



WP6: Dissemination and Communication

European Dissemination and Communication Plan



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Executive Summary

This document presents the plan for dissemination and communication of the 3C4Life project on European level. The aim of this European Dissemination and Communication Plan is to establish widespread visibility of the project and to share results with as many target groups and individuals as possible. It lays out the communication and dissemination infrastructure of the project so that all activities carried out during the project lifetime will be widely communicated across Europe and all results will be disseminated with the highest possible quality and impact across Europe. All partners will make significant contributions to its full and effective implementation.

Europe is facing teacher shortages. STEM education systems lack the capacity to support teachers to make the best of their life as teachers. Our objective is to change that and seeks to support the establishment of educational systems which allow STEM teachers to operate successfully along their whole career paths. 3C4life test the following measure: an all-digital STEM teacher platform with an innovative concept which addresses the three most impactful dimensions in the STEM teachers' profession: cooperation, career and competence development.

*The digital field trials which have been set up to test the measure follow a quasi-experimental design in all partner countries. The evaluation follows a mixed-methods approach combining quantitative before- after comparison and qualitative case studies. **The project's main result will be a comprehensive set of robust data on how to motivate STEM teachers to pursue lifelong occupational advancement from the beginning of their careers.** This main result sets the direction for the dissemination planning.*

Dissemination and communication work package (WP6) organises dissemination and communication activities to make the platform widely known in partner countries and beyond to maximise the impact of the tested measure. An important milestone in WP 6 is the first version of a European dissemination plan (month 6), which will guide the project's dissemination and communication activities and lead to best possible impact. Setting up the first version of the project website (month 6) is WP6's second milestone, while its third key milestone is project's policy seminar to ensure wide-reaching dissemination and policy measure scale-up (month 30). The most important deliverable will be a midterm dissemination report (month 20) which will guide the communication and dissemination activities till the end of the project and beyond to guarantee maximum impact.

1. Introduction

1.1. Project summary

Policy measures are a funding programme which support the testing of the relevance, effectiveness, potential impact and scalability of particular measures to improve given conditions. This is supposed to happen through field trials running parallel in different countries, based on quasi-experimental approaches and joint evaluation protocols.

3C4Life (2021-2024) stands for “Perspectives for Lifelong STEM Teaching – Career Guidance, Collaborative Practice and Competence Development”.

Teachers need to be able to rapidly adapt to changes in educational conditions, need to continuously update their competences, operate digitally, and act self-efficiently. The past two years have shown these requirements more than ever before. However, top performance requires top conditions.

3C4Life gathers 12 partners from 6 European countries, in each country an educational authority teaming up with a research partner to operate in close connection with systemic levels of education in each country. These powerful tandems tackle a fallow issue, which impedes top conditions in STEM education across Europe: **STEM education systems lack the capacity to support teachers to make the best of their life as teachers.**

The project’s objective is to change that.

- OUR MEASURE is an all-digital STEM teacher environment with an innovative concept to facilitate occupational advancement of STEM teachers. Its key innovative features are
 - A sequential process of motivational triggers (for example ads and pop-up windows in digital teacher environments popular in partner countries), from low threshold attraction to shared advancement which guides STEM teachers to our platform and encourages them to engage in cooperation and career developmental multi-directional variety of vertical and horizontal occupational advancement perspectives unfolded at a glance which shows STEM teachers a variety of options to widen their teaching scope, and enrich their career paths, for example teaching in another country, teaching in hospitals or taking advisory roles in their schools’ panels.
 - enhancement-propellant collaboration through Communities of Practice which means we will provide options to gather, exchange and support each other across Europe, benefitting from each individual experiences.
- OUR HYPOTHESES (the research foundation for planned field trials) relate to above-described key features:
 - A sequential arrangement of motivational triggers increases the involvement of STEM teachers in occupational advancement programs.

- Multi-directional advancement perspectives raise teachers' motivation to shape their best personal path as a teacher.
- Targeted community-building features increase teachers' participation in Communities of Practice.
- The digital field trials (pandemic-safe!) follow a quasi-experimental design in our 6 partner countries Germany, Lithuania, Netherlands, Spain, Portugal, and Turkey.

Our evaluation follows a mixed-methods approach combining quantitative before- after comparison and qualitative case studies.

Through the project, robust data will be generated on how to motivate STEM teachers to pursue lifelong occupational advancement from the beginning of their careers.

Our measure bears a high capacity to be up-scaled and mainstreamed across Europe, as it is all-digital, research-based, system-contextualized and policy-strategized.

1.2. STEM Teacher shortages across Europe

Europe is facing teacher shortages (EC, 2018). As major reason, the ET2020 Working Group on Schools identified that, teachers do not perceive teaching as an attractive career option any more (Carlo et al., 2013; EC, 2018; Katsanova, 2020). To raise the attractiveness of the profession, the following challenges must be overcome:

- There are many Member States in which the teaching profession is of a perceived low value among society, which results in that many young people do not choose it as their career, on the one hand. And on the other hand, practicing teachers do not feel valued by society in many countries and various situations during their life as teachers.
 - A positive image of the teaching profession must be established, among teachers as well as among society.
- Many teachers do not have the competences needed to teach in today's high-demand education system with challenges such as Europe's aim for climate neutrality, gender gaps, heterogeneity, and digital learning tools (ET2020, 2015).
 - The teaching profession must be perceived as a lifelong development process, including the use of innovative teaching approaches.
 - Professional development offers must meet the needs of teachers.
- Collaborative professional learning is still rare (Schleicher, 2018) in terms of systemic means implemented in official programmes (compared to, for example, informal means such as discussing issues with their colleagues at school, or sharing materials). For example, on average across the OECD, large proportions of teachers' report that they never engage in deeper forms of collaboration: 16% of teachers report never participating in any kind of collaborative professional learning, and 41% of teachers report never observing other teachers' classes and providing feedback (OECD, 2020)
 - Teachers must understand the need to develop collaborative and teamwork competences and must experience the benefit of collaborative practices in educational contexts.
 - Collaborative practice and professional learning communities must be promoted and anchored
- Career guidance for teachers across Europe is rare.

- Teachers must receive support from the beginning of and throughout their careers to allow for professional growth.

The project's communication and exploitation plan is supposed to contribute to overcome these challenges. For example:

- A positive image of the teaching profession must be established, among teachers as well as among society: particular measures highlighting positive aspects or showing the relevance of successful education and teachers' role in it are supposed to support the perception of people towards this profession
- The teaching profession must be perceived as a lifelong development process, including the use of innovative teaching approaches: illustrating role models and showing the benefits of continuous advancement across a variety of communication channels is supposed to make teachers aware of the fact that they have the option to enrich their teaching throughout their careers
- Teachers must understand the need to develop collaborative and teamwork competences and must experience the benefit of collaborative practices in educational contexts: providing (digital) environments which enable collaboration and sharing of experiences facilitates collaboration
- Teachers must receive support from the beginning of and throughout their careers to allow for professional growth: specific communication and dissemination activities which provide career information and offer support lower the threshold to engage with career advancement.

Above-described challenges and project objectives guide the development and execution of all planned communication and dissemination activities.

1.3. Project results

With reference to the H2020 Online manual, dissemination is "... sharing research results with potential users - peers in the research field, industry, other commercial players and policymakers)", and, with reference to the EU IPR helpdesk, dissemination is ""The public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications in any medium."

Hence it is obvious that each communication and dissemination strategy requires the clear identification of all project results:

Table 1. Overview of project expected results

Please add lines as necessary according to number of work packages and results (deliverables, outputs or outcomes).

No of Work package	Start date	End date	Result(s) (output(s) or outcome(s))	Medium that will be used (publication, electronic, online, other (specify))	Languages	Dissemination level (Public, Restricted, Confidential)	Target groups/potential beneficiaries
WP4	13	24	Raw data gained through the field trials	digital	In all partner languages, but will be translated in English for further processing	Confidential	education authorities, researchers, partners ³
WP5	25	36	Findings gained through analysing the raw data and summarized in Final evaluation report (D5.1)	digital	English	Public	education authorities, researchers, education stakeholders, Agency and other EU bodies
WP2	1	33	Platform as a digital environment (policy measure as such)	digital	All partner languages plus English	public	education authorities, researchers, education stakeholders
WP2	1	33	On Platform: trigger procedure as operational concept	digital	All partner languages plus English	public	education authorities, researchers, education stakeholders
WP2	1	36	On Platform: Communities of Practice as operational concept	digital	All partner languages plus English	public	education authorities, researchers, education stakeholders
WP2	1	33	On Platform: Materials for STEM teacher competence development	digital	All partner languages plus English	public	STEM teachers
WP2	1	33	On Platform: Materials for STEM teacher career development vertically	digital	All partner languages plus English	public	STEM teachers

WP2	1	33	On Platform: Materials for STEM teacher career development horizontally	digital	All partner	public	STEM teachers
WP 3	1	12	Evaluation instruments for the policy experimentation (D3.1 & 3.2) + protocol guidelines + framework for case studies	digital	English and national languages	public	education authorities, researchers, education stakeholders
WP3	1	12	National Strategies for Field trials	digital	English	public	education authorities, researchers, education stakeholders
WP4	7	9	Announcement text for field trials	digital	English and national languages	public	education authorities, researchers, education stakeholders
WP6	1	6	European and National Strategies for Communication and Dissemination	digital	English	public	education authorities, researchers, education stakeholders
WP6	1	36	Marketing contents (for newsletters, social media posts, flyers, etc.)	digital	Each partner in their national language plus English	public	STEM teachers, education authorities, researchers, education stakeholders, public at large
WP6	1	36	European and national project website	digital	Each partner in their national language plus English	public	STEM teachers, education authorities, researchers, education stakeholders, public at large
WP 6	19	21	Midterm dissemination report	digital	English	public	education authorities, researchers, education stakeholders, project coordinators and partners
WP 7	1	21	European and National Strategies for Exploitation	digital	Each partner in their national language plus English	public	education authorities, researchers, education stakeholders

WP 7	31	36	Exploitation report	digital	English	public	education authorities, researchers, education stakeholders
WP 8	1	3	Monitoring grid for monitoring project activities	digital	English	public	All future project coordinators and partners
WP1	1	36	Peer-learning Group	digital	English	public	Education authorities and researchers
WP1	1	36	Partnership among Consortium partners	digital	English	project internal	Consortium partners
WP1	1	36	Risk Management Plan	digital	English	project internal	Consortium partners

2. Dissemination

2.1 Background information sources and obligations for dissemination and communication

While planning dissemination and communication activities, it is better to follow Erasmus+ Programme Guide (European Commission, 2021a) and obligations on the Grant Agreement. Dissemination and exploitation of results by beneficiaries were set in the Grant Agreement as follows:

Beneficiaries of grants under the Erasmus+ Programme have the duty to ensure that the work undertaken within the framework of this grant agreement and the results accruing from it receive substantial visibility. The co-ordinator must pay specific attention to the importance of dissemination, exploitation of results of the action and to their visibility at a transnational level (Article I. 12). In this respect, the co-ordinator must:

- *create and maintain (at least during the project lifetime) a website for the action. The website must be kept up-to-date with at least: a description of the project, the contact details of the co-ordinator, the list of beneficiaries, mention of the European Union's financial support with the relevant logo (see Article I.11), and access to all results, as and when they become available.*
- *update the project summary in accordance with the instructions provided in Annex V.*
- *provide during the project lifetime the Agency and/or the Commission with the information requested in order to promote the Erasmus+ Programme and disseminate the results. This may include answering questionnaires and entering data into databases.*
- *use Erasmus+ Project Result Platform, on the website <http://ec.europa.eu/programmes/erasmus-plus/projects> to disseminate project results and deliverables in accordance with the instructions provided therein. The approval of the final report will be subject to the upload of the project results/deliverables on the aforementioned platform by the time of its submission.*

2.2 Strategic planning of communication and dissemination tasks/activities

We will organise dissemination and communication activities to make the project outcomes and the platform widely known in partner countries and beyond to maximise the impact of the tested measure. Schematic overview of the work packages in the project is available on Figure 1, which indicates that Dissemination and Communication phase last from the beginning of the project to the end and beyond. It should be pointed out that dissemination and exploitation are different. Dissemination is to share research results with potential users - peers in the research field,

industry, other commercial players and policymakers. By sharing our research results with the rest of the scientific community, we are contributing to the progress of science in general. Whereas exploitation is the use of results for commercial purposes or in public policymaking (European Commission, 2021b). To improve the effect of the project, WP6 includes dissemination and communication activities and WP7 includes exploitation and scaling up activities. As Figure 1 shows the work packages are closely intertwined and therefore need to cooperate closely. The data collection instruments (WP3 – Experimentation protocol) naturally need to be tailored to the platform concept and materials developed (WP2 – policy measure). In the field trials (WP4), we will use materials produced in WP2 and instruments developed in WP3. All implementation needs to conform to the experimentation protocol as developed in WP3. Monitoring the field trials (WP4), the activities in WP6 (Dissemination & communication) and WP 7 (Exploitation and scaling-up), as well as Management (WP1) are WP8s (Quality control) responsibilities.

Several activities in WP6 (Dissemination and Communication) are related to the schedule of the field trials in WP4. There will be peaks before the trials (advertising of the courses and any other activities), after the trials (announcing the results), after having drawn all relevant conclusions, and before the final conference. The activities in WP 7 (Exploitation) will run throughout the lifetime of the project, but will have a peak once the field trials are finalized.

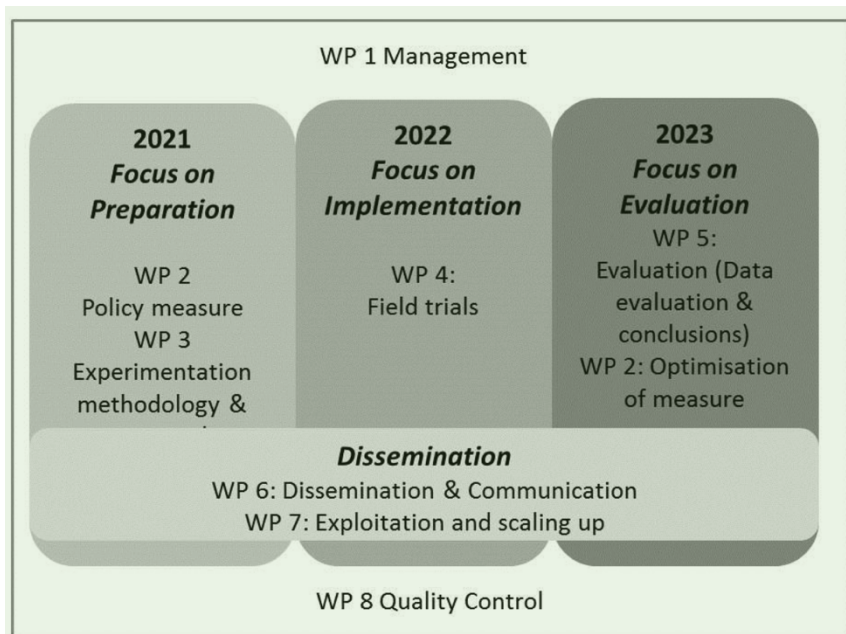


Figure 1. Schematic overview of the work packages in the project

Our first task in WP6 will be to carry out shareholder mapping. Stakeholder mapping involves the identification of the interested parties, their interests, possible impacts and influences and the

ways in which they interact between themselves or within the process. The stakeholder mapping will help us to identify and understand people with influence over the project. To do so we will send a questionnaire (see Appendix 1) to national team members to fill in about their national dissemination and communication plan. Based on their responses, we will prepare European dissemination, communication and exploitation plans. As highlighted in Figure 2, key questions that needs to be addressed are *what* to do, *why* do we do, *who* do we target, *how* do we do it and *when* do we disseminate and communicate.



Figure 2. Questions to be considered during dissemination and communication phases

What: There are many ways to plan for the dissemination and communication activities but most of them include following stages of a cycle: (1) plan for dissemination, (2) consider the target audience (3) select key messages (4) consider dissemination options/channels, (5) develop appropriate materials, (6) consider other ways to improve accessibility, (7) implement the strategy, (8) evaluate effectiveness of dissemination, and (9) remember that dissemination is an ongoing process.

Why: Raise awareness and visibility, promote your activities, engage with citizens, target groups and stakeholders, report to citizens on how their money is spent on, prove to decision makers that investing in EU projects is a good idea, it is all partners' legal obligation.

To whom: Identification and analysis of stakeholders. Stakeholder mapping will help us to co-create dissemination and communication actives with target groups and stakeholders. Researchers and stakeholders will work together to co-create the project by exploring needs, impacts, benefits, and challenges. To visualize the necessary steps and create actual tasks out of

this process, we produced a table, visualizing the action plan for our activities (see Table 2). In a way they go through beyond dissemination.

How: We will make a comprehensive communication plan that defines the project's audiences by considering the tools to reach and multiply the audiences. The communication might include publications (leaflets, brochures), website(s), events, campaigns, social media, and press releases etc. Each should have catch elements to attract target groups' attention. As our EEEB members expressed it, different ways should be used during dissemination and exploitation phases:

“Do not [necessarily] bring the teachers to the content but [also] bring the content to where the teachers are. And be flexible (the tools might change). Note: at international level, Scientix Ambassadors network can be used. Note as well how to access the teachers that are not “part of the group” yet as they do not feel it is relevant for them. Examples again: teachers with two subjects, primary school teachers, S+T+E+M vs STEM Teachers).” [The EEEB members]

When: Several activities in WP6 are related to the schedule of the field trials in WP4. There will be peaks before the field trials, after the trials (announcing the results), after having drawn all relevant conclusions, and before the final conference. The activities in WP 7 will run throughout the lifetime of the project, but will have a peak once the field trials are finalized.

Action: Each partner needs to plan effective dissemination and communication activities and report accordingly (a draft template is provided on Table 3). Thus, we will cover different transnational activities across Europe.

2.3 Phases of the policy experimentation and list of activities/tasks related to WP6

Overall 3C4Life projects includes three phases: (1) Preparation Phase, (2) Experimentation Phase, and (3) Evaluation Phase. This first version of the European dissemination and communication plan (M6) will guide our dissemination and communication activities and lead to best possible impact. Setting up the first version of the project website (M6) is our second milestone, while its third key milestone is project's policy seminar to ensure wide-reaching dissemination and policy measure scale-up (month 30). The most important deliverable will be a midterm dissemination report (month 20) which will guide the communication and dissemination activities till the end of the project and beyond to guarantee maximum impact.

2.3.1 Preparation Phase (M1-12)

This phase includes identifying the dissemination strategy and plan to ensure the best impact of the project outcomes. A stakeholder analysis will be carried out and based on that the European

and national dissemination plans will be produced (M5 & 6). International Website (M6) and national websites (M9) will also be completed in this phase.

Task 1	Strategic planning of dissemination, communication, exploitation	Month	Status
	Detailed identification and analysis of stakeholders	M3	
	Development of criteria to evaluate the selected dissemination means (such as effectiveness, impact, appropriateness for target group)	M3	
	Setting up European dissemination, communication and exploitation plans	M5	
	Setting up national dissemination, communication and exploitation plans to strategically address target groups: This involves the identifying the target group and their needs, the selection of the measure to be conveyed, as well as the means for dissemination, the execution of the plan, its monitoring, reflection on the results and rectification if needed.	M6	
Task 3	Websites		
	Set up of the European website. This website will be linked to the ICSE website	M6	
	Set up of national websites	M9	
	Websites updated following the dissemination plan	M7-36	

2.3.2 Experimentation Phase (M12-24)

A comprehensive set of tools will be produced to diffuse key messages extracted from research results to the identified targeted groups in a way that encourages them to factor the research implications into their work. Dissemination and communication plan will be executed both face-to-face activities (as far as possible) plus pandemic safe social media activities on various channels. Afterwards, midterm dissemination and communication report will be produced. Workshops on dissemination and communication for the consortium will be carried out and based on that the national dissemination plans will be revised to maximise impact.

Task 2	Execution of dissemination plan and monitoring of plan	Month	Status
	Carry out dissemination on European and national levels	M7-36	
	Dissemination & communication: Partners will report on their activities and the impact these had. Based on the information exchange and the	M12 & M18	

monitoring carried out in WP8 (feedback on the strategies, the activities and their outreach so far), partners will refine their strategies.	
Dissemination workshops to encourage peer learning.	M15 & M24
After careful planning (starting at least one year before), we hold a one-day dissemination and exploitation policy seminar particularly targeted to policy makers and stakeholders from educational authorities. It will be attached to another big conference, presumably the well-known Educating-the-Educators Conference (if the pandemic is still viral or should any other obstacle of this kind occur an online conference will be held).	M33

2.3.3 Evaluation Phase (M15-36)

Evaluation phase aims to assess the impact and success of dissemination activities and setting up the mechanisms needed to ensure persistent and long-lasting visibility of the project outcomes. This phase includes one day policy seminar attached to a well-known international conference, the Educating-the-Educators Conference (<https://icse.eu/educating-the-educators-iii>), to maximise dissemination and exploitation (M33) and ongoing execution of dissemination and communication plans.

Task 4 Midterm report on dissemination, communication, exploitation and sustainability	Month	Status
Based on the results of the workshops, the experience gained when carrying out activities and feedback from WP8, a midterm report on dissemination, communication will be written so as to give guidelines to the Consortium for further dissemination and communication activities as well as for exploitation and scaling-up activities.	M21	
Dissemination & communication: Partners will report on their activities and the impact these had. Based on the information exchange and the monitoring carried out in WP8 (feedback on the strategies, the activities and their outreach so far), partners will refine their strategies.	M12 & M18	
Dissemination workshops to encourage peer learning.	M15 & M24	
After careful planning (starting at least one year before), we hold a one-day dissemination and exploitation policy seminar particularly targeted to policy makers and stakeholders from educational authorities. It will be attached to another big conference, presumably the well-known Educating-the-Educators Conference (if the pandemic	M33	

is still viral or should any other obstacle of this kind occur an online conference will be held). **(D 6.1)**

2.4 Target groups

Stakeholders and target groups are of different natures and will have different interests regarding the project. All partners were asked to identify stakeholders and target groups (see Appendix 1). Based on their responses, the following groups of stakeholders likely to be interested by the project outputs, and therefore targeted by the consortium for dissemination activities. The following target groups may be revised throughout the project. Table 2 summarises targeted groups and their possible contributions to the project. We will have an overall strategy mainly covering large-scale activities across Europe e.g., to involve public authorities, and networks at European level. Each national tandem will adapt a national strategy (with specific activities targeted towards e.g., regional stakeholders and in national language) to strengthen the regional/national outreach and linking to relevant education (policy) programmes. Strategy, channels and modalities to reach and involve population sample, target groups and stakeholders.

2.4.1 Sample population

The success of the field trials stands and falls with the sample population of pre- and in-service teachers. Thus, we intend to have a strong focus on this target group from the beginning, leading a clear national strategy in each partner country. Tools to communicate with and disseminate to this target group vary depending on the purpose.

As soon as the first version of the project portal is completed, we will start a social media offensive to make the project known and to attract participants for the field trials. The extent to which social media is used, varies among partners. The kinds of channels they use differs as well. For example, some partners do not use Facebook and concentrate their efforts on Twitter or LinkedIn, others use it frequently. We therefore decided to leave it up to each partner tandem to choose which social media they focus on nationally.

Parallel to the social media offensive, we work with promotion materials to attract participants for the field trials: A project logo will serve as a 'symbol' for the sample population to recognise the measure and fosters e.g., identification of participants working on it. Also, we plan posters to announce the platform and our search for field trial participants to be hung-up in schools and at universities.

In addition, each partner has contact and mailings lists available to reach out to the potential sample population. Particularly, established access channels of education authorities will ensure contact to in-service STEM teachers on national level. Furthermore, existing partners' homepages

and digital initiatives will be used. During the field trials, participants need to be prepared and supported throughout, e.g., by receiving information on the project and its relevance, the experimentation methodology and steps to be taken, their role etc. This information will be shared via the platform itself.

After the field trials, the focus in communication to the sample population will be on keeping them motivated to continue to work with the platform and spread the word on it. In this context, it is first important to value their contribution to the field trials and therefore keep in close personal contact with them and second, only naturally, the sample population is always interested in being informed about the results of the evaluation and thus they will receive the results.

Table 2. Stakeholders and target groups

Stakeholders/Target Groups	In what way their contribution to the project can be stimulated?
A Pre-service secondary STEM teachers	<i>Empowering them to improve the quality of STEM teaching. Showing them opportunities to enlarge their methods in teaching in STEM fields.</i>
B In-service secondary STEM Teachers/Schools and their teachers	<p><i>Empowering them to improve the quality of STEM teaching. Low-threshold inputs allow an access to advanced training. Showing them the diverse opportunities to benefit professionally in the STEM field as prospective teachers using new resources and approaches to enhance and facilitate STEM learning.</i></p> <p><i>[PT] At national level, Teachers training centres (TTC) can be mobilized to attract teachers from STEM areas and identify their needs. TTC can also publish project materials and outputs through their websites and social networks. They can also provide training for teachers on the platform and promote the dissemination of the project.</i></p>
C Scientific Community /Higher Education Institutes/Research Centers	<i>[DE] National Institute ZSL: The platform of the 3C4LIFE project will be useful to inform teachers about career options and to give them short advanced trainings. The results of the project will help to identify opportunities of online advanced teacher training</i>
D Teacher Educators and Researchers	<p><i>Making them aware of the range of strategies and resources offered by the project to support pre- and in-service teachers in growing professionally as STEM teachers in a stimulating community or Teacher Professional Development (TPD) networks.</i></p> <p><i>The project has a commitment to rigorously evaluate the impact of the project on teachers' beliefs and practices, therefore offering interesting research evidence to improve TPD in the STEM field.</i></p>

The project will offer research evidence to orientate future actions in STEM teacher professional development.

[PT] At the national level it is possible to involve STEM educators from several Portuguese universities in the dissemination of the project and its materials to support pre-service and in-service teachers.

E Educational authorities and policy makers

The outcomes of 3C4Life project will be useful for further consideration and making decisions regarding in-service STEAM teacher training.

Making them aware of the range of interesting strategies and resources offered by the project to support pre-service and in-service teachers in growing professionally as STEM teachers in a stimulating community or teacher professional development networks.

The project will offer valuable information about teacher professional development needs and resources to address and satisfy them.

[PT] At the national level, the Ministry of Education can contribute to encourage female teachers from STEM areas to join the project. Through its platforms, policy makers and educational administration can contribute to publicize the project (resources, outputs, events, etc.) and to attract in-service teachers to participate in the project. For example, the project can use the Private area of the DGEstE to communicate with school principals/teachers at national level.

F Director of schools/Principals/School Leaders

The project will offer valuable information about teacher professional development needs and resources to address and satisfy them.

[PT] At the local level, school principals may help to encourage teachers from STEM areas to join the project and disseminate project materials and outputs through their schools' website and social networks.

G International Associations

The European Science Education Research Association (ESERA) [www.esera.org], The European Society for Research in Mathematics Education (ERME) [www.erne.site], International Congress on Mathematical Education (ICME) [www.icme14.org], EU STEM Coalition [www.stemcoalition.eu], STEM PD Community of Practice (STEM CoP) [www.stempd.net]

H (National) Associations

Teacher Associations and other educational associations should be mostly involved in dissemination, but their support to general

		<i>project aims is vital as they are information gate-keepers at schools.</i>
		<i>[PT] STEM Teachers' National Associations (such as, Portuguese Society of Chemistry, Portuguese Society of Physics) can be mobilized to attract STEM teachers and identify their needs. They can also publicize the project and its materials and results through their webpages and social networks.</i>
I	Influential organizations and projects	<p><i>The organisation of networking, clustering and collaborating activities will focus on several distinct actions including collaboration with other European projects such as Scientix and STE(A)M-IT.</i></p> <p><i>[PT] The Ministry of Education is National Contact Point of the Scientix. In this sense, it is possible to use the platform and other initiatives: National Scientix Conferences, workshops for teachers, dissemination of relevant news in the field of science education, among others to attract teachers for the project and disseminate outputs.</i></p> <p><i>[PT] The STE(A)M-IT is a collaborative exchange environment for STEM education actors. So, it's a great way to disseminate project results. It is possible to reach the target audience by sharing the promotional products of the project.</i></p>
J	Industry / Businesses or other related organisations	<i>We need to inform them and maybe (if there are related roles developed) address specifically the possibilities for them to give their input in this project (i.e., as part of social corporate responsibility to provide opportunities for teachers to have internships).</i>
K	Non-formal education providers: STEAM centers	<i>[PT] Lithuania will have 10 STEAM centers across every region in Lithuania, VU will be responsible for the leading STEAM center [methodological]. Representatives of STEAM centers should be consulted in various stages, because in Lithuanian case many roles for STEAM teachers could be proposed in relation to STEAM centers</i>
L	Media/Science Communications/Journalism	<i>Instagram, LinkedIn, Twitter, Facebook, Print Media like Kontaxis etc.</i>
M	Civil Society / Community members	<i>Non-governmental civil societies</i>
O	General Public	<i>Making the general public aware of the international effort made to improve TPD in the STEM field with important implications to teacher growth and satisfaction as professional the quality of the STEM education received by students.</i>

Table 3. 3C4Life communication and dissemination action schedule partner country XXX

(This information below will be requested from each partner as part of the reporting to the EU)

Action type*	Activity name and action details	Activity Date (if applicable place)	Purpose / Target group**	Number of people reached	Evaluation/ Comments
b2	Presented 3C4Life project outcomes at “International STEM Education Conference” www.stempd.net	2-3 July, 2022, Istanbul	A-B-C-D-E-F-G-H-I-J-K	232 participants from 13 countries	The participants were encouraged to participate in the project and visit the website for further information.

* **Action type:** Please choose one of the following actions on “Table 4: Dissemination and communication channels”

* **Purpose / Target group:** Please specify the number of persons reached in the context of all dissemination and communication activities as summarised on “Table 2: Stakeholders and target groups”.

Table 4. Dissemination and communication channels

(This information below will be requested from each partner as part of the reporting to the EU. Please specify TOTAL number of Dissemination and Communication activities linked to the project for each of the following categories. List only activities directly linked to the project, and the type of audience reached. See your National Dissemination, Communication and Exploitation Plan)

Action type	Number of activities	Number of people reached
Official Launch/Launch Event		
a1 Press release		
a2 Web resources release (Web pages, The Platform etc.)		
a3 Communication Campaign (e.g., Radio, TV)		
Meetings/Workshops		
b1 Organisation of a Conference		
b2 Participation to a Conference		
b3 Organisation of a Workshop/Seminar/Meeting/Webinar		
b4 Participation of a Workshop/Seminar/Meeting/Webinar		
b5 Organising a Meet-Chat with Professionals		
b6 Participation of a Career Fair/STEM Career Days/Meet-Chat with Professionals		
b7 Participation in activities organised jointly with other EU project(s)		
b8 Participation to an Event other than a Conference or a Workshop (e.g., Brokerage Event, Pitch Event, Trade Fair, Science Festival, Exhibition etc.)		
b9 Personal communication, e-mails and phones		
Publications		
c1 Journal Article		
c2 Non-scientific and non-peer-reviewed publication (popular magazine, newspaper, e-newsletter)		
c3 Project branding and visual materials (flyers, leaflets, brochures, rollup,)		
c4 Video on Careers		
Marketing		

d1	Mass media campaign
d2	Social media marketing
d3	E-mail distribution
d4	Endorsement from related organisations
d3	Project flyer
d4	Project poster
Other (please specify below)	
e1	ICSE Newsletter
e2	
e3	
e4	
e5	
e6	

2.4.2 Pre- and in-service secondary STEM teachers

Each pre- and in-service STEM teacher is a potential long-term user of the platform. Communication and dissemination must therefore be very compelling (to have impact beyond project duration). We will basically use the same channels like mentioned above (under sample population) to attract our main target group to the platform. Only the focus of the message will be slightly different, because we do not need to win participants for the evaluation (which is always slightly more difficult), but for using the platform. Our communication strategy will highlight the attractive features of the platform and we will spread examples of it via the above-mentioned channels. Our 3C4Life platform will apply relevant principles of interest, motivation and career guidance. We want to inspire teachers gradually to use the platform more and more and to take further steps (like career counselling).

In this respect we will also use *three-step trigger procedure* to cultures engagement:

(1) Low threshold attraction: brief inspirational teasers (contents advertising colourful career development or enticing teachers to try out new tasks)

(2) Supported activation: more information and activity for learning (like films explaining the background of tasks tried out in step 1 or leaflets about career options)

(3) Shared advancement: in-depth information, activities to promote change (like workshops on innovative teaching approaches, life-streams with experts) and needs-oriented pro-active collaboration and mutual support in a CoP.

For dissemination and communication, we will send out the low threshold materials (teasers with tasks or short information about career development) via social media channels. A traditional yet very effective measure to present a project and share results is a project website. Ours will be directly connected to the platform and will mainly cover communication purposes (e.g., publicise project and attract stakeholders). However, as results become available it will also serve dissemination purposes (e.g., share research results, dissemination plans). However, one challenge with promotion via websites is that there are far too many of them and people often do not find the information they search. Therefore, we link the project website to the homepage of ICSE. We make it in ICSE's corporate design to increase the recognition factor, as ICSE and the ICSE Consortium (a network of 16 higher education institutions across Europe, icse.eu) are well known among and strongly embedded in Europe's STEM education landscape and STEM teachers already frequently use it (e.g., downloading teaching materials or exchanging with ICSE's STEM education researchers). Also, ICSE is already enlarging its google search hits by optimising its SEO (Search Engine Optimisation) criteria. It will be updated regularly, and remain available beyond project lifetime.

ICSE has been spreading biannual newsletters among Europe's STEM education actors regularly for many years to inform about relevant events and projects. We will spread information about the project and its results via this newsletter as well, therewith reaching a growing number of recipients. Plus, the content will also be published in similar digital and print media (regular newsletters, in-house journals, internal staff and student mailings etc.) which are send out through partners regularly.

In addition, we plan to connect to our main target group and share results on European level via popular STEM education initiatives such as Scientix, Science on Stage, and on national level, e.g., Futurum (a career support site in the UK) or MUED in Germany. We therewith open our resources up to STEM teachers across Europe (as it has proven beneficial in past projects and links are established already).

Project partners have been organizing huge conferences for STEM teachers, which are of relevance for communicating with and disseminating to our main target group. For example, Utrecht University organizes the 'Nationale Wiskunde Dagen' (NWD) which attracts several

thousands of teachers in the Netherlands and our partners from Turkey are involved in the annual Turkish STEM festival, which attracts several thousand attendees as well.

2.4.3 Educational authorities and policy makers

This is the main target group for the research results of the policy experimentation and for upscaling and mainstreaming. Our tandem structure is a strong element for communication and dissemination in itself, as it allows close and focused communication and dissemination on regional/national level. Communication channels are short and uncomplicated, as they e.g., can communicate in national language.

To further communicate and disseminate the results of this policy experimentation we intend to arrange face-to-face meetings with high-level stakeholders at the public authorities in partner countries. This will facilitate the transfer of our findings into future planning of national education plans and relevant educational policy directives. For example, in meetings in the Lithuanian Ministry of education easily 20 persons come to jointly reflect with the partners from VU and ICSE on how project results can be transferred into policy actions.

To disseminate 3C4life, the project consortium will host a policy seminar at well-known conferences such as Educating-the-Educators (ETE) 4, planned for 2023. This is a conference series organised by ICSE and its consortium which regularly attracts about 200 attendees from research, policy and practice. In 2019, the one-day policy seminar at ETE3 was a huge success, fully booked, and participants explicitly asked to run a similar event in the future to bring STEM teacher educators, researchers and policy makers together. This perfectly fits to the policy experimentation and its demand for upscaling and therefore we will organise this policy seminar specifically to disseminate and exploit 3C4Life.

It is fundamental to go beyond the project partnership and specifically initiate dialogues with leads at other public authorities, as they will be key in deciding whether to follow up on our findings and exploit our results. This endeavour will be supported by the fact that consortium members already have strong and active contacts to eight Ministries and several public authorities across Europe as well as to the European Schoolnet (in which 30+ ministries of education are members), the STEM alliance, STEM Coalition and EU working groups. We will develop catchy project information focussing on various upscaling requirements, chances, options and possible support from our side, specifically targeted to this group. Partners will send this information via personified emails to identified high-level contact persons and seek opportunities for personal talks e.g., on the phone.

2.4.4 Stakeholders and public at large

Examples for members of this target group are higher education institutions across Europe, scientific peer groups, industry and the general public. Of course, to reach this target group, we will use social media, the newsletter, promotion materials, the website and networking as well.

Networking is one of the most effective strategies to spread information (e.g., among scientific peers) and each partner will network beyond project duration. Networking measures vary, e.g., personal talks at meetings/conferences with education research peers or conversing with policy makers at public events (regional, national and European level).

We decided to mainly use *Twitter*, *LinkedIn* and *Instagram* for communication activities at European level and to the public at large, because it allows us to share information in a short but different way (text, video, pictures) and it is used by most target groups. This will likely lead people to the project website (where the project, the team and the measure (platform) are introduced and results will be shared) and thus serve dissemination and exploitation as well.

A huge benefit is that most partners already have a large online community of a variety of stakeholders (scientific peers, policy makers, teacher associations, etc.) that is not limited to project lifetime. Our project can thus easily be linked to further (social) media accounts, which facilitates dialogue and widens 3C4life's impact.

We will write various catchy advertising texts about 3C4life to be used in other media measures, e.g., webpages, newsletters or contacts to networks. Partners can use them for national PR (in English or national language). They will be short and precise and, moreover, specifically written to be understood by a non-scientific audience, putting the focus on raising interest to look further (e.g., visiting our website, contacting our experts, etc.).

To particularly address scientific peers, partners will give presentations at nationally and internationally relevant conferences and workshops, such as the ESERA (European Science Education Research Association) conference or ICTMA (International Community of Teachers of Mathematical Modelling and Applications).

During the various events at national/regional level our partners attend (e.g., such as the GDM conference for mathematics education in Germany), they will disseminate our results not only per talks but also per informal chats, which from our experience is always very effective.

Partners will also publish their result in prestigious journals, such as the International Journal of Science Education, or Journal of Research in Science Teaching. Scientific papers will be published

in either gold open access mode or, when publishing in traditional journals, in green open access mode. Plus, we will provide links to the documents on the project's website and platform.

Action: Each partner will describe target groups at national and European levels. The list will be made available for each project partner to revise and use (see Appendices 3 and 4).

3. Communication

Communication in the context of EU-funded projects has various purposes. There are some useful guidelines that can be used while preparing communication materials (EC, 2021c; 2021d). For example, the IPR helpdesk suggest that good communication:

- *starts at the outset of the action and continues throughout its entire lifetime*
- *is strategically planned and not just be ad-hoc efforts*
- *identifies and sets clear communication **objectives** (e.g., have final and intermediate communication aims been specified? What impact is intended? What reaction or change is expected from the target audience?)*
- *is targeted and adapted to **audiences** that go **beyond the project's own community** including the media and the public*

chooses pertinent messages (e.g., How does the action's work relate to our everyday lives? Why does the target audience need to know about the action?)

- *uses the **right medium and means** (e.g., working at the right level - local, regional, national, EU-wide? using the right ways to communicate - one-way exchange (website, press release, brochure, etc.) or two-way exchange (exhibition, school visit, internet debate, etc.); where relevant, include measures for public/societal engagement on issues related to the action)*
- *is proportionate **to the scale of the action.***

Drawing upon these guidelines, we will promote 3C4Life project and its results. In particular, we will engage multiple target groups with key messages in a **strategic and effective manner** and possibly **engaging in a two-way or multidirectional exchange** (see Figure 3). Communities of public engagement with science may have different priorities, agendas and base their work on different science communication models (from the deficit to the dialogue and participation models) (see Figure 3) (Trench, 2008). According to the deficit model, key message/science is transmitted and

disseminated by experts to the public/target groups¹, who are perceived to be ignorant and deficient in awareness and understanding. Based on the dialogue model, the public's diverse needs and views are considered and key message/science is communicated between scientists and their representatives and public, sometimes to find out how key message/science could be more effectively disseminated, sometimes for consultation on specific applications. During this process, public talk-back and take on the issue. Based on the participation model, communication about key message/science takes place between diverse groups on the basis that all can **contribute, shape the issue, set the agenda and negotiate meanings** and that all have a stake in the outcome of the deliberations and discussions. During the 3C4Life project, different kinds of (science) communication models will be addressed and practiced aligned with the goals and objectives of the project.

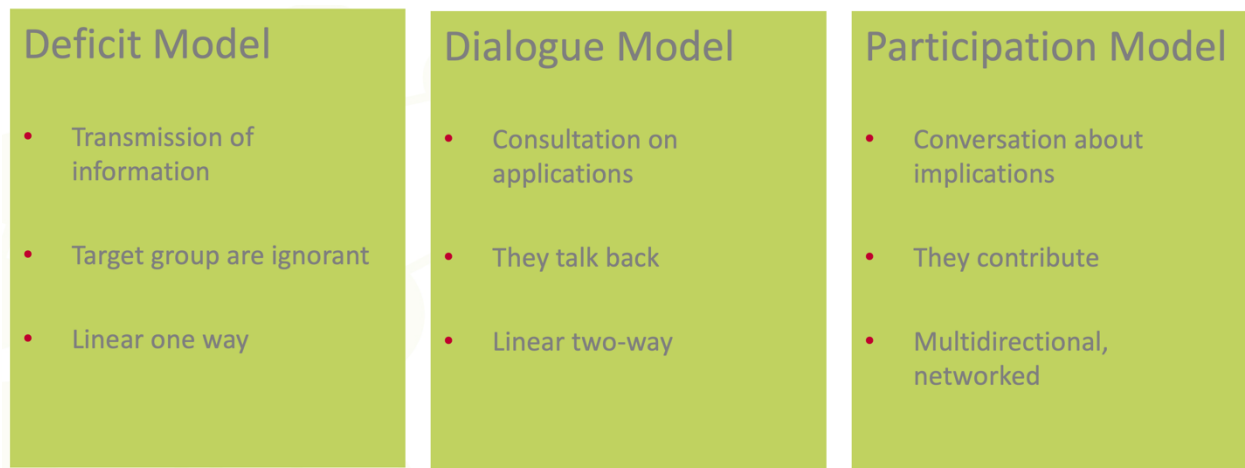


Figure 3. Models of (Science) Communication (Trench, 2008)

3.1 Communication tools and activities

A comprehensive communication plan should define clear objectives by considering various relevant target groups and set out a description, action and timing for each activity (EC, 2021d). Objectives of the WP6 are as follows:

- Active and vivid communication of the platform and its material via a variety of channels, including social media and other online communication channels.
- Ensure widespread dissemination of the platform and its materials to ensure a widespread use.
- Search actively for new channels (further platforms to use, further contacts etc.).

¹ In this sub-section, the terms “the public” and “the target groups” are used interchangeable.

Tables 1, 3 and 4 outline multiple dissemination and communication channels with relevant target groups and stakeholders.

Table 5. Strategy and channels for communicating on-going work and final results to national and European policy-makers, stakeholders and public at large

Channels	Target Groups	Information
Project Platform	A-O	<p>The Platform is the main outcomes of the 3C4Life project. The platform will include all materials for the 3C4Life project. Throughout the project the materials will be optimized, scaled-up and mainstreamed. Followings are some examples that might be on the platform:</p> <ul style="list-style-type: none"> - Videos on STEM Teacher as a Career - Chats with Professionals/STEM Career Days
Project Website	A-O	<p>The website will be the project’s showcase for a broad audience to get information and updates.</p> <p>The web page will be hosted on the next URL: https://icse.eu/international-projects/3c4life/</p> <p>The following sections and information are envisaged at an early stage:</p> <p>Welcome (Homepage) to attract the attention of visitors and facilitate their navigation to other pages on the site.</p> <p>Project (About the 3C4Life) includes information about the project, its aims and target groups.</p> <p>Team section includes information about the consortium partners and a link to national website. The detailed content of the site will have to be updated by the partners throughout all the operational phases of the project. A monthly update of the webpage is established as part of the communication timetable.</p> <p>Events section includes information about events, meetings and conferences, as well as relevant external events.</p>
National Websites	A-O	The detailed content of the national websites will have to be updated monthly by the partners throughout the project.

Newsletter	A-O	<p>The ICSE Newsletter reaches many stakeholders and anyone interested in STEM education, reports and materials from ICSE and its projects. The newsletter is issued to its unique and unparalleled network of around 2000 STEM education researchers, practitioners and policy makers at least twice a year. https://icse.eu/startseite/newsletter/</p> <p>Activities related to the 3C4Life project will be published at the ICSE Newsletter. The news articles will inform readers about the project, its events and outcomes. The ICSE Newsletter will be spread out through each of partner's mailing lists to reach a maximum number of stakeholders on national and European level (policy makers, Commission representatives, networks on science education, science education researchers, science teachers, educational authorities, industry, etc.).</p> <p>Action: Each partner will be contacted by the Project Office and WP6 leader to participate in the newsletter production. Additionally, please feel encouraged to contact the Project Office with every idea you might have. The newsletter will be circulated to everyone on the project mailing list. Partners are encouraged to share this newsletter where appropriate with targeted stakeholders and target groups.</p>
Press release	A-O	<p>Information about the project, its activities and results will be distributed in the form of press releases sent by e-mail to regional, national, European and other international media such as Futurum, Science in Schools, Scientix Digest.</p>
Social media	A-O	<p>Social media channels will allow the project to share catchy messages for quick dissemination purposes and establish a virtual dialogue with the same channels of relevant stakeholders, including relevant projects/initiatives. The aim will be to drive traffic towards the 3C4Life website and portal, and to promote the project's activities. ICSE has got social media account on LinkedIn and Instagram. These accounts will be used to disseminate information about the project. In particular, ICSE LinkedIn will be used to build a strong professional network among strategic stakeholders and to promote active discussions among project partners and the public in general.</p> <p>The Dissemination Plan will include a section (Communicating key messages) detailing the tailored social-networks strategy, including</p>

		<p>references to the selected networks, opportunities to be exploited and account management policy. All the project partners will be engaged in social network dissemination activities and will collaborate to animate these profiles with periodic posts.</p> <p>Action: Each partner will be encouraged to use different social media channels to share news, resources and videos among their networks.</p>
Clustering, Networking and Collaborating	A-O	<p>One of the core activities of the WP6 is to organise a series of clustering and networking activities with relevant organisations and networks as described in Appendices 3 and 4. One of the primary means of stakeholder outreach will be done through networking. Networking is one of the most effective strategies to spread information (e.g., among scientific peers). Networking measures vary, e.g., personal talks at meetings/conferences with education research peers or conversing with policy makers at public events (regional, national and European level).</p> <p>Action: Each partner will network during and beyond the project duration. They will contact targeted stakeholders and target groups.</p>
Exchange with decision-makers at systemic level	E-O	<p>All partners will work closely with the leaders of their respective institutions (HEIs, Ministries and Schools).</p> <p>Action: Partners will be asked to provide list of relevant target groups/stakeholders with contact details (see Appendices 3 and 4). Afterwards at national and European levels, partners will contact to them or will inform them about the project and its outcomes.</p>
Resources and publications	A-O	<p>Open access to materials, results and publications</p> <p>All our materials will be published freely under the Creative-Commons-share-alike- license so that other people can use, implement, adapt and share them. We will prohibit commercial exploitation and demand owner recognition when using the material. There is no restriction of confidentiality to our deliverables (except for the Consortium Agreement). We follow the recommendations for high-quality Open Educational Resources (OER) and internally review outputs before publishing.</p>

3.2 Communicating key messages

Considering any specific target group, customized communication and dissemination messages should be developed. It involves adopting several communication types, paying attention to the

content, form and visual identity, both online and offline. There are some basic steps for developing key message and/or visual representation for the specific target group:

- Conceptualizing the idea about the 3C4Life project.
- Conceptualizing impact of these challenges for stakeholders and target groups.
- Providing feedback as part of two-way communication (see Figure 3).

We will brainstorm with the project partners to get their ideas about a key message and/or visual representation for the specific target group. Based on their responses, we will structure key messages and visual representations for the specific target group to be used for instance on social media, LinkedIn, Twitter, etc.). Here are some key messages that come out from group works:

- *Cooperating STEM teachers - Successful STEM Classrooms*
- *Cooperation! Career! and Competence! Development - the 3Cs of successful STEM classrooms*
- *A STEM teacher's career is full of wonderful surprises*
- *A STEM teacher's career bears many unknown opportunities*
- *Competent STEM teaching requires competent STEM teachers [Elena Köck].*

Throughout the project, each national team will continue working on effective dissemination and communication means with possible monitoring indicators both in national and international contexts. When the platform is substantially developed, we will discuss social media messages and campaign with partners and the EEEB members to develop a concrete concept for social media campaign.

4. Management of Communication and Dissemination

4.1 Time management and responsibilities

All partners have jointly established the schedule, set realistic timescales for WPs, activities, meetings, milestones, and deliverables and aligned them to each other (see Figure 5 and Table 7) during proposal stage. During project duration, the coordinator will control the schedule to ensure efficient time management and if needed responsibilities. Partners will be strongly advised to communicate any (possibly upcoming) delays immediately. Options will be discussed between the affected partner and the Project Office, to adjust the schedule if necessary. Generally, the schedule and progress will be discussed during the project meetings.

The structural diagram in Figure 4 gives an overview of the project work and indicates connections between the WPs. It also presents the schedule for dissemination and communication. Considering the WP6, all consortium partners will be involved in communication, dissemination and exploitation activities both national and European levels in different capacities. All partners are responsible for planning and executing their national and European dissemination plans and report accordingly.

	M 1-3	M 4-6	M 7-9	M 10-12	M 13-15	M 16-18	M 19-21	M 22-24	M 25-27	M 28-30	M 31-33	M 34-36
WP 1 Manage PH/ZSL	M1.1 Con. Agreement* M1.2 PM*		PM		PM			PM		PM		PM
WP 2 Measure UU/VOH O	D2.1 Platform concept Country-analysis	Material for Platform Workshop on material develop.	M2.1 Platform & materials (m 12) and translation*							D2.2 Optimisation of platform & materials		
WP 3 Methods Protocol UJA/CEFI RE	D3.1 Pre-post +intermediate) questionnaire (m10) D3.2 Case study instruments (m10)	Guidelines for protocol & template for reporting on the field trials (m11)			Framework for case studies							
WP 4 Field trials VU/SMS			D4.1 Announcement text	Advertising field trials Workshop1	M4.1 Field trials (Policy measure and data collecting)* Completing reporting template m12,18,24, Workshop2 (m 18)				Continuous use and promotion of the platform for scaling up purposes			
WP 5 Analysis UJA					M5.1 Data Evaluation Pre-post questionnaire * Case study workshop m 15,24						M5.2 Validation workshop* Conclusion	D5.1. Final evaluation report
WP 6 Diss & Comm HU/MO NE	Stakeholder analysis	M6.1. Dissimination plans* (m5&6) & M6.2 Website*	Execution of plan									
WP 7 Exploitation PH/ZSL	First scaling up workshop	Questionnaire for exploitation strategy	Scaling up workshop	M7.1 National scaling up strategy*	Carrying out scaling up strategy & constant monitoring through workshops	Refining strategy		Scaling up workshop	Refining strategy			D7.1 Exploitation report based on reports of the Educational authorities
WP 8 Quality control ULIS/DG E	M8.1 /D8.1 Monitoring grid*		Feedback management	Monitoring project activities	M8.2 Report*	Monitoring project activities	Feedback management	Monitoring project activities	Monitoring project activities	Monitoring project activities	Feedback management report	Workshop: Lessons learnt from the project
EEEE meetings on each project meeting & ongoing guidance for EEEB												

Table 6. Overview of the tasks and deliverables

Table 7. WP6 – Dissemination and communication: Overview of expected results

No of Work package	Start date	End date	Result(s) (output(s) or outcome(s))	Medium that will be used (publication , electronic, online, other (specify))	Language	Dissemination level (Public, Restricted, Confidential)	Target groups/potential beneficiaries
WP6	1	6	European and National Strategies for Communication and Dissemination	digital	English	public	education authorities, researchers, education stakeholders
WP6	1	36	Marketing contents (for newsletters, social media posts, flyers, etc.)	digital	Each partner in their national language plus English	public	STEM teachers, education authorities, researchers, education stakeholders, public at large
WP6	1	36	European and national project website	digital	Each partner in their national language plus English	public	STEM teachers, education authorities, researchers, education stakeholders, public at large
WP6	19	21	Midterm dissemination report	digital	English	public	education authorities, researchers, education stakeholders, project coordinators and partners

4.2. Quality assurance and performance indicators

Within the 3C4Life project, WP8 is devoted to the quality control by developing and implementing quality assurance plan, setting up monitoring grid for quality assurance, meeting with the European External Evaluation Board (EEEB), providing guidance for the EEEB, facilitating peer reviews, internal feedbacks, evaluation feedbacks and reporting on project quality to allow for corrective measures if deemed necessary. WP8 implements quality assurance procedures for both project management/operation and project results (essentially the findings of the field trials, but also on the policy measure and its materials). To evaluate outcome and success of all activities, WP8 will develop monitoring grid with performance indicators. All activities will be monitored and if needed necessary action will be taken in order to reach the set targets.

Quality assurance is of utmost importance for the project, as the quality of the policy measure itself, of the experimentation methodology, and of the operation of field trials, and consequently of collected data, determines the transferability and scalability of our results. To make sure that quality assurance is implemented with the necessary thoroughness, all project work related to it is organized in a separate work package (WP8 – Quality Control). Throughout the duration of the project, two quality cycles run: an internal quality cycle (planned activities are allocated to Consortium members) and an external quality cycle (planned activities are allocated to external experts).

Action: Dissemination and communication progress will be continuously monitored. Tools, such as the one on Table 3, will be used to collect and track the activities performed as well as the individual interactions made by the project partners. The plan will be updated and improved when adaptations are required, with additional activities. Each partner needs to report their progress report related to dissemination and communication activities.

4.3 Decision-making structures and editorial approval procedures

All partners are involved in all project-related activities in a participatory manner. Basically, all institutions have one vote, decisions are made in the governance board with simple majority. The coordinator ensures decision-making procedures in line with Grant and Consortium Agreements, addressing in detail all partnership rights and obligations, including issues such as intellectual property.

4.4 Rules of acknowledgement of EU funding and visual identity

Throughout the lifetime of the project, the team will make available a range of attractive and recognisable promotion materials based on a common house style and in accordance with the objectives laid down in the description of work. To do so, all partners were informed about visual

identity through the Grant Agreement (e.g., Articles I.11). Each partner was recommended to use the same visual identity and following disclaimer in the project materials.

The contents of this publication are the sole responsibility of (name of the implementing partner) and do not necessarily reflect the opinion of the European Union.

Slightly modified versions of this disclaimer may also be used:

The creation of these resources has been co-funded by the ERASMUS+ grant program of the European Union under grant no. 626139-EPP.I-2020-2-DE-EPPKA3-PI-POLICY. The project's funding body, the European Commission, is not responsible for the content or liable for any losses or damage resulting of the use of these resources.

Action: A visual identity kit comprising e.g., project logos in various formats, templates with specified layouts (for e.g., newsletters, posters, internal documentation, etc.), and specified colour palette will be provided to the partners.



Project logo - always to be used

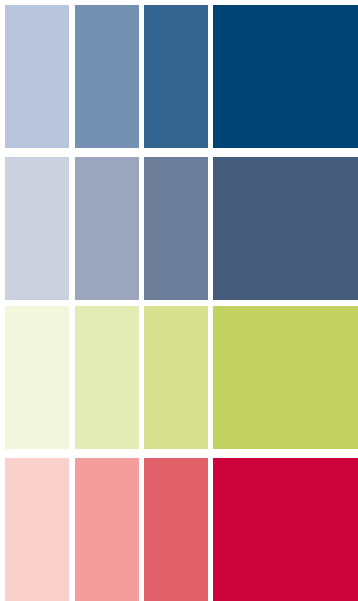
a) without subtitle, Versions: png, pdf

or



b) with subtitle, Versions: png, pdf

This logo has the advantage of not only being an attractive and easily identifiable image but also of including a very clear explanation as to what the project is about.



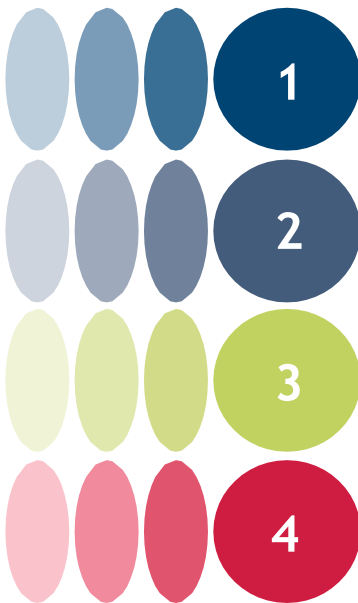
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green
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red
CMYK: 0|100|60|15

25% 50% 75% 100%



blue
RGB: 37|72|123

grey
RGB:87|99|131

green
RGB: 203|217|116

red
RGB: 180|43|77



Co-funded by the
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Acknowledgement of EU funding: Any communication or publication related to the project, made by partners jointly or individually, including at conferences, seminars or in any information or promotional materials (such as brochures, leaflets, posters, presentations, etc.), shall indicate that the action has received funding from the Union and shall display the European Union flag.



EU flag



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4.5. Data management and intellectual property right

3C4Life is a policy experimentation project, thus data collection, evaluation and reporting are the very nature of this project. In particular, WPs 2 and 5 focus on evaluation. Data collection and storage comply with the privacy and data protection legislation applicable in the respective countries. Data will be stored on encrypted facilities and only used for the intended research purposes. Scientific, project-internal and management-related data will be exchanged via a 3C4Life-specific access on ICSE's (Coordinator) internal data server. Each partner will have an access where resources can be uploaded, revised and commented. This internal data server will be administered by the Project Office (ICSE) beyond project duration.

The coordinating institution employs a data protection manager, which will support us throughout the project. As agreed among the consortium, partners mainly provide their assets/background in form of knowledge and expertise on applied pedagogical concepts and educational approaches. None of the partners expressed the wish to sign a non-disclosure agreement to protect know-how fed into project work, as most of them are well-tested, in use and openly accessible already.

We make project foreground (such as materials on career development and teaching materials or evaluation report) available open and free of charge (using CC-NC-SA license). In accordance with the respective data protection regulations all partners have the right to use the data for additional data analysis, in particular their national data.

We follow all Erasmus+ open access recommendations. A Consortium Agreement regulates any remaining, unclear details regarding intellectual property rights (e.g., for background brought into the project, cases of joint ownership).

5. Conclusions

The European dissemination and communications plan suggests a roadmap and practical information for disseminating and communicating project activities and outcomes. The 3C4Life partners will use this document as an initial strategy which will be further updated and developed as dissemination materials and specific strategies are evaluated for their reach, effectiveness in targeting particular stakeholders and alignment with project objectives and stakeholder interests. Each partner will adapt this plan and set up their national dissemination and communication plans to strategically address target groups: This involves the identifying the target group and their needs, the selection of the measure to be conveyed, as well as the means for dissemination, the execution of the plan, its monitoring, reflection on the results and rectification if needed. Having defined the list of target stakeholders and the appropriate channels to reach them, the future dissemination and communications activities will aim to further increase the interest of stakeholders in the project and further promote the outcomes of the 3C4Life project to the selected target groups.

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7. Appendices

7.1 Appendix 1: National/European Dissemination and Communication Plans for Your Country

National/European Dissemination and Communication Plans for Our Country

Country:

As a country group, please elaborate your Dissemination and Communication plans at national and international levels for the 3C4Life Project. Please email your response to gultekincakmakci@gmail.com. Based on the responses, the European dissemination, communication and exploitation plans will be set.

Detailed identification and analysis of stakeholders

1. Considering the nature of 3C4Life projects, who are the stakeholders (in national and European levels) and in what way their contribution to the project can be stimulated?

Stakeholders	In what way their contribution to the project can be stimulated?

Criteria to evaluate the selected dissemination means/strategies (such as effectiveness, impact, appropriateness for target group, monitoring indicators)

2. Please discuss possible dissemination and communication (DC) means/strategies (with monitoring indicators) for the target groups of the project?

3. What would be key message for each target group?

4. Dissemination and Communication (DC) and Action Schedule for Partner Country

DC* means/Tools/Activity	Stakeholder/Target Group	Key messages	Existing dissemination and communication (DC) means	Key concerns of the existing DC means	More effective DC means	Monitoring indicators

* DC: Dissemination and Communication

Your inputs are always welcome!

5. What other issues should be considered while developing “National Dissemination and Communication Plan” and “European Dissemination and Communication Plan”?

WP6: Dissemination and Communication

Group Work: Activity – 1: You will be divided into subgroups. Please discuss the following questions in your group. Please choose one person to take notes about what is discussed. After the group work, please email this form to gultekincakmakci@gmail.com

Group members:

Communicating the key message: What would be a key message and/or visual representation for the specific target group? (For instance, to be used on social media, LinkedIn, Twitter, Facebook, Instagram etc.)

What would be a key message and/or visual representation for the specific target group? (For instance, to be used on social media, LinkedIn, Twitter, Facebook, Instagram etc.)	What would be a short statement in reference to the respected key message?

7.3 Appendix 3: Preliminary list of relevant stakeholders/target groups (European/International Level)

[This list will be updated with partners contribution]

Name	Contact details	Web sites
European Science Education Research Association	Lucy Avraamidou, Responsible for Early Career Researchers l.avraamidou@rug.nl	https://www.esera.org
EU STEM Coalition	info@stemcoalition.eu	https://www.stemcoalition.eu
Gatsby, Good Career Guidance		https://www.gatsby.org.uk/education/focus-areas/good-career-guidance
Futurum	Brett Langenberg Director and Co-founder	https://futurumcareers.com
European Society for Engineering Education	Françoise Côme, secretary.general@sefi.be	https://www.sefi.be/
IMST – Austrian-based innovation-oriented teaching network		https://www.imst.ac.at/
My Career Options		https://www.mycareersoptions.co.uk
Science in Schools	https://www.scienceinschool.org/submit-article/	https://www.scienceinschool.org
Scientix Ambassadors network	Find here teachers who are Scientix Ambassadors in your country agueda.gras@eun.org	http://www.scientix.eu/in-your-country/scientix-3-teacher-panel
Scientix Digest	http://www.scientix.eu/news/submit-news	http://www.scientix.eu/news
European School Net	http://steamit.eun.org/about-the-project/the-team/	http://steamit.eun.org/category/stem-careers/
Science on Stage Europe		https://www.science-on-stage.eu/
STEM Alliance		http://www.stemalliance.eu/
Association for Teacher Education in Europe	secretariat@atee.education	https://atee.education/
EPALE	https://epale.ec.europa.eu/en/nss	https://epale.ec.europa.eu/en
EERA	Angelika Wegschneider, wegscheider@eera-ecer.de	https://eera-ecer.de/
European Network of Science Centres and Museums	info@ecsite.eu	https://www.ecsite.eu/
The European Society for Research in Mathematics Education (ERME)		www.erme.site
International Congress on		www.icme14.org

Mathematical Education (ICME)		
STEM PD Community of Practice (STEM CoP)	Gultekin Cakmakci cakmakci@hacettepe.edu.tr	www.stempd.net
Educating the Educators (ETE4)	ICSE consortium icse@ph-freiburg.de	https://icse.eu/educating-the-educators-iii/ (link to last edition)
ICTMA (International Community of Teachers of Mathematical Modelling and Applications)	Jill Brown jill.brown@deakin.edu.au	https://www.ictma.net/
European Network on Teacher Education Policies (ENTEP)	Hessische Lehrkräfteakademie coordinator@entep.eu	https://www.entep.eu/
ICASE (International Council of Associations for Science Education)	Dr. ZHANG BaoHui icase2017bh Zhang@163.com	https://www.icaseonline.net/index.html
EERA (European Educational Research Association)	EERA Office office@eera.eu	https://eera-ecer.de/
Coimbra Group	Raimonda Markeviciene +370 5 26 87 182	https://www.coimbra-group.eu/
ARQUS	https://www.arqus-alliance.eu/contact	https://www.arqus-alliance.eu/
Science on Stage	Science on Stage Europe e.V. Am Borsigturm 15 13507 Berlin info@science-on-stage.eu	https://www.science-on-stage.eu/countries
EASE- European Association of STEAM Educators		http://ease-educators.com/
Europass Teacher Academy	https://www.teacheracademy.eu/contact/s/	https://www.teacheracademy.eu/about-us/
LET'S STEAM	Project manager Manon BALLESTER manon.ballester@lets-steam.eu	http://www.lets-steam.eu/

7.4 Appendix 4: Preliminary list of relevant stakeholders/target groups (National Level)

[This list will be updated with partners contribution]

Country	Name	Contact details	Web sites
Germany	ZSL	Denise.Madan@zsl.kv.bwl.de	https://zsl-bw.de/,Lde/Startseite
Germany	LEW 3maIE Bildungsinitiative	+49 821 328-1564	https://www.lew-3male.de/unser-bildungsangebot
Germany	Tezba	sandra.braun@bbw.de	https://www.tezba.de/
Germany	MINTec	Irene Menke, menke@mint-ec.de	https://www.mint-ec.de/
Germany	MINT-Region A ³	marietta.menner@amu.augsburg.de	https://www.region-a3.com/product/mint-region-a3/
Germany	mintzukunftschaffen	gunnar.solka@mintzukunftschaffen.de	https://mintzukunftschaffen.de/
Germany	Kommachmint	info@kompetenz.de	https://www.komm-mach-mint.de/ , www.kompetenz.de
Germany	MINT vernetzt	Nora perseke, presse@nationalesmintforum.de	https://www.nationalesmintforum.de/themen/aktuelles/start-mintvernetzt/
Germany	Club MINT	Dr. Pascal Hetze, club-mint@stifterverband.de	https://club-mint.org/
Germany	DZLM	Katja hat enge kontakte	https://www.dzlm.de/
Germany	Landesbildungsserver	Sven Zimmermann, info@mail.schule-bw.de	https://www.schule-bw.de/
Germany	Lisa Sachsen-Anhalt	thorsten.liebers@sachsen-anhalt.de	https://lisa.sachsen-anhalt.de/lehrausbildung/
Germany	Mathe im Leben	Stephanie Schiemann, info@mathe-im-leben.de	https://www.mathe-im-leben.de/
Germany	MINT regionen	Sigrun Bones, boneskoerberstiftung.de	https://www.mint-regionen.de/
Germany	Netzwerk Digitale Bildung	info@netzwerk-digitale-bildung.de	https://www.netzwerk-digitale-bildung.de/
Germany	Schülerforschungszentrum	Manuel Vogel	https://sfz-bw.de/ , gibt's aber in allen Bundesländern, bitte beachten
Germany	Wo wissen wächst	Charlotte Willmer-Klump, cwk.uk@t-online.de	https://wowissenwaechst.de/
Germany	T3Deutschland	info@t3deutschland.de	https://www.t3deutschland.de/de/t3-europe/netzwerk-und-projekte
Germany	Lehrer-Online	Michael Jäger	https://www.lehrer-online.de/ , Eduversum GmbH
Germany	MINT-Kolleg am KIT	info@mint-kolleg.kit.edu	https://www.mint-kolleg.kit.edu/FuerLehrkraefte.php
Germany	Science on Stage		

Germany	Zentrum für Chemie	Gabi Riethe-Merz	https://www.z-f-c.de/
Germany	MILeNa	jan.heysel@uni-bonn.de	https://www.mint-rheinsieg.de/seite/470638/milena-programm-zur-mint-lehrkr%C3%A4fte-nachwuchsf%C3%B6rderung.html%20
Germany	MINTNetz Berlin-Brandenburg	stefanie.czybik@vme-net.de	https://www.mintnetz.de/
Germany	mintregion	Philippe Ludwig, LudwigP@lram.bayern.de	https://www.mintregion.de/
Germany	zdi	info@matrix-gmbh.de	https://www.zdi-portal.de/
Germany	Qualitätsoffensive Lehrerbildung	lehrerbildung@dlr.de	https://www.qualitaetsoffensive-lehrerbildung.de/lehrerbildung/de/home/home_node.html
Germany	MINT Foren	Jennifer Plath, jplath@joachim-herz-stiftung.de	https://www.joachim-herzstiftung.de/was-wir-tun/naturwissenschaften-begreifen/mint-ernetzen/mint-netzwerke-in-norddeutschland/
Germany	fobizz		https://fobizz.com/
Lithuania	National Education Agency		https://www.nsa.smm.lt/
Lithuania	Teaching competence and professional development centre of Institute of Educational Sciences (Vilnius University)	Assoc. Prof. Dr. Asta Meškauskienė asta.meskauskiene@fsf.vu.lt	https://www.fsf.vu.lt/en/research-institute-of-educational-sciences/about-institute-umi
Lithuania	Lithuanian centre of non-formal youth education	https://www.lmnc.lt/lmnc_kontakatai/	https://www.lmnc.lt/
Lithuania	Association INFOBALT	https://infobalt.lt/en/contacts/	https://infobalt.lt/
Lithuania	Lithuanian Computer Science Teachers Association	https://linma.org/apie/vadovai-kontaktai/	https://linma.org/
Lithuania	Lithuanian Mathematics Teachers Association	http://mif.vu.lt/lmma/?page_id=7	http://mif.vu.lt/lmma/
Lithuania	STEAM LT	https://steam.lt/kontaktai/	https://steam.lt/
Lithuania	LITHUANIAN COMPUTER SOCIETY	https://www.liks.lt/en/contacts/	https://www.liks.lt/en/
Lithuania	Regional education centres	Direct contact: Ministry of Education, Science and Sport	https://smsm.lrv.lt/
Lithuania	Lithuanian Association of Distance and e-Learning	https://liedm.net/en/contacts/	https://liedm.net/en/about-liedm/

Lithuania	Public institution "eMundus"	info@emundus.eu	https://www.emundus.lt/en/about-us/
The Netherlands	Teacher trainers and researchers in the area of STEM	They also have an annual conference for teacher trainers. They can help with spreading the Videos info (both career and PD oriented)	elwier.nl and ecent.nl
The Netherlands	didactical experts VO-HO-netwerken (vohonetwerken.nl)	VO-HO-netwerk Oost Pieter Boerman - Universiteit Twente VO-HO-netwerk Arnhem-nijmegen Barbara Evertsen - Radboud VO-HO-netwerk Noord Maaïke de Heij - RUG VO-HO-netwerk Leiden Jacqueline Hoornweg - Universiteit Leiden VO-HO-netwerk Wageningen / WUR Jamila de Jong - Wageningen Universiteit VO-HO-netwerk Amsterdam Agnes Kemperman - Vrije Universiteit van Amsterdam VO-HO-netwerk Utrecht Berenice Michels - Universiteit Utrecht, U-Talent VO-HO-netwerk Zuid-holland, PTVT Renée Prins - TU Delft VO-HO-netwerk Limburg Jos Schreurs - Hogeschool Zuyd VO-HO-netwerk Brabant Mandy Stoop - Fontys - FLOT	
The Netherlands	didactical experts Curriculum Reform https://www.slo-vakvernieuwingscommisies.nl/	This will be a national network for curriculum reform in the NL also, in connection with the (scientific) Curriculum Committee (wetenschapscommissie): https://www.curriculumcommissie.nl/	
The Netherlands	STEM teachers in secondary education	National Associations of Teachers: NVON NVvW	

		Ver. I&I also supported with National Annual Conferences for Teachers (C3 for chem., NIBI for bio., WND for phy., NWD for math)	
The Netherlands	Teachers in primary education	NVORWO (nvorwo.nl) and others (e.g. the group of teacher trainers on 'nature and technology'.	
The Netherlands	University researchers		e.g. Platform Wiskunde Nederland (platformwiskunde.nl)
The Netherlands	Assessment experts	Cito	https://www.cito.com
The Netherlands	A specialised group of schools with a strong STEM emphasis	Stichting Technasium Stichting NLT	
Portugal			
Portugal			
Portugal			
Portugal			
Portugal			
Portugal			
Spain	Provincial Delegation of Education in Jaén	Patricia Huertas patricia.huertas.edu@juntadeandalucia.es	https://www.juntadeandalucia.es/educacion/portals/web/ced/delegaciones/jaen
Spain	CEPs (Centros del Profesorado)	Tiburcio Biedma tiburcio.biedma.edu@juntadeandalucia.es	https://www.juntadeandalucia.es/educacion/portals/web/cep-jaen
Spain	INTEF (Instituto Nacional de Tecnologías Educativas y de Formación del Profesorado)	Marcos Noriega marcos.noriega@educacion.gob.es	https://intef.es
Spain	CEFIRE – CTEM (Centros de formación, innovación y recursos educativos - Conselleria d'Educació, Cultura i Esport)	Óscar Lozano lozano_osc@gva.es	https://portal.edu.gva.es
Spain	ÁPICE (Asociación Española de Profesores e Investigadores de Didáctica de las Ciencias Experimentales)	Ana María Abril Gallego amabril@ujaen.es	https://apice-dce.com
Turkey	Scientix Türkiye	scientix@meb.gov.tr Ali Murat Civi, Mersin,muratcivi33@gmail.com	https://scientix.eba.gov.tr

		Filiz Şentürk, Konya, rainydaisyx@gmail.com	
Turkey	Bilim İletişimi	Metin Şardağ, metinsardag@gmail.com	www.bilimiletisimi.com
Turkey	Uluslararası STEM Öğretmenler Konferansı	Hasan Özcan, hasanozcan@yahoo.com	www.stempd.net/turkce
Turkey	Hayat Boyu Öğrenme Genel Müdürlüğü	Mete Kızılkaya kizilkayamete@gmail.com	https://hbogm.meb.gov.tr
Turkey	Öğretmenlik Kariyer Basamakları Daire Başkanlığı	Ayşe OĞUZ	oyg_ykgdb@meb.gov.tr
Turkey	Meslekî Gelişimi Destekleme Daire Başkanlığı	Abdurrahim YIĞMAN	oyg_meslekigelisim@meb.gov.tr

7.5 Appendix 5: Dissemination and Communication Form

This information below will be requested from each partner as part of the reporting to the EU

Dissemination, activities and events

Partners will carry out different dissemination activities to inform different target groups about the project and its outcomes according to the proposal.

- Please list news, publications and media coverage
- Please inform about your web dissemination on your institution/university website, via Facebook/Twitter/Instagram (if applicable), distribution of news and information via email, newsletter or other means of web dissemination.
- Please describe how you disseminated 3C4Life project and teach4life platform among target groups.
- Pre- and in-service STEM teachers are our core target groups in teach4life platform. You may report how you reach them, and disseminate project outcomes.

Please list for all dissemination activities: name of dissemination activity/event, date, venue, target group, number of participants/people reached.

Dissemination Form: Following form will be used to collect data about dissemination and communication activities. Please see below.

Dissemination Form

Length & language: 1 page per dissemination action in English

Submit to: After the event, send the form to WP6 leader (gultekincakmakci@gmail.com)

	TYPE: Event/workshop/field trials/(online) meeting/etc.
Date / Time	
Place / Country	
Name of the Action	
Type	<input type="checkbox"/> Event/workshop/meeting/etc. <input type="checkbox"/> Publication-based dissemination action
Summary of the Dissemination Action (50 words/5 sentences approx.)	
Target Group(s)	Please mark all relevant categories <input type="checkbox"/> Pre-service teachers <input type="checkbox"/> Teachers (general education) <input type="checkbox"/> Primary school <input type="checkbox"/> Secondary school <input type="checkbox"/> Teachers (vocational education) <input type="checkbox"/> Groups, which support teachers (head teachers, teacher’s networks and associations, school authorities, teacher trainers, curriculum & assessment developers) <input type="checkbox"/> Research/scientific <input type="checkbox"/> Parents, pupils’ family, community, civil society <input type="checkbox"/> Industry, World of work <input type="checkbox"/> Policy makers <input type="checkbox"/> Media Other (please specify).....
No. of Participants	
Person(s) that participated	
Person in charge (your name)	
Attachments (if applicable please take 1-2 pictures from the event)	e.g., 2 pictures in jpg-Format (see below)

7.6 Appendix 6: Dissemination and Communication Activities with Numbers/Indicators

This information below will be requested from each partner as part of the reporting to the EU

a) Please specify the number of Dissemination and Communication activities linked to the project for each of the following categories

- List only activities directly linked to the project, and the type of audience reached.
- See your National Dissemination, Communication and Exploitation Plan

Activity	Number of activities	People reached
Official Launch/Launch Event		
a1 Press release		
a2 Web resources release (Web pages, The Platform etc.)		
a3 Communication Campaign (e.g., Radio, TV)		
Meetings/Workshops		
b1 Organisation of a Conference		
b2 Participation to a Conference		
b3 Organisation of a Workshop/Seminar/Meeting/Webinar		
b4 Participation of a Workshop/Seminar/Meeting/Webinar		
b5 Organising a Meet-Chat with Professionals		
b6 Participation of a Career Fair/STEM Career Days/Meet-Chat with Professionals		
b7 Participation in activities organised jointly with other EU project(s)		
b8 Participation to an Event other than a Conference or a Workshop (e.g., Brokerage Event, Pitch Event, Trade Fair, Science Festival, Exhibition etc.)		
b9 Personal communication, e-mails and phones		
Publications		
c1 Journal Article		
c2 Non-scientific and non-peer-reviewed publication (popular magazine, newspaper, e-newsletter)		
c3 Project branding and visual materials (flyers, leaflets, brochures, rollup,)		
c4 Video on Careers		

Marketing

d1 *Mass media campaign*

d2 *Social media marketing*

d3 *E-mail distribution*

d4 *Endorsement from related organisations*

d3 *Project flyer*

d4 *Project poster*

Other (please specify below)

e1 *ICSE Newsletter*

e2

e3

e4

e5

e6

b) 3C4Life communication and dissemination action schedule partner country XXX
 (This information below will be requested from each partner as part of the reporting to the EU)

Activity/Measure**	Activity Date (if applicable place)	Purpose / Target group*	Number of participants	Evaluation/ Comments
Presented 3C4Life project outcomes at XXX conference, www.stempd.net	2-3 November, 2021, Ankara	Scientific Community (Higher Education, Research), in-service teachers	35 teachers and researchers	The participants are encouraged to visit the project website and platform for further information.
Set up a 3C4Life Stakeholders Reference Group (SRG) in Turkey	2021	A-O	20	A stakeholders and target group list has been created.

* Purpose / Target group: Specify the persons reached, in the context of all dissemination and communication activities as summarised on Table 5.

** Activity/Measure: Please choose one of the actions on Table 4.