



ECOPLANET s.r.l.



Project: BLUE TEmPLATE

BLUE TEch PARtnership Education

Cod. 2017-1-IT02-KA201-036870

Report of the third year of the School-to-Work activity

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Report of the third year of the School-to-Work activity

The activities of the third project year began with an overall revision of the training courses, updating the training contents to lead to the creation of a more specialised profile expert in the construction of ROVs (Remotely Operated Vehicles), as instruments for environmental investigation in deep waters. The new teaching path, created during the transnational meetings, had the fundamental support of the partner University of Cartagena, which provided teaching materials, video tutorials and contacts for the purchase of assembly kits for different types of underwater drones. The topics covered are consistent with both the partners' school curricula and those of the Blue Template project, and essentially relate to Mechatronics, Precision Electronics and Environmental Monitoring.

A complete revision of all formats prepared for the accession of participating students and for the in itinere, ex ante and ex post evaluation of the school-to-work activities was carried out.

Following the tried and tested procedure, the Capellini Sauro Institute in La Spezia published a circular letter within the school for fourth-year students on the possibility of participating in the Blue Template Project, explaining the contents and methods of implementation and the opportunities to increase their experience in an international context.

The application form was provided and, on the basis of an evaluation grid based on the average marks of the previous school year's final examination, knowledge of English and personal motivations for participating in a European project, a ranking list was drawn up and 20 pupils were chosen, divided into the three specialist profiles foreseen by the project.

The **first phase** of the teaching activities was characterised by study sessions for the acquisition and testing of soft skills for the twenty selected pupils. Unfortunately, due to the closure of the school because of the pandemic, a total of 16 hours out of the 24 planned were carried out.

	Hours carried out	teachers	Laboratories used	Teaching material
Safety and security on workplaces	8 hours	L. Ricotta	IT Lab.	Lessons notes
Technical English	4 hours	A. Giannanti	classroom	Notes
Digital systems	4 hours	T. Castagnetti	IT Lab.	Lessons notes

However, it was possible to carry out all the planned specialist training, totalling 50 hours, with the exception of only 16 hours to be carried out in the company's teaching workshops or within the school.

COURSE BLUEROV

	Hours carried out	teachers	Laboratories used	Teaching material
Technology Mechatronics	18 hours	F. Riccobaldi	Technology Lab.	Lessons notes
		A. Pietrini		Lessons notes

Precision electronics	18 hours	S. Simeonov	Electronics Lab.	Lessons notes
		O. Pietrobono		Lessons notes
Robotics	14 hours	M. Godani	Robotics Lab	Lessons notes
		L. Peroni	Virtual Lab	Lessons notes

Unfortunately, due to the health emergency caused by COVID-19, the course has been suspended (Prime Ministerial Decree of 04.03.2020 et seq.) and it has not been possible to conduct:

- workshop activities planned in conjunction with the company tutor (16 hours)
- the remaining hours of technical English and digital systems (4 hours+4 hours)
- the last phase called “Short-term exchanges of groups of pupils”, the exchange in Toulon scheduled from 11 to 15 May 2020 (40 hours).

In any case, the course was carried out with great interest by all participants, since after the course, on the occasion of the last student exchange planned in Toulon, a competition was organised between the partner schools who would build the best ROV and demonstrate its functionality in fresh water (a swimming pool).

To this end, all the students, including the French and Spanish, divided into working groups and jointly participated in online lessons in English, held by lecturers from the University of Cartagena, with the aim of exchanging information, assembly techniques and electronic connection of the instrument under construction.

Below is the list of students from Istituto Capellini Sauro participating in the project

PARTICIPANTS LIST COURSE BLUEROV

NAME	class
SIMONELLI DANIEL	4 INFA
BRESCIANI ROBERTO	4 INFA
MANCIN ANDREA	4 INFA
BERTELLA ERIK	4 INFB
SIMONINI FILIPPO	4 INFB
NARDELLA MIRKO	4BMM
CAGNOLI LORENZO	4AMM
ALIBANI DIEGO	4AMM
PUCCIARELLI REMO	4AMM
VARESE MATEO	4AMM
MAFRICI CHIARA	4ECH
MOISE GABRIELE	4CLS
ZANIN ANDREA	4BLS
OLIVATO RICCARDO	4BLS
PIAZZA JACOPO	4BLS
ROMBONI DAVIDE	4DLS

MASOTTI ANNA	4CL
FAVAZZA MONICA	4CL
RAGUSO VITO	4CL
MONTICELLI ALICE	4AIM

The Spanish partners, Institut de Nàutica de Barcelona, were able to carry out both cross-curricular activities (24 hours) and specialised activities before the closure of schools due to the pandemic, by including in the BlueROV course the following modules Mechatronics (13 hours), Electronics (12 hours), Precision Electronics (12 hours), Underwater Robotics (13 hours), etc..

COURSE: METAL WORKING ELECTRONIC

PARTICIPANTS LIST: Institut de Nàutica de Barcelona

Caballero Roman	Ruben
Casas Vilasís	David
Cuenca Sopena	Pau
Martin Lujano , Maria	Maria
Martínez Abad	Dario
Montes Monforte	Raúl
Subirós Canet	Vladimir

The French partners of the Lycee Rouviere in Toulon started the third year teaching activities in September 2019 by recruiting students with the same procedures used by the Italian school. The course started "Enseignement de spécialité EE" with teaching contents consistent with the activities agreed between the partners. They too had to interrupt activities in March 2020 due to the pandemic as the school was closed from 17 March. However, since they started their teaching activities very early, they managed to carry out about 80% of the planned programme, both on transversal and specialised modules.

COURSE: Enseignement de spécialité EE

PARTICIPANTS LIST: Lycee Rouviere di Toulon

ALBOUY	Maxime
AUGIER	Marceau
BARA	Camille
BOUSNINA	Sabri
BRÈS	Valentin
BROCKER	Jade
DANET	Florian
ETERRADOSSI	Paul
FILLIAT	Walter
FRITSCH	Romain
GALLI	Gabriel
GIORDANENGO	Loïc
GROUSSARD	Arthur
HOFFMANN	Robin

JOUFFRET	Leo
MORLA	Matthieu
NACI	Cédric
PACIORKOWSKI	Maxence
SCALIA	Lucas
TAILLIEZ	Axel
TANOH-KOUTOUA	Malcom
TRÉMOLIÈRE	Constant

Due to the COVID-19 pandemic, some evaluation data sheets were incomplete or even missing, but these are only two sheets.

With reference to Output 2, the following sheets were reviewed and shared:

02-Autovalutazione personale studenti-ROV-OP2_EN (Students personal self-evaluation-ROV-OP2)

As in the previous year, the first form was customised on the specific training path of each partner school. The results show that in the majority of cases the pupils rate their knowledge and basic skills as fair:

In detail, the students on the ROV construction training course give average scores of 7-8/10, although they show a lack of knowledge on topics related to Mechatronics, Electronics and Robotics, on which they give average scores that are fairly below sufficient, obviously with some exceptions that show a specific personal interest in these topics, probably due to the current innovations in electronic systems and their applications to environmental investigation tools.

The other topics of the sheet concern:

- Possibility of application of the studied topics in the work world
- The coherence of the topics covered with the school curriculum
- The desired professional profile
- The working mobility

As in previous years, the answers to these questions indicate that the young people seem to be involved in their chosen course of study and have fairly clear ideas about their future, aware of the difficulties in achieving their career goals but at the same time aware that only their commitment will give them real results.

The second form, Before and After Knowledge/Skills Assessment form ("12-Valut_conosc_compet_exante-expost ROV_OP2_EN) has been filled in by Capellini Sauro Institute only.

The third form was not completed as the third student exchange planned in Toulon could not take place due to COVID.

The results, although partial compared to previous years, show the educational value of the course, also reporting personal indications of students on their vocations, interests and learning styles with a strong orientation function and also promoting self-assessment and self-guidance.

With reference to Output 3, the following sheets were reviewed and shared among the partners:

01-Valutazione Percorso formativo dallo Studente-OP3_EN

03_AUTOVALUTAZIONE PERSONALE FINALE-OP3_EN

Unfortunately, again due to the suspension of school activities for the pandemic, only the first one was completed by the students.

The sheet “Valutazione Percorso formativo da parte dello Studente” (Student training path evaluation) was made for participants to fill in at the end/interruption of their school-to-work activities. The participants were asked to provide an assessment of the experience gained in the company and more generally of their participation in the project, of the new knowledge and technical skills acquired and were also asked to highlight strengths and weaknesses of the training course and to report any observations and/or suggestions.

Data collected show a high level of satisfaction with the experience and a good capacity for criticism, expressed, albeit briefly, in the final comments on the form. But the most important result is certainly the satisfaction of the pupils with the involvement in the realisation of the project activities through the request for their opinion and observations. This particularly stimulated them to participate actively in the project, feeling that they were not only the recipients of the activities but also the main actors.

The other two forms were filled in jointly by the school tutor and the company tutor.

The first “Valutazione Percorso ASL-ROV-OP3_EN” (School-to-work ROV path evaluation-OP3-EN) has been prepared on a student-by-student basis, as it has been specifically composed for the assessment of skills acquired in individual competences on the different school-to-work activities paths.

The evaluations expressed by the school tutor and the company tutor on a scale of 1 to 5 show an average result of 4-5/5. This is also a very good result.

The last form "13-Evaluation of the theoretical and practical activity-OP3_EN" is approximately the same as the final personal self-evaluation form completed by the students, but this time it is an evaluation expressed on each individual student by the school tutor and the company tutor. The scores given on a scale of 1-5 show an average result of 4-5/5, with a greater tendency towards 5.

During the third year, the INNOVATION DAY was to be held in Toulon, which would have seen the participation of student teams from the three partner schools for an ROV Contest. Unfortunately, due to the COVID 19 emergency, it was not possible to realise what was planned, but the Innovation Day was organised anyway in July 2019, on the network using the DLTM's platform for managing events on the American site Eventbrite which allows users to browse, create and promote local events, a day dedicated to the presentation of innovative methodologies both educational and technological applied to the construction and use of instrumentation for quality control of marine environments subject to environmental stresses.

In fact, before the COVID crisis occurred, the students had already had the opportunity to organise themselves into teams and start work on the design of ROVs. The work involved various technologies, including the robotic programming language ARDUINO. The students also had to think about electronic components and solve problems related to fluid dynamics in order to make their submarines perform well. As early as January 2020, all the teams connected simultaneously on the network to share their projects, progress and difficulties in the ongoing construction with their peers in other countries. The connections were made directly between the laboratories, where the students' activities were carried out, with interventions by both the school teachers and the professors from the University of Cartagena, who acted as international remote tutors, actively participating in solving technical problems.

The Innovation Day was quite well attended, considering the state of emergency due to the pandemic and the consequent closure of schools and companies all over Europe; of course, all partners and the majority of pupils were present, but also other external guests invited by the partners mainly from the whole labour sector. In total about 50 people participated, excluding the



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students from the three partner countries, from public bodies including municipalities, chambers of commerce, colleges and universities and private companies.

New technologies also played a leading role during the specialised training courses included in the project: students were able to come into contact with the world of work thanks to lectures given by experts such as, for example (and this is not an exhaustive list) submarine designers, researchers from important research institutes, companies producing electronic devices for detecting weather conditions or producing innovative buoys or telecommunication devices or dealing with robotics. The project also aimed to provide guidance for possible life choices by showing students, where possible, the latest market trends.

Due to COVID, it was not possible to carry out also the final event of the project; in fact, a final conference was to be organised in La Spezia, at which local public authorities, representatives of national and international educational institutions, production companies linked to the marine and environmental activities sector and university research institutes, as well as young students from other technical-professional high schools in Liguria, were to take part.