Analysis framework definition

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[Dissemination] It is like throwing a stone into the water.
If you throw it nonchalantly into the water, it will only make a little splash.
But if you throw it in a more elaborate way, it will ricochet across the water,
and make a lot more waves.
(SALTO-YOUTH Inclusion Resource Centre, 2010)

A. The DESIRE Project. Where does it come from and what is its aim?

There are hundreds of national and international projects in science education around Europe each year. Most of them are intended and have the potential to change the existing teaching and learning practices. Lots of money is invested in great projects, but their impact is sometimes poor and the outcomes are often not used in the way they could be. Thus, educational policy-making continues placing emphasis on the dissemination of project results as a mechanism for quality improvement in education.

The European Commission is also supporting researchers and project coordinators in meeting these challenges with actions such as the ones funded under Key Activity 4 'Dissemination and Exploitation of Results'. This call within the Lifelong Learning Programme is a good example of the emphasis on promoting the creation of a framework for the effective exploitation of results of projects carried out at regional, national or European levels. This issue of disseminating educational research results and materials, as a medium through which we gain information and knowledge from others, with a view to promote reformed teaching, is neither trivial nor unproblematic. As shown in several studies in STEM education, the main challenge is to bridge the gap between research and practice. Advances in science education research have not produced comparable advances in practice, as the latest PISA and TIMSS studies show, among other studies. Thus, one of the growing concerns within the community of STEM educators consists of making research results available and useful in practice.

In the DESIRE project, we seek to examine this process in detail. The DESIRE project aims to analyse obstacles which prevent from and facilitators of a successful dissemination and exploitation of research results and research-based innovations in STEM education. With the purpose of maximising the impact of the dissemination of project results, the DESIRE project is also intended to search for a solid and effective

method / mechanism / model of dissemination and exploitation of results, which would mean:

- Preventing project results becoming 'sticky' (to the origin context) or rapidly lost. Spreading results / innovations.
- Making results understandable, applicable and practical for the target audience.

A.1. What is generally understood by dissemination of results?

The most common meaning of the term dissemination refers to the act of spreading something widely, promulgating extensively, broadcasting or dispersing. According to this general definition, dissemination basically consists of sending information to an audience, without necessary direct contact with the receiver, and without a direct response or clarification method. The same meaning of dissemination can be derived from its Latin roots, as the scattering of seeds. These seeds are metaphors for voice, words, opinions or knowledge to be scattered to an audience.

Many institutions emphasize the need for disseminating knowledge as a transfer from one place to another, especially within the field of business and management due to their great interest in a globalized world in which knowledge and products produced in one place should be used and reproduced somewhere else. In this sense, knowledge transfer (KT) is considered a process by means of which good ideas, research results, experiences, practices, skills, and objects are shared among universities, other research organisations, business, government, public sectors and the wider community to enable innovative new products, services and policies to be developed.

The meaning attributed to dissemination and to KT has changed a lot throughout the years. The conventional model of KT was linear. That is to say that information was seen to flow from the information provider, via the chosen media, to the information user. This model assumes that dissemination is a one-way, top-down flow of information from the 'experts' to a passive audience. From this olden perspective, knowledge was viewed as a commodity that could be transferred from a knowledge producer to a user (or consumer). This perspective viewed the brain as an empty vessel in which knowledge might be poured.

As defined by Saywell, Cotton, and Woodfield (1999), dissemination is the process of sharing information and knowledge, understood as the process by which information produced in a context is transferred to another context, where this information is going to be applied. According to the previous authors, the goal of dissemination is to

improve the accessibility of research findings to those we are trying to reach. This means, firstly, to ensure the physical availability of research materials or innovations to as large a proportion of the target audience as possible, and secondly, to make research findings and innovations comprehensible and usable to those who receive them.

The terms 'divulgation' or 'popularization' are also commonly used and generally considered the act of communicating knowledge to the general public. That is to say that divulgation of certain knowledge consists of making this knowledge public, popular and understandable. Nevertheless, the terms 'divulgation' and 'popularization' are usually uniquely related to science or technology as the specific knowledge to be popularized. Taking into account that the knowledge to which we refer is related to STEM education but not to STEM in itself, we will avoid using the term divulgation or popularization throughout this document. We will talk in terms of dissemination, instead.

In the DESIRE project, we are interested in analysing to which extent and how STEM education knowledge can be effectively disseminated from the origin context to the application context, in a way that the transferred information doesn't become misinterpreted or distorted. First of all, we need to establish a consensus about what we will mean by dissemination in order to proceed to analyse the factors that influence the impact of different dissemination strategies used in several existing projects.

A.2. What do we mean by dissemination in the DESIRE project?

Nowadays, no one considers that knowledge has neutral value, detached, and 'existing on its own'. KT is considered a complex process, the nature of which is interactive, and multi-directional. At present, KT is regarded as a process of reconstruction rather than a mere act of transmission and reception. From this constructivist perspective, the user acts upon information by relating it to existing knowledge, imposing meaning and organization on experience. This perspective implies the need for reviewing and rethinking strategies for disseminating knowledge related to STEM education.

According to Rogers (1983), the diffusion of innovations, envisaged as the process by which an innovation is communicated through certain channels over time among the members of a social system, undergoes different phases, such as spreading, understanding, adopting, and adapting. This implies that any dissemination strategy should guarantee not only the availability of results, but also the understanding and the

potential adoption by users, in case the results are relevant to them. From that point on, adapting results coming from one context in the application context is often considered necessary by users, although the adaptations should not compromise the integrity of the original results. That is to say the adaptations should not trespass the 'zone of drastic mutation' (Hall & Loucks, 1977). Otherwise, the knowledge being implemented may no longer be what was originally intended.

Harmsworth et al. (2001) also express in similar terms their idea of dissemination, referring to it from three different perspectives:

- **Dissemination for Awareness**: It can be assumed that, at the very least, one wishes people to be aware of the work of the project. This may be useful for those target audiences that do not require a detailed knowledge of the work but might find helpful to be aware of the activities and outcomes since they might be trying to solve similar problems.
- **Dissemination for Understanding**: There will be a number of groups / audiences that one will need to target directly with the dissemination strategy. This will be because it is considered that they can benefit from what the project has to offer. It will be important, therefore, that these groups / audiences have a deeper understanding of the project results.
- **Dissemination for Action**: 'Action' refers to a change of practice resulting from the adoption of products, materials or approaches offered by the project. These groups / audiences will be those people that are in a position to 'influence' and 'bring about change' within their organisations and that can benefit from the results of the project. These are the groups / audiences that will need to be equipped with appropriate resources, skills, and knowledge of the work in order to achieve real change.

Other authors (SALTO-YOUTH Inclusion Resource Centre, 2010) also distinguish between *dissemination* of project results, which would refer to making these results available to the outside world, and *exploitation* which would refer to adapting those project results to the target group / audience and ensuring that they will be effectively used.

Taking into account the different perspectives on dissemination, we will consider the most global definition, as **the process by which, using certain strategies, results of**

a project are made available, comprehensible and usable to be adopted by potential users. That is to say, we do not consider dissemination as merely referring to making results available but making them potentially exploitable. On the other hand, we consider exploitation of results as an action that can be uniquely carried out by users when adapting and implementing the disseminated results. Accordingly, we will consider that **a certain dissemination strategy has a positive impact in practice when it is exploited, that is to say, when it contributes to the awareness, understanding and utilization in the expected way of the disseminated results on the part the target audience.**

A.3. What are some possible barriers to effective dissemination?

Little attention has been paid to barriers that hinder a broad dissemination and exploitation of project results in everyday practice of science teaching in our schools and in policy. According to Anastopoulou (2010, p.9), 'researchers should keep in mind that their projects are problem-oriented and policy-relevant'. There may be barriers that prevent people involved in a project from disseminating their work and there may be barriers that prevent research results from reaching their potential audience and being understood and usable to be adopted by them. Here we highlight some of these barriers:

- **Institutions** may not give priority to wider dissemination. Research outputs may be stored or disseminated only in specific ambits (e.g. academic) rather than put to be used as training resources or discussion materials.
- Practical difficulties may act as disincentives to **project coordinators and other participants**. Time constraints may hinder dissemination activities, especially if competing against management tasks and/or production of academic research papers, which have greater perceived intellectual credibility.
- Regarding the gap between research and **policy**, researchers and policy-makers are driven by different incentives and reward structures, they have different timeframes for action, and different understandings of and standards for evidence. Moreover, policy-makers often do not have the time to pay attention to project results published in the style and media typically used by researchers (Anastopoulou, 2010; CIHI, 2004).
- For the **users of information**, there may be technical and infrastructural barriers to accessing information. Social and cultural barriers also have an effect and demand that disseminated findings are presented in appropriate

formats, of the right length, style or approach, content and language. There may be also other structural constraints that avoid information reaching the target audience and being understood by them, such as time and resource limits, evaluation requests, and extension of national programs.

All these critical aspects produce tensions between an ideal way to manage the work in classrooms and the activities that are actually developed in real contexts. Thus, we wonder how to effectively disseminate the existing body of ideas, hints, and highlights coming from research / projects in STEM education to make them available, understandable and usable for the actual educational policy and practices in schools.

A.4. What are some possible facilitators of dissemination?

According to NCDDR (2001), in order to be **effective**, dissemination strategies need the following characteristics:

- **User's needs-oriented**, incorporating the types and levels of knowledge needed into the forms and language preferred by the user.
- **Combined dissemination methods**, including written information, electronic media, and person-to-person contact.
- **Proactive and reactive dissemination channels**, including information that users have identified as important, and that users may not know to request but that they are likely to need.
- **Coherent with the "natural flow" of dissemination**, aiming to spreading results, making them comprehensible, and potentially adopted, and adapted.
- **Based on existing resources, relationships, and networks** to the maximum extent possible while building new resources as needed by users.
- **Driven by effective quality control mechanisms** to assure that information to be included is accurate, relevant, and representative.
- **Practical and usable**, including sufficient information so that the user can determine the basic principles underlying specific practices and the settings in which these practices may be used most productively.
- **Complete and generative**, establishing linkages to resources that may be needed to implement the information - usually referred to as technical assistance.

Several studies support the importance of teachers' active participation in design and research in STEM education, signalling school-university collaborative scenarios as the

most adequate settings for teachers' development and thus educational change (Couso, 2011). There are several good reasons to opt for strong collaboration between project members and their target audience as a way to maximise the chances of effecting real changes:

- The focus on mutual learning and values-sharing on the part of all the members of a community of practice. Teachers have knowledge, experiences, competences that differ from those of academics or science centre practitioners. They all can therefore bring different contributions to and expectations about the results of such collaboration.
- The intention to promote understanding of results and thus, to avoid critical transformations or misinterpretations (Pintó, 2005; Viennot, Chauvet, Colin, & Rebmann, 2005).
- The purpose of promoting teachers' sense of ownership of the results (Ogborn, 2002).

In this sense, this collaboration is considered a promising scenario that can bring a major degree of understanding of results for the purpose of change efforts. Changes are more likely to happen if those to affect the changes are involved in the dissemination process. It is expected that creating a dialogue among all the participants in the dissemination process, project results are more likely to be understood and potentially adopted in policy and practice. As mentioned by Harmsworth et al. (2001), experience from earlier projects has shown that the approach of leaving dissemination until the final year of the project does not work as it fails to allow time for actively engaging users and finding ways of generating a feeling of ownership amongst those people and groups to whom you wish to disseminate and make an impact.

A.5. What dissemination strategies do projects usually use to reach their target audience?

There is some debate about the relative advantages of different dissemination strategies or methods using technology, face-to-face or paper-linked formats. The traditional way of communicating academic research findings is through refereed journal articles. However, these are unlikely to reach and be understood and adopted by a broad-based or non-technical target audience. A general principle is that optimum dissemination is achieved through using a wide variety of strategies, from traditional and face-to-face communication methods, to the use of ICTs, in order to cover the

range of user's (e.g. of policy makers, practitioners and the research community) needs. Saywell et al. (1999) summarize the most common strategies of dissemination and their advantages and disadvantages as shown in Table 1:

Table 1. Dissemination strategies. Advantages and disadvantages

Strategies	Advantage/s	Disadvantage/s
Sharing project working documents	- Target research findings to particular groups	- Limited audience
Sharing research reports	- Single reference point for all aspects of the research	- Limited audience
Publishing in academic, refereed journal	- Wide impact on intellectual networks	- Limited audience
Publishing in professional journal	- Practitioner oriented audience	- Lacks academic rigour
Engaging in popularisation / mass media (e.g. TV, newspaper)	- Reaches wide audience - Bottom up influence	- Diluted core message
Using Internet, e-mail (e.g. portals, websites, videos, newsletters)	- Immediate, convenient - Wide interest in electronic media - Communication with networks (i.e. e-mail lists)	- Limited access in some contexts - Underdeveloped potential - Expense
Printing and distributing brief documents (e.g. flyers, brochures, leaflets, policy briefs)	- Reaches the target audience and summarizes the key ideas	- Limited audience - Expense
Organizing or participating in events (e.g. conference, workshop, seminar)	- Learning and networking of professionals	- Expense
Elaborating training manuals (e.g. teaching material)	- Applied knowledge	- Limited audience - Expense
(On-line) Social Networking (e.g. blogs entries, forum)	- Reaches members who share common interests - Interaction, discussion and review of findings	- Low active participation - Strong incentives needed for participation - Time consuming to manage
Selecting intermediaries (e.g. teacher trainers, experts on communication, cascade models)	- Research based on local norms	- Different agendas of intermediaries and project
Using participatory techniques (e.g. face-to-face communities of practice (CoPs))	- Practical guidance/support at community level for promoting, monitoring or sustaining development	- Time consuming

A.6. Summary

Table 2 summarizes the agents who intervene in a dissemination process and the ways they intervene.

Table 2. Dissemination agents, results, methods and audiences

Who disseminates?	What is disseminated?	How are the results disseminated?	To whom are the results disseminated?

Project members (e.g. coordinators, managers, researchers) Communication experts / teams Researchers Teacher trainers Policy-makers	Teaching, learning or assessment tools / materials / resources Theoretical perspectives Professional development / teacher education materials / approaches Guidelines or recommendations of good practices	Paper-based strategies (e.g. flyers, brochures, leaflets, policy briefs, written materials) Web-based strategies (e.g. digital materials, articles, on-line social networking, portals, websites, videos, newsletters) Face-to-face strategies (e.g. events, conference, workshop, seminar, communities of practice)	Project managers Policy-makers Teachers Science events' organizers Science centres' managers

B. Methodology

In order to analyse possible facilitators and obstacles for disseminating the results of specific projects, and consequently elaborate a model for a more effective dissemination, we should proceed to elaborate on the research methodology of the DESIRE project.

B.1. What do we need to take into account when analysing a dissemination strategy?

Analyses of dissemination strategies should be informed by what is known about the users, source, content and channel. Saywell et al. (1999) suggest considering the following information when analysing a dissemination strategy:

- **From the users' perspective (e.g. teachers):**
  - What information do users need and does its content have local relevance?
  - Do they have the resources to receive and understand the information?
  - What is the most appropriate and effective information format and dissemination strategy to reach the target audience?
  - Do users perceive the source to be competent, experienced and trustworthy?
- **From the source's perspective (e.g. project members):**
  - Is the source sufficiently oriented to dissemination?
- **From the content's perspective (e.g. research result or innovation):**
  - Is the content comprehensible (clear and unambiguous) to users and written in a language they can understand?
- **From the channel's perspective (e.g. on-line or face-to-face):**

- Was the information channel one that can be easily accessed by users?
- Are there more effective channels or methods that might improve accessibility and comprehension?

B.2. What content or information regarding STEM education can be disseminated?

When referring to STEM education, we should take into account whether the analysed projects have generated and disseminated results related to some of the four arenas of practice, distinguished by Fensham (2004):

- **Teaching and learning including assessment:**
  - Does the disseminated information consist of teaching, learning or assessment tools (e.g. tools to facilitate students their ideas' organization such as concept maps, teaching strategies such as POE or discussion of rival concepts, analogies, models, diagnostic tools for formative assessment or self-assessment)? To what extent and how have these tools been disseminated to the target audience?
  - Does the disseminated information consist of teaching materials? To what extent and how have these materials been disseminated to the target audience?
  - Does the disseminated information consist of learning theories? To what extent and how have these theories been disseminated to the target audience?
- **Curriculum development**
  - Does the disseminated information consist of new curricula? To what extent and how have these curricula been disseminated to the target audience?
- **Teacher education**
  - Does the disseminated information consist of materials and approaches for professional development / teacher education? To what extent and how have these materials and approaches been disseminated to the target audience?
- **Policy**
  - Does the disseminated information consist of guidelines or recommendations of good practices? To what extent and how have these guidelines or recommendations been disseminated to the target audience?

B.3. How to measure effectiveness of a dissemination strategy?

Some indicators or parameters are required to be established that allow us to qualitatively and quantitatively appraise the factors that influence effectiveness of a certain dissemination strategy.

B.3.1. Qualitative analysis

In order to qualitatively analyse effectiveness of a dissemination strategy, we have planned to use different **instruments for data collection**, such as:

- A questionnaire including direct (open and closed) questions.
- On-line discussion forums, which will involve different target groups and meet during 2-3 days every several months to discuss certain dissemination issues from indirect questions that are posed by the moderator.

The **sample** to which the questionnaires will be addressed consists of the following three main target groups:

- Managers of each of the projects selected for the purposes of our research (See Annex 1).
- A minimum of 1 or 2 teachers involved in each of the projects selected for the purposes of our research.
- 20 policy-makers.

The selection of the specific sample will contribute to the analysis of the dissemination strategies used in different projects from an internal perspective (people directly involved in a certain project) and from an external perspective (people who belong to a certain target group but are not directly involved in a certain project).

The on-line discussion forums would involve at least 20 people from the following target groups:

- Project managers
- Teachers
- Policy-makers
- Organizers of science events
- Organizers of activities and expositions in museums

Table 3 summarises the sample and instruments of data collection to be used in the research conducted in the DESIRE project.

Table 3. Sample and instruments of data collection

Sample	Instruments of data collection
Project managers	Questionnaire1 including direct (open and closed) or indirect questions
Teachers	Questionnaire 2 including direct (open and closed) or indirect questions
Policy-makers	Questionnaire 3 including direct (open and closed) or indirect questions
Community of Practice – Project managers	On-line discussion forums
Community of Practice – Teachers	On-line discussion forums
Community of Practice – Policy-makers	On-line discussion forums
Community of Practice – Organizers of science events	On-line discussion forums
Community of Practice – Organizers of activities and expositions in museums	On-line discussion forums

The **questionnaires** will include direct questions such as the ones adapted from the 'Dissemination Planning through Answered Tools' (NCDDR, 2001). Tables 4, 5 and 6 show the questions to be included in each questionnaire. Some of these questions request to describe different aspects (e.g. users, source, content and channel) of dissemination strategies used in the selected projects, whereas other questions refer to the impact of these strategies. The responses to these questions could be correlated to draw some conclusions on the type of characteristics of certain dissemination strategies that seem to influence their impact on practice.

For project managers (Questionnaire 1):

Table 4. Questions to be included in Questionnaire 1

Possible questions	Information to be collected
1. What are the main results of the X project that were selected to be disseminated?	On the content to be disseminated
2. What dissemination strategy(ies) did you choose to use in the project?	On specific dissemination strategies
3. What are the characteristics of the channel of that dissemination strategy (format, language, length, structure, approach, content)?	On the characteristics of the channel of the dissemination strategy
4. Why did you choose to use that/those dissemination strategies?	On perceived advantages of specific dissemination strategies
5. What is the profile of the audience you were intending to reach in the project?	On the characteristics of the potential target audience
6. What is the profile of the audience you actually reached[1] in the project?	On the characteristics of the target audience
7. In case there are any, what do you think are the main reasons for the differences between the target and the reached audience?	On perceived obstacles of specific dissemination strategies
8. What evidence(s) of effectiveness of the dissemination strategies in practice do you have? What	On indicators to measure effectiveness of dissemination

[1] Here 'to reach' refers to making the audience become aware of the results of a project, understand them and consider them usable.

evaluation methods and what criteria did you use to measure effectiveness of each selected dissemination strategy?	
9. Have you ever heard any information from any of these other projects?	On the effectiveness of other project's dissemination plans
10. How were you informed by the results of this project?	On the effectiveness of other project's dissemination plans

For specific teachers (Questionnaire 2):

Table 5. Questions to be included in Questionnaire 2

Possible questions	**Information to be collected**
1. According to your experience, what are the main results of the X project (i.e. content)?	On the content to be disseminated
2. In what sense do you think these results are relevant (or not) to your practice?	On perceived relevance of the content to be disseminated
3. By means of what dissemination strategy(ies) did you get the results of the project?	On specific dissemination strategies
4. Do you consider that strategy / those strategies practical and usable? Why / Why not?	On perceived practicality and usability of specific dissemination strategies
4.1. What resources did you have to access to the results?	On practicality and usability of specific dissemination strategies
4.2. How much time could you devote to access to the results?	On practicality and usability of specific dissemination strategies
4.3. What was the language of the results to which you accessed?	On practicality and usability of specific dissemination strategies
4.4. Give your opinion about the format, length, and style or approach of the dissemination method(s)	On practicality and usability of specific dissemination strategies
5. What other strategies or characteristics do you think would have facilitated a more effective access, comprehension and/or usability of these results?	On perceived facilitators and obstacles of specific dissemination strategies
6. What kind of support did you receive to incorporate these results into your teaching practice?	On perceived usability of the disseminated results
7. In what aspects do you think your teaching practice has changed as a result of taking into account these results?	On perceived impact of dissemination in one's own practice
9. Have you ever heard any information from any of these other projects?	On the effectiveness of other project's dissemination plans
10. How were you informed by the results of this project?	On the effectiveness of other project's dissemination plans

For policy-makers (Questionnaire 3):

Table 6. Questions to be included in Questionnaire 3

Possible questions	**Information to be collected**
1. Have you been informed about any of the following projects? [Select one about which you have been informed and answer the following questions about that project]	-
2. According to your experience, what are the main results of the project (i.e. content)?	On the content to be disseminated
3. In what sense do you think these results are relevant (or not) to teaching practice and should be taken into account in educational policy?	On perceived relevance of the content to be disseminated
4. By means of what dissemination method(s) did you get the results of the project?	On specific dissemination strategies

5. Do you consider that method / those methods practical and usable? Why / Why not?	On perceived practicality and usability of specific dissemination strategies
5.1. What resources did you have to access to the results?	On practicality and usability of specific dissemination strategies
5.2. How much time could you devote to access to the results?	On practicality and usability of specific dissemination strategies
5.3. What was the language of the results to which you accessed?	On practicality and usability of specific dissemination strategies
5.4. Give your opinion about the format, length, and style or approach of the dissemination method(s)	On practicality and usability of specific dissemination strategies
6. What other strategies or characteristics do you think would have facilitated a more effective access, comprehension and/or usability of these results?	On perceived facilitators and obstacles of specific dissemination strategies

The target groups involved in each session of each **on-line discussion forum** will be involved in the discussion of indirect questions or tasks such as:

If you were responsible for planning the strategy for disseminating a certain result (e.g. teaching, learning or assessment tools / materials / resources, theoretical perspectives, professional development / teacher education materials / approaches, guidelines or recommendations of good practices), which have resulted from a certain research project:

- What would be the target audience to which you would address these results? Place yourself in the 'shoes' of the target audience / group and think about what problems they might have or what solutions they might be looking for.
- Give a detailed description of the strategies you would use to try to reach the target audience. Think about how you can present the content to be disseminated as benefits / solutions.
- Why would you choose that mechanism?

We have planned to establish four 3-days long sessions to carry out an on-line discussion forum within each of the 5 target groups. These four sessions will deal with the topic of dissemination of project results from different perspectives:

1st session: How much information from European and national projects results do you receive? How are you usually informed of these results?

2nd session: What do you know about specific European and national projects? By means of which strategies have you been informed of these results? What impact do these results have in your practice?

3rd session: Discussing preliminary results of the DESIRE project

4th session: Discussing recommendations for more effective dissemination strategies.

B.3.2. Quantitative analysis

A **quantitative analysis** would take into account a set of parameters to measure the impact of dissemination, such as the ones shown in Table 7.

Table 7. Parameters to measure the impact of dissemination

Parameter	How to measure this parameter?
Website statistics	Web / Desk-based analysis
Citation index of written articles	Web / Desk-based analysis
Events participation	Analysis of a question to be included in Questionnaire 1
Social networks participation	Analysis of a question to be included in Questionnaire 1
Number of participating teachers in face-to-face CoPs or teacher training sessions	Analysis of a question to be included in Questionnaire 1
Number of published articles / reports / leaflets / booklets	Analysis of a question to be included in Questionnaire 1
Web or media presence	Analysis of a question to be included in Questionnaire 1

Questionnaire 1 will include quantitative questions, such as:

- How many articles / reports / leaflets / booklets have been published for disseminating the results of the project?
- How many webs (or other media) have been used for disseminating the results of the project?
- How many people did you intend to reach using that dissemination strategy?
- How many people did you reach using that dissemination strategy?

C. Work plan

The research to be carried out within the DESIRE project should comprise the following tasks:

Task A. Design of instruments (questionnaires, discussion topics for the on-line discussion events).

1. Design of a short questionnaire to be administered to the manager of each of the selected projects, to some specific teachers who participated in these projects and to some policy-makers.
2. Further development of discussion topics about dissemination to be tackled in each of the 5 ODEs.
3. Translation of the questionnaire for teachers.
4. Pilot test of the questionnaire with a reduced sample of project managers, policy makers and teachers (2-4).

Task B. Selection and contact of the sample

Once we have selected the list of European and national projects, we will proceed to contact the managers of these projects (writing emails or making phone calls) to let them know that we request their collaboration in the DESIRE project and to find out

teachers who participated in the selected projects and with whom we could contact. The sample of policy-makers might be contacted by EUN.

Task C. Administration of the questionnaire to the selected sample and data collection.

Task D. Set up of each 3-days work session of each of the 5 on-line discussion forums in order to discuss different dissemination issues and the results that will arise from the DESIRE project.

Task E. Desk-based analysis on existing dissemination strategies in STEM education projects, and associated facilitators and obstacles.

Table 8 shows a proposal of work plan to carry out the tasks described above:

Table 8. Work plan for the research to be conducted within the DESIRE project

Tasks	2012																	
	Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
	1-15	16-30	1-15	16-31	1-15	16-30	1-15	16-31	1-15	16-31	1-15	16-30	1-15	16-31	1-15	16-30	1-15	16-31
A.1																		
A.2																		
A.3																		
A.4																		
B																		
C																		
D																		
E																		

Tasks	2013																	
	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep	
	1-15	16-31	1-15	16-28	1-15	16-31	1-15	16-30	1-15	16-31	1-15	16-30	1-15	16-31	1-15	16-31	1-15	16-30
A.1																		
A.2																		
A.3																		
A.4																		
B																		
C																		
D																		
E																		

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Annex 1. List of selected projects for the research study of the DESIRE project

LLP projects [DG EAC] (20)

List of projects	Website	Contact person(s)	Email
1. Spice	http://spice.eun.org/web/spice	Agueda Gras Ana Paiva Barbora Grecnerova	agueda.gras@eun.org ana.paiva@dgidc.min-edu.pt barbora.grecnerova@naep.cz
2. Inspire	http://inspire.eun.org	Agueda Gras-Velazquezv	agueda.gras@eun.org
3. UniSchoo LabS	http://unischoolabs.eun.org/	Anne-Christin Tannhäuserne Evita Tasiopoulou	actannhauser@scienter.org evita.tasiopoulou@eun.org
4. CrossNet	http://www.crossnet.uni-kiel.de/cms/	Wolfgang Graßer	wgraeber@ipn.uni-kiel.de
5. GIMMS	http://www2.ul.ie/web/WWW/Faculties/Education_&_Health_Sciences/Research_Projects/GIMMS	Geraldine Mooney Simmie	geraldine.mooney.simmie@ul.ie
6. SCeTGo	http://www.sctg.eu/	Hannu Salmi	hannu.salmi@heureka.fi
7. EU Train	http://www.helsinki.fi/luma/eutrain	Jarkko Lampiselkä	jarkko.lampiselka@helsinki.fi
8. STENCIL	http://www.stencil-science.eu/	Francesca Magrefi Sibylle Moebius Pier Giacomo Sola	fmagrefi@amitie.it smoebius@amitie.it pgsola@amitie.it
9. EU-HOU	http://www.euhou.net/index.php?option=com_frontpage&Itemid=1	Yannick Libert Roger Ferlet Anne-Laure Melchior	libert@euhou.net ferlet@iap.fr almelchior@euhou.net
10. ICT for IST	http://www.itforus.oeiizk.waw.pl/	Elżbieta Kawecka	elka@oeiizk.waw.pl
11. Items	http://itemspro.net/	Bernat Martínez Sebastià	cabernat@gmail.com
12. eTwinning	http://www.etwinning.net/en/pub/index.htm	Santi Scimeca Claire Morvan	santi.scimeca@eun.org Claire.morvan@eun.org
13. Stella	http://www.stella-science.eu/	Francesca Magrefi Sibylle Moebius Pier Giacomo Sola	fmagrefi@amitie.it smoebius@amitie.it pgsola@amitie.it
14. FEAST	http://feastportal.wordpress.com/	Marzia Mazzonetto	mmazzonetto@ecsite.eu
15. COMPASS	http://www.compass-project.eu/	Katja Maaß Alexander Oettlin	maass@ph-freiburg.de oettlinfr@ph-freiburg.de
16. SETAC	http://www.museoscienza.org/setac	Maria Xanthoudaki	setac@museoscienza.it
17. AESTIT	http://www.clab.edc.uoc.gr/aestit/	P. G. Michaelides	clab@edc.uoc.gr

FP 7 and other bigger projects [Other DGs] (10)

List of projects	Website	Contact person(s)	Email
1. inGenious	http://www.ingenious	Rinske van den Berg	mailto:rinske.vandenberg

	-science.eu/	Emma Bluck Agueda Gras	@eun.org goldsparkconsulting@gmail.com agueda.gras@eun.org
2. Scientix	http://www.scientix.eu/web/guest	Agueda Gras Premysl Velek	agueda.gras@eun.org Premysl.velek@eun.org
3. Pathway	http://www.pathway-project.eu	Franz Bogner	Franz.Bogner@uni-bayreuth.de
4. Traces	http://www.traces-project.eu	Emilio Balzano Digna Couso	traces@fisica.unina.it digna.couso@uab.cat
5. Fibonacci	http://www.fibonacci-project.eu/	David Jasmin Janick Rajoharison	david.jasmin@fondation-lamap.org janick.rajoharison@inrp.fr
6. Engineer	http://www.engineer-project.eu/	Maya Halevy	mayah@mada.org.il
7. Twist	http://www.the-twist-project.eu/en/partners/	Marzia Mazzonetto	mmazzonetto@ecsite.eu
8. Xplore Health	http://www.xplorehealth.eu	Maïté Debry	maite.debry@eun.org
9. OSR	http://www.openscienceresources.eu/	Jennifer Palumbo	jpalumbo@ecsite.eu
10. Nanochannels	http://www.nanochannels.eu	Ilse Marschalek	marschalek@zsi.at
11. Nanoyou	http://nanoyou.eu/	Joel Rothschild Maïté Debry	yoelrot@mapa.ort.org.il maite.debry@eun.org
12. Inquire	http://www.inquirebotany.org/	Suzanne Kapelari	Suzanne.Kapelari@uibk.ac.at
13. U4Energy	http://u4energy.eu/	Caroline Bergaud Maite Debry	caroline.bergaud@eun.org maite.debry@eun.org
14. SAILS	http://www.sails-project.eu/	Odilla Finlayson Eilish McLoughlin	odilla.finlayson@dcu.ie eilish.mcloughlin@dcu.ie
15. S-TEAM	http://www.ntnu.no/s-team	Peter Gray	graypb@gmail.com
16. SED	http://www.science-education-for-diversity.eu	Andrew Dean	a.dean@exeter.ac.uk
17. CoReflect	http://www.coreflect.org/nqcontent.cfm?a_id=3689	Elena Kyza	eleni.kyza@cut.ac.cy
18. PRIMAS	http://www.primas-project.eu	Katja Maaß Diana Wernisch	maass@ph-freiburg.de diana.wernisch@ph-freiburg.de
19. ESTABLISH	http://www.establish-fp7.eu/	Eilish McLoughlin Sarah Brady	eilish.mcloughlin@dcu.ie sarah.brady@dcu.ie
20. IRIS	http://iris.fp-7.org/about-iris/	Ellen Karoline Henriksen	e.k.henriksen@fys.uio.no

MoE projects / National projects (10)

List of projects	Website	Contact person(s)	Email
1. Compec (UAB)	http://www.crecim.cat/portal/index.php?option=com_content&task=view&id=86&Item	Digna Couso	digna.couso@uab.cat

	id=1&lang=cat		
2. EUSEA	http://www.eusea.info/	Peter Rebernik	office@eusea.at
3. Projekt X	http://ntsnet.dk/projektboersen/projekter/projekt-x	Lene Beck Mikkelsen Heiko Buch Illing	lbm@nts-centeret.dk hbi@nts-centeret.dk
4. PON Scienze	http://for.indire.it/ponscienze/	Serena Goracci	s.goracci@indire.it
5. EPSE	http://www.york.ac.uk/education/research/cirse/older/epse/	Robin Millar Jaume Ametller	rhm1@york.ac.uk J.Ametller@education.leeds.ac.uk
6. SINUS	http://www.ipn.uni-kiel.de/projekte/sinus_an_grundschulen_eng.html	Claudia Fischer	cfischer@ipn.uni-kiel.de

Academic projects (10)

List of projects	Website	Contact person(s)	Email
1. ROSE project	http://www.uv.uio.no/ils/english/research/projects/rose/	Svein Sjøberg Fredrik Jensen	svein.sjoberg@ils.uio.no fredrik.jensen@naturfagsenteret.no
2. MUSE	http://education.epsdivisions.org/muse	Gorazd Planinšič Elena Sassi Christian Ucke Laurence Viennot	gorazd.planinsic@fmf.uni-lj.si sassi@na.infn.it christian.ucke@web.de laurence.viennot@univ-paris-diderot.fr

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