

STEM CAREER ACADEMIES PROJECT DESCRIPTION

The SEAMEO Regional Centre for STEM Education (SEAMEO STEM-ED) intends to develop a college and career readiness program called Career Academies which will be established as small learning communities within a secondary school. The program will use career strands as an organizing framework for learning and instruction that helps students connect academic subjects and their applications to the world of work in a specific career pathway. The Centre will develop partnerships among employers, communities, and universities that will provide resources, adult mentors, and opportunities for students to engage in career-related work and internships. In addition to the academic enrichment, career awareness and occupational skills, the academies will develop 21st century skills in order to prepare young adults for the ever-changing technology-oriented and innovative society.

Through engagement with national policy agencies, local governments, and employers, the STEM Career Academies will be piloted and evaluated before being proposed to policy makers for wider adoption nationally and regionwide.

BACKGROUND

The overall purpose of the STEM Career Academies initiative is to pilot and implement a university and career readiness program regionwide. The program seeks to equip students with the knowledge and skills they need to pursue their chosen career. Based on data reported by the World Bank during 2015-2018, fewer than 30% of the students in Southeast Asia graduated from STEM related fields in tertiary education. The Southeast Asian countries are all aware that STEM education is one of the essential mechanisms for developing their human resources and enhancing their competitiveness in the global economy, and therefore is a key to addressing the skills gap in current and future workplaces. Consequently, addressing the skills gap by strengthening STEM education in the region and integrating career related skills into the program are critical to enhancing the employability of young people. Moreover, students need to be equipped with technology skills which are in high demand in the global economy.

Career Academies have been widely adopted across the United States and many countries. It has been proven to be one of the most successful reform models which serve a wide group of students, especially those at-risk groups who are prone to drop out or leave school early after they complete compulsory education. The students participating in Career Academies program have higher graduation and employment rate as well as earnings when compared to the comparison groups. In the US, a number of states have legislation supporting Career Academies with multiple funding streams. Therefore, Investments in career-related experiences during high school can produce substantial and sustained improvements in the labor market prospects and transitions to adulthood for youth.

OBJECTIVES

- The set-up of Career Academies Advisory Committee and working groups to oversee the project implementation and evaluation;

- The design of Career Academies model including curricular and instruction, career awareness and internships activities, professional development for teachers, leaders, and parents, student assessment, certification and employment;
- The development of core trainers and mentors in Thailand and selected countries in the region;
- The initial testing of the courses or modules offered to students;
- The successful demonstration of the effectiveness of the model through the creation of an Academy in collaboration with universities and professional certification agencies in Thailand and in the region;
- The transfer of this new STEM Career Academy to the implementation agencies to be established within existing agencies or to be newly created in Thailand and in the region;
- Provision of ongoing support to the agencies and educators implementing the programs.

SCOPE OF THE PROJECT

The Centre will pilot the career academies model in Thailand. After the impact evaluation to study its effectiveness and impact on student outcomes is conducted, it will be scaled in Thailand and in the region. Four prospective industries will be selected as the first four career strands to be piloted which include health science, computing science, smart agriculture, and teaching. The components of the model include:

1. A central goal of preparing students for higher education and solid careers in the workplace, and emphasizing academic instruction to deliver a challenging college preparatory curriculum in the context of a broad occupational or career strand;
2. Recruiting students based on their interest in a career theme;
3. Establishing a multi-grade curriculum in which Academy sequences span at least two (and sometimes up to four) years of the high school experience;
4. Using cohort scheduling—a hallmark of small learning communities—to keep groups of students together over several years and ideally assigning teachers to stay with those students over that period; and
5. Involving private sector partners extensively to provide input into curriculum and standards, train teachers, teach and interact with students, certify students for the job, and provide opportunities for internships and jobs.

DELIVERABLES

The deliverables for the project will be:

1. The partnerships with policy makers, local government, employers, and professional bodies in selected industries;
2. The committee to oversee the implementation and evaluation;
3. The curriculars to be delivered at pilot schools;
4. The development of core trainers in Thailand and in the region;
5. The study of the academy effectiveness and its impact on student outcomes;
6. The sharing of the studies with policy makers and employers to secure additional funds to scale up the model;

7. The establishment of implementing agencies.

EXPECTED BENEFITS

Career Academies will provide a new platform within the current education system by setting new standards, curriculum, and testing system that the private sector takes a major role in sharing know-how and expertise in improving the quality of education system. The expected benefits related to academic outcomes include attendance, earned credits, graduation rates, college attendance rates, and also labor market outcomes. In the long run, the program is expected to improve the livelihoods of the future workforce through higher income generated from the matched skills required by the workplaces.

STAKEHOLDERS AND BENEFICIARIES

- Policy makers: Office of the National Higher Education, Science, Research and Innovation Policy Council, Ministry of Higher Education, Science, Research and Innovation, Thailand and similar agencies in the region;
- Department of Skill Development (DSD), Ministry of Labour, Thailand and similar agencies in the region: In sharing trainer resources, training facilities and developing skills standards for Career Academies;
- Potential US partners which successfully implemented Career Academies Program to advise on the conception of the program;
- Bangkok Metropolitan Administration and provincial administrative organizations in Thailand with over 400 schools in Bangkok and over 300 in rural areas as the target recipients in the initial phase before regionalization into other countries;
- Universities which are committed to implement the program in partnership with the Centre;
- Employers in the selected industries.

PROJECT TIMELINE AND SOURCES OF FUNDS

The project will begin in 2020 with the funding of Chevron Enjoy Science Project Phase II in combination with the allocated government budget. In the first year, a committee will be formed to oversee the development of the model. In the second year, the first cohort of teachers and students will be trained and developed. After the completion of Chevron Enjoy Science Project in 2022, additional funding will be sought to continue the project in the following three years. Towards the completion of the project in year five, the study of the program effectiveness will be released and shared with policy makers in the region. The Centre will provide continued support for the adoption of the model by governments in the region to set up their own career academies.