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# Report on three programmes for key competences of researchers

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Abstract	The report describes the process of specifying and developing three programmes for researchers to strengthen their skills in science communication, career diversification and female empowerment within the 18 months of the project. The general specifications and architecture of the 3 programmes are also outlined.
Keywords	Competences, researcher, PhD candidate, science communication, female empowerment, career diversification





#### 1. Overview

Within the Work Package 5: EDUC Staff Development Agenda, Task 5.5 aims to enhance the key competence of researchers. Researchers often require various sets of skills and competences: they need to do their own research, find their own funding and be responsible with their academic work, they need to be good teachers and lecturers to educate their students and share their knowledge with society, they need to be aware of the current trends in academia and even outside of it.

To help our researchers be prepared for some of the challenges they must face in a modern world of science, three training programmes are being developed by **EDUC universities within T5.5**. Those programmes deal with topics outside the traditional scope of the researcher's focus and aim to educate them within the science communication, career diversification and female empowerment areas.

By engaging in training programmes that focus on these areas, researchers can develop a well-rounded skill set that will benefit their personal and professional growth and contribute to broader societal goals such as promoting scientific literacy, diversity in the workforce, and gender equality.

**Three working groups** were created within Task 5.5 which work independently to develop their own training while using a joint framework and instructions to ensure the training programmes are being developed under the same conditions to enhance the EDUC Alliance framework and branding. Each subject area has a dedicated coordinator who organizes meetings concerning the training programme design, gathers resources, structures resources into a coherent training plan and supervises the piloting, evaluation, review and implementation of the respective programme. Other participants contribute by providing locally available resources, and feedback, and promoting, piloting and implementing the training programmes in their local environments.

- WG1: Science Communication is coordinated by Masaryk University
- WG2: Career Diversification is coordinated by Jaume I University
- WG3: Female Empowerment is coordinated by Masaryk University

The final trainings are therefore expected to share the same target group, format, schedule, and work process.

The Target group of these trainings consists of **R1 to R3 levels researchers**. Based on the Euraxess definition<sup>1</sup>, those include *individuals doing research under supervision in industry, research institutes or universities. It includes doctoral candidates. PhD holders or equivalent who are not yet fully independent and researchers who have developed a level of independence. In case where it makes sense, some of the* 

<sup>&</sup>lt;sup>1</sup> <u>https://euraxess.ec.europa.eu/europe/career-development/training-researchers/research-profiles-descriptors</u>

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trainings can be opened to administrative and support staff as well since those acts act as direct support to the primary target group.

The training programmes are being developed as **asynchronous online courses**. Three online courses will be created inside the EDUC Moodle platform, each of them will consist of several thematical modules which can be studied in a specified time based on the participant's time schedule and availability. The core of each module will be a video recording, together with additional study materials, links, and recommended literature. The workload of one module is 3 hours including the study time of the materials. Modules will possibly include a form of skills assessment to issue EDUC certificates and an evaluation of satisfaction for continuous improvement. This approach was agreed upon by the task group during the kick-off meeting. Several reasons influenced the chosen format such as:

- **Previous positive experience:** Based on the experience of EDUC and on the continuous development of an online course Initiation to Research and Critical Thinking within T3.3 of EDUC2, the asynchronous online course was picked as a suitable choice since the EDUC Alliance already has a functional case study of such a format which was successfully deployed in the past and is further developed now.
- **Practical aspects of online space:** Since we aim to train a rather large number of participants during the duration of the project, and we need to do it in 2 separate rounds (pilot run with 150 participants + full release run with 300 participants), the asynchronous online course is an optimal format since it allows online cooperation of EDUC Alliance coordinators on one side and on the other it enables participants to study online in times that are suitable for them. This way, we are also able to reproduce the course in future runs and ensure the same quality of the modules. Furthermore, it helps us to innovate existing content based on the feedback of the pilot run participants.
- **EDUC infrastructure:** Asynchronous online course format allows us to use the existing EDUC infrastructure. That way we can include every partner and share knowledge across all universities, not being tied by local-specific information systems. EDUC Moodle allows us to create the whole online course, gather participants and collect their feedback. Moreover, the EDUC course catalog enables the promotion of training and the collection of applications by interested researchers.
- **Sustainability:** Complementary to the point above, asynchronous online courses offer a sustainable alternative to traditional classroom-based education by promoting flexibility, resource optimization, scalability, and reduced environmental impact.

The first kick-off meeting of all task members took place on April 2023 after previous online discussions with the three work group leaders. The goal was to introduce the

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vision of the task and its activities (which is being described in this deliverable), to introduce the colleagues in charge of the coordination of the task at each partner university and to explain the schedule and next that needed to be taken to implement the activities of T5.5.

The task is being developed in three working groups based on the proposed schedule:

- 1. Indexing of existing trainings and formats in digital skills, science communication, career diversification and female empowerment at partner universities (Y1Q2)
- 2. Design of the three programme outlines with scopes, aims, participants, expected outcomes, training and practice formats (Y1Q4)
- 3. Development of additional training, workshop or practice formats to enrich and complete the respective programmes (Y2Q2)
- 4. Testing of the beta version of three programs with a total of 150 participants from all partner universities (approx. 50 participants per program line) (Y2Q2-Y3Q2)
- 5. Adaptation of program if need be according to evaluation results (Y3Q4)
- 6. Full release of the three programs with a minimum of 300 participants per year (Y4)

Each of the working groups follows the proposed target group, format, and time schedule, however, each group has its own coordination and added conditions under the joint framework which is suitable for the specific conditions of the working group topic. The general pattern it follows consists of indexing existing trainings, designing the outlines and developing additional training.

Based on the timing of this deliverable (M18), the groups currently working on the development of additional training, workshop, or practice formats to enrich and complete the respective programmes. The groups plan to move towards the next stage in the following months which includes the testing of beta versions of the three programmes.

#### 2. WG1: Science Communication

The Science Communication WG aims to develop the competences of researchers to address diverse, often non-expert or non-academic audiences explaining both scientific results and methodologies in a comprehensible way by making use of different tools like social media, press interviews, talks or interactive settings. The modules aim to train participants in various fields of science communication so they would be able to understand various ways how to communicate their research, what specific tools and formats can be used to communicate science and how to use them towards various audiences. The topics of these modules therefore could be

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focused on the **basic principles of science communication, media communication, the use of language towards various audiences, science communication and social networks** and other similar topics.

Science communication WG follows the general rules described above. The training is aimed at **researchers of the R1 to R3 level** as communicating science is relevant across all the career phases. The chosen format of an **asynchronous online course** suits the topic well since researchers are often very busy with their work and activities and thanks to an online course they can decide when to study the content of the training.

In the first year of the project, after the initial indexing and idea collection locally at universities, the WG representatives agreed upon a content structure of the training:

- Introduction to Science Communication: This module should offer basic and introductory information about science communication. After completing this module, participants should know what science communication is, why it is important, and what is the difference in communicating science towards various audiences. They should be theoretically familiar with formats of science communication and should get a basic idea of what way of science communication they need to use to achieve their goal and how to pick their way to communicate science.
- **Communicating Science towards the Professional Public**: This module should introduce relevant target groups of professional science communication and useful tools to use how to communicate science towards them. It also should offer tips and tricks on how to do your own professional self-promotion as a researcher. Part of this module is also a contribution to how to write a scientific article. It could discuss the methodologies of academic paper writing and publishing while also highlighting the differences between social science and humanities and life sciences approaches.
- Communicating Science towards the Broad Public: This module should introduce Science Popularization, along with a short analysis of the general context of the Science-Society relationship. It should explain how to approach the broad public and general audiences, directly or through journalists, how to talk to them and what language to use. It should explain basic principles and struggles and define various options and tools how to popularize science.
- Practical Formats of Science Communications: This module should offer an overview of various practical formats that can be used to communicate science (mostly to the general public) and how to approach them. Not every format is suitable for every researcher - how to pick the right one? A deeper dive into the most common and popular science communication formats.
- **The use of Social Networks in Science Communication**: This module should offer an overview of communicating science on social networks. It should help





listeners decide, which social network is relevant to meet their needs, and should help them with managing their social networks. The gains and risks of communicating science on social networks and how to approach it.

- **Media and Science**: This module should explain the role of media in science communication. Participants should get information about how media operate and how to find a common language. There can be a focus on the expectation versus reality of media communication and finding common ground.
- **Visualization of Science**: This module should discuss the possibilities of using data to communicate science towards various audiences (towards students, peers, and the general public). How to work with data and how to visually transform them to be easy to understand? How to engage audiences with data?

The Call for Contributors was opened in October 2023. Twelve (12) proposals were received and confirmed within the framework of the proposed structure above. The contributor's meetings started soon after their confirmation. During the first half of year 2, the schedule was followed, and additional modules were developed. The next step that will be required is to finish some of the contributions, investigate the technical aspect of the EDUC Moodle platform and do a beta test run in years 2 and 3.

#### 3. WG2: Career Diversification

The Career Diversification Working Group aims to create training that helps participants develop transversal skills to move within and beyond academia. EDUC representatives of WG2 followed the recommendations for all working groups of T5.5 and confirmed the target group of R1 to R3 researchers with a special focus on PhD candidates and early-stage researchers since the topics of various career paths are usually more appealing to them at that stage of their careers. The WG2 also chose an asynchronous online training format for their training as the advantages mentioned in the overview could be applied in this case too.

WG2 followed the general pattern described in the overview and indexed existing training, designed the outlines and is currently in the process of developing additional modules. Based on the project schedule, the following topics were identified and introduced:

#### - Overview of Career Diversification

• **Overview of career paths after the PhD**: This module should introduce various career paths that the PhD candidates can follow after finishing their doctorate. They could continue in academia but also could be interested in other public administrations, industry, or starting their own business. The lecture should offer a basic overview of the various options available mentioning the pros and cons of such career paths.





#### - Capacity self-assessment

- **Developing a professional project**: what are the steps towards your "dream job"?: This module should enable the participant to carry out a first self-assessment analysis as a researcher. To know what they would like to apply their skills as researchers shortly, to know why, and to be able to set milestones to achieve it. Identify people who can serve as referents in their close environment (academic or otherwise).
- Getting to know the job market: Beyond academia, this module should open new doors for participants. Participants will learn to identify the main labour market actors in their field, to know where and how to find relevant information about them, and how to explore the "hidden" labour market. It would help the participants to visualize themselves as researchers integrated into the industry environment.
- Identify, value and develop skills and competences: This module should show the necessary competences needed for different career paths: what should one know to generate knowledge? How should one relate to other researchers? How to identify the skills and competencies that are needed? Which skills are valuable? Participants are expected to know the skills and aptitudes expected by employers in the target field. The self-analysis carried out in the first topic of this module will enable them to identify their skills and aptitudes and how to showcase them, focusing on the target occupation.

#### Capacity building: Skills to improve your career opportunities

- Respectful management: how to coordinate research teams? Methods and tools for professional conflict management. Mentoring: Participants will learn the basic concepts of a respectful management style through an approach with a positive focus. The ultimate goal is to optimize respectful management styles as a socialorganizational resource that is essential to enhance personal and professional development and psychosocial well-being.
- How to introduce innovation and the social and environmental transformation issues in your research: This module should help participants understand the concept of innovation as applied to research. In this sense, it would be interesting to be able to include examples from a wide range of fields. Subsequently, participants should learn how to evaluate and assess innovation in their projects, as well as how to introduce it in their future projects. Understand the socio-environmental transformation issues and incorporate these issues into their professional activity and projects.

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- Master new digital and collaborative tools and techniques: This module should provide participants with useful tools to manage the development of the research project, the distribution of resources (human and/or financial), the establishment of control milestones and their fulfilment, etc. It also should provide techniques that encourage collective intelligence and collaboration between and within teams.
- Effective funding applications to get resources for your research project: Participants should learn about European funding opportunities for industry-academia collaboration projects. It will show strategies on how to search for and identify relevant calls for proposals, as well as how to manage the search for partners and external collaboration with other entities.
- From academia to industry and back
  - **Spin-off/start-up creation**: A peak into the creation of start-ups. How to get into the industrial sphere, what are the challenges? Tips on what you should know about start-ups and starting them. We can also integrate managerial and scientific knowledge; soft skills related to teamwork (problem-solving, persuasive communication/"elevator pitch", networking, etc.); market analysis; technology transfer; and eventually testimonies from researchers who created a successful/unsuccessful spin-off.
  - How to incorporate industrial and applied research in an academic career: In this module, participants should learn about opportunities to generate benefits from their research, as well as ways to protect the results (e.g. Patents or Intellectual protection software).

Each module should last around 3 hours of workload and the recording of relevant content should be the core of the modules. The final structure of the module should be decided afterwards during the meetings with contributors. The recruitment and selection process was discussed, and a joint Call for Contributors was released in late February. After the initial deadline in March and a few extensions due to scheduling reasons, the Call was closed. Eleven (11) applicants emerged and were confirmed by the working group. The next step towards creating the training will consist of contributors meeting to discuss the content of their module.

During the WG2 brainstorming, it was proposed to include testimonies from alumni of partner universities which could add a special value to the modules through personal experience. Partners agreed to search for alumni willing to share their experiences and knowledge via short recordings. The University of Rennes is in charge of drafting this methodology of testimonies.

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#### 4. WG3: Female Empowerment

EDUC representatives in WG3 creating training on Female empowerment for researchers/academia have met regularly to first specify the target population of the training and the core objective in compliance with the EDUC project goals. It was agreed to concentrate our work on those open to learning and curious to understand gender inequality in academia, which primarily means:

- 1. early career academics (researchers and teachers)
- 2. those interested among members from across all career stages and disciplines in EDUC partner universities
- 3. future academics, i. e. doctoral students.

This WG consists of both experts themselves (researchers and teachers involved in gender studies topics or equal opportunity commissioners) and project managers with expertise in organizational tasks and teaching planning. They have thoroughly discussed and developed a **training scheme (format) and core themes** with pedagogical engineers (PE) and in coordination with other EDUC WGs and tasks. Such consultation and knowledge exchange has resulted in the ambition to create an **online training** (a-synchronous, pre-recorded videos with interactive sections), **complemented by an optional face-to-face wrapping-up session provided at national levels** (and either in English or in national languages based on demand). The training content involves three thematic modules covering the core topics relevant for training in female empowerment:

- **structural gender inequalities**: understanding core concepts and broader structures.
- **gender violence(s)**: everyday experiences of sexism, gender-based oppression and violence specific for to the environment of academia
- **gender methodologies (beyond ticking of the policy boxes)**: logic and inspiration by feminist research methods and ethics across disciplines and research problems.

It was agreed that each module should last around 3 teaching hours and (based on the online training format) consist of several shorter presentations each. The final proportion should be decided in mutual discussion with selected experts in the respective thematic modules and WG representatives participating in the negotiations. Thus, it was agreed on a collective bottom-up participatory process.

In the next phase, the expert recruitment, selection process, and incentives were discussed. Experience in the field, topical fit with the call, and the proportionality of partner universities' representation in the final training content all formed the core selection criteria. The Call for Expressions of Interest was out in early December 2023, asking for the submission of an abstract and link to experts' profiles and publication lists. The WG has received twenty-four (24) unique presentation proposals from

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individual experts (some of them proposed more presentations) as well as from teams of presenters (2 - 4) from six of EDUC partner universities. All these applications have been assessed then.

Several WG meetings took place, then gradually narrowing down the candidate list and clarifying and specifying the detailed training content and its structure. Module leaders (two for each module representing two partner universities), together with the WG3 coordinator, Iva Smidova (MU), took part in these meetings – reporting back regularly at the WG3 meetings on the progress.

In the meanwhile, the group worked on the (technical) guidelines for the presentation outline, the PPT layout, video recording instructions, and formatting that were then provided to the experts.

The final expert selection phase was completed in early March 2024, and unsuccessful candidates have been informed. The creation of the following more detailed Female Empowerment training program outline has been approved:

- Module 1 Gender Inequality: Structural inequalities, inequality in academia, glass ceiling, leaky pipeline and work-life balance career issues:
  - Structural issues, work-life balance, career issues, and intersectionality
  - Introduction: General framework Basic concepts and definitions
  - Glass ceiling, work-life balance, GEN career issues
  - Labour market (Academia) Gender issues  $\rightarrow$  mechanisms Glass ceiling
  - Labour market (Academia) Inequalities in the workplace (work-life balance); Factors which influence women's careers; Gender inequality and the work-life balance
  - Labour market (Academia) Representations (Media representation of female academics)
  - Interactive methods Iconographics, storytelling
- Module 2 Gender-based Violence: Sexism, everyday experiences of inequality, and gender-based violence in academia at various career stages:
  - Gender-based violence in academia at various career stages
  - Sexism and everyday experiences of inequality
  - Raising awareness about gender-based violence through comic
- Module 3 Gender Methodologies: Conducting gender-sensitive research beyond the required ticking policy boxes

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- Introduction to different gender methodologies to address the challenges • intersectionally
- Epistemology and exploratory qualitative methodology ٠
- Feminist methodologies
- Journaling methods as a tool of feminist pedagogy and research •

The next phase followed the initial meetings and discussions with the experts in their thematic module (1 - 3) working groups. The experts were asked to provide detailed abstracts of the content of their presentations, guiding tuning up the final module structure (avoid repetitions and gaps and gain synergic effect). This phase is still ongoing - module leaders meeting with experts and tuning up their presentations before the recording phase (planned to be completed in June 2024). The group also discussed any interactive elements in their recordings that the experts need assistance with.

Simultaneously the FE WG3 members have started planning how and when best to prepare and upload the FE training materials to the EDUC learning Moodle system. The recruitment of participants (trainees) was also discussed and agreed that the pilot version of the training would be launched in the fall (late October - November). Relevant to this, certificates for PhD candidates participating in the training (stating the number of teaching hours) and measures for quality assessment checks and feedback forms are discussed and under construction. These will help us integrate the comments into the FE Training beta version.

Regular reflection and timeline assessment are a part of WG meetings, ensuring that modules and the whole training scheme and content are created according to the EDUC II project objectives and along the project's original timeline.

### 5. Conclusion

Every working group follows the general proposed schedule described in the Overview chapter. Each WG managed to index existing trainings in their respective areas and to design training programme outlines including expected participants and formats. The working groups are currently compliant with the schedule and are in the process of developing additional training to enrich and complete the respective programmes. The next step is going to be the integration into the EDUC Moodle and running the pilot of these trainings (Y2Q2-Y3Q3).

The experience for now is mostly positive: there is a functional synergy with other EDUC tasks, such as sharing best practices of online courses, presentation templates, syllabus templates, and technical guidelines on how to record a video. Possible trouble points to take care of are the time management of contributors, possible change of contributors or editing the structure of the training.

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