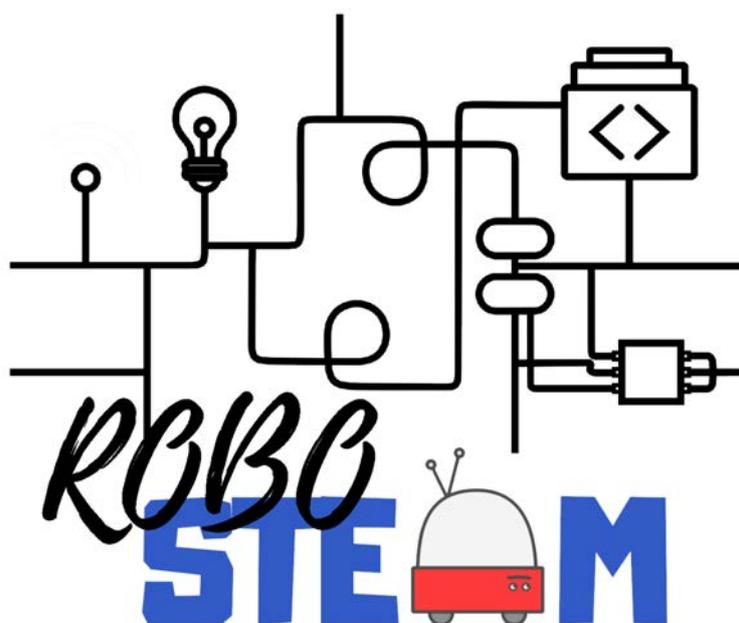


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# RoboSTEAM Quality Interim report

## (M1-12)

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Project Number: 2018-1-ES01-KA201-050939

## Version History

| Version | Date       | Comments                    |
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| 0.1     | 30/10/2019 | First draft of the Report   |
| 1.0     | 31/10/2019 | Final Version of the Report |

## Table of contents

|     |  |    |
|-----|--|----|
| 1   | INTRODUCTION.....                          | 4  |
| 2   | PROJECT EVALUATION.....                    | 6  |
| 2.1 | Quality of the Project Management.....     | 6  |
| 2.2 | Quality of Consortium’s engagement.....    | 9  |
| 2.3 | Quality of the Project implementation..... | 12 |
| 3   | KEY PERFORMANCE INDICATORS.....            | 16 |
| 3.1 | Project Management Indicators.....         | 16 |
| 3.2 | Consortium’s Engagement Indicators.....    | 17 |
| 3.3 | Consortium’s Work Indicators.....          | 18 |
| 4   | OVERALL EVALUATION.....                    | 19 |
| 5   | ACKNOWLEDGEMENTS.....                      | 19 |
| 6   | REFERENCES.....                            | 20 |

# 1 INTRODUCTION

The purpose of this report is to document the processes and results of the application of the RoboSTEAM Quality Assurance Plan [1] at the mid-term of the project.

## Project Overview

The RoboSTEAM project [2, 3] aims to experiment with STEAM [4] integration projects that help learners to develop computational thinking [5-11] by using/programming PD&R [12-16] in pre-university education environments. To this end, the project proposes the exchange in the European context of experiences related to this topic. This would allow training of in-service and future teachers in such a way that they can apply this knowledge in class. This project will define a set of challenges and tools to address them. Two pilot cycles will be carried out exchanging these challenges and tools between institutions, so it is possible to analyze the impact of the context where they are used. From the results achieved and the instruments used, good-practice guides will be defined about the development of computational thinking from STEAM integration.

Given this context, the main objective of this project is the definition of a knowledge base to facilitate integrating STEAM and computational thinking by using robots [17-19]. This will be carried out by developing pilot programs, gathering good practices and tools, and defining learning actions and educational resources for teachers.

In order to achieve this objective some sub-objectives are defined:

- Analyze the different existing activities that deal with STEAM integration.
- Define some challenges and instruments to facilitate STEAM integration and computational thinking development.
- Define metrics to evaluate both the integration and the competence development.
- Establish guides for the definition of integration STEAM challenges by using PD&R.

- Define educational resources for in-service teachers and future teachers.
- Establish ways of collaboration between robotic companies and educational institutions.
- Publish the obtained results in order to involve other educational institutions of the same and different contexts.

The RoboSTEAM project is led by the University of León (Spain) and implemented by 7 further partners:

- Agrupamento de Escolas Emídio Garcia (Portugal).
- CPPCMCM Colégio Internato dos Carvalhos (Portugal).
- IES Eras de Renueva (Spain).
- Instituto Politécnico de Bragança (Portugal).
- Karlsruher Institut fuer Technolie (Germany).
- University of Eastern Finland (Finland).
- University of Salamanca (Spain).

### **Quality Assurance Methodology**

According to the Quality Assurance Plan [1], the purposes for managing quality in ROOSTEAM are:

- Monitor the project progress.
- Ensure the quality completeness of each activity and output separately and of the whole project.
- Ensure the quality of the key processes and the key results of the project.
- Identify possible bottlenecks and enable corrective activity.

Led by University of Salamanca (USAL), and with the support of all partners, the QA method is using the following tools:

- Evaluation questionnaires for transnational meetings.
- Internal monitoring questionnaires.

- Evaluation of the outputs and activities.

These tools collect the relevant quantitative and qualitative data to measure if Erasmus+ ROBOSTEAM is meeting the partnership expectations.

### **Project evaluation**

The Quality Interim Report is divided into 3 aspects evaluated during the project period according to the key performance indicators defined in the Quality Assurance plan:

- Quality of the Project Management.
- Quality of Consortium's engagement.
- Quality of the Project implementation.

## **2 PROJECT EVALUATION**

### **2.1 Quality of the Project Management**

Project management relates to the quality of project management arrangements, the management and leadership qualities demonstrated by project coordinator, the effectiveness of the process of monitoring and evaluation, the implementation of the work-plan and the integration of project activities into the department's/ institution's development plan.

Quality of the management was measured by the usage of the periodical monitoring questionnaire (M1-12, September 2019) and the Transnational Project Meetings questionnaires. The tables below show the responses from the mentioned questionnaires.

#### **Interim Monitoring surveys**

Tool: Internal monitoring questionnaire.

**Period October 2018 - September 2019 (Tot. 9 responses)**

*Quality of project management arrangements.*

**2.1. Quality of project management arrangements**

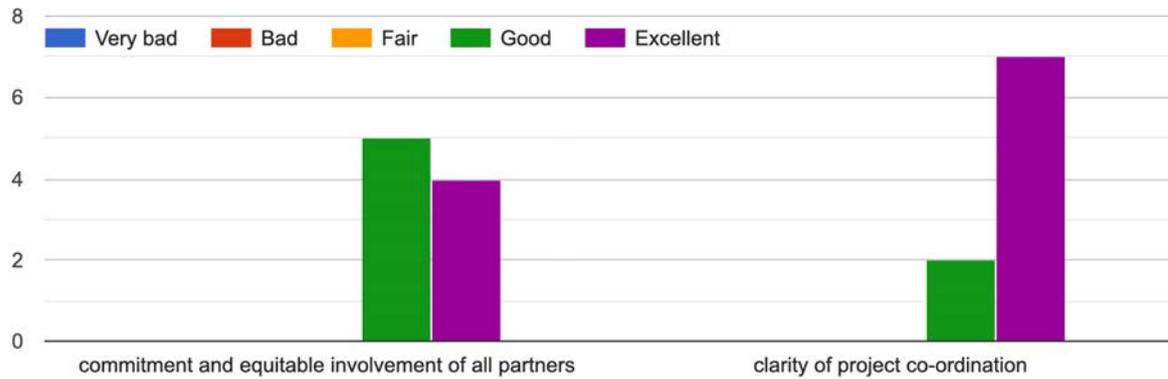


Figure 1: Effective management and leadership qualities demonstrated by project co-ordinator

**2.2. Effective management and leadership qualities demonstrated by project co-ordinator**



*Effectiveness of the process of monitoring and evaluation*

## 2.4. Effectiveness of the process of monitoring and evaluation



*Management, coordination & partnership*

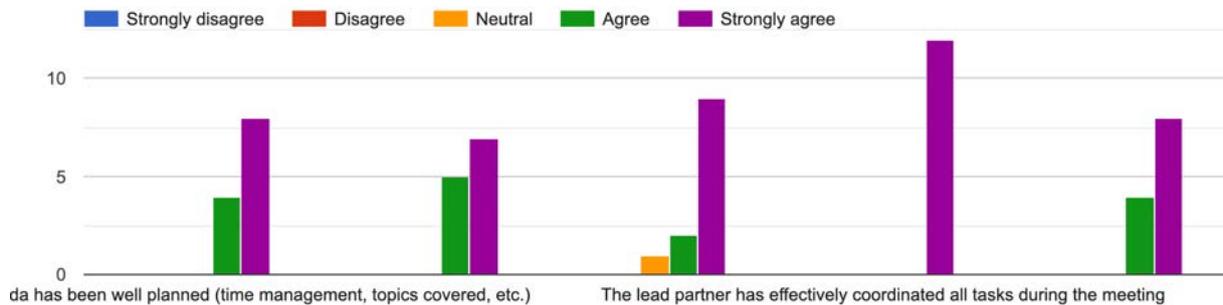
Tool: Transnational project meetings' evaluation questionnaire.

Topics:

1. The meeting agenda has been well planned (time management, topics covered, etc.).
2. The documentation and working materials have been useful and sufficient.
3. I feel that all the relevant topics have been sufficiently discussed and cleared.
4. The lead partner has effectively coordinated all tasks during the meeting.
5. All partners have actively participated and became involved in the project.

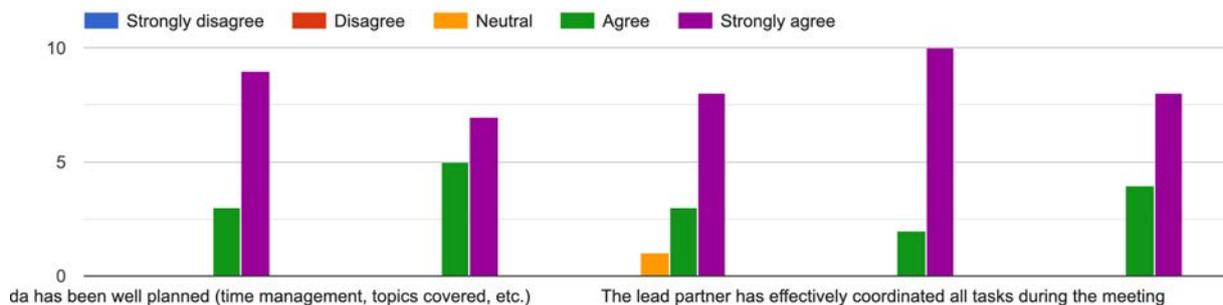
**Bragança (Portugal), 15-16 February 2019 (12 responses)**

Please select the answer that best reflects your opinion. After these questions, you can also add some comments or feedback



## Karlsruhe (Germany), 30 September - 2 October 2019 (12 responses)

Please select the answer that best reflects your opinion. After these questions, you can also add some comments or feedback



### 2.2 Quality of Consortium's engagement

This section relates to the commitment to the project by each partner, the agreement among partnership, the communication among partners and other actors, the trust among partners, the development of positive attitudes and the atmosphere between partners. Here also we will focus on the quality of support in the partnership.

The tables below show the total responses collected from 2 periodical monitoring questionnaires and the Transnational Project Meetings questionnaires:

#### Interim Monitoring surveys

Tool: Internal monitoring questionnaire

**Period October 2018 - September 2019 (Tot. 9 responses)**

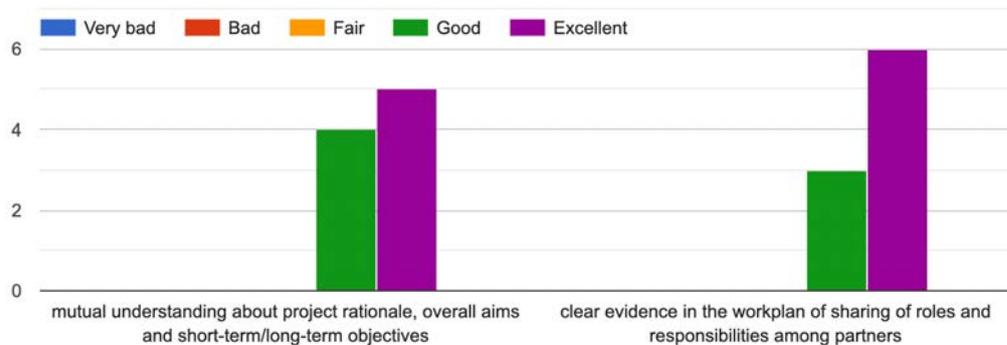
*Strong commitment to the project by each partner*

**1.1. Strong commitment to the project by each partner**



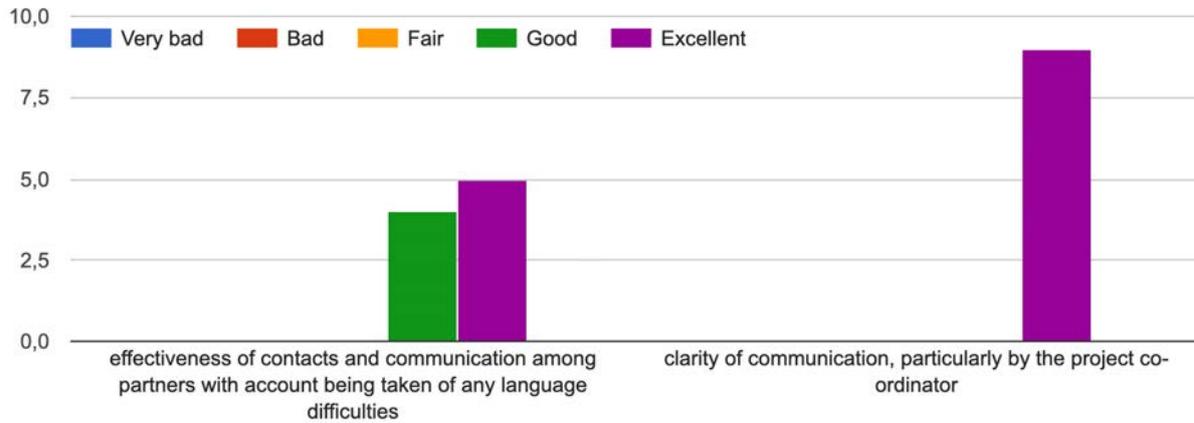
*Agreement among partners*

**1.2. Agreement among partners**



*Effective and on-going communication among partners*

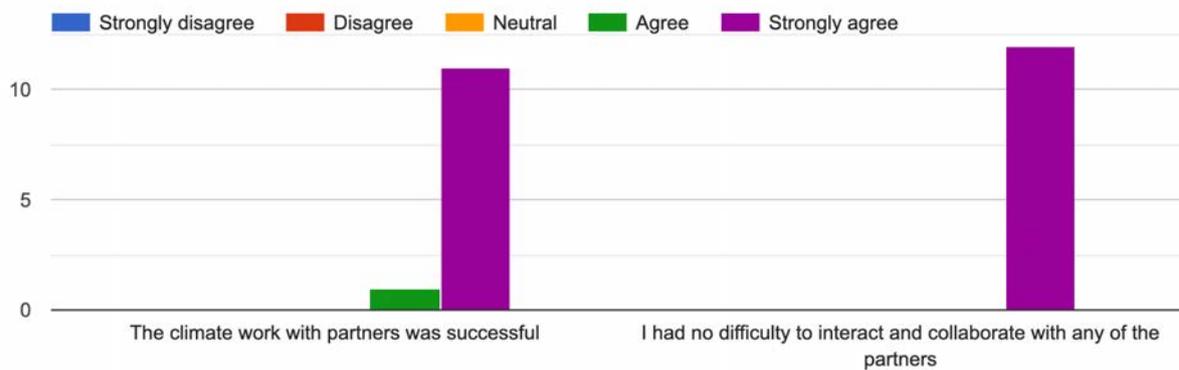
### 1.3. Effective and on-going communication among partners



#### *Atmosphere between partners during the meetings*

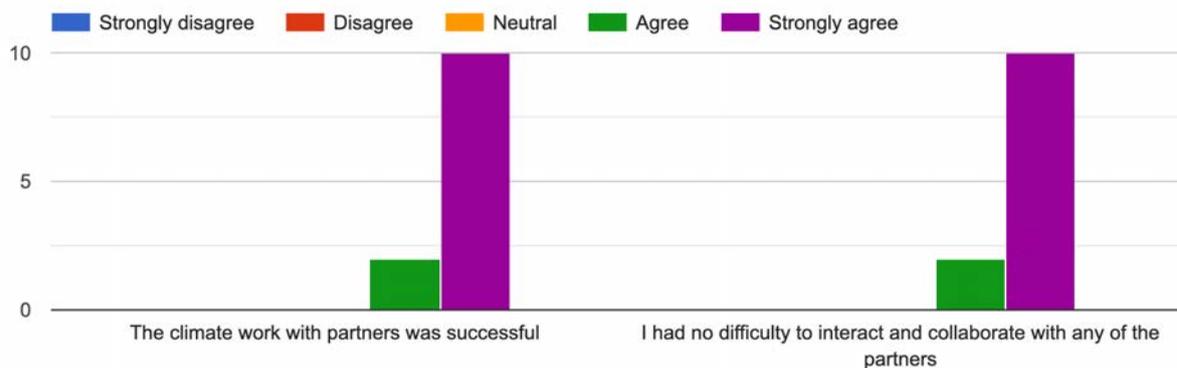
#### **Bragança (Portugal), 15-16 February 2019 (12 responses)**

Please select the answer that best reflects your opinion. After these questions, you can also add some comments or feedback



## Karlsruhe (Germany), 30 September - 2 October 2019 (12 responses)

Please select the answer that best reflects your opinion. After these questions, you can also add some comments or feedback



### 2.3 Quality of the Project implementation

This part of the report focuses on the quality of the activities developed throughout the project duration. The indicators evaluated are the structure of the project, the implementation of the workplan, the quality of project working materials/products, the innovation approach, the quality of the promotion of the European Dimension.

The tables below show the total responses collected from 2 periodical monitoring questionnaires.

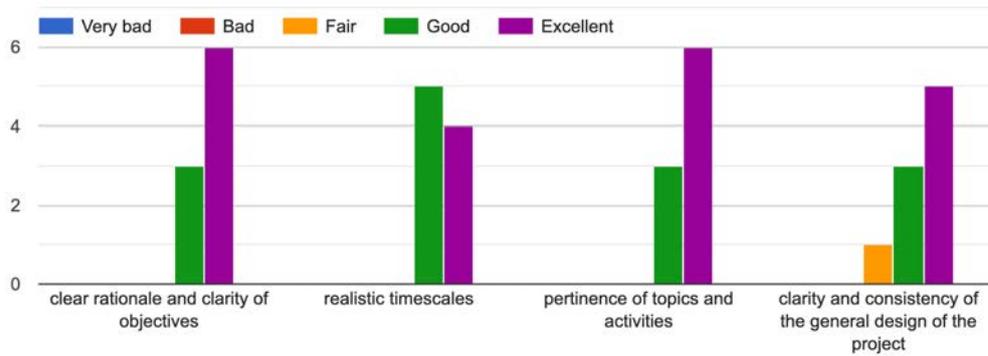
#### Interim Monitoring surveys

Tool: Internal monitoring questionnaire

**Period October 2018 - September 2019 (Tot. 9 responses)**

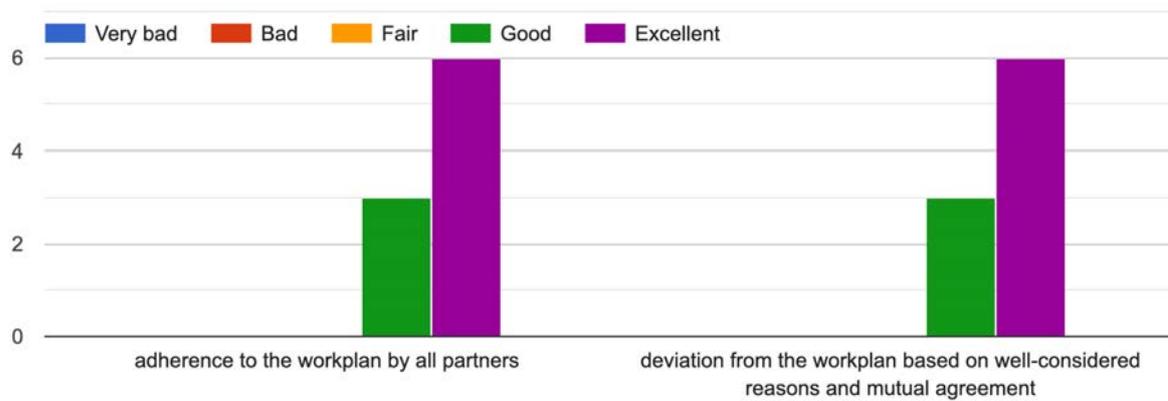
*Structure of the project*

3.1. Structure of the project



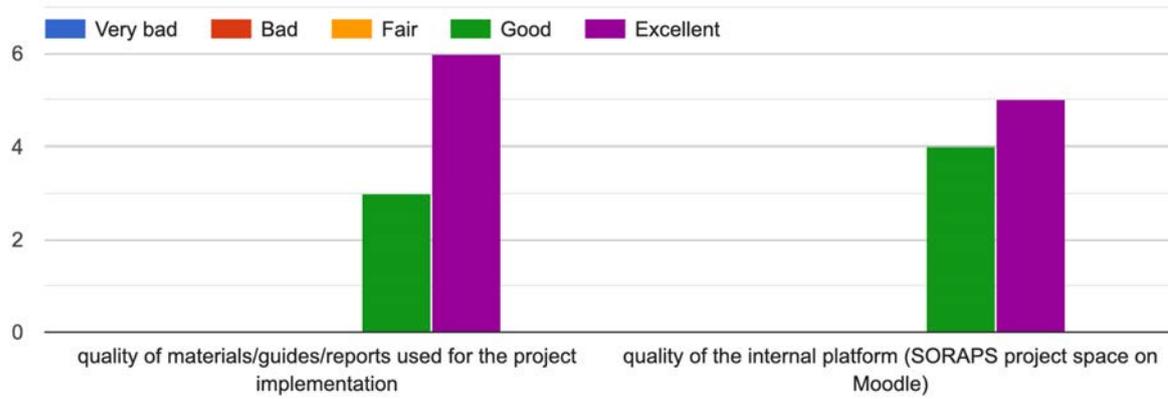
*Implementation of the work plan*

2.3. Implementation of the workplan



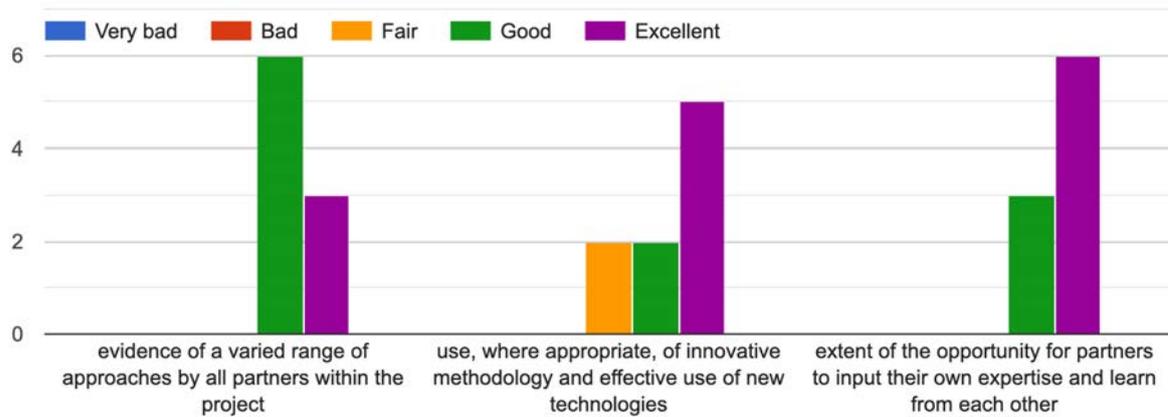
*Quality of project working materials/products*

**3.2. Quality of project working materials/products**



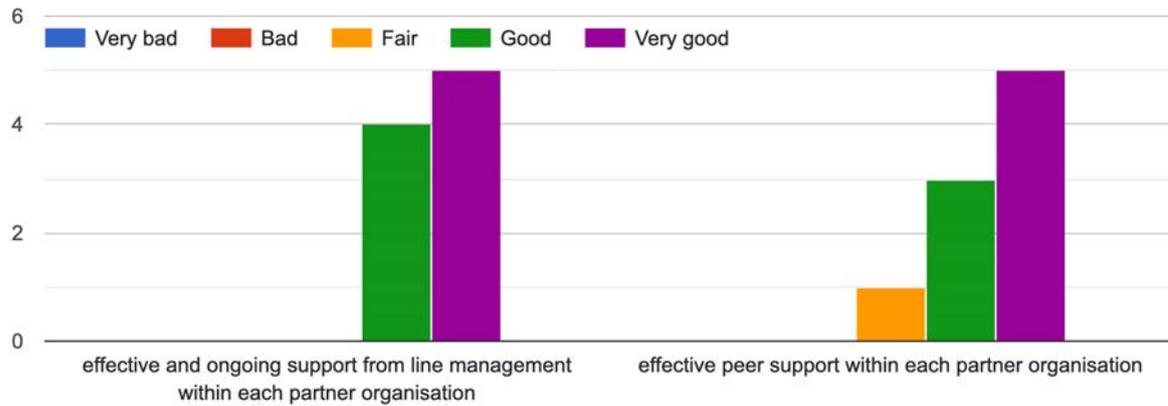
*Innovation and variety of the approach*

**3.3. Innovation and variety of approach**



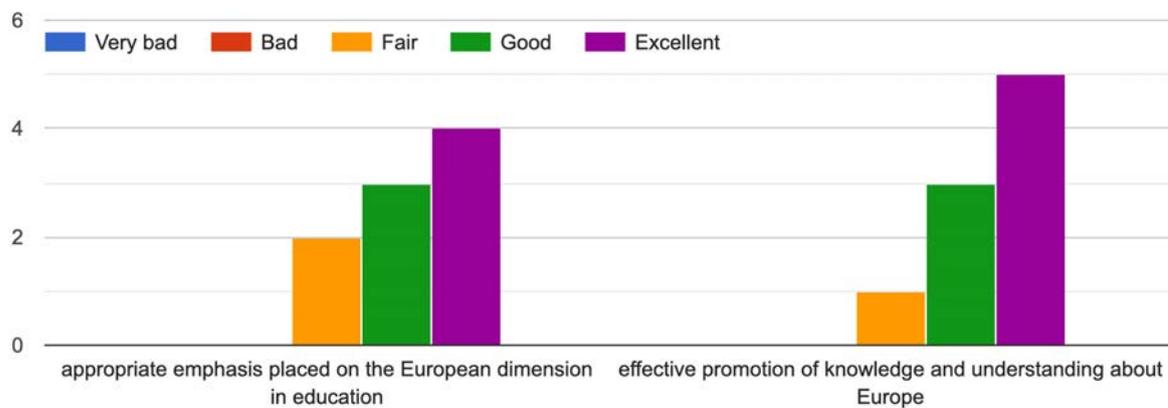
*Support within each partner organization*

4.1. Support within each partner organisation



*Quality of the promotion of the European Dimension*

3.5. Quality of the promotion of the European Dimension



## 3 KEY PERFORMANCE INDICATORS

### 3.1 Project Management Indicators

| Performance Indicator   | Themes/issues addressed in the evaluation  |
|---|--|
| Quality of project management arrangements  | <ul style="list-style-type: none"> <li>– The commitment and involvement of the partners is very strong and constant along the project.</li> </ul>  |
| Effective management and leadership qualities demonstrated by project co-ordinator      | <ul style="list-style-type: none"> <li>– The partners appreciate the work and professionalism of the coordinator.</li> </ul>   |
| Effectiveness of the process of monitoring and evaluation                               | <ul style="list-style-type: none"> <li>– The on-going monitoring and evaluation methodology has been well accepted by the partnership, with a very good participation in the questionnaire responses.</li> </ul> |
| Quality of the dissemination process  | <ul style="list-style-type: none"> <li>– The arrangements for disseminating project information worked well considering that the project products are in progress so far.</li> </ul>                             |
| Implementation of the workplan  | <ul style="list-style-type: none"> <li>– The implementation of the workplan was positively evaluated by the partners.</li> </ul>   |
| Integration of project activities into the department's/ institution's development plan | <ul style="list-style-type: none"> <li>– The partnership received a very good support from their own institution and a good reception of the project results is expected.</li> </ul>                             |

### 3.2 Consortium's Engagement Indicators

| Performance Indicator  | Themes/issues addressed in the evaluation  |
|--|--|
| <b>Strong commitment to the project by each partner</b>                              | <ul style="list-style-type: none"> <li>– The commitment of the partners is really high and the sense of ownership of the project among the partners and the pilot schools is crucial in order to implement the two piloting phases.</li> </ul> |
| <b>Agreement amongst partners</b>  | <ul style="list-style-type: none"> <li>– There is good agreement among partners.</li> </ul>  |
| <b>Effective and on-going communication amongst partners and with other agencies</b> | <ul style="list-style-type: none"> <li>– The communication processes are fluent so far.</li> </ul>   |
| <b>Trust amongst partners</b>  | <ul style="list-style-type: none"> <li>– The partners are developing mutual trust throughout the project.</li> </ul>   |
| <b>Development of positive attitudes</b>   | <ul style="list-style-type: none"> <li>– The climate during the face to face meeting was always evaluated extremely positively.</li> </ul>   |

### 3.3 Consortium's Work Indicators

| Performance Indicator                              | Themes/issues addressed in the evaluation  |
|--|--|
| Structure of the project                           | <ul style="list-style-type: none"> <li>Objectives, topics and activities are evaluated as really good in the internal monitoring surveys.</li> </ul>   |
| Quality of the project                             | <ul style="list-style-type: none"> <li>Good dissemination strategy has been planned, but the results in terms of impact will be evaluate during the 2<sup>nd</sup> year activities.</li> </ul> |
| Quality of project materials/products              | <ul style="list-style-type: none"> <li>The first results from the IOs development are positive.</li> </ul>   |
| Quality of the promotion of the European Dimension | <ul style="list-style-type: none"> <li>The project is placing appropriate emphasis on the European dimension and it is expected to reach a good promotion of the project results.</li> </ul>   |
| Innovation and variety of approach                 | <ul style="list-style-type: none"> <li>The perception of innovation in general is felt as good.</li> </ul>   |

## 4 OVERALL EVALUATION

### Interim Monitoring surveys

Tool: Internal monitoring questionnaire

**Period October 2018 - September 2019 (Tot. 9 responses)**

#### 3.4. Overall quality of the project



Having analysed the monitoring and evaluation results, we can conclude that the partners are really satisfied with the project implementation.

There are no aspects or situations at risk of calling for specific actions, considering that in all the items which have been monitored, quality of the consortium and activities received the highest rates.

For the second year, good quality products are expected and hopefully a wide impact will be reached.

## 5 ACKNOWLEDGEMENTS

This document has been developed within ROBOSTEAM Erasmus+ KA201 Project with reference 2018-1-ES01-KA201-050939.

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