**- Periodic Technical Report -**

1. **Explanation of the work carried out by the beneficiaries and Overview of the progress**

* *Explain the work carried out during the reporting period in line with the Annex 1 to the Grant Agreement.*
* *Include an overview of the project results towards the objective of the action in line with the structure of the Annex 1 to the Grant Agreement including summary of deliverables and milestones, and a summary of exploitable results and an explanation about how they can/will be exploited.*

In this initial period of the project (Month 1 to 6), the PERFORM consortium has developed relevant work to gather key knowledge and skills from different stakeholders (i.e., secondary school students and teachers, early career researchers) through focus groups and workshops in selected case studies in Paris (France), Barcelona (Spain) and Bristol and Manchester (UK). This has served as a basis to develop pilot science education methods based on stand-up comedy in the Spanish case study and to further do this with clown and science busking in France and the UK, as well as to initiate the design of trainings for early career researchers and teachers to equip them with the tools to participate in the project and make the most of it (e.g., reflexivity, science communication, performance).

Before the activities, case study coordinators contacted potentially interested secondary schools from low and medium socio-economic contexts to participate in the project and finally recruited four of them in each case study to implement the focus groups and develop the performance-based science education and innovation activities (PERSEIAs). Case study coordinators explained school board members and teachers the project and the details of their participation, and obtained prior and informed consent from them and the students who were involved in the research process, including the design and implementation of the PERSEIAs.

Specifically, the consortium has identified key education and communication tools in performance-based activities addressing the human dimension of science, as well as relevant contents according to young people’s interests in STEM and the RRI values by implementing a set of six focus groups with a group of 15 to 30 students in the four selected schools in each case study. During focus groups students discussed about STEM careers and market opportunities, science related stereotypes, ethics in science, dialogue between science and society, gender inequality in STEM careers, and EU societal challenges. Based on these results, we have designed a pilot PERSEIA for the Spanish case study and initiated the corresponding design in France and the UK. These first pilot PERSEIAs will be tested with students in 10 to 16 schools in each case study in two rounds in order to allow for improving them with the results of an on-line survey conducted with participant students.

In parallel, we have developed a set of workshops aiming to identify relevant skills, knowledge and methodological approaches to foster secondary-school teachers’ and early career researchers’ competences to be engaged in performance-based activities motivating young people for STEM. In this sense, a five-day workshop among consortium members –including a session with early career researchers- was organised in Bristol, UK, April 4th-8th, in which partners shared their respective skills and knowledge on capacity building for science communication and education skills to improve the quality of the different training activities that will be developed within the project. The results of this meeting will contribute to the achievement of Milestone 1 in May 2016 (Month 7).

In this period, the consortium has also started the development of an innovative and participatory methodology for the impact assessment of the participatory educational process, including the PERSEIAs. To do that, we conducted a systematic literature review on transdisciplinary assessment frameworks in science education and 13 exploratory workshops in selected schools in Spain, France and UK. As a result, we have identified 32 evaluation criteria and 93 indicators of learning outcomes and process requirements related to cognitive and experiential learning aspects, transversal competences and RRI values. Such a battery of criteria and indicators will allow to qualitatively and quantitatively analyse in a systematic way the impact of PERFORM activities on students’ motivations and appeal for scientific careers.

The consortium has also initiated efforts regarding the dissemination and exploitation of the initial results, these being related to the design of the first pilot PERSEIAs based on stand-up comedy in the Spanish case study and the identification of the RRI and transversal competences indicators for science education assessment. A series of internal and external meetings have been conducted with UNESCO Education sector and with representatives of Member States at UNESCO Headquarters to collect best practices and literatures as far as setting up a medium- and long-term sustainability plan. Furthermore, we have elaborated the plan for communication, dissemination and exploitation of the project results (D.6.1 Month 4), designed the graphic identity of the project, and launched the website and social media tools to be used to convey the results and other messages to the targeted audiences identified in the communication plan (D.6.2 Month 6). The following on-line tools have been launched:

* PERFORM website ([www.performresearch.eu](http://www.performresearch.eu) or [www.perform-research.eu](http://www.perform-research.edu))
* Social media tools: Twitter account (*@performstem*), [Facebook page](https://www.facebook.com/performproject/?ref=ts&fref=ts) (*www.facebook.com/performproject/*), and Instagram account (*performstem*)
* YouTube channel: *Perform Research*, which includes a short video elaborated by UOC during the kick-off meeting: <https://www.youtube.com/watch?v=TsSDpbcR3-w>

Moreover, we have disseminated the project by participating in three international conferences in which other H2020 projects have been also involved: 1st HEIRRI project Conference, 18th March 2016, Barcelona, Spain; TEMI Final Congress 2016, April 15th-17th, 2016, Leiden, The Netherlands; PSCT (Public Communication in Science and Technology Network) Conference, April 26th-29th, 2016 Istanbul, Turkey. Besides HEIRRI, we have also participated in other activities directly organized by other H2020 projects or with their direct involvement, such as: SWAFS InfoDay, February 16th, 2016, Madrid, Spain, Welsh Government event to promote H2020 in Cardiff, March 17th, 2016, Cardiff, UK, and RRI tools workshop, March 31st, 2016, Barcelona, Spain.

Other than attending events to establish links with other European research science education projects, the consortium has submitted the PERFORM project to be included in the Scientix network webpage (April 2016).

Finally, and in terms of management, the consortium met for the project kick-off meeting in Barcelona, Spain, November 16th-18th, 2015, in which a General Assembly and the first Steering Committee meetings were also hold. A second Steering Committee meeting was organised during the knowledge sharing workshop in Bristol. We have also elaborated the PERFORM internal communication strategy (D.1.1 Month 4), the risk management plan (D1.2 Month 6) and the data management plan (D.1.4 Month 6) to ensure an effective coordination and management of both research and technical activities and overall progress of the project.

In sum, during the first reporting period of PERFORM, eight deliverables have been achieved (Table 1) and two exploitable results have been generated (Table 2):

**Table 1.** Deliverables achieved in this reporting period (M1-M6).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Del. no.** | **Deliverable name** | **WP no.** | **Lead beneficiary** | **Delivery date**  **(Month)** | **Status** | **Peer-reviewed by** |
| D1.1 | Internal communication strategy and intranet | WP1 | UOC | 4 | Approved 07/04/2016 | EUSEA, UAB |
| D1.2 | Risk management plan | WP1 | UOC | 6 | Submitted | UoB, TBVT |
| D1.4 | Data management plan | WP1 | UOC | 6 | Submitted | UAB, EUSEA |
| D6.1 | Plan for communication, dissemination and exploitation | WP6 | EUSEA | 4 | Approved 08/04/2016 | UNESCO, AJA, UOC |
| D6.2 | Website and social media launch | WP6 | EUSEA | 6 | Submitted | SMS, LAC UOC |
| D7.1 | POPD – Requirement No. 2 | WP7 | UOC | 6 | Submitted |  |
| D7.2 | H – Requirement No. 9 | WP7 | UOC | 1 | Approved 08/04/2016 |  |
| D7.3 | POPD – Requirement No. 4 | WP7 | UOC | 1 | Approved 08/04/2016 |  |

**Table 2.** Exploitable results generated in this reporting period (M1-M6).

|  |  |  |  |
| --- | --- | --- | --- |
| **Exploitable result** | **WP no.** | **Lead beneficiary** | **Means for exploitation** |
| Pilot PERSEIA based on stand-up comedy | WP2 | TBVT | Participation in science policy events (e.g., UNESCO World Science Day Nov 2016) and outreach events.  Publication at Scientix website. |
| RRI indicators for science education assessment | WP4 | UAB | Publication in top peer-reviewed journals on science education and communication.  Participation in scientific conferences.  Publication at Scientix website. |

* 1. **Objectives**

*List the specific objectives for the project as described in section 1.1 of the DoA and describe the work carried out during the reporting period towards the achievement of each listed objective. Provide clear and measurable details.*

**Objective 1. To explore new science education methods based on scenic arts that lead secondary school students to understand and to learn about STEM**

PERFORM has initiated an exploratory research process with four secondary schools in each case study (see Table 3) to gather information on students’ perceptions and attitudes towards STEM and to design suitable science education methods drawn on three different performance approaches: stand-up comedy in Barcelona (Spain), clown in Paris (France), and busking science in Bristol and Manchester (UK). Selected schools in each case study, and participant students, gave their free, prior and informed consent to participate in the project.

The consortium has contributed to this objective by designing and conducting a series of six focus groups with 15 to 30 students in each selected school to obtain their opinions and views on STEM subjects and RRI values. These focus groups promoted students’ discussion on specific contents to be included in the PERSEIAs: ethics in science, STEM careers, EU societal challenges, students’ role in science, gender stereotypes and dialogue between scientists and society. In doing that, case study coordinators gathered useful data to design new PERSEIAs (PERformance-based Science Education and Innovative Activities) that will be delivered to 10-16 schools in each case study.

**Table 3.** Participant schools in the first stage of the project.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Case study** | **Criteria of selection** | **School** | **Socio-economic background** | **Will participate in a second stage?** |
| Spain | Gross disposable household income per capita according to the Catalan Statistics Institute (IDESCAT) | IES Castellbisbal | Medium | Yes |
| IES Santa Eulàlia | Low | Yes |
| IES Consell de Cent | Low | Yes |
| Institut Europa | Low | No, will be changed to a school from a medium socio-economic background |
| France | Financial category according to the "Bulletin officiel de l'éducation nationale", 2016 | Collège les Toupets | Medium | Yes |
| Collège Zay | Low | Yes |
| Collège La Grange aux Belles | Low | Yes |
| Collège Marie Curie | Low | Yes |
| UK | Percentage of students allegable to free school meals where the average for the country is 15% | Albany Academy | Medium | No, will be changed to a school located in Bristol |
| Brimsham Green School | Medium | Yes |
| Fairfield Highschool | Low | Yes |
| Derby High | Low | No, will be changed to a school located in Bristol |

**Objective 2. To identify and challenge limitations faced by secondary school teachers and early career researchers in teaching and communicating STEM to young people**

As a first step, the consortium has organized of a Knowledge Sharing Workshop in Bristol in Month 4 (March 4th and 8th, 2016), in which all partners except EUSEA –as planned- participated to discuss and explore the limitations that secondary school teachers and early career researchers may face when teaching and communicating STEM. On the one hand, this workshop allowed the different members of the PERFORM consortium for sharing expertise on capacity building for strengthening science communication and education related skills, as well as RRI values. On the other hand, we had the opportunity to discuss the PERFORM project with five early career researchers in Bristol to have their views in the project and identify the kinds of training they would need as well as the best formats to deliver it. The consortium has also initiated conversations with teachers in the three case studies with the same aim.

Based on the workshop results, PERFORM has initiated the design of three training programmes for early career researchers –one for each case study- in order to involve them in a dialogue with young people through the creation of performance-based science education activities. More specifically, these trainings are addressed to strengthen early career researchers’ reflexivity about the scientific research practice, its values, its relationships with society, in relation with the RRI approach and European framework. Trainings also focus on strengthening the ability of early career researchers to share these aspects of their scientific research practice and experience with young people and teachers.

**Objective 3. To assess the impact of the participatory educational process in fostering secondary school students’ motivations and engagement in science and with RRI values**

PERFORM has identified a total of 32 evaluation criteria and 93 indicators for assessing the impact of the participatory educational process that the consortium will develop in each case study, including indicators assessing cognitive and experiential learning aspects, transversal competences and values related to the RRI approach. This was achieved through a systematic literature review on 67 academic articles on transdisciplinary assessment frameworks leading to the identification of expert-based indicators, complemented by a set of 13 exploratory workshops. Exploratory workshops were conducted with 10 to 20 students in selected schools from each case study and led to the identification of 15 participatory indicators, being seven of them different from the expert-based indicators. Identified indicators will allow us to qualitatively and quantitatively measure the impact of the participatory process developed by PERFORM in raising students’ learning and engagement with STEM.

Work has been also carried out at this point by designing an on-line pre and post-survey for testing the effectiveness of the initial pilot PERSEIAs delivered at the schools in changing students’ perceptions and attitudes towards science and technology.

**Objective 4. To implement a sound communication strategy for the dissemination and exploitation of the research results for widespread policy adoption and implementation across Europe**

The consortium has elaborated the project communication strategy for dissemination and exploitation of the results, through collecting feedback and comments by all the project partners during the project kick-off meeting (Barcelona, November 16th-18th, 2015) and identifying target groups for the communication and dissemination actions. This strategy includes the identification of on-line and off-line communication tools, such as the project website ([www.performresearch.eu](http://www.performresearch.eu)), addressing different communities and target audiences (e.g., teachers, researchers, policy makers) that have been launched by the end of April 2016.

In parallel, we have identified a relevant list of conferences that will serve as effective platforms to promote PERFORM and its sustainability beyond 2018, such as the World Bank (May 2016) and the ESOF conference in Manchester (July 2016) in which UNESCO will participate.

* 1. **Explanation of the work carried per WP**
     1. **Work Package 1 ‘Project coordination and management’** [Months 1-36]

As WP1 leader, **UOC** has coordinated both research and financial activities of the project according to the rules stated in the Grant Agreement (GA), providing support to other partners when needed. UOC has also led the design and effective achievement of three deliverables, being the most important management results achieved in this first reporting period: internal communication strategy (D.1.1 Month 4), risk management plan (D1.2 Month 6) and data management plan (D.1.4 Month 6), which have been peer-reviewed by PERFORM partners. Finally, the consortium has initiated the establishment of links with other European research science education projects, including Scientix, RRI-Tools and HEIRRI among others.

**Task 1.1 Project management**

UOC and the local partner UAB organised and implemented the consortium kick-off meeting in November 16th-18th 2015 in Barcelona (Spain). Twenty members of the 10 partnering organisations participated in this three-day meeting, in which the different WPs, related tasks and case studies were presented and discussed, financial and technical questions were raised and solved, potential financial deviations were identified, and a common schedule for project activities was collectively agreed.

A General Assembly with the participation of all PERFORM partners was celebrated during the kick-off meeting (Nov 17th, 2015), as well as the first meeting of the Steering Committee (Nov 18th, 2015) only attended by WP leaders (UOC, TBVT, UoB, UAB, UNESCO and EUSEA). A second meeting of the Steering Committee was organised by UOC during the knowledge sharing workshop in Bristol (April 4th, 2016).

During this period, the PERFORM project manager at UOC has provided advice to other partners for several issues mainly related to management issues (e.g. related to budget and p-m reallocations, to extension of deadline requirements, to technical and financial reporting issues), to dissemination issues (collecting inputs periodically from partners) and to ethical issues (e.g. procedure to collect consent forms in schools). Also, the coordination team (PI and project manager) have been in contact with the EC project officer mainly by e-mail and have also had a face to face meeting in Brussels (February 4th, 2016).

There has been regular email correspondence, on-line meetings and phone conversations between the coordination team and other partners (i.e., case study coordinators and WP leaders) to discuss any areas of the project that we are unclear on.

**Task 1.2 Facilitation of the consortium communication**

UOC designed and is facilitating an internal communication strategy with the support of EUSEA, who has been key in the definition of some functions to be implemented on the website through a simple intranet-like structure. In doing this, a constant dialogue was carried on between the coordination team at UOC and EUSEA to refine the internal communication strategy and the design of the intranet.

The internal communication strategy aims to design and maintain a sound and effective internal communication strategy among PERFORM partners. It first describes the goals and expected outcomes of the project internal communication strategy and it then outlines the four main communication tools to be used by PERFORM partners to enhance the exchange of information, discussion and reflection on the project progress. These communication tools consist of i) an intranet for supporting document exchange and project management, ii) e-communication means for boosting day-to-day interactions, iii) project meetings for ensuring face-to-face interactions, organisation and implementation of project activities, and iv) an internal e-Newsletter for updating information about the project execution. Specifically, the intranet (<http://www.perform-research.eu/intranet/>) is located at the PERFORM webpage as a private section only available for consortium members use and for internal communication purposes, as well as project repository, which has been developed by EUSEA.

This deliverable (D1.1) was peer-reviewed by EUSEA and UAB and comments were included by UOC in the final version.

**Task 1.3 Scientific coordination and project monitoring**

UOC led the design of a risk management plan (D1.2) and a data management plan (D1.4), two deliverables that were peer-reviewed before their submission by UoB and TBVT, and UAB and EUSEA respectively.

The risk management plan (D1.2) was elaborated with the support of UAB through a participatory process conducted within the PERFORM consortium to identify the risks that might occur during the project implementation with the aim of ensuring a smooth coordination of the project for a high quality of results and implementation. WP leaders (TBVT, UoB, UAB, UNESCO and EUSEA) were consulted during such process. The resulting risk management plan provides a detailed analysis of the nature and dimension of these risks, including their likelihood, the envisaged measures to mitigate them as well as the designed contingency plan in case of their occurrence.

In turn, the data management plan (D1.4) provides an overview of how the research data will be organized, and how it will be handled during the duration of the PERFORM project and after the project is completed. The data management plan was elaborated following the ethical requirements described in WP7 deliverables.

UOC also coordinated the selection and the invitation of five experts to become members of the Advisory Board of the project. WP leaders identified potential candidates during the first and second Steering Committees, and the coordination team elaborated the following final list according to the required expertise for the project and the budget available:

* Roger Strand, chairman EC expert group on RRI indicators (University of Bergen, Norway)
* Daniel Erice, entrepreneur in STEM and performing arts (Alioth Arte y Ciencia, Spain)
* Emily Dawson, expert on science learning and engagement, science education research (University College London, UK)
* Àgueda Gras, science programme manager and expert at European level (European Schoolnet, Belgium), and
* Frank Burnet, science communication expert and artist (University of West England, UK)

They were invited by the UOC, UAB, UoB and EUSEA respectively. Once they accepted, Advisory Board members were asked to sign a non-disclosure agreement.

**Task 1.4 Links to STEM education research projects and networks at European level**

UOC has conducted few actions concerning this task, being these the request for the inclusion of the PERFORM at the Scientix network (April 2016) and the participation in conferences, workshops and meetings organised by the National Contact Points and other FP7 and H2020 SWAFS consortium. These are:

* SWAFS InfoDay in February 16th 2016 in Madrid (Spain), invited speech by PERFORM project PI (UOC).
* Welsh Government event to promote H2020 in Cardiff (March 17th, 2016) in which SMS shared social media communications about the project.
* 1rst HEIRRI conference in March 18th 2016 in Barcelona (Spain), with an oral communication by UOC and UAB.
* RRI tools workshop March 31st 2016 in Barcelona (Spain), by UOC and UAB.
  + 1. **Work Package 2 ‘Innovative science education methods based on performing arts’** [Months 1-36]

As WP2 leader, **TBVT** has coordinated the consortium contribution to Task 2.1 by working on the identification and inclusion of key education and communication tools in performance-based activities that address the human dimension of science, young people’s interests in STEM and the RRI values. This has been done through (1) the design and implementation of six focus groups in selected schools, (2) the design of a PERSEIA, and (3) the PERSEIA delivery. TBVT has coordinated the design of the focus groups, data collection and results analysis, as well as the design of the PERSEIAs, with the support of LAC and SMS. Thus, the most important achievements of this period has been the implementation of a total of 31 focus groups in selected schools in the three case studies and the design of a pilot PERSEIA for the Spanish case study.

To do that, case study coordinators (TBVT, LAC and SMS) contacted potentially interested secondary schools from low and medium socio-economic contexts to participate in the project and finally recruited four of them in each case study. Case study coordinators also explained school board members and teachers the project and the details of their participation, and obtained prior and informed consent from them and the students who will be involved in the research process, including the design and implementation of the PERSEIAs.

**Task 2.1 Inclusion of the “human dimension” of science and the values embedded in RRI in performance-based activities**

Case study coordinators (TBVT, LAC and SMS) actively participated in the PERFORM project kick-off meeting (Barcelona, Nov 16th-18th, 2015) to further understand the three different performance-based approaches to be used and coordinate the design of science education methods based on such performances in each case study. They also shared knowledge between case study coordinators and other partners such as EUSEA who gave examples of events using scenic arts to introduce STEM contents and suggested strengthening the connection with the science events community to better include innovative science communication methods based on performing arts.

Based on this, TBVT led the design of six focus groups in collaboration with the other case study coordinators (LAC, SMS) to obtain information about students’ concerns, needs and expectations in STEM education, as well as their interests on relevant scientific topics related to current EU societal challenges. UAB and UOC provided feedback to the focus groups by focusing on the coherence of the design and data collection methods and the integration of RRI aspects and societal challenges. Specifically, these focus groups were about the following topics:

* STEM careers and market, aiming to understand young people’s perceptions and views on studying a STEM career and their future professional opportunities.
* Science related stereotypes, aiming to understand which the stereotypes that young people associate with scientists are.
* Ethics in science, aiming to explore students’ views on ethical issues related to science, technology and innovation.
* Dialogue between science and society, aiming to understand how students currently interact with science and scientists and how students would like to interact with science and scientists.
* Gender inequality in STEM careers, aiming to explore students’ feelings and beliefs related to gender stereotypes and STEM jobs and why do they think this is so.
* EU societal challenges, aiming to examine students’ perceptions and attitudes towards the societal challenges highlighted by the EU, and to explore others of their concern.

Since February to May 2016, a series of six focus groups have been (or will be) implemented with 15-30 students in each selected secondary school in each case study by TBVT, LAC and SMS. UAB attended two focus groups in Spain and provided TBVT recommendations to improve the discussions. UoB has been attending the focus groups taking place in the area of Bristol in the UK and having post discussions about them with SMS and teachers.

Data from collective discussions generated during the focus groups were (and will be) collected in an Excel database, and will be analysed by TBVT through a qualitative content analysis. Preliminary results from the Spanish case study were presented to and discussed by the consortium in the knowledge sharing workshop in Bristol. UoW, UAB and UOC proposed adjustments in data collection and gave recommendations to improve data analysis. During the knowledge sharing workshop, and as an initial point for the design of the PERSEIAs, TBVT, SMS and LAC discussed commonalities and differences that PERSEIAs from the three case studies have, and how to include the EU societal challenges and RRI topics (i.e. focus groups results).

As a result, TBVT led the design of the PERSEIA in the Spanish case study by structuring it around three monologues show, including a final set of open questions by participant students and a collective “selfie” to be uploaded in PERFORM Instagram. This PERSEIA included topics, reflexive moments and references to the EU societal challenges and RRI values that were identified as interesting for students in the focus groups. The corresponding PERSEIAs based on the debates and thoughts of the youngsters collected during the focus groups for case studies in France and UK will be designed by LAC and SMS, respectively, in June 2016 for up to 16 schools.

A first PERSEIA delivery will happen with 7 schools in Spain (including the 4 participating in the project) at the end of May 2016, and with 4 schools both in France and UK in July 2016. These first pilot PERSEIAs will be improved with the results of an on-line survey that has been designed by UoW with the support of TBVT, UAB and UOC. This survey was not originally included in Annex I of the Grant Agreement (GA), but included during the kick-off meeting because of their relevance for ensuring the validity of our final findings. UoW has prepared the survey for distribution among participant students using technology to enable automated data collection and initial analysis. TBVT, SMS and LAC will address practical challenges and make adjustments as needed to ensure successful collection of impact data for pilot PERSEIAs. Based on survey results, PERSEIAs will be improved and implemented in a second round from September 2016 to November 2016 in each case study.

**Task 2.2 Participatory process with young people, teachers and early career researchers**

No activities have been developed in this period. This task will initiate in Month 12, as planned in the GA.

**Task 2.3 Pilot PERSEIA scaled up into informal context: implementation in science museums**

No activities have been developed in this period. This task will initiate in Month 30, as planned in the GA.

* + 1. **Work Package 3 ‘Building science education and communication capacity for teachers and early career researchers’** [Months: 1-36]

**UoB** (WP3 leader) has taken the lead in organising and developing a set of activities aiming to identify key skills, knowledge and methodological approaches to foster secondary-school teachers’ and early career researchers’ competences to be engaged in performance-based activities to motivate students for research. Moreover, UoB has also initiated a sharing process amongst partners and external stakeholders for the development of training and guidelines for researchers and teachers. The most important achievement in this period has been the organisation of a five-day workshop with most consortium members in Bristol, UK, April 4th-8th, 2016, in which partners shared their respective skills and knowledge on capacity building for science communication and education skills to improve the quality of the different training activities that will be developed within the project. The results of this meeting will contribute to the achievement of Milestone 1 in May 2016 (Month 7).

**Task 3.1 Development of knowledge sharing workshop on performance-based activities and RRI values**

UoB organised the knowledge sharing workshop in Bristol, April 4th-8th, 2016, with the support of UOC and UAB who provided inputs for the workshop design. UoB put together the workshop based on the needs the partners expressed they had and also on the skills we could share as a consortium, including expertise and skills which would be beneficial for PERFORM. In doing this, UoB led discussions and debates about topics from participation to reflexivity in which AJA, LAC, SMS, TBVT, UNESCO, UoW, UAB and UOC actively participated.

Specifically, UoB organised a two-hour session on participation and engagement. In turn, AJA designed a three-day sessions for internal sharing of knowledge and ideas on reflexivity. This provided a common understanding of the issues related to reflexivity as well as RRI, improved the capacities of all partners to communicate appropriately on the project as well as opened perspectives for performers to design PERSEIAs that addressed issues related to RRI and reflexivity with their public. In turn, UAB and UOC designed and facilitated a two-hours working session on RRI to foster an in-depth discussion among partners so as to facilitate a common understanding of RRI within the project. As a result, UAB and UOC are generating an implementation protocol for including RRI process requirements and values through all the stages of the project as part of Task 4.4. In another session, TBVT, SMS and LAC presented initial results from the focus groups conducted in Spain in Task 2.1 and got feedback from partners. TBVT, SMS and LAC also shared the ideas for the development of their future PERSEIAs and scheduled their activities in the schools for the next months with the other partners. UoB, AJA and UAB provided resources for all partners to support continuous reflexivity for the next project activities.

During the workshop UoB also organised discussions with early career researchers who will be involved in the PERSEIAs. The discussions with the teachers are taking place independently at schools.

A summary of the workshop has been produced, and at the moment UoB is working on the transcriptions of the workshop that we will be able to share with the consortium and will be useful for the development of trainings (Tasks 3.2 and 3.3). The workshop has thus helped us start to identify the potential training that both researchers and teachers may need in order to participate in PERSEIAs. UoB is at the moment having more in depth discussions in Bristol and trying to also get to know about local particularities through the partners in France and Spain.

**Task 3.2 Development of training and guidelines for researchers**

After the discussions with early career researchers and based on the topics discussed during the knowledge sharing workshop, UoB together with AJA, LAC, UAB and UOC are working on a first version of the topics to be tackled in the trainings for researchers. It has been agreed that each of the trainings will be different and have different formats in order to adapt them to the educational setting in each country. In Bristol, UoB has been working with their training specialists and with the Bristol Doctoral College to find ways in which to make the training attractive to early career researchers, bearing in mind the amount of training that is available out there.

Moreover, in France, AJA and LAC have outlined a first version of the training program and established contact with graduate schools in Paris to include the first training session for early career researchers within their catalogue of trainings proposed to their PhD students in 2016-17.

In Spain, UAB and UOC are initiating conversations with UAB’s Institute of Education (ICE) to explore local training possibilities and constraints, with the support of UoB and AJA.

**Task 3.3 Development of training and guidelines for teachers**

UoB is at the stage of having conversations with teachers before starting this task that will initiate in Month 12, as planned in the GA.

* + 1. **Work Package 4 ‘Impact assessment of the participatory educational process in students' engagement in and learning about science’** [Months: 1-36]

As WP4 leader, **UAB** has coordinated the design and implementation of activities contributing to the first task of this WP, consisting on the development of an innovative and participatory methodology for the impact assessment of the participatory educational process, including the PERSEIAs effectiveness, in motivating young people for STEM. To do that, we conducted a systematic literature review on transdisciplinary assessment frameworks applied in science education and 13 exploratory workshops in selected schools in Spain, France and UK, in order to identify indicators for assessing cognitive and experiential learning aspects, as well as transversal competences and RRI values. The most significant results in this first period are the identification and operationalization of 32 evaluation criteria and 95 indicators based on this literature review and the exploratory workshops, to qualitatively and quantitatively analyse in a systematic way the impact of PERFORM activities on students’ motivations and appeal for scientific careers.

**Task 4.1 Development of an innovative and participatory impact assessment research methodology**

UAB and UOC have worked together in a systematic literature review of academic articles on science education assessment frameworks, including educational psychology, science communication, sociology, performance-based approaches, among others, to identify expert-based indicators and criteria to be used in PERFORM to assess students’ changes in science learning and engagement as a result of their participation in the development of performance-based science education methods. UoW contributed with some feedback to the methodological design, proposing adjustments and additional requirements.

UAB and UOC conducted the review using Scopus as search engine and identifying a final relevant sample of 67 scientific papers and chapter books, which were included in the review. The sample was analysed so as to identify and characterize assessment frameworks used in the context of science learning and engagement with young people, with an emphasis on RRI values and process requirements, transversal competences and experiential aspects. As a result, a set of 86 assessment indicators emerged from our literature review. These relate to the RRI values, transversal competences and experiential and cognitive aspects of science learning and engagement identified in the reviewed science education experiences.

Between March and May 2016, UAB and UOC, supported by UoW, LAC, TBVT and SMS, designed and conducted an exploratory workshop with 10 to 20 students in four selected schools in Spain, four in France and three in the UK, in order to early engage and include participating schools and students in the development of the assessment methodology. Through these workshops, we collected students’ perceptions on science education activities in selected schools so as to identify participatory indicators to be included in the methodology and thus complement the expert-based indicators identified in the literature review. A total of 15 indicators corresponding to 11 criteria emerged from these exploratory workshops conducted with students in our three case studies.

These findings are included in a research report (D4.1) to be delivered in Month 7, which also contains all the insights of the literature review and the exploratory workshops in terms of key methodological aspects of PERFORM project, describes the battery of assessment criteria and indicators, and reflects upon the main implications for the methodological development of PERFORM’s assessment. At the moment of writing, this report is under peer-review by TBVT and UoW.

**Task 4.2 Evaluation of the social media-based impacts of the performance events on young people’s engagement in science**

This task, led by UoW, will start in Month 8 as planned in the GA.

**Task 4.3 Evaluation of the acquisition of transversal competences by students during the educational process**

This task, led by UAB, will start in Month 10 as planned in the GA.

**Task 4.4 Assessment of the Responsible Research and Innovation values**

This task, led by UAB, will start in Month 10 as planned in the GA.

* + 1. **Work Package 5 ‘Sustainability and Policy Impact’** [Months: 1-36]

**UNESCO**, as WP leader, has organised a series of internal and external meetings by UNESCO at UNESCO Headquarters with their colleagues from UNESCO Education sector and with representatives of Member States also at UNESCO to collect best practices and literatures as far as setting up a medium and long term sustainability plan. None important achievement has been reached in this first period, but we are working for the achievement of M2 in Month 7.

**Task 5.1 Generation of a sustainability plan**

In order to identify key resources and models to generate the PERFORM sustainability plan, UNESCO has organised a series of internal and external meetings to collect best practices and literatures as far as setting up a medium and long term sustainability plan. Work was carried out at this point of the project with UNESCO’s Education sector and also with some representatives of Member States at UNESCO. As a result, a set of height key issues that should be taken into account in the design of PERFORM’s sustainability plan are being identified.

UNESCO is elaborating a list of the relevant resources on the use of science education using performance around the world along with example of guidance for the construction of protocols for what should be the sustainability plan of PERFORM.

**Task 5.2 Maximize the policy impact of PERFORM**

UNESCO is working on the first policy paper draft based on the above mentioned landscape analysis and meetings.

Moreover, UNESCO will organise a two-day meeting with all partners to present and promote PERFORM to the UNESCO’s Permanent Delegations and the general public at the occasion of the World Science Day for Peace and Development (9th-10th Nov 2016). Established by UNESCO in 2001, the World Science Day for Peace and Development (WSDPD) is celebrated worldwide on 10 November each year. The day will offer an opportunity to mobilize various partners to highlight the important role of science in society and to engage the wider public in debates on emerging scientific issues and the relevance of science in their daily lives.

* + 1. **Work Package 6 'Dissemination and Outreach'** [Months: 1-36]

As WP leader EUSEA has collected the needed information from consortium members in order to be able to design the communication strategy of the project. More specifically, during the reported period EUSEA actions have focused on: developing a general communication, dissemination and project results exploitation plan, designing the graphic identity of the project, and launching the main on-line tools to be used to implement the plan.

The most important results achieved in this first reporting period are the elaboration of the communication strategy of the project, and the launching of the website of the project and the on-line social media tools. In terms of deliverables, EUSEA has led two documents: the plan for communication, dissemination and exploitation (D.6.1 Month 4) and the website and social media launch (D.6.2 Month 6), which were reviewed by AJA, UNESCO and UOC, and SMS, LAC and UOC respectively.

**Task 6.1 Communication Plan and Tools**

The PERFORM communication strategy has been developed based on the decennial experience of the EUSEA network in reaching general public through events. Combined with this experience a constant dialogue with the PERFORM coordination team at UOC and the rest of the consortium has taken place aiming at collecting partners’ expectations, needs and thoughts about the project itself and about the potential target groups to be reached. To nurture this dialogue, face-to-face meetings together with on-line meetings were organized during the reported period to finalize the communication plan. Thanks to this information it was also possible to decide the launch of on-line tools that were not originally included in Annex I of the GA, namely the Instagram account, a more suitable on-line tool for secondary-school students compared to other social media (see next paragraphs).

Within the communication plan for dissemination and exploitation of results three main contents have been addressed during the reported period. First, target groups for the PERFORM communication actions have been identified, corresponding to the actors actively involved in each phase of the project: science teachers from secondary schools, researchers, performers, event organizers in the educational and cultural field, and policy-makers and other stakeholders. Also, key messages to reach each target group have been identified in the communication plan which also facilitates the definition of effective tools to convey them.

Second, off-line and on-line communication tools that will be used to convey the messages to the targeted audiences have been identified in the communication plan. As for their implementation, EUSEA has focused on developing the graphic identity of the project (i.e. the project logo and its different versions for different formats) and on implementing the on-line tools, such as as the web presence and the use of social media tools that will be a vital part of the dissemination of the project:

* + the PERFORM website ([www.performresearch.eu](http://www.performresearch.eu) or [www.perform-research.eu](http://www.perform-research.edu))
  + the social media tools: Twitter account (*@performstem*), [Facebook page](https://www.facebook.com/performproject/?ref=ts&fref=ts) (*www.facebook.com/performproject/*), and Instagram account (*performstem*)
  + a YouTube channel (Perform Research)

The website has a public and a private section (intranet, described in Task 1.2). The public web is organized in 7 sections (home, about, toolkits, research, events, gallery, contacts), which will be fed and updated during the life-period of the project. In order to update the web content, EUSEA is in constant communication with the coordination team, as well as with consortium partners, whose inputs are requested.

As for social media tools, the main goal is to constantly feed them with live report from the activities that are running within the project and since these activities are carried on by different partners the multiplicity of the voices involved in the social media life are also giving to the project communication a lively appearance on the web. In order to do this, each consortium partner has identified a social media manager who will be actively using all the communication channels open, in coordination with EUSEA and UOC. In doing this, a campaign to increase its visibility through these channels has begun based on such cooperative approach to the management of the social media, focusing mainly on using Twitter and Facebook.

As set in the communication plan, both quantitative and qualitative impact of the use of on-line and off-line tools will be assessed periodically. Criteria to be used to adapt and adjust the communication strategy during the project development have also been identified.

Third, the communication management structure has been established during this first period, in which the management is led by EUSEA as WP6 leader, with a constant dialogue and support by the coordination team at UOC. Indeed, UOC contributes to the management of PERFORM Facebook and Twitter accounts.

**Task 6.2 'Building the community relations and outreach'**

During the first period of the consortium partners have attended several conferences and events where the PERFORM project has been presented:

* 1st HEIRRI project Conference: "Teaching Responsible Research and Innovation", Barcelona (Spain), March 18th, 2016

Attended by UAB and UOC, contributing with an oral presentation on *Performing RRI in science education: how to measure the impact?* The conference was also used to make networks with both national and international research projects related to RRI, education and assessment.

* TEMI Final Congress 2016: 'Teaching the TEMI Way' Congress, Leiden 15th-16th April 2016 (Netherlands)

Attended by LAC contributing with an oral communication on *Worst scenarios: an enquiry into science education projects nightmares - "It could be worse. It could be raining."*

* PSCT (Public Communication in Science and Technology Network) Conference, Istanbul 26th-29th April 2016 (Turkey)

Attended by TBVT and LAC contributing with oral communications *BigVan-scientists on the road. Participatory science education approaches based on performing arts* (TBVT) and *Spectacular science: a reflection about limits and opportunities* (LAC).

Furthermore, the project has been presented at four H2020-related events, as described in Task 1.4.

Other than attending scientific events, within outreach activities a short video was elaborated by UOC during the kick-off meeting explaining the project: <https://www.youtube.com/watch?v=TsSDpbcR3-w>.

As mentioned above, UOC has submitted PERFORM project to be included in the Scientix network webpage (April 2016), which website is currently under changes and thus PERFORM application is still pending. The Junior Communications Officer of Scientix was contacted in this regard and at the time of this reporting the situation has not changed.

* + 1. **Work Package 7 'Ethics requirements'** [Months: 1-36]

**UOC** has led the coordination of a work package on Ethics (WP7) that was not originally included in Annex I of the GA, but added in Month 2. Three additional deliverables concerning ethical issues have been successfully achieved within the reported period:

* D7.1 “POPD Requirement 2” in April 2016 (Month 6), which meets Ethics requirement No. 2 of Table 1.4 in the Grant Agreement Annex 1 corresponding to providing detailed information on the procedures that will be implemented for data collection, storage, protection, retention and destruction. It also confirms that these processes comply with national and EU legislation. The content of this deliverable is complemented by the Data Management Plan of the PERFORM project (Deliverable 1.4).
* D7.2 “H Requirement 9” in January 2015 (Month 3), which meets Ethics requirement No. 9 of Table 1.4 in the Grant Agreement Annex 1 corresponding to providing details on the procedures and criteria that will be used to identify and recruit research participants before the commencement of the relevant part of the research (February 2016). A detailed explanation on the procedures and criteria to select participant schools, students, teachers and early career researchers is provided. The UAB contributes to this deliverable as the institution that will centralise data collection and storage during the lifetime of the research project, which is also responsible for impact assessment (WP4 leader). Students returned parental consent forms and schools and teachers returned informed consent forms prior to this stage.
* D7.3 “POPD Requirement 4” in January 2015 (Month 3), which meets Ethics requirement No. 4 of Table 1.4 in the Grant Agreement Annex 1 corresponding to submission of the copies of opinion or confirmation by the competent Institutional Data Protection Officer and/or authorization, or notification by the National Data Protection Authority (whichever applies according to the Data Protection Directive and the national law) before the commencement of the relevant part of the research (February 2016). It contains the confirmation by the Catalan Data Protection Agency, which is the correspondent competent authority of both the institution coordinating the research project (UOC) and the institution that will centralize data collection and storage during the lifetime of PERFORM (UAB).
  1. **Impact**

*Include in this section whether the information on section 2.1 of the DoA (how your project will contribute to the expected impacts) is still relevant or needs to be updated. Include further details in the latter case.*

The expected impacts related to the work of the different WPs are still relevant and need no update at this stage of the project. The different activities carried out by the different WPs so far are contributing to the update of innovative methods in science education based on performing arts, and to the establishment of a dialogue with relevant European stakeholders in the fields of education and research.

Given the fact that the social media tools were just launched and that the project activities with different target groups will start at the end of May 2016 the first relevant impact on the communication will be visible by the end of year 2016 through quantitative data referred to on-line and off-line tools, which will allow us to identify further needs if any.

1. **Update of the plan for exploitation and dissemination of result (if applicable)**

*Include in this section whether the plan for exploitation and dissemination of results as described in the DoA needs to be updated and give details.*

EUSEA has elaborated D6.1 “Plan for communication, dissemination and exploitation”, which updates the plan for exploitation and dissemination of results described in the DoA as follows:

* Identification of 6 target groups and the corresponding key messages, i.e. teachers, professional science communicators in the field of events and museums, researchers, students and performers).
* Identification of partner networks relevant for PERFORM dissemination purposes, such as museums and science events networks at European and international levels, and researchers’ networks involved in events such the European Researchers’ Night.
* Detailed description of off-line tools, such as a leaflet, events’ press releases, interviews on specialized newspapers and publications in research reviews to be published during the project.
* Detailed description of on-line tools, such as the website, a Facebook, Twitter and Instagram profile, and a YouTube channel.
* Organisation of management tasks among consortium members to effectively implement the communication plan: The strategy developed to disseminate the progress and outcomes of the project was designed in order to give all project partners the possibility to publish news and information relevant to the project in the social media. One person per project partner was nominated administrator of the Facebook page and Twitter and Instagram accounts. This strategy aims at describing lively and in real time the project actions where different partners are involved. EUSEA coordinates these actions and has the role of inviting and reminding the different partners to contribute through the different channels on a periodic base. Moreover the EUSEA team involved in the PERFORM communication management will collect information, news and material to update the website on a monthly base.

1. **Update of the data management plan (if applicable)**

*Include in this section whether the data management plan as described in the DoA needs to be updated and give details.*

UOC has elaborated D1.4 “Data Management Plan“ (submitted by April 2016), which includes a first version of the PERFORM project data management plan (DMP), which includes the description of the management life cycle for all research data generated by the project.

This data management plan provides an overview of how the research data will be organized, and how it will be handled during the duration of the PERFORM project and after the project is completed. More specifically, it describes what data will be collected and processed (following specific methodology), whether and how these data will be shared and/or made open, and how they will be curated and preserved according to the corresponding ethical requirements. The data management plan is a living document since internal or external factors may cause changes in data management during the development of the project. Thus the data management plan is expected to evolve with the project and will be updated accordingly, if needed.

1. **Follow-up of recommendations and comments from previous review(s) (if applicable)**

*Include in this section the list of recommendations and comments from previous reviews and give information on how they have been followed up.*

Not applicable

1. **Deviations from Annex 1 (if applicable)**

*Explain the reasons for deviations from the DoA, the consequences and the proposed corrective actions.*

**5.1 Tasks**

*Include explanations for tasks not fully implemented, critical objectives not fully achieved and/or not being on schedule. Explain also the impact on other tasks on the available resources and the planning.*

In this first reporting period there have been three minor deviations from the DoA related to Tasks 2.1 and 3.1, without any consequence in the fully achievement of the tasks and critical objectives.

First, in Spain and France, we implemented focus groups (Task 2.1) in three and one schools from low and medium socio-economic background, respectively, instead of two and two as stated in the DoA. In the Spanish case, this deviation was due to a misguided interpretation in the assignment of the socio-economic level of one of the participant schools located in the city of Hospitalet de Llobregat (Barcelona), which Gross Disposable Household Income (GDHI) per capita corresponds to a medium socio-economic classification. When the case study coordinators visited the school, they realized that this previous classification did not correspond to the reality of the school nor of the neighbourhood. In the French case, we selected two schools of each socio-economic level to start the project but in late March (2016) one of the two medium schools abandoned the project. Since the case study coordinator had to find a new school in a very short time in order to begin the focus groups before the end of the academic year (Task 2.1), they contacted and invited a school that already told them they were ready to participate, even being a low socio-economic level school.

This deviation does not affect the results and objectives of this task because we were able to gather data from one school from low socio-economic background in each setting, thus covering potential differences in students’ perceptions and attitudes towards science in each socio-economic background. Two new schools with the appropriate socio-economic level will be selected in September 2016 to participate in Task 2.2.

Second, and instead of having the teachers in the UK in the knowledge sharing workshop (Task 3.1) together with the consortium UoB had to organise separate meetings with them since an intensive five-day meeting such as this one did not allow it for teachers to participate. UoB has taken advantage from this situation by organising non-previously planned meetings with teachers and researchers from France and Spain to ask them for feedback, with the support of LAC, TBVT, SMS and UAB.

Third, we requested for a two-month extension of "Milestone 1: Selection of the specific training skills to be developed (Month 5 to Month 7)" led by UoB, which was approved by the EC project officer on March 8th 2106. The reasons for the need of this extension were that in order for UoB to be able to do the selection of the training skills they needed to have the knowledge sharing workshop before, and it fact was scheduled at the beginning of April 2016 (Month 6), just after the deadline for the milestone, making it not possible to produce an informed milestone without the workshop happening.

**5.2 Use of resources**

*Include explanations on deviations of the use of resources between actual and planned use of resources in Annex 1, especially related to person-months per work package.*

We informed the EC project officer about the following minor deviations in the planned use of AJA resources on February and March 2016:

* AJA will need to travel to Bristol and Barcelona (2017) to actively contribute to the development of Tasks 3.2 and 3.3. by providing expertise on reflexivity in order to design both teachers and researchers trainings, as identified during the PERFORM kick-off meeting in Barcelona (November 2015). Since AJA travels to Bristol and Barcelona for 2 people during 1 week were not included in the initial budget, University of Bristol (UK) and UOC (Spain) propose to cover AJA travels (1200€ and 1100€, respectively).
* AJA needs put more effort in the preparation of the training contents to be delivered in WP3 so will implement a slight change in person/month allocation among WP3, 5 and 6. AJA will reallocate to WP3 0,25 pm initially allocated to WP6 and 0,25 pm initially allocated to WP5. AJA argues that both WP6 and WP5 work will not be affected by such small change because AJA's dissemination and policy making capacity is rather limited, in particular due to their small networking capacities.

**5.2.1 Unforeseen subcontracting (if applicable)**

Not applicable.

**5.2.2 Unforeseen use of in kind contribution from third party against payment or free of charges (if applicable)**

Not applicable.