

Project Title:

Integrating Self-directed Learning with Curriculum-oriented Cross-disciplinary 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

Department of Science and Environmental Studies, The Education University of Hong Kong

3. Objectives

The project aims to develop primary and secondary school teachers' professional capacity to promote STEM education with a stronger linkage to the subject curricula, and enhance the integration across STEM-related disciplines, using self-directed learning as one of the major approaches.

4. Foci of Support

- To explore the integration of self-directed learning with curriculum-oriented cross-disciplinary STEM education in primary and secondary schools
- To enrich teachers' strategies to design and implement STEM-related learning activities with enhanced integration across STEM-related disciplines
- To facilitate students to consolidate their subject knowledge through cross-disciplinary STEM-related learning activities, which goes beyond the understanding of single-discipline learning
- To enhance the coordination of school-based curricula of various subjects relating to STEM education

5. Modes of Support

- To build a STEM education leadership community composed of curriculum leaders and teachers from Participating Schools to develop the leadership qualities in STEM education and facilitate the sharing of experiences among the schools in the community
- To organise professional development seminars and workshops for school leaders and teachers
- To help Participating Schools identify their needs and strategies for developing a school-based curriculum relating to STEM education, based on the schools' missions and visions, resources and student characteristics
- To provide exemplars on STEM education activities that match with the school-based curriculum for teachers' reference
- To coordinate and facilitate the lesson observations by teachers in the school-network
- To provide on-site technical support
- To conduct surveys and focus group interviews to evaluate students' learning outcomes and the impact of the STEM-related learning activities
- To produce a resource pack, including the learning and teaching materials relating to STEM education developed by the Participating Schools as

exemplars

6. Expectations on Participating Schools

- Each Participating School forms a core team of at least 2-3 teachers and assign 1 teacher-in-charge to liaise with the university support team
- The school core team works closely with the university support team in areas such as needs analysis, professional development, lesson observations and post-observation feedback
- The Participating Schools collaborate with the university support team, to design curriculum-oriented, cross-disciplinary STEM learning activities and implement them in classrooms, to allow teachers of other Participating Schools to observe the lessons as well as to contribute one school-based curriculum unit and learning and teaching materials relating to STEM education as an exemplar for the resource pack
- 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
- Participating Schools observe strictly their legal obligations and, in all cases, comply with the Copyright Ordinance in developing school-based learning and teaching materials