

## The benefits of Open Schooling on STE(A)M learning

### Key messages

- ⇒ **Open schooling can support STE(A)M learning better for the majority of students than traditional methods**
- ⇒ **Open schooling brings the benefit of active citizenship through community engagement into STE(A)M education**

**Open schooling has been promoted as an approach that creates an engaging environment for children's learning while strengthening links to local communities. Local expertise and experience incorporated into learning at school, making links to the real world offers ways to learn more meaningfully and leads to better motivation of learners, but also of teachers. Open schooling brings the arts element into STEM learning in a natural way, and thus paves the way for higher levels of STE(A)M competences.**

The purpose of Open Schooling is to bridge the gap between formal, informal, non-formal; institutional and non-institutional education. The development of technology and infrastructure of our modern society is so fast that nowadays school systems are educating students for jobs that do not exist yet. Therefore, teaching cannot be based on knowledge alone, since this knowledge may be obsolete by the time the student enters a workplace. Transition towards a more contemporary and competence-based education system has been on-going in many countries for some years now. To achieve this, it has been crucial to redefine the framework for the education of children. Education needs to be engaged with real life and not isolated from it. This new educational landscape demands collaborations between members of local communities that traditionally were not involved.

A paradox of the open schooling approach lies in the meaning of the Greek word for 'School', which means "free from work" or "leisure". Open schooling in general is shift in paradigm from school as an isolated island, towards engaging

school in multiple ways with the local society and the world of work in the process of educating students. Although the benefits of open schooling constructions are widely accepted, there can still be several interpretations for the core values and objectives of concrete open school activities can be based on:

- 1) For some, external institutions the focus is on formation, and the aim is to prepare student to be critical thinkers and engaged citizens.
- 2) For others, an open school has a clearly defined and transparent learning objective, with summative assessments.
- 3) Yet others build on developing innovation and project competences, for example through the methodology of problem-based learning (PBL). eg. Learning STE(A)M by solving actual problems in local society.
- 4) Creativity as a single purpose for engaging in open school partnerships is also legitimized in several cases, eg. arts and crafts in focus. This is done without expectations of a certain learning outcome, since this kind of aesthetic process is a personal experience.

### Inspiration #1 – Copenhagen Honours College

Copenhagen Honours College (CHC) is a new 2-year talent programme (started in 2018) driven by the University College Copenhagen for teacher training students. The program offers a small group of students the possibility to pursue certain extracurricular activities and, at the same time, provides a scholarship in order for the scholar to dedicate all available time to studying. The honour programme involves among other elements a journal club, project management education, tools in innovation processes and networking. The 30 ECTS given amounts to a semester, which is done on top of the mandatory college courses. As a part of the 2 year programme, all students are paired to a public school. There they focus on practical projects within the field of certain learning outcomes in line with the aims of CHC, eg. on developing sustainable and qualified open schooling activities. A recent project presentation from an intern has proven what the extra resource of having a CHC student at a school can achieve. The teacher training student developed two



partnerships, and planned, professionally defined and project managed the learning activities beginning to evaluation. The feedback from the mentor at the local school stated that the effort put in by the teacher training student was of great importance and a resource that really made a difference in order for these open schooling activities to happen. Teacher training students can make a significant difference and get valuable, on-the-job training experience, given the right conditions and motivation. ([More information](#))

There is not necessarily a contradiction between different motivations for engaging in open school programmes, and it is important to be aware of this pedagogical and didactic diversity. The combination of approaches and objectives will often be unique for the individual educational landscape, and also definitive for how the local collaborative strategy on open schooling is developed and implemented. The benefits of open schooling lay in this construction, getting it right for all by uncovering nearby educational resources and bringing them into play by local partnerships. In some cases, the external educational environments do not have pedagogical nor didactical competences, and yet they still represent an authentic framework for learning. Interaction between teachers as formal scaffolders of learning and the external agents/providers provides a potential cradle for innovative learning and education, also within the field of STE(A)M. An open schooling educational landscape has the potential for creating a broad framework of learning activities that accommodates the wide variety of ethnic, cultural and traditional backgrounds, approaches and perspectives, interests and motivations for learning among students. It also has a potential to meet the criteria of equity and inclusive education. Innovation, creation of new practices and reflections on the effects are core values in this transition from traditional formal education towards education in an open schooling environment.

Sources: OSOS, DPU

### Inspiration #2 – OSOS

The three-year (2017–2020) Open Schools for Open Societies (OSOS) project aimed to help a thousand European primary and secondary schools with opening up to its community. In this project, schools can count on support around curriculum, pedagogy and assessment. Schools that participated in the first round of implementations, school year 2017–2018, acted as HUBs for the schools participating in the second round of this project. This method stimulated a growing support network between schools.

The OSOS model proposes a process and this process starts with the Change Agents who are becoming Inspiring Leaders of the school community. It supports school leaders to capture the needed steps for innovation with constant reflection being part of the process. The OSOS Open Schooling Model provides a powerful framework for school leaders to engage, discuss and explore how their schools need to evolve, transform and reinvent for personalized science learning and teaching; how schools can become innovation incubators and accelerators.

By the end of the project 1169 schools joined the movement, with 2222 teachers as part of the OSOS community over 1188 projects carried out. ([More information](#))

### ABOUT PHERECLOS

PHERECLOS is aiming to establish “Local Education Clusters” (LECs) of different design as examples of open schooling. All LECs will bring together schools and other relevant actors in the education ecosystem in a particular pilot region, supported by a peer mentoring programme. The LECs will be incubators for enabling a dialogue between various parties and help to set up joint activities in formal and non-formal education. The LECs will also help to develop collaborative learning environments as experimental testbeds for schools, and in parallel, they aim to impact on the quality of science engagement opportunities available in these areas.

More information: [www.phereclos.eu](http://www.phereclos.eu)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 824630.