

**Project Title:**

**Self-directed Learning as a Strategy to Promote STEM Education**

**1. Support Service Co-ordinator**

School-based Professional Support Section, Quality Assurance and School-based Support Division, Education Bureau

**2. Network Co-ordinating Organisation**

e-Learning Development Laboratory, Department of Electrical and Electronic Engineering, The University of Hong Kong

**3. Objectives**

The support will focus on, but not limited to, the following themes: robotics and sensors, 3D and VR technologies, coding and computational thinking, science project learning, artificial intelligence, smart city, e-Learning and STEM education. The project aims :

- to support the participating schools in strategic planning and implementation of STEM-related lessons and curriculum using a whole-school approach
- to strengthen curriculum leadership, foster collaboration across STEM-related KLA's / subjects such as Mathematics, Science / General Studies and Technology Education
- to enhance teachers' professional capacity to adopt self-directed learning as a strategy to promote STEM education
- to strengthen students' ability to integrate and apply knowledge and skills across different subject disciplines to unleash their innovation, and to help them develop positive values

**4. Foci of Support**

- To support the Participating Schools in strategic planning and implementation of the school-based curriculum relating to STEM education
- To support the development of learning activities relating to STEM education that integrate knowledge, skills and attitudes into the daily learning and teaching activities to help students develop positive values
- To support the development of school-based resources and promote activities relating to STEM education for the successful implementation of STEM education and SDL
- To enhance the professional capacity of teachers and help them understand the objectives and principles of STEM education and SDL through teacher professional development programmes
- To provide consultancy service to the Participating Schools to create the environment and space that is suitable for the implementation of STEM education, such as setting up the STEM Lab or cross-science subject laboratories for STEM education and SDL

**5. Modes of Support**

- Meetings with the teachers-in-charge to develop and implement the school-based curriculum relating to STEM education
- Teacher training workshops at the University of Hong Kong to equip

participating teachers with knowledge relating to STEM education and SDL

- Exchange activities among schools to share good experience and practices, e.g. sharing sessions on teaching, open lessons, learning cluster meetings and exhibitions
- Project learning competitions to encourage students to learn under STEM education
- School-based consultancy services to each Participating School

## **6. Expectations on Participating Schools**

- Participating Schools appoint panel heads or curriculum leaders as the project coordinators to establish a STEM education team of three or more teachers, so as to ensure an efficient operation of the support service
- The STEM education teams teachers actively participate in pre-lesson preparation, lesson observation and teacher training activities of the project, formulate school-based objectives and conduct corresponding assessments and reviews, and establish a long-term development plan and direction in STEM education
- Participating Schools arrange regular timeslots for teachers concerned to attend meetings and participate in various professional development activities, e.g. collaborative lesson planning
- Representatives of the Participating Schools attend at least two meetings held in the school year with the Network Co-ordinating Organisation and other Participating Schools on formulating strategies and work plans, etc.
- Participating Schools share with other teachers their experiences in school-based curriculum development and the materials and resources they develop
- Participating Schools observe strictly their legal obligations and, in all cases, comply with the Copyright Ordinance in developing school-based learning and teaching materials