Quality Education Fund Thematic Networks – Tertiary Institutes (QTN–T) (2022/23)
Project Title:
Self-directed Learning as a Strategy to Promote STEM Education (2022/23)

1. **Support Service Coordinator**
    School-based Professional Support Section, Curriculum Support Division, Education Bureau

2. **Network Coordinating Organisation**
    e-Learning Development Laboratory, Department of Electrical and Electronic Engineering, The University of Hong Kong

3. **Objective**
    The project aims:
    *   to support 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 KLAs/subjects such as Mathematics Education, Science Education/General Studies and Technology Education
    *   to enhance teachers' professional capacity in adopting self-directed learning (SDL) 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
    *   to provide professional recommendations and technical solutions in field of STEM including electronics and robotics

4. **Foci of Support**
    *   To support participating schools in designing learning and teaching strategies related to STEM education
    *   To support the development of learning activities relating to STEM education that integrate knowledge, skills and attitudes to help students develop positive values towards the society
    *   To support the development of school-based resources and promote activities for the successful implementation of STEM education and SDL
    *   To help teachers understand the objectives and principles of STEM education and SDL through teacher professional development programmes
    *   To provide consultancy service to participating schools to create the environment and space that is suitable for the implementation of STEM education, such as setting up a STEM Lab or cross-science subject laboratories for STEM education and SDL
    *   To 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

5. **Modes of Support**
   - Meetings with the STEM education team to develop and implement school-based STEM education curriculum
   - Teacher training workshops at the University of Hong Kong to equip participating schools with knowledge relating to STEM education and SDL
   - Exchange activities among participating schools to share experience and good practices, e.g. sharing sessions, open lessons, learning cluster meetings and exhibitions
   - Project learning competitions to foster students' learning interest in 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 teacher-in-charge 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 team 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
   - Participating schools attend two Executive Committee (EC) meetings and an annual dissemination seminar to share good practices generated and effective ways to cope with challenges encountered
   - STEM education team share with other teachers their experience in school-based curriculum development and the materials and resources they develop, e.g. work plans, learning and teaching materials, research reports, student work (The copyright of these materials will be owned by the Quality Education Fund.)
   - Participating schools observe strictly their legal obligations and, in all cases, comply with the Copyright Ordinance in developing school-based learning and teaching materials

7. **Project Webpage**
   https://elearning.eee.hku.hk/stem/