Research shows that the way sciences are communicated to youth, in and out of school, is not yet gender inclusive. Young Europeans, both girls and boys, still have very little idea of the variety of careers that are possible in science, technology, engineering, and mathematics (STEM), and the skills that are relevant for those career pathways.

In the coming years, with Europe’s knowledge economy developing and new technologies on the rise, skills in STEM will be needed for a broader range of careers than ever before. This initial position is the starting point of Hypatia’s activities and aims.

The Hypatia project fosters partnerships and dialogue among schools, museums, science centres and industries in order to offer gender-inclusive STEM education to young people, to actively expose young people and especially girls to the variety of STEM-related careers and to encourage young people to open up their horizons to “expect everything” from the field of STEM.

How is Hypatia pursuing these ambitious objectives? Hypatia first produced a theoretical framework on gender inclusion in STEM education and a list of criteria on what makes educational activities gender inclusive, Meie van Laar, Head of Learning and Research of NEMO Science Museum in the Netherlands, and project coordinator, explains. As the next step, the framework was implemented in the form of the Hypatia toolkit with the aim to promote gender-inclusive practices in Europe.

Actively expose young people and especially girls to the variety of STEM-related careers

The Hypatia toolkit is an accessible, practical and ready-to-use digital collection of innovative activities aimed at teenagers. The toolkit activities vary from workshops to speed dating, debate scenarios and more and are accompanied by gender and facilitation guidelines. They can be implemented by teachers, informal learning organisations, researchers and industry. The toolkit activities aim to empower teenagers to explore the range of skills needed for a great variety of STEM studies and careers open to young people. The toolkit consists of 15 modules and is available in 15 languages. It is being implemented across more than 14 countries in Europe and beyond during the project’s runtime. The dissemination of the toolkit is part of Hypatia’s pan-European campaign “Expect Everything”. “Expect Everything” calls on teenagers to get involved in the STEM-related events and activities that are taking place in the 14 countries, to discover unexpected facts about science and to get in touch with scientists and learn about their career paths. By the end of the project, more than 250,000 teenagers will have participated in the project activities.

To achieve such a large European coverage, the project established National Hubs in 14 countries from the outset. These are coordinated by science centres and museums and include more than 250 hub members. The hubs consist of panels formed by schools (science teachers but also head teachers), informal educational institutions, local, regional and national authorities, academic research institutes and industries, gender experts, parents, but above all, van Laar emphasises, young people themselves. The hubs co-designed and piloted the toolkit activities and are also

The Hypatia project: Inspiring teenagers all across Europe in a gender-inclusive way to follow a STEM-related career
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The vision of Hypatia is a European society that communicates science to youth in a gender-inclusive way in order to realise the full potential of girls and boys around Europe to follow STEM related careers. Share their vision, join the “Expect Everything” campaign and make use of their toolkit to contribute to a more gender-inclusive STEM education.

strongly involved in the dissemination and implementation process of the toolkit on regional and national level. The National Hubs are furthermore working on sustainability plans to ensure that Hypatia’s achievements extend beyond the project’s life span.

On a level playing field with teenagers

The strong involvement of teenagers from across Europe is a unique element of Hypatia. More than 1,500 teenagers, for example, tested the modules in the developing phase. They play an important part in the “Expect Everything” campaign, which is very active in social media and which set up youth panels across Europe that work with museums and science centers, thus allowing their stories, articles, and videos to shape the campaign.

Another cornerstone of the project’s efforts is the preparation of a set of institutional guidelines for science museums, schools and industries on how to address gender inclusion and how to transform their organisations (publication date: July 2018). Gender inclusion requires institutional change. It is important, for example, that organisations reflect on possible inherent stereotypes. It is furthermore essential to recognize the implicit gendering of STEM, which, e. g., presupposes certain types of learners to the exclusion of others, and also the widespread conflation of gender with biological sex, which contributes to creating STEM stereotypes. These mechanisms are at work both in and out of school contexts, and have the effect of excluding a variety of learners from STEM.

The Science with and for Society programme provides the opportunity to work on and disseminate new practices and to link with stakeholders

The participation in European collaboration keeps the science museum NEMO informed on the latest developments in science communication and on research in this field, van Laar points out. She adds that it has improved their performance as a museum: “By working with partners from across Europe we are strengthening the field of informal learning, ensuring that the broadest possible audience is aware of the significance of science to society, technology and innovation.”

The SwafS programme, van Laar points out, offers organisations such as science museums, that are experts in the field of science communication and whose mission is to bridge the gap between science and society, the opportunity to cooperate with other stakeholders and work towards eliminating this gap. It also enables them to promote gender- and cultural-inclusive practices and to cooperate with stakeholders from the field of research, civil society organisations, universities and schools towards achieving this goal.

To get a foot in the door of European research and innovation funding, van Laar recommends to newcomers that they should come with an open mind and with the will to question their own practices. They should be prepared to work with new types of stakeholders and to think ahead beyond the lifetime of a project on how to incorporate what they learn into more sustainable practices in their own contexts and countries. She points out that they can always turn to the Science with and for Society National Contact Point in their country for advice, which was what van Laar herself did concerning issues the consortium had doubts on while preparing the Hypatia proposal.