

## University of Minho & Work 4.0 Consortium



Source / Link: <http://work4-0.eu/>

### Thematic area:

- Transversal competences
- Technical skills
- Creative skills
- Social skills
- Contextual skills

### Type of good practice:

- Project
- Initiative
- Programme
- Methods
- Training materials
- Other

### Target group:

- VET and adult education trainers
- Labour market policy experts
- Human recourse management
- Others

### Summary:

This best practice outlines some concrete recommendations for developing certain future-proof skills. Since the focus is on the digital economy and the labour market transformations it entails, the recommendations address effective strategy for the development of these skills for working in virtual and smart work environments.

### Detailed description

#### Sense-making, Social Intelligence and Cross-Cultural Skills

The growth of information available on the web is huge and grows very fast with each passing day. This information is often created and shared by credible entities genuinely interested in sharing important information for understanding the world around us and to make decisions; however, individuals and organizations have the same ability to share false information and spread rumours. The workers of the future will increasingly use digital information to learn, perform their tasks and innovate. Thus, it will be necessary to train these workers in the best strategies to distinguish credible information from false information to address this theme the following learning outcomes are recommended:

- Explain the concepts of fake/biased information and rumours together with the reasons that may lead to their creation and spread,
- Analyse problems and potential consequences associated with the spread of fake and biased information,
- Explore real cases in which fake/biased information led to serious consequences for organizations and the society in general,
- Apply strategies to assess the credibility of information sources,
- Apply strategies to avoid unintended spread of rumours online,
- Evaluate software that automatically detects fake information.

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Increasingly, workers will find themselves interacting online with clients and suppliers, co-workers, individuals in knowledge communities external to their organizations among many other individuals reachable over the internet. The success of these interactions depends on their ability to understand the interlocutor and making others to understand them. Below it is a list of recommended learning outcomes:

- Apply social listening by using effective software tools to monitor social media. In this way, workers can anticipate expectations and dissatisfactions as well as develop a prior knowledge of the interlocutors.
- Evaluate different strategies to writing text to communicate reasoning and emotion. Assess the effectiveness of tools to share visual, sound, touch and smell information in an online communication.
- Apply strategies for online conflict resolution to deal with situations such as cyberbullying, fast response to a negatively-charged interaction in a productive manner, reduce the impact of a misunderstood message.
- Apply one-to-one listening during online interactions, namely by maintaining a stable focus on the exchange of information, ask for clarifications that may be useful to a complete interpretation of received information, relating to prior online interactions to contextualize received information.
- Create effective strategies for online self-advocacy that adequately transmit one's needs without compromising the dignity of oneself or others.
- Develop online coherent identity by ensuring consistent communication, managing online reputation, and provide information on life experiences (personal, social, professional).

In the global economy, to make sense of situations and to relate harmoniously with whom she/he interacts, the worker must be able to understand different cultures and learn how cultures express online. For effective cross-cultural communication and collaboration, the learning outcomes listed for online sensemaking and social intelligence are also important. The list of additional recommended learning outcomes includes:

- Recognize cultural diversity and online cultural expressions,
- Explains strategies that promote mutual acceptance and understanding,
- Recognize online best communication practices,
- Describe how to prepare for a multi-cultural online assignment.

### **Cognitive Load Management skills**

The numerous devices that surround us offer many opportunities for accessing information, making contacts with acquaintances and strangers, and acting locally or at a distance. The price of this empowerment of decision and action is an overload of information that requires a very high cognitive effort, producing anxiety, attention difficulties and inability to build consistent understandings about events. In order to deal with the incoming information and other stimuli, workers will have to learn how to manage their cognitive load. Below it is a list of recommended learning outcomes:

- Apply effective techniques to focus own attention towards the issues relevant to perform the tasks at hand.
- Understand the concept of collective intelligence to apply it to interlink the cognitive capabilities of a group of people using adequate technology.

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- Apply techniques and software tools to effectively manage time.
- Recognize and assess software tools that integrate information into insightful visualizations.

### **Adaptive Thinking and Transdisciplinary skills**

These skills support the worker's ability to innovate by adjusting perspectives and connecting insights from different scientific fields. Smart work environments will be created to take advantage of these skills. The list of learning outcomes below are useful guides to develop them:

- Explain how to apply technology to analyse and integrate structured or unstructured data from different sources to produce insightful visualizations.
- Explain how to use intelligent systems to guide decision and expand action capabilities.
- Design work environments where technology (IoT, cloud computing, big data) interconnect and expand human intelligence, defining an open ecology of interconnected smart spaces and services.
- Recognize the potential of smartphones to act as human sensors for a wide range of solutions that require human judgement in the selection of the information to transmit.

### **Design Mindset and Computational Thinking skills**

As the digital economy grows, the demand for innovative supply solutions, dynamic integration of multi-national teams and development of new digital products will increase. Courses to develop the design mindset and computational skills should include the following learning outcomes:

- Identify the digital marks of activities and transactions.
- Explain the role of digital currency and how it is created.
- Design self-organization strategies and mechanisms for digital organizations.
- Assess the performance of machine learning algorithms and their usefulness in specific work contexts.
- Select appropriate programming languages for different development objectives.
- Design and build robots.

### **Beneficial Results**

The learning outcomes that have been recommended for the definition of training that allows the development of skills considered key to the digital age reflect the specific needs of digital work or work that heavily relies in present and emerging technologies. The above listed recommendations represent a reasonable blueprint, which can be used by human resource departments and VET trainers to design training programs, which are aimed at building future-proof skills among workers.

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