



SEAMEO Regional Center For Technical Education Development



Progress Report
FY 2018/2019

Message from Dr. Doung Vuth, SEAMEO TED's Director



Countries and educational institutions around the world have formulated policies and launched initiatives in favor of developing, adapting, adopting and sharing quality online repositories with an open license. Technical and Vocational education at secondary level forms an important part of educational systems in all the countries in South-East Asia.

The provision of vocational and technical education is important not only for partly solving the problems of unemployment poverty, and rural development of the poor and disable students but also supplying enough skilled workers demanded by some foreign companies in the era of industrial revolution 4.0. and the context of sustainable development

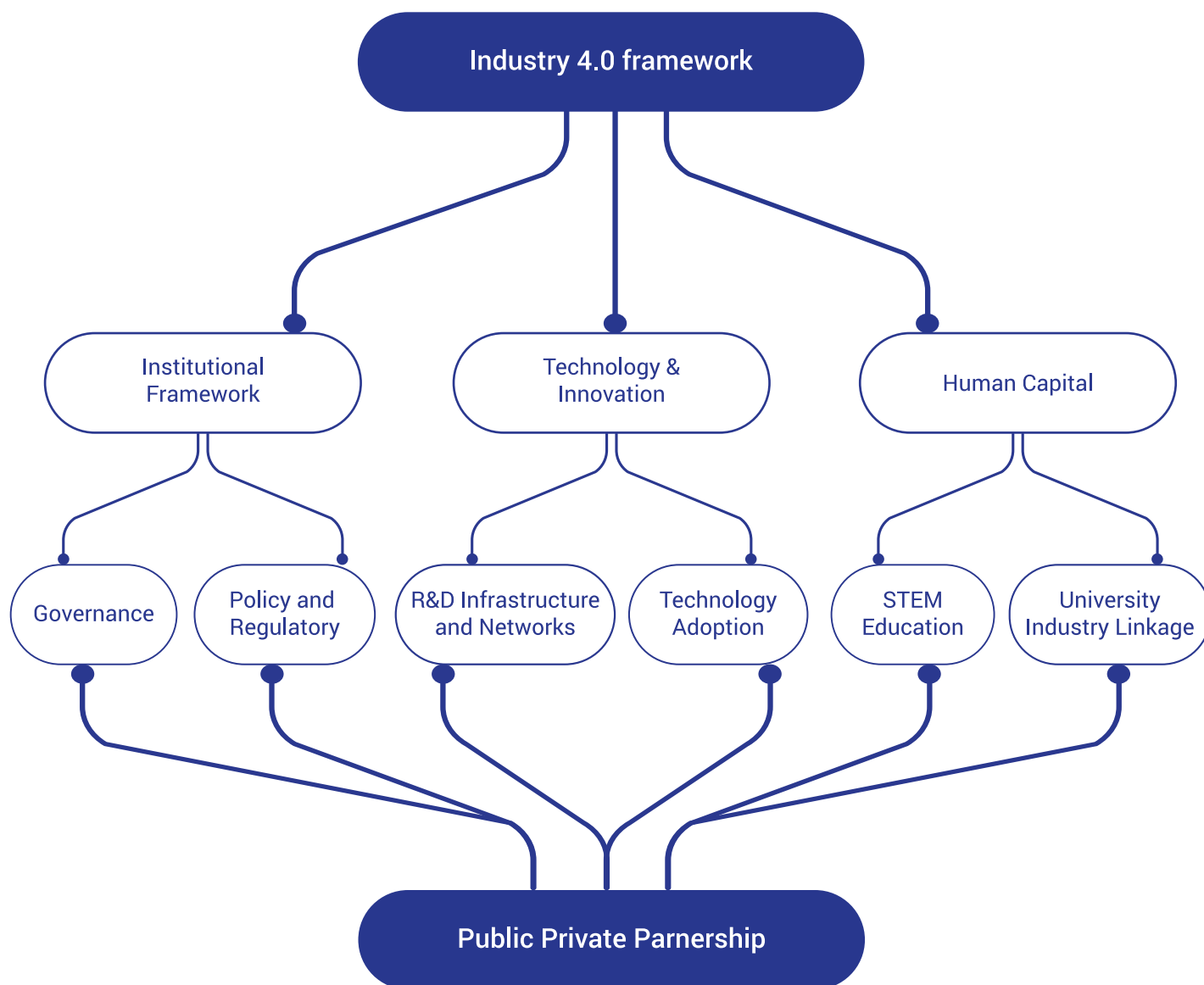
Guided by SEAMEO Priority No 4 to promote “TVET among learners, teachers and parents with more visible investments and relevant curricula that focus on creativity and innovation with a clear pathway to lifelong learning, higher education and regional labour, skill and learners’ mobility”, SEAMEO TED is aware of the essential role that technical education is playing in enhancing the capacities of peoples in Southeast Asia and meet the emerging challenges brought about by the ever-changing education landscape and the emergence of 4.0 Industries.

What is Industrial Revolution 4.0?

Industrial revolution, in modern history, implies radical economic and social structural changes that take decades to unfold. The first began in the 18th century and was characterized by the use of steam power in manufacturing industry. It brought about mechanisation and shaped a new economic structure that relied mainly on textiles and iron. The second industrial revolution occurred in the late 19th and early 20th century. The discovery of new energy sources – electricity, oil and gas – led to the invention of the internal combustion engine. The assembly line was introduced, allowing mass production, which led to improved systems of transportation, communication and banking. It added a series of new dimensions to the economic structure. The third industrial revolution began in the late 1960s fuelled by electronic and IT systems, prompting the invention of robots and programmable logic controllers. High-level automation in mass production was made possible. New technologies such as the internet, consumer electronics, renewable and nuclear energy, high-speed trains and aircraft were introduced, facilitating production abroad (Schwab 2016). The 2000s mark the beginning of the fourth industrial revolution. Industry 4.0, also known as smart manufacturing, was introduced in 2011 at the Hannover Messe trade fair by the German government. Source: CDRI: *Industry 4.0: Prospects and Challenges for Cambodia's Manufacturing Sector*

Industrial Revolution 4.0 refers to the fourth industrial revolution. It calls for a dynamic transformation of how all aspects of business and production are done. A new wave of global technology will change global production. Internationalization, in all aspects of business and industry, will be the norm. Countries can no longer remain confined within their borders but must become citizens of the world. Leaders in this new era will need to be critical thinkers, problem solvers, and be able to interact across the globe. In short, they need to be liberally educated. Source: <https://restart-project.eu/industry-4-0-impact-education/>

Industrial Revolution 4.0 represents an integration of the IoT and relevant physical technologies, including analytics, additive manufacturing, block chain, robotics, HPC, artificial intelligence and cognitive technologies, advanced materials, and augmented reality, that complete the physical-to-digital-to-physical cycle. (Sniderman, Mahto and Cotteleer 2016, 8)



Source: CDRI: *Industry 4.0: Prospects and Challenges for Cambodia's Manufacturing Sector*

Technical education in the context of Industrial Revolution 4.0

Every developmental change in production and economy has had significant economic, social and demographic consequences in history. The individual stages of the industrial revolution accompanied not only the changes in habitual practice in the production, distribution and consumption of goods and services, changes in the structure and nature of the labour market, but also the fundamental changes in the way of life of individuals and

social strata. The transformation of the organization of production, work, lifestyle, and the way of thinking that started the new millennium was identified in the second decade of the 21st century as the fourth industrial revolution, and the professional and lay public works with it as Industry 4.0. The Fourth Industrial Revolution is linked to the process of digitization and cybernavigation of the production and

distribution of goods and services. Linking the production process will increase the efficiency not only of the production, but also of product development and service. Intelligent systems will effectively replace human manual work: in

particular, this raises serious concerns about the fate of the secondary labour market, which is characterized by low-qualification jobs, low wages, worse working conditions, and, as a result, greater staff turnover.

INDUSTRIAL REVOLUTION 4.0 AND ITS IMPACT ON EDUCATION

How should Industry 4.0 impact on education? Future workers will need to be highly trained in the emerging technologies but also, as importantly, in the values associated with using those technologies. In the future, we must not only possess the ability to develop the technology but also to know whether, when, and where to use that technology. That kind of thinking is both reflective and interdisciplinary. Schools must reinvent themselves quickly. They need to adapt to the demands of the RI4 and have the obligation to come out of its shell, its hermetic spaces and try to give as many opportunities as possible by creating the adequate contexts for students to be prepared for the future jobs. The problem in the future could not be the lack of employment, but the shortage of skills that the new jobs will demand. The big question is: how can schools adapt to these demands?



Students need to understand how they can correlate and use and apply different knowledge in diversified contexts, what they really mean and how they can create synergies among different subjects to develop/create “something” that connects to the real world. This takes us to another very important point: students need to work in a framework of projects and from there they

need to collaborate with their colleagues, with their teachers and with the outside world. They need to develop new ways of communicating; they need to be put in front of complex situations to develop critical thinking and complex problem solving and to learn how to be imaginative, creative, adaptable, flexible and to develop brain plasticity. In other words, Industry 4.0 will require the world to produce a new kind of worker—a knowledge worker! Tomorrow's industry leaders and managers must possess new skill sets to adapt, to manage, and to take advantage of Industry 4.0. They must be critical thinkers, problem solvers, innovators, communicators, and provide value driven leadership. They must be able to see beyond the technology at play to the implications for society for the use of that technology. These traits define the knowledge worker. They must know the technology but be able to meet and solve all aspects of the challenges engendered by this technology. This kind of leader requires a new approach to education. Source: Retrieved from <https://www.weforum.org/agenda/2016/01/the-10-skills-you-need-to-thrive-in-the-fourth-industrial-revolution/>



The impact of the Industrial revolution 4.0 is forthcoming and Technical Vocational Education Training (TVET) will be more than an enabler towards the era of digitalization and information technology. The Industry 4.0 has already signified how humans and machines networked each other in decision making to provide new solutions towards employees work processes. Thus, the importance of skilled workers to improve co-decision in flexible routine tasks will become a norm. In the context TVET they should be a strong emphasized on developing social intelligence merging with ICT competencies focusing towards learning how digitalization works rather than understanding usage. As a result, this will build competencies of creativity due to the deep understanding of the systems and technology for all types of learners. In view, the renewed ICT competencies for teachers will enable high relevancy for the teaching profession to remain adaptable and renewing the teaching framework for the 21st century curriculum.

By DR. SHEIKH LUKMAN BIN SHEIKH ABDUL HAMID, Principal For Institute of Bureau Technical Education (IBTE), Ministry of Education, Brunei Darussalam and SEAMEO TED Governing Board Member for Brunei Darussalam

The Ministry of Education Malaysia reaffirms the importance of equipping our students with relevant skills and competencies especially in this challenging era set within the context of the fourth Industrial Revolution (4IR). The 4IR has contributed to a landscape that is laden with VUCA, hence, skills and competencies attained at school and education institutions, including in technical and vocational education and training (TVET), must be able to address these challenges and in meeting the demands of the labour market. SEAMEO TED gives the opportunities for member countries to collaborate to understand the skills and competencies gaps which each country face and to improve talent development, mobility, governance and TVET accreditation.



By Dr Habibah Binti Abdul Rahim
Ministry of Education, Malaysia and SEAMEO TED Governing Board Member for Malaysia

The Fourth Industrial Revolution and the subset Industry 4.0 is the new trend of automation and data exchange in manufacturing technologies (Smart Manufacturing) that are adopted globally to drive innovation, accelerate advancement and capture the maximum economic benefits. The Fourth Industrial Revolution is a global trend of cyber-physical system adopting the digital technology. The new generation learners should be technically educated and capacitated to address the challenges and advancement of the Industry 4.0 and the 21st Century employment. To drive the economy in the 21st century, it is important that the Government and its citizens are mindful on the effect of the Industrial Revolution 4.0.



By Mr. Raul C La Rosa, Director Bureau of Learning Resources Department of Education, Philippines
SEAMEO TED's Governing Board Member for the Philippines



"The Industrial Revolution 4.0 requires a massive transformation in employee skills and training to meet demands of labour market in 21st century. Therefore, technical education plays a very crucial role in well-preparing learners with diverse technical backgrounds and real-world experiences for gainful employment and lifelong learning. I strongly believe that developing action-oriented training programs engaged closely technical universities with industries /businesses/ communities and constructing an innovative and human learning environment based on the emerging technology and deep learning instruction will provide learners with opportunities to develop technical/professional and core skills to adapt with jobs becoming more cognitively demanding."

By Associate Prof. Dr. Do Van Dung, President, University of Technology and Education
Ho Chi Minh, Ministry of Education and Training, Vietnam
SEAMEO TED's Governing Board Member for Vietnam

Background

At the 4th Annual Forum for High Officials of Basic Education of SEAMEO Member Countries and Associate Members held in Brunei Darussalam on 11-12 June 2014 with the theme “Promoting Entrepreneurship Education and Culture Within the Basic Education System”, it was highlighted that in this era of the 21st Century, driven by demands for a dynamic economy, promoting Entrepreneurship Education within the basic education is pertinent as Member Countries are faced with the challenges of producing a flexible and resilient workforce well equipped with the necessary skills and key competencies. In 2016, through a great



deal of in-Country consultations, MOEYS Cambodia finally submitted the letter of intent on the establishment of SEAMEO TED in Cambodia on 27 June 2016.

The Royal Government of Cambodia officially endorsed and issued the Sub-Degree on the establishment of SEAMEO TED in 2017. Then, at the SEAMEO Executive Committee (EC) Meeting held in August 2016 in Bangkok, the SEAMEO Secretariat on behalf of the Ministry of Education, Youth and Sport (MOEYS), Cambodia highlighted the need for establishing a SEAMEO Regional Centre specialized in Technical Education and Cambodia’s willingness to take the initiative to establish and host the proposed Centre. The EC took note and supported the request from MOEYS Cambodia on the proposal on establishing a SEAMEO Regional Centre for TED in Cambodia and to seek the endorsement of the 39th SEAMEO High Officials Meeting on the said proposal to the SEAMEO Council for approval.

In order to explore the feasibility of establishing a SEAMEO TED, a survey instrument (questionnaire) was developed and MOEYS Cambodia has conducted the survey on TED in the Southeast Asian Countries.

The establishment of SEAMEO Regional Center for Technical Education Development (SEAMEO TED) in Cambodia, endorsed by 49th SEAMEO Council Conference on 25 July 2017 at Mulia Hotel, Jakarta, Indonesia which supports the SEAMEO 7 Priority Areas (2015-2035). One of the 7 Priority Areas which is Priority Area Number 4 is promoting technical and vocational education and training (TVET) among learners and their parents, through more visible investments in the field, and improving the relevance of the curricula to focus on creativity and innovation. In 2017, SEAMEO TED updated all necessary documents and proposed the budget allocation for processing the SEAMEO TED Center.



SEAMEO Regional Center for Technical Education Development (SEAMEO TED) of the Ministry of Education, Youth and Sport, Cambodia was established by SEAMEO Council on 25 July 2017 in Jakarta, Indonesia. SEAMEO TED's establishment supports the SEAMEO 7 Priority Areas (2015-2035). One of

the 7 Priority Areas which is Priority Area 4 is promoting technical and vocational education and training (TVET) among learners and their parents, through more visible investments in the field, and improving the relevance of the curricula to focus on creativity and innovation.

The relevant areas include priority 2, addressing barriers to inclusion by providing access to basic learning opportunities to all learners through innovation in education delivery and management to provide for the previously inaccessible and vulnerable groups; priority 6, promoting harmonization in higher education and research; and priority 7, adopting a 21st century curriculum by pursuing a radical reform through systematic analysis of knowledge, skills, and values needed to effectively respond to changing global contexts, particularly to the ever-increasing complexity of the Southeast Asian economic, socio-cultural, and political environment, with ASEAN ideals in building ASEAN Community.

SEAMEO TED is one of 26 SEAMEO Centers in Southeast Asia, established according to a Sub-degree of Royal Government of Cambodia No.104/ dated 28 June 2017 and endorsed by the 49th SEAMEO Council Conference in 2017 to assist SEAMEO Member Countries in identifying Technical Education Problems and finding alternative solutions for sustainable human resource development through the technical education. In 2017, The Center has temporally offices at Resource Building #201 Preah Norodom Blvd., Phnom Penh. SEAMEO TED has managed and developed an organizational structure, Enabling Instrument, Memorandum of Agreement (MoA), Five Year Development Plan, Three Year Budget Plan, Annual Operational Plan, Logo, Seal, and

Staff recruitment. The Center consists of four divisions:

1. Division of Administration Planning and Finance;
2. Division of Advocacy and Partnership;
3. Division of Technical Education and Training; and
4. Division of Research and Development.

These four divisions serve three programmes trust: 1) Research and Development, 2) Building Capacity of Technical High School Teachers in Southeast Asia and 3) Advocacy and Partnership.

Activities Implemented 2018-2019

SEAMEO TED nominated one official to attend the First SEAMEO Centre Policy Research Network (CPRN) Task force Meeting

SEAMEO TED sent one research official, Dr. Phalla SEAN to attend the SEAMEO Center Policy Research Network (CPRN) Task Force meeting held on 20th-21th February 2018 at Bangkok by the SEAMEO Secretariat. This meeting was participated by 16 SEAMEO Regional Center from 11 countries, and the representative from UNESCO and Head of Foundation and coordinated by SEAMEO Secretariat. The Network was established to enhance relevance and sharpen responsiveness of SEAMEO Centres and Secretariat to the needs of education leaders for policy research to address regional human resource development issues in Southeast Asia. The first SEAMEO Centre Policy Research Network (CPRN) Task Force meeting aims to:

- Strengthen the SEAMEO Centre Policy Research Network through its task force;
- Pinpoint research priorities and opportunities of SEAMEO And SEAMEO Centres;
- Collaboratively plan for the activities in 2018-2020

In the meeting, the SEAMEO TED's official learned from the welcoming speech delivered by Dr. Gatot Hari Priowirjanto, Director of SEAMEO Secretariat and presentation of Dr. Ethel Agnes Valenzuela, Deputy of SEAMEO Secretariat. Dr. Ethel Agnes Valenzuela presented about history, objectives and activities of this CPRN task force meeting. He also learned from the presentation on the need for the Policy Research in ASEAN countries by the representative of UNESCO and Head of Foundation. From the meeting a 3-year action plan for SEAMEO policy research was proposed and agreed by the participants of the task force meeting.

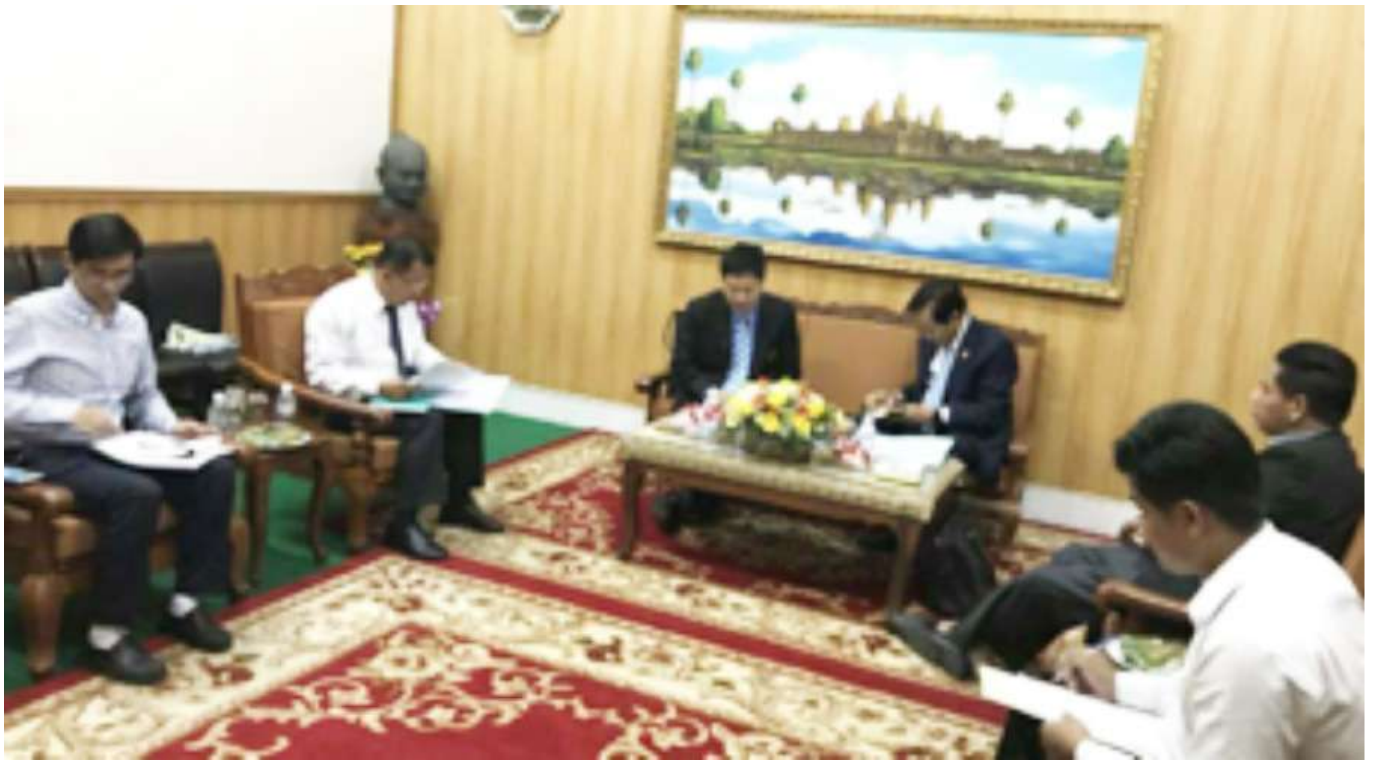


SEAMEO TED welcomed the Visit of Delegate of SEAMEO Secretariat to the Ministry of Education Youth and Sport of Cambodia

SEAMEO Regional Center for Technical Education Development welcomed the official visit of delegate from SEAMEO Secretariat, Mr. Prassert Tepanart, Deputy Director of Administration and Communication. The objectives of the visit are as the following:

1. To monitor the progress of the set-up of the SEAMEO TED in Cambodia as well as to assist in the current challenges such as the official launce of the centre, administrative challenges, staffing, etc.
2. To discuss with relevant officials on the regional Centre of TED to solicit their opinions on the future direction an how they can assist the Centre to kick start some activities.
3. To visit some potential projects or partners to understand the context in Cambodia related to TED future activities.

In the visit, Mr. Prasert paid his courtesy to Dr. Im Koch, Secretary of State of the Ministry of Education Youth and Sport of Cambodia, accompanied by H.E Dr. Om Sethy, Deputy Director General of Education, and SEAMEO's High Officials of Cambodia, Dr. Doung Vuth, Interim Director of SEAMEO TED. In the meeting, we discussed on how to support on the implementation of SEAMEO TED Center and the future direction, such as the necessary activities should TED conduct function its roles as state in the enabling instrument signed by 11 Ministers of Education at SEAMEO Council Conference (SEAMEC) held in Jakarta 2017.



SEAMEO TED visiting SEAMEO Centers in Indonesia



SEAMEO TED nominated three officials to visit to the SEMOE LEC in Indonesia following invitation from Mr. Dr. Abi Sujak, Director of SEAMEO Regional Learning Center on 7th May 2018.

1. To learn from the administration model and operation management system of SEAMEO LEC as the regional center;
2. To understand the document preparation of Governing Board Meeting (GBM), Annual Report, Center Director Meeting (CDM), Senior's Official Meeting(HOM) , five-year Development plan and Three-year Plan;
3. To understand the training program of SEAMEO LEC;
4. To strengthen cooperation with SEAMOLEC on ICT development.
5. To learn about how to develop the necessary document for regional events such as meeting or conference.



SEAMEO TED got very warm welcome from Mr. Pak Yoni, Deputy Director of Administration and his management team from SEAMOLEC. The SEAMOLEC center mainly focuses on training, educational development of open and distant learning for teacher and student in South East Asia. Dr Doung Vuth, SEAMEO TED's Director suggested from SEAMOLEC

to share experience in organizing Governing Board Meeting (GBM), High official meeting (HOM), developing Five-Year Development Plan and Three-Year Budget Plan. In the meeting, TED and SEAMEO SEAMOLEC had discussed about the possibility of cooperation. Dr. Doung Vuth had a request for experts from SEAMOLEC to support SEAMEO TED on webpage design by sending volunteer officers to work a short time SEAMEO TED. Mr. Pak Yoni, Deputy Director of Administration, said that the send experts to work and teacher at SEAMEO TED related to information technology base on the sharing cost between SEAMEO TED and SEAMEO LEC. Thanks goes to SEAMOLEC Management team and staff for their warm hospitalization for TED during the visit in Indonesia.

The objectives of study visit o SEAMEO BIORTROP were:

1. To find out the administration model system of SEAMEO BIORTROP ;
2. To understand the training program SEAMEO BIORTOP
3. To strengthen cooperation with SEAMEO BIORTROP .



Dr Irdika Mansur shared experience to SEAMEO TED about the SEAMEO Biotrop's work. SEAMEO was established in 1968 and managed by Board of Director, Director, Deputy Director for Human Resource, and Deputy Director for Program, Quality Department

Management, Internal Auditor Committee and Research Laboratory. The main activities of the SEAMEO BIOTROP focuses on Forest, Pest and Aquatic Biology as well as SEAMEO BIOTROP has a research team for Tissue Culture, packing, fish production, capacity building to develop the life skill, and garden decoration in school.

Dr. Doung Vuth, SEAMEO TED's director briefly presented about SEAMEO TED four main sectors: (1) agricultural sector, (2) industry, (3) engineering, and (4) information and communication technology. The two directors had a discussion regarding the possibility of cooperation with SEAMEO TED on agriculture. In particular, Dr. Irdika Mansur provided a scholarship and accommodation for eight teachers per year. Therefore, flight ticket and food are the responsible by

SEAMEO TED. Dr. Irdika Mansur agreed to send the experts to train agriculture high school teachers organized by TED in Cambodia if there is requested from TED. Dr. Irdika Mansur requested SEAMEO TED to cooperate with Royal University of Agriculture in Phnom Penh Cambodia, which is the partner of SEAMEO BIOTROP for sharing the place and experimental

laboratory for training. Thanks to Dr. Irdika Mansur, Director of SEAMEO BIOTROP and his management team for their warm welcome, accommodation and meaningful discussion on possible collaboration on the field of agriculture which Biotrop will extend their support to SEAMEO TED, Cambodia, Led by Dr. Doung Vuth.

SEAMEO TED visiting SEAMEO CECCEP Center in Bandung, Indonesia

SEAMEO TED delegates also visited SEAMEO CECCEP in 10th May 2018. SEAMEO CECCEP was established as the regional research center for Early Childhood Care and Education (ECCE) and Parenting. The purposes of study visit to SEAMEO CECCEP are:

1. To find out how to write five-year development plan and three-year budget plan;
2. To understand training program of SEAMEO CECCEP;
3. To strengthen cooperation with SEAMEO CECCEP.



Director of SEAMEO CECCEP and his management team warmly welcomed SEAMEO TED. SEAMEO TED learned from the presentation by SEAMEO CECCEP management team about their developing three-year budget plan, five year development, partnering and development necessary working papers of the centers. SEAMEO CECCEP mainly focused on research and development and training program for Early childhood and education such as Children's wellbeing, Curriculum and pedagogy; enhancing teacher's competencies, Quality learning environment, Policy and programs for 21st century learning, Participation and access in ECCE and Parenting including Children participation in parenting, the 21st century parenting, Inclusive, culturally relevant and sensitive parenting education programs. Dr. Doung Vuth appreciated and thanked to Director of SEAMEO CECCEP and his management team for their warm welcome and sharing to TED. The two centers

promised to share experience and support to each other in order to smoothly implement the regional activities such as research and training and event based on cost-sharing and mutual benefit the two centers. Thanks to Dr.

Dwi, director of CECCEP and his management team for their warmly welcome, dinner, accommodation and sharing to the team from SEAMEO TED, Cambodia.

SEAMEO TED visiting SEAMEO QITEP in Science Center in Indonesia

SEAMEO TED visited SEAMEO QITEP In Science on 11 May 2017. The objectives to study visit to SEAMEO QITEP were:

1. To find out the administration model system of SEAMEO QITEP;
2. To understand the training program SEAMEO QITEP;
3. To strengthen cooperation with SEAMEO QITEP.



SEAMEO QITEP was established in 2009 which has focused on capacity improvement of science teachers and educators in South East Asia. The topics in training for teachers and students in South East Asia are: Science Laboratory Management, Science Classroom Supervision, Classroom Action Research, Inquiry-Based Science Education, ICT-Based Science Learning, Higher Order Thinking Skills Pedagogical Content Knowledge in Science. This center provides support to trainees from the region especially Cambodia, Laos and Myanmar such as airfare, accommodation, meals, and allowance.

SEAMEO TED delegates attending the SEAMEO Centers Directors Meeting in Bangkok, Thailand

SEAMEO TED delegates led by Dr. Doung Vuth, Center Director attended the Center Director Meeting(CDM) from 17-19 July, 2018 in at Arnoma Grand Bangkok Hotel, Thailand. The meeting was organized by SEAMEO Secretariat. The center became the platform to for all SEAMEO Regional Centers to present their activities and programme which have been implemented for a year. A number of the progress report of each center, SEAMEO Secretariat and partnering universities were presented. In the meeting, SEAMEO TED also requested for the collaboration with SEAMEO BIOTROP Center in Indonesia conduct a short-term training to technical teachers in Cambodia and Southeast Asia. The proposed dates of Governing Board Meeting (GBM) of the



new established SEAMEO Centers including SEAMEO CECCEP in Indonesia, SEAMEO CED in Laos and SEAMEO TED in Cambodia was also in discussion. From the CDM, SEAMEO TED also learned from how all SEAMEO Centers have made networking and collaboration with partners in implementing their activities. The SEAMEO's partners are include: University of Tsukuba, China Education Association for International Exchange(CEAIE), UNESCO Asia-Pacific Center of Education for International Understanding, ASEAN-China Center, Aflatoun International, Aide et Action-Southeast Asia, GIZ, John Wiley&Sons Singapore,Pte Ltd, Ministry of Education, Culture, Sport, Science and Technology, Japan, The Institute for Promotion of Teaching Science and Technology, UNESCO Asia Pacific Regional Bureau for Education, UNESCO International Research and Training Center for Rural Education and Asia-Pacific Regional Network for Early Childhood (ARNEC). These partnering institutions work together with 26 SEAMEO centers to realize the seven priorities of SEAMEO member countries in the areas of education, science and culture. The 2018 CDM meeting also decided on proposed date for the CDM2019 on 18-20 July 2019 in Bangkok, Thailand.

SEAMEO TED Attending the 2nd Partnership Workshop for SEAMEO-China TVET Cultural Twinning Programme in China

Referring to letter of SEAMEO Secretariat, Bangkok, Thailand dated on 7 July 2018, SEAMEO TED director was invited to attend the 2nd Partnership Workshop for SEAMEO-China TVET Cultural Twinning Programme, held on 25-30 July 2018 in Guiyang, Guizhou, PR China.



In response to the recommendation of the 2nd SEAMEO High Officials Meeting in Technical and Vocational Education and Training (TVET), held in Bali, May 2016, the Multi-Countries Level Workshop in Guiyang was aimed to promote collaboration of TVET institutions in Southeast Asian countries with other regions beyond Southeast Asia.



The objectives of the 2nd Partnership Workshop for SEAMEO-China TVET Cultural Twinning Programme were: 1) to provide

opportunity of capacity development for TVET administrators, teachers, and students through cross-country partnership programmes; 2) to strengthen and sustain long-term collaboration between TVET institutions in China and Southeast Asian countries; 3) to promote student and teacher mobility through the various forms of collaborations between China and Southeast Asian countries such as student and teacher exchanges, scholarships, short course trainings, internships, and dual programmes; 4) to set up the partnership agreements which can start the implementation in September 2018 onwards; and 5) to develop a group of model TVET institutions of best practices for cross-country partnership development.



The workshop was attended by 107 delegates who are high officials or school management from 62 selected advanced TVET colleges or polytechnics in Southeast Asia and China. Among the participants, 63 were from China and 44 were from SEA countries, including Cambodia, Indonesia, Lao PRD, Malaysia, Myanmar, the Philippines and Thailand.

Six sessions – focusing on sharing and developing partnership and collaborative activities among TVET institutions – were held on the first two days of the workshop. There were also two school visits to Guizhou Polytechnic of Construction and Guiyang Pre-School Education College in the afternoon, 29 July. At the end of the Workshop, there were 128 bilateral agreements signed between Chinese and SEA TVET institutions, with total 417 collaborative activities, such as teacher exchange and training, student exchange, scholarship and internship which will be organized onwards.

Hosted by the Technical Education and Skills Development Authority (TESDA) and the Department of Education, the Philippines, 4th High Officials Meeting on SEA-TVET Theme: Moving Together Towards TVET 4.0 was held on 4-5 September 2018 at Philippine International Convention Center Manila, Philippines. Dr. Doung Vuth, Interim Director of SEAMEO TED participated in 4th High Officials Meeting on SEA-TVET Theme: Moving Together Towards TVET 4.0. He presented the showcase concerning technical education sector under Ministry of Education, Youth and Sport.



Since the 1st High Officials on SEA-TVET organised in 2015, various new national and regional initiatives in TVET have been created and co-developed among the Southeast Asian countries, and Development Agencies with the purposes among others are to improve the quality of TVET, to promote partnerships among TVET institutions, to strengthen involvement of industries, to leverage capacity of TVET personnel, to harmonise TVET curriculum among participating countries, and to promote the mobility of skilled workers, teachers and students. Various activities have been organised at all levels of TVET personnel such as policy makers, TVET school/college leaders, researchers, teachers and students.

SEAMEO TED nominated two officials to attend the 3rd International Conference on Global Education Citizenship Education in South Korea



SEAMEO TED has nominated two officials, Mr. Suong Saruon, and Ms. Han Nanita to attend the 3rd International Conference on Global Citizenship Education (GCED) under the theme of GCED of Every Corner of the World: Local-Contextualization of GCED, which was co-organized by The Asia-Pacific Centre of Education for International Understanding (APCEIU), the Ministry of Education, the Ministry of Foreign Affairs of the republic of Korea in partnership with UNESCO. The conference was conveyed at Lotte Hotel Seoul in the Republic of Korea on 5-6 September 2018 and attended by 500 participants from over 60 countries. It was the platform to share regional, national and traditional concepts which same or similar values to those that are at the core of CGED, and the exchange of practices and ideas in facilitating the dialogue on diverse roles of GCED playing with difference emphases depending on the context of societies.

SEAMEO TED Director attending the 1st SEAMEO CECCEP Governing Board Meeting in Bali, Indonesia



SEAMEO TED's Director attended the attending the 1st SEAMEO CECCEP Governing Board Meeting as an observer, 19-22 September 2018 in Bali, Indonesia in

collaboration with Centers. In the meeting, the members of SEAMEO CECCEP from SEAMEO countries (Brunei, Cambodia, Indonesia, Loa PDR, Singapore, Thailand and Vietnam) were invited. The aim of meeting is to discuss and adopt the working papers of the SEAMEO CECCEP and some activities have been done so far and it authorized the SEAMEO CECCEP to officially implement the activities bases on the Five Year Development Plan 2018-2023 and three year budget plan 2018-2021. In a bilateral meeting, SEAMEO CECCEP, Indonesia shall nominate its officials to collaborate and assist in developing the SEAMEO TED's staff capacity in the preparation of SEAMEO.

SEAMEO TED's 1st Governing Board Meeting and International Conference on Technical Education in Southeast Asia in Siem Reap, the Kingdom of Cambodia



SEAMEO TED hosted the 1st SEAMEO TED Governing Board Meeting, presided by Dr. Ethel Agnes Pascua Valenzuela, Director of SEAMEO Secretariat and His Excellency Dr. Im Koch, Secretary of State of the Ministry of Education, Youth and Sport, Cambodia, held on 25 October 2018 at Angkor Paradise Hotel in Siem Reap province, Cambodia. The Meeting attended by GB members from eight countries such as Brunei Darussalam, Cambodia, Malaysia, Myanmar, Laos, the Philippines, Thailand and Vietnam. The main aim of 1st SEAMEO TED Governing Board Meeting:

- To make a consensus among the Governing Board Members from 11 SEAMEO countries
- To adopt SEAMEO TED to be officially in Southeast Asia
- To approve a position from interim SEAMEO TED's director to become a director
- To dialogue and discuss on the process of SEAMEO TED
- To share ideas and comments on the working papers

As the result from the 1st GBM, at least 9 working papers of SEAMEO TED were presented and endorsed by the GB member from 8 countries. Those working paper are

1. Matters for Acknowledgement
2. Significant Points, Agreement and Actions Taken on Key Agenda Items from SEAMEO Meeting in FY 2017/2018,
3. Propose SEAMEO TED's Logo and Seal (Stamp)
4. Propose SEAMEO TED's Enabling Instrument, Organization and Structure
5. Propose SEAMEO TED's Staff Development Program
6. Propose SEAMEO TED's First Five-Year Development Plan (FYDP 2019-2024)
7. Propose Three-Years Operational Budget Plan for FY 2018/2019, FY 2019/2020 and FY 2020/2021
8. Propose SEAMEO TED Program Fiscal Year 2018/2019
9. Progress Report:



From her remark in the opening ceremony, Dr. Ethel Agnes Pascua Valenzuela, Deputy Director for Programme and Development, SEAMEO Secretariat gave her Opening Message acknowledging SEAMEO TED's achievements in its initial year. She informed the audience that the role of Governing

Board is to advise the centre operations to achieve the centre's mission and goals and strengthening the future directions and programs that will be executed by the centre. She emphasized that the 1st Governing Board Meeting is an important event for sharing ideas and thoughts. She also shared that SEAMES observed and learnt the progress of SEAMEO TED's achievement since it was first established. She shared that SEAMEO TED will contribute towards the SEAMEO Education Agenda, particularly priority no 4 on promoting technical and vocational education. She shared the SEAMEO's vision to aspire each member country to establish their own centres.

His Excellency Dr. Im Koch, Secretary of State, the Ministry of Education, Youth and Sport of Cambodia delivered his opening remarks by welcoming all of invited guests and all GBMs. He explained the history of the establishment of SEAMEO TED since 2017 and its achievements. He granted special thanks to SEAMEO Secretariat Deputy Director for Programme for her high concern and support for SEAMEO TED. Dr. Im Koch highlighted the importance of ICT for this generation and focus on technical education and the uncertainty in predicting the future as it will change very fast but we can learn from the challenge of expectation. Finally, Dr. Im Koch shared that the world as well as our country has changed dramatically and embrace a dire need to adapt for digitalization 4.0. He officially declared to open the 1st SEAMEO TED Governing Board Meeting this year.



On the 26 October 2019, the International Conference on Technical Education and Development 2018 (ICTED on Theme: “Technical Education in Southeast Asia: Better Skills and Better Jobs for SEA 4.0” was hosted by SEAMEO TED of MoEYS with collaboration with SEAMEO Secretariat, and there was 55 participants who are expertise from TVET Institution, MoE and education partners in the region, education officials, teachers, students and local authorities. A number of reports, and working documents, practices of technical education of the countries in Southeast were presented. The main objectives of the conference was proposed as the following:

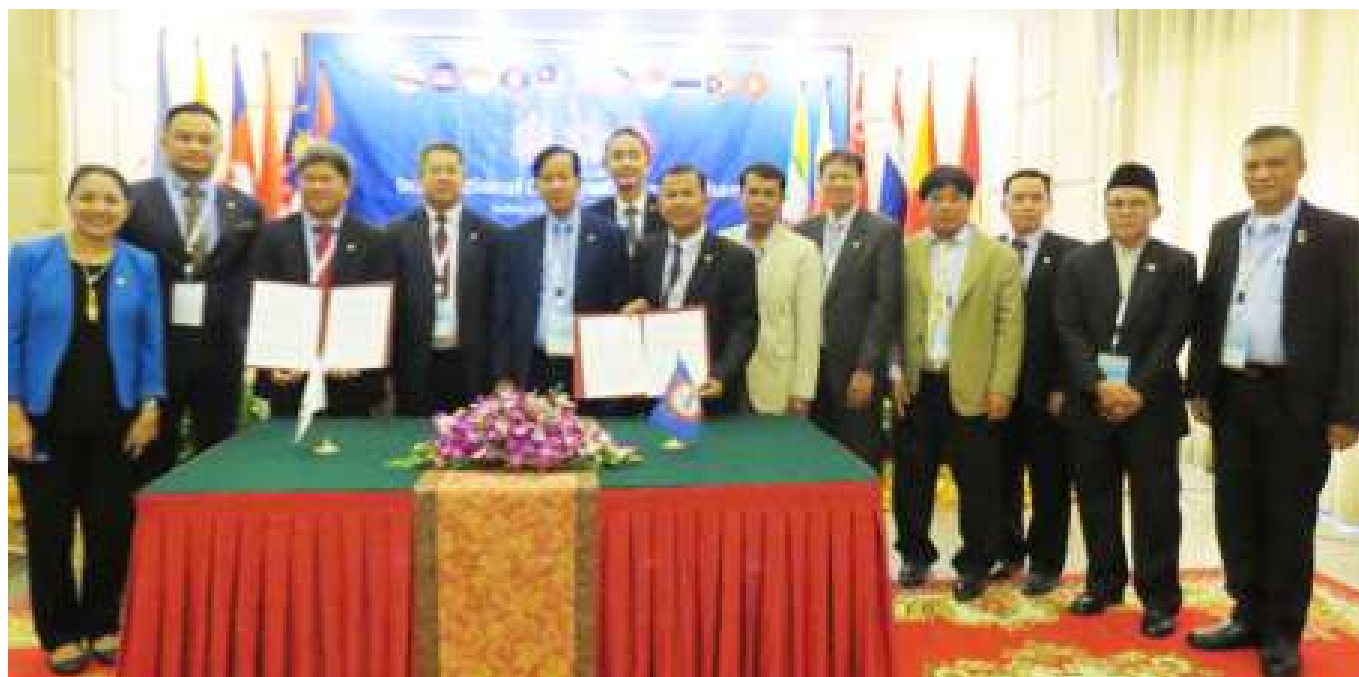
- To provide an avenue where leading names and experts in the academe, labour ministers and industry leaders can present the current status of 21st century technical education in their respective fields;
- To take stock of the best practices and lessons learned by stakeholders and interested parties related to 21st century technical education;
- To present the document country reports on initiatives related to 21st century technical education in the region and how such fares in comparison with the rest of the world; and
- To create a community of leaders on 21st century technical education with the intention of further advancing such in Member Countries



SEAMEO TED signed an MoU with Royal University of Agriculture (RUA)

On the 26 October 2018 at Angkor Paradise Hotel in Siem Reap province, Cambodia. SEAMEO TED had signed on Memorandum of Understanding (MoU) with Royal University of Agriculture (AUA). The main objectives of the MoU are:

- To collaborate in undertaking programs, projects, and other related activities whenever and wherever feasible opportunities present to both parties;
- To exchange scientific materials, publications, and information;
- To co-conducting research, training and advocacy in the field of technical education;
- To execute separate agreements in writing for any particular undertaking jointly implemented, wherein sharing of responsibilities shall be specified and approved by both parties.
- To co-conducting national, regional and International seminar/conference/ symposium



SEAMEO TED signed an MoU with National Polytechnic Institute of Cambodia (NPIC)

On the 26 October 2018 at Angkor Paradise Hotel in Siem Reap province, Cambodia. SEAMEO TED had signed on Memorandum of Understanding (MoU) with National Polytechnic Institute of Cambodia (NPIC). In consideration of their premises and covenants hereunder provided, both parties to this Memorandum of Understanding (MOU) agree as follows:

1. To collaborate in undertaking programs, projects, and other related activities whenever and wherever feasible opportunities present to both parties;
2. To exchange scientific materials, publications, and information;
3. To co-conducting research, training and advocacy in the field of technical education;
4. To execute separate agreements in writing for any particular undertaking jointly implemented, wherein sharing of responsibilities shall be specified and approved by both parties.
5. To co-conducting national, regional and International seminar/conference/ symposium



SEAMEOTED attended the 41st SEAMEO High Official Meeting In Bangkok

SEAMEO TED delegates, lead by Dr. Doung Vuth attended the 41st SEAMEO High Officials Meeting which was convened on 27-29 November 2018 at Amari Watgate Hotel, Bangkok, Thailand. A number of working papers, proposals, activities and programme implemented by SEAMEO Centers /Network were presented. Also implementation on Priority Areas of SEAMEO Countries were presented by SEAMEO High Officials as the representative. SEAMEO Partners such as APCEIU, ASEAN China Centre, ASEAN Secretariat, MEXT Japan, UNESCO Bangkok, UNICEF EARPR, UNESCO Paris. Key Activities / Programmes on Priority 7 : Promoting Technical and Vocational Education and Training were updated and presented such as Development of

SEA-TVET Consortium and Web Platform, SEAMEO Polytechnic Network, The 4th High Officials on SEA-TVET, hosted by TESDA, Philippines, SEA-TVET Scholarship Programme, SEA-TVET KOSEN Partnership Programme, SEA-TVET KOSEN School Modeling programme, Academic and industry partnership programme in Southeast Asia: Cross-country Diploma Model with Industry (Thailand-Indo), Industry Partnership development Programme with TVET institutions (Incooperation with GIZ-RECOTVET initiative and ASEAN under Labor Sector), Regional Skill Competency Development Programme through Development of TVET Quality Assurance Framework, Regional Training programmes for TVET personnel, Development of SEA-TVET Knowledge Sharing Platform, Research on TVET Occupational Mapping and Future Skill Demands, Regional Workshop on Competency Certification for Agricultural Workers in Southeast Asia and so on. SEAMEO TED did learn a lot from the SEAMEO Centers and partners in managing and implementing regional programmes.



In Country Training program on Vegetable Production for Technical High School Teachers

In collaboration with the Royal University of Agriculture, of Cambodia, SEAMEO TED conducted a customized training course on Vegetable production to provide vegetable knowledge and share working experience to 30 high school teachers in Cambodia. Training was conducted on 28-30 March 2019 in the main campus of Royal University of Agriculture (RUA). The training focuses on: (1) concept of soil preparation and management, water management for leafy, tuberous and fruit vegetable; (2) basic techniques for vegetable pest management; and (3) the concept of agricultural cooperative and its relationship to agricultural production.



Finally, the participants understood the concept of agricultural growing techniques included soil management, water and pest management and function of agricultural cooperative in vegetable production. And they are able to establish the vegetable farm in their school by learning from the model of the Royal University of Agriculture (RUA of Cambodia. It is well noted that the Royal University of Agriculture (RUA) is the oldest agricultural university in Cambodia, and its mission is to become the country's premiere research university in agricultural sciences. RUA composed of ten faculties (Veterinary Medicine, Agronomy, Land

Management and Land Administration, Animal Science, Agricultural Economics and Rural Development, Rubber Science, Forestry and Environment, Agricultural Engineering, Fisheries, Agro-industry), Graduate School, Department Foundation Year, 12 agricultural researched centers and Division of Research and Extension (DRE). From the training, capacity of agriculture high school teachers was improved. Thanks to the provincial department of education youth and sport and Vocational Orientation Department of MoEYS for their good coordination to assign participants for the training.



Training Programme On Digital Learning and Online Training Management



In the current Education of Southeast Asian Region, ICT become an increasingly necessary tool for innovating the quality of teaching and learning, school management, and school efficacy. Cambodia is not an exception. the ministry of Education Youth and Sports of Cambodia always show their attention and effort to ensure increasing inclusive education opportunity for all and expand the access to education at all possible means even though Cambodia do not have much progress in practices on this.



In collaboration with SEAMEO SEAMOLEC Center in Indonesia, SEAMEO TED provided an training program on Digital Learning and Online Training Management to was provided

to 50 participants who high schools teachers, teacher trainer and MoEYS staff across Cambodia. This training was conducted on 23-25 May 2019 in Siem Reap province, tourism site of Cambodia. This program was provided teachers with advanced ICT skills in delivering online training using SEAMOLEC's MOOC as the platform and developing digital learning content. The aims of the training were:

- to provide skills and knowledge for high school teachers
- to understand with MOOC as the concept and tool;
- to write MOOC Syllabus;
- to write contents and assessments;
- to conduct a video conference;
- to develop digital learning contents on PowerPoint presentation, White Board Animation and Lecturing Video and

- to conduct an online training platform.

Thanks to SEAMOLEC for providing support on resource persons and contents, while SEAMEO TED, MoEYS for covering on operational cost and participants 'fares and administration coordination.



In-Country Training Program on AutoCAD, Electrical Technical Drawing



Based on the agreement in Memorandum of Understanding dated 26 October 2018 in the International conference in Siem Reap province between National Polytechnic Institute of Cambodia (NPIC) and SEAMEO TED center, these trainings are proposed to conduct accordingly to enhance the capacity of agriculture high schools teachers in Cambodia. Therefore, in collaboration between SEAMEO TED Center and NPIC, the customized training course on "AutoCAD, Electrical Technical Drawing" is proposed to provide more technical knowledge for technical high school teachers in Cambodia and become an important session of sharing experience between experts of NPIC and teachers in Cambodia. AutoCAD is a drawing tool and is essential for electrical design engineers. AutoCAD is useful for drawing substation schematics, transmission grid schematics, wiring diagram schematics and ladder diagrams. This training was designed to meet these objectives: (1) Conducting the Sustainable Training for Technical High School Teachers; (2) Human capacity development for Cambodia Teachers;(3) Train

the trainees to create and transfer the project ;(4) After completing this training programme, participants were to be able to (1) Navigate the AutoCAD user interface, creating basic drawing, drawing organizing, dimensioning and plotting drawing; (2) Use the fundamental features of AutoCAD for Electrical.; (3)Build electrical symbols and electrical diagrams; (4) Create, view, and edit the project settings and properties. The total number of participants is 35 people which assigned by provincial department of Education Youth and Sport by the channel of Vocational Orientation Department.



Capacity Building program for SEAMEO Official on Regional Education Management and Strategic Planning



In collaboration with Yeungnam University of the Republic of Korea and SEAMEO Regional Centers in Southeast Asia Yeungnam University hosted the training programme on Regional Education Management and Strategic Planning for SEAMEO Regional Centers in Southeast Asia to provide participants clear concept and better understanding on regional education management, education policy, model and practices; to provide participants basic techniques in designing region education planning to meet the need of the region; to share experience of South Korean Education, Saemaul Education and their work on International Cooperation Development; and to build good network and make partnership between SEAMEO Centers and relevant departments of Yeungnam University.

SEAME TED Coordinated a Special Lecture on Saemaul Education by Dr. Choi Oo Chool



SEAMEO TED Coordinated special lecture and visit of professor Dr. Choi Oo Chool, President of Global Saemaul Undong Network and Professor of Yeungnam University, the Republic of Korea. This study visit and special lecture was made from 24-25 April 2019 in Kampong Cham and Tbong Khmum Provinces of Cambodia. The main purpose of the study visit was to share the concept and experience on Saemaul Undong (Development) to the government officials and students in Cambodia. Saemaul Undong, known as development policy of South Korea, which was very successful during the 1970s was introduced to more than 200 government officials and students in Cambodia through the special lectures. Key principals of Saemaul Undong are Self-help, Diligence, Cooperation, Sharing, Creative and Serving. The main program of Saemaul Undong are (1) Mindset Change-Let's live better (2) Environmental Improvement-Home-Village-Workplace (3) Income Generation-Increase Agriculture Production, Enhance Quality, Technology Innovation). From the special lecture, the participants were also shared the 9 Key Success Factors of Saemaul Undong as the following:

1. Political Philosophy or Conviction of National Leader
2. Consistent Policies
3. Consensus among people and active participation
4. Saemaul Education
5. Training Saemaul Leaders both Men and Women
6. Dedicated Service and Initiatives of Saemaul Leaders
7. Presenting of Selection and Concentration
8. Principles of Selection and Concentration
9. Pan-Government Aids.

Training of Trainer: Training program on Hydroponics and Greenhouse Technology for Cambodian Agriculture Teachers in Cambodia



With a good collaboration with SEAMEO BIOTROP Center in Indonesia, SEAMEO TED sent a group of agriculture teachers to participate a one-week training programme on Hydroponics and Green House Technology at SEAMEO BIOTROP, Indonesia for 5 days (24th-28th June 2019.) From the programme, the participants got many experiences from this training such as: Hydroponic Production of Vegetable and Fruit, Tissue Culture Concepts and Principles,

Aquaculture Concepts and Principles, Household Scale Computing and Solid Organic Wastes, Soy Milk Production. Moreover, the trainees also visited SMKN1 Cibadak where I learned about Entrepreneurship in Vocational School. It was very good time that the participants got to learn a lot about Indonesian culture during staying in SEAMEO BIOTROP. This training was significantly important for Cambodian teachers to share new knowledge and experiences to apply in teaching agronomy students in Cambodia in practicing in the real farm more better.



The practicing activities of technical students in Preah Sihamony General and Technical High School in Kampong Channang province

Partnership and Advocacy

- SEAMEO TED's Staff and Management Team attended the APEC-Tsukuba International Conference XIII Steering Meeting of the Inclusive Mathematics for Sustainability in a Digital Economy (In Mside) Project and SEAMEO-University of Tsukuba Symposium VII on the theme: Reform and Development in Teacher Education for the Digital Economy, Feb. 7-10, 2019, at Tokyo Campus of the University of Tsukuba, Japan. The objective of meeting is to share the necessary issues for the curriculum reform with other APEC Fora for Digital Economy for developing the discussion document and assignments on the APEC Seminar on Computational Thinking Curriculum for the Digital Economy.



- SEAMEO TED's Research Officer attended the SEAMEO Centres Policy Research Network (CPRN) Conference 2019 to be organized at the Four Wings Hotel Bangkok, Sukhumvit 26, Bangkok, Thailand on 30-31 January 2019. The aim of Conference is :
 - to strengthen the SEAMEO Centres Policy Research Network initiatives and the regional and international agenda;
 - to provide capacity building for SEAMEO Centres on key research areas, and
 - to update research priorities and opportunities of SEAMEO Centres and Units on CPRN Action Plan 2019-2023.



- SEAMEO TED organized the SEAMEO TED Annual Operations Plan Fiscal Year 01 July 2019 – 30 June 2020, presided by Dr. Ethel Agnes Pascua Valenzuela, Director of SEAMEO Secretariat, held on 22-23 February 2019 at Angkor Paradise Hotel in Siem Reap province, Cambodia. The aims of the meeting were:
 - to understand the SEAMEO Strategic Plan 2011-2020
 - to develop SEAMEO TED Annual Operational Plan 2019-2020
 - to develop concept notes to support the new SEAMEO TED Operational Plan.



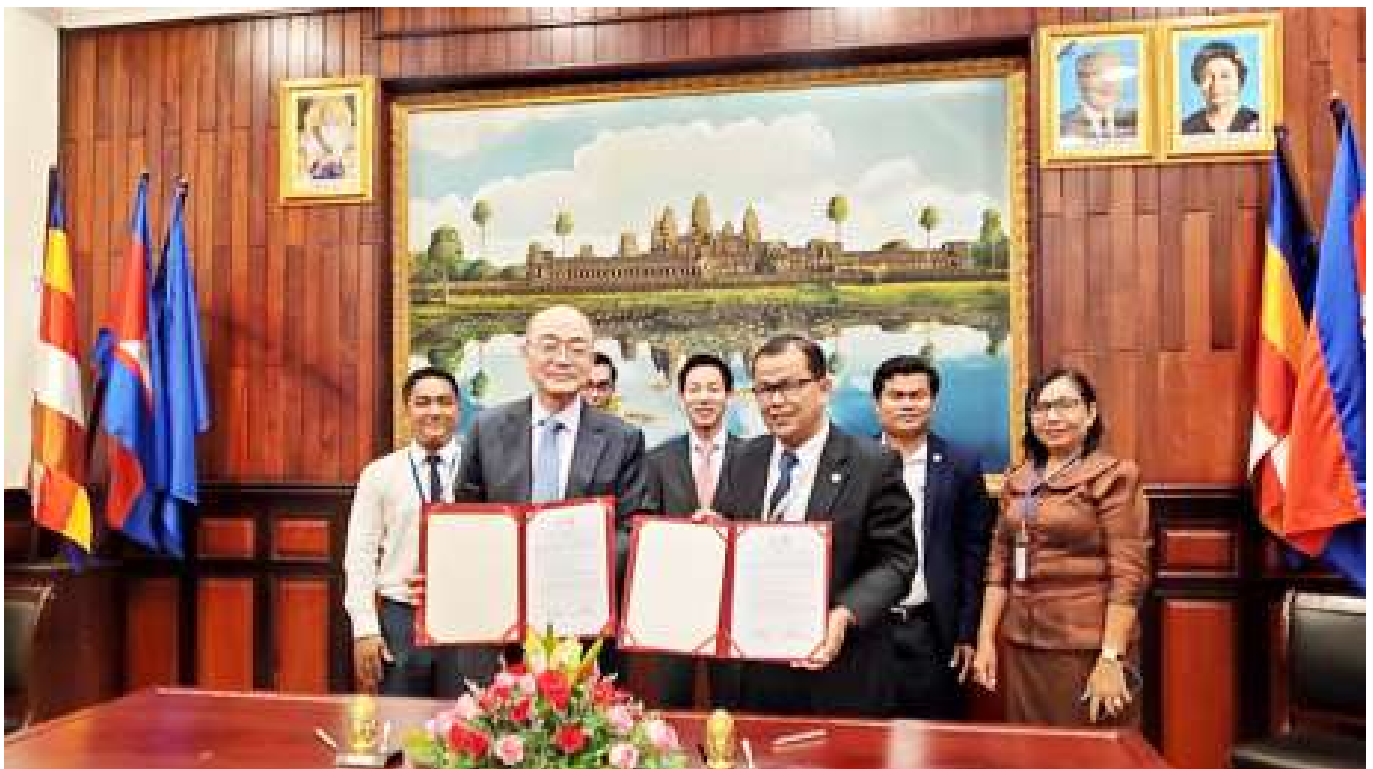
- SEAMEO TED Director had a study visit to SEAMEO SEAMOLEC in Indonesia with delegates of the Ministry of Education, Youth and Sport led by His Excellency Dr. Im Koch, Secretary of State, held 25-28 February 2019. The aim of visit is
 - to explore a progression of MOOCS development and Online Training management
 - to request for training of trainers programme on ICT development for Cambodian Technical Teachers in Cambodia.
- SEAMEO TED's official accompanied the delegates of the Ministry of Education, Youth and Sport, Cambodia led by His Excellency Dr. Im Koch, Secretary of State for a study visit to SEAMEO SEAMOLEC and Universitas Terbuka in Indonesia, held 25-28 February 2019. The aims of the study visit were:
 - to explore a MOOCS development and Online Training management
 - to request for a training of trainers programme on ICT development for Cambodian Technical Teachers.



- SEAMEO TED nominated an officer to attend the 5th SEAMEO Polytechnic Network Meeting: Agreement for the 4th Batch of SEA-TVET Student Exchange Programme on 26-27 March 2019 at EXCELSIOR Hotel, Ipoh, Malaysia. The 5th SEAMEO Polytechnic Network Meeting aims:
 - to share and learn the successful practices of student exchange from the participating institutions.
 - to review and evaluate the implementation of the 3rd batch of SEA-TVET student exchange during January-April 2019.
 - to identify the agreed mechanism and improvement for the 4th batch of SEA-TVET student exchange to be implemented during August-October 2019.
 - to seek commitments from participating TVET institutions in the 4th batch of SEA-TVET student exchange.
- SEAMEO TED signed on Memorandum of Understanding (MoU) with Global Development Foundation to establish partnership for the general development of both parties and the promotion of rural development cooperation projects through agricultural modernization and Saemaul Undong that (1) links between the agricultural modernization project of SEAMEO-TED and the research and education project of GDF to share the Saemaul Undong and economic development experiences; (2) supports for agricultural education and rural development technology demonstration projects: training for rural development cooperation project, Saemaul Undong education, and dispatch of expertise; (3) exchanges of information and promotion of activity through each party's publication; (4) collaboration to develop internship programs at other international/domestic organizations in Cambodia.



- SEAMEO TED and Korean National University of Education (KNUE) of the Republic of Korea signed an Memorandum of Understanding. The MoU aims to Strengthen relationships, understanding and appreciation between people in the two respective countries; and to Develop ties of friendship through regular communication. This event was host in the building of Ministry of Education Youth and Sport of Cambodia on 23 September 2019 presided over by H.E Mr. Sok Sabayna, Undersecretary of State as the representative of H.E Dr. Hang Chuon Naron, Minister of Education Youth and Sport of the kingdom of Cambodia. Based on this MoU, the SEAMEO TED and KNUE will work together to exchange information about technology education development; exchange of teaching resources, course materials and teaching strategies; staff, experts and administrators; and Other activities mutually agreed by the two parties. It is well known that Korea National University of Education is a South Korean national university which specializes in pre- and in-service teacher training and educational research. It comprises four colleges and three graduate schools and provides training and education programmes from kindergarten to doctoral level. KNUE locates in Cheongju-si, Chungcheongbuk-do, the central part of South Korea.



- SEAMEO TED nominated one official to attend the Workshop on TVET Agenda and Governance in ASEAN From June 25-26 2019 In Landcaster Hotel, Bangkok, Thailand. The workshop aims to outline the ongoing initiatives and future agenda of ASEAN on TVET and skills for industry 4.0 and the Future of Work and discuss a cross-sectoral process to advance this common agenda further. It defines the modalities of the ATCD such as its area of focus, structure, and more importantly, its roles in the cross-sectoral and multi-stakeholder process in developing an ASEAN strategy on TVET and skills for industry 4.0 and the Future of Work.



- SEAMEO TED nominated one official to participate the “China-ASEAN Vocational Education Forum and Exhibition of Successful Cooperation Program” to be held from July 22 to 24, 2019 in Guizhou, the People’s Republic of China. The main point of the workshop was to share the success of efforts to assist technical schools and institutes of public, private within the ASEAN and Timor-Leste frameworks (CEAIE) and the Government of the People’s Republic of China with a focus on President Xi Jinping’s policy on (One Belt, One Road). During the seminar, he learned a lot from the group discussions, group presentations, Q&A, comments and the meeting proposed to further share the success in efforts to assist technical schools and institutes of public, private among the ASEAN and Timor-Leste frameworks. He also learned from the success sharing from ASEAN-China in organizing technical training between China and ASEAN on the policy of One Belt, One Road cooperation , especially; the contribution from China in providing and supporting both financial and expert resources to technical schools in Cambodia as the key to education and modernize the people.

- SEAMEO TED delegates attended the Center Director Meeting held on 06-08 August 2019 in Hotel Nikko, Bangkok, Thailand. The meeting joined by all SEAMEO Center Directors or Representative and SEAMEO Partners. It is the flat form to present the regional activities, achievements, research proposal and updates of ICC research and training programmes implemented by SEAMEO Centers and their partners under coordination by SEAMEO Secretariat. SEAMEO TED joined the discussion in the roundtable meeting in networking session with proposed SEAMEO Partners such as ASEAN-China Center, UNESCO International Research and Training Centre for Rural

Education, Monah University and British Columbia Council for International Education. In the special Session, with other 4 SEAMEO Centers, SEAMEO TED also present its research proposal on Comparative Study on Technical Teachers' Instructional Competencies in Southeast Asia.



- SEAMEO TED attended the International Conference on Embedding Artificial Intelligence (AI) in Education Policy and Practice for Southeast Asia 18-19 September 2019 in Jakarta, Indonesia. This international conference serves as a platform to identify policy options and to share best practices on AI in education. This conference was co-organized by SEAMEO Regional Open Learning Centre (SEAMOLEC) and SEAMEO Regional Centers in Indonesia in collaboration with Ministry of Education and Culture of the Republic of Indonesia, in partnership with SEAMEO Secretariat, UNESCO, Ministry of Research Technology and Higher Education (MoRTHE) and Ministry of Communication and Information of the Republic of Indonesia. The Objectives of conference are to Identify policy options to strengthen education system through AI in Southeast Asia; Exchange best practices from current research and development in AI and its potential to shape the education; and Conduct networking and explore further cooperation and collaboration to promote equity and quality of education. Artificial Intelligence (AI) has been integrated into many aspects, boosting growth and expanding opportunities in particular in the era of industry 4.0. In education, AI will be a powerful engine to improve learning outcome and has been recommended to help attaining the Fourth Sustainable Development Goal (SDG), which is to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.



- SEAMEO TED attended the 5th High Official Meeting on SEA-TVET IR.4.0. This meeting was held on 09-10 September 2019 at Center Point Hotel in Brunei Darussalam with collaboration from SEAMEO VOCTECH, SEAMEO Secretariat, Ministry of Education, Brunei Darussalam by participation from high officials of 11 SEAMEO Member Countries, Associate Members, Partners and Representatives from Universities, TVET institutions/schools in the meeting is around

110 people. The Objectives of the 5th HOM on SEA-TVET

- To discuss the current situation of TVET collaboration during 2018-2019 and to identify the strategies to improve the regional cooperation and harmonisation for the region;
- To determine and plan for the regional directions and strategies to advance quality of TVET in Southeast Asian countries that may enhance the responsiveness of the member states and the region towards Industry 4.0; and
- To strengthen cooperation among the TVET Ministries/Departments and TVET development agencies among Southeast Asia and with other countries beyond Southeast Asian.

Within the era of digitalization, collaboration within and outside of SEAMEO region is even more needed. Key issues that require strong collaborations are preparing future workforce with quality, relevance and effective technical and vocation education and training. Unemployment of TVET graduates is still high in some countries. Collaboration with industry must continue to be strengthened as well as offering opportunity for lifelong learning through flexible TVET and employment systems. Knowledge creation and management are even more needed in the era of digitalization through research activities and having knowledge management systems for easy access and usage. The need for more qualified workforce by offering higher level skills are also needed in the era of digitalization. Through reviewing the current and new occupation profiles, TVET providers must also adjust the curriculum and the programmes by integrating key competencies besides improving the quality of teachers and infrastructures.



Research Work

SEAMEO TED Conducting a Need Assessment on Technical Education in Cambodia The Case of Six Technical High Schools

With the fund support from the Ministry of Education Youth and Sport of Cambodia, SEAMEO TED conducted a need assessment in six technical high schools of Cambodia. The Specific Objectives of the study is as the follows:

1. To determine the current needs of the implementation of technical high schools/ institutions in providing training services in basic agriculture, basic industry-handicraft, basic electronic and mechanic engineering, and ICT skills to students in upper secondary level;
2. To determine the possible responds should be done to improve the access and quality of basic agriculture, basic industry-handicraft, basic electronic-mechanic engineering, and ICT skills of students in upper secondary level.

Six upper secondary schools (high schools) where the technical education program is implementing were chosen as the study areas, namely (1) Bavet Technical and General High School (Svay Rieng Province), (2) Santa Fransvo High School (Takeo), (3) Pouk High School (Siem Reap), (4) Kompong Chheurteal High (Kompong Thom), (5) Sihamony Reachea High School (Kompong Chhnang , and (6) Kompong Speu High School (Kompong Speu Province). 150 respondents participated in the interview and focused group discussion in this study.



The result shows that the majority of the respondents has defined their schools need more agriculture teachers, basic industry, basic engineering and ICT who can help their students in practicing. Livestock and Planting Vegetables subjects are mostly suggested to offer in agriculture subjects in high schools to make students have a basic life skill after leaving high school. Lack of agriculture and basic industry-handicraft textbooks, documents and handout for students in learning basic agriculture, industry and handicraft are the common challenges in each technical high school. Making furniture, products packaging techniques, reuses of wasted techniques and wood processing machine techniques are the four basic subjects of industry and handicraft decided by majority the respondents to be offered for a basic life skill for student after leaving high school. Packaging food is the mostly demanded subject for students in technical high schools of Cambodia. Computer

operation repairing and maintaining subject are the subjects in high demand in high school. The majority of the respondents suggested that technical teachers need further trained locally and regionally for basic industry, agriculture and engineering knowledge to help students practice this in their class. The results from focused group discussion (FDGs) with technical teachers shows that the training mostly suggested for Agriculture and Basic handicraft subjects are Greenhouse technology, Hydroponics, Mushroom planting, Fish raising, Rice, Vegetable and animal production, Feed producing technology, Post-harvest technology, Egg production technology, Agriculture Mechanics, Making furniture, Products packaging techniques, Business management and English. The training mostly suggested for Electricity and Engineering are Program Logical Code (PLC), Motor System, Designing by Auto-Cat, Material and equipment utilization, Business Management and English.



With very strong initiative and profession of SEAMEO TED's researcher, Dr. Ai Song Heang* and his assistant team has issued a study report on Graduates' Teamwork Skills Boil Over in Cambodia. The aim of the study was to identify the required employability skills possessed by graduates, who are currently studying bachelor's and associate degrees and perceived by employers. The surveyed

sample was analyzed using a principal component analysis to find out the latent constructs. The results showed that there were 6 factors apparently encompassing teamwork, problem-solving and critical thinking, initiatives and leadership, computing and technology, personal organization and time management, and communication and language literacy. Among them, graduates were good at teamwork but poor at communication and language literacy and computing and technology. The result was also presented and got as the Best Paper award in the 2nd International conference on Multidisciplinary Academic Research (ICMAR 2019) which was organized by the Asia Pacific Institute of Advance Research, Australia on 22-23 June 2019 in Bali, Indonesia.

Proposal on A Comparative Study on Technical and Vocational Education Teachers' Instructional Competencies: A case study of Cambodia, Lao, Myanmar, Vietnam, the Philippines, and Indonesia

The current skills mismatch, shortage, low education, and low skills in the workforce pose major constraints to diversifying the economy and enhancing completeness (ADB, 2016). The global challenge for technical and vocational education and training (TVET) is to strengthen student academic outcomes.

Rapid changes in industrial sector have contributed the economic growth of each individual ASEAN country transitioning from low-income country status to lower-middle income countries recently. Consequently industrial sector and economic growth are strongly interconnected particularly for newly developed countries. Six selected countries comprising of Cambodia, Lao, Myanmar, Vietnam, Indonesia, and the Philippines apparently encounter similar challenges of industrial development. However, the industrial development can't be separated

from education sector requiring human resources to push up industrial prosperity of each respective country. Technical and vocational education consumes time and resources in order instill productive citizens. The most wanted resource of education is teachers requiring them to be competent and productive to educate students with productive academic outcomes. Instructional environment and teachers' experiences and knowledge affect the students' interest, motivation, and levels of academic achievements (Day, 1999). Furthermore,

technical and vocational education teachers must meet the required competencies in response to industrial development successfully, especially possessing hand-on skills to create unique things for industry.

To be successful in diverse classrooms, knowledge, skills, and dispositions of teachers should be strengthened (Levin, 2001).

SEAMEO TED has proposed a comparative study on A Comparative Study on Technical and Vocational Education Teachers' Instructional Competencies: A case study of Cambodia, Lao, Myanmar, Vietnam, the Philippines, and Indonesia. The study explored the instructional competencies of each individual country and compared the results in similarities and differences. Specifically, the research questions were as follows (1) What are the instructional competencies of technical and vocational education teachers for each selected country? (2) How different and similar are the instructional competencies of technical and vocational education teachers among selected countries? (3) Is the finding implication applicable to Cambodian implementation?

Proposed Research Programs

SEAMEO Regional Center for technical Education Development (SEAMEO TED) has proposed a number of research topics for its research implementation program in Southeast Asia in the coming years. SEAMEO TED is committed to working with researchers, experts in partnering countries and SEAMEO Centers to find possible solution in promoting quality and make better access to technical education in secondary level in Southeast Asia. Research work is always in our priority agenda.

1. A comparative study on the training needs assessment for TVET students
2. Exploring students' perception of technical and vocational education and training
3. Developing the competency standards for TVET teachers in SEAMEO countries
4. A comparative study on TVET teacher training programs among ASEAN nations
5. Identifying industry perception of TVET
6. Examining the linkage of industry and school partnership in TVET collaboration
7. Examining the government roles in TVET development among ASEAN nations
8. Examining the industry roles in TVET development
9. Identifying the parental involvement levels in TVET development
10. Examining the relationship of pedagogical knowledge and content knowledge of TVET teachers in the region
11. Exploring TVET teacher perception of teaching competencies
12. A comparative study on TVET teachers' Job Satisfaction levels: A case study of Cambodia, Lao, Myanmar, and Vietnam
13. A comparative study on TVET student internship programs in SEAN region
14. An investigating into the professional learning community practice of TVET teachers in the region
15. Exploration of TVET collaboration network from government to government of ASEAN nations
16. Examining the levels of continued professional development programs for TVET teachers in ASEAN



SEAMEO Regional Center For Technical Education Development

Leading Through Learning