

How to match the supply and demand of job skills by using standardized skill descriptions

To monitor the development of job requirements, some nations and economies use skill monitoring systems to get insights into the changes in skills and competencies needed for jobs and occupations. The need for those systems results from rapidly changing contents and tasks for occupations and jobs, to follow digitization and automation processes as well as requirements for sustainability and resource conservation. In addition, tasks and skill demands differ depending on the sectors in which the jobs and occupations are located. Therefore, systems that monitor skills have to be very detailed and their data needs to be up-to-date at all times. The existing systems for skills monitoring, such as O*Net, Cedefop Intelligence Tool, OECD skills strategy, ESCO or Burning Glass Technologies (for more systems see Siekman & Fowler 2017), use either surveys or semantic text analysis to access the data. As a result, the data is mostly derived from the perspective of employers displaying the need for skills in different job and occupation areas.

In addition to employers, job seekers and political decision-makers, several other stakeholders may benefit from the data and the information that derives from it as well, such as educational institutions. In the course of this, the system of continuing education and training is the one that can respond to the needs and changes at the shortest notice. Their programmes and curricula should be adapted to the need for skills displayed by skills monitoring tools. To create appropriate matches between the skills needed and the skills trained in the continuing education system, it would be useful if the continuing education institutions would base their programme planning on learning outcomes that give insight into the skills that might be obtained in the different learning offers. It would be even better if these skills were labelled with a language that could be linked to existing skill monitoring systems. In this presentation, we want to discuss the use of the European skills classification ESCO to establish a link between the continuing education system and the labour market.

ESCO is a taxonomy that might be used as a standard language for the description of skills and competencies. It has been developed by the European Commission to support labour market mobility in the European Union. The EURES Regulation (EU) 2016/589 builds a legal framework that accompanies the introduction of ESCO in the European Union. ESCO consists of three pillars describing (1) occupations, (2) skills and competencies, and (3) qualifications and their linkages. All concepts have been translated into all European languages as well as Arabic. The development of the classification followed a bottom-up principle. Different stakeholders of every nation participated in the development process, such as employers' associations, trade unions, employment agencies, educational institutions and training providers as well as state institutions (Annen et al., 2020). Nevertheless, the tough legal regulation to implement the ESCO standard is perceived as an intrusion into national governance structures (ibid.). Especially the wish of the European Commission to have the education and training institutions "adapt their curricula accordingly to better prepare their students for tomorrow's labour markets" (European Commission 2020) is considered problematic (Annen et al., 2020).

The European Center for the Development of Vocational Training (CEDEFOP) uses ESCO in the Skills OVATE Tool. This tool "offers detailed information on the jobs and skills employers demand based on online job advertisements (OJAs) in 28 European countries" (CEDEFOP, 2022). Through this monitoring of data based on the demand for skills in the job market, CEDEFOP is able to display

changes in skill demands in general as well as for specific European countries and different jobs. However, there is no tool yet that provides data on the employees' market or in other words, on the existing human capital in a region or sector. This lack of information results from the fact that (continuing) education institutions do not provide information on the certified skills yet.

In the project "MyEduLife", we aim to change the current situation by providing processes and technological infrastructure for the standardization and digitalization of educational certificates. The data on acquired skills and competencies will be indicated in a standardized way and stored digitally, so that they are machine-readable. In order to implement and test those processes, we are working together with three continuing education institutions from different areas of the labour market as practice partners. As a first step towards a digital certificate that meets the requirements stated above, the ESCO classification is applied to specify learning objectives in form of competencies of existing training programmes chosen by each of the practice partners. The choice was based on the usefulness of a digital certificate, considering for example mandatory regular updates or the obligation to carry the proof to the workplace. In this context, we want to discuss the experiences of our practice partners in using ESCO as well as the advantages and disadvantages encountered during the introduction of it. We base our results on the data gained through case studies and qualitative interviews with our practice partners as well as an online survey conducted with additional training institutions.

At the start of the project, none of the practice partners used ESCO before, neither for curriculum planning nor for the indication of skills and competencies on a training certificate. They did not even define and formulate learning outcomes for their training offers beforehand, which would have been the basis for an application of ESCO. While trying to apply and test the ESCO classification, the practice partners had to spend a lot of time researching the ESCO database. During the process, they were faced with various difficulties and found it hard to match competencies within the pillar that lists the skills, with those of their own specific programme - the listed skills are either too specific or too superficial. Moreover, the practice partner found the pillar that addresses occupations not to be fitting to the national occupational system, which made the application additionally difficult as professions overlap or are not even listed in the ESCO. Another difficulty was navigating the database. It was problematic to remember the concepts that had been screened before or to go back to screen the next concept at the same level of the hierarchized skills and competencies. Therefore, the practice partners could not apply a successful search strategy. Because of that, the practice partners did not perceive the ESCO as a useful tool for their daily work nor did they see a benefit from the use of ESCO. However, by getting insight into the translation and formulation of learning objectives as competencies, they did recognize the potential and value this has for the placement of their programmes as well as for employees and employers. While employers may get a detailed list of skills, a person possesses in the application process and therefore can find staff that fit the position; employees may recognize and fill their gap in education.

In the online survey (N = 15) we asked for the relevance of learning outcomes and competencies in different processes of programme planning, conception and execution of training courses as well as assessment and documentation in continuing education institutions. Most frequently, learning outcomes were considered in course conception, as nine participants stated that this is the case in their institution. Only one institution does not take learning outcomes into account when designing a new course. In contrast, using learning outcomes for documentation processes is least common among the participating training institutions (four participants stated their institution does, while two said theirs does not). Nevertheless, this process is most relevant for the provision of data on existing skills and competencies. When learning outcomes are considered, the training institutions most

frequently use further training regulations as a classification (N = 10), but none of them used ESCO before. Six participating training institutions did not use any classification at all.

The results of the interviews and survey show that we still need to convince the main players involved in this system to use standardized labelling for learning outcomes and skills. However, we think that this procedure will provide better matching of the job market and the continuing education system and that there is potential for many stakeholders. Consequently, comparable data will not only provide transparency but also the possibility for matching the right talents with the best suiting jobs and for recommendations for building individual learning and working biographies. The presentation will summarize those perspectives and will introduce our research and thoughts on the potential of the use of standardized data on skills acquired in continuing vocational education and its consequences for the labour market.

References

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