

Report on the first mobility in Turkey

The motion of the technology

The first mobility under the project STEAM POWERED EDUCATION was held in Turkey, as previously arranged and approved by all partners. Dates of mobility were changed with the approval of Bulgarian NA because of reconstructions of schools, in order to give all participants best conditions possible.

The mobility lasted from 19-23rd September. Serbian team consisted of 4 teachers and 6 students. After the arrival of Serbian team the program was postponed for an hour because of the technical problems in transport of the team. The hired agency was trusted both by Serbian teachers and parents as it was engaged in transport in previous Erasmus+ project. The host was full of understanding and after the long journey we felt welcomed, relaxed and ready to learn, make new friendship and explore the small part of the huge country which our hosts prepared for us. Students were extremely excited to participate, meet new friends, practice English language, learn new Bulgarian and Turkish words and compare our languages as there are so many similarities between them. They were eager to learn about robotics and coding as well. In the evaluation form we can see that our students are completely satisfied with this mobility as their expectations were completely fulfilled, even more than they hoped for.

Students chosen for the mobility were from families with low income, sensitive group of students from divorced families, students interested in coding and robotics with good English level knowledge who wanted to learn new things and were ready to transmit knowledge and pass on the experience they gained during the mobility.

Day 1

During the first day, all the participants were taken to Kuyucak Municipality Pamukören Cultural Center where they were welcomed with the show prepared by Turkish students and teachers. After the welcoming show, the students and teachers were taken to school where they were presented with the STEAM experiences in the technology. Among the lots of gadgets and robots that Turkish school possess, the most interesting to our students was the 3D PRINTER. We were shown the process of making a figure with the printer by using a thermoplastic material that is pushed through a heated nozzle. We were given a lecture about the process of 3d printing – downloaded 3D design from the internet transformed into a figure of a rabbit, and the possibility to create your own 3d design and then print it into a figure. 3D design is loaded into the software and generated the G-code that 3D printer reads as an instruction. Then 3d printer interpret the instructions layer by layer until the desired figure is made. Depending on the model, the process can take few minutes to few days. This presentation was one of the most valuable and intriguing to our students. We learned that we can make pretty much anything with this kind of printer, as well as the way the printer works. All the participants attended the workshop on “robotics coding”. The workshop was inspiring, students got practical experience and lessons. Their comments later were that for a moment they felt like a real programmers.

Students had a chance to attend classes in Turkish school and get to know the differences and similarities with our school and education system, had a school detour, take some photos with each other and did some ice breaking activities.

The students and teachers have been taken to a place Benevola to catch a breath of fresh air and relax, get to know each other better and enjoy the lovely nature. The hosts made a friendly environment

for all the participants, students got involved with each other very quickly, enjoyed the music and chatting and had paper airplane workshop. The STEM skills both students and teachers built and improved while making paper airplanes - creativity, how to follow instructions, problem solving and basic understanding of the forces of light are among the main benefits of the workshop.

Day 2

After the coordinator's meeting both students and teachers were presented the STEAM lesson and presentation about working principles of simple technologies and had a chance to discuss it and share ideas, opinions and personal experience of their use in education.

After lunch both students and teachers participated in the "ART show" activity. Students and teachers were able to express themselves artistically by choosing the painting to replicate and present to others. Some real talents have been discovered! All the participants loved this activity since it was relaxing, not too demanding, students could make a stronger bond with each other by working together on some drawings and paintings. They also felt motivated as they discovered the broad range of topics they could draw and paint. Teachers proudly shared photos of activity on social networks!

The good atmosphere continued on the way to the spectacular archaeology site of Aphrodisias, a UNESCO World Heritage Site, dedicated to Aphrodite, the goddess of love. The peaceful place without crowds left everyone speechless.

Day 3

The day began with the detour of another school building where students attended classes, met new students from Turkey and later each country presented themselves to others through a PowerPoint presentations.

After that, during the "Smart curtain " activity, in which over 50 teachers and students participated, smart curtains were developed by bringing the system together.

Light sensor and digital thermometer workshop

Students learned what a light sensor is and which devices use it. They found out that most common use in our daily lives is in cell phones and tablets. Most portable personal electronics now have ambient light sensors used to adjust brightness. If the device can sense that it is in a dark place, it turns down the screen brightness to save power and not surprise the user with a very bright screen. They can also be found in smoke detectors, Remote control devices etc.

Different types of light sensors can be used to measure illuminance, respond to changes in the amount of light received, or convert light to electricity. Students realized that these were the things they mostly knew about but weren't even aware of it.

A digital thermometer, a temperature measuring device is something everyone uses at home but the students' knowledge was broaden with information that digital thermometers are used in industry as well, in applications including food preparation, manufacturing, medical and scientific testing and procedures. They found out that there are various different kinds of modern digital thermometer sensors.

The classic liquid mercury thermometer is now forbidden to use in most countries as it is proven not to be safe so that's why today we use digital ones.

Students talked about daily devices more closely, how, when and why they are used.

After lunch students and teachers participated in engine trigger switch systems workshop. We were shown that sensors have to be wired and configured correctly in order for the engine to start, let alone run well.

After that we were taken to Pamukkale. The photographs on the social networks and on the website tell it all!

Day 4

The day began with the workshop "Red light alarm". Students learned how to make a sound warning system which enables visually impaired people to become familiar with the sounds associated with specific life situations, through coding. Students found this workshop very useful and wished they could make similar sounds once they return to their countries.

After the workshop students and teachers were taken to Ali Kuşçu Mathematics House and Village Life Center where the host organized Maths competition for the students. All participants planted a tree in the lovely garden of the village.

Later on students and teachers visited Şirince and Kushadasi resort where again everyone had the chance to bond with each other and enjoy each other's company.

Day 5

The teachers discussed about E-twinning and the difficulties with the new platform. The teachers from Serbia and Turkey will open the project on the new platform by the end of November.

Both students and teachers attended a workshop "Movable Arms" - workshop focused on the principles of hydraulic movements. The process illustrated aspects of fluid pressure, force, mechanical work, and biomechanics. With the help of the teachers, students made and tested their own Hydraulic Arm! They managed to do some pretty cool tasks with their "Arm". The simple hydraulic system is what made this workshop really stand out and the fact that it's not too hard to build. The other reason that this project is fun to make, is because the materials needed are very cheap and can be easily found at home!

Students wished to explore more options and they were interested in all the things this "arm" can do, and how to give instructions. They found this workshop very interesting, educational and creative.

In the end of the workshop we talked about where hydraulic systems are used in everyday life: in brakes and steering on cars; hydraulic lifts and jacks for servicing cars; airplane wing flaps, stabilizer controls, and landing gear; mechanical arms on garbage trucks; blades on bulldozers; and so on.

Teachers evaluated all the activities done in Turkey and prepared evaluation of the project for students.

During the coordinator's meeting teachers discussed about the virtual mobility in Serbia, agreed on dates and activities.

The mobility was finished with the farewell dinner where all the participants received the certificates of attendance.

Parents are extremely satisfied with the first mobility. The evaluation form shows that there is nothing they would like us to change or do differently, that these kind of projects are valuable for their children, and they wish there were more such activities with students from other countries.

Students' evaluation was positive, too. It shows that they would like to travel again, participate in projects more, they are excited about meeting new people and learning about other cultures. They also liked the new approach to learning, by making, creating and trying their products.

Evaluations are posted on the website as well.

Both students and their teachers benefits from the participation in the project.

English language was used and practiced throughout whole of the mobility. Through various workshops, ice-breaking activities, visiting cultural places, teachers developed a team working atmosphere and guided students into asking thoughtful questions, discover answers, apply what they learn, and creatively solve problems.

Students were given space to think, evaluate, and determine how to best achieve their goals and complete projects. They were exposed to the creative process by engaging in activities that combine different elements of STEAM and they were engaged in the learning process actively.

Many activities demanded teamwork and dialogue in which students exchanged ideas and discussed the ways to solve problems. Through these activities, students learned how to take and split responsibilities, compromise, listen to and encourage each other. They learned that being part of the team means sharing duties, helping each other, learning from each other. Through all the activities students saw that not everyone is best at everything and each of them can contribute in some way. Girls had a chance to prove themselves to be equally capable of doing tasks just like the boys, that science is for everyone, which made one of the main targets of the project accomplished.

As for the teachers, new skills in collaborative planning are developed, including a cross-section of teachers on each team, adjusting scheduling to accommodate a new way of teaching and learning, hearing and accepting new ideas, all in all, becoming better at STEAM approach. In addition to this, teachers needed to face and adopt new challenges, develop new strategies, skills, tools, and techniques in order to effectively carry out the project activities. Written and verbal communication skills are improved as well.

Dissemination of the meeting in Turkey was done via social media (Facebook group, Instagram profile), YouTube channel and our project website.

In addition to this, dissemination of the project was done via **local media**

https://bujanovacke.co.rs/2022/09/26/brankovci-u-turskoj-promoteri-svoje-skole-i-svog-bujanovca-foto/?fbclid=IwAR0mN_gsGHIsx4d0FhYuMhrx_Yr9tLxKlvellCeE3kQdTCCpGclwvDu9ak

regional media <https://vom.rs/vesti/ucenici-skole-branko-radicevic-iz-bujanovca-obisli-tursku/>

https://infovranjske.rs/brankovci-iz-bujanovca-obisli-tursku/?fbclid=IwAR3X2tOI4liFZkbBoZU2oPQdGykMhDgax948qiJkAVF89F0og7_AINDeY8I

and even in **national daily newspaper** <https://www.novosti.rs/srbija/vesti/1157681/ucenici-bujanovca-poseti-turskoj-projekt-skole-branko-radicevic?fbclid=IwAR3fBLvxPGU6kIBLJEFOoJYetxZDSB85k6cgKfLWf7r7HYpgpqupKxBov3E>

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