

'Creativity through Early Years Science Education' Erasmus+ Training Activity Marathon, Greece 10/7- 15/7 2016

Theoretical Background

The Creativity through Early Years Science Education summer course aims to encourage teachers to promote the use of creative approaches in teaching science in preschool and early primary education and adopt the role of agents of change in their schools and more widely. The Creativity through Early Years Science Education summer course intends to sensitize in-service teachers to the synergies between inquiry-based learning and creative approaches identified in the Creative Little Scientists' (CLS) project (<http://www.creative-little-scientists.eu/>) that was funded by the European Union from October 2011 until March 2014, and train them to foster these in their classrooms.

The process of curriculum development is at the core of the training course and, in addition to its focus, is one of its main innovative elements. The learning and assessment training activities carried out in the Creativity through Early Years Science Education course will have an emphasis on stimulating partnerships between participating teachers coming from different countries across Europe. The course will embrace the notion of community which provides the chance to learn from others through social interaction. Such communities of practice can be fostered when teachers come together intent on learning from and with one another and other colleagues in the group.

The training course aims and objectives promote the overall objective:

To foster creative approaches to science teaching and learning in preschool and the first years of primary school.

More specific aims and objectives of the training course for early years educators include:

- to use inquiry-based science education approaches in early years settings
- to experience how creativity is manifested in the science classroom
- to use creative approaches in teaching science
- to develop positive attitudes towards learning and teaching science and creativity
- to act as innovators, researchers and reflective practitioners
- to engage in communities and partnerships with other stakeholders (other teachers, parents, professional associations, experts, etc.)
- to develop understandings about the Nature of Science
- to recognise the potential in everyday materials and the importance of observing children's use of resources to gain insights into their developing explorations and thinking
- to explore the ways in which tasks can be designed with appropriate resources to support collaboration and how they can help children to collaborate effectively, encouraging them to articulate their ideas and exchange and evaluate these
- to experience the different purposes of inquiry and the ways in which everyday learning activities can be opened up to allow greater opportunities for problem solving and creativity
- to be enabled to use different forms of questioning and reflect on their productivity in different contexts, as well as ways of encouraging children's questions, particularly their scientific questions which have the potential to be generative and/or evaluative and thus support their creativity
- to reflect on the purposes of recording, selecting approaches appropriate for purpose and different ways of representing and expressing ideas, as well as recording as a process, to support thinking, reflection and dialogue.

Finally, the course will strengthen its European dimension by inviting participants to form a community of practice with fellow teachers across Europe. To achieve this, the course will serve as an introduction to a bottom-up community building model to professional development which will provide the necessary space for them to exchange and share ideas, experiences, concerns and educational resources with other practitioners from diverse backgrounds.

You may find it helpful to use this text when you are filling out your application for a KA1 Erasmus+ grant

Training Objectives

Throughout the course teachers will experience inquiry-based and creative approaches in 3 different modes:

- a) as learners participating in science inquiry-based activities fostering creativity;
- b) as teachers implementing inquiry-based and creative approaches in their science classes; and
- c) as researchers collecting, examining and interpreting data about their practice and their students' learning.

The course will leverage an inquiry-based creative approach through hands-on and reflection sessions to experience the principles of inquiry-based and creative science learning, while introducing the basics of curriculum design research and exploring teacher education curriculum design principles. The latter cover: learning activities, role of teacher educator, materials and resources, grouping, location, time; and assessment.

Reflective and collaborative practices will be promoted and during the hands-on sessions attention will be paid to formative assessment and feedback.

The training course is based on the Conceptual Framework, teacher education curriculum design principles and guidelines formulated in the EU-funded project Creative Little Scientists (www.creative-little-scientists.eu), as well as the training approach and teaching materials created by the Erasmus+ project CEYS to promote creative approaches to science learning in preschool and the first years of primary school.

The CEYS Training Framework is structured according to the "Vulnerable Spider-Web" of Jan Van der Akker and can be seen in the figure below.

