

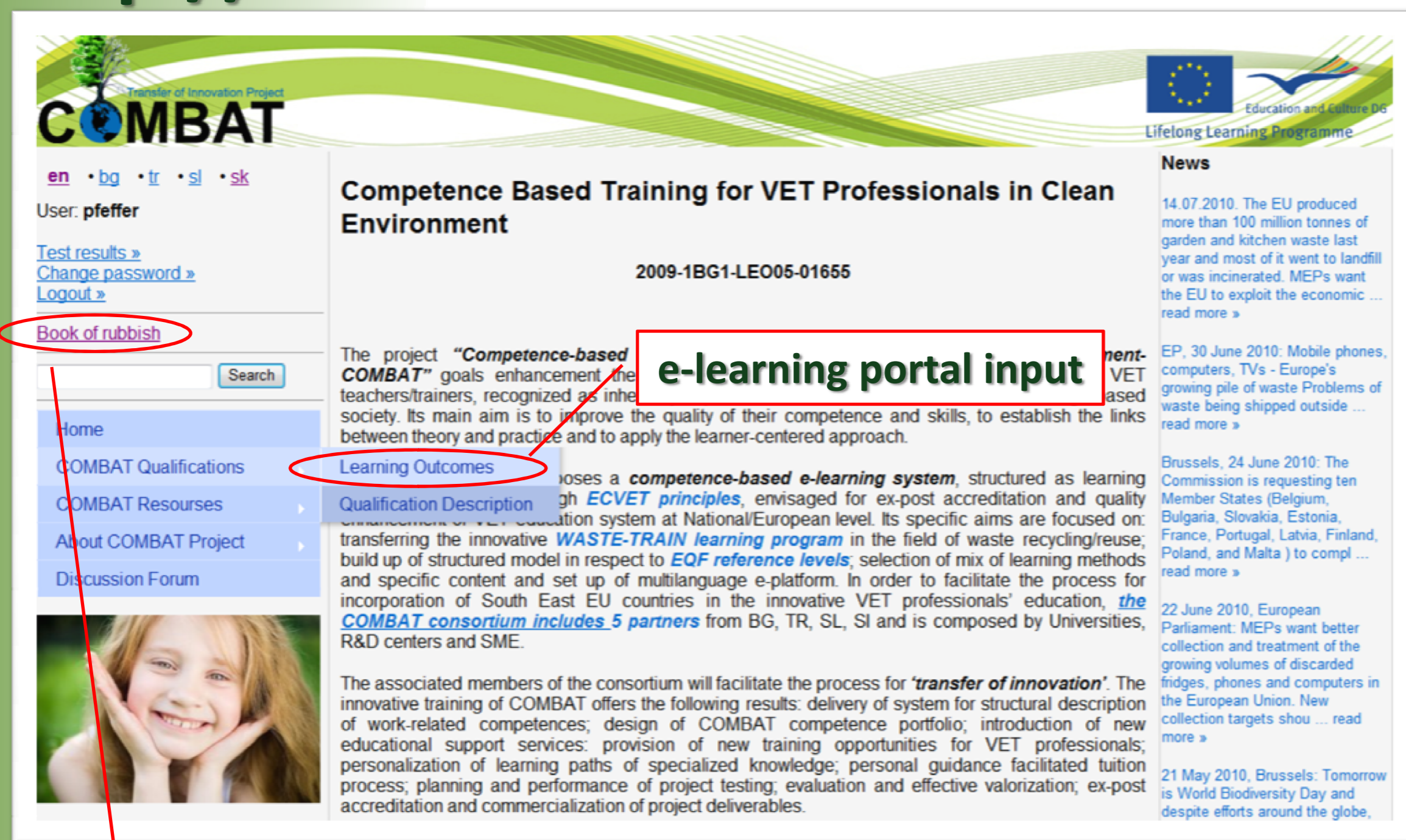
Competence-based training for VET professionals in clean environment – the COMBAT project

Miriam Spodniaková Pfefferová, Martin Hruška, Janka Raganová, Stanislav Holec

Abstract: The COMBAT project meets the key target for transfer of innovation to support the sustainable development of the European economy and job market. For this reason the role of teachers, trainers and other training facilitators needs a change to respond to the latest scientific, technological and social changes. To meet its challenges, the COMBAT project focuses on: (1) transferring an existing learning program into the field of waste recycling; (2) building a structured model following European Qualification Framework (EQF); (3) a blended system combining novel learning methods and specific content and (4) a multilanguage e-learning platform.

This poster will present one of the COMBAT project outcomes – a multilanguage e-learning platform. It is an interactive e-learning portal that serves as a tool for the qualification model. The e-learning tool is constructed by mixing novel methods and new content, constructed on the basis of learner-focused approach and offering new learning opportunities.

<http://waste-combat.eu>



The COMBAT project major task – **to improve the VET trainers' competence** – especially in the context of links between theory and practice and the learner-centered approach.

On the basis of ISCO 12 professions were selected for which a detailed **qualification description** as well as **competence profile** was created. A list of selected professions is given in the following table:

| Professions | by ISCO |
|--|-------------|
| Waste recycling manager | (ISCO 1210) |
| Solid waste engineer | (ISCO 2142) |
| Waste recycling quality and safety inspector | (ISCO 3152) |
| Technical expert in health physics matters | (ISCO 2111) |
| Microbiologists | (ISCO 2211) |
| Chemical waste handler | (ISCO 2113) |
| Toxicologists | (ISCO 2212) |
| Solid waste coordinator | (ISCO 1229) |
| Hazardous waste coordinator | (ISCO 1229) |
| Waste reduction specialists | (ISCO 2149) |
| Hazardous waste technician | (ISCO 3111) |
| Remediation field technician | (ISCO 3112) |
| Mechanical engineer | (ISCO 2144) |
| Environmental engineer | (ISCO 2143) |
| Electrical engineer | (ISCO 2151) |
| Geological engineer | (ISCO 2146) |
| Environmental protection professionals | (ISCO 2133) |
| Secondary education teachers | (ISCO 2330) |
| Primary school teachers | (ISCO 2341) |
| Early childhood educators | (ISCO 2342) |

e-curriculum content is divided into 9 training units

| Modules of COMBAT e-curriculum | Training Units (TU) | European Credits (ECVET) |
|---|---------------------|--------------------------|
| 1. Waste – general considerations | TU 1 | EC 2 |
| 2. Responsibilities and legislation | | |
| 3. Waste generation | TU 2 | EC 2 |
| 4. Waste collection systems | TU 3 | EC 2 |
| 5. Basic elements of waste treatment | TU 4 | EC 2 |
| 6. Waste management: planning | TU 5 | EC 3 |
| 7. Waste management concepts | | |
| 8. Waste Management: Implementation | TU 6 | EC 2 |
| 9. PR work of communities to increase "waste awareness" | TU 7 | EC 2 |
| 10. Waste recycling & reuse technologies | TU 8 | EC 3 |
| 11. Economics of recycling & reuse | TU 9 | EC 3 |
| 12. Recycling & reuse business risk considerations | | |

An e-learning tool, **one of the project outcomes**, is constructed by mixing novel methods and new content. The content is arranged on modular principle and is available as **VET learning pathways** that are designed as competence profiles for European Qualifications Framework (EQF) levels. Selected parts are offered as short intensive courses on demand. For each module a number of credits is given which a learning subject can get after completing the module.



An example of **learning pathways for a selected competence profile** together with a number of credits for individual EQF levels of a respective profile.

| Profession by ISCO Primary school teachers – environmental coordinator (ISCO 2341) | | |
|--|--------------|--------------|
| EQF level | | |
| Level 5 | Level 6 | Level 7 |
| TU1 | TU1 | TU1 |
| TU3 | TU2 | TU2 |
| TU5 | TU3 | TU3 |
| | TU5 | TU5 |
| | TU9 | TU7 |
| | | TU9 |
| 6 EC | 11 EC | 14 EC |
| <i>total sum of EC for each EQF level</i> | | |

Testing

After completing selected TUs the learner undertakes testing which provides a feedback to one's knowledge acquired. Apart from the knowledge the testing will check a level of one's skills and wider competences, too. Provided the learner's acquired knowledge, skills and/or wider competences are insufficient, there will be an opportunity to go through selected TUs again and so reach a required level of needed information acquisition.

Acknowledgment: This work was supported by the international project Leonardo da Vinci called "Competence Based Training for VET Professionals in Clean Environment – COMBAT" No. 2009-1BG1-LEO05-01655.