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Střední průmyslová škola elektrotechnická, Makarenkova 513/1, Město, 736 01 Havířov, Česká republika

## **Final report to the project**

### **"Project Learning for Labor Market"**

**Implementation period from 1 December 2017 to 30 June 2019**

2017 - 1 - SK01 - KA219 - 035391 \_ 2

Coordinating School:	SPŠ elektrotechnická Košice, Slovensko Coordinators – Ing. Michal Copko, Ing. Ingrid Kolembusová School Director – Ing. Štefan Krištín
Other partners involved:	Secondary Vocational School of Secondary Schools in Hungary - Miskolc, Poland - Mikolów, Slovenia – Murska Saturday, Slovakia - Košice
Partner school:	SPŠE Havířov, Makarenkova 1, 736 01, CZ Coordinator - Miroslava Svrčinová School Director – Ing. Petr Kocurek
Tutors / Lead Teachers:	Ing. Zuzana Paučková, Ing. Pavel Urban, Ing. Petr Madecki, Ing. Milada Bajtková, Ing. Ladislav Opiol, Ing. Božena Ralbovská, Ing. Václav Sedlák

#### **Project Context:**

The project was created on the basis of the needs of our school and the organizations involved, in connection with the development of long-term partnership with the coordinator of the SPŠ elektrotechnická Košice project in providing mobility for pupils and teachers within the Erasmus + KA1 program.

Our school has been involved as a partner in the project, so that we also provide our pupils with additional learning opportunities through project-based learning and developing their potential, such as working in an international environment, working in a team, improving English communication skills, enhancing responsibility, professional skills and experience, which in turn can improve graduates' professional position in the labor market.

#### **Main project objectives:**

Enable all participating organizations to develop and enhance collaboration, enhance their ability to engage in international collaboration to exchange practices and good practice, support and develop pupils' technical competences and software skills through project-based technical subjects - IT, Control Systems. To acquire, in addition to expertise, soft skills - the ability of teamwork, responsibility, ability to adapt to changing conditions, planning, improving communication skills in English.

Improve the professional position of pupils in the labor market.

Use project outputs and experience in project planning and management and project learning for school teachers and other organizations involved.



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#### Participant Profile:

The project was attended by a total of 12 students of our school from the 3rd and 4th grade at the age of 17-19, the information technology (18 - 20 M / 01) and Control Systems (Electrical Engineering 26 - 41 –M / 01). Seven professional teachers were also involved in the implementation of the project work, representing both educational fields, who served as a tutor for the professional guidance of pupils at work, and during their mobility 4 of them also accompanied their pupils to partner school countries.

#### Activity progress description:

During the whole project period, a total of 12 project work of the pupils was realized with the cooperation of the school, their teachers / tutors and foreign partners.

Pupils consulted with each other's foreign counterparts, communicated via e-mail, telephone, social networking - Facebook, solved problems, learned to plan and follow deadlines and approached their work responsibly.

Each pupil had a tutor / teacher at work to deal with with sub-tasks.

Pupils also had the opportunity to meet personally with their fellow partner through short-term mobility (1 week) between partner schools (SK? PL, HU, SL), when in the first stage our three-member pupils and their accompanying person went out and in the second stage we are hosted pupils from partner schools in our country so that they can gradually finalize their roles in their functional form.

We consider the mobility process to be excellent, the mobility has served its purpose, the pupils have been very satisfied, they have learned a lot, they have learned about the culture of other countries, they have successfully completed their products.

#### Acquired Skills:

Students had the opportunity to work and develop knowledge and skills in electronics and IT. In addition to hard skills, they have developed soft skills, especially in the areas of communication, flexibility, self-sufficiency, teamwork, and strengthening work discipline. Students worked very responsibly. Mentors were satisfied with their work.





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#### Project results, impact and benefits:

The result of international project cooperation between our school and schools abroad is 12 completed projects / modules, including the preparation of project documentation for individual tasks based on the pupil's professional guidance.

Pupil collaboration has strengthened a set of professional competences and software skills through project teaching in technical subjects - IT, Control Systems - in addition to expertise, pupils have developed soft skills - teamwork, responsibility, ability to adapt to changing conditions, planning, improving communication skills in English, with a positive impact on their future employment and improving their labor market position.

Cooperation on the project also brings a positive impact on the involved organizations, especially in terms of using project outputs - Methodology for creating and managing student work, Project documentation, Manual for student project evaluation, manufactured products. The benefit for organizations is also the consolidation and development of international cooperation, the development of experience in the organization and management of an international project, as well as the implementation of project-based teaching of pupils at school.

Students and teachers performed their work program tasks and project schedules very carefully, in line with the project objectives, not only to compare the different levels of electronics and IT knowledge, but their knowledge is consistent in creating a common product; partner countries, to improve English language communication skills.

In the future, we plan to continue these projects or other project activities with these partner schools. Pupils individually presented their project results within the practical part of the final secondary school leaving examination, where students had the opportunity to defend their work on the basis of questions asked by the school-leaving examination board and to complete the given subject. The final grade was part of the overall assessment of the subject.

We will take into account the results of the project and use the SEPs for teaching vocational subjects.

On the basis of the manual for the evaluation of pupils' projects, the pupils' work was evaluated and three winning projects were selected, which were subsequently followed by their three authors - Ondřej Sabela, Bořek Tuleja, Timotej Plachta - at the end of the project period from 12 to 14 June 2019 in Košice. A transnational meeting to evaluate the results of the whole project was presented in English. Pupils received a certificate of a participant in a transnational meeting and Europass Mobility.

At the same time, all students also evaluated their work in a self-evaluation questionnaire, where they assessed the level of their acquired knowledge and skills, attitudes and the course of the project.



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Pupils' presentations at the school, information about the results and the project output documentation will be posted on the school website.

We plan to share the results of the project and spread it outside the school through the media, by presenting the results at school events with the public - workshops for elementary school pupils, recruiting pupils, Open Day.

Miroslava Svrčinová  
project coordinator

Havířov, 30. 06. 2019

Ing. Petr Kocurek  
headmaster



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**ATTACHMENT:** List of pupils / participants

Pupils / SPŠE Havířov	Foreign partner / school	Project name	Winning projects
Marek Lohn	Köteles Kornél Miskolci SZS Kandó Kalmán Informatikai Szakgimnáziuma, Miskolc, Hungary	Parking robot	
Timotej Plachta	Vígh Gergő Miskolci SZS Kandó Kalmán Informatikai Szakgimnáziuma, Miskolc, Hungary	Weather forecast station with Arduino	3./ Weather forecast station with Arduino
Hynek Tuleja	Szedlák Botond Miskolci SZS Kandó Kalmán Informatikai Szakgimnáziuma, Miskolc, Hungary	Attendance system with RFID	
Vojtěch Janásek	Patryk Bojczuk Zespół szkół Technicznych Mikolów, PL	RFID lock	
David Zimniok	Wojciech Habaszka Zespół szkół Technicznych Mikolów, PL	Temperature regulativ	
Bořek Tuleja	Marek Krosny Zespół szkół Technicznych Mikolów, PL	Weather station	1./ Weather station
Tomáš Macháč	Lukáš Varanai SPŠ elektrotechnická Košice, SK	Signal generator for frequencies up to 5MHz	
Ondřej Sabela	Šimon Bučko SPŠ elektrotechnická Košice, SK	Voltmeter with web output	2./ Voltmeter with web output
Tomáš Cymorek	Patrik Skaloš SPŠ elektrotechnická Košice, SK	Sorting line with automats	
Filip Kubo	Žan Horvat Srednja poklicna in tehniška šola Murska Sobota, Slovinsko	Smart trash bin	
Pavel Veselka	Aljoša Minarič Srednja poklicna in tehniška šola Murska Sobota, Slovinsko	Control of crossroad	
Alex Kolebacz	Pintarič Marko Srednja poklicna in tehniška šola Murska Sobota, Slovinsko	Smart greenhouse	

Miroslava Svrčinová  
project coordinator

Havířov, 30. 06. 2019

Ing. Petr Kocurek  
headmaster

