D1.2
Risk Management Plan

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PERFORM
Participatory Engagement with Scientific and Technological Research through Performance

SUMMARY

This deliverable corresponds to Task 1.3 'Scientific coordination and project monitoring', which aims at ensuring a smooth coordination of the project for a high quality of results and implementation. It first describes the participatory process conducted within the PERFORM consortium to identify the risks that might occur during the project implementation. Such risks are related to three main activities: i) research, ii) management, and iii) dissemination and exploitation of results. A detailed analysis of the nature and dimension of these risks is outlined, including the work packages (WP) which they might affect, their likelihood, the envisaged measures to mitigate them as well as the designed contingency plan in case of their occurrence. The Coordination Team at the Universitat Oberta de Catalunya (UOC) will ensure that the risk mitigation and contingency measures provided in this plan are met if needed.

1. INTRODUCTION

The ultimate goal of the PERFORM Risk Management Plan (RMP) is to increase the probability of the project success by identifying potential problematic and challenging tasks early and envisaging mitigation and contingency measures to avoid or reduce the probability of negative occurrence.

A 'risk' is a probable situation that has the potential to cause an unwanted change in the project objectives and planned activities. PERFORM aims to investigate the effects of the use of innovative science education methods based on performing arts in fostering young people motivations and engagement with STEM (Science, Technology, Engineering, Mathematics) through a three-year research project. It involves ten partners, including universities, science communication associations and international organisations, who will implement different types of activities to conduct research on the development and assessment of innovative science education methods based on performing arts (PERSEIAs) with students in twelve secondary schools in Spain, France and the United Kingdom (UK). Teachers and early career researchers will also be trained to co-produce such artistic performances while improving their communication skills to boost the interest of secondary-school students in science. The consortium will also conduct communication actions to disseminate the research results to science education networks (such as Scientix and European Schoolnet) through social media (Facebook and Twitter), the project's webpage (http://performresearch.eu/) and participation in different events.

Due to the participatory nature of the activities carried on within the project, which will require the voluntary involvement and commitment of selected schools, students, teachers and early career researchers, there are relevant risks to address to ensure the successful execution of the project. These risks encompass external factors such as the engagement of the schools and participants in the PERSEIAs, which may vary among and within countries due to the different national education systems and schools' idiosyncrasies. Risks may also be caused by internal vulnerabilities expected in any collaborative research project such as those related to the management and coordination of the consortium and the dissemination and exploitation of the project results.

The RMP of PERFORM thus identifies and addresses risks related to i) research, ii) management, and iii) dissemination and exploitation of results, including information on

the WPs that could be affected by these risks, their probability of occurrence and the planned mitigation and contingency actions.

2. IDENTIFICATION OF RISKS

The Coordination Team has conducted a thorough analysis of the risks connected with the execution of the project activities that might affect the achievement of the project objectives through a participatory process involving PERFORM partners. Rather than elaborating the RMP on its own, the Coordination Team asked partners to identify those potential deviations and risks connected to their corresponding tasks, activities, deliverables and milestones within the project (Month 4). Such participatory process allowed foreseeing additional risks different from those anticipated in the proposal, as well as refine some previously suggested mitigation measures, covering all the WPs and addressing countries' heterogeneity.

The potential risks perceived by the consortium related to research activities, project management, and dissemination and exploitation of results are described in the following sections. We also specify the likelihood of their occurrence as high, medium and low, as well as additional information such as their relevance to particular countries when appropriate.

2.1 Research-related risks

PERFORM uses a case study approach in twelve secondary schools in Spain, France, and the UK to explore the effectiveness of PERSEIAs in stimulating students' learning and engagement in STEM through a participative educational process that embeds the Responsible Research and Innovation approach (RRI). Students will be at the centre of the design of the performances. Qualitative and quantitative methods are being implemented to assess the impact of such educational process on girls' and boys' cognitive and behavioural changes towards science and related careers, focusing on students' acquisition of the transversal competences required to undertake scientific careers, as well as on RRI values. In this process, limitations faced by secondary school teachers and early career researchers in teaching and communicating STEM to students will be identified and addressed.

Identified risks related to such research respond to two main causes. First, participants' low interest in exploring innovative methodologies based on performing arts to

foster scientific learning and teaching, and science communication skills. Second, participants' low motivation to contribute to the impact assessment of such methodologies and the participatory educational process developed. Tables 1 and 2 describe each risk as well as the mitigation measure and contingency plan to ensure that the research will not be intrusive, that participants will be respected in their privacy, that ethical issues will be taken into account, and that a comfortable atmosphere of collaboration between PERFORM partners and participants will be created.

Table 1. Foreseen research-related risks resulting of participants' low interest in PERSEIAs.

Risk description	WP	Likelihood	Risk mitigation actions	Contingency plan
Low engagement of students in participatory workshops Selected students may not be motivated to actively participate in workshops for developing their own PERSEIAs.	2, 4	Medium	Case study coordinators clearly explain the project and invite a wide range of students in each school to participate. Workshops' schedule is arranged taking into account the students' academic needs. PERFORM also motivates students by offering visits to labs and meetings with experts.	If a student or students are not interested in participating in PERFORM activities, the case study coordinator and the corresponding teacher will consider the possibility to select other required candidates.
Low teachers' engagement in performance science education approaches Teachers may not be interested in PERSEIAs since they are not part of the curriculum.	2, 3	Medium	Case study coordinators keep smooth and regular communication with teachers to discuss any potential barrier and tackle it as soon as it is identified. UNESCO offers official recognition for participating teachers in the three countries. In France, teachers are motivated by their involvement in trainings and dissemination events organised by the project. In Spain, participant teachers in the trainings have official recognition by the corresponding regional Department of Education. In the UK, if needed, teachers are provided with	If a teacher decides to abandon the project, another teacher will be invited.

			an economic compensation by the case study coordinator to cover their time in the project.	
Lack of schools' support to students and teachers participating in PERFORM The school ceases to support the participation of teachers and students in PERFORM, for instance due to a change in the school's board during project.	2, 3, 4	Low	Case study coordinators promote schools' engagement through organising promotional meetings with schools in order to explain the benefits of the project. They also keep smooth communication with school principals to discuss any potential barrier and tackle it as soon as it is identified. In Spain, schools' participation is encouraged by providing them with educational material. UNESCO offers official recognition for participating schools in the three countries.	If the school decides to cease its participation, another school will be invited and engaged by using existing contacts of both case study coordinators and UNESCO network of Associated Schools (ASPnet)
Low school commitment with the project The schools initially willing to participate in PERFORM may not be further committed due to the participation of the school in other projects.	2, 3	Low	It is prioritized to include schools with previous working-relation with the partners and which have shown a high level of commitment. Case study coordinators keep good communication with the schools to identify potential barriers and tackle them from the beginning or at least to know with as much time as possible if they will not participate.	If local partners perceive that a school's commitment with the project is not enough to accomplish the objectives of the project, the school will be encouraged to increase their commitment. If the situation does not change, another school will be invited and engaged by using existing contacts of both case study coordinators and UNESCO network of Associated Schools (ASPnet)
Low engagement of early career researchers in performance science education approaches and	2, 3	Low	Researchers involved in the project receive expenses payment for participating in workshops, if needed. In the three countries, initial meetings between	If a researcher decides to abandon the project, the case study coordinator will invite another researcher working in the same topic and who has been already

trainings Researchers may not be interested in participating in the project due to lack of time.			PERFORM members and researchers are conducted to explain the project activities in which their involvement is required, being flexible enough to deal with their academic commitments. In the UK, WP3 leader keeps good communication with involved researchers and their supervisors so that they are encouraged to participate and their participation is valued. Also, conversations between PERFORM members and UK interested researchers take place at the Knowledge Sharing Workshop (Month 6) to identify barriers to participation, to get a realistic view of their capacity in terms of time and to adapt trainings format consequently.	involved in science dissemination activities with PERFORM partners to participate in the project. If a researcher has more work than s/he can afford, another researcher will be invited to participate.
Low teachers' interest in the RRI approach Teachers may not be interested in exploring the concept of RRI.	2, 3	Low	In the first meetings with teachers, case study coordinators introduce them to the RRI approach and related values (e.g., reflexivity, critical and creative thinking, gender equality, etc.). In the UK, teachers are also engaged in a discussion on how RRI contributes to improve the participatory educational process to be developed, so potential motivational barriers be identified.	If a teacher decides to abandon the project because s/he is not interested in RRI, another teacher will be invited.

Low teachers' interest in the trainings Teachers may not be interested in participating in the trainings.	3	Low	As part of the preparation of the trainings, meetings between case study coordinators and teachers take place to identify the skills they feel they would benefit from or need to acquire in order to participate in the project. Trainings are specific to the participating schools to make them the most useful to teachers and to adapt to their time availability.	Teachers should participate in the training to be part of the project. In cases where this is not possible, other ways of sharing useful resources with them will be contemplated (e.g., on-line).

Table 2. Foreseen research-related risks resulting of participants' low contribution to impact assessment.

Risk description	WP	Likelihood	Risk mitigation actions	Contingency plan
Low participation of students in social media (Facebook / Twitter / Instagram) Students may not participate in Facebook's or other social media scientific debates after PERSEIAs implementation to maintain an on-line dialogue with researchers.	2, 4	Medium	Case study coordinators and involved early career researchers encourage students' participation in social media (i.e., Twitter) by asking direct questions related to the activities. Case study coordinators have expertise in promoting dialogue and scientific debate using Twitter. Social media is thus incorporated as part of the development of PERSEIAs.	If students do not participate in Twitter, University of Warwick will conduct qualitative interviews for assessment purposes by using a video conference and telephone calls in order to minimize cost.
Low students' interest in participating in the impact assessment Students may not be interested in participating in focus groups (giving their opinions and discussing) to evaluate the educational process.	4	Low	Participants sign an informed consent to participate in the research, which explains that collected data will be anonymised. Prior to developing PERSEIAs, case study coordinators explain students the importance of knowing their opinions to improve the educational process and encourage their participation in the identification of assessment goals and criteria through an exploratory workshop on participatory indicators.	If students of a school do not participate in focus groups, the assessment will focus on pre and post-tests, participatory observations conducted during PERSEIAs development, and interviews with participating teachers for triangulation.

2.2 Management-related risks

Risks related to the overall management of the project, corresponding mitigation actions, and contingency plan in case of their occurrence are explained in Table 3. Despite the fact that most PERFORM partners have previously participated in other successful European projects in which they acquired valuable experience in project management and financial tasks, several risks were identified and thoroughly examined during the project design by the Coordination Team based on their previous experience in European and international collaborative research projects.

The Coordination Team is in charge of supervising the project execution, reminding deadlines to partners, and contacting the Project Officer (PO) in case of major changes in the project execution. Anticipated management risks include those connected to financial deviations, collaboration between partners and on-time, quality project execution. In order to mitigate these risks, day-to-day communication among partners is encouraged by the Coordination Team to assure that all activities are implemented on time and with a high quality level.

Moreover, two management bodies have been created to enhance a smooth management of the project through providing communication spaces to partners to express and discuss their concerns, exchange information about the project development and become informed about the overall project execution. These are i) the Steering Committee (SC), and ii) the General Assembly (GenA). The SC is formed by a representative of each WP leader and meets every six months to supervise the working schedule of each WP and coordinate the different WPs. The GenA is composed of a representative of each partner and meets every 18 months to provide the space for research coordination among WPs and among partners, and to discuss major changes in the working plan.

PERFORM uses an internal peer-reviewing system to improve the quality of deliverables. Also, the project will be evaluated by an external and independent Advisory Board (AB) at the mid-term, which is also expected to make recommendations for improvement. The AB will be an interdisciplinary panel composed of an expert on science engagement and education research, a representative of entrepreneurs in STEM and performing arts fields, a member of decision making and science education agencies at European level, an expert on RRI values, and a member of civil society organizations related to science communication.

Table 3. Management-related risks.

Risk description	WP	Likelihood	Risk mitigation actions	Contingency plan
Financial deviations Small financial deviations from initially planned budgets may be requested by partners during the project, which do not imply a change in the overall budget amount.	1-6	Medium	The project proposal was thoroughly thought to provide appropriate budget to each task and partner to achieve the project plan. Partners send interim technical and financial reports every six months to the Coordination Team for supervising the appropriate development of the project. The Coordination Team keeps smooth and regular communication with partners to discuss any potential financial barrier and tackle it as soon as it is identified.	If a partner needs to change the allocation of financial resources, the Coordinator Team will discuss the situation and request the change to the PO.
Deadlines are not respected Partners do not respect deadlines of their corresponding deliverables and/or milestones.	1-6	Low	The Coordination Team keeps track of deadlines and sends reminders to partners through regular communication by email and phone calls.	If a partner does not meet a deadline, the Coordination Team will inform the PO in advance to explain the reasons for the delay and to ask for an extension. The Coordination Team will send a reminder to the partner and wait up to two weeks. If the partner does not react, the research coordinator will convene the GenA in a video conference, where the case will be discussed and decided upon. Sanctions may range from giving a last deadline to financial shortcuts or withdrawal of

				project responsibilities.
Low quality of deliverables Deliverables may not achieve the expected quality.	1-6	Low	The quality of deliverables is ensured by an internal peer-reviewed system. Every partner should send its deliverables to other three members of the consortium three weeks before the submission deadline to the PO. Peer-reviewers have one week to send their feedback to the partner in charge of the deliverable for corrections. The final version of the deliverable is approved by the project coordinator before its submission. An Advisory Board evaluates the project in Month 24 and provides feedback for the improvement of the subsequent deliverables during its execution.	If a deliverable does not have the expected quality for a European research project, the Coordination Team will not submit it and ask the partner to improve its content and/or presentation. In case of delay, the Coordination Team will inform the PO in advance to explain the reasons for the delay.
Low collaboration among partners Partners may not collaborate within and across WP as much as expected.	1-6	Low	A variety of communication tools are provided by the project to facilitate collaboration among partners (see Deliverable 1.1 Internal Communication Strategy and Intranet). Partners are regularly encouraged to use them, making sure that any new person joining the project is updated and induced on how to use them. The SC meets every six months to ensure the coordination and the flow of communication among WP.	If there is not enough coordination and collaboration among WP leaders, the Coordination Team will organise an extra SC meeting in a video conference to discuss the situation and prompt collaboration. If a lack of collaboration is identified among other partners, extra meetings, online and/or face to face, will be encouraged and organised, if needed, by the Coordination Team.

Conflicts within the consortium Conflicts between partners may arise during the project execution.	1-6	Low	Partners are aware that the Coordination Team is available at any time for any complaint or dissatisfaction with the working plan in order to find solutions that can be discussed in extraordinary SC meetings by using video conference. Partners can also express and discuss their concerns to find appropriate solutions in GenA meetings.	If no resolution is achieved the GenA will be involved in order to mediate and resolve the situation between conflicting parties. As the last resource and if the conflict provokes negative outcomes or changes in the project execution, the Coordinator will explain the problem and its causes to the PO, and find a solution according to the European funding principles.

2.3 Risks related to the dissemination and exploitation of results

Most partners of the PERFORM consortium have participated in previous EU proposals and projects focused on dissemination and outreach, targeting young European citizens. Many of them are science communicators, dissemination and networking specialists with many years of experience in their specific fields of activity. This experience is crucial to implement a sound communication strategy for the dissemination and exploitation of research results for widespread policy adoption and implementation across Europe (see Deliverable 6.1 Plan for communication, dissemination and exploitation).

On one hand, the project aims to widely disseminate all the material (e.g. PERSEIAs toolkits) and research results produced by PERFORM to foster a multiplying effect of initiatives connected to STEM education through performing arts, and advance research in this field. On the other hand, PERFORM aims to translate its innovative methodology and research results into specific policy recommendations to strengthen the institutional capacity of European Member States in encouraging scientific vocations among young people. This will be done by combining the expertise of PERFORM partners, specifically the European Science Events Association (EUSEA), who leads dissemination and outreach activities through educational networks (WP6), and UNESCO, who leads the sustainability and policy impact work package (WP5). Given both institutions expertise and reputation in Europe, it is very unlikely that PERFORM will not reach the expected visibility. Nonetheless, few risks related to a possible low interest in the materials and outputs resulting from PERFORM have been identified and addressed in Table 4.

Table 4. Risks connected to dissemination and exploitation of results.

Risk description	WP	Likelihood	Risk mitigation actions	Contingency plan
Low dissemination impact during the project Visitors' flow on the PERFORM website, Facebook and Twitter may be low.	6	Medium	Statistics on the use of the PERFORM webpage are reviewed periodically to monitor visitors' flow and increase the diffusion in time. The Coordination Team, EUSEA and UNESCO engage with science education networks (e.g. Scientix, Schoolnet) to maximise PERFORM dissemination impact. Other partners also maximise their channels.	If the consortium detects that the visitors' flow on the website is lower than expected, other dissemination actions will be emphasised (e.g., news in local media, engaging with other educational networks) to increase the project activities' visibility.
Low interest in PERFORM outputs by targeted audiences Teachers, early career researchers and/or policy makers in science education may not be interested in training toolkits and PERSEIAs methodologies.	5	Low	The generation of a sustainability plan (D5.1) by UNESCO ensures PERFORM impact in the medium and long term once the project is finished.	UNESCO will incorporate the PERFORM outputs as resources under its programmes and initiatives related to science education, from which they will be readily available to policy makers at UNESCO National Commissions.

4. CONCLUSIONS

This document describes general and specific risks related to three main activities of the PERFORM project: research, management and coordination within the consortium, and dissemination and exploitation of results.

No risk identified here has a high probability of occurrence and the likelihood of most risks is low, which facilitates their management. The corresponding mitigation actions as mechanisms to partially or completely prevent these risks, as well as contingency plans to solve them in case of their occurrence have been carefully elaborated and are detailed in the document.

This RMP will be thoroughly applied throughout the PERFORM project life cycle under the supervision of the Coordination Team.