects may be animated in different ways and along freely definable motion paths: a library of figures even comes with the program. Experienced designers can use variables and 'triggers' that allow them to state conditions: for example, a video will play or a special slide (a 'lightbox') will pop up when the

user clicks on a certain button. Triggers are also used to change the sequence of the slides by defining where to go to next. Different 'layers' can be used to react to individual scenarios, like success or failure in a task, or different choices, such as marking an element as 'visited' when a checkmark is displayed.

There are two versions available:
- A computer-based version, which the user downloads:
  the current version (in February 2021) is **Articulate Storyline 3**, and
- An online version that a user can access in the Cloud:
  currently ***Articulate Storyline 360***.

13.4.3 Ready for Creativity

Articulate Storyline is a program that allows the user to design online courses without any specific programming experience. Storyline is not only based on the PowerPoint, but is also designed to interact with it (e.g., by importing slides from PowerPoint to Storyline and then animating them). Course designers who use PowerPoint will recognize lots of familiar features like master slides. Once the designers have familiarised themselves with all the options and effects that are available within ***Articulate Storyline***, they will be able to use the full versatility of the program to create customised online courses.

The program allows the designer to incorporate media, such as sound and video and lets them record what they do on their computer screen. Video editing options are included as well, like trimming the video or adding subtitles. A media player is integrated within the program: this may be reconfigured to suit individual needs – from adding a logo to changing the menu or the labels or even restricting parts of the menu.

Articulate Storyline offers a range of ready-to-use exercises – including popular ones like drag-and-drop and multiple choice – but if those are not to a user's taste, they may also design their own, incorporating elements from their chosen slides (e.g., by defining a picture as a drop target or hot spot). It also offers results slides – for individual exercises or the whole course. These can be modified to suit the designer's needs.

In the program, the designer creates a 'project' with a so-called storyline. A 'storyline' is identified as a sequence of slides that can be interlinked according to the designer's wishes. This project may be split up into separate 'scenes', within which everything can be previewed – from single slides or single scenes to the whole project. If the designer is happy with the project, they can publish it in various forms, such as one that lets users view the course with a simple web browser.

13.4.4 Accessible and Sustainable

Articulate Storyline courses may be viewed on electronic devices ranging from a PC screen to a tablet or smartphone. Designers can even switch between the different views in the preview feature to check what the final product will look like on each device. The program has the capacity to adapt the contents according to each device.

Technical sustainability for the resource is given through the publishing options: as the finished *Articulate Storyline* file can be published in HTML and then turned into a simple internet link, it may be opened with the learner's browser. The learner does not need any special program.

13.4.5 Look and Feel

UNI-KLU, the lead partner in the design of the e–Learning resource, and Bellyfeel as the technical partner did a lot of discussing and experimenting to decide what the course should look like. Finally, Bellyfeel designed PowerPoint templates for the various course slides and exercises which UNI-KLU used as the basis for the e-resource. As the course developed, each step was tested with all the Partners and continuously adapted according to their feedback.

One challenge was the need for the e-resource to be used on smartphone screens – the design had to take the limited screen size into account so that everything would still be clearly visible. This meant that we had to cut back on the animations that are the strength of *Articulate Storyline* and to limit the number of the videos that could be used in a single exercise to three at the most.

13.4.6 Intuitive Navigation and Open Choices

Navigation is open. The course is split into topics, so the users may choose which ones they need and/or which ones they want to do. At the end of each topic, they will get feedback on their rate of learning, including a percentage score for the degree of correct responses and the number points where they were right. The length of the topics varies according to the number of the phrases for each topic; so, there may be just one or two exercises for some topics and several exercises for others.

When entering a topic, the users first see one or more screens with vocabulary: in case they have not looked up the signs in the Glossary, they have the chance to brush up on the necessary knowledge before doing the exercises.

Most of the exercises are self-explanatory. The SSaW design team applied only very brief instructions for each exercise, understanding that most learners do not want to read long texts. However, the team included a button for longer instructions; if the test phase

shows that the current instructions need more explanation, the team can activate this button and put in a longer text.

Where the icons that are included in the exercise are very similar, the team uses 'mouse-overs' with the respective glossary phrases. If the users get an exercise wrong, they can opt to go back and do it again. It is up to the users to decide what they want to learn, and for how long they want to study. Because of the topic approach, it is even possible to use the course whenever a learner has a few minutes on their hands.

Selection of Identified Institutions and Communities

American Society of Safety Professionals (ASSP)
https://www.assp.org

European Network Education and Training in Occupational Safety and Health (ENETOSH)
https://www.enetosh.net

European Union – Occupational Safety and Health Agency (EU-OSHA)
https://osha.europa.eu

Health and Safety Executive (HSE)
https://www.hse.gov.uk

Institut für Arbeit und Gesundheit der Deutschen Gesetzlichen Unfallversicherung (IAG)[31]
www.dguv.de/iag

Institution of Occupational Safety and Health (IOSH)
https://iosh.com

Vault Intelligence Limited (VLT)
https://www.vaultintel.com

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[31] The Institute for Work and Health