Project Title:
Integrated Self-directed Learning Approach to School-based STEM Development (In-STEM) (2021/22)

1. **Support Service Co-ordinator**
   School-based Professional Support Section, Quality Assurance and School-based Support Division, Education Bureau

2. **Network Co-ordinating Organisation**
   Centre for Information Technology in Education (CITE), Faculty of Education, The University of Hong Kong

3. **Objectives**
   This project aims to provide support to teachers to enhance their capacity to integrate self-directed learning (SDL) into STEM education, develop and implement a school-based curriculum in relation to STEM education, and assess students' ability under STEM education so that students are facilitated to integrate and apply the knowledge and skills across different STEM disciplines, and develop self-directed learning, entrepreneurial spirit and 21st century skills through scientific investigation and engineering design. The project targets at upper primary (P.4-6) and lower secondary (S.1-3) school students and develop STEM school networks so as to foster a sustainable development of STEM education in schools.

4. **Foci of Support**
   - To enhance teachers' understanding of STEM education and SDL
   - To enhance teachers' mastery of related learning design, assessment and curriculum development strategies to implementat STEM education through SDL
   - To support teachers to design and implement STEM education and STEM-related subjects using e-learning technologies
   - To develop students' 21st century skills as well as the solid knowledge and skills across STEM-related disciplines through classroom implementation
   - To facilitate collaboration among schools and scale up innovative practices through cluster networks

5. **Modes of Support**
   - On-site support, and professional development and network activities on STEM education, learning design, school-based curriculum development and leadership capacity building
   - School clusters for building networks and facilitating collaborative learning
   - Resource schools with rich STEM implementation experience and expertise to support the development of STEM education of Participating Schools through collaborative learning
   - Technologies and related training to support teachers on learning design and knowledge management
   - Connecting schools with local industries and other STEM-related networks for broadening and supporting the learning of teachers and students

- Disseminating good practices of SDL in STEM education and celebrating success of students and teachers
- Informing practice with theory and research

6. **Expectations on Participating Schools**
   - Participating Schools support the integration of SDL into school curriculum of upper primary (P.4-6) or lower secondary (S.1-3) levels to implement STEM education
   - Participating Schools set up a core project team comprising at least one curriculum leader and teachers from STEM-related subjects in the school
   - The core project team teachers to collaborate with other teachers within the project for collaborative lesson planning and implementation, as well as peer lesson observation and reflection on practice (including timetable scheduling, manpower planning, etc.)
   - Participating Schools facilitate teachers and students to use e-learning to support SDL in STEM education
   - Participating Schools facilitate teachers to participate in project activities for capacity building and networking
   - The core project team teachers engage in evaluation and research of the project to improve the project quality and facilitate school's organisational learning and development
   - Representatives of the Participating Schools attend the related 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, 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