

Study on 21st century relevance of learning content

Country report Hungary

**Multidisciplinary, Project-based
Digital Learning Content for VET**



VETPROFIT

Content

Introduction	4
Short introduction of the partner organisation	4
Premontrei Szakgimnázium, Technikum és Kollégium.....	4
Association of Hungarian Horticultural Colleges MAKESZISZ.....	5
Discovery Center Ltd.	6
VET systems in <i>HUNGARY</i>	7
Results of the interview with teachers, students and companies in Hungary	10
Methodology.....	10
Suggested aims, topics.....	11
Interview with teachers	13
Interviews with students.....	14
Interviews with companies	14
Description of the standard curricula, subject and topic	16
Description of the selected qualification and standard curricula	16
Short summary of the subjects, requirements, and available textbooks.	17
Annexes.....	18
Annex 1. BIBLIOGRAPHY	18
Annex 2 – Selected topics	19


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Introduction

This document was prepared in the VETProfit Erasmus+ project for providing information about the state-of-art situation related to the project aims as follows:

- *Decrease the skill-gaps between VET and the labour market*
- *Prepare teachers for 21st century education*
- *Starting collaborative development of learning materials for VET – teachers, students' companies*

The aim is to perform a thorough analysis of learning outcomes, curricula, learning materials and applied methods of the initial/basic training of IT and telecommunications sector in Italy.

The document has 4 parts:

- (1) *Introduction of the Hungarian partners involved into the research*
- (2) *A short introduction to the VET system in Italy*
- (3) *Results of the interviews in Italy*
- (4) *Description of the selected standard curricula, subject and topics*

Short introduction of the partner organisation

Premontrei Szakgimnázium, Technikum és Kollégium

Profile of the partner who carried out the survey, max, half page with picture.



Premontrei Szakgimnázium, Technikum és Kollégium (Premonstratensian Vocational Grammarschool, Vocational Highschool and Dormitory) is located in Keszthely, Hungary.

Our school has specialized classes for those who want to keep up with the developments of technology in a fast-changing world and extend their knowledge in the world of informatics (software developer); and we also specialize in pedagogy (pedagogical

assistant / special education assistant) and healthcare (nurse). We keep in touch with professional enterprises and experts, other secondary schools and universities / higher-education institutes in these fields.

Our goal is to raise students who are wise enough to be responsible for their future, have a sense of the true value of things, who have self-awareness and are conscious of the world around them. We contribute to the growth of our students' physical, mental and psychological state, our special aim is to elaborate our students' awareness of spiritual and moral values - our teachers are the primary intermediaries of those.

The school is a developing, innovative one, the colleagues are ambitious and the number of students are growing year-by-year (the school in its present form has been existing since 2017). At present our school is attended by 200 students altogether, which is to be increased to 235 from September 2022.

Our students prepare for the General Certificate of Secondary Education (Matura) and they also accomplish technical education/ vocational training. The school has an own virtual learning environment (Moodle), which acts as the main platform of digital education and which will hopefully aid our blended learning ambitions after the pandemic situation. We consider digital skills essential in each field of life and profession. We do believe that young people must be able to competently evaluate and manage information on the internet, use different online tools and also to develop digital content. We would like to raise our students' awareness of online threats and the netiquette.

Our school participates in different national and international projects, we have experience in curriculum / material development and course design, our teachers believe in life-long learning.

Association of Hungarian Horticultural Colleges MAKESZISZ

The Association of Hungarian Horticultural Vocational Institutes held its inaugural session in March 1995. The Association is a well-established organization with national coverage and 23 member schools. Current members of the board work in several schools in several parts of the country, so they have a good overview of the horticultural education achievements



and problems in all Hungarian regions. The president of the association is Sándor Hajnal, who is also a teacher and principal of the Central Hungary Agricultural Vocational Training Center Magyar Gyula and Varga Márton Horticultural Technical and Vocational School. The number of teachers teaching vocational subjects in the association is about 400.

In recent years, cooperation with the German education center BBS Ammerland has been extended. In October 2016, representatives of the BBS were welcomed for a one-week visit by our association, during which a cooperation agreement was signed between the two parties. MAKESZISZ holds two general assemblies a year, attended by the principals of the member schools or teachers they delegate, with 20-30 people present on occasion. On the second day of the general assemblies, a teacher training session is held, where the participating teachers are informed about the current issues.

The association has also been involved in the development of vocational curricula in the past. MAKESZISZ reviewed the content of the new Horticultural Technician education and the new qualification register, and also made a proposal on how to conduct said education.

The association regularly supports national and international competitions for the professional development of students and teachers. It participates in the Skills Hungary Program, providing financial and professional support to the competitors.

Discovery Center Ltd.

Discovery Center Kft was founded in 2012 with the goal of researching and educating in modern agriculture and innovative IT technologies. Our operation basically consists of three divisions: research, services and education.

As far as the research activity is concerned, the Discovery Center Kft has been involved in several R&D EU and national projects. Currently coordinating 11 EIP-Agri Operational groups throughout the country, conducting on-farm trials and educating farmers to the latest technologies. Currently we are also involved in a H2020 project on bioenergy, conducting field research and data collection. Our main research areas include, soil health, UAV systems, artificial intelligence in decision making in agriculture, micro plastics in the agricultural environment and food system.



Most of our research is aimed to produce a new service or product which can be implemented by our consultancy department, thus result a valuable service to help farmers to achieve sustainable goals. Our main research infrastructure includes an accredited soil and water laboratory, several UAVs, GPS based automated soil sampling machine, complete soil survey equipment, high capacity computing environment etc.

Our service/consultancy department is mainly focusing on precision agriculture. In the last 10 years we have been working with more than 500 farmers in 3 countries, covering more than 250.000 hectares. Our service offers a full solution from database building to machinery recommendations and training. The main areas of this division's activity are:

- *Remote sensing with satellites and drones*
- *GIS services*
- *Soil sampling*
- *Fertilizer and seeding planning*
- *Plant protection consultancy*
- *Soil and Plant Analytics*
- *Soil Protection Plans*
- *Agricultural farm management systems*

Our staff has long experience in higher education, and building on this we have been offering training for farmers and young professionals in the following topics:

1. *Soil science*
2. *GIS and RS in precision agriculture*
3. *Innovation brokers*
4. *Integrated soil protection*

Previously we have been involved in several ERASMUS, Visegrad and other program funded projects, focusing on either sustainable agriculture or education of young professional in the region. We have been the first organization to offer training for young innovation brokers on several summer schools and trainings.

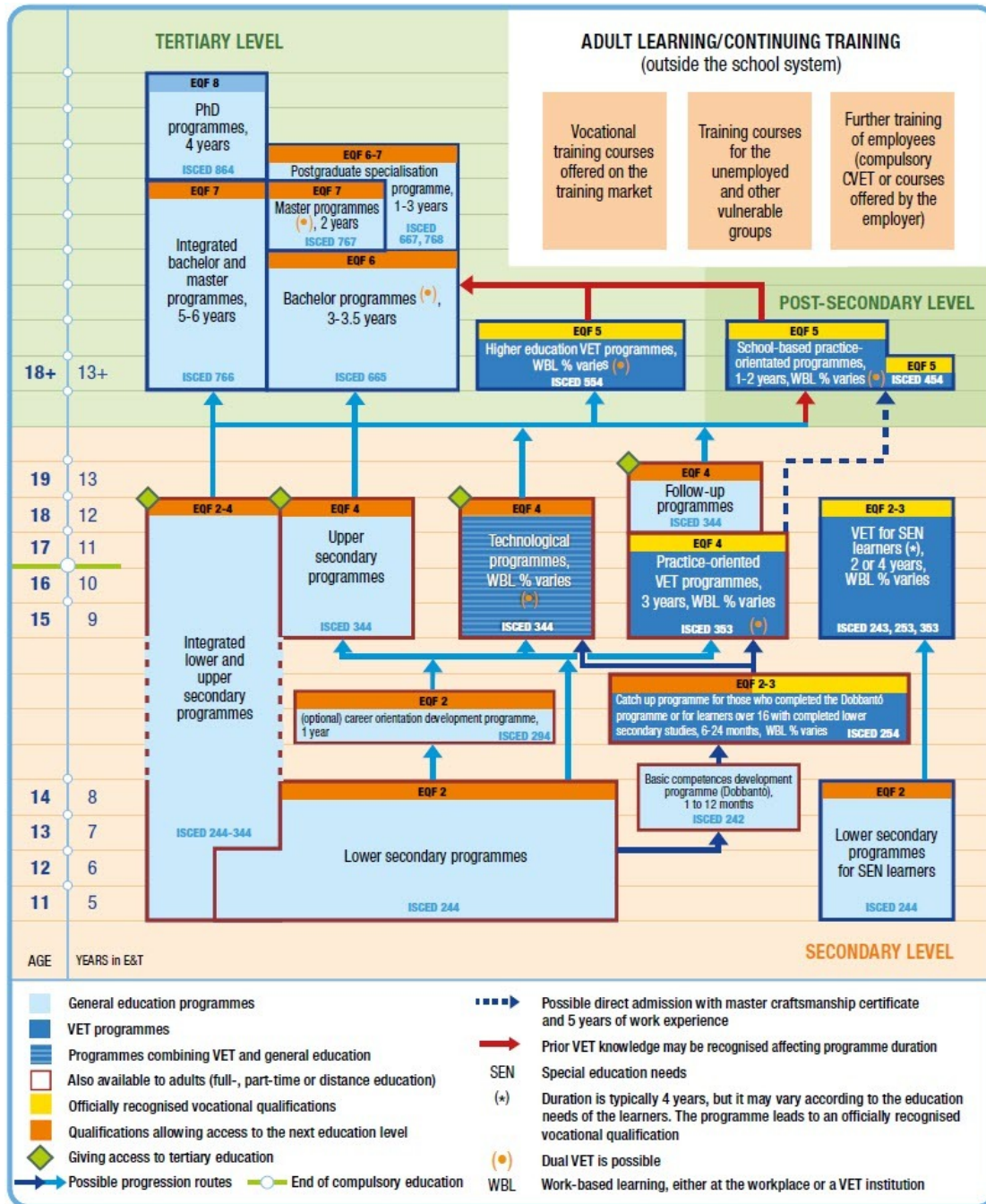
VET systems in *HUNGARY*

In Hungary, vocational education and training is managed by two bodies: the Ministry of the Interior is responsible for public education, while the Ministry of Culture and Innovation is responsible for vocational education and training and adult education. There are standard curricula offered by the state for both school-based education and adult education (training and outcome requirements, training program requirement, training curriculum), but VET schools and adult education providers can adapt these to their specific needs, while the learning outcomes measured and assessed by final examinations are the same for all VET institutions. While schools have some freedom in curricula, administrative management is highly centralized.

VET is available from age 14 (or 15), after completion of lower secondary, offering several options:

- *five-year technological programmes (Technikum) combining general subjects and sectoral basic education (common contents of vocational training affiliated to the same economic sector) in grades 9 and 10 and vocational specialisation in grades 11 to 13. Learners acquire the upper secondary school leaving certificate (EQF level 4) giving access to HE, and a technician diploma (EQF level 5);*
- *three-year vocational school (Szakképző Iskola, ISCED 353) programmes provide general and vocational (sectoral foundation) education in grade 9, followed by vocational specialisation (grades 10 and 11). Learners acquire an EQF level 4 vocational qualification entitling holders to perform an occupation. Graduates may enrol in a two-year follow up programme in a technicum to obtain the secondary school leaving certificate;*
- *at the end of the ninth grade there is interoperability between the two VET tracks, without any aptitude test. Skills acquired during the sectoral foundation year(s) are assessed before moving on to specialised vocational training. General upper secondary graduates may enrol in any of the two VET tracks, without general subjects, to acquire a vocational qualification in two years;*
- *two- to four-year special vocational school programmes for SEN learners (szakiskola ISCED 252, 352, 353) provide VET based on special framework curricula issued by the Minister for Education to acquire a partial (EQF level 2) or full (EQF level 3) vocational qualification;*

In March 2019, the Hungarian Government adopted the "VOCATIONAL TRAINING 4.0 - "A medium-term vocational policy strategy for the renewal of vocational education and training and adult education, the vocational education and training system's response to the challenges of the fourth industrial revolution". The strategy aims to ensure that all VET learners leave school with the right set of skills and competences (including basic competences), and that they successfully pass a final exam granting a State-recognised VET qualification.



Source: Cedefop and ReferNet Hungary, 2020

Types of vocational schools in the new system

Technicum (EQF level 5)

Based on the feedbacks provided by the economy, technical college or technicum (in Hungarian **“technikum”**) was introduced to replace the name of “vocational grammar school”, which is more clearer and even nowadays symbolizes high-quality VET for many people, so it can be a buzzword for both the parents and students. Its name indicates the qualification, as those finishing their studies in it will be technicians. The technician training programme characterised by being a single unit, dual and having a strong connection with higher education justifies the changes.

The technician programme lasts for 5 years. The first two years provides sectoral knowledge followed by dual training in the second cycle. Apprenticeship contract will be replaced by an employment contract, which allows students to earn an income during the second cycle of the programme. Students take the secondary school-leaving examination, which consists of four general subjects and the fifth one will be the final vocational exam needed for the technician's vocational occupation. Thus, after the successful examination at the end of grade 13 students obtain a certificate that attests two educational attainment. They obtain the secondary school-leaving certificate and also a technician diploma. The knowledge acquired in technicum creates the possibility for those finishing it with good academic performance, taking into account the result of the final vocational examination, to continue their studies in higher education within the same economic sector.

Vocational school (EQF 4 level)

Vocational school programme lasts for 3 years. The first year provides sectoral knowledge, which is followed by two years of **dual training**, primarily in the framework of an employment contract. After graduation it is possible to learn further and obtain the secondary school-leaving certificate or even a technician qualification.

As sectoral foundation education is carried out in the first stage of both vocational school and technicum, at the end of the grade 9 there is an interoperability within the two school types without an aptitude test. Initial sectoral foundation education is finished by a sectoral basic examination. The sectoral basic examination entitles its holder to fulfil simple jobs. Post-secondary VET is an option for those having taken only the secondary school-leaving examination, for those completed secondary grammar school, as well as for those who have given up their university studies. The 2-year training programme which takes place in technicum serves this purpose.

- A) *The changing structure of the renewed vocational education and training (VET) system responds to the problems outlined in the previous (pre-2020) system.*
- B) *Special functions were be added to the IVET system. These functions primarily aim at reducing the lack of competences and leaving school without a qualification.*

The introduction of the option of an orientation year, a competence development year for young people who are uncertain about their career choice or completed the elementary school with lack of competences. Its task is not to repeat the elementary school curricula, but to develop competences based on a competence assessment. The condition for entering upper secondary VET programmes is that the student has the basic competences which are indispensable for learning a vocational occupation.

The aim of the basic competence development year organised within the framework of the **Springboard Programme ("Dobbantó Program")** is to offer an opportunity for young people aged 15–25 with behavioural and learning disorders, lagging behind in the school-based full-time education or having dropped out of the system, which reintegrates them in the world of education or work providing opportunities in the framework of special vocational schools to find their own successful individual life path.

Young people who would drop out or leave upper secondary VET without a qualification or have obtained a basic level qualification in the Springboard Programme but cannot study in a classic school environment can obtain a partial vocational qualification in the framework of **School Workshop programme (Műhelyiskolai Program)**. The school workshop programme replaces the vocational „BRIDGING” (HÍD) programme, which is operating with low efficiency. In the school workshop programme the partial vocational qualification is learnt at the practical training placement. The obtainment of the qualification for the students studying in school workshops is not tied to an academic year, but lasts for at least six months. There are no general

subjects. All the acquired knowledge is linked to the partial qualification, which the student learns from his/her master. Teachers support education as mentors.

Dual training

Hungarian dual training has to be developed further within the framework of the domestic economic and social environment by adopting good practices of the German/Swiss/Austrian dual model. The number of enterprises participating in dual training must be increased. During the training particular emphasis should be placed on the requirements of digitalisation and Industry 4.0, in the areas of new technologies and skills development too. In Hungary, the percentage of enterprises participating in dual training lags behind the results of the countries which should be regarded as references in the development of this professional field.

Currently, among the students studying in secondary vocational grammar schools 11.3 thousand students participate in practical training at companies. It should be taken into account here that currently dual training can be organised in the grades 13 and 14 of vocational grammar schools. Among the students studying in secondary vocational schools, altogether 74.1 thousand students, i.e. 48.1% of them participate in dual trainings.

The share of dual training shows significant variations according to economic sectors. It can be established that it is particularly high in the area of commerce and hospitality industry (cook, shop assistant, waiter).

Results of the interview with teachers, students and companies in Hungary

The survey was focused on identifying the needs of teachers and students regarding textbooks and digital learning materials and asking companies (from the selected two sectors) as well about their requirements against young professionals applying for their vacancies.

Our main preliminary assumptions to clarify by the interviews were as follows:

- *if there are textbooks existing, they were not prepared for the new professions, they are not up-to-date, not fit for the learning-outcome oriented approach; methodologically they are not suitable for active learning and the development of soft skills;*
- *content is not always motivating; few examples are practical or real-life;*
- *the learning content has gaps - it does not always correspond to the needs of the labour market (new technologies are not reflected in the curriculum).*

This document includes a short summary about the VET system of our country, it presents the circumstances of the interviews (place, date, duration), the profile of the respondents and the conclusions of the interviews.

Methodology

The consortium developed agreed in a few basic rules to follow the interviews as follows:

- *Contact the persons, send them invitation explain how the process will work and ask for dates/times that are appropriate for the interviews.*
- *Deliver the interviews according to the agenda. Make sure someone – other than the interviewer – takes detailed **notes**.*
- *Welcome and **say thanks** for joining. Do not record the meeting.*

- Establish a **friendly atmosphere**, assure the participants that you are not there to assess them in any way. It should rather be an informal, “coffee break” type of discussion. **Do not evaluate** what they say.
- State at the beginning that **time is limited**, perhaps not all of them will have the chance to speak. Ask them to be “to the point”.

We developed common interview plan with suggested topics, but we agreed that the leader of the interview can make some modifications when it is needed to adapt to the special character of the respondents.

Suggested aims, topics

Interview with teachers

- Knowledge content taught (based on learning outcome criteria), skills expected (development of professional and "soft" competences based on learning outcome criteria)
- Applied books, professional materials, free-to-use learning materials, curricular elements
- Tools used (digital and traditional) teaching
- Centrally developed model projects, self-designed projects
- Applied teaching and learning methods, own practices (if any)
- What are the gaps in terms of textbooks, digital learning materials (in general and for a given subject)?
- What (tools, methods) would best support teaching and learning in the school or for a given subject?
- Methods (other than grading) and tools used to measure and assess students' knowledge and competences in the institution and/or in the subject.

Interview with students

- On what basis (literature, books, teaching materials) do students learn theoretical knowledge?
- What tasks, projects, practical demonstrations, etc. help to develop practical competences?
- What tools (traditional, digital) support learning?
- How is the learning material processed - by what methods?
- What is most lacking in order to learn effectively?
- What is most lacking for you to obtain adequate practice in this subject?
- Do your teachers use other types of assessment methods than grading?
- Are you satisfied with the teaching and assessment methods used by your teachers?
- What suggestions would you make regarding teaching? (method, teaching material, teaching tools, cooperation, etc...)?

Interview with companies

- What do you expect from a new employee who has studied and passed the exam of the qualification of,?



- *What are the competences the company is missing when employing young people who have just obtained a professional certificate?*
- *Do you see an opportunity to make a real change in the quality of vocational education and training and to make young people take responsibility for their own learning and be motivated to develop?*
- *In what ways can and will you help to ensure that young people are better prepared for their profession?*
- *Would you cooperate with schools in the development of digital curricula?*
- *Would you be open to define a project task for students, what prepares them for acting more effectively in a workplace, and what could help you as well to get a picture about the knowledge, skills and competences of a newly certified young person who just passed the exam?*



Interview with teachers

Basic figures

The institution conducting the survey: PREMONTREI, MAKESZISZ

Place: KESZTHELY, BUDAPEST

Date (period): May, 2022

The survey was conducted by: Csaba Balogh, Ágnes Gradwohl, Sára Ekert

Number and profile of teachers (subject, qualifications they teach for): altogether 10 teachers - 4 teaching EQF level 5 schools, IT basics, Digital Culture Programming + 1 teaching at EQF level 4, IT basics, 5 teachers are teaching in ornamental horticulture, at EQF level 4.

The use of paper-based textbooks and digital teaching materials vary in the different subjects: in **Digital culture** teachers use smart books and develop their own materials while in Programming there is no available coursebook for secondary school students /on python/and the development of course materials matching the curriculum requirements is done by the individual teachers.

There are no or very few prepared sample projects available, no centrally developed sample projects either.

Students can acquire knowledge by learning and doing (tasks matching their age group and competences). Teachers use project work, pair work, individual work and frontal work as well.

Teachers would welcome to have online learning material aiding practical education, available for everyone + task collection could help the teaching/learning process. A sample task sheets in accordance with the training and exam requirements would be necessary. A unified book, tasks and related digital knowledge base would be needed. In general, more modern devices and applications, computer labs would be needed for the practical training.

7 of the teachers interviewed have not used any different measurement methods in their schools. Teachers are generally not prepared for developing the soft skills of students - they would need trainings to be able to do that more consciously (methodology trainings). As institutional devices are not modern enough, there would be a need for more profession-specific applications, programs and tools for the efficient training and exam preparation (device development or outsourced training to a partner company would be a solution.

Teachers admit they do not have the necessary knowledge and practice in innovative teaching and learning assessment methods.

Teachers interviewed agree that some parts of the curriculum are completely outdated, and other parts are unnecessary for the studied profession and uninteresting for the students. The problem with the textbook is the same as with the curriculum: it covers almost everything, but in such a superficial and confusing way that none of the interviewed teachers use it for teaching. In general, they prepare their own PPT based on their own research, considering the standard curriculum created by the institution. Some of the classrooms are equipped with a projector but in most of them there are only traditional school boards. Teachers all think that students should be provided with tablets.

Most cases, teachers use frontal teaching method to teach theory besides the practical part.

To evaluate the students, the teachers use the traditional grading forms, and they mentioned the basic exam as an evaluation method. They all seem to prefer this, and they do not require any other evaluation system.

Interviews with students

Basic figures

The institution conducting the survey: PREMONTREI, MAKESZISZ

Place: KESZTHELY, BUDAPESZ

Date (period): 29-30 May, 2022

The survey was conducted by: Ágnes Gradwohl, Sára Ekert

Number and profiles of students: 15 students, 5 9th and 5 10th and 5 12ths' grades were interviewed aged 16-19, learning at Level EQF 5, majored in IT and telecommunications and horticulture and gardening

They say that there are no coursebooks available, which makes it difficult to learn programming and other IT subjects. There are some online tutorials /materials, but students would need more guidance what to find and where. They can mainly learn from the online materials suggested by teachers, or they find tutorials etc. for themselves. Teachers prepare the learning material themselves, which is shared via Moodle. However, the material is very often not structured enough for students, they would need more guidance in where to find what.

Students would need better-structured course material (theory + real-life practice tasks), more guidance from teachers; more practical lessons to obtain adequate practice.

Students would prefer a more complex evaluation (step-by-step evaluation, giving an overall picture of the students' work), a system that would motivate them more than the present grading system.

According to the interviewed students, teachers usually use their own PPTs, YouTube videos, and printed sheets during education as students also agree that textbooks are useless. They only encountered a frontal form of education. Most of them say that they would prefer practice to theoretical education and want to complete more project tasks in order to learn more effectively.

They would like to see that their teachers can work independently and not bounded by strict central or local regulations. Some of them would prefer more application of digital tools in the classes but with the stipulation that these should not be self-serving.

As regards to assessment, students seem to be satisfied with the old numerical grades they receive from the teachers with some verbal evaluation sometimes however they haven't experienced any other methods.

Interviews with companies

Place: KESZTHELY, BUDAPEST

Date (period): May – June 2022

The institution conducting the survey: PREMONTREI, MAKESZISZ, DRDC

The survey was conducted by: Csaba Balogh, Ágnes Gradwohl, Hella Bukombe-Fodor

Number and profile of companies (main divisions, geographical place, type (number of employees, SME, micro, etc.):

In Hungary 10 companies: were interviewed: seven from the IT sector (IT consultancy, computer programming, IT services) with micro, small or medium and 2 from the agriculture sector (processing and preserving of fruit and vegetables, producer of ornamental and vegetable plants) with micro or medium size and a small-size company dealing with consultancy.

IT related companies' expectations against the new recruits are management skills, project-based thinking, good problem -solving skills, ability to work in a team, good communication skills, systematic approach, skills in digital technologies, up-to-date knowledge and willingness to undertake further training. They also lack other skills, like project-based thinking, problem solving, multidisciplinary approach, the ability to estimate expenditure, IT literacy, documentation skills and practical skills.

Agriculture related companies expect more digital skills from the new recruits as well as concrete practical knowledge (even if trivial) that is essential for everyday simple work.

Independently from the profile, they keep good verbal communication skills, self-awareness, independency, logical thinking, precision, stress-resistance, loadability highly important.

Companies suggest that there should be more autonomy for teachers, more up-to-date theoretical training and preparation for the changes that will take place in the next 5-10 years, closer cooperation with companies and the student's participation in internships and dual training could improve the quality of education. For further motivation of students, they suggested higher admission scores, financial rewards for participation in real projects and practical programs before training to familiarize students with their chosen profession.

They say that instead of grading test papers teachers at schools should plan real-life implementation processes with alternative ways of evaluation. Students should participate actively in the teaching/learning process so that they would have their inner motivation, awoken by real-life projects, following a theoretical foundation period.

Companies would contribute to these operating as a training site, involving students in workplace projects or providing tutors or presentations for schools. 6 out of 10 companies would participate in digital curriculum development. One company does not wish to cooperate only due to lack of capacity. 9 of them would participate in defining project task for students.

Description of the standard curricula, subject and topic

Each partner selected a qualification from the sector and analysed the standard curriculum, requirements of the certificate, the available textbooks and learning materials. They identified a subject in which they intend to develop micro-learning contents in VETprofit project.

Description of the selected qualification and standard curricula

INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS SECTOR

(EQF Level 5)

There are 4 training courses in this sector as follows:

The training courses:

- Software developer and tester
- IT systems and application operating technician
- Telecommunications technician
- Info-communications network designer and operating technician

Based on a successful examination at the end of the training (+ the examination of the basic education completed earlier), the trainee receives a certificate of qualification, which is a stately recognized EQF level 5 qualification.

The knowledge (theoretical and practical) expected as a result of the basic training courses:

Basic education provides the acquisition of a general and broad range of knowledge, and skills that are both necessary and useful for all occupations in the sector. At the end of their basic education, students will have an overview of all relevant aspects of the sector, which will enable them to make an informed choice about the occupation in which they wish to continue their studies. This will include a basic understanding of how computers and mobile devices work, disassembling and assembling a computer if necessary, installing an operating system, setting up a home wired and wireless network, creating a website, coding small applications, setting up electronic connections, and gaining insights into the potential uses of artificial intelligence and other future-oriented technologies. In addition to basic technical skills, the basic education also focuses on developing social and communication skills, enabling students to work together in teams and on a project basis.

Competence developing expectations:

Learning basic programming, basic programming techniques which can then be translated into complex techniques and practised in problem solving. Computer literacy, logical thinking and problem solving, customer-oriented approach, systematic thinking, cooperation skills.

Dual system:

Thanks to the dual system, students can take part in most of the practical training from the first year onwards, with the possibility of increasing the amount of practical training in the second year (the number of hours allocated is divided between theoretical and practical training in the local programme and agreed with the dual partner).

In addition to the learning outcome requirements, the core curriculum for basic education also proposes methods, the most prominent of which is teaching-learning in projects, which also supports the development of digital and transversal competences.

Short summary of the subjects, requirements, and available textbooks.

BASIC EDUCATION

All courses have the same learning outcomes in basic education (see details in the Training and outcome requirements) The total BASIC EDUCATION lasts two years, includes altogether 576 hours of study, of which the chosen subject is:

PROGRAMMING BASICS (144 hrs)

The chosen subject must be studied in grade 10, taking into account the following topics:

Introduction to Python programming

The aim of this topic is to teach students - through example from life / school - programming in Python, by installing, learning the development environment and creating simple programs.

Python programming language basics

The aim of this topic is for students to use real-life examples (including examples from school) to write simple programs using Python, during which they can learn about different types of literals, arithmetic operators, mathematical functions and the use of variables. By mastering this topic, they will be able to solve problems by choosing the right type of data and complex data structures, and to create and use their own functions.

Modules, objects, file management in Python

In this topic, students will learn about the modules and packages of the Python programming language. After using some basic built-in modules, they will also create their own modules and packages. They will learn about the concept of exceptions and exception handling techniques, as well as the basics of object-oriented programming, which will enable them to use objects and create their own simple objects in their Python programs. Finally, they will learn how to handle text files.

The topic builds on the previous (9th grade) subject of the same name (Programming Basics), for which 72 hours of study is recommended, leaving the same number of hours for these subtopics.

Programming Basics (72 hrs,), 10th grade

Programming Basics (72 hrs), 9th grade

BASIC DOCUMENTS AND RECOMMENDATIONS (KKK, PTT, MODEL PROJECT)

Common training and outcome requirements (KKK) for the professions can be found here:

https://api.ikk.hu/storage/uploads/files/kkk_informatika_szoftverfejleszto_es_tesztelo_tech_2020p_df-1589880410952.pdf

Details of the Programme Curriculum (PTT) can be found here: pp. 32-41 PTT.

https://api.ikk.hu/storage/uploads/files/ptt_informatika_tavkozlesi_technikus_2020pdf-1599123477836.pdf

Description the selected subjects and reasons why it was selected.

Annexes

Annex 1. BIBLIOGRAPHY

Government Decision No: 1168/2019. (III.28.) on the mid-term strategy 'Vocational Education and Training (VET) 4.0 for the renewal of VET and Adult Education

<https://ikk.hu/dokumentumok#Jogszab%C3%A1lyok,%20strat%C3%A9gi%C3%A1k>

Laws, decrees and decisions regulating Hungarian vocational training and adult education

<https://ikk.hu/dokumentumok>

Framework plans, programs for vocational training

https://www.oktatas.hu/koznevelés/kerettantervek/2020_nat/kerettanterv_szakkepzes

<https://szakkepzes.ikk.hu/kkk-ptt>

Annex 2 – Selected topics

Agriculture and forestry (HU, DE)

IT and telecommunications (HU, IT)

Partner	Curriculum	Textbook	Subject	Topic	EQF	Company
JAC	Web Development	"Programming PHP, 4th edition", by K. Tatroe and P. MacIntyre, O'Reilly Media Inc., 2020	Web programming	Back-end programming with PHP 1	Tertiary VET, EQF 5	???
PREMO	Foundation training for IT students	NONE	Introduction to programming	Python prog.	IVET EQF 5	DRDC
DEULA	Web Development	Fachstufe Landwirt (Subject Level Farmer)	Agriculture 4.0	?	CVET, EQF 3-4-5	PROMPT
MAKE-SZISZ	Foundation training for agriculture students	Introduction to agriculture, Introduction to horticulture, Technology in Horticulture (Ornamental horticulture)	Smart Greenhouses, linking weather station to greenhouse automation, drone soil testing	?	IVET, EQF 3-4	DRDC

Project Summary

Multidisciplinary, Project-based Digital Learning Content for VET

Basic data

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.

Background

Vocational education and training (VET) has a key role to play in preparing young professionals for the challenges of a rapidly evolving global and digital economy. However, education often operates in isolation from the business world, with a widening gap between the skills provided by schools and those required by employers.

The labour market needs practical knowledge, and textbooks tend to be dominated by theory. Textbooks are not motivating enough for students born into the digital world and contain very few real-life examples from work situations. While most workplaces expect staff to work in a project-oriented way, the project approach and its associated forms of work are still not integrated into training, and a significant number of trainers are not yet prepared to apply the project approach. The multidisciplinary approach is difficult to integrate with traditional teaching methods, even though young graduates need to apply knowledge and skills from different subjects at the same time to solve workplace problems. While employers expect prospective employees to work in teams and on projects, the project method and related forms of work are not widespread in VET and project-based teaching methods are often missing from the toolbox of VET teachers.

Target groups

- VET- schools' leadership
- VET teachers/trainers
- Companies (Agriculture and IT sectors)

Beneficiaries

- VET students
- Employers

Objectives

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:

- *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.*

Results

R1 – A study on 21st century relevance of textbooks and learning content

R2 - PBL with interdisciplinary approach – blended course for VET teachers

R3 - Labor market-oriented projects for students

R4 - Repository of re-usable digital micro-learning content for VET

R5 - Mini-courses and projects for VET students

R6 - Methodology of developing, publishing and re-using digital micro-learning contents – a guide for VET expert teachers

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