

PR3 Summary – Labour market-oriented projects for students

The objective of the PR3 phase was to develop real-life project tasks for VET students in a multidisciplinary approach. The development of project tasks was intended to reduce the skills gaps between VET and the labour market. By involving companies and planning a micro-courses to provide missing knowledge, skills and competences, students will be able to solve the project tasks defined by the companies and VET teachers in PR5.

Defining projects in a multidisciplinary approach

Collaboration between VET schools and companies is increasingly perceived as a means of promoting innovation. Educational institutions are encouraged to build partnerships and multidisciplinary projects based on real-world problems.

To meet this demand, 3 multiplier events were held; one in Germany and two in Hungary, organized by DRDC and MAKESZISZ. The invited guests were representatives of companies, vocational schools and other partner institutions involved in the VETPROFIT project from the fields of IT, horticulture and agriculture in general. The purpose of these events was to identify the needs of the labour market and the short and long-term goals in the respective sector. According to this, they were asked to formulate project ideas with which the students can develop their skills in these areas.

Defining student projects

From all the ideas collected during the consultations with the companies, 9 real project tasks were defined in a standard template in English and in the languages of the partners (who will implement them). All these projects are useful for both students and companies looking for innovation.

Project tasks defined in Hungary:

- Meteorological data influence on plant growth: *Planning the management and care of crops based on data from two different meteorological systems.*
MAKESZISZ with collaboration of Szuvandzsiev Dízkertészeti and AgriDron Ltd in the sector of Horticulture and Agriculture.
- Drone technology in precision agriculture: *Collecting and analyzing soil and geospatial data for precision application planning.*
MAKESZISZ with collaboration of AgriDron Ltd. in the sector of IT, Horticulture and Agriculture
- Complete cultivation technology of a model plant: *Workflow planning and learning professional skills through the entire cultivation technology of two model plants.*
MAKESZISZ with collaboration of Szuvandzsiev Dízkertészeti in the sector of IT, Horticulture and Agriculture.
- Food processing – development of a software aiding wine cooling
Application of Python programming language. Development of an application for temperature control of fermentation tanks in grape and wine processing departments using available temperature data.

Premontrei Secondary School with collaboration of Bábelhal Webstudio Ltd. in the sector of IT and Agriculture.

- Development of a software for recording pesticide treatments
Web application with login interface (HTML), authorization management, stores data using Python and returns the previously recorded plant protection treatments

Premontrei Secondary School with collaboration of Balázs Fatér in the sector of IT and Agriculture.

Project tasks defined in Germany:

- Autonomous Hoeing Robots: *Install a GPS-controlled hacking robot that automatically hacks within a certain field.*
Deula with collaboration of Hof Bunkemühle, Derboven GmbH &Co.KG in the field of IT and Agriculture.
- Autonomous pest control by drone: *Program and operate a drone to monitor a field to spread beneficial insects.*
Deula with collaboration of Schessing Ackerbau GmbH in the field of IT and Agriculture.

Project tasks defined in Italy:

- Design of a reporting methodology for integrated energy upgrading projects: *developing a design and reporting methodology for integrated energy modernization projects.*
JAC with collaboration of Struture energia srl. in the field of Agriculture.
- Management Softwares for Companies: *Promote real-world software development skills, especially front-end software for data visualization, in a data-driven and data-centric context.*
JAC with collaboration of Terminus di Matteo Mondini in the field of IT.

Planning of the responsive projects

The soft skills of vocational students can only be developed through active learning. To be successful in their future profession, they need to experience working in teams, working on a real task, being part of a project team. By reducing the skills gaps, students are prepared for the labour market by completing short training courses in cooperation with representatives of the labour market.

After the project tasks were defined, project groups are to be formed (students, teachers, company representatives) and project plans drawn up. Each project is planned for a maximum of one semester, partly integrated into regular lessons, practical units, partly online and outside of regular school lessons.

A standard template is used to create the project plans to ensure that they can be reused and implemented by other VET teachers after the pilot projects. The responsive project plans are only created in the languages of the partners and contain the following information; basic data of the project, description of the project, the specific purpose of the project, necessary tools and equipment, implementation environment, occupational health and safety regulations, project plan, work method, communication and evaluation.

In order to support students in successfully completing their project tasks, micro-courses are planned and carried out in which the previously created digital micro-learning contents and the methods learned in the teachers' training course are used.

Project basics

Title: Multidisciplinary, Project-based Digital Learning Content for VET

Acronym: VETPROFIT

Project ID: 2021-1-HU01-KA220-VET-000025350

Partner countries: Germany, Italy, Hungary

Coordinator: ITStudy Hungary Ltd.

Duration: 01 November 2021 – 31 October 2024.

Target groups:

VET- schools' leadership

VET teachers/trainers

Companies (Agriculture and IT sectors)

Beneficiaries:

VET students

Employers

Aim of the project

The aim of the project is to reflect the needs of the labour market in vocational education and training, to prepare teachers to work with companies to develop project tasks for students and future employees to solve real problems proposed by them. To achieve this objective, the partnership:

Objectives

- *review the curriculum, learning materials and teaching methods used in the initial training of IT and Agricultural sectors in the partner countries;*
- *train VET teachers of these sectors about the project method, related digital tools, innovative assessment practices and digital content creation;*
- *assign real-life project tasks for VET students, in close collaboration of teachers and labor market representatives;*
- *create a repository of project-based, re-usable, high-quality, motivating digital learning contents with an interdisciplinary approach;*
- *prepare students for successful project implementation by designing and delivering mini-courses for them;*
- *create a model to be published as a guide for teachers of other VET institutes.*

Partners

iTStudy Hungary IT Education and Research Centre. Hungary

DEULA - Nienburg GmbH, Germany

Fondazione ITS – JobsAcademy, Italy

Association of Hungarian Horticultural Vocational Training Institutions, Hungary

Premontre Vocational High School, Technical School and College, Hungary

Discovery Center Nonprofit Ltd., Hungary