# Forecasting skill supply and demand in Europe: Year 2

## International comparisons of changing skill structures and projections

### SKILLSNET TECHNICAL WORKSHOP
### 15-16 June 2010, Thessaloniki, Greece

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**FACULTY OF EDUCATION**
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# Task 13:  Implications for generic skills and disciplines

**Jan Koucký**

**Forecasting skill supply and demand in Europe: exploring alternative scenarios and developing better tools, Thessaloniki, 14-15 June 2010**

# Main points

1. Key tasks

2. Definition of Occupational skill profile

3. EQF and O*NET

4. Dimensions of Occupational skill profile

5. Example of Sector-specific Occupational skill profile
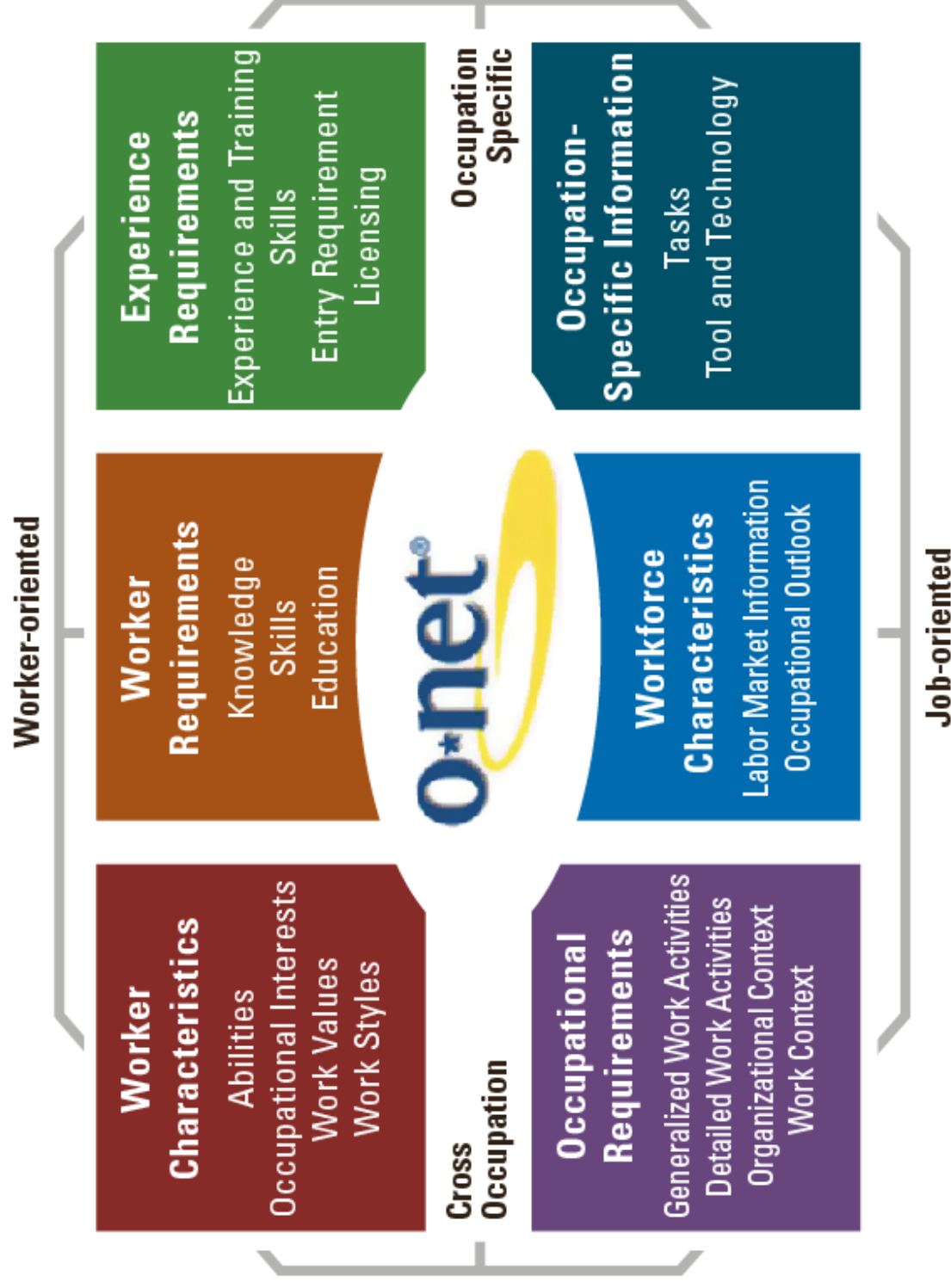
6. DISCO and ESCO

# Key tasks

- To develop a **new Module** focusing on implications for generic skills

- To develop *occupational skill profiles* for some 40 E3ME sectors and about 110 occupations (ISCO88 3-digit level)

- To focus on likely change of these *profiles* over time, developing „**dynamic**" profiles for 2000 and 2020 **to be ready for use in the 2011 update**

- Try to consider links to new taxonomy/terminology such as European Skills Competences and Occupations (ESCO)

# Definition of Occupational skill profile

An Occupational skill profile sums up characteristics describing various dimensions of qualification requirements, conditions and qualities needed in a given job
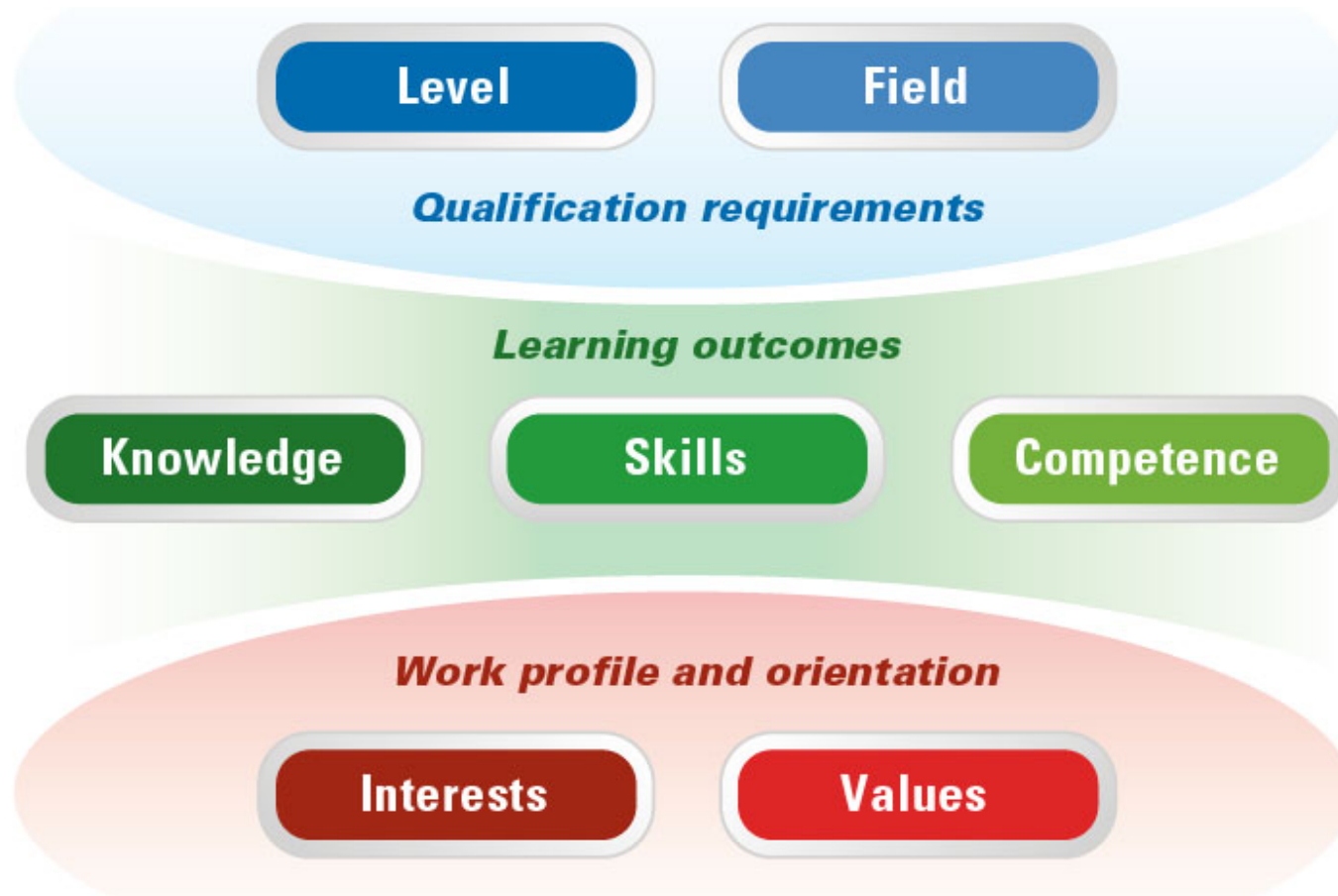
# The O*NET® Content Model

## Worker-oriented

### Worker Characteristics
- Abilities
- Occupational Interests
- Work Values
- Work Styles

### Worker Requirements
- Knowledge
- Skills
- Education

### Experience Requirements
- Experience and Training
- Skills
- Entry Requirement
- Licensing

## Job-oriented

### Occupational Requirements
- Generalized Work Activities
- Detailed Work Activities
- Organizational Context
- Work Context

### Workforce Characteristics
- Labor Market Information
- Occupational Outlook

### Occupation-Specific Information
- Tasks
- Tool and Technology

**Cross Occupation**

**Occupation Specific**

O*NET®

# European Qualifications Framework (EQF)

| | Knowledge | Skills | Competence | Education required |
|---|---|---|---|---|
| Level 1 | | | | ISCED 1 |
| Level 2 | | | | ISCED 2 |
| Level 3 | Each of the 8 levels is defined by a set of descriptors | | | ISCED 3C |
| Level 4 | indicating the learning outcomes relevant to | | | ISCED 3AB |
| Level 5 | qualifications at that level in any system of | | | ISCED 4 |
| Level 6 | qualifications. | | | ISCED 5 Bc |
| Level 7 | | | | ISCED 5 Mgr |
| Level 8 | | | | ISCED 6 |

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# Dimensions of Occupational skill profile



Qualification requirements
- Level
- Field

Learning outcomes
- Knowledge
- Skills
- Competence

Work profile and orientation
- Interests
- Values

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# Dimension of Occupational skill profile (1)

**Qualification requirements**

**Level of Qualification Requirements**

Eight reference levels of complexity as defined by the European Qualification Framework

# Dimension of Occupational skill profile (2)

**Qualification requirements**

**Field of Education/Training**

Fourteen groups of fields of education and training
defined according to ISCED

General / no specific field
Art, fine / applied
Humanities
Technical and engineering
Agriculture / forestry
Teacher training / education
Science / mathematics / computing etc
Medical / health services / nursing etc
Economics / commerce / business / administration
Social studies / administration / media / culture
Law and legal services
Personal care services
Public order and safety
Transport and telecommunications

# Dimensions of Occupational skill profile (3)

**Learning outcomes**
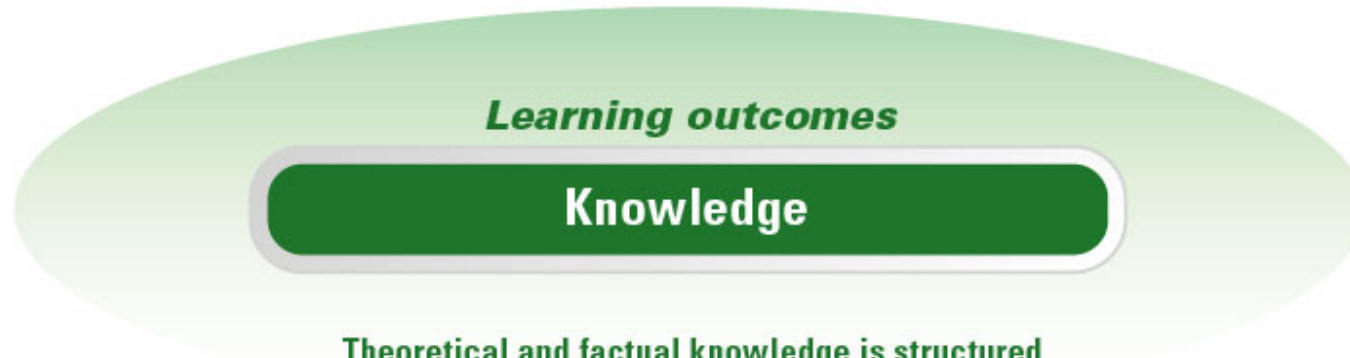
**Knowledge**

Theoretical and factual knowledge is structured
in eight main areas (and further sub-divided into 32 sub-areas)

Education and training (1 sub-area)
Humanities and art (6 sub-areas)
Social science, economics and law (4 sub-areas)
Science, mathematics and informatics (5 sub-areas)
Technology, production and construction (6 sub-areas)
Business, administration and management (4 sub-areas)
Health and social care (2 sub-areas)
Services (4 sub-areas)

# Dimension of Occupational skill profile (4)



**Learning outcomes**

**Skills**

Cross-functional and occupation-related skills are structured in seven areas

Cognitive skills
Communication in the mother language
Communication in foreign languages
Numeracy and basic SMT concepts
ICT/digital skills
Learning to learn
Practical skills

# Dimension of Occupational skill profile (5)

**Learning outcomes**

**Competence**

According to EQF competence is defined in terms of responsibility and autonomy and structured in three areas

Personal abilities
Social abilities
Methodical abilities

# Dimension of Occupational skill profile (6)

**Work profile and orientation**

**Occupational Interests**

Preferences for work environment, related to personality types

Realistic
Investigative
Artistic
Social
Enterprising
Conventional

# Dimension of Occupational skill profile (7)

**Work profile and orientation**

**Work Values**

Orientation of work, important to the satisfaction of job-holders

Achievement
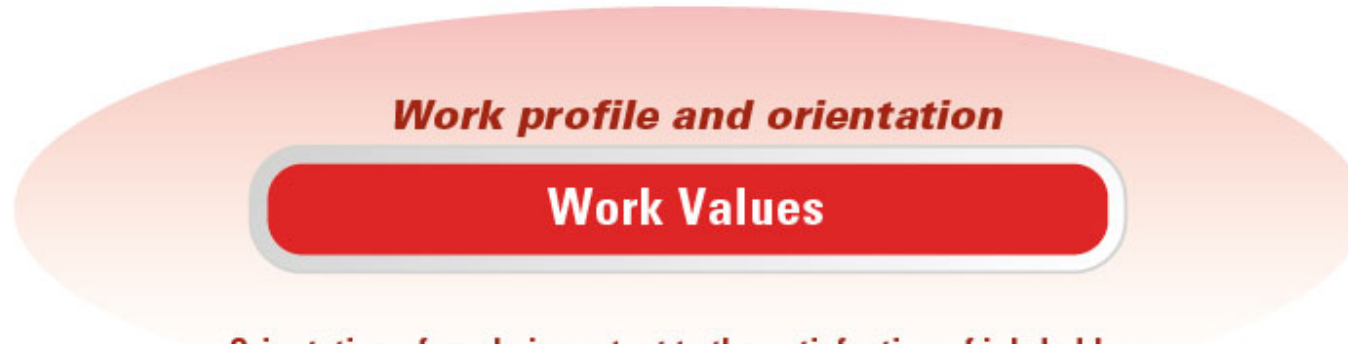Working conditions
Recognition
Relationships
Support
Independence

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# Example of Sector-specific Occupational skill profile

| Qualification Profile – QP | | Group of occupation | | NACE 22 specific | |
|---|---|---|---|---|---|
| QP dimensions | QP characteristics | ISCO 24 | ISCO 245 | ISCO 245 | ISCO 24 |
| Level of qualification requirements (EQF) | 1 | 0 % | 0 % | 0 % | 0 % |
| | 2 | 0 % | 0 % | 0 % | 0 % |
| | 3 | 0 % | 0 % | 0 % | 0 % |
| | 4 | 6 % | 6 % | 2 % | 2 % |
| | 5 | 7 % | 13 % | 8 % | 8 % |
| | 6 | 39 % | 57 % | 65 % | 65 % |
| | 7 | 38 % | 22 % | 26 % | 25 % |
| | 8 | 10 % | 0 % | 0 % | 1 % |
| | Average | 6.4 | 6.0 | 6.2 | 6.1 |
| Field of Education / Training | General / no specific field | 5 % | 8 % | 9 % | 9 % |
| | Art, fine / applied | 4 % | 36 % | 16 % | 13 % |
| | Humanities | 8 % | 14 % | 24 % | 20 % |
| | Technical and engineering | 10 % | 9 % | 7 % | 8 % |
| | Agriculture / forestry | 2 % | 1 % | 1 % | 2 % |
| | Teacher training / education | 3 % | 4 % | 5 % | 4 % |
| | Science / mathematics / computing etc | 4 % | 1 % | 2 % | 2 % |
| | Medical / health services / nursing etc | 3 % | 2 % | 2 % | 2 % |
| | Economics / business / administration | 40 % | 5 % | 5 % | 14 % |
| | Social studies / media / culture | 11 % | 17 % | 24 % | 22 % |
| | Law and legal services | 9 % | 1 % | 2 % | 2 % |
| | Personal care services | 1 % | 1 % | 1 % | 1 % |
| | Public order and safety | 0 % | 0 % | 1 % | 1 % |
| | Transport and telecommunications | 1 % | 1 % | 1 % | 1 % |

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| QP dimensions | Qualification Profile – QP<br>QP characteristics | | Group of occupation | | NACE 22 specific | |
|---|---|---|---|---|---|---|
| | | | ISCO 24 | ISCO 245 | ISCO 245 | ISCO 24 |
| **Knowledge** | Level | Education and Training | 44 % | 51 % | 46 % | 46 % |
| | | Arts and Humanities | 35 % | 53 % | 52 % | 48 % |
| | | Social sciences, Economy and Law | 42 % | 35 % | 33 % | 34 % |
| | | Sciences, Mathematics and Computers | 27 % | 25 % | 27 % | 28 % |
| | | Engineering, Technology, Production and Processing | 29 % | 28 % | 26 % | 27 % |
| | | Helath services | 18 % | 15 % | 12 % | 12 % |
| | | Services | 37 % | 34 % | 34 % | 34 % |
| | | Bussiness and Management | 50 % | 44 % | 41 % | 43 % |
| | Importance | Education and Training | 40 % | 46 % | 42 % | 41 % |
| | | Arts and Humanities | 39 % | 59 % | 59 % | 55 % |
| | | Social sciences, Economy and Law | 45 % | 34 % | 30 % | 32 % |
| | | Sciences, Mathematics and Computers | 26 % | 21 % | 22 % | 23 % |
| | | Engineering, Technology, Production and Processing | 30 % | 29 % | 27 % | 28 % |
| | | Helath services | 18 % | 13 % | 11 % | 11 % |
| | | Services | 40 % | 37 % | 36 % | 36 % |
| | | Bussiness and Management | 50 % | 43 % | 38 % | 41 % |
| **Skills** | Level | Cognitive skills | 60 % | 60 % | 56 % | 56 % |
| | | Communication in the mother language | 39 % | 40 % | 35 % | 35 % |
| | | Comunication in foreign languages | 63 % | 70 % | 55 % | 54 % |
| | | Numeracy & basic SMT concepts | 17 % | 16 % | 18 % | 17 % |
| | | ICT / digital | 43 % | 32 % | 32 % | 34 % |
| | | Learning to learn | 13 % | 9 % | 7 % | 9 % |
| | | Practical skills | 52 % | 64 % | 54 % | 53 % |
| | Importance | Cognitive skills | 70 % | 68 % | 64 % | 65 % |
| | | Communication in the mother language | 47 % | 47 % | 44 % | 44 % |
| | | Comunication in foreign languages | 78 % | 82 % | 80 % | 79 % |
| | | Numeracy & basic SMT concepts | 16 % | 17 % | 17 % | 17 % |
| | | ICT / digital | 46 % | 30 % | 30 % | 33 % |
| | | Learning to learn | 13 % | 11 % | 10 % | 11 % |
| | | Practical skills | 52 % | 63 % | 49 % | 49 % |
| **Competence** | | Personal abilities | 73 % | 77 % | 76 % | 75 % |
| | | Social abilities | 57 % | 59 % | 56 % | 56 % |
| | | Methodical abilities | 56 % | 58 % | 56 % | 56 % |

# Example of Sector-specific Occupational skill profile

| Qualification Profile – QP | | Group of occupation | | NACE 22 specific | |
|---|---|---|---|---|---|
| QP dimensions | QP characteristics | ISCO 24 | ISCO 245 | ISCO 245 | ISCO 24 |
| **Interests** | Realistic | 14 % | 17 % | 10 % | 11 % |
| | Investigative | 40 % | 23 % | 29 % | 30 % |
| | Artistic | 27 % | 89 % | 90 % | 76 % |
| | Social | 41 % | 25 % | 21 % | 22 % |
| | Enterprising | 69 % | 69 % | 73 % | 73 % |
| | Conventional | 67 % | 32 % | 42 % | 49 % |
| **Values** | Achievement | 68 % | 74 % | 74 % | 73 % |
| | Working Conditions | 63 % | 59 % | 58 % | 59 % |
| | Recognition | 61 % | 63 % | 67 % | 66 % |
| | Relationships | 68 % | 57 % | 48 % | 52 % |
| | Support | 56 % | 37 % | 45 % | 47 % |
| | Independence | 69 % | 70 % | 77 % | 75 % |

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# DISCO

- European **Di**ctionary of **S**kills and **Co**mpetencies
- Multilingual thesaurus of skills and competences
- Contains of about 70.000 terms
- In 7 European languages (CZ, DE, EN, FR, HU, LT, SE)
- www.disco-tools.eu

# ESCO

- **E**uropean **S**kills, **C**ompetences and **O**ccupations taxonomy (using ISCO-88)
- Link skills and competences to occupations
- Bridge between the labour market and learning/training outcomes in the concept of EQF
- In 27 languages and 30 countries (EEA)
- Free of charge
- http://esco.tenforce.com/esco-browser/
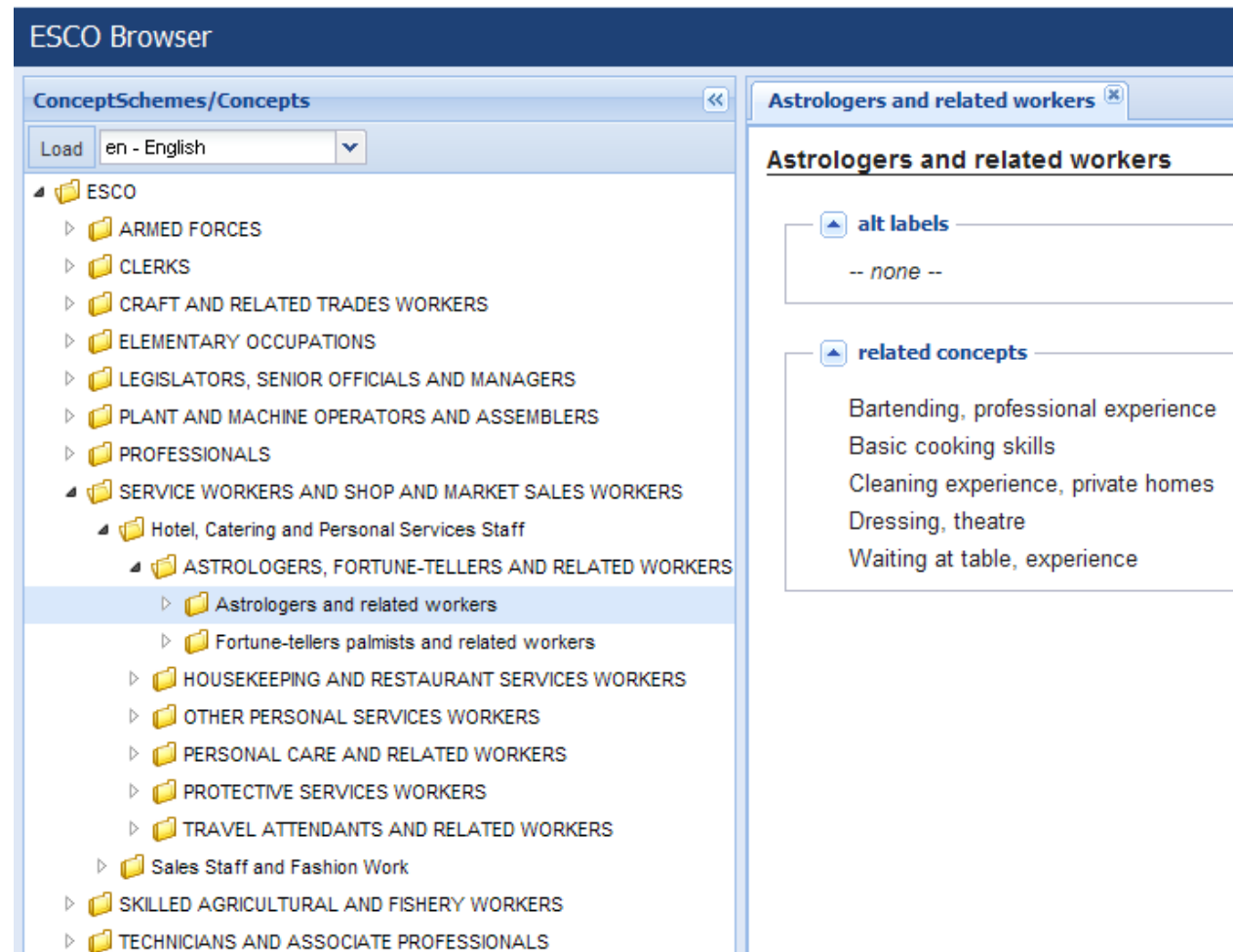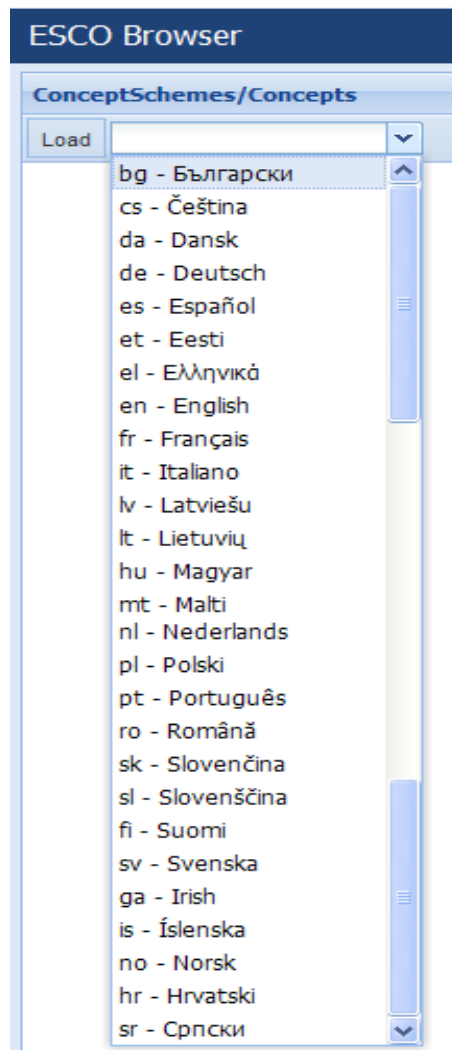
# ESCO – web portal



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# Thank you for your attention!

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