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# European Classification of Skills/Competences, Qualifications and Occupations



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## Highlights

### **ESCO introduces labelling of Digital Skills and Knowledge Concepts**

In line with the Commission's effort in tackling digital skills gap, ESCO introduced the digital label, which distinguishes the digital skills and knowledge competences that are part of the ESCO classification. The process combined machine learning algorithms with human labelling and validation.



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### **ESCO v1.1.1 updated matrix tables**

The updated files of the skills-occupation matrix tables for v1.1.1 are now available, including for knowledge concepts.



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## News

### Have your say in the Europass evaluation!

The Commission kindly invites relevant stakeholders to contribute to the public consultation on Europass, whose goal is to assess its uptake and wider impact of Europass in the labour market and skills and lifelong learning policies. You can share your views until 28th February 2023.



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## First Call of ESF Social Innovation Plus to support ALMA is now open

The first call for proposals under the ESF initiative Social Innovation Plus is launched. The Indicative budget of the Call is 15 million Euro and closes on 15/03/2023.



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## Public Employment Services support to persons displaced from Ukraine: latest developments

To facilitate sharing of information and experience, the European Network of Public Employment Services has launched a questionnaire to collect information from PES.



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## Events

### **Webinar organised by an ESCO implementer: Artificial Intelligence for mapping the skills of the future**

The webinar will highlight the adopted data-driven approach developed in the frame of the ENCORE project, which combines artificial intelligence and human expertise, to identify Green, Digital, and Entrepreneurial skills. Learn more about how ESCO is useful in this process by signing up below.



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### **ESCO continues its longstanding cooperation with the European Training Foundation (ETF) through webinars**

At the invitation of ETF, the ESCO team presented the recent developments on the use of artificial intelligence for the maintenance of ESCO in ETF's online capacity building programme on big data for labour market analysis organised online on the 15th of November 2022.



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## ESCO presented in the Learning by Leaving 2022 conference in Spain

The conference highlighted ESCO, EURES and Europass as free tools in promoting labour mobility across Europe and supporting public employment services and career guidance professionals in the provision of their services.



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## ESCO presented in the regional conference of public employment services in Latin America and Caribbean

ESCO was presented in the Regional Policy Dialogue "Digital Transformation of Public Employment Services," organised by the Inter-American development Bank and the SEALC network. Learn more about current ESCO implementers in Latin America.



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## Publications

### ESCO data science blog: machine learning assisted mapping of multilingual occupational data (Part 2)

In this news article, the ESCO data science team looks at a different use-case and focuses on mapping content such as job titles, work history descriptions or job advertisement descriptions to ESCO occupations.



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## Labour Market Information Driven, Personalized, OER Recommendation System for Lifelong Learners

The paper suggests a novel method to aid lifelong learners to access relevant open education resources (OER) based learning content to master skills demanded on the labour market.

### Labour Market Information Driven, Personalized, OER Recommendation System for Lifelong Learners

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**Keywords:** Lifelong Learning, Open Education Resources, Recommendation Systems, Labour Market Intelligence, Machine Learning, Test Mining

**Abstract:** In this paper, we suggest a novel method to aid lifelong learners to access relevant OER based learning content to master skills demanded on the labour market. Our solution integrates 1) a hybrid Text Classification and Text Mining methods on vacancy announcements to decompose jobs into meaningful skills components, which lifelong learners check target, and 2) creates a hybrid OER Recommendation System to suggest personalized learning content for learners to progress towards their skill targets. For the fine-grainedness of the approach we focused on two job career: Data Scientist, and Bio-chemical Engineer. We applied our skill extraction approach and provided OER recommendations for learners applying these jobs. We conducted in-depth, semi-structured interviews with 11 subject matter experts to learn how our prototype performs in terms of its objectives, logic, and contribution to learning. More than 100 recommendations were generated, and 76.9% of these recommendations were found as useful by the user reviews. Our work revealed that a personalized OER recommender system, based on skills demanded by labour market, has the potential to improve the learning experience of lifelong learners.

#### 1 INTRODUCTION

The worlds of work and employment are changing rapidly in our post-industrial societies. As a consequence, teaching processes become skill demand and supply are getting more and more complicated as skills demanded by market through an unceasing process (Chandrasekhar et al., 2014; Casadeu et al., 2016). These dramatic changes lead to a number of educational problems in relation to the gap between educational skills that job markets demand and the training

needed to 1) understand the dynamic nature of labour markets, which requires the decomposition of jobs into required skills, and 2) match those skills to relevant learning content.

In order to tackle the first problem, governments and international organizations have created a number of occupational and skill taxonomies to provide structure for job seekers and employers about skill components of jobs (e.g. ESCO, ISCO, O\*NET). However, there are obstacles limiting the usefulness of these taxonomies, such as keeping their information up-



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## Work-based learning and the green transition



The paper reflects on the role of work-based learning in tackling the green transition, and on the enabling conditions to unlock its potential.

# WORK-BASED LEARNING AND THE GREEN TRANSITION



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OECD, Cedefop, the ILO, the ETF and UNESCO

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**How to work in the green economy? Guide for young people, job seekers and those who support them**

The objective of this guide is to provide young people, job seekers and those who support them with useful information to build their professional goals plan, either as an employee of the green economy, or by creating their own job in a sustainable entrepreneurship approach.



► **How to work in the green economy?**  
Guide for young people, job seekers and those who support them



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