

Best Practices in TVET Policies Coping with COVID-19 Crisis

UNEVOC Network East and Southeast Asia Cluster Countries



The outbreak of COVID-19 pandemic this year has affected every facet of our lives. It had also an influence on the active networking in the East and Southeast Asian Cluster of UNEVOC-Network, which was the norm in previous years. This made us search for ways to turn this into an opportunity to build the network using alternative means of communication.

We worked with the member states and the member institutions within the East and Southeast Asian Cluster in order to collect their best practices on the national policies responding to COVID-19. In particular, we searched for the best practices with regard to TVET policies to cope with COVID-19 crisis. Such topics as Industry 4.0, youth unemployment, migration, and the gender issue in TVET were also explored as special topics.

Active participation has been made among the member UNEVOC centers in response to KRIVET's effort to collect best practices on these topics. We have collected 8 cases of manuscripts from 6 countries in total. The topics covered range from the national TVET policies responding to COVID-19 crisis to open and digital learning, migrant female workers, and TVET strategies to deal with youth unemployment.

It has been valuable learning experience for the UNEVOC centers and also for KRIVET to discuss and communicate in order to arrange the draft manuscript submitted and to edit them into this booklet.

We acknowledge that every word in this booklet is an output of the common endeavor of the UNEVOC centers in the cluster. We deeply appreciate it. We expect that this booklet will open up the venue to share the knowledge and information in this Untact era.

Korea Research Institute for Vocational Education & Training
President Dr. Ra, Young-Sun



Best Practices in TVET Policies Coping with
 COVID-19 Crisis: UNEVOC Network East
 and Southeast Asia Cluster Countries

3C	Confined spaces, Crowded spaces, and Closed conversations
4C	Communication, Collaboration, Creativity and Critical Thinking
ADB	Asian Development Bank
AI	Artificial Intelligence
AR	Augmented Reality
BEEP	Basic Education Equivalency Program
CBMSC	Competency-Based Modular Short Course
CEO	Chief Executive Officer
CERP	COVID-19 Economic Relief Plan
CLIB	Creative Library
COVID-19	Corona Virus Disease-19
CPSC	Colombo Plan Staff College for Technical Education
DepEd	Department of Education
DFA	Department of Foreign Affairs
DGTVET	Directorate General of Technical and Vocational Education and Training
DLMS	Digital Learning Management System
DTI	Department of Trade and Industry
DTVET	Department of Technical and Vocational Education and Training
EMIS	Educational Management Information System
EU	European Union
GDP	Gross Domestic Product
GTC	Government Technical College
GTHS	Government Technical High School
GTI	Government Technical Institute
HR	Human Resource
HRD	Human Resource Development
ICDL	International Computer Driving License
ICT	Information and Communications Technologies
ICT CFT	ICT Competency Framework for Teachers
ILO	International Labor Organization
INGO	International Non-Governmental Organization
ISCED	International Standard Classification of Education
IT	Information Technology
ITE	Institute of Technical Education

JICA	Japan International Cooperation Agency
KERIS	Korea Education and Research Information Service
KOCW	Korea Open Course Ware
LGBTQI	Lesbian, Gay, Bisexual, Transgender, Questioning (or: Queer), Intersex
LMS	Learning Management System
MCO	Movement Control Order
MDEP	Myanmar Digital Education Platform
MOLIP	Ministry of Labour, Immigration and Population
MoLVT	Ministry of Labor and Vocational Training
MOOC	Massive Open Online Course
MR	Mixed Reality
MSMEs	Micro, Small, and Medium Enterprises
MyRIVET	Malaysia Research Institute for Vocational Education and Training
NCS	National Competency Standards
NDTIC	National Digital TVET Innovation Centre
NESP	National Education Strategic Plan
NGO	Non-Governmental Organization
NIVT	National Institute of Vocational Training
NVFC	National Vocational Foundation Certificate
OER	Open Educational Resources
Off-JT	Off the Job Training
OJT	On the Job Training
OPLAN	Operational Plan
OxCGRT	The Oxford Coronavirus Government Response Tracker
PESFA	Private Education Student Financial Assistance
PLC	Programmable Logic Controller
PPE	Personal Protective Equipment
RECOTVET	Regional Cooperation Programme to Improve the Quality and Labour Market Orientation of Technical and Vocational Education and Training
RISS	Research Information Sharing Service
RMCO	Recovery Movement Control Order
SDC	Swiss Agency for Development Cooperation
SDG	Sustainable Development Goals
SIM	Subscriber Identity Module
SME	Subject Matter Expert

Best Practices in TVET Policies Coping with
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and Southeast Asia Cluster Countries

SOP	Standard Operating Procedures
STEP	Special Training for Employment Program
TAM	Technology Acceptance Model
TESDA	Technical Education and Skills Development Authority
TOP	TESDA Online Program
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
TTI	TESDA Technology Institution
TVET	Technical and Vocational Education and Training
TWSP	Training for Work Scholarship Program
UAQTEA	Universal Access to Quality Tertiary Education Act
UNESCO	United Nations Education, Scientific and Cultural Organization
UNEVOC	UNESCO's Designated Centre for Technical and Vocational Education and Training (TVET)
UTHM	Universiti Tun Hussein Onn Malaysia
VEC	Vocational Education Committee
VET	Vocational Education Training
VR	Virtual Reality
VTI	Vocational Training Institute
WHO	World Health Organization
WYSD	World Youth Skills Day

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Malaysia

PART 01

Strategies for Promoting Distance and Digital Learning

– Learning Transformation of TVET Programs in Malaysia –

Strategies for Promoting Distance and Digital Learning

– Learning Transformation of TVET Programs in Malaysia –

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Abstract

The COVID-19 pandemic has affected many countries, compelling them to adopt a “new normal” in various sectors. Undoubtedly, education has been severely affected, as have other sectors, including Technical and Vocational Education and Training (TVET) students and professionals around the globe. During this period, TVET coordinators, instructors, and coaches are transitioning through a particularly uncertain time in terms of their professional lives and work. One of the main concerns brought up by TVET professionals was the framework of execution for the teaching and learning process in the event that a physical lecture is not feasible during the Movement Control Order (MCO) period. Currently, Malaysia is undergoing the Remedial Movement Control Order (RMCO) phase, which is predicted to end on December 31, 2020. However, some challenges will arise when Malaysia’s national borders are opened to migrants who intend to work, as well as locals returning from other countries. In September 2020, there was an increase in the number of positive COVID-19 cases, exceeding 100 new cases daily.

The COVID-19 pandemic has impacted our health as well as daily activities. The public is aware that COVID-19 has created a new norm in many aspects. Equally, the administration of the TVET program in Malaysia was affected by this crisis. Many parties in the TVET program were affected by the drastic changes in TVET including TVET providers, lecturers, laboratory instructors, workshop trainers, and the students or trainees themselves. Some TVET institutions were forced to eliminate certain courses due to the pandemic. Distance and digital learning is a practical

approach in a situation where learning sessions are difficult to be conducted physically during this pandemic. Distance and digital learning will enable trainees to access the course content anywhere, anytime, 24/7. This paper will outline a number of strategies to promote distance and digital learning in Malaysia for the TVET programs as a guideline. The strategies explore and discuss how TVET institutions in Malaysia are handling the challenges behind implementing distance and digital learning, and what are the initiatives taken by the government in supporting the adaptation and transformation processes. An investigation of the effectiveness of distance learning among TVET students will also be discussed based on a study of students' perception of distance learning.

Keywords: Covid-19, TVET Institutions, TVET Students, Digital Learning, Distance Learning

I . Background of the Case

The COVID-19 pandemic has significantly affected the global community, having a major impact not only economically but also on the education sector globally. This also creates fear and caution among citizens. Schimmenti, Billieux, & Starcevic (2020) explain four types of outbreak fears as follows: fear in protecting one's self from all symptoms of an infection; fear of approaching or being approached by others (social and physical distancing); fear of not knowing who in the community has carried and spread the COVID-19 virus; and fear in taking action individually to face this issue.

In Malaysia, since the enforcement of the Movement Control Order (MCO) starting on March 18, 2020 to halt the spread of COVID-19, all educational institutions, schools, and Technical and Vocational Education and Training (TVET) institutions have been halted. Students

are not allowed to attend physical classes, lecturers are required to work from home, and access to education became limited. This is worrisome since students are striving to graduate on time, and the TVET institutions are trying to comply with the procedures while ensuring the quality of curriculum delivery. The students are sent home as a safety precaution to minimize movement and to avoid the transmission of COVID-19, per the procedural recommendations of the World Health Organization (WHO).

Nevertheless, the debate still lingers: are we ready to adapt and transform to the “new normal” in the education system, shifting from the traditional method and experimenting new options that have yet to be proven as efficient? Though the answer remains vague, something must be done and it is clear that we ought to start somewhere. The government has recently laid out thorough plans to aid the public, particularly targeting the B40 group, to envisage the possibility of working from home and replacing traditional classroom settings at schools. Note that the B40 group refers to the Malaysian citizens who are in the bottom 40% household income range. The government has allocated some finances - the *Prihatin Rakyat Economic Stimulus Package* - to ensure that all existing telecommunication customers enjoy the privilege of free daily internet data, up to 1 gigabyte, throughout the MCO period, beginning April 1, 2020, with the cooperation of all telecommunication providers. Also, an additional budget was allocated to widen network coverage and capabilities to improve the quality of telecommunications services. This is indeed a great start to help educators and students move forward and survive during the pandemic crisis period, especially when digital and distance learning is seen as the best option in a time where meeting up in class is not possible.

However, the question remains, are we ready to make remote learning a new norm? Are our educators equipped with the skills needed

to switch to this new norm? What about the students in rural areas? What appeared to be a feasible solution could possibly have opened up more Pandora's boxes. Do we choose to move on and leave the unfortunate behind? Seemingly no one can provide a sound answer yet.

Students are hoping that they will graduate on time this year, despite the circumstances. Lecturers still aim to ensure the completion of the course syllabus as stated in the teaching plan. These issues are considered crucial because it directly puts the delivery of the TVET content into question. The TVET educational approach emphasizes skills and hands-on oriented workshops. Consequently, TVET institutions should acknowledge digital or distance learning as a feasible means to implement teaching and learning activities. Therefore, all TVET institutions should be well-prepared to tackle this concern without violating the MCO.

The Malaysian government has initiated few strategies to assist students and TVET institutions to successfully engage with learning. Actions are also taken by TVET institutions during this crisis period to make decisions regarding the implementation of training (current and post-crisis) based on existing capabilities, suitability of resources, and infrastructure. They have to guarantee that the trainee's interests and welfare are in good condition. They have to occasionally record and update any actions and activities that have been implemented during the MCO period. All TVET institutions are encouraged to continue training and learning through various appropriate online learning platforms. In addition, teaching in the TVET program is limited to around 30%-50% for the theoretical part, while the rest requires demonstration, hands-on skills, and observation of equipment handling. Some modules are proposed to deploy Augmented Reality (AR), Virtual Reality (VR) or Mixed Reality (MR) technology to deliver training effectively. However, the cost and expertise of such implementation may be beyond the capabilities

of most TVET institutions.

To address this issue, the Malaysian government, in cooperation with internet service providers, introduced relief packages such as free phones and data to help those who are at a disadvantage. Other counter measures drafted by the government are also reflected in the decision made by the Ministry of Education, which recently announced the scrapping of national exams and eventually eliminated unnecessary adversities in administering face-to-face examinations. With the execution of Restricted Movement Order (RMO) expected to stretch for several more phases, we have little choice but to move along with the new norm. TVET institutions are striving to ensure nobody is left behind, doing their best to deal with this pandemic while serving students as best as possible. Strategies to promote digital and distance learning, as a transformation for TVET programs in Malaysia, have been planned to ensure the quality of curriculum delivery and to keep access to education continuously open to students. The strategies have been designed meticulously to foster a smooth transition from traditional to digital and distance learning. Meanwhile, efforts to increase awareness and competency among students and lecturers through training are also being conducted, while providing optimum infrastructure to support learning.

II . Description of the Case

This section provides a detailed description of the strategies implemented by Malaysian TVET institutions facing the challenge of managing the TVET program to comply with existing Standard Operating Procedures (SOP).

1. Brief summary of the case

One of the challenges in managing the TVET program is the nature of the course's practical content. Unlike other programs, the courses in the TVET program emphasize the importance of practical elements in laboratory work and workshop activities. The practical elements are the basis of the assessment of cognitive, psychomotor, and affective components for every trainee in the TVET program. However, laboratory and workshop activities may not be feasible when physical meetings are not allowed, especially during the MCO. Indeed, the enforcement of the SOP) for educational institutions, including TVET, must comply with avoiding the 3Cs: confined spaces, crowded spaces, and closed conversations. The SOP requires downsizing the number of trainees in every practical session maintaining sufficient space to practice social distancing. Although tremendous efforts have been made to overcome the challenges of SOP requirements in limited facilities and the workplace, the TVET program still has not resolved the problems faced by international students. Some international students pursuing courses with on-campus lectures are not allowed to return to campus due to the pandemic. Therefore, this project proposes a strategy to promote distance and digital learning as a solution to the challenges faced by the TVET program today.

2. Significance of the case

Although the COVID-19 pandemic presents a challenge in the implementation of the TVET program, it has greatly benefitted various parties involved in executing the transformation strategy for TVET in Malaysia. The implemented strategies have had positive impacts, such as:

- Improving the relationship between various parties such as governmental organizations, non-governmental organizations, and private agencies in providing initiatives and incentives for educational programs, including TVET.
- Opportunities for TVET trainers and trainees to explore various teaching and learning media using advanced technology. This is a chance to reskill and upskill trainers and trainees.
- The introduction of specially-designed applications, enabling the course syllabus and learning outcomes to still be fulfilled even under challenging conditions such as the MCO period.
- Encouraging government and TVET providers in designing future curriculum and its delivery, which emphasizes the importance of internet connectivity and infrastructure.

3. Description of the case

i. Initiatives and incentives

In managing the impact of this pandemic, the Malaysian government has planned various initiatives and incentives to ease the burden of students facing the challenges of learning sessions during this period. Cooperating with telecommunication providers, the government has allocated RM600 million through the PRIHATIN Economic Stimulus Package (ESP) to ensure students can enjoy free daily internet of up to 1 gigabyte (PENJANA, 2020). An additional RM400 was also allocated to improve the coverage and quality of network services. The YTL Foundation donated free mobile phones to students from low-income families and B40 group families (YTL, 2020). Each free mobile phone comes with a free SIM card and free 10GB-monthly internet data for a year.

Various initiatives such as webinar series and public discussions regarding new work procedure norms have been undertaken and should be welcomed by the teaching community, including TVET trainers. The Ministry of Education has collaborated with other relevant ministries and non-governmental organizations (NGOs) to assist teachers and students in ensuring the continuity of the national education agenda. Webinars by TVET experts were also organized by the Malaysia Research Institute for Vocational and Technical Education and Training (MyRIVET) to help TVET trainers adapt to working in new conditions (MyRIVET, 2020).

The implementation of academic activities in higher institutions of Malaysia, including Universiti Tun Hussein Onn Malaysia (UTHM) are led by an academic team of Vice Chancellor of Academics and Internationalization, Center of Academic Development, Deputy Dean of Academics and Internationalization of respective faculties, Committee of Outcome Based Education, and Head of Program. The academic team in the higher education institutions, sat together to revise the delivery mode and assessment details for every course. Teaching plans were revised to ensure course syllabi are properly covered, although we are still facing the COVID-19 pandemic crisis.

At Universiti Tun Hussein Onn Malaysia (UTHM), building support groups using online platforms such as Google Classroom and Author is also a good initiative. The existence of these support groups encourages information sharing as well as the exchange of teaching and learning materials in the form of documents, audio, and videos. Author UTHM enables lecturers to upload notes and facilitate the execution of assessments. Lecturers can upload questions for students to answer and it can also be utilized as a platform for students to receive feedback from their lecturers.

UTHM also participated in the national project to create content for

massive open online courses (MOOCs). MOOCs is a learning and teaching platform that allows students to access learning topics anywhere and anytime through the MOOCs platform website. Malaysia intends to develop a national policy providing credit recognition for the MOOCs platform. Through the initiative, students around the world will be able to pursue their studies online and be given credit recognition. The Malaysian Ministry of Education plans to award credit through the country's own MOOCs to encourage flexible learning among students, reduce the duplication of learning, and recognize the lessons and experiences gained outside the conventional classroom.

ii. Establishment of the National Digital TVET Innovation Centre (NDTIC)

The National Digital TVET Innovation Centre (NDTIC) provides flexible and efficient services to empower Malaysia Digital TVET through research, development, technology, innovation, and training (NDTIC, 2020). The ultimate goal of the NDTIC is to focus on the development of innovative solutions for digital learning that can be summarized as interface design, application development, content development, IT services, hardware, and software deployment. This center also focuses on the development of Open Educational Resources (OER) and its guidelines to provide free access to education.

These guidelines are used to support education that may be freely accessed, reused, modified, and shared. These guidelines outline key issues and make suggestions for integrating OER into higher education. The guidelines aim to encourage decision makers in government and institutions to invest in the systematic production, adaptation, and use of OER and to bring them into the mainstream of higher education in order to improve the quality of curricula and teaching and to reduce costs

(UNESCO, 2015). Therefore, NDTIC will play a major role in coordinating digital content development for target users in TVET institutions.

iii. Guidelines

Following the COVID-19 pandemic crisis, the Malaysian Qualification Agency (MQA) has established a number of new guidelines for teaching and learning in higher education. Essentially, the guidelines are largely advisory for the implementation and delivery of teaching materials and assessment activities using online and offline platforms, especially during the MCO period. The Department of Skills Development, in its guidelines, emphasizes adherence to the order from the government. TVET institutions need to be aware of students' availability and their access to training (Department of Skills Development, 2020). TVET and educational institutions are responsible for ensuring that students have access to the teaching materials and are being assessed fairly in any chosen teaching and learning platform.

iv. Content development

The implementation of content delivery in TVET courses shall comply with the SOP of the "new normal". The use of AR, VR, and MR can be optimized to transform the practical elements in a digital platform. AR, VR, and MR technologies can provide a similar experience to trainees, as if they are executing actual practical work in physical laboratories and workshops. Indeed, AR and VR applications can make the process of understanding complicated concepts in TVET courses less challenging by adding interactive, audio-visual components. The interactivity elements of AR and VR applications enable immersive learning to happen, leading to student engagement in learning sessions. Content

development for TVET courses should also consider the need for collaborative learning and problem-solving skills. Implementing and nurturing teamwork spirit in problem-solving activities reflects the nature of the work in TVET-related industry.

v. Training

Many current TVET trainers are constrained by the conventional teaching and learning approach, where the usage of whiteboards and marker pens is adopted. Presentations of content are limited to PowerPoint slides, Word documents, and PDF documents. Nevertheless, the new norm of teaching should not only be understood and accepted by TVET trainers, they should see this as an opportunity to enhance their potential as trainers possessing creativity and the ability to overcome challenges. UNESCO has developed the ICT Competency Framework for Teachers (ICT CFT) as a tool to guide pre- and in-service teacher training on the use of ICTs across the education system. The ICT CFT is intended to be adapted to support national and institutional goals by providing an up-to-date framework for policy development and capacity building in this dynamic area (UNESCO, 2018). This includes transformation from pedagogy/ essentialism/instructivism, through andragogy/constructivism, towards heutagogy/ connectivism leading to peeragogy and cybergogy (Rawoofu Nisha, 2018).

Teaching and learning occur in different forms and across varied platforms, which each educator and trainer should be familiar with. By observing the functions and features of each platform, educators and trainers can identify what forms of interaction are supported and help students and trainees adapt and gain access to the platforms' full potential.

Training sessions should be organized to familiarize trainers with the delivery methods of TVET courses in the new normal environment. Trainers and trainees need to be skilled in mastering the environment of online learning platforms and be able to utilize AR and VR applications for the practical component of the TVET program. Subject matter experts (SMEs) for the TVET program courses should be trained to facilitate digital content developers' understanding of the needs of various teaching and learning activities. SMEs have the skill to illustrate the core elements of the syllabus content toward learning outcomes. Moreover, SMEs should implement creativity to diversify the teaching and learning activities of the courses.

vi. Survey on distance and digital learning among TVET students

Since the shifting of traditional and conventional learning to online and distance learning being implemented, various challenges and barriers arise to both students and instructors. In this study, a survey has been designed to investigate their satisfaction, perceived ease of use, usefulness and enjoyment. This survey adopts Technology Acceptance Model (TAM) to examine student's perception of online and distance learning (Moon and Kim, 2001).

The Technology Acceptance Model (TAM) provides a conceptual framework based on theories in social psychology, namely, the theory of reasoned action (TRA) (Ajzen & Fishbein, 1980)), and the theory of planned behavior (TPB) (Madden, Ellen, and Ajzen, 1992). On the basis of these theories, TAM proposed a causal model to explain and predict the acceptance of a given information technology by potential users. The TAM suggests that perceived usefulness and perceived ease of use are drivers that influence a student's attitude towards using the online learning, which in turn determines their intention to use or to adopt it.

An online survey was employed with TVET students around Malaysia to investigate their perception of the current distance learning implementation during the COVID-19 crisis. The respondents were selected through random sampling using online survey and have experience in attending online courses.

A total of 242 responses were received, 47.5% were male and 52.5 % female. The respondents were from Malaysian TVET institutions currently taking certificates up to the bachelor’s degree level of study. The institutions involved in this study are Malaysia Technical Universities, Vocational Colleges and Industrial Training Institutes. There are limitations to this survey as it did not cover wide range of respondents due to the accessibility of information and it only focuses on technical and vocational students. The survey was divided into satisfaction, perceived ease of use, perceived usefulness, and perceived enjoyment. The findings are presented in Table 1-1.

Table 1-1) Student perception of distance learning

Dimension: Satisfaction			
No.	ITEM	Mean	Std. Deviation
1	A distance learning program keeps me informed and focused.	2.82	.950
2	I am pleased with the way I communicate with my lecturer in the existing distance learning program.	3.05	.891
3	I am pleased with the way I communicate with other students in the existing distance learning program.	3.02	.938
4	I am satisfied with the current technology used in the distance learning system.	3.26	.947
5	I am really happy with my study performance.	2.73	1.014
6	Using distance learning technology helps me train myself at my own pace.	3.24	1.012
7	I feel more pleased with the knowledge that I gained through the distance learning program compared to a face-to-face lecture setting.	2.50	1.020

Dimension: Perceived Ease of Use			
No.	ITEM	Mean	Std. Deviation
1	I consider it convenient to gain knowledge through the distance learning program.	2.86	.951
2	The distance learning program provides greater exposure to contact between learners and lecturers.	2.83	1.001
3	My interactions with the distance learning system are clear and well understood.	2.76	.952
4	I rarely get confused when I use the distance learning system.	2.95	1.045
5	I never commit errors when I use the distance learning method.	2.45	.902
6	When I use the distance learning method, I never feel disappointed.	2.53	.938
Dimension: Perceived Usefulness			
No.	ITEM	Mean	Std. Deviation
1	Distance learning saves me time and energy.	3.17	1.040
2	Distance learning gives the freedom to gain exposure to a study platform.	3.24	.929
3	The distance learning program helps me accomplish my assignments efficiently.	2.84	.985
4	The distance learning program enhances my quality of work and increases my efficiency.	2.82	.976
5	The distance learning program increases my job performance.	2.83	.939
6	The distance learning program will have influence over my career.	3.17	.888
7	I consider the distance learning program helpful in organizing and maintaining my study plan.	2.88	.922
Dimension: Perceived Enjoyment			
No.	ITEM	Mean	Std. Deviation
1	The distance learning system that I am using is enjoyable.	2.99	.966
2	The distance learning system that I am using is fun.	3.00	.927
3	The distance learning program that I am using is nice.	3.06	.934
4	The distance learning program that I have been using is a good one.	3.03	.906
5	The distance learning program that I am using strengthens my communication skills.	2.95	.984
6	I like exchanging learning resources with other students.	3.37	.851
7	I prefer the distance learning program to the conventional classes with lecturers.	2.45	1.042
8	I find myself more involved in a topic with the distance learning method.	2.85	.984

Based on the findings, the respondents showed their perception level of technology acceptance towards online and distance learning. The first dimension on satisfaction explains that the highest mean is “I am satisfied with the current technology used in the distance learning system” with mean $M=3.26$, $SD=0.947$.

Users' satisfaction with digital technologies as being studied by (Priscilla, Edward and Theresa, 2012) are very important in keeping and engaging the students throughout the learning. Davis (1989) describes perceived ease of use as “the degree to which a person believes that using a particular system would be free of effort”, that is, utilizing a specific technology (like online learning) would be free of physical and mental exertion. The findings indicate that item “I rarely get confused when I use the distance learning system” with mean $M=2.95$ and $SD=1.045$ scores the highest mean showing that the system is helpful and easy to use.

In regards to the perceived usefulness dimension, item “Distance learning gives the freedom to gain exposure to a study platform” with mean $M=3.24$ and $SD=0.929$ shows the highest among. This is in line with the study by Davis (1989) that describes the perceived usefulness as the degree to which a person believes that using a particular system would enhance his or her job performance.

Perceived enjoyment alludes to the degree to which the use of a technology (like Learning Management System) is seen to be enjoyable (Davis, Bagozzi, and Warshaw, 1992). It is the user's perception of the fun and pleasure derived from using the application (Nguyen, 2015). The findings indicate that “I like exchanging learning resources with other students” with mean $M=3.37$ and $SD=0.851$ shows the highest mean, reflects the enjoyment of sharing resources with peers. Various studies on perceived enjoyment (Davis, Bagozzi, and Warshaw, 1992) have shown that users' happiness while using an application or system have huge effect on their intention to use the application.

<Table 1-2> Mean score for the dimension

No.	DIMENSION	Mean	Std. Deviation
1	Satisfaction	2.95	.970
2	Perceived Ease of Use	2.73	.960
3	Perceived Usefulness	2.99	.950
4	Perceived Enjoyment	2.96	.950

In regards to Table 1-2, the mean score for all dimension is $M=2.91$ and $SD=0.96$. This explains that the respondent's perception of distance and online learning is at moderate level. More investigation needs to be conducted to see the problems behind this scenario such as the internet connectivity, equipment, tools and even the curriculum's content. TVET Institutions, when shifting the teaching and learning delivery into online are struggling in many aspects in order to provide quality education.

III . Implications of the Case

Implementation of digital and distance learning is one of popular studies in education (Viberg and Gronlund, 2017). While maintaining the quality of education, instructional design and learning outcomes should be focused on skills at graduation. In particular, 21st century skills need to be integrated into digital content delivery.

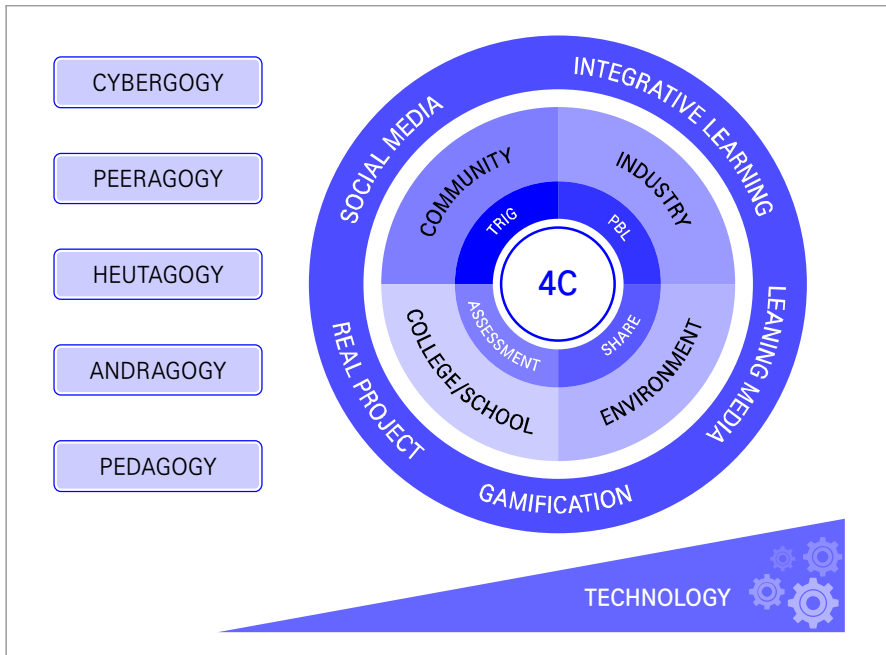
Teachers need to be flexible and ready to explore digital learning platforms such as Blackboard, Edmodo, Google Classroom and ClassDojo. Through the assistance of existing learning management platforms such as Docebo, Udemy, Skillshare, WizIQ, Adobe Captivate Prime, and SAP Litmos, teachers can conduct hybrid teaching; an example of which is Cikgootube, developed by a group of teachers to share their content online. This also includes social media such as WhatsApp,

Facebook, Twitter, Telegram, and Instagram.

There is also a portal at moe-dl.edu.my which provides applications and services to teachers and students for digital learning that can be used for free. The Ministry of Education actively conducts training to assist in the integration of technology in teaching and learning, organized by Digital Classroom. MyGuru, for example, is purposely developed to give access to students from anywhere as long as they are connected to the Internet. Teachers should use their creativity to create interesting classrooms via innovation in MOOCs, OER, and Flipped Classroom. These new platforms that have been introduced help teachers easily upload and share their course content, which includes Google Classroom, Microsoft Teams, online applications, and EduwebTV. Whatever the platform is, it must support learning approach and assessment activities, present usability functions, enable accessibility, provide technical support, facilitate assessment, simplify reporting, and accommodate integration with other applications.

In summary, the strategy to promote distance learning among TVET institutions in Malaysia should look into the learning outcomes of graduates. Referring to Figure 1-1, the main objective of this transformation is to develop well-rounded, quality TVET graduates that encompass the 4Cs: communication, creativity, critical thinking, and collaboration. The framework suggested as in Figure 1-1 shows the stakeholders involved in the ecosystem and the transition of technology such as Video, PowerPoint, AR, and VR in making the teaching and learning session more attractive. Meanwhile, teachers should gain better understanding of methodologies such as pedagogy, andragogy, heutagogy, peeragogy, and cybergogy.

[Figure 1-1] Online and distance learning framework



IV. Conclusion

The Covid-19 pandemic has evidently taught us to keep vigilant, besides coming to terms with the new norm. There are massive growth challenges faced by most countries in combating the virus that has in one way or another affected the education sector across the globe. Thus, coming out with appropriate strategies to provide quality education is of utmost importance, especially when confronting the changing landscape in today's education as a result of the global pandemic outbreak. The education sector should be ready to face such changes in order to avoid falling behind in the ever-changing world, more so in this

year (2020). It is about time that a paradigm shift takes place to embrace the challenges of keeping up with the tide of change that will continue.

This paper contributes by suggesting ways on how TVET institutions may provide access to education amidst the pandemic with the aid of the Malaysian Government and other concerned parties. Distance and digital learning is the key answer to keep the students on track and ensure their access to education with strict adherence to the SOP set by the government. TVET institutions should make use of educational technology and digital mechanisms to promote distance and digital learning. The most important aspect in curriculum design and delivery is ensuring the achievement of student outcomes with reliable assessment and infrastructure. It is earnestly hoped that it will further proffer priceless opportunities for all parties involved in adapting to the new norm.

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Best Practices in TVET Policies Coping with
COVID-19 Crisis: UNEVOC Network East
and Southeast Asia Cluster Countries

The Philippines

PART
02

Assisting Communities, Developing Skills, and Supporting the Country's Economic Recovery

–The Philippines TVET Sector's Response to COVID-19–

Assisting Communities, Developing Skills, and Supporting the Country's Economic Recovery

–The Philippines TVET Sector's Response to COVID-19–

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Abstract

The COVID-19 pandemic has ravaged the world for most of 2020, infecting millions and putting a huge strain on healthcare systems. In response, governments have implemented community quarantine and other social distancing measures to contain the disease's spread, reduce the number of infected as well as fatalities, and provide much-needed relief to frontline workers. These restrictive (albeit necessary) policies have impacted economies in varying degrees. They have forced companies to implement alternative work arrangements and cut back on their operations (especially in non-critical areas), pushing some toward retrenchment, or worse, closure. As a result, many workers have been left without a stable source of income in a time of crisis. With little to no money to spend, governments have, therefore, scrambled to put together social protection packages to provide assistance to their constituents, particularly the micro, small, and medium enterprises (MSMEs) and the disadvantaged and marginalized sections of society.

Considering the rise in unemployment and closure of many businesses, several countries have reported a decrease in economic growth, or as is the case with the Philippines, are in the midst of a recession. This paper looks at how TESDA, as the agency responsible for Philippine technical vocational education and training (TVET), has responded to the challenges brought by COVID-19. It highlights the Operations Plan TESDA Abot Lahat: TVET Towards the New Normal as the agency's detailed strategy on how the TVET sector will deal with the effects of the pandemic, and outlines various systemic changes that TESDA must undergo to ensure it is ready for

the new normal of TVET delivery. Specific initiatives highlighted are on how TESDA is 1) providing assistance to frontline workers and healthcare staff by mobilizing its TVET institutions to produce food and medical supplies and equipment, 2) scaling up its TESDA Online Program (TOP) to provide more Filipinos nationwide with access to quality TVET programs, 3) adopting flexible modes of TVET delivery (face-to-face learning, distance learning, online learning, and blended learning) to guide TVET institutions nationwide in the safe conduct of training during the pandemic, and 4) providing scholarships and other training packages to severely affected groups, such as MSMEs, repatriated/returning overseas Filipino workers, and the basic sector.

Finally, the paper examines how TESDA is reviewing and updating its policies and programs to ensure the Philippines TVET sector is ready to face similar crises in the future, such as but not limited to the 1) revision/updating of the Training Regulations development process, 2) utilizing a flexible and dynamic TVET program registration and accreditation process, 3) conducting the assessment and certification of TVET graduates via portfolio review and other remote means, and 4) reskilling/upskilling of TVET trainers on flexible training delivery and e-learning curriculum development.

Keywords: Communities, Developing Skills, Economic Recovery, TVET, COVID-19

I . Overview: COVID-19 Facts and Statistics

The COVID-19 pandemic has ravaged the world for most of 2020, infecting millions and putting a huge strain on healthcare systems. As of September 23, 2020, over 31,174,627 people were reported to be infected and more than 962,613 dead across 235 countries, areas, or territories¹⁾. In the Philippines, the total number of cases is 291,789 and deaths 5,049²⁾. Moreover, based on a World Health Organization (WHO) survey released

¹⁾ https://covid19.who.int/?gclid=EAIaIQobChMlrSbg9rXw6wIVS3RgCh02DwoyEAAAYASAAEgLvT_PD_BwE

²⁾ <https://www.doh.gov.ph/covid19tracker>

on June 01, 2020, the pandemic has also significantly impacted the provision of healthcare services for noncommunicable ailments such as heart attack, stroke, cancer, and diabetes in many countries worldwide, with low-income ones being the most affected³⁾.

To mitigate the spread of the virus and avoid the collapse of healthcare systems, countries have implemented a combination of health and social distancing protocols with varying degrees of strictness. The Oxford Coronavirus Government Response Tracker (OxCGRT) Containment and Health Index is a composite measure based on twelve policy response indicators: school closures, workplace closures, cancellation of public events, restriction on gatherings, closure of public transport, stay-at-home requirements, restrictions on internal movements, international travel controls, public information campaigns, testing policy, extent of contact tracing, and policies on use of facial coverings⁴⁾. As of September 23, 2020, the OxCGRT Index shows that a majority of countries still rank medium to high in terms of strictness of government policies for COVID-19⁵⁾. The Philippines' strictest policy response (with a score of 96.97 out of 100) can be traced to the beginning of the nationwide enhanced community quarantine from March to April 30, 2020. At present, the country has considerably eased its response to COVID-19, and therefore, has a score of 61.36 out of 100.

Aside from being a global humanitarian challenge, the pandemic has also severely impacted the world's economies. The World Bank estimates a 5.2 percent contraction in global Gross Domestic Product (GDP) in 2020, which is the deepest global recession in years⁶⁾. The contractions is a

³⁾ <https://www.who.int/news-room/detail/01-06-2020-covid-19-significantly-impacts-health-services-for-noncommunicable-diseases>

⁴⁾ <https://www.bsg.ox.ac.uk/sites/default/files/2020-10/BSG-WP-2020-032-v8.pdf>

⁵⁾ <https://ourworldindata.org/policy-responses-covid>

⁶⁾ <https://www.worldbank.org/en/publication/global-economic-prospects>

result of mitigating measures employed by countries such as stringent social distancing and the closure of public transportation, which have forced businesses to retrench, or worse, close entirely. According to the International Labour Organization's (ILO's) estimations in April this year, the pandemic would wipe out 6.7 percent of working hours globally in the second quarter of 2020, which is equivalent to 195 million full-time workers⁷⁾. Micro, small, and medium enterprises (MSMEs) will be hit the hardest - these have less capital and less long-term potential of balancing business operations while adhering to COVID-19 mitigation policies.

II. Impact of COVID-19 on the Philippines

The pandemic has hit the Philippines economy hard. According to the Asian Development Bank's (ADB's) Asian Development Outlook 2020 Update, the Philippines economy is expected to contract by 7.3 percent in 2020, a much deeper decline than the June forecast of 3.8 percent.⁸⁾

Various sectors of the Philippines economy are at risk due to COVID-19. Table 2-1 below shows the different sectors with the varying levels of risk based on ILO's ranking:

⁷⁾ https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_740893/lang--en/index.htm

⁸⁾ [https://www.adb.org/news/philippine-economy-decline-further-2020-amid-covid-19-recovery-2021#:~:text=MANILA%2C%20PHILIPPINES%20\(15%20September%202020,Bank%20\(ADB\)%20released%20today.](https://www.adb.org/news/philippine-economy-decline-further-2020-amid-covid-19-recovery-2021#:~:text=MANILA%2C%20PHILIPPINES%20(15%20September%202020,Bank%20(ADB)%20released%20today.)

⟨Table 2-1⟩ Economic impacts of COVID-19 in the Philippines

High	Medium-High	Medium	Low-Medium	Low
1. Wholesale and retail trade, repair of motor vehicles and motorcycles 2. Manufacturing 3. Real estate, renting and business activities 4. Accommodation and food services/ hotel and restaurants and other personal services	5. Transport, storage and communication 6. Tourism 7. Arts, entertainment and recreation, and other services	8. Mining and quarrying 9. Financial intermediation 10. Construction	11. Agriculture, forestry and fishing /agribusiness	12. Utilities (electricity, gas, water) 13. Human health and social work

Source: TESDA (2020). TVET Brief - COVID-19's Impact to the Philippines Economic Sectors: A TVET Response, P.5-8.

Also badly affected are Overseas Filipino Worker (OFW) remittances, household consumption, MSMEs, and the informal sector. Retrenchment by companies have left many of our OFWs without jobs, and many have since returned or, for the less fortunate, been repatriated back to the country. Per data from the Department of Foreign Affairs (DFA) as of September 20, 2020, they have already facilitated the repatriation of 185,650 overseas Filipinos, of which 120,602 are land-based and 65,048 sea-based⁹⁾. Community quarantines and social distancing protocols have also discouraged people from going out of their homes, severely impacting domestic consumption nationwide. Likewise, the Philippines' Department of Trade and Industry (DTI) said 52.66 percent of MSMEs fully stopped or closed their operations due to the health crisis as of April 29¹⁰⁾.

⁹⁾ <https://www.philstar.com/headlines/2020/09/21/2044053/dfa-logs-over-185000-filipinos-repatriated-due-pandemic>

A DTI survey in June 2020 of 2,135 companies revealed that 25.9 percent of businesses have closed down since the onset of the pandemic in the country, with 52 percent in partial operation and only 22.1 percent operating at full capacity¹⁰).

The Philippines education sector has also been having difficulty adjusting to the new normal as the country continues to implement nationwide lockdowns. The start of basic education was postponed from August 24 to October 05 to give schools, teachers, and students more time to prepare for the new normal of learning; This delay was welcomed by the Filipino people. Data from the Department of Education (DepEd) as of September 21, 2020 shows that 24,536,403 or 88.35 percent of learners have already enrolled nationwide, exceeding last year's enrolment rate of 80 percent¹²).

The nature of TVET delivery has made it more difficult for the sector to cope with the challenges brought by the pandemic. The Philippines' competency-based TVET requires both theoretical knowledge and the mastery of practical skills and techniques that are in demand among industries and companies. While the theoretical aspect can be taught via distance learning or other non-face-to-face methods, practical skills are much more difficult to impart through means other than actual hands-on experience. Moreover, the success of TVET is highly dependent on whether or not the competencies learned are sought by industries and employers, demonstrating the importance of on-the-job training and industry immersion programs called enterprise-based training. One major problem arising due to the pandemic, therefore, is the arrangements related to various enterprise-based training modalities,

¹⁰) <https://business.inquirer.net/296227/dti-over-half-of-msmes-in-ph-fully-stopped-operations-due-to-virus-outbreak>

¹¹) <https://mb.com.ph/2020/07/16/closure-of-26-of-ph-businesses-alarms-dti/>

¹²) <https://www.pna.gov.ph/articles/1116139>

such as apprenticeships, learnerships, and dual training system, and how industries will be able to accommodate trainees for immersion to ensure that they gain the relevant knowledge and experience.

The current situation of Philippine TVET must also be taken into consideration when addressing the issues brought by COVID-19. TESDA's TVET Brief on Traversing the "New Normal": Innovation in Philippine TVET summarizes these as follows¹³):

- PH TVET caters to different types of individuals from diverse backgrounds. While some can afford connectivity at home, there are also those who only rely on the available facilities provided by the trainers.
- There are different training modalities used for the delivery of training - enterprise-based, institution-based, and community-based. These are being implemented depending on the learners' requirements.
- PH TVET is competency-based, wherein training programs developed are in sync with the qualifications sought by industries and employers.
- The government has established scholarship programs such as Training for Work Scholarship Program (TWSP), Private Education Student Financial Assistance (PESFA), Special Training for Employment Program (STEP), Unified Access to Quality Tertiary Education Act (UAQTEA), and Tulong Trabaho Law.
- TESDA programs are industry-driven. From policy formulation to Training Regulation (TR) development to TVET delivery, industry partners (together with other relevant stakeholders) are deeply involved in these programs implemented throughout the country.
- Based on data on the users of the TESDA Online Program (TOP) during the ECQ period, 50% have full-time employment, 18% are students, while

¹³) https://tesda.gov.ph/Uploads/File/TVET%20Brief%202020/TVET%20Brief%20Issue%20no.%205_Traversing-the-New-Normal-Innovation-in-PH-TVET.pdf

only 15% are unemployed. This points to an existing economic discrepancy in education driven by information and communications technology (ICT).

III. Philippine TVET Response to COVID-19

According to the World Bank, TVET can be utilized to address the immediate training needs of health workers, those engaged in the production of personal protective equipment (PPEs), and those who provide child or elderly care. This is mainly due to the fact that TVET is modular in nature, allowing students to learn at the pace and in the environment suitable to them; directly shifting their subjects to COVID-19 response will help develop students who can act as frontline workers¹⁴).

In addition to this immediate role, TVET could also be used to help the Philippines transition to a “new normal”. Healthcare workers would be in greater demand, in addition to special caretakers. According to TESDA’s Labor Market Information: COVID-19 Health Human Resources, the agency must facilitate the development of training programs on the qualifications that are identified as immediately needed but do not have corresponding or equivalent TRs: 1) contact tracer, 2) swabber, and 3) ward assistant¹⁵).

To streamline the various thrusts and initiatives for the COVID-19 response of the TVET sector, TESDA has come up with an operational

¹⁴ <https://blogs.worldbank.org/education/tvet-technical-and-vocational-education-and-training-times-covid-19-challenges-and>

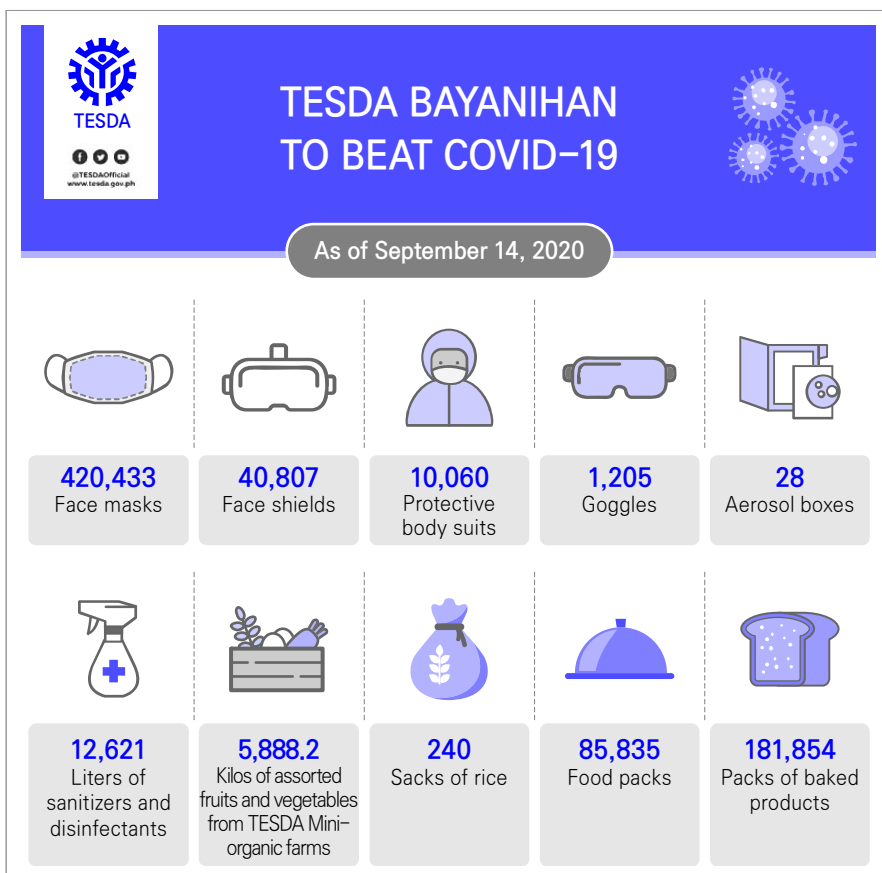
¹⁵ https://tesda.gov.ph/Uploads/File/LMIR%202020/2020.07.06_Quick%20LMI_Human%20Health_Web%20Format.pdf

plan that outlines the strategies and reforms that need to be implemented. Titled OPLAN TESDA Abot Lahat: TVET Towards the New Normal (hereafter “OPLAN”), it is divided into three phases: survival, transitional, and structural. The survival phase, though having ended in June 2020, is an ongoing effort and part of TESDA’s commitment to the Filipino people to provide assistance in the fight against COVID-19 through the production of food, PPE, and other medical supplies/equipment. The transition phase is where we lay the groundwork for the eventual shift to the new normal operations in the TVET sector. This involves the issuance of relevant policies and guidelines for the smooth conduct of TVET during and post-COVID-19. The last, which is the structural phase, will be the regular, full-blown implementation of TVET policies and programs under the new normal.

Furthermore, the OPLAN also identifies four priority sectors - agriculture, health, ICT, and construction - that need particular focus in the country’s transition to the new normal. These sectors will be crucial in providing decent work to Filipinos and in revitalizing the Philippines economy: agriculture to help the country achieve food security; health to augment the existing healthcare system; ICT to assist in the development of the country’s digital economy; and construction to provide a steady stream of workers for the smooth implementation of the Philippines government’s Build Build Build infrastructure program.

TESDA provides food and medical supplies and equipment to frontline workers and healthcare staff by mobilizing TVET institutions. TESDA utilizes its training institutions nationwide - called TESDA Technology Institutions or TTIs - to employ a training-cum-production approach to produce food, PPE, and medical supplies/equipment for frontline workers and healthcare staff nationwide. Figure 2-1 provides the breakdown of items produced as of September 14, 2020.

[Figure 2-1] TESDA technology institutions produce food and medical supplies/equipment for frontline workers and healthcare staff



Source: TESDA (2020). Public Information Division.

The OPLAN also calls for the scaling up of the TOP to provide more Filipinos nationwide with access to quality TVET programs. TOP is an open resource education platform that offers 71 courses, which are categorized as shown in Table 2-2 below:

⟨Table 2-2⟩ TESDA online program category of courses

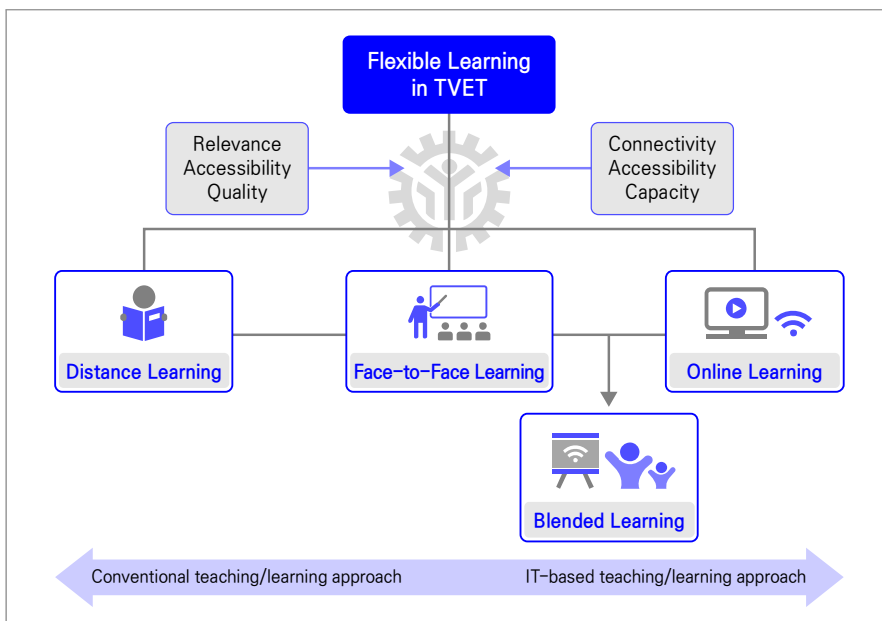
COVID-19 management courses	COVID-19 preventive measures	21st century skills	Agriculture	Flexible learning
Automotive	Electrical and electronics	Entrepreneurship	Heating, ventilation and air conditioning	Human health/ health care
ICT	Lifelong learning	Maritime	Solid waste management	Communication
Food processing and beverages	Social and community development	Tourism	TVET	Trainers methodology / eLearning

Source: TESDA (2020). <https://www.e-tesda.gov.ph/course/>

Flexible modes of TVET delivery have also been adopted to guide TVET institutions nationwide in the safe conduct of training during the pandemic. TESDA’s guidelines for implementing flexible learning in TVET allows the training institutions to adopt innovative ways in delivering TVET. This is to ensure the sector’s resilience in the face of educational disruptions such as the pandemic, as well as a response to the challenges of the digital economy.

Training institutions have the option to adopt any of the flexible learning delivery modes, depending on their institutional capacity, trainers’ capability, and learners’ access to learning resources and technology. Figure 2-2 portrays the Flexible Learning in TVET Conceptual Framework, and gives a clear picture of the difference between distance learning, face-to-face learning, online learning, and blended learning.

[Figure 2-2] Flexible learning in TVET conceptual framework



Source: TESDA (2020). TESDA Circular No. 62 series of 2020, P.5.

Assistance to severely affected groups is provided via scholarships and other training packages. TESDA scholarship programs such as the TWSP, PESFA, STEP, UAQTEA, and the Tulong Trabaho Law all cater to different categories, be it MSMEs, indigenous peoples (IPs), or out-of-school youths, among others. The implementation of these programs shall strictly adhere to government protocols, with training institutions having the option to adopt any of the flexible training delivery modes shown in Figure 2-2. Per TESDA's Labor Market Information: COVID-19 Health Human Resources, funds from these programs shall also be utilized to provide training for in-demand and new course offerings, including health-related qualifications for contact tracers, swabbers, data encoders, medical equipment technicians, nursing assistants, ward assistants, ambulance drivers, and barangay health workers¹⁶).

IV. Way Forward: Initiatives to Future-Proof the Philippines TVET Sector

To ensure readiness in facing similar crises in the future, TESDA is reviewing and updating a majority of its policies and programs. While some policies were in place pre-COVID-19, there is a need to streamline them even further and have them front and center for the implementation of TVET providers nationwide. Of these policies, four have been identified as crucial to future-proof the Philippines TVET sector: 1) TR development, 2) program registration and accreditation, 3) assessment and certification, and 4) trainer reskilling/upskilling.

TESDA is looking for ways to further speed up the development of TRs, including the competency standards and competency assessment tools. A review of the TR development process is being undertaken to ensure a more streamlined approach while strengthening industry buy-in to guarantee that the TVET programs developed impart competencies that are actually required by industries and companies. TESDA shall also prioritize the development and updating of TRs, specifically those priority sectors stated in the OPLAN.

A flexible and dynamic TVET program registration and accreditation process shall be developed to further ease the burden of training institutions. One methodology currently being looked at is the Online Program Registration. This shall be utilized for orientation, submission of requirements by training institutions, and for inspection using online conferencing and other communication tools. Likewise, Certificates of TVET Program Registration, which refers to a document issued by TESDA

¹⁶⁾ https://tesda.gov.ph/Uploads/File/LMIR%202020/2020.07.06_Quick%20LMI_Human%20Health_Web%20Format.pdf

to a concerned institution to certify that the TVET program offered complies with its minimum requirements or standards, shall also be generated and submitted to training institutions online.

Assessment of trainees shall be done mostly through portfolio review, while other remote means are being explored. While the country is on community quarantine, portfolio review of trainees is the most effective way of determining whether or not they are competent in their respective trades. This method also recognizes prior learning, which means a person can submit him/herself for evaluation even without enrolling in a TVET program, provided he/she has sufficient knowledge and experience in that trade. As the country shifts toward the new normal, new approaches in the assessment and certification of TVET trainees shall also be developed and adopted to utilize digital technology and ease away from face-to-face assessment.

The reskilling and upskilling of TVET trainers are also needed, especially with the mainstreamed implementation of flexible training delivery and the development of e-learning curriculum. The National TVET Trainers Academy, together with e-TESDA that manages the TOP, is developing and implementing training courses for TVET trainers and assessors nationwide to ensure that proper techniques and pedagogies are used when imparting knowledge via the flexible modes of TVET delivery. Aside from training delivery, capacity-building programs are also being implemented to capacitate school administrators and teaching and non-teaching staff to develop coursewares suitable for e-learning and other alternative modes of TVET delivery.

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Myanmar

PART
03

Digital Adaptation in Learning (E-Learning) with the Effectiveness of Students' Digital Skills at Government Technical Institute (Insein)

Digital Adaptation in Learning (E-Learning) with the Effectiveness of Students' Digital Skills at Government Technical Institute (Insein)

Ei Phyo Wai (Government Technical Institute)

Abstract

Information and communication technology (ICT) are important for online learning and distance education within COVID 19 crisis. Before that crisis, our institute, Government Technical Institute (Insein), called GTI (Insein), Yangon in Myanmar have been communicated with our students via SMS and video chatting by using social media like Facebook and Viber software. For data sending and receiving, websites, Google Mail, Drive and Viber were used. Because of inviting from Unevoc network, students from Government Technical Institute (Insein) participated in 1-minute short video submission that students were learning within COVID 19 pandemic for World Youth Skills Day 2020 digital conference. The institute's administrative team announced and communicated with the students who wanted to participate in stories submission via students' Facebook Group. Many students made and created their video files at their homes by using mobile phones, laptops and video editor software. Then, they sent their files to heads of department respectively via Google drive and Viber with good resolution. After that, the best short video and video maker was selected that video file were uploaded and posted in INSEIN, GTI HOD Facebook Group by voting the favorite one. As a result, our institute have implemented student's video submission without face to face meeting of any students, teachers and heads of departments.

The story of a student among these students, who is female, was chosen and describe in YouTube Channel for Youth Education by UNEVOC. She presented and shared her opinion about E-learning or distance learning is effective and more time to learn and extra time as possible as they can learn on day and night or every time

and everywhere. She could make video with Video Show video editor herself. Because of these facts, students in TVET institute can apply ICT very well.

The institute is now trying to introduce, test and prepare E-learning or Distance Education to all students that were attended at Government Technical Institute (Insein). Video conferencing and Learning Management software like Zoom application, Google Classroom, BigBlueButton and Moodle Web Server were introduced in order to continue their learning opportunity for education within COVID 19 crisis, new normal condition. From my point of view, open education and E-learning is a good education system but some problems and issues are facing like no internet access, low bandwidth, high cost for data consuming and no ICT devices.

Keywords: Digital adaptation, ICT, Learning Management System, Learning opportunity, Media

I . COVID-19 Announcement and Postponing Students' Midterm Examination in Myanmar

Myanmar has found the first two positive COVID 19 patients who are 36 years old and 26 years old, males, in one day according to the Ministry of Health and Sports news update on March 23rd, 2020 at 23:45. One is back from the United State of America on the 13th and the other is from the United Kingdom on the 21st. None of them have any respiratory symptoms and no fever, no cough [1]. People in Myanmar have known that COVID 19 pandemic reached or spread to Myanmar on Monday midnight that two tests showed positive for the infection [2].

Students who they attended to Government Technical Institutes in Myanmar were sitting examinations respectively at each state and region in the country before announcement of COVID 19 positive case, the

second day of the examination. The next early morning on March 24 had the news “All examinations are postponed indefinitely”, “Universities, Colleges, Institutes and Schools are closing temporarily” because the social-distancing protocols are recommended by health experts. This is all such a shock for students and parents.

The teachers and administrative team leader were also trying to discuss and explain why the institute was closed or the examination was postponed in the early morning of 24th March. It is a good decision to postpone the examinations because the virus could spread between students, particularly dormitory students who live close together.

II . Stay-at-Home Restrictions and Effectiveness of Media Usage

The restriction on stay-at-home orders may affect citizens in the covered areas. According to Stay-at-home Orders in Myanmar [3], there are more businesses on digital transformation, education and online shopping. Their services include mobile applications development and digital marketing. Furthermore, digital competence for their customers are very important taking in consideration. As for TVET’s institutes, students are facing temporality pause of education within COVID 19 pandemic. Without media usage nor digital skill of students and teachers, depression of continuous learning will be appeared and some students can drop from the schools. Therefore, the effectiveness of media usage and motivation to in touching with digital transformation can upgrade the living styles of student life or the formal life.

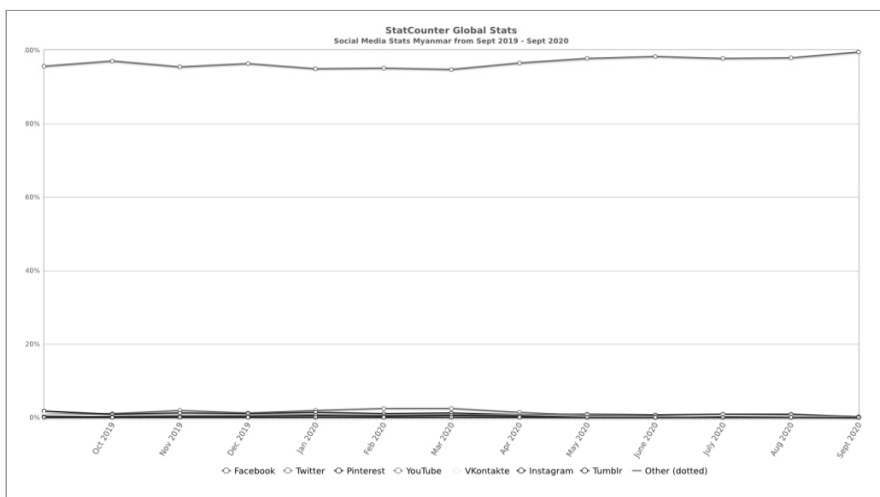
1. Institute closing

Examinations at many technical institutes across Myanmar have been suspended after two COVID 19 cases were confirmed by the government Monday midnight. Department of Technical and Vocational Education and Training (DTVET) institutes' examinations started 23rd March, in the morning on Monday and were scheduled to continue until 2nd April. At the midnight of 23rd March, Director General of DTVET has informed to all principals of DTVET Institutes that the examinations for DTVET Institutes were temporarily postponed started on 24th March because the two positive patients were found in Myanmar [2]. The announcement of "The midterm examinations of the students are postponed" shown in was noticed by Education and Administrative Committee of Government Technical Institute (Insein) according to the Ministry of Health and Sports news update on March 23rd, 2020 at 23:45.

2. Communication among students and teachers at Government Technical Institute (Insein)

There were 22,350,000 Facebook users in Myanmar in January 2020, which accounted for 45.5% of its entire population. The majority of them were men 59.3%. People aged 25 to 34 were the largest user group (960000). People who interested in Facebook in Myanmar are 99.42 percent compared with other social media like YouTube and Twitter on September 2020 [4]. In Myanmar, Facebook, the blue line in Figure 3-1, is the most useful social media among young people according to StatCounter Global stats survey graph.

[Figure 3-1] Graph for social media stats Myanmar from September 2019 to September 2020

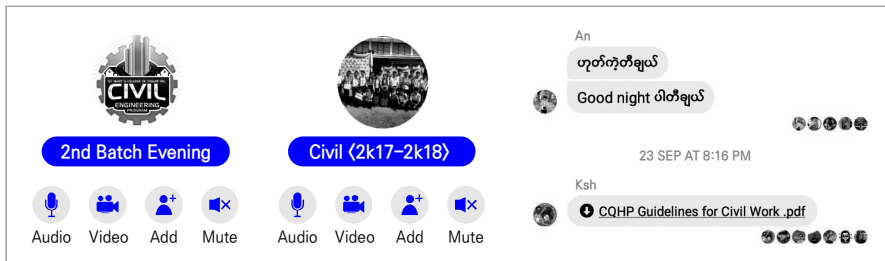


Source: <https://gs.statcounter.com>

Facebook and Viber are the main social media channels. Burmese often communicate with their friends and families through Facebook Messenger. Myanmar now has at least 33 million active mobile subscriptions in a country with an official population of 53 million. Smartphone usage rate is reported at 80% in 2017. The number of mobile connections in Myanmar in January 2020 was equivalent to 126% of the total population. To look at the penetration of the total population in Myanmar, active users of social media increased from 20% to 39% in the span of three years 2016-2019, according to Statista. 89.5% of smartphone users use Facebook (source: StatCounter). There were 68.24 million mobile connections in Myanmar in January 2020. The number of mobile connections in Myanmar increased by 10 million (+18%) between January 2019 and January 2020. Just same as other countries, posting photos and videos, sharing with friends, live updates, instant messaging through Facebook are common among Burmese young generations.[4]

Young people or students in Myanmar log in Facebook regularly. As a result, teachers and head of departments at Government Technical Institute (Insein) are trying and connecting to students to discuss and inform their activities and gather the information and the voice of the students. On formal open days of schools, students and teachers made a meeting, face to face discussion sometimes information can share and notice via media like Facebook secret group or page.

[Figure 3-2] Facebook secret group for students of civil engineering department



Source: Civil Engineering Department, Government Technical Institute (Insein)

3. Digital adaptation in learning (e-Learning) with the effectiveness of students' digital skills

Technology move forward in daily life that everything is available at the top of a finger on smartphone. The process of learning is now accessible over the Internet in the era of E-Learning. There is digital transformation happening in this crisis. At least, teachers and students should have Google mail or their official email that is required for communication and work from home in order to follow up digital transformation.

i. Digital skills and ICT tools for students and teachers

In the new era of learning, technology plays a fundamental role in the processes of teaching children and adults. Digital Tools that facilitate communication between teachers and students, among other things. [5]. Digital skills are part and parcel of higher education and an important part of life for college students. Usage of basic applications of digital systems like Google Drive, creating a new mail account, social media as Viber and Facebook, Microsoft Office, Banking Apps or different types of installing Apps or Installer Software should be well known and used by teachers and students in daily life. Microsoft's Word, Excel and PowerPoint are essential processing tools for virtually any profession. Creating presentations and spreadsheets are skills that many students and teachers will assume that applications will save time and effort and allow to come across a competent professional, no matter the field. Google and other open-source office suites are becoming widely used in education and the corporate world, being familiar with these tools can only further improve overall digital literacy level [6].

At Government Technical Institute (Insein), basic ICT Training for computer applications like Microsoft Office, Google Mail, and Google Apps were delivered to all teachers and students as schedule called short course, extra regular course in Information Technology Department. After year by year, students are able to create their exercises, assignment with Microsoft documents. Teachers are also more attractive in digital teaching and learning with software documents and digital platform because it is easy to prepare and more comfortable rather than normal teaching and learning with hard documents and teaching aids. Google are the most powerful teaching and learning aids for teachers and students. YouTube can help teachers and students for active learning with video including pictures, voice and demonstration of things. Some

teaching and learning software, Kahoot can motivate students to use it which is very attractive quiz software. As possible as teacher's introduction to teaching media software, students are more active in the usage of ICT and can carry on and increase digital skills.

ii. Digital submission and virtual show of students' stories

On 15 July, UNESCO-UNEVOC joined global celebrations to mark World Youth Skills Day. The celebration aimed to recognize the strategic importance of equipping young people with skills for employment, decent work and entrepreneurship, and to highlight the crucial role of skilled youth in addressing current and future global challenges. World Youth Skills Day 2020 took place in a challenging context. The COVID-19 pandemic and lockdown measures led to the worldwide closure of technical and vocational education and training (TVET) institutions, threatening the continuity of skills development. [7]

The Department of Technical and Vocational Education and Training informed to all Government Technical Institutes and Government Technical High Schools in the whole country that making 1-minute video file for TVET youth stories concerned with lifelong learning within COVID 19 crisis can be submitted by each student from respective institutes and schools. The aim of TVET youth stories include very good things. Schools and technical and vocational education and training TVET institutions around the world have closed in massive numbers due to the Covid-19 pandemic. As young people continue to showcase their adaptability and resilience at this challenging time.

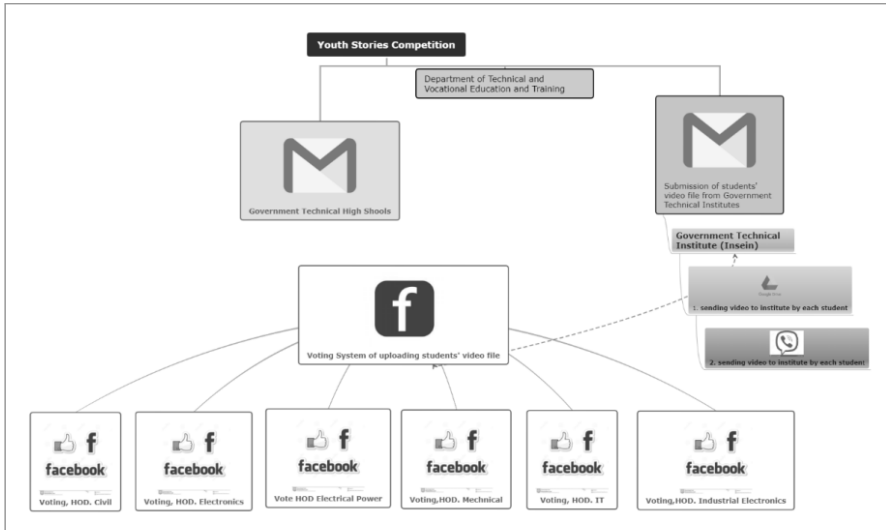
The principle of Government Technical Institute (Insein) gave responsibility of submission of 1-minute video making by students to me, head of department of information technology and the office member

of Unevoc Centre, Myanmar. And then, planning and preparation of submission of the video clip was announced to Administrative team via INSEIN, GTI HOD Facebook Group. The text message included the themes of virtual show “TVET Youth Stories”, “Learning Never Stops” and tips for recording the students’ video like 60 seconds maximum.

According to social distancing, a face-to-face meeting could not be made on these days. Digital meeting with the help of Zoom application could not be made on these days because Facebook group chat with some documents and text messages helped some decisions making in the early. For confirmation case like clearance decision and tips for making video was discussed by phone calling. Consequently, heads of department announced and delivered guidelines to their students who were interested in these virtual show of youth stories for lifelong learning with the aid of Facebook Group respectively.

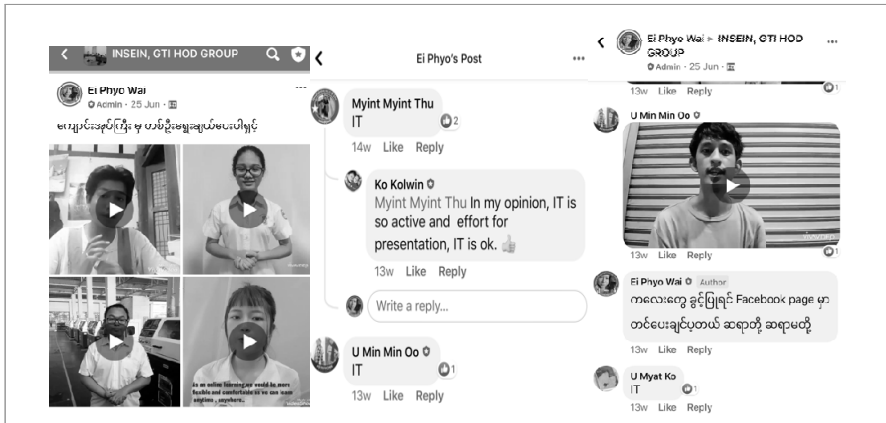
At each departments, the judges or members of selection with voting systems were built and the best one was chosen by teachers respectively. Before the deadline of that submission, some students queried how these video can submit to the judges, administrative teams of GTI Insein. As a good manner, making video have been implemented in each home within the Stay-at-Home Restriction without boring nor face to face communication. Resolution of the video is very important factor so suitable submission method is in order to use Google drive or Viber applications. The following Figure 3-3 is the screenshot for the students’ video submission via Google drive and Viber.

[Figure 3-3] Video submission by students at GTI Insein



Source: Information Technology Department, Government Technical Institute (Insein)

[Figure 3-4] Virtual show and selection by principal and HODs at GTI Insein



Source: INSEIN, GTI HOD Group, Government Technical Institute (Insein)

Myat Thu Thu Kyaw, Female student, GTI Insein explained how she prepared and created that video clip. Firstly, she just thought about the pros and cons of online learning and wrote down the facts as a draft. Then she rewrote those facts into sentences. And tried to take a video to know how long did it take. Then, she minimized again and again until it fixed into one minute. Actually, she tried to take the video more than five times as it was the first time and hard to get a video without missing anything. She took the video alone in my room at home as it was a pandemic period so we have to stay in isolation. After making a video, she used a mobile video editor software, Video Show to subtitle her video so that everyone could understand easily by reading.

The virtual show of students' video submission were played in INSEIN, GTI HOD Facebook Group. The principal and HOD at GTI Insein voted the best video among six departments that was represented by each department (Civil Engineering, Electronics Engineering, Electrical Power Engineering, Mechanical Engineering, Information Technology and Industrial Engineering) in order to submit to DTNET as a representative student of GTI Insein.

After that, the female student' video clip of Information Technology Department of GTI Insein was chosen in order to show on You Tube Channel as themes of "TVET Youth Story", "Learning Never Stop" competitive with other students' stories of institutes and schools in Myanmar.. There are three students' video clips shown in You Tube Channel, TVET Youth Stories from Myanmar.

iii. E-Learning for students' distance learning opportunities

E-learning has been introduced as a tool in the learning process in the majority of the international universities worldwide. The term

“e-learning” is defined by as “any learning that involves using internet or intranet.” According to “e” in e-learning should not stand for electronic; it should be an abbreviation for “evolving, enhanced, everywhere, every time and everybody.” In fact, the quotation of shows most of the advantages of e-learning for learners and instructors. E-learning has grown in significance as an educational tool just like technology has developed and progressed over the years. Interestingly, there have been more efforts at advancing technology than on attempting to understand the needs and learning styles of individual learners and instructional design. The 21st century has seen rapid progress with such things as the Internet and online learning. [8]

Most of students are familiar with digital content and E-learning. Remote learning or distance learning is more suitable learning that situation. Using existing resources, online learning can adopt among students according curriculum or knowledge sharing that were interested fields. Teachers can choose learning system that serve as a backbone of online learning. E-learning systems include the following:

- A learning management system (LMS) such as Google Classroom, Microsoft Teams
- A backbone to LMS such as Google drive, Dropbox, or One Drive
- A tool for teaching and learning such as Google Meets, Microsoft Teams Meeting, Zoom, Facebook, BigBlueButton

Hopefully, a personal computer, tablet, smartphone and laptops are required with a good internet connection. What devices are available and parents may have what digital devices in order to create learning environment at home. If it has a chance for access survey, a short survey should be administered to determine which students may need support

in setting up a learning environment in their home. Some students may be in need of special assistance, internet access or certain internet speed with the high bandwidth for video conference. Another option is to provide charges for mobile bills for students something like that.

A survey with some IT students who may have digital electronics device more than other students at other departments has been implemented when the institute will be opened within COVID 19 crisis. The following response included what digital devices do they have, how to create learning environment. Here, it was found that every students who learned in IT course may not have laptop at their homes. It is also one challenge for online learning and some students had desires to test and practice their practical jobs or work at the institute, GTI (Insein). Consequently, HOD would like to communicate and contact to students via meeting or some knowledge sharing within Stay-At-Home situations.

[Figure 3–5] IT students’ response with Google spreadsheet

Please write your name	Please write your	May I know do you have one of the following	Theories Lecture Times	Practical or Lab Times
Myat Thu Thu Kyaw	2GIT-26	Laptop	In Your Class Room distancing 6 feet each student	Come to GTI(Insein) and do your practical
Wan Lin Kyaw	2G IT-25	Mobile Phone	In Your Class Room distancing 6 feet each student	Come to GTI(Insein) and do your practical
Aye La Pyae Phyo	2GIT - 23	Laptop, Mobile Phone	In Your Class Room distancing 6 feet each student	Come to GTI(Insein) and do your practical
Paing Khaht Kyaw	2GIT-32	Laptop, Mobile Phone	In Your Class Room distancing 6 feet each student	Come to GTI(Insein) and do your practical
Aamatar	2GIT-1	Laptop, Mobile Phone	Half Students are in Social Distancing Lecture Room and another half in Practical Room	Come to GTI(Insein) and do your practical
yi Phyu May	2GIT 16	Laptop, Mobile Phone	Half Students are in Social Distancing Lecture Room and another half in Practical Room	Come to GTI(Insein) and do your practical
Aamatar	2GIT-1	Laptop, Mobile Phone	Half Students are in Social Distancing Lecture Room and another half in Practical Room	Come to GTI(Insein) and do your practical
Allen Htoo	2GIT - 12	Laptop, Mobile Phone	In Your Class Room distancing 6 feet each student	Send practical work short video file to team
Sai Thaha	2GIT-5	Desktop Computer, Laptop, Mobile Phone	You will learn about all theories in zoom live application	Come to GTI(Insein) and do your practical
Hleik Hleik Oo Wai	2G-IT-17	Mobile Phone	Half Students are in Social Distancing Lecture Room and another half in Practical Room	Send practical work short video file to team
Wg Ye Myint Aung	2GIT-9	Mobile Phone	In Your Class Room distancing 6 feet each student	Come to GTI(Insein) and do your practical
May Thu Khine	2G IT 22	Laptop, Mobile Phone	You will learn about all theories in zoom live application	Send practical work short video file to team
Sandar Nyunt Lu	2GIT-2	Mobile Phone	You will learn about all theories in zoom live application	Send practical work short video file to team
ho Kyi Phyu Myint	2GIT-4	Laptop, Mobile Phone	Half Students are in Social Distancing Lecture Room and another half in Practical Room	Come to GTI(Insein) and do your practical
Khine Zar Thwe	2S IT 11	Laptop, Mobile Phone	You will learn about all theories in zoom live application	Come to GTI(Insein) and do your practical
Phone Myat Minn paing	2G IT-27	Laptop	Half Students are in Social Distancing Lecture Room and another half in Practical Room	Come to GTI(Insein) and do your practical
Y Ye Linn	2GIT-28	Laptop, Mobile Phone	In Your Class Room distancing 6 feet each student	Come to GTI(Insein) and do your practical
Aye Theint Thant Tun	2GIT-29	Mobile Phone	In Your Class Room distancing 6 feet each student	Come to GTI(Insein) and do your practical
ho Wai Maw	2GIT-3	Mobile Phone	Half Students are in Social Distancing Lecture Room and another half in Practical Room	Come to GTI(Insein) and do your practical

Source: Information Technology Department, Government Technical Institute (Insein)

iv. Students’ motivation and learning in touch within COVID-19 crisis

Recent studies indicate that university students who have been enrolled on e-learning courses outperform those being taught on

traditional courses. An education system is created which is capable of rapid adaption to its technological, social, cultural and political environment. Incorporating technology in the learning process does not necessarily guarantee motivated students. In fact, online instruction has resulted in the student teacher relationship becoming less personal. Teachers are required to turn the classroom into an online environment. The question is what exactly is required of teachers to motivate students in an online environment? It is essential for teachers to understand their students' motivations. The success or failure of online instruction is perhaps related to student motivation. To stimulate students, teachers should do as follows:

- keep in mind that motivation must be natured in students
- explain to their students how the online environment may be used
- encourage interaction and collaboration among their students
- build study groups so that students will no longer be studying in isolation
- help students to make friends by meeting fellow students in the online environment
- interact with their students by monitoring the online presence of them and supplying them with continuous feedback
- construct their learning materials and environment to target their students
- facilitate the students' interaction with the online material by explaining the goal behind designated tasks
- be aware of students' frightened, worries and nervousness because such anxiety may have a negative effect on their accessibility and motivation

Teachers at GTI Insein delivered some topics and fields of study for students in order to motivate students lifelong learning that situation. The

first step, communication with students is made by phone calling or contacts with text messages in personal case not official manner. And then, how to use online environment and required teaching media were explained. The coordinator of the students explained how to step up software and hardware preparation steps for online learning and video conference. After that, the coordinator, the student shared the link that the students would like to join and study the topic. Some teachers at each department delivered their digital lessons by using zoom application, Google Classroom, BigBlueButton, and Facebook Messengers.

According to facing difficulties of internet access or without electronics devices or bare of motivation on online learning, one third of total students can't join online classes. The findings are shown in Table 3-1.

<Table 3-1> Information table of introduction to online learning at GTI Insein

Course	Learning Fields	Attendance of Students Online Learning	Total Number of Students in the class
Civil Engineering	Safety Estimate What is Civil Engineering Concrete Building Materials 5S for Workshops	Maximum 22 students Minimum 20 students	36 students
Electrical Power Engineering	PLC	Maximum 35 Minimum 20	35 students
Industrial Engineering	Opti Turn (L28 CNC Turning Machine-ISO)	Maximum 35	35 students
Electronic Engineering	Introduction to Applications of Learning Environment	Maximum 6	32 students
Information Technology	Python Programming Network Administration	Maximum 26 Minimum 21	34 students

Source: Interview and Survey with Teachers at GTI Insein via Facebook Messenger

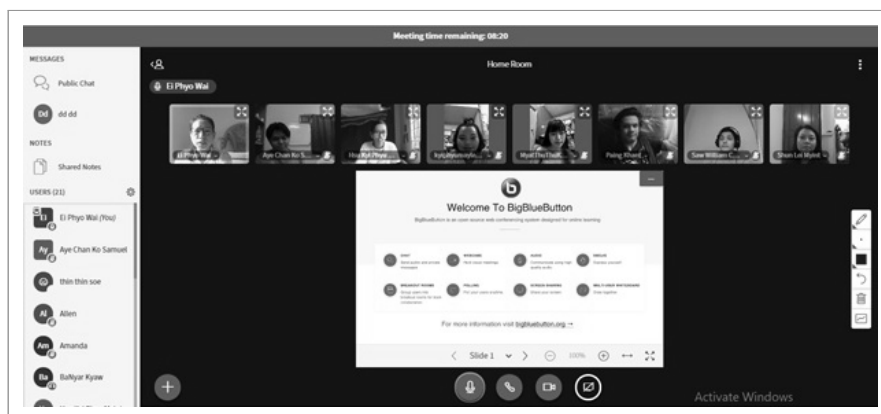
[Figure 3-6] Video conference of teachers and students at GTI Insein using Zoom



Source: Information Technology Department, Government Technical Institute (Insein)

Google Classroom is one of E-Learning tools for Assignments and Classwork's for students or trainees. Video Conference and Power Point presentation with screen sharing were done by using Zoom or BigBlueButton applications in students and teachers' mobile phones, tablets or laptops. Teachers prepared digital lessons and documents like power points, worksheets (pdf files) etc. As a result, teachers' and students' digital skills are increasing because of digital transformation and the platform of E-Learning.

[Figure 3–7] Video conference of teachers and students at GTI Insein using BigBlueButton



Source: Information Technology Department, Government Technical Institute (Insein)

III. Effectiveness and Challenges of Students' Digital learning in Myanmar

In order to survey whether E-learning or online is the good way to deliver within COVID 19 outbreak, questionnaires' with Microsoft Survey Form to students, teachers were created and requested to answers or responses to me.

- Questionnaires' included the following fields.
- Do you like Online Learning? Why?
- Advantages of Online Learning
- Disadvantages of Online or Distance Learning
- Challenges for Online or Distance Learning
- Charges or cost of Online or Distance Learning for 1 hour lesson

<Table 3-2> Advantages and disadvantages of distance learning at GTI Insein

Advantages of Online or Distance Learning	Disadvantages of Online or Distance Learning
<ul style="list-style-type: none"> • Lack of transportation charges • Easy to learn • It has new technology and save healthy • I can learn at my free time • I can learn any place • I like it because of challenging of new technologies such as zoom, office 365 and. Clouds etc... In my opinion, online learning gives our new ideas and leading to industrial 4.0. Today students and learners should be accepted this challenges and get new life style. On the other way, I think our self-proud in style because of new techniques get currently age. And you also as an examiner, how to do you think? 	<ul style="list-style-type: none"> • Lazy or sleeping • Internet charges • I feel alone for a long time and thus I have psychological and mental health problem • Less attention • Electricity problem • Ok start with (lagging) if you use unstable network, you will miss something and nobody no who is watching learning or not • It cost lots of money, it has never been used and no keep in touch. So, we would try not only to know about lessons also to keep in touch. In addition, some of the majors couldn't really be done with online learning because they have equations, theories, mathematical expressions and also logical problems.

[Figure 3-8] Response of distance learning using Microsoft survey form

Disadvantages of Online or Distance Learning:	Challenges for Online learning or Distance Learning
Lazy or sleeping	Laptop or Desktop Computer; Mobile Phone;
Internet charges	Internet Access;
I feel alone for a long time and thus I have psychological and mental health problem. My mind isn't normal right now. So I want normal life	Internet Access;
No, I don't have	Laptop or Desktop Computer; Mobile Phone;
Charges of Internet access.	Internet Access; Laptop or Desktop Computer;
less attention	Internet Access; Laptop or Desktop Computer; Mobile Phone; Devices
No Practical	Internet Access; Mobile Phone;
A lot of cost (bill) . Not all youth have laptop. Even if they have a cellphone , the screen size is too small for screen sharing. In other region in	Mobile Phone;
Practical workshop demonstration on online learning is little effective.	Internet Access; Laptop or Desktop Computer; camera or devices for v
Expensive internet fee/ Electricity problem	Internet Access; Laptop or Desktop Computer;
Like what I said in the above, it's too noisy We can't chat a normal video chat in these days	Internet Access; Devices for voice or microphone;
It would be nice to have a laptop or a mobile phone. Must have good internet connection. Expired for internet packs	Internet Access; Laptop or Desktop Computer; Mobile Phone; Devices
1.No face to face interaction. 2.Out of control	Internet Access; Laptop or Desktop Computer; Devices for voice or mi
ကျောင်းသားအချို့ကလည်းအတွက် အခါအခါမျိုးဖြစ်ပါတယ်။ အခုလိုပင်သင်သင်အခါအခါပဲဖြစ်ပါတယ်။ ဆိုတာကိုကြားတော့ လျန်မာပြည်ကျောင်းသားပြန်တဲ့အတွက်	Internet Access; Mobile Phone; camera or devices for video chat;
It can cost another charges such as internet	Internet Access; Laptop or Desktop Computer;
Charges for internet access	Internet Access; Mobile Phone; camera or devices for video chat;
It costs Internet bill and sometimes Internet access is unstable. And it takes more time to gather in a meeting room.	Internet Access;
There's still some issues that we have to be in touch with teachers in person, and also the practical works .	Internet Access; camera or devices for video chat;
Less of discuss.	Mobile Phone;
Online	Internet Access;
No social	Internet Access;
Bull shit/No practical	camera or devices for video chat; Private Windows

Source: Information Technology Department, Government Technical Institute (Insein)

As a response of 38 answers, half of the response are like and others don't like or not too bad for online learning. The important issue is that some people can't interested in these questions or don't know how to answer digital survey form. It is unfamiliar with digital survey form or can't be made untrusted link or can't motivate on digital learning. The most important challenge for students is internet access. Free Wifi or Free Internet access or supporting to internet bills can help students. They didn't charge on internet bills that they think that it is extra money for their daily cost also electricity problem.

Some parents can give good learning environment who live in town or city. Some students comes from villages and rural area. Our institute always give fair chances to all students from anywhere in Myanmar to attend and entrance to our institute, GTI Insein. When examinations are postponed, students return to back their native town or village and stay at home. Therefore, motivation on distance learning of students that comes from countryside should be try in order to continue their lifelong learning within COVID19 pandemic.

Furthermore, our institute will carry on setting up for E-learning platform as like Moodle Web Server in order to upgrade teachers' formal lecture and demonstration to digital lessons with E-learning tools and environment.

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Myanmar

PART
04

TVET for Youth Employment in Myanmar during the COVID-19 Pandemic and After

TVET for Youth Employment in Myanmar during the COVID-19 Pandemic and After

Maw Maw Tun (Ministry of Education)
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Abstract

The COVID-19 pandemic has had a huge impact on Technical and Vocational Education and Training (TVET) worldwide due to the closure of TVET institutions and training centers and the limitations of social distancing, making it difficult to arrange training and employment for youths. Currently, to promote the TVET sector, youth employment, and continued learning in Myanmar during the pandemic, a digital learning management system has been introduced in TVET institutions for regular full-time students and adult learners. Additionally, digital campuses and IT infrastructure, including affordable access to computers/laptops and the internet for teachers, have been established. Furthermore, digital learning content related to TVET programs is being made available via the Myanmar Digital Education Platform.

This study aims to highlight the implemented TVET activities for youth employment across Myanmar during the pandemic and after. To achieve this aim, we collected, synthesized, analyzed, and evaluated the data on the TVET programs and implemented activities in Myanmar, based on previous literature and reports. Based on the analysis, we have specified the major human resource development activities being implemented for youth employment in Myanmar during the pandemic and after—the national COVID-19 response and recovery plan, a digital learning management system, capacity building of teachers and trainers, school management training, training via blended teaching-and-learning methods, preparation for the reopening of schools, etc. Moreover, a comparison between the regular and new approach in the TVET sector for youth employment in Myanmar is also presented. Finally, along with the descriptions of challenges and opportunities related to the TVET sector, the

lessons learned from other countries and suggestions for the way forward are discussed.

Keywords: COVID-19, TVET, Youth Employment, Digital Learning Management System, Human Resource Development, National COVID-19 Response and Recovery Plan

I . Background of the Study

Technical and Vocational Education and Training (TVET) is expected to provide training opportunities and skilled manpower for sustainable development (CPSC, 2020). The TVET sector is crucial for the sustainable socioeconomic development of a country, as it equips its youths with the relevant employment skills, fulfilling the local labor market demand and driving the nation's economic development.

However, the ongoing COVID-19 pandemic has led to widespread school closures in many countries, affecting 89% of the global student population (1.54 billion children and youths enrolled in school or university, including nearly 743 million girls) across 185 countries, as reported by UNESCO (Majumdar and Araiztegui, 2020; UNESCO, 2020). Additionally, there globally encountered 400 million full time job losses, accounting for 14% and 235 million full-time jobs have been lost in the Asia-Pacific region (Lamichhane, 2020a). The TVET sector has been affected the most in this pandemic because of its structure—a combination of theoretical learning and practical training.

To mitigate the long-term impact of the pandemic, governments have implemented strategies and approaches corresponding to the

preparedness of their respective countries to tackle the issue on different fronts (Majumdar and Araiztegui, 2020). Regarding the TVET sector, most countries, including Malaysia, Myanmar, the Philippines, Korea, and China, have initiated distance learning (online and offline) and blended learning (online learning and practical training at workplaces) (Hu, 2020; MoE, 2020; Park, 2020; Urdaneta, 2020). Likewise, several countries have started training (skilling, upskilling, reskilling) for capacity building of teachers and trainers to improve digital teaching and learning methods, with the aim of building digital infrastructure and ensuring full access to digital devices for teachers and students (Hu, 2020; Kay, 2020; Korea Ministry of Education, 2020; Lamichhane, 2020a; MoE, 2020; Park, 2020; Urdaneta, 2020). In addition, some of the institutions are also supporting the national crisis response, such as crisis management, reopening plans, and the post-COVID-19 situation and smooth operations, with blended learning (Lamichhane, 2020a; Majumdar and Araiztegui, 2020; MoE, 2020).

Several online teaching and learning modes have been deemed useful and helpful for not only developed countries but also developing ones, covering education that takes place over the internet (e-learning), “distance learning” via correspondence courses (mail), tele-courses (radio or television broadcast), CD-ROM courses (static computer content), and mobile learning (cellphones, iPods, iPads, MP3 players) (Lamichhane, 2020b).

1. The TVET sector in Myanmar

Myanmar’s education system is divided into five segments: early childhood care and development, basic education, alternative education, TVET, and higher education (MoE, 2020). The government provides TVET

at the upper secondary and post-secondary levels as part of the National Education System (UNESCO, 2019). The TVET sector has been established by thirteen different line ministries, and the Ministry of Education (MoE) is the largest public provider of formal TVET (UNESCO, 2019).

DTVET (Department of Technical and Vocational Education and Training) (2020) reported that, as of 2019, it has 69 institutions ((3 government technical colleges (GTCs), 25 government technical institutes (GTIs), 35 government technical high schools (GTHSs), and 6 vocational training institutes (VTIs)) under it, offering training to a total of 87,046 students over a 4-year period. Additionally, in the 2018-2019 academic year, DTVET also started evening diploma courses, training 669 students in two GTIs in Mandalay and Insein. Under competency-based short courses to acquire TVET, and for skills development and employment opportunities, TVET institutions, in cooperation with development partners (INGOs and NGOs), have offered several to 41,954 trainees in the last 4 years and to 1,057 trainees from disadvantaged and vulnerable groups since 2007.

To promote school and industry partnerships, mutual training of trainers by schools and industries and dual apprenticeships have been conducted—for instance, dual apprenticeship training for culinary skills and agricultural machinery mechanic training via cooperation between DTVET, Swisscontact, and Industry. Furthermore, a labor market demand-based curriculum has been developed with European Union (EU) budget support to meet local industrial needs. Training for capacity building of TVET leaders, teachers, and trainers has been conducted nationwide—9 school management training sessions for 253 leaders, 24 pedagogy training sessions for 1,519 pre-service teachers/trainers, and 202 technical skills training sessions for 3,686 in-service teachers (DTVET, 2020).

The Vocational Education–School Quality Assurance Standard Framework has been implemented to a reasonable extent for quality assurance in TVET institutions under DTVET. National Skills Standard Authority–testing centers for TVET graduates have been established in TVET institutions. With the implementation of an informational management system, TVET websites of TVET institutions, EMIS, and communication for management have been launched (DTVET, 2020).

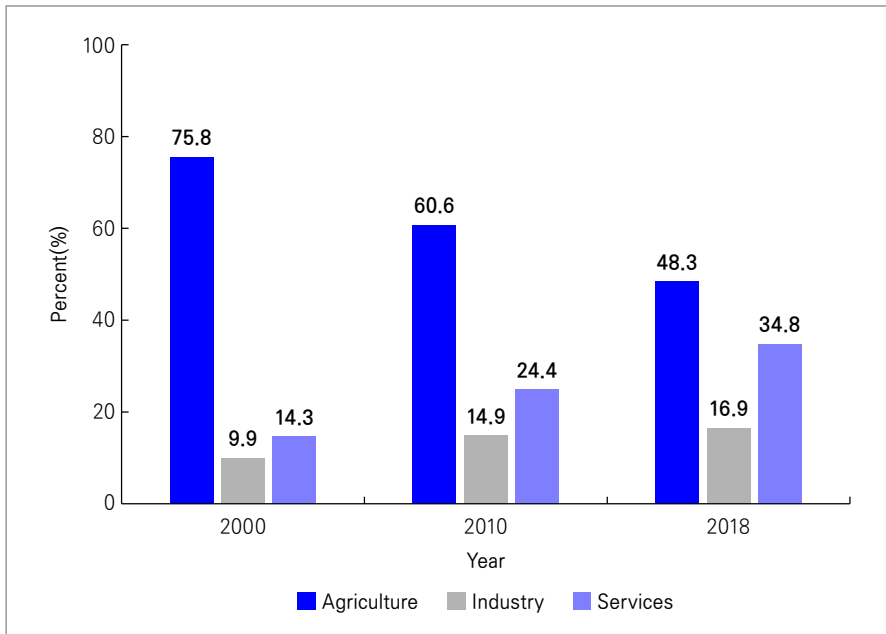
The development partners involved in TVET, extending support through grants, loans, and technical assistance to the sector in Myanmar, include the Asian Development Bank, EU, Swiss Development Agency, German Society for International Cooperation, KfW, Japan International Cooperation Agency, Japan Fund for Poverty Reduction, Danish International Development Agency, Finland, International Labour Organization (ILO), Norwegian Refugee Council, and Government of Singapore.

2. The employment sector in Myanmar

Myanmar’s working-age population (15 and above) is about 35 million people (54% female and 44% male), whereas its labor force is estimated at 24 million people—45% female (9.8 million) and 55% male (11.9 million) (UNESCO, 2019; World Bank, 2018a). Moreover, 71% of the working-age population lives in rural areas and 29% in urban areas (MOLIP, 2016). Though agriculture was the main source of employment for nearly half of the labor force until 2018 (Figure 4-1), 2010 and 2018 saw a decrease in the number of people engaged in it owing to the shifting trend in Myanmar’s economy—from agriculture to the service and industry sectors: this was mainly because jobs in the agriculture sector are particularly prone to seasonality, and farmers have to deal with the

adverse impacts of severe weather events such as massive flooding (UNESCO, 2019).

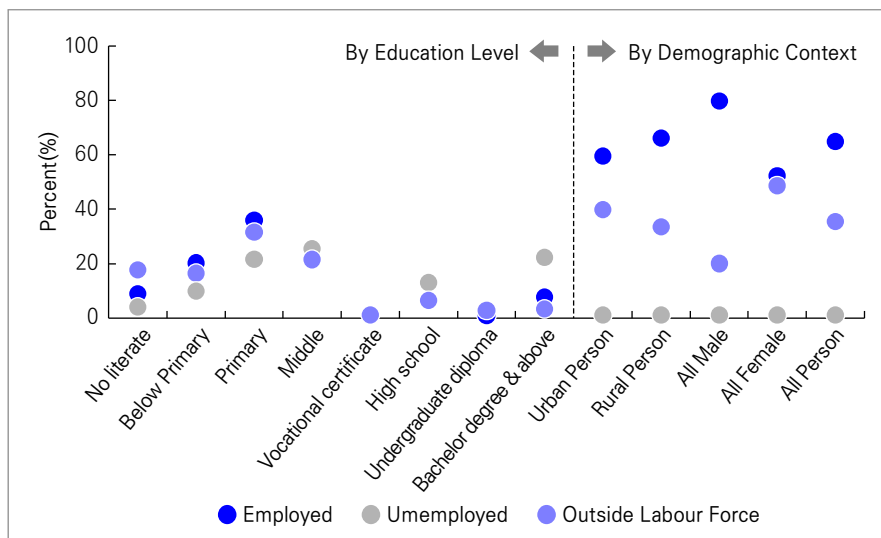
[Figure 4-1] Employment by sector (% of total employment)



Source: World Bank (2018b)

Based on the projected 18% population growth for Myanmar, labor force participation rate is expected to rise, to 77.7% (UNESCO, 2019). Figure 4-2 shows the distribution of persons aged 15 and above by labor force status (sex, education, and location). The number of persons with primary education in Myanmar’s labor force is higher than those with vocational certificate, high school education, undergraduate diploma, and bachelor’s degree and above. It is expected that the promotion of the TVET sector will increase employment opportunities for TVET graduates to a reasonable extent.

[Figure 4-2] Distribution of persons aged 15 and above by labor force status



Source: MOLIP (2016)

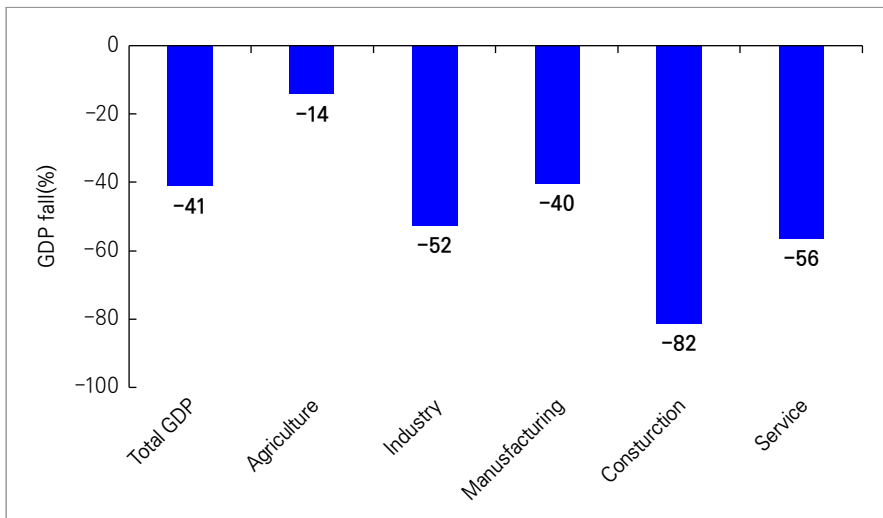
II. Impact of COVID-19 on the Youth Employment and TVET in Myanmar

1. Impact of COVID-19 on the employment

Myanmar confirmed its first two cases of COVID-19 on March 23, 2020 (MoE, 2020). To curb the spread of the disease, the government has implemented various measures, including international travel restrictions since February, a ban on public events and festivals, and restrictions on business and workplace operations (ILO, 2020). *Xinshen* (2020) stated that the restrictions on business and workplace operations have adversely affected the agri-food system in the form of falling

consumer and export demand, not to mention the negative impact due to the closure of factories. Additionally, it was estimated that five million jobs in the non-farm sector would be lost during the lockdown period. Overall, according to ILO’s (2020) estimates, 6.9 million to 7.3 million jobs could be lost in Myanmar as a result of the pandemic and related containment measures. By industry, job losses could impact nearly 3.5 million workers in agriculture, 1.5 million in wholesale and retail trade, 1.2 million in manufacturing, and approximately 400,000 in both construction and transport (ILO, 2020). As a result, a 41% drop has been predicted in Myanmar’s overall GDP during the two-week lockdown period, compared with a no-COVID-19 situation during the same period (Xinshen, 2020) (Figure 4-3).

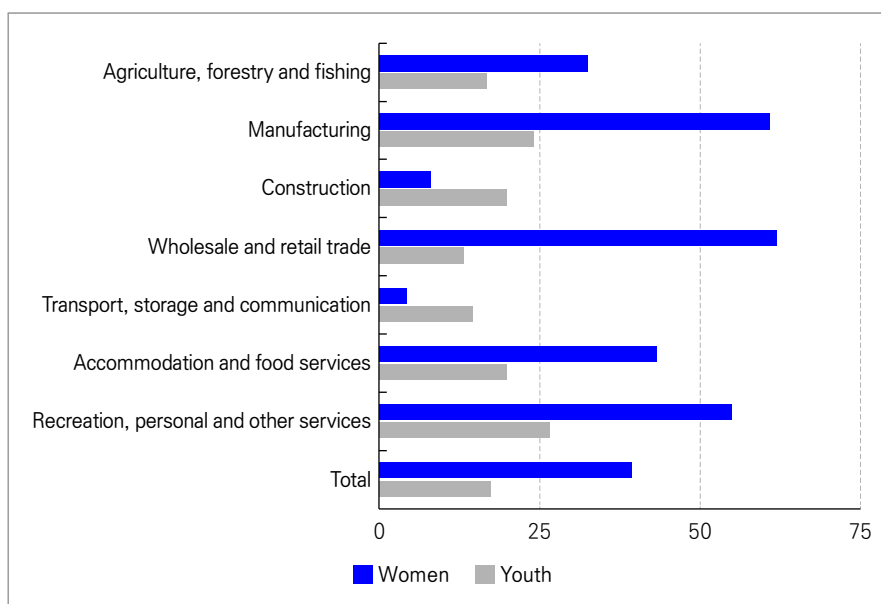
[Figure 4-3] Fall in total and sectoral GDP during the lockdown period (%) (relative to a no-COVID situation)



Source: Xinshen(2020)

Figure 4-4 shows the share of employed women and youths in sectors facing medium to high impact due to the pandemic. ILO (2020) has reported that jobs are especially vulnerable and precarious in these sectors. Owing to the higher number of women employed in these sectors, they are more vulnerable to job loss than youths aged between 15 and 24 who account for approximately one in six workers in the at-risk industries (ILO, 2020).

[Figure 4-4] Share of employed women and youths in sectors facing medium to high impact due to the pandemic (%)



Source: ILO (2020)

2. TVET for youth employment in Myanmar during the pandemic

Following Myanmar's first two COVID-19 cases on March 23, 2020, the MoE called for the closure of all schools, higher education institutions (HEIs), and TVET institutions. The closure of HEIs and TVET institutions is expected to affect 1.5 million and 15,712 students, respectively (MoE, 2020). In addition, the number of dropouts and out-of-school children is likely to increase, as both students and teachers have limited exposure to distance learning (MoE, 2020).

In this context, the MoE, in collaboration with UNESCO and partners for the Education and TVET Sector Coordination Group, has developed a national response and recovery plan for the education sector, aligned with the overarching aims of the current 2016-2021 National Education Strategic Plan (NESP) to “Improve teaching and learning, vocational education and training, research and innovation[,] leading to measurable improvements in student achievement in all schools and educational institutions,” and providing an opportunity to inform priority setting in the ongoing preparation of the next NESP (MoE, 2020).

In addition to the national response and recovery plan, DTVET has, to a reasonable extent, provided IT infrastructure, and upgraded internet access to its TVET institutions. Moreover, human resource development for TVET leaders, trainers, teachers, students, and trainees has been considerably promoted via online training, blended learning, international webinars, virtual workshops, and online knowledge-sharing events in Myanmar during the pandemic. Reopening of TVET institutions is being planned under the guidance of Myanmar's Ministry of Health and Sports.

III . Research Need and Study Aim

The pandemic has had a huge impact on TVET worldwide due to the closure of TVET institutions and training centers and the limitations of social distancing, leading the difficult arrangements for trainings and employment for the youths. Currently, to promote the TVET sector, youth employment, and continued learning in Myanmar during the pandemic, a digital learning management system (DLMS) has been introduced in TVET institutions for regular full-time students and adult learners. Additionally, digital campuses and IT infrastructure, including affordable access to computers/laptops and the internet for teachers, have been established. Furthermore, digital learning content related to TVET programs is being made available via the Myanmar Digital Education Platform (MDEP). However, as far as we are aware, only a few studies have focused on the impact of the pandemic on the employment sector (ILO, 2020; *Xinshen*, 2020), national response and recovery (MoE, 2020), and implemented activities (DTVET, 2020; Thu, 2020) in Myanmar. Therefore, this study aims to highlight the implemented TVET activities for youth employment across Myanmar during the pandemic and after, to understand how the TVET sector has been set up for the national TVET response and recovery in this time of crisis and after.

Though Myanmar's TVET sector has been set up by 13 line ministries across the country, DTVET, under the MoE, is the focal point, mainly responsible for its functioning. Therefore, the data collected in this study is primarily from previous literature and reports related to DTVET. In addition, since most of the data was collected during the pandemic, some of it as well as the planned activities may change with time.

IV. Methodology

To achieve the aim of this study, we collected, synthesized, analyzed, and evaluated the data on the TVET programs and implemented activities in Myanmar, based on previous literature and reports. Based on it, we have specified the human resource development activities implemented for TVET during the pandemic and after. Finally, along with the descriptions of challenges and opportunities related to Myanmar's TVET sector, we have discussed the lessons learned from other countries and suggestions for the way forward.

V. Results and Discussion

1. National COVID-19 response and recovery plan (2020-2021)

Due to the spread of COVID-19, TVET institutions in Myanmar have been closed since the last week of March 2020. Hence, in collaboration with UNESCO and partners for the Education and TVET Sector Coordination Group, the MoE has developed the national sector-wide response and recovery plan with the objective of providing an overall framework to ensure the continuity of quality and equitable education in Myanmar during the pandemic in the short, medium, and long term (MoE, 2020). To achieve this goal, this plan is divided in two phases, as shown in Figure 4-5 (MoE, 2020):

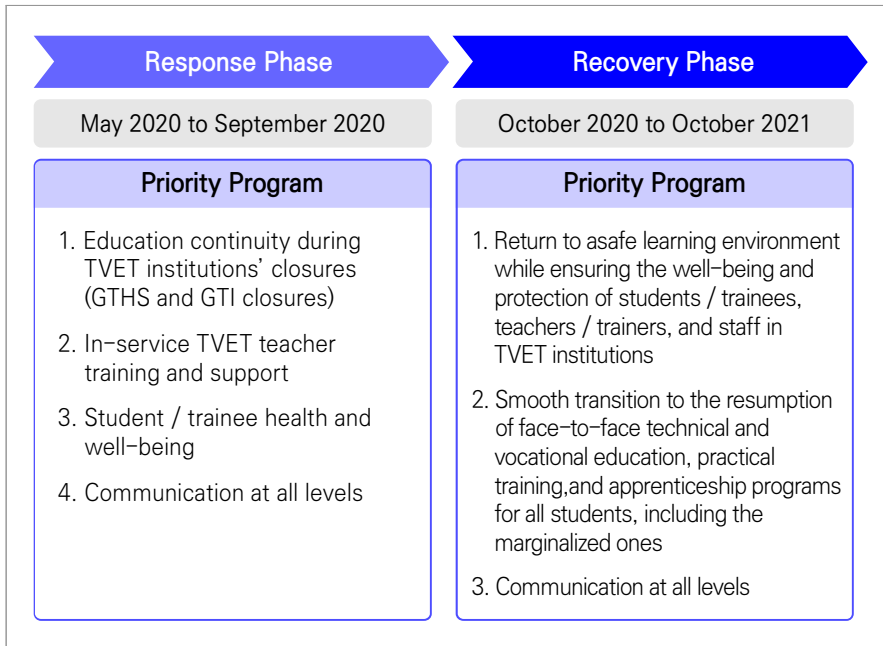
i. *The response phase*, from May to September 2020, aims to ensure education continuity through diverse distance learning modalities, considering the closure of educational institutions.

ii. *The recovery phase*, from October 2020 to October 2021, focuses on planning the reopening of educational institutions in an appropriate manner while protecting the health and well-being of learners and the education workforce.

In addition to these phases, the framework provides for a crosscutting focus on the strengthening of the education system through crisis-sensitive educational planning.

In Myanmar, the aspects to be addressed as part of the EPR policy framework include national curriculum, distance learning, infrastructure preparedness, use of ICT for education, school emergency preparedness, teacher training and professional development, student and education workforce well-being, examinations, community engagement, communication flows and coordination, departmental officials' capacity building, and data production and management, including EMIS (MoE, 2020).

[Figure 4–5] Myanmar’s COVID–19 national response and recovery plan for the TVET Sector



Source: MoE (2020)

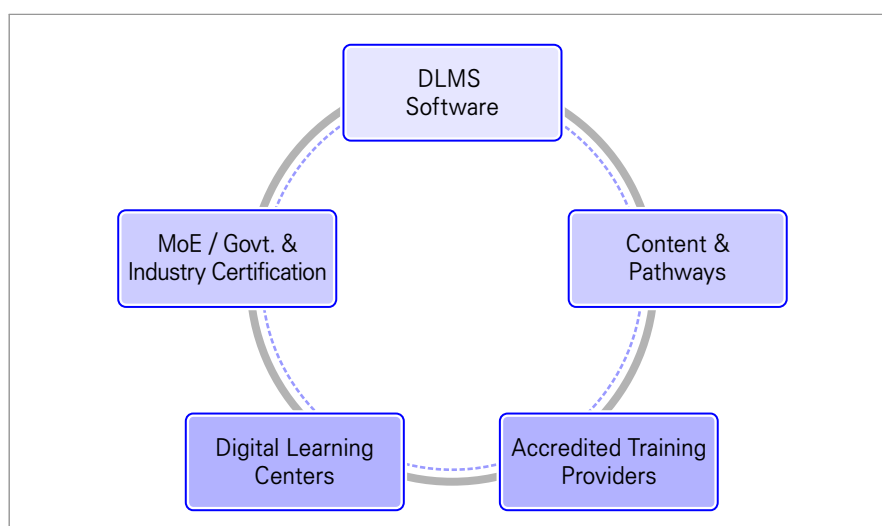
2. Introduction of a digital learning management system for the TVET sector

Considering the pandemic and its impact so far, DTVET plans to maximize the many benefits of 21st-century skills to expand access to quality TVET for students and adults interested in new TVET qualification-certificates, diplomas, and degrees. The most efficient and cost-effective way to expand TVET capacity and improve quality is by establishing a TVET DLMS. A quality TVET DLMS will enable DTVET to provide training opportunities to youths and workers in a wide range of TVET courses in all stages and regions, for example, NVFC, competency-

based modular short courses, and certificate and diploma courses via (a) blended learning (face-to-face training and offline self-learning) and (b) offline self-learning.

Figure 4-6 illustrates a proposed quality TVET DLMS comprising five aspects: DLMS software, content and pathways, accredited training providers, digital learning centers, and MoE/government and industry certification.

[Figure 4-6] A proposed quality TVET Digital Learning Management System (DLMS)



i. DLMS software

Good-quality learning management system software is available at a low cost, which DTVET can customize; and DTVET has secured funding from the capital development fund to conduct a rapid assessment, in September-October 2020, of the best international software that it can use in its TVET DLMS.

ii. Content and pathways

A quality TVET DLMS must have an extensive range of content that is easy to learn for a wide variety of learners, for example, youths starting their careers, and mid-career technical workers and professionals. The learning content must be presented in modular form so that learners can learn at their own pace. Content on the DLMS must be structured around career pathways, which will help learners acquire new knowledge and skills in their chosen career pathway.

iii. Accredited training providers

A quality TVET DLMS must have content delivered by accredited training providers to expand its range of content and qualifications on offer. These providers will enable DTVET to deliver quality TVET courses through (i) blended learning and (ii) offline self-learning. DTVET has contracted a company to document all government and private TVET providers in 41 cities and towns, and it is developing a pilot project with MCTC to offer international standard short courses for youths and professional workers in five competency areas: banking, insurance, logistics, retail, and health and safety. The course content for these will be provided by the Institute of Technical Education (Singapore) and Myanmar Industry Associations.

iv. Digital learning centers

A digital learning center is a facility where youths, workers, and professionals can access TVET DLMS courses—a large classroom (or) may be 2-3 smaller ones in a GTI or GTHS with desktop computers, tablets, work stations, free internet, and group meeting tables. Each center will be managed by a team of trained DTVET trainers and work experience

volunteers; the former will provide mentoring support to students, workers, and professionals to help them select and complete the TVET courses listed in the DLMS. The centers will stay open from 7.30 am to 9.30 pm every day.

v. MoE/government and industry certification

The TVET DLMS will offer MoE, TVET partner ministries, and industry recognized qualifications (NVFC, CBMSCs, certificates, and diplomas) to youths, workers, and professionals who complete the course requirements and acquire the related competency. Such certification is a very important incentive for youths, workers, and professionals to complete the courses listed in the TVET DLMS.

Currently, the content of introduction to digital literacy has been planned with TPTC (Baelin) and the University of Computer Studies (Yangon). The proposed content is instant meeting using Zoom/Google Meet, scheduled meeting using Zoom/Google Meet, course creation, uploading/managing learning materials, topics and content creation, control during a meeting (change host, share screen, chat, breakout room, file sharing record), system testing, Gnimio Moodle and question bank preparation, assignment and question preparation, and test creation. Additionally, the content of basic computer has been defined with TPTC (Baelin), and that of basic English with ELPS (Nay Pyi Taw).

To ensure successful implementation of the DLMS, three phases have been designed: (a) preparation of human resources, procurement of IT infrastructure, provision/upgrading of internet access, etc.; (b) preparation of blended learning content on the DLMS, contracting with accredited training providers, website development, and launching blended learning, assessment, and certification; (c) establishment of the

TVET Studio and all related IT professional works, and creation and innovation of the TVET Digital Platform for regular TVET courses, as well as pilot tests for it through the DLMS.

3. Human resource development for TVET leaders, trainers, teachers, and students/trainees during the pandemic

During the pandemic, increasing capacity building of leaders and teachers in TVET institutions and training centers under DTVET, and training of trainers and principals have been offered via online/offline sessions, namely for pedagogy training, soft skills training, and technical skills (i.e., ICT skills, e-learning management, etc.). All these sessions have been national as well as international, and by both local and international experts and experienced teachers. Moreover because the webinars and virtual workshops play a crucial role in enhancing capacity building of teachers and leaders/principals, those organized by CPSC, KRIVET, Korea World Bank, RECOTVET, UNEVOC, etc. have been helpful and useful to teachers and trainers as well as students and trainees.

There have been several online TVET courses on offer. One of the modes followed is blended learning: (i) online training for theoretical background and (ii) practical work, organized by DTVET in cooperation with the development partner Finnish Refugee Council. The number of students in each group is 3, and the course is available nationwide, with a training duration of 120 hours. The target trainees are youths aged 15 and above as well as dropouts. The training is designed for 120 hours with a combination of 3 hours of online training and 3 hours for practice at the workplace. The trainers involve teachers from TVET institutions, who teach theory online, and local mechanics, who train at their own

workplace. The assessment systems constitute questions and assignments for theory, while practical assessment is carried out at a motorbike workshop. It is a helpful pilot course and adapted for other training courses.

In addition, the DTVET is planning to implement the MDEP for secondary education, technical and vocational education, and higher education in the country. It has continued to set up the secondary education sector and been planning to set up the TVET sector since 2020. Through the MDEP, students and trainees can get free access to learning resources online. The platform has been supported by major telecommunication companies, including MPT, Telenor, and Ooredoo, which are the local development partners for the education sector. The platform is very resourceful and informative for students/trainees, to ensure their continued learning.

4. A Comparison between the regular and new approach in the TVET sector for youth employment in Myanmar

Considering the pandemic, the TVET sector in Myanmar needs to shift from its regular approach to a new one. The latter relates to digitalization with digital campuses, DLMSs, online learning resources, etc. A comparison between these approaches in the TVET sector for youth employment in Myanmar has been done based on seven features—infrastructure, resources, personnel (leader, trainers, staff), methods/delivery modes, learning materials, assessment, and transition—as shown in Figure 4-7 below.

[Figure 4-7] A comparison between the regular and new approach in the TVET sector for youth employment in Myanmar

Regular Approach		New Approach
TVET institution	Infrastructure	TVET institution + digital campus / ICT infrastructure
Regular teaching aids (machines, hand tools, equipment, devices, etc.)	Resources	Regular teaching aids + internet, computer / laptop + virtual reality / learning platforms, etc.
Relevant skills and competency	Personnel (leader, trainers, staff)	Relevant skills and competency, ICT skills, DLMS, etc.
Face-to-face learning, practical work	Methods / delivery modes	Face-to-face learning, practical work, online / offline / distance learning methods, blended learning methods
Lectures, assignments, jobs, etc.	Learning materials	Lectures, assignments, jobs +video lectures, PPT presentations, interactive online teaching and learning
Paper assessments, assignments, and practical tests	Assessment	Paper assessments, assignments, practical tests, and online assessments
A regular and steady approach to digitalization	Transition	A quick transition to digitalization

5. Challenges and opportunities for the TVET Sector due to digitalization

Digitalization could give rise to unavoidable challenges as well as favorable opportunities. These are presented in Table 4-1.

〈Table 4-1〉 Digitalization challenges and opportunities for the TVET sector

Challenges	Opportunities
<ul style="list-style-type: none"> • Difficulty in managing additional and inadequate workforce • Reduction in employment opportunities • Difficulty in addressing the new demand for quality skills programs • Linkages with enterprises • Need of ICT and DLM skills for teachers and staff as well as trainees • Challenges in responding to urgent reskilling needs • Lack of full access to learning devices (laptops, computers, smartphones) for all students / trainees • Lack of knowledge and awareness of online learning and teaching among most teachers, parents, and students • Dependence on internet connectivity at the teachers' and students' locations • Perceptions and awareness of most students and teachers • Limited practical skills training and certifications due to social distancing and closure of workplaces / training centers • Inadequate training of administrators, trainers, and trainees for remote / distance education • Limited access to internet, learning platforms, devices or media, and other related resources for TVIs / trainers / trainees 	<ul style="list-style-type: none"> • Skilling, reskilling, and upskilling with new technology • Emergence of a new employment sector • Flexible enterprise-based / apprenticeship training • Government priority on TVET sector development • Support of development partners (NGO, INGO) • Transition from a regular form of learning to blended learning (a combination of regular form and digital platform) • Development of DLMSs • Establishment of the Digital TVET Campus • Curriculum development adapted to online / distance learning • More access to online and distance learning resources for students / trainees and teachers • Ease of TVET-related data collection, including online surveys • Establishment of TVET networks and effective communication channels among TVET institutions • TVET priorities from NESP strategies and policies • Achieving SDGs as the overarching principles of future TVET development

Source: Hu (2020), Kay (2020), Korea Ministry of Education (2020), Lamichhane (2020a), MoE (2020), Park (2020), Urdaneta (2020)

6. Lessons learned from other countries

With COVID-19 affecting almost every country in the world, most have successfully managed to respond to the crisis, preventing the spread of the disease, planning a digital transition in teaching and learning in schools and universities, and fulfilling the need to change the labor market demand vis-à-vis the pandemic. Table 4-2 shows the responses to the pandemic in brief, especially for the TVET sector in the selected countries.

Some countries have implemented blended learning methods and distance learning resources. Myanmar has introduced the DLMS, established IT infrastructure in all TVET institutions, and undertaken capacity building of TVET leaders, staff, and teachers. Digital campuses have been introduced for select institutions (e.g., GTI (Insein)). It will, however, take students and teachers in Myanmar some time to adapt to the DLMS and blended learning environment. Learning lessons from other countries (e.g., the Philippines’ Technical Education and Skills Development Authority (TESDA) and Korea’s Smart Training Education Platform (STEP)) will be valuable and helpful.

<Table 4-2> Responses in brief to the COVID-19 pandemic in the selected countries

Country	Responses	Source
Singapore	ITE, Singapore <ul style="list-style-type: none"> • Safe reopening of campuses from June 2 • Home-based learning (HBL) for current students • Division into groups (on-campus and HBL) • Cancellation of the 2020 Graduation Ceremony (July) • Cancellation of all face-to-face short courses 	Lamichhane (2020a)

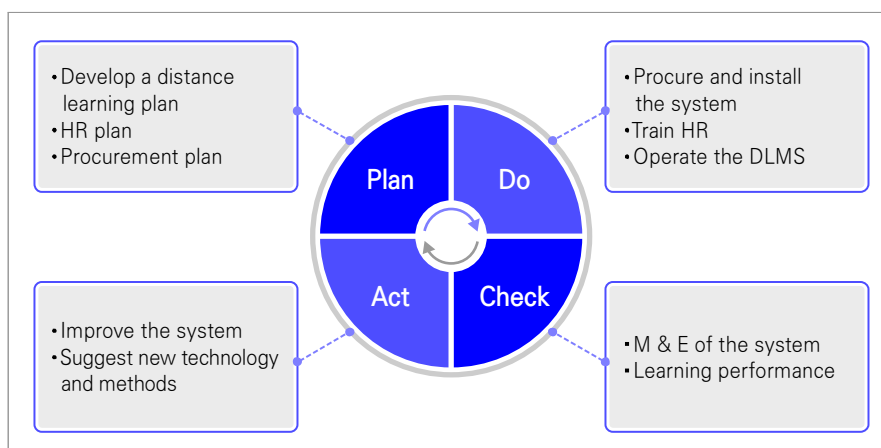
Country	Responses	Source
Thailand	<ul style="list-style-type: none"> • Online courses • VEC TV Channel 53 • VEC joins hands with ICDL Thailand to enhance knowledge and skills in using digital technology to expand learning and readiness to adapt to a new way of life (the new normal) 	Lamichhane (2020a)
Malaysia	<ul style="list-style-type: none"> • Online, on campus for all theory classes • Online, off campus for all theory and online able classes • Plan for face-to-face learning for practical classes and industrial attachment 	Lamichhane (2020a)
Australia	<ul style="list-style-type: none"> • Various types of online training • Free courses (public providers) • Use of existing LMS to allow multiple learning platforms • Contextualization of online courses by teachers, lowering resistance to use • Resource sharing between institutions and across jurisdictions • Changing the way trainers and assessors work 	Kay (2020)
China (Xinjiang and Gansu)	<ul style="list-style-type: none"> • A ban on most face-to-face activities, including teaching, by the government • Initiation of “Disrupted Class, Undisrupted learning” • Training Needs Survey to investigate the specific challenges encountered by teachers in TVET institutions • Provision of technical support using IT infrastructure • Classroom teaching and learning in project schools (during the pandemic) 	Hu (2020), Wang (2020)
Philippines	<ul style="list-style-type: none"> • Suspension of all TVET classes nationwide, initiation of work-from-home arrangements • TESDA Online Program for TVET learning and other flexible modes of learning, processes, and systems 	Urdaneta (2020)
Korea	<ul style="list-style-type: none"> • School closure • Preparation and operation of online classes (expanding public infrastructure, supporting teachers’ capacity building, revamping online education systems) • Online learning assistants • Facilitating teacher-to-teacher communication • Introduction of STEP in the wake of the TVET innovation strategy preparing for a digital economy • Development of an integrated system for provision of customized TVET 	Korea Ministry of Education (2020), Park (2020)
Nepal	<ul style="list-style-type: none"> • Counseling • Distance classes (online / offline) • Virtual and industry-based practical classes • Completion of examination 	Lamichhane (2020a)

Country	Responses	Source
Myanmar	<ul style="list-style-type: none"> • GTI and GTHS closures • Building a DLMS • Introduction of IT infrastructure and the DLMS in all TVET institutions • Enabling access to digital devices and supplements for TVET teachers and trainers • Capacity building of TVET leaders, staff, and teachers • Introduction of digital campuses for select institutions 	MoE (2020), Thu (2020)

7. Suggestions for the way forward

For the management system of the distance learning environment in a TVET institution, the *Plan-Do-Act-Check* model suggested by Lamichhane (2020b) will be helpful and useful to a reasonable extent (Figure 4-8). The model highlights the distance learning management system, from a development plan to the upgraded one, systematically. Furthermore, Majumdar and Araiztegui's (2020) study recommends three kinds of responses to the crisis in TVET institutions: (a) an immediate response, which should include mitigating learning disruption through the promotion of online education, making provisions to supply medical equipment and devices on demand; (b) a medium-term response, which is related to repositioning to support workforce retraining, supporting community-based solutions and strengthening of local industries, and preparing flexible learning solutions that include pandemic risk in planning; and (c) a long-term response, which focuses on SDGs as the overarching principles of future TVET development, global citizenship, and peace education as the pillars of individual growth, and encouraging institutions to innovate and connect with community actors.

[Figure 4-8] Management system of the distance learning environment in a TVET Institution



Source: Lamichhane (2020b)

Note: HR : Human resources; DLMS: Distance learning management system

Overall, learning lessons and knowledge transfer from other countries will be, to some extent, helpful in tackling challenges and grasping opportunities. Support from NGOs and INGOs, too, will be valuable for achieving our goals quickly. Moreover, locally available resources should be acknowledged because they highlight our strengths and weaknesses. Likewise, a proactive approach to the labor market demand and public-private partnership could be applied to utilize new emerging opportunities. Furthermore, short-term, medium-term, and long-term response and recovery plans are the most effective for tackling the issues that arise during such a crisis and after. The “One size fits all” approach will not be effective in the TVET sector; only holistic and alternative approaches that can utilize all available resources and meet local urgent needs can help achieve the sector’s sustainable development.

VI. Conclusion

The TVET sector has been affected the most due to the pandemic because of its structure—a combination of theoretical learning and practical training. Currently, to promote the TVET sector, youth employment, and continued learning in Myanmar, a DLMS has been introduced in TVET institutions for regular full-time students and adult learners. Additionally, digital campuses and IT infrastructure, including affordable access to computers/laptops and the internet for teachers, have been established as per CERP, 2020. Furthermore, digital learning content related to TVET programs is being made available via the MDEP. In other words, Myanmar’s TVET sector needs to shift from its regular approach to a new one related to digitalization, with digital campuses, DLMSs, online learning resources, etc.; though there will be unavoidable challenges, these will also bring favorable opportunities. Therefore, only holistic and alternative approaches that can utilize all available resources and meet local urgent needs can help achieve the sector’s sustainable development.

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Cambodia

PART
05

Online TVET for Employment in Cambodia

Online TVET for Employment in Cambodia

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Abstract

Virtual learning is taking place in many countries around the world currently, especially in areas that are most heavily impacted by the COVID-19, such as the United States and China. Virtual learning, which offers students the opportunity to learn at their convenience anywhere and anytime, fits more into the TVET learning context in Cambodia since many learners need to work concurrently. It will allow learners to review at a later time if they miss any class and will continuously benefit more students even years after the pandemic.

The proposed video contents will be posted on the platform and website that the learners can access at their convenience with a smartphone. Courses and learning materials that were delivered in a traditional classroom before the pandemic will be recorded and uploaded to this platform. A total of 400 selected modules out of all the subjects of Technical Certificate I, II, III in sectors of electronic/electricity, construction, auto-mechanics, manufacturing and business/ICT will be digitized. Each course will have four sections, including the recorded lecture, supplement learning materials, assessment, and discussion.

To properly deliver this platform, people from several occupants will be engaged. For cost-effective, all recordings can take place at current TVET schools where experimental equipment is provided. Marketing will be tremendously helpful to get learners familiarized with this novel platform.

Keywords: Online TVET, Virtual Learning, Video Content Development, Online Platform Development, Youth Employment

I . Introduction

Today, virtual learning is taking place in many countries around the world, especially in the areas most heavily impacted by the COVID-19, such as the United States and China. Currently, there are two different prevailing virtual learning methods. The first allows teachers and students to log in to a software platform, such as Zoom in the U.S. or Dingding in China, at the same time to meet each other online; another type allows the learners to watch previously recorded lectures online with smart phones or computers and self-study afterwards. The latter type offers students the opportunity to learn at their convenience anywhere and anytime. Thus, it better fits the technical and vocational education and training (TVET) context in Cambodia, since many learners need to work concurrently. It allows learners to review a missed class at a later time and will continue to benefit students even years after the pandemic.

II . TVET Online Platform Development

The outbreak of COVID-19 has been declared a global pandemic. Cambodia is currently implementing a range of measures to prevent the spread of the disease and reduce its impacts; this includes the decision of the Royal Government to close all schools from March 16, 2020, until further notice. The Ministry of Labor and Vocational Training (MoLVT) has established the TVET working group to prevent the spread of the virus and to support continued learning among currently enrolled students in the TVET institutes across Cambodia. The unprecedented pandemic has caused all TVET institutes, private and public, across Cambodia to temporarily close. Despite the improvement in the COVID-19 situation,

risks still persist and all education institutions remain shut.

Since March 2020, 107 TVET institutes across the nation have been closed, resulting in the postponement of the training of approximately 50,000 TVET learners in the formal training courses of all levels. Due to limited support structures and resources to provide distance/online training, TVET learners have not been able to continue their training. However, the digitized learning content at all TVET levels can be utilized by all the training centers/institutes across Cambodia.

In response to this issue and particularly to provide continuous learning opportunities to all TVET learners, MoLVT plans to develop an online training platform with digitized TVET learning contents. The initiative not only addresses the current pandemic but will also serve the needs of TVET students in the post-pandemic period. The Ministry is planning to pilot this program in 18 TVET institutes located in Phnom Penh, Takeo, Kampot, Svay Rieng, Siem Reap, Battambang, Sihanoukville, Koh Kong, Pursat, Banteaymeanchey, and Kampong Speu, with a focus on digitizing the contents of technical and vocational certificates I (CI), II (CII), and III (CIII). The development of the platform will be funded by the SDC, and this proposal seeks Smart's support for the digitization of learning contents.

By developing an online learning platform and digitizing TVET learning contents, the proposed initiative will help respond to the crisis and address the very urgent needs of learners. First, about 50,000 TVET learners who are currently postponing their training will be able to continue learning using their smart devices anywhere and anytime. Second, with internet access support from Smart Axiata, the platform will promote better and equitable access to TVET courses. All 107 private and public TVET institutions across all the provinces will be able to utilize this platform with the existing resources and materials at each institute.

In addition, by connecting with the Basic Education Equivalency Program (BEEP), the platform will encourage more youth who have lower secondary school equivalent certificates to enroll. The platform will remain significantly relevant and useful even after the pandemic.

Cambodia TVET objectives in developing online platform training are as follows:

- To provide continuous and flexible TVET training opportunities during the COVID-19 pandemic and beyond.
- To increase equitable access to TVET programs among youth across Cambodia.
- To improve quality education of TVET for employment generation.

By developing the common TVET online training platform, Cambodia TVET goals are as follows:

- At least 20,000 TVET students will benefit from continued learning access to TVET programs, particularly women and the poor.
- An online learning platform and the contents of Technical and Vocational Certificates I (C1), II (C2), and III (C3) are developed.
- Flexibility, quality, and interest in TVET training are improved.
- The governance and management of the TVET system are strengthened.

To achieve the objectives, the DGTVET under the MoLVT will:

- Develop a TVET learning platform using an ICT system that enables TVET institutes under the Ministry to manage and provide TVET online training that focuses on theory.

- Develop supporting policies, strategies, and guidelines to manage and support TVET institutes implementing online TVET courses in a coherent and cohesive manner and contribute to achieving long-term national TVET goals.
- Find supporting donors and development partners for monetary and technical support.

III . Video Content Development

The proposed video contents will be posted on a platform and website that the learners can access at their convenience with a smart phone. The team has already secured support from the Swiss Agency for Development and Cooperation (SDC) to develop the platform. Smart support is very important for digitizing the contents to be broadcast on this platform. Consequently, courses and learning materials that were delivered in a traditional classroom before the pandemic were recorded and uploaded to this platform.

A total of 400 selected modules out of all the subjects for the Technical Certificates I, II, and III in the sectors of electronics/electricity, construction, auto-mechanics, manufacturing, and business/ICT will be digitized. Programs for Certificates I, II, and III vary from school to school. Our online platform will select those most often selected by students at the beginning of the implementation process; more programs will be included later as the budget allows. To promote student engagement, the design of the platform needs to meet the criterion of a user-friendly model to motivate learners to join this kind of virtual learning that is relatively new to some students. Instructions about how to use the platform will be provided to the learners.

Each course will have four sections: the recorded lecture, supplemental learning materials, assessment, and discussion. The recorded lectures will be based on the content of a face-to-face lecture, while the supplement materials can include handouts and readings that the teachers provide for learners to preview and review the lecture content. Assessment is important to determine whether the learners have engaged in and fully understood the provided lecture. It will provide feedback on students' learning progress so that future adjustments can be made to the material based on their performance. The main points of each lecture will be turned into multiple-choice questions to check whether students have achieved the learning objectives of each class.

The platform will provide a discussion section for each course, to allow students to talk about issues, concerns, and questions about the course content. A disadvantage of online learning is that there is a lack of interaction between students and teachers as well as among peers. Thus, a discussion section will offer a place for students to collaborate, such as by forming a study group and asking and answering peers' questions. This space will offer students the opportunity to provide feedback on the course as well as raise questions. Teachers and teaching assistants need to have access to this area so that they can interact with the learners, read students' comments and feedback, and make adjustments to teaching materials targeting students' needs.

To properly deliver this platform, people from several occupations will be involved. Directorate General of Technical and Vocational Education and Training (DGTVET) will provide guidelines, supervise the project, and organize training for teachers with inadequate ICT experiences. Information Technology personnel, that is, the Institute of Technology of Cambodia, will design and deliver the platform. Top teachers from various TVET programs of each course need to prepare lectures and learning materials for students. Photographers need to assist

in the recording process. Teaching assistants are needed when teachers are not able to interact with too many students at the same time. For cost-effectiveness, all recordings can take place at the current TVET schools, where experimental equipment is provided. Marketing will be tremendously helpful to familiarize learners with this novel platform. While developing this platform, marketing personnel can cooperate with local TVET schools to announce this program so that the learners know that there is another option to learn during the COVID-19 pandemic. Marketing flyers and videos are both important. After the platform is developed, videos teaching how to operate the platform can be made and spread to build brand awareness.

IV. Youth Employment

Increasing the accessibility of quality TVET, equity, and environment is important to ensure that “each young person has at least one life skill” to meet the needs of the labor market and development. Socioeconomics is given high priority in the subsequent policy framework of the Royal Government, with systematic reforms and substantial investments in infrastructure, such as school buildings, workshops, laboratories, dormitories, and software, including technical teachers, national qualifications, competency-based training programs, and competency recognition systems.

The Bridge Skills Scholarship Program has provided opportunities for young people to receive short-term and long-term training in informal systems at community or mobile enterprise establishments in all capitals and provinces across the country. At the same time, the quality of training is considered a priority through the introduction of quality

assurance systems, the expansion of internships and on-the-job internships, and the promotion of research and innovation in applied technology to ensure that the trained youth have the necessary knowledge and skills. Good attitude, professional ethics, and high competitiveness can lead to better job opportunities, help people adapt to the rapid development of technology, and contribute more to socio-economic development now and in the future. In fact, in the last five years, more than 200,000 young people have received vocational training (Cambodia Youth Development Index, 2018).

However, with such progress, young people face major challenges related to acquiring appropriate skills to enter the job market and transition to new jobs in response to changes in their economic structure, technology, and higher aspirations because of factors such as dropping out of school early and entering the job market without clear professional skills. The quality of education and training does not fully meet the demand for training opportunities to promote and expand new skills at any time and place.

With respect to employment and opportunities, achieving high economic growth in the past has led to the creation of many new employment opportunities for young people, both of working age and recent graduates as well as those who have left the agricultural sector to pursue new careers and need better job opportunities in industry and services. In addition, continued deepening regional and global integration as well as efforts to expand relations with other countries has created additional employment opportunities abroad that provide a wider range of employment options for young people. In addition, the Royal Government's efforts to develop institutions and improve the efficiency of the labor market, such as the public employment service system and labor market information, have driven high labor force participation rates and low unemployment rates among young people,

especially women.

Along with the rapid change in the structure of the labor market from agriculture to industry and services as well as from informal to formal sectors, the quality and working conditions for young people have improved with the increasing rate of young people working for pay. In addition, the continued deployment and expansion of social protection and assistance systems has contributed to ensuring stronger job stability and security for young people.

Despite this steady growth, young people still face major challenges in quickly and successfully entering the job market, seizing new and better job opportunities both at home and abroad, as well as transitioning from one job to another. In addition, at a time when the economy is growing and in times of crisis, growth slows, as in the current case of the COVID-19 epidemic, as young people are not yet aware of the importance of developing and adjusting their personal career plans. Accurately and regularly responding to changes in the preferences and needs of the labor market and developing and enhancing knowledge, skills, and experience is constantly necessary.

In addition, the provision of essential support services such as employment services, career counseling, skills training, current and future job market information both domestically and internationally, and the possibility of retraining and expanding skills remains limited for youth. Therefore, young people, especially those with less education and skills, are at higher risk of losing their jobs in a crisis economy and an increase in the replacement of manpower with automation and robots.

<Table 5–1> Issues and challenges for the youth in the COVID–19 TVET and employment

Technical Vocational Education and Training
<ul style="list-style-type: none"> – Low soft skills for young people in and out of school – Basic education (literacy and numeracy) and a flexible learning environment, especially for out-of-school youth – The use of technology and laboratories in teaching and learning – Digital literacy, including computer literacy, technology literacy, and ethical issues – Lack of, gap in, and incompatibility of skills – Limited scope of technical education in financial literacy, especially in relation to debt in daily life and the use of credit
Health and Well-being
<ul style="list-style-type: none"> – Limited awareness and services related to reproductive health, especially for young women (e.g., regarding sexual and reproductive health, reproductive health, especially HIV, STIs, preterm pregnancy, abortion, and sexual violence) – Unconscious increase in mental health problems among young people both in and out of school – High rates of road injuries and deaths among young people – Drug and alcohol use among the youth in both rural and urban areas
Employment and Opportunities
<ul style="list-style-type: none"> – Soft skills or social-behavioral skills such as reflection, ethics, work and professional behavior, communication, teamwork, and problem solving – Awareness of and access to career and professional counseling services and labor market information – Understanding of rights, duties, and responsibilities in a job – Opportunities and support for internships – Youth Entrepreneurship Development
Youth Participation
<ul style="list-style-type: none"> – Youth participation in governance processes at both national and sub-national levels – Soft skills for young people through volunteer work in various fields and activities – Vulnerable youth participation including youth in remote areas, young women, out-of-school youth, youth with disabilities, and LGBTQI youth. – Youth expectations raising awareness among young people and increasing the demand for information about services

To address these issues and challenges, the Inter-Ministry Strategy Plan 2019–2033 along with the National Action Plan will be developed to synergize relevant ministry resources and manpower needed to support youth for development. The National Action Plan aims to achieve the key strategic objectives set out in the 2011 Cambodian National Youth Development Policy, which remains relevant to the current situation of

the youth. The main objectives are as follows:

- Provide opportunities for young people to receive education and training in technical skills with quality, equity, and environment.
- Encourage and motivate young people to be creative, innovative, and entrepreneurial.
- Promote gender equity and equality for young people, especially opportunities for and empowerment of women.
- Train young people to have fitness, ability, virtue, knowledge, and morality; live well and live together in peace and harmony as well as have a conscience, patriotism, nationalism, and a sense of responsibility; and love people while maintaining self-belief and dignity.
- Lead and preserve the culture, civilization, customs, and traditions of the nation and promote a comprehensive understanding of society.
- Provide opportunities for young people to share ideas and participate in community decision-making and national development.
- Gather forces from all relevant ministries, institutions, development partners, civil society organizations, communities, parents, and guardians to develop Cambodian youth.

The National Action Plan on Youth Development in Cambodia covers all sectors in the country and will be implemented from 2019 to 2023. The plan identifies 5 major priorities and 12 strategies as well as detailed actions, indicators, targets, timeframes, implementation institutions, and clear support budgets.

<Table 5–2> The national action plan on youth development in Cambodia (2019–2023)

Priority	Strategy	Activities
Facilitation, Institutional Review, and Evaluation	Strategy 1: Develop a legal framework and mechanism	Coordinate key stakeholders (especially youth stakeholders) on the implementation of the National Action Plan on Youth Development
		Establish a framework to monitor and evaluate the implementation of the National Action Plan on Youth Development in Cambodia on a regular basis
		Establish a youth data management information system
		Disseminate national policies and national action plans on youth development (especially vulnerable youth)
		Understand the situation of youth and vulnerable youth
		Update the Cambodia Youth Development Index
		Prepare a national report on youth development
		Legislate councils for youth development, ministries, institutions, and provincial capitals
Education, training and capacity building for vulnerable youth	Strategy 2: Promote technical vocational education and training capacity and development	Promote access to technical and vocational education and training services for young people, especially underprivileged and vulnerable youth, including the disabled and women.
		Develop soft skills training programs, standards, and training materials for young people in the school (including reflection, ethics and (work and professional attitudes, communication, teamwork, and problem solving) and mutual understanding between different religions and cultures, and professionalism)
		Raise youth's awareness on economic and public financial management
		Provide soft skills and training materials for out-of-school youth (including reflection, ethics, work and professional attitudes, communication, teamwork, and problem solving)
		Expand the scope and increase the enrollment of young people in the Online Basic Education Equivalent Program (BEEP) for young people dropping out of lower secondary school

Priority	Strategy	Activities
		Implement digital literacy programs for young people
		Expand digital and IT skills training as defined in competency-based training standards
		Raise awareness about safe work migration among high school students and dropouts
		Strengthen the literacy of high school students and dropouts
		Strengthen existing school complaint procedures
		Promote education for LGBT (LGBTQI)
		Organize training courses on road traffic law for the private sector (factories/enterprises)
		Provide hospitality and well-being skills through orientation and spa skills training for young people working in the capital, province, or destination
		Develop youth capacity with tourism product development skills and promote new tourism products in the community
		Provide digital tourism vocational training
Health education, health care, and health services	Strategy 3: Increase education on care and health services	Expand sex education (CSE) in Schools
		Develop a strategic plan to promote reproductive and sexual health education among out-of-school youth
		Provide education on sexual rights, health, and reproductive health, especially HIV, STIs, premature pregnancies, abortions, sexual violence, and youth-friendly services
		Provide mental health education and related services
		Disseminate knowledge related to online sexual exploitation
	Strategy 5: Promote security, safety, and justice	Disseminate information and educate young people on the Law on Road Safety
		Prepare and release a report on victims and road accidents in 2019
		Visit and inspect areas with frequent traffic accidents on national roads
		Produce a short video clip on priority rights and a song on 2-road traffic safety tracks

Priority	Strategy	Activities
	Strategy 12: Prevent drug use and rehabilitate users	Disseminate and educate drug and alcohol prevention laws among young people (especially adolescents) in both rural and urban areas
Employment and Entrepreneurship	Strategy 4: Cultivate entrepreneurship and expand labor market services in the context of the Industrial Revolution 4.0	Provide entrepreneurship education and enterprise development skills for young people in the context of the Industrial Revolution 4.0, especially migrant youth and service workers
		Provide training for young people on the Cambodian tax system
		Create youth apps with general information on the potential labor market and agricultural market (One Window for Youth)
		Expand the provision of employment services and job market information through information technology systems
		Provide consulting services on safe work migration
		Provide career and career counseling and job market information to high school students and out-of-school youth
		Increase the promotion and attract enrollment to technical and vocational skills of young people in and out of school
		Provide education services on the rights, duties, and responsibilities of young people(male/female)
		Support young people to get internships
		Create an atmosphere to encourage new business ventures
		Support the development of small and medium enterprises and enterprises with new technologies
Youth Involvement and Volunteering	Strategy 6: Increase youth participation	Increase the number of young people (especially women) involved in the local governance process
		Provide training on the role of youth in national economic development
		Promote youth participation in the policy-making process
		Promote the participation and exchange of youth experiences in national and international forums
		Increase the number of young women in leadership roles and decision-making at all levels

Priority	Strategy	Activities
	Strategy 7: Promote relaxation, recreation, and sports	Organize youth sports and entertainment events (link educational activities)
	Strategy 8: Promote arts and culture	Support youth volunteering in projects to support sporting, arts, and cultural events
	Strategy 9: Raise the awareness of environment, agriculture, tourism, and business	Support youth volunteering in projects to support the environment, agriculture, tourism, and business
	Strategy 10: Increase volunteer work	Provide soft skills training for young people to participate in volunteer work Organize the annual Outstanding Youth Competition on "I am a Leader of the 3 Great Tasks"
	Strategy 11: Promote gender equality	Support young women to participate in social activities

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Cambodia Youth Development Index (2018)

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Viet Nam

PART
06

Open Vocational Education and Training for Migrant Women Workers

– Policy to Practice

Open Vocational Education and Training for Migrant Women Workers

– Policy to Practice

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Abstract

The open nature of Vocational Education and Training (VET) emphasizes the flexibility of the system and removes barriers for learners. Everyone will not only have the opportunity to be trained, but also be trainable for employment in the job market or for transition to another qualification level. The flexible VET system provides adaptive access to skill needs and offers continuous training solutions, improving the skills of the workers. Open VET, in this case, does not only implicate technological aspect, but also cover institutional, ethical, cultural, pedagogical issues, evaluation, and management.

Public services provision of governmental agencies ensures that to serve the essential general needs of people. This understanding emphasizes the role and responsibility of the state in public service delivery. Even when the state transfers part of the provision of public services to the private sector, it still has a regulatory role to ensure fairness in the distribution of these services and to overcome the shortcomings of the market. Followed by VET institutions to be flexible to meet the needs of the market, of the poor and disadvantaged groups. This paper introduces the open VET as a public service for migrant women workers by reviewing of literature, policy importance of the case of Viet Nam and performance as well. The paper also recommends to stakeholders as state management agencies on labour and VET, the service companies sending workers to work abroad under contracts, and VET institutions.

Keywords: Skills, VET, Migrant, Women Worker, Policy

I . Overview

The United Nations Sustainable Development Goals (SDGs) and the 2030 Action Plan emphasize the requirement that the education sector must enable people of all levels to learn from anywhere, anytime as well as lifelong learning. One of the strategic views is to renovate the Viet Nam education system to be open, flexible, and permeable between levels and qualifications, and in its education and training formula. Accordingly, the aim is to improve the national education system toward an open education system, lifelong learning, and building a learning society. However, as of now, Viet Nam has not officially defined the concept of open and flexible vocational education and training (VET). Open and flexible VET has various levels and scope with economic, cultural, and social contexts.

In this case, the open nature of VET emphasizes the flexibility of the system and removes barriers of location, geographical distance, time, economy, age, physical and mental health, content, modality, and so on for learners. Everyone will have the opportunity to be trained for employment in the job market or for transition to another qualification level.

Labour migration is an inevitable trend in almost all countries, and Viet Nam is not an exception. It is unfolding in three patterns, including domestic labour migration, Viet Nameese workers working abroad under definite term contracts, and foreign workers migrating to Viet Nam. For domestic labour migration, the flow is more prevalent from rural to urban areas rather than the opposite because urban areas are more developed and have more high-paid jobs, and better working conditions and living environments; they also bring migrant workers better career promotion opportunities. One of the key reasons for migration is to find jobs with

better working conditions and income often the main purpose of most migrants, especially the youth.

Although some laws and policies are gender-sensitive in recent amendments such as the Labour Code, Social Insurance Law, and Health Insurance Law, some such as the Employment Law or the VET Law are still rather gender-neutral. Issues of female workers, especially migrants, such as recruitment, labour contracts, job placement, and vocational training would be better solved if gender issues in employment and VET were identified and effective measures were taken in formulating and implementing relevant policies, so that female migrant workers may have greater economic and social empowerment.

This study reviews systems, practices, institutional capacities, and legislation, conducting a rapid assessment to identify barriers to access and participation in VET and potential approaches to redress inequalities, including achieving gender equality, and providing recommendations on how to make VET more inclusive for the group. The COVID-19 pandemic would be referred to in the discourse on the situation of VET not only in Viet Nam but worldwide. Online learning is only a part of courses, but the application of information and communication technology seems to require much more than its technological aspect. Open VET would cover institutional, ethical, cultural, technological, pedagogical, evaluation, and management.

II. Background of the Case

1. Concept and methodology of the paper

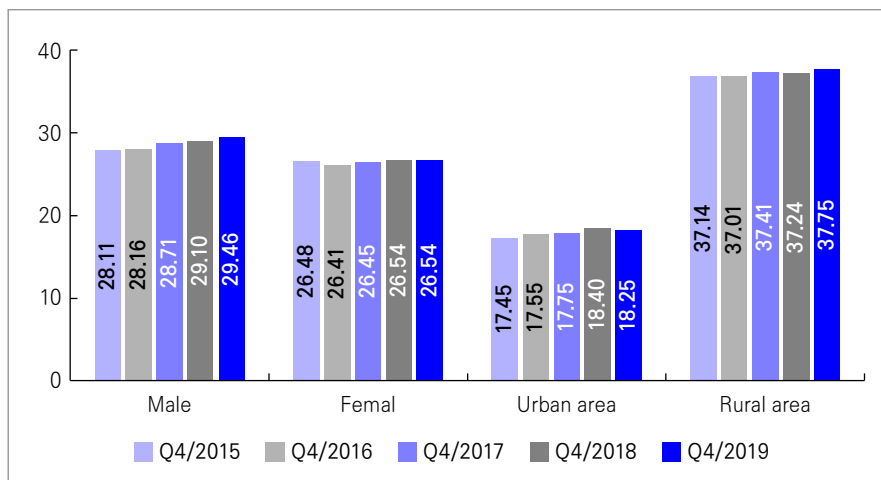
This study provides a comprehensive assessment of the recent situation, challenges, and opportunities of the opening VET for migrant women workers in Viet Nam. Based on a review of relevant country experiences and lessons learned, it provides policy recommendations for the opening VET programs for migrant women workers in Viet Nam.

The study conducted a literature review on existing legislation, policies, plans, and national target programs in VET and gender equality; it also analyzed available data and documents concerning the VET to quickly assess the outcomes of policies that have contributed to the promotion of gender equality in VET, and to identify gender gaps in the process of policy formulation. A field study was not conducted so primary information are not presented, and therefore, this is limitation of the paper.

2. Share of the labour force by gender, living area, and technical qualification level and share of unemployment

According to the General Statistics Office (GSO), in Quarter 4 of 2019, the labour force was 2.58% larger than that of Quarter 4 of 2015 (54.59 million persons). Female and male workers accounted for 47.7% (26.54 mil. persons) and 52.3% (29.10 million persons) of the total labour force, respectively urban workers accounted for 32.6% and rural workers 67.4% (Figure 6-1).

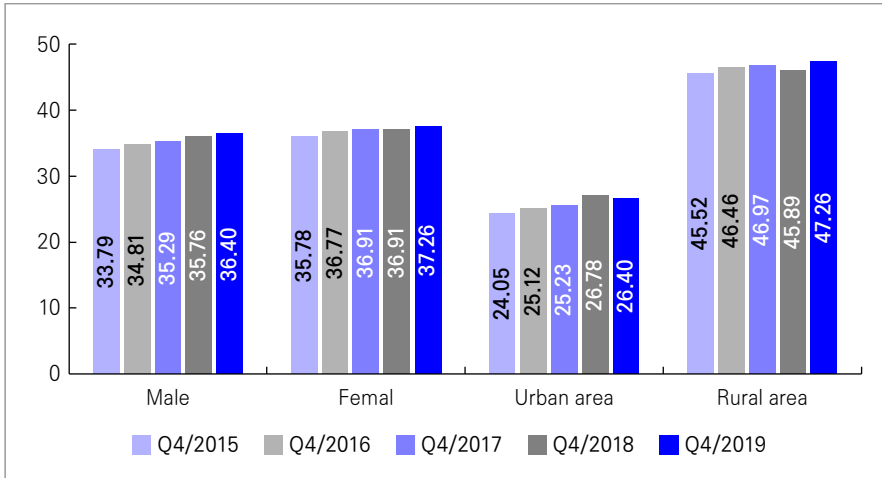
[Figure 6-1] Labour force by sex and living areas (mil. persons)



Source: Calculations based on Labour and Employment Surveys, Quarter 4 of 2015, 2016, 2017, 2018, 2019, GSO

In Quarter 4/2019, the population aged 15 and above was 73.66 million people (an increase of 5.9% compared to Quarter 4/2015), of which women accounted for 50.6%, and men accounted for 49.4%; the population living in urban areas accounted for 35.8%, and in rural areas for 64.2% (Figure 6-2)

[Figure 6–2] Population aged 15 and above (mil. persons)

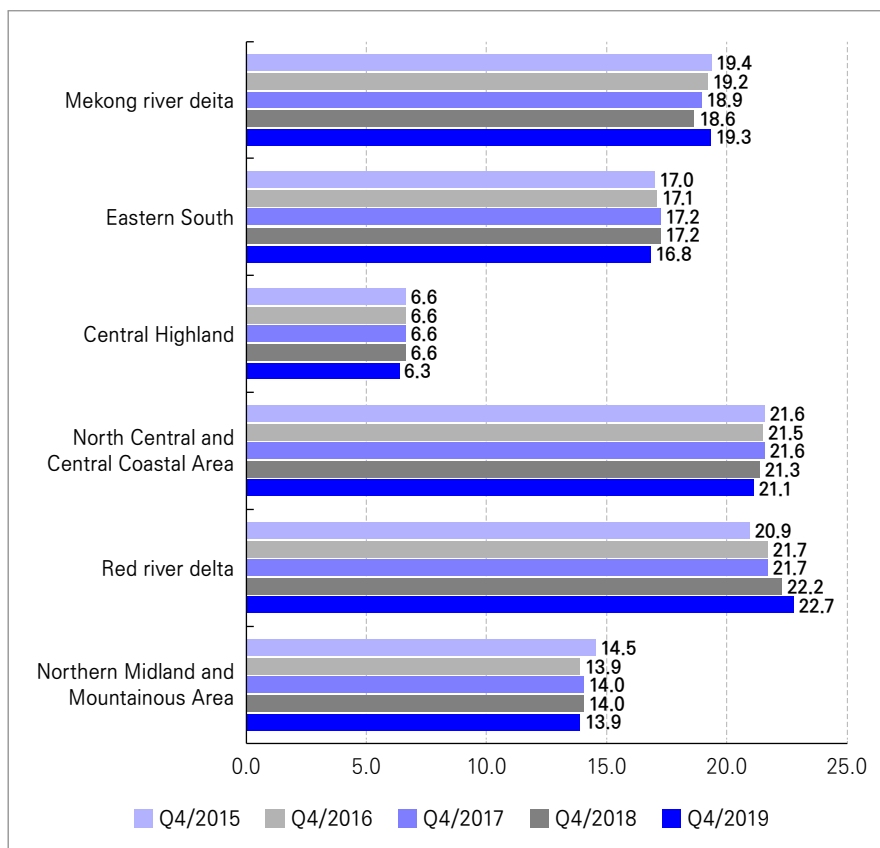


Source: Calculations based on Labour and Employment Surveys, Quarter 4 of 2015, 2016, 2017, 2018, 2019, GSO

In 2019, the Red River Delta region and the North Central and Central Coastal Area region continued to have the largest shares of the country’s labour force, accounting for 22.7% and 21.1%, respectively. The Mekong River delta came third, with 19.3%, while the smallest percentage (6.3%) was in the Central Highland.¹⁾

¹⁾ Calculations based on Labour and Employment Surveys, Quarter 4 of 2015, 2016, 2017, 2018, 2019, GSO

[Figure 6-3] Labour force distribution by socio-economic region (percentage)

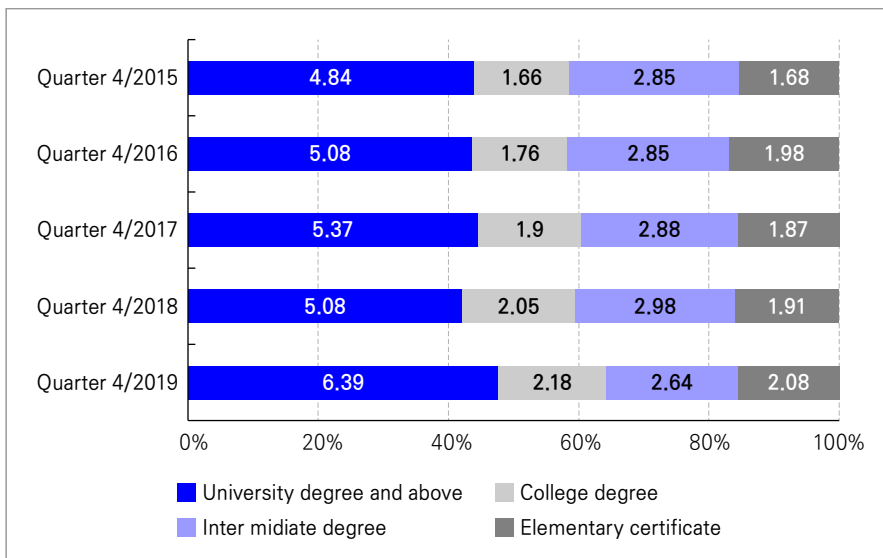


Source: Calculations based on Labour and Employment Surveys, Quarter 4 of 2015, 2016, 2017, 2018, 2019, GSO

According to the Ministry of Labour—Invalids and Social Affairs, in Quarter 4 of 2019, 23.68% (13.29 million persons) of the labour force aged 15 and above had at least a three-month training qualification. This represents a 12.73% increase compared to Quarter 4 of 2015. Of the 13.29 million trained workers, 11.39% had university degrees and above, 3.88% had college degrees, 4.70% had intermediate degrees, and 3.71% had elementary certificates. A correlational comparison among the numbers

of people with different qualifications shows that for every 100 people with a university degree or above, 34 had a college degree, 41 an intermediate degree, and 33 people an elementary certificate.²⁾

[Figure 6–4] Labour force by technical/professional qualifications (mil. persons)



Source: Newsletters: Labour Market Update No. 8 – Quarter 4/2015, No. 12 – Quarter 4/2016, No. 16 – Quarter 4/2017, No. 20 – Quarter 4/2018, No. 24 – Quarter 4/2019, Ministry of Labour—Invalids and Social Affairs)

By the end of 2019, 421 enterprises were licensed to send workers abroad, representing a 71.1% increase from 2015.³⁾

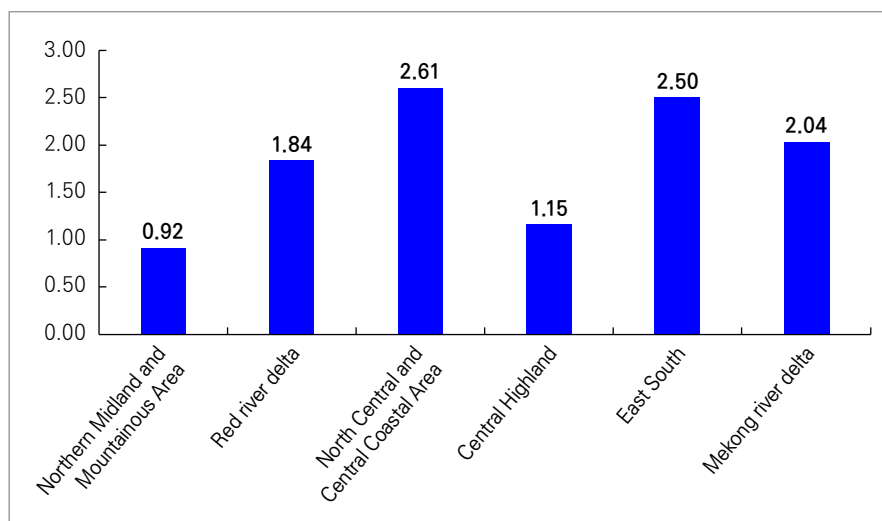
The unemployment rate is quite different between regions. Those with the lowest unemployment rate in the country are the Northern Midlands and Mountainous Area (0.92%, nearly 2.2 times the national

²⁾ Newsletters: Labour Market Update No. 8 - Quarter 4/2015, No. 12 - Quarter 4/2016, No. 16 - Quarter 4/2017, No. 20 - Quarter 4/2018, No. 24 - Quarter 4/2019, Ministry of Labour—Invalids and Social Affairs)

³⁾ www.dolab.gov.vn

average of 1.98%), followed by the Central Highland (1.15%). The regions with the highest unemployment rates are the North Central and Central Coast Area and the East South, at 2.61% and 2.5%, respectively.

[Figure 6–5] Unemployment by socio-economic region (percentage)



In Quarter 4 of 2019, the working age unemployment rate was 2.15% (equivalent to 1,063 thousand people). It is 3.1% for the urban area, 1.64% for the rural area, 2.15% for males, and 2.16% for females.⁴⁾

⁴⁾ Calculations based on Labour and Employment Surveys, Quarter 4 of 2015, 2016, 2017, 2018, 2019, GSO

3. Introduce VET for women in general and for migrant women workers in particular

Article 14 of the Law on Gender Equality states that men and women are equal in terms of age for schooling, training, and retraining; in choosing professions and occupations for study and training; and in accessing policies on education and professional training. In addition, one of the measures to promote gender equality in the field of education and training is to provide rural female employees with vocational training support as prescribed by the law.

Many scholarship policies or subsidies for study costs have been enacted since 2015, when the Law on Vocational Education and Training came into effect, but they mainly target disadvantaged groups who study at the elementary level and train in under three months⁵⁾ (women, rural workers, people with disabilities). Priority is given to those entitled to preferential policies: people with meritorious services to ethnic minorities, poor or near-poor households, labour living in the area of converted land, female workers who had lost their jobs, and fishermen. Policy scholarships for long-term courses (intermediate, college) are only available to students who are: (1) ethnic minorities, near-poor households, people with disabilities, ethnic boarding secondary school graduates, or (2) Kinh people belonging to poor households, near-poor households, people with disabilities with permanent registration in areas with extremely difficult socioeconomic conditions, ethnic minority areas, border areas, and islands.

The Law on VET stipulates that only women learners who participate in training courses for elementary qualifications or courses under three months are supported for the training costs, according to the regulations

⁵⁾ Lowest level of the Viet Nameese Qualifications Framework.

of the Prime Minister. However, migrant workers are unable to take advantage of vocational training courses and policies because these are usually only communicated and intended for people with permanent residence. For example, Decision No. 1956/2009/QĐ-TTg of the Prime Minister dated November 27, 2009, approving the Scheme on Vocational Training for Rural Labour applies to rural labourers working in their permanent residence but does not include migrant workers without a household registration.

Although some laws and policies are gender-sensitive in recent amendments and laws, others such as the Employment Law and the Vocational Education and Training Law are still quite gender-neutral. Issues of female workers, especially female migrant workers, such as VET and employment, would have been better solved if gender inequality had been identified, and measures had been taken with regard to formulating and implementing relevant policies. Then, female migrant workers would have greater economic and social empowerment (Nguyen Quang Viet et al. 2019).

Continuous statistical data showed large gaps in gender and geographic area (urban vs. rural) in the proportion of the population with vocational training at all levels, with no tendency of these being narrowed. In addition, surveys show that gender equality in VET is still being addressed in the national policy framework, and that technical capacity to address this issue needs to be improved through policy strategy approaches and improvement. In addition, surveys show that gender equality in VET is still being addressed within the national policy framework, and that technical capacity to address this issue needs to be improved through policy, strategy approaches, and improvement (ADB 2020).

III. Description of the Case

1. Overview of the situation of VET for migrant women workers in Viet Nam

Currently, most countries included in this survey have national policies to support equal employment and education for girls and women. In VET, considerable efforts have been made to implement structures and develop strategies to support the increased enrollment, completion, and job placement of girls and women within non-traditional VET areas.

Viet Nam has one of the highest labour force participation rates among women in the region. On average, women represent about 48% of those employed. Gender-related disparities are still salient when comparing different age groups in formal employment, yet disproportionalities are significantly decreasing among younger workers. More striking are the disproportionate shares of women in particular occupations: while women workers are well represented in white-collar professions, with a significantly higher proportion in service-related occupations, they are still remarkably underrepresented in leadership positions. In addition, women jobs in particular industry sectors show some peculiarities. While the classic disproportion of women employed in the social sectors (i.e., health and education) versus those working in heavy industries (e.g., mining, construction, transportation) is not surprising, the relatively high employment rate of women in the manufacturing sector is due to Viet Nam's prevailing textile and garment industry employing large numbers of (mostly low-skilled) women workers.

A survey of the job market for female migrant workers of NIVT (National Institute for Vocational Education and Training) in 2017

showed that they as well as their children face many difficulties in accessing services of education and training. According to a report by the International Labour Organization (ILO), Viet Nam is one of the countries with the highest proportion of workers affected by automation, which is estimated at 86% of the labour force in the leather and shoes, textile, and garment industries and 75% in electronics. Among them, women and unskilled workers are the most vulnerable. The question is how to train and retrain workers, help them acquire new skills and familiarize them with new technology to adapt to the changes in the industrial revolution 4.0. If women workers are not able to access VET support programs, they will be even more vulnerable.

Over the past years, Viet Nam has had a comprehensive legal system and policies on labour employment and VET related to female migrant workers, such as the Education Law, the Labour Code, the Residential Law, the Law on Social Insurance, the Law on Vocational Education and Training, the Law on Health Insurance, the Law on Occupational Safety and Health, and other related documents. Legally, these policies can actively support the development of the domestic labour market as well as employment for workers. In particular, the Law on Vietnamese Workers Working Abroad under Contract regulates pre-departure training courses for workers preparing to work overseas. Its Article 63 clearly states that enterprises, non-business organizations, organizations, and individuals investing abroad and sending workers to work in foreign countries are responsible for organizing or associating with vocational training institutions to foster occupational and foreign language skills for workers working abroad.

2. Changes in economic standards for women migrant workers compared to non- migrant women

i. Income

The potential to make more money abroad was an important motivation leading many women to migrate. On average, the women in this study made more than five times per month during their time abroad than they did in Viet Nam. The highest monthly salaries were earned in Japan (averaging 21,000,000VND (US\$940) and the Republic of Korea (averaging VND19,500,000 (US\$870), followed by Chinese Taipei (VND13,500,000 (US\$600), with Malaysia, Saudi Arabia, and Thailand all trailing behind and paying wages averaging about VND8,000,000 (US\$360). Even when removing unemployed women from the sample, the average income while abroad was still more than three times what these women made before migration. Disaggregating the data by province shows even more striking contrasts, with women from Quang Ngai province making ten times more while abroad than they did before migration, while women from Thanh Haa province made the same amount as they did before migration.

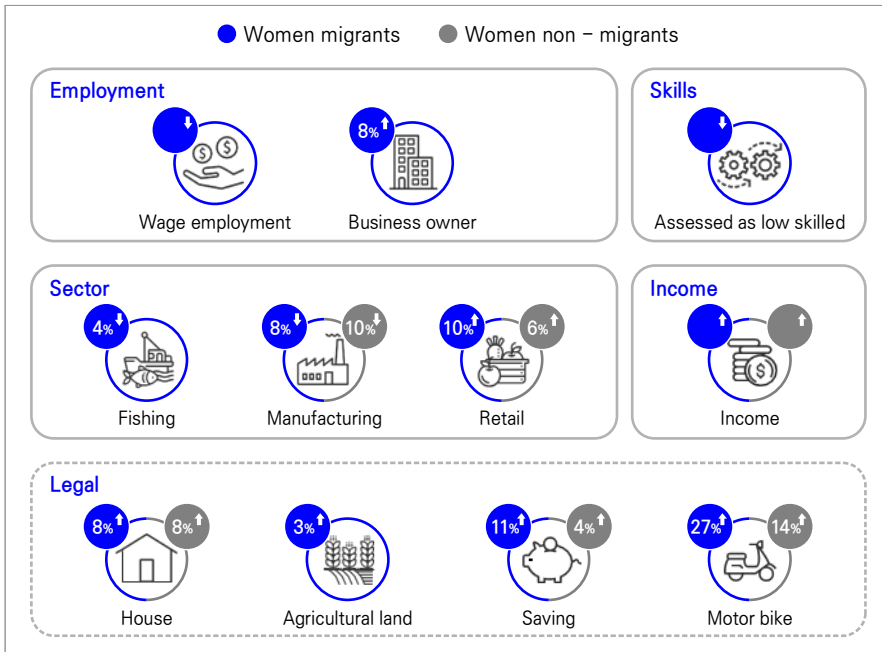
When taking employed migrant and non-migrant sub-samples with equivalent starting incomes, the greatest improvement in income is seen for the poorest sub-samples. This is true whether the women had migrated or not. This is consistent with Viet Nam having the lowest scores for inequality in South-East Asia (World Bank, 2019). Indeed, the mean increase in income for the women migrants was roughly 65 percent, 17 percentage points higher than the rate of increase in the country's GDP per capita over the same period, which was about 48 percent. Meanwhile, the mean increase for non-migrant women was about 41 percent, six percent less than Viet Nam's rate of increase in GDP per capita (ILO 2018).

ii. Assets

The figures for women migrants reporting no legal assets fell by 40 percent. Specially, ownership among women migrant respondents converged in ownership of motorbikes and land for business, and they surpassed non-migrant women in residential property and having savings books, indicating access to formal banking. The remarkable increases in capital assets, while small in number, give important evidence for migrant workers investing in higher income livelihoods and adding to the economic development of their home provinces.

The women migrants reported significantly improved housing, indoor bathrooms, televisions, air-conditioners, and motorbikes. In comparison, the non-migrant women reported greater improvements to water- heating units and cars. This difference in what the two groups purchased also indicate that women migrant workers purchased more basic needs that they could not afford before migration - housing, sanitation, and transport - allowing them to climb higher up in their hierarchy of needs (ILO 2018).

[Figure 6–6] Comparison of migrant and non-migrant women’s changes in economic empowerment

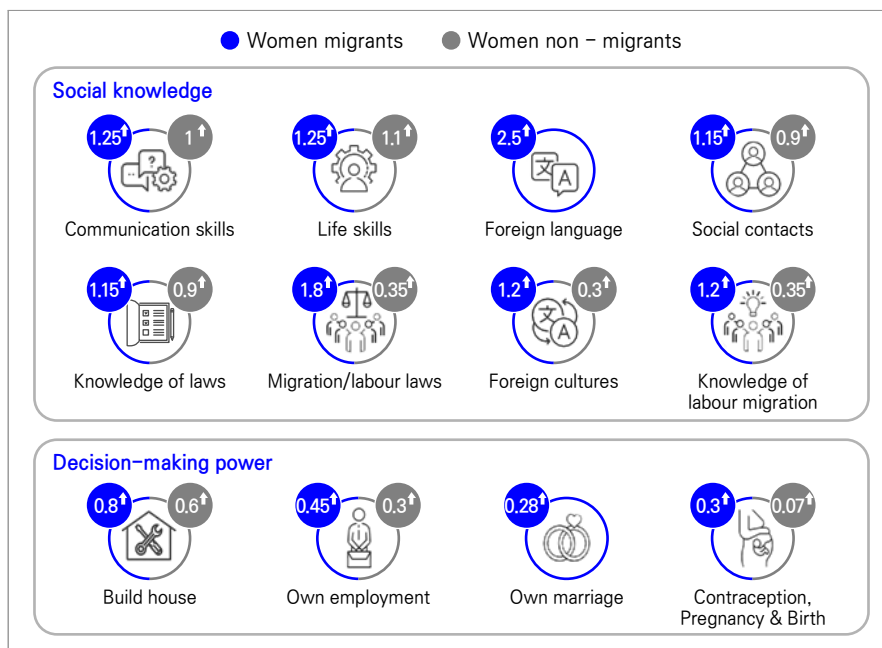


iii. Changes in social standards for women migrant workers compared to non-migrant women

Women migrants reported significantly greater improvements in their knowledge of foreign languages and foreign cultures, knowledge of migration law, and knowledge of the migration process (Figure 6-7). The more significant improvements in these skills show that, through migration, women workers were able to sharpen skills in cosmopolitan capacities that would enable migration as a livelihood strategy. However, several women reported that they did not feel the skills they learned were applicable in their home provinces.⁶⁾

⁶⁾ More choices, more power: Opportunities for women’s empowerment in labour migration from Viet Nam, Jack Miller, *p21*

[Figure 6–7] Comparison of migrant and non-migrant women’s changes in social empowerment



iv. Advantages and concerns

The Prime Minister issued Directive 24/CT-TTg dated May 28, 2020, on “Promoting the Development of Skilled Labour Force, Contributing to Improving Labour Productivity and Increasing National Competitiveness in the New Situation”—especially in the context of the effects of the COVID-19 pandemic. This requires ministerial agencies and localities to enhance digital transformation and online training, focusing on regularly training and retraining the labour force to create drastic changes in the scale, quality, and effectiveness of VET. Thus, learners must have professional skills, digital skills, soft skills,

entrepreneurial skills, and knowledge of foreign languages to adapt to the requirements of the labour market. In addition, it is necessary to forecast the needs of building and updating open data on skilled workers in each field, industry, and training level—especially in new occupations and skills—and update data periodically. It is also necessary to strengthen the application of information technology in connecting supply and demand to improve the efficiency of training and employment, including workers who have returned after working abroad to promote their strengths in working, production, and income-generation associated with decent work.

The National Digital Transformation Programme by 2025 with Orientations toward 2030 identifies education as a priority sector. Action plans include developing platforms to support distance learning and teaching, thoroughly applying digital technology in management, teaching, and learning; digitizing documents and textbooks; building a platform for sharing teaching and learning resources in both face-to-face and online forms; developing technology for education toward individualized training; testing training programs that allow students to study online at least 20% of the program content; and applying digital technology to deliver homework and test students' preparedness for class. Directorate of Vocational Education and Training has upgraded the Application of Career Selection - School Selection. This is aimed to facilitate potential trainees to apply for VET.

Nowadays, with a smartphone, workers can easily register to learn about the careers, training providers then apply for a course. The application provides users with main information on career, video clips (news, reports, employment opportunities, job description, and so on etc. The database of Career Selection- School Selection Application has updated the entire list of training occupations at advance diploma and diploma level, including 871 intermediate qualifications and 630 advance

qualifications. It also updates numbers of VET institutions that are provided with account, have updated enrollment information (905 vocational education institutions). This APP could be seen as useful channel for potential trainees to access to enrollment information and registration, especially in the Covid-19 pandemic. However, the APP did not cover short courses with elementary levels that migrant workers mainly apply to.

There are many advantages for female migrant workers in participating in vocational training and searching for jobs (Nguyen Quang Viet 2018). First, although female migrant workers are doing or finding jobs whose quality is not assured, they can still find employment rather easily and have opportunities to develop if they receive appropriate career counseling. Second, some female migrant workers have certain work experience and skills but do not have a degree/certificate or official recognition in the labour market. Therefore, if they are given favorable conditions to participate in vocational training courses, their knowledge and vocational skills will be standardized and officially recognized, thereby allowing them to find better jobs. Third, the survey results did not detect discrimination by the business owner against male and female workers at work. Some sectors (such as hotels) prioritize women employees, who do not have to work night shifts if male workers can do so or serve, cook, and sell. Women are also assigned to less demanding working positions than men. Fourth, recruitment criteria focus on occupational skills and experience and do not distinguish between employees in cosmopolitan cities such as Ha Noi or other provinces. The requirement for short-term vocational training is very suitable for the capacities and conditions of most female migrant workers in cosmopolitan cities. However, some concerns must be noted.

The awareness and qualifications of female migrant workers are limited as most of them have no professional or technical qualifications.

Most of the workers working in the informal sector do not receive vocational training through the mode of learning. They gain vocational skills by accumulating experience in the workplace, but soft skills such as problem-solving and communication are limited. Most female migrant workers do not speak foreign languages and lack computer skills.

Due to unstable jobs, low income, and long working time, women workers have fewer opportunities to learn vocational training and improve their qualifications; they also receive very little support from employers. Female migrant workers in the garment industry often work from 9 to 11 hours daily.

Most female migrant workers working in informal production, trade, and service establishments do not sign labour contracts. Therefore, it is very difficult to ensure that they receive labour benefits (for example, participating in social insurance, health insurance, sick leave, vacation, and maternity leave).

Most women workers outside the province have not been provided with adequate information on vocational training and employment. Some women workers in the informal sector want to participate in voluntary health insurance and social insurance, but they do not have information about these types of insurance and do not know how to seek advice regarding this matter.

Ha Noi, Ho Chi Minh City and other big cities lack specific policies to support migrant women workers. Vocational training and employment policies for women workers are applied to both men and women, and to rural and urban workers. The state's preferential policies on vocational training and employment are often linked to the household registration book. Thus, women migrant workers are generally excluded from the current training and employment support policies.

IV. Implications

Based on the policy problems of extending VET to migrant women workers, this work provides some suggestions to policymakers, stakeholders, and women workers below.

For state management agency on labour and VET

- Reviewing, formulating, and perfecting policies and mechanisms to support vocational training and employment offer for female migrant workers and women in general. Promoting and diversifying forms of communication for female migrant workers on skills development, career guidance, career counseling, and employment.
- Implementing the effectiveness of monitoring and evaluation of the application of policies on labour and employment and skills development in informal sector production, trade, and service establishments.
- Establishing activities and necessary guidance for VET providers to develop flexible training programs that adapt to specific groups, particularly migrant women workers.
- Considering and guiding the assessment and grant of certificates of national occupational skills according to the provisions of the Law on Employment for occupations that employ a large number of women workers—and especially women workers with experience repatriated from abroad or from large cities.
- Conducting research on the quality assurance system of formal training, in-service training, distance learning, self-study, guided self-study, and other forms of learning according to learners' needs (the Amended Education Law). COVID-19 time showed the limitations of the current training programmes in providing online courses without quality

assurance framework of qualifications. As an open VET, online course takes beyond technology, but considering institutional, ethical, cultural, pedagogical aspects, evaluation, and management.

- The Application of Career selection - School selection should extend to cover skills and elementary qualifications that may be higher training needs to migrant workers in both domestic and oversea labour market.

For the service companies sending labour to work abroad under contracts

- Renewing the selection of jobs to reduce training costs and shorten training time. In particular, companies need to cooperate closely with localities, VET institutions to select and recruit qualified people. They also need to closely oversee the health check process to eliminate control in order to overcome the situation of fleeing as soon as they arrive at the port of entry because they know that they are ill and cannot afford to stay abroad.
- Companies need to actively upgrade the quality of training and pre-departure orientation education based on the curriculum framework prescribed by MOLISA.

For VET institutions

- VET institutions shall change their thinking about training, enrollment, and teaching, closely associated with the job and labour market.
- Renewing training programs toward flexibility and integration, in line with the changing technology of enterprises. Deploying a number of foreign advanced training programs for a number of high-tech occupations.
- Building a contingent of teachers who meet the standards of qualifications, skills, and professions.

- Actively cooperating with businesses in signing training-order-contracts for setting learning outcomes, curricular development, delivering courses, assessment, and recruiting graduates.

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PART 07

Efforts to Build K-OER Ecosystem for Distance Learning in the Republic of Korea's Higher Education and TVET Areas

Efforts to Build K–OER Ecosystem for Distance Learning in the Republic of Korea's Higher Education and TVET Areas

Hwansun Yoon (Korea Education and Research Information Service)

Abstract

This paper describes Korea's national efforts to build an open, easy, and resourceful learning ecosystem for the TVET and higher education areas, thereby drawing out implications for an open and sustainable distance learning ecosystem. To that end, this paper presents two major initiatives launched by the Korea Education and Research Information Service (KERIS), a public organization under the Korean Ministry of Education that serves as a lead agency in developing and proposing government policies and initiatives with regard to the integration of information & communication technologies (ICTs) across the education and research sectors. This paper first presents the Korea Open Courseware (KOCW) platform, one of the earliest OER platforms for higher education, launched in 2007. KOCW is an example of an effective nationwide initiative that collected and re-organized the wide spectrum of learning contents developed by different subject-matter experts (SMEs) across the higher education sector.

The paper also introduces KOCWC, an extension of the KOCW platform jointly launched through collaboration with the Korea College Library Association (CLIB). As the main purpose of KOCWC is to advance the accessibility of learning contents that focus more on the TVET areas, learning contents in the KOCWC platform are provided through a reorganization into groups aligned with the basic job competencies of Korea's National Competency Standards (NCS) framework. The paper then introduces the Content Development Project for Adult Learners' Capacity, a recent government initiative conducted in partnership with cyber universities that focuses

on developing teaching–learning resources with regard to job capacities. The KOCW platform and the content development project are significant in the sense that they share the common aim of providing a holistic ecosystem for digital learning in TVET and higher education.

Keywords: Open Education Resources (OER), OCW, Information and Communication Technologies (ICTs)

I . Background

The Korea Education and Research Information Service (KERIS) is a quasi-governmental organization of the Korean Ministry of Education with a mandate to promote the integration of information and communication technologies (ICTs) across the education sectors. As such, the main objective of KERIS is to serve as a lead agency in developing, proposing, and advising on current and future government policies and initiatives with regard to the use of ICTs in education. The organization's services stretch from kindergarten to higher education and research areas.

KERIS was established on April 22, 1999, under the legal framework of the “Korea Education Research Information Act.” The organization was a result of the consolidation of two centers from the public domain—the Korean Multimedia Education Center (KMEC, under the Korean Educational Development Institute) and Korean Research Information Center (KRIC, under the National Research Foundation of Korea). The organization's establishment was in line with governmental initiatives to strengthen the integration of ICTs in education, at a time when computer

education was included as part of the national curriculum (5th national curriculum of the late 1980s) and the concept of *ICT in Education* recognized through the first of its “5-Year Master Plan of ICT in Education (1996–2000),” released in 1995 and every 5 years thereafter.

With a mission to contribute to education development through the application of ICTs in education and academic research, the main projects of KERIS span the entire education sector, from digital learning and administration across primary/secondary education, and digital learning and research in higher education. Among the Korean public, KERIS is best known as the operating agency of a number of public services. First, *EDUNET*¹⁾ is Korea’s earliest open educational resource (OER) platform for primary and secondary education, launched in 1996. Second, the National Education Information System (NEIS) is a comprehensive nationwide educational management information system (EMIS) used in all schools across the country. Third, the Research Information Sharing Service (RISS) is an academic database providing academic resources to researchers.

[Figure 7-1] Sample interface of EDUNET (left) and RISS (right)



1) <http://www.edunet.net/nedu/main/mainForm.do>

As can be seen from the above examples, the organization is working to play a leading role in the public OER ecosystem. The education platforms indeed reflect the organization's mission to expand Digital Education for All. In this regard, this paper focuses on the open educational resource (OER) platform focused on higher education and technical/vocation education. In particular, this paper focuses on the Korean Open Courseware (KOCW) and the Content Development Project for Adult Learners' Capacity, explaining governmental efforts to expand quality contents for technical and vocational education in an ICT-intensive society.

II. KOCW, An Open Educational Resource Platform for Higher Education

1. Overview

The Korean Open Courseware (KOCW) is a learning platform that was developed with the aim of expanding accessibility to higher education, mainly by disclosing and sharing teaching-learning contents to anybody interested. In line with UNESCO's definition of OER (2019), KOCW is operated as an open and public platform that provides learning, teaching, and research materials at no cost (2019). While the contents can be accessed by anyone anywhere without having to log in, users can manage their activities within the platform by creating an account, which is also linked to the Research Information Sharing Service (RISS) operated by KERIS.

After its pilot operation in 2007 with 150 lectures collected from 40 universities, it opened official operations in 2009 and currently provides

more than 34,000 lecture videos and 410,000 lecture resources from 224 universities and institutions at home and abroad (KERIS, 2019). The largest open educational resource (OER) platform in higher education, KOCW has provided more than 34,000 lecture videos and 410,000 resources (text, audio, etc.), developed and provided by 231 universities and institutions at home and abroad (as of October 2020).

In terms of the types of resources provided (by domestic universities and institutions), a total of 286,954 resource files have been shared as of October 2020. Among them, 190,024 resources (66.3%) come in video clips, 82,1468 in document files (28.7%), 11,998 in e-Learning flash contents (4.2%), and 2,426 in other formats (0.8%).

The KOCW platform resources are provided in a number of different classification methods. First, it provides content according to the content provider (university/institution), allowing users to search and access materials provided by the university or institution that match their interests. Second, the contents are provided according to specialization tracks. The contents are organized into 35 sub-tracks under seven specializations: *humanities*, *social sciences*, *engineering*, *natural sciences*, *education*, *medicine*, *arts*, and *physical education*. Through this taxonomy, users are able to access a more diverse spectrum of learning resources within a specific topic. Aside from the two classification methods, the KOCW platform provides a curated service of learning contents by categorizing them according to popular themes, allowing users to browse a wider spectrum of contents. The contents are organized into 14 major themes and include timely topics such as *SW education*, *preparation for certificates*, and *SMART learning*.

2. Curation of TVET contents

Aside from collecting and providing relevant learning resources according to different classification methods, KOCW is also working to increase the accessibility of learning resources on technical and vocational education as well by classifying contents into themes that are more relevant to technical and vocational education, including *employment, entrepreneurship, and lifelong education*. This additional reorganization of the KOCW content has created the KOCWC (KOCW College), an extension of the KOCW platform jointly launched through collaboration with the Korea College Library Association (CLIB).

In order to enhance the accessibility of learning contents that focus more on the TVET areas, learning contents in the KOCWC platform are curated and reorganized in two approaches. First, content curation is performed in line with 84 tracks under 8 specializations, following the classification framework of specializations provided by the Korean Council for University College Education (KCCE). Table 7-1 shows the specialization tracks covered by the KOCWC platform.

<Table 7-1> Detailed classification of the KOCWC (according to specialization tracks)

Humanities	English	Japanese	Chinese			
Engineering	Construction & Civil	Applied Internet		Social Sciences	Business Administration	Creative Writing
	Engineering	Automotive			Police Administration	Real Estate
	Architecture	Electrical			Tourism	Military Secretary
	Defense	Engineering			Tourism	Social Welfare
	Machinery	Electronics			English	Accounting
	Mechanical Design	Information Communication			Tourism	Fire Safety
	Mechatronics	Landscape Design			Japanese	Management
	Industrial System Management	Naval Architecture			Tourism	Entertainment
	Material Science	Computer			Chinese	Logistics
					Public Relations	Air Operation Administration
					International Business	Hotel Management
					Senior Welfare	e-Business

	Renewable Energy Video & Media Medical Equipment	Game Applied Computer Information Environment		Library Marketing	
Natural Sciences	Food Science Food Nutrition Culinary Food Service Management	Pastry Animal Husbandry Coffee Barista Probability & Statistics	Arts & Sports	Golf Crafts & Jewelry Design Advertisement Design Ceramics Leisure Sports Cartoon Animation Broadcast Performance Photography Industrial Design Lifetime Sports	Visual Design Interior Contemporary Music Arts Music Taekwondo Fashion Design Beauty Art Children Art
Education	Nursery Early Childhood Education Special Education	Instructional Methods Childcare			
Nursing & Health	Nursing Healthcare Physiotherapy Radiation Health Administration Optics	Pet Management Emergency Rescue Clinical Pathology Occupational Therapy Korean Medicine		Dental Engineering Dental Hygiene Skincare Language Rehabilitation Rehabilitation Treatment	

Second, the contents are further organized according to the framework of the Korean National Competency Standards (NCS). In this approach, the learning resources are classified according to the 9 basic vocational skills stated in the NCS framework: *communication skills, mathematical skills, problem-solving skills, self-development skills, resource management skills, interpersonal skills, information management skills, organizational skills, and work ethics*. As illustrated in Table 7-2, learning resources are further classified into each subskill under basic vocational skills. As of now, the KOCWC content provides learning resources for 28 subskills under 9 basic vocational skills. This reflects the changing nature of employment, where job descriptions are provided in accordance with the basic vocational skills of the NCS framework.

〈Table 7-2〉 Basic vocational skills and sub-skills covered by the KOCWC contents

Communication Skills	<ul style="list-style-type: none"> • Document-creating Skill • Document-understanding Skill • Listening Skill • Language-communicating Skill • Basic Foreign Language Skill • Opinion-expressing Skill 	Mathematical Skills	<ul style="list-style-type: none"> • Basic Arithmetic Skill • Basic Statistical Skill
Problem-solving Skills	<ul style="list-style-type: none"> • Thinking Skill • Problem-processing Skill 	Self-development Skills	<ul style="list-style-type: none"> • Self-recognition Skill • Self-management Skill • Career-development Skill
Resource-management Skills	<ul style="list-style-type: none"> • Time-management Skill • Human-resource Management Skill • Resource-management Skill 	Interpersonal Skills	<ul style="list-style-type: none"> • Teamwork Skill • Leadership Skill • Conflict-management Skill • Negotiation Skill • Customer Service Skill
Information Skills	<ul style="list-style-type: none"> • Computer-application Skill • Information-processing Skills 	Organizational Skills	<ul style="list-style-type: none"> • International Skill • Organization-understanding Skill • Management-understanding Skill
Ethical Skills	<ul style="list-style-type: none"> • Work Ethics • Community Ethics 		

III. Expansion of Learning Contents for Adult Learners

In addition to the launch and operation of the KOCW platform, the Korean Ministry of Education and KERIS are working to expand the spectrum of learning resources that can fulfill the demands of both employees and employers, thus resolving potential skills-gaps in the workplace. To that end, the Korean Ministry of Education and KERIS initiated the Content Development Project for Adult Learners' Capacity in 2018. The project mainly seeks to assist the self-directed learning and capacity-building of adult learners, mainly by providing a set of resources relevant to the key capacities of the 21st century intelligent society.

In this context, major themes include business start-ups, employment transition, and job competencies, which reflect the constantly changing nature of the workplace in the face of an intelligent information society. The content development project is also in line with the social paradigm that views continuous learning as the key to growth in the face of the 4th Industrial Revolution. Ultimately, the project seeks to build a platform for a win-win partnership with cyber universities and reinforces the usability of online learning.

The project is an instrument to address two major agendas. First, it seeks to assist capacity-building for adult learners' participation in the workplace, mainly by developing and operating a platform for vocational/job training that can strengthen the key competencies to enhance adult learners' social participation. In this regard, the learning contents are organized as an online short-term curriculum meeting the learning needs of the learners' various life cycles. Table 7-3 illustrates the types of content developed to build a continuous learning foundation that can embrace both self-directed learning and working at the same

time. As illustrated in the table, adult learners are classified into four different groups as defined by the Korean Council on Open Universities. To meet the demands of the different groups of adult learners, the project focuses on developing two curricula per life cycle group.

<Table 7-3> The four life cycles of an adult and relevant curriculum

Life Cycle Groups	Characteristics	Types of Curriculum
1st Phase (Ages 19-24)	<ul style="list-style-type: none"> Capacity development as a newcomer in society Education on career path & life planning 	<ul style="list-style-type: none"> Foundations of Business Startups Start-Up Practice Employment/Career Job Transition Advanced Job Capacities Re-Education for Women with Disrupted Careers Social Re-Start Community Service <p>(2 curricula per cycle group)</p>
2nd Phase (Ages 25-40)	<ul style="list-style-type: none"> Strengthening of job expertise & competency Education on prevention of disruption of social career 	
3rd Phase (Ages 41-65)	<ul style="list-style-type: none"> Startup support education based on social experience Education on creation & transition to knowledge-based job 	
4th Phase (Ages 65-)	<ul style="list-style-type: none"> Education for social contribution based on social experience Social participatory education to achieve a <i>young society</i> in an aging era 	

The second agenda addressed by the project is collaboration with cyber universities. The project serves as a means to enhance the competitiveness of cyber universities by expanding their roles and strengthening their responsibilities within the higher education sector. The project is an opportunity for cyber universities to expand their roles as vocational and lifelong learning institutions, as it enables them to apply their experiences and insights in online learning to the development and operation of various short-term curricula regarding the workplace.

⟨Table 7-4⟩ Previous works to develop quality TVET resources

Phase (Period)	Main Projects
2003-2011	<ul style="list-style-type: none"> Promoted the specialization of cyber universities by supporting the development quality online learning contents on liberal arts and adult vocational education (<i>66 contents developed</i>)
2012-2014	<ul style="list-style-type: none"> Established the foundations for the <i>Employment First, Advancement to University Later</i> approach by supporting the establishment and reorganization of departments for graduates from Meister/Specialized high schools (<i>7 cyber universities designated</i>)
2014-2015	<ul style="list-style-type: none"> Promoted vocational education & training by supporting the reorganization of cyber university departments to match the National Competency Standards (NCS) and promote field-oriented education (<i>4 cyber universities designated</i>)

The Korean Ministry of Education’s efforts to strengthen the connection between cyber universities and TVET is not new, as efforts to develop quality learning resources through collaboration with cyber universities date back to 2003. The various support projects explained in Table 7-4 are significant in the sense that they contributed to the establishment of the *Employment First, Advancement to University Later* approach, and fostered an environment where work and learning can be managed at the same time, saving a great amount of time and opening social opportunities for adult learners.

⟨Table 7-5⟩ Detailed overview of the content development project for adult learners’ capacity

Track/Type	Basic curriculum for Vocational/Job competency	Specialized convergent curriculum for new industries
Purpose	Establish a socially tailored educational foundation for adult learners in preparation for job changes	Establish an educational foundation to empower creative convergent capabilities and key talents for the development of new industries of the intelligent information society

Track/Type	Basic curriculum for Vocational/Job competency	Specialized convergent curriculum for new industries
Areas	Employment/Startup/Job Transition/Inter-industry, Community Service, etc.	Specialized convergent curriculum for AI and inter-industry (academia)
Amount (2020)	A total of 48 contents (in 8 curricula) • 8 types × 6 resources	A total of 26 contents (in 4 curricula) • AI-curriculum: 2 types × 7 resources • Inter-industry-academia curriculum: 2 types × 6 resources
Content Developer	Cyber universities to be designated as developers based on a call for proposals	Cyber universities (graduate schools) to be designated as developers based on a call for proposals
Target Learners	Any adult learners interested and capable of economic activities	Workers in AI/industries, military students, etc.

Table 7-5 provides an overview of the content development project for 2020. In the past 2 years (2018-19), the focus has been on creating basic learning resources for skill capacitation; contents developed in 2020 will be more diverse, as they will be developed in two main tracks: basic curriculum (for vocational/job competency) and specialized curriculum (for AI/industry-related).

[Figure 7-2] Content provided in the KOCW platform



IV. Significance

The greatest significance of the KOCW platform and the content development project for adult learners' capacity is that these initiatives have led to the creation of a comprehensive teaching-learning ecosystem in the higher/vocational education areas. As stated in Figure 7-2, the lecture contents developed by cyber universities from the content development project are provided within the KOCW platform. While they are used within the respective universities, the contents are shared in the KOCW platform as well to connect with other contents.

[Figure 7-3] Screenshot of lecture materials

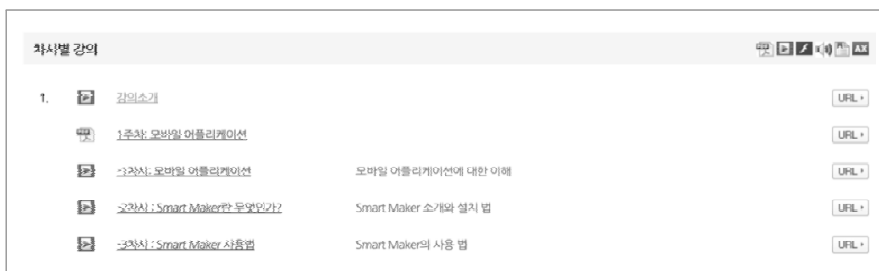


Figure 7-3 is a sample image of lecture materials developed by a cyber university participating in the content development project. The image is part of a curriculum designed in a total of 13 modules. The image also suggests that the specific module is composed of 3 video materials and 1 text material (PDF format). However, the 6 icons in the upper right corner of the image suggest that the files can be provided in other formats as well, such as e-learning flash contents or audio files.

[Figure 7-4] Screenshot of other relevant open lectures within KOCW



Figure 7-4 is an example screenshot suggesting other open lecture materials that are deemed to be relevant to the content viewed by the learner. The image is an actual list of suggested lecture materials provided to be relevant to Figure 7-3.

[Figure 7-5] Screenshot of other relevant academic resources within RISS



Figure 7-5 is an example screenshot of relevant academic resources on the lecture material viewed by the user. In particular, Figure 7-5 is a list of published theses that are deemed relevant to the lecture materials accessed. The resources are connected to the Research Information Sharing Service (RISS),²⁾ and clicking the list will redirect the user to the RISS platform. This is significant as it enables the learner to refer to a wider spectrum of resources. While Figure 7-5 provides a partial list of relevant academic resources linked to the lecture material within KOCW, the RISS database provides an expanded list of articles, such as domestic

²⁾ <http://riss.kr>

and international journal articles. Such integration of content indeed provides users with more convenient learning, but can also enable them to engage in more efficient academic activities by leading them to various contents.

According to a statistical report released by the Korea Educational Development Institute (2019), the market size of the e-Learning market in Korea was forecast to have grown as large as 3,800 billion won (about 3.4 billion US dollars), composed of individual providers (47%), industry providers (40%), education institutions, and public organizations (13%). This signifies that learners currently have a wide spectrum of choice in the learning resources they can select. As one of the earliest online learning platforms, the KOCW platform is significant, as it remains one of the largest OER platforms, providing unlimited and equal access to any learner. The Content Development Project for Adult Learners' Capacity should be viewed as a national endeavor to provide timely learning resources that meet the rapidly changing learning needs of the 21st century workplace.

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PART
08

Apprenticeships in Korea: An Innovative Approach to Youth Employment and Skills Development

Apprenticeships in Korea: An Innovative Approach to Youth Employment and Skills Development

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Abstract

This paper describes how the apprenticeship system works in Korea and discusses its outcomes and challenges, so as to share Korea's experience with other countries. The Korean government introduced the apprenticeship system in 2014 as a means to overcome youth unemployment and effectively link skills development to skills utilization.

In Korea, apprenticeship programs are designed for newly hired workers and students, and take one to four years to complete. The operational procedure begins with recruiting companies to participate in the apprenticeship. Once companies are selected, they recruit apprentices and develop apprenticeship programs. On the Job Training (OJT) and Off the Job Training (Off-JT) take place at companies or dual training centers according to the approved programs. Apprentices are required to undergo internal and external assessments toward the end of the program, and those who pass the external assessment can obtain a nationally recognized qualification.

Apprenticeships achieved rapid growth over the last 6 years in Korea, with 16,222 companies and 101,512 apprentices having participated in the programs as of September 2020. However, demographic changes and technological advancements pose challenges for the current apprenticeship system. In order to overcome these challenges, as well as the existing drawbacks, the system needs to establish a more horizontal governance structure with flexible standards, which will help reflect the changing industry demands and growing need for lifelong career management in apprenticeship programs.

Keywords: Apprenticeship, Youth Employment, Skill Development, On-the-Job Training, Transition to Labor Market

I . Background of the Case

In recent years, apprenticeship has been perceived as an attractive policy option for many countries to alleviate the increasing youth unemployment rate in the current global economic crisis. Countries with a solid system of apprenticeship have facilitated the smooth transition and settlement of youths into the labor market, while maintaining a low youth unemployment rate.

Youth unemployment has become a major social problem in Korea, as the country has entered a stage of economic stagnation. In particular, the youth labor market in Korea has suffered from an ongoing mismatch between human resources and jobs due to over-education, and a mismatch between school education and industry demands. While there is an oversupply of college degree holders relative to the number of jobs that require higher education, small firms face labor shortages, as young job seekers with a higher education prefer to start their careers at major companies. Meanwhile, as vocational education and training heavily rely on school-based learning in Korea, there has been a mismatch between the skills acquired at school and those required by industries (Lee & Jeon, 2016).

The Korean government introduced the apprenticeship system in 2014¹⁾ as a means to overcome youth unemployment and effectively link skills development to skills utilization. It was designed based on the German and Swiss dual systems but tailored to match the Korean context. In the Korean apprenticeship system, apprentices receive practical training from in-company trainers, while receiving theoretical education through education and training institutes (such as schools) on the basis

¹⁾ A pilot project was initiated in September 2013 and the actual implementation of the apprenticeship system began in 2014.

of National Competency Standards (NCS). Upon completion of the program, apprentices can receive a completion certificate from the Human Resources Development Service of Korea (HRD Korea), and those who pass an external assessment can also obtain a nationally recognized qualification (Related Ministries, 2015).

As of May 2020, 15,808 companies had participated in apprenticeship programs since 2013, and 96,823 apprentices are either undergoing training or have completed their training. Apprenticeship training is being implemented in 23 out of 24 NCS occupations (major classification: project management is the exception). Machine courses constitute the largest share, at 33.4% of the total training courses, followed by electronics courses (14.6%), business administration, accounting and clerical work courses (13.4%), and ICT courses (9.9%) (HRD Korea, May 2020).

Through work-based education and training, apprenticeship is not only expected to provide youths with the practical experiences that are required by companies, but also to be an effective system that connects industries and education. Youths participating in apprenticeships are able to acquire the skills required by firms, and the firms can learn how to actively cope with current and future demands for manpower.

II. Description of the Case²⁾

1. Apprenticeship at a glance

i. Target

Initially, the Korean apprenticeship system targeted new graduates only, but later, it expanded to allow currently enrolled students to become apprentices through apprenticeship high school, Uni-Tech, and IPP apprenticeship programs. Apprenticeships for new workers target newly hired workers who have worked in training companies for less than a year. Apprenticeships for students cover students of specialized vocational high schools, colleges, and universities, which are selected as dual training centers and approved to implement apprenticeship programs.

Apprenticeships for students were diversified in order to improve the permeability between Vocational Education and Training (VET) programs at the secondary and tertiary levels and to strengthen the link between VET and higher education. First, the purpose of linking apprenticeship programs with academic programs is to enhance the attractiveness of VET. Second, offering apprenticeship programs to vocational high school, college, and university students can ensure a practical and demand-oriented qualification in secondary and higher education to avoid a mismatch between the academic curricula and the skills needed by companies (Hanau, Jeon, & Lee, 2019).

²⁾ This section mainly refers to “Apprenticeship in Korea 2019 (Center for Work-Learning Dual System in KRIVET, 2019)” and “Apprenticeship in Korea 2018 (Park et al., 2018).”

<Table 8-1> Target groups of apprenticeships

Type	Sub-type	Target Group	Duration & Set-up
Apprenticeship for New Workers	Management Body <ul style="list-style-type: none"> • Company-led • Training center-led Recognition of Results <ul style="list-style-type: none"> • Company-based type • Industry-based type (Qualification, Qualification + Degree) 	<ul style="list-style-type: none"> • Newly hired workers • Workers who have worked for less than a year 	<ul style="list-style-type: none"> • 1-4 years (Only Qualification + Degree type is 4 years, the others are maximum 2 years) • On the Job Training (OJT) at work & Off the Job Training (Off-JT) at training center
	<ul style="list-style-type: none"> • P-Tech³⁾ 	<ul style="list-style-type: none"> • Graduates of apprenticeship high schools 	<ul style="list-style-type: none"> • 1.5-year • OJT at work & Off-JT at polytechnic (ISCED⁴⁾)
Apprenticeship for Students	<ul style="list-style-type: none"> • Apprenticeship high school 	<ul style="list-style-type: none"> • Specialized vocational high school students 	<ul style="list-style-type: none"> • 2 years • OJT during 2nd and 3rd years of high school (ISCED 3)
	<ul style="list-style-type: none"> • Uni-Tech 	<ul style="list-style-type: none"> • Specialized vocational high school students + college students 	<ul style="list-style-type: none"> • 3.5 years • OJT for 2 years in high school (ISCED 3) + 1.5 years in college (ISCED 5)
	<ul style="list-style-type: none"> • College Apprenticeship 	<ul style="list-style-type: none"> • College students 	<ul style="list-style-type: none"> • 1 year • OJT during last year of college (ISCED 5)
	<ul style="list-style-type: none"> • IPP⁵⁾ 	<ul style="list-style-type: none"> • University students 	<ul style="list-style-type: none"> • About 1.5 years • 4-10 months of long-term work experience (3rd year) + 1-year apprenticeship (4th year) in university (ISCED 6)

Source: Park, Jong-Sung & Jeon, Seung-Hwan & Lee, Han-Byul. (2018). Apprenticeship in Korea 2018, p.6.

³⁾ P-Tech: Pathways in Technical Education oriented Convergent High-Technology

⁴⁾ ISCED: International Standard Classification of Education

⁵⁾ IPP: Industry Professional Practice

ii. Governance

The Ministry of Employment and Labor (MOEL) is responsible for overseeing the overall system, such as setting an institutional framework or approving and funding apprenticeships with public bodies and social partners. The Ministry of Education cooperates with the MOEL regarding apprenticeships for students. Meanwhile, Human Resources Development Service of Korea (HRD Korea) is in charge of the actual execution, such as planning and carrying out apprenticeship systems. The Korea Research Institute for Vocational Education and Training (KRIVET) supports the performance management of apprenticeships by conducting R&D work. Industry Skills Councils (ISC) support the development, operation, and evaluation of companies that institute training programs.

Since the early days of the system, through public hearings and briefing sessions, efforts have been made to build a social consensus on enacting the “Act on Supporting the Industrial Site Work-Learning Dual System.” In July 2019, it passed the subcommittee of the Legislation-Judiciary Committee as well as the general meeting. Through this process, the Act passed the National Assembly’s plenary session and was promulgated on August 27, 2019, then enacted on August 28, 2020. Enforcement of the law is expected to contribute greatly to the development of the study dual system and the stability of the system.

iii. Finance

The annual operation budget for apprenticeship is allocated as part of the project budget of the employment insurance fund for vocational competency development. The fund is established using the employment insurance that employers pay. Employers pay 0.25-0.85% depending on

their number of full-time employees.⁶⁾

The budget for Korean apprenticeships has risen dramatically in recent years due to the increase in the number of apprentices and participating companies, amounting to 407 million USD in 2017. However, from 2018, when the system started to stabilize, the budget started to decrease somewhat, with records of 310 million USD in 2019. It is allotted 308 million USD as of 2020.

The financial support for apprenticeship training is provided to training companies including training infrastructure support fees, OJT and Off-JT training fees, training fee subsidies to compensate for the loss of the labor force by the employer due to the apprenticeship training, accommodation costs, in-company trainers, and an HRD manager allowance.

iv. General procedure

Most apprenticeship programs take one to two years, but those designed for higher degrees could take up to four years; they are administered and monitored by HRD Korea. The procedure begins by recruiting and selecting companies to participate in the apprenticeship. Once companies are selected, they recruit apprentices, have their in-company trainers and HRD managers educated by Korea Tech,⁷⁾ and develop apprenticeship programs, which are then approved by HRD Korea. OJT and Off-JT take place at companies and dual training centers according to the approved programs, and apprentices are required to undergo internal and external assessments toward the end of the program. Those who pass the external assessment can obtain a nationally

⁶⁾ Ministry of Employment and Labor Website: <https://www.moel.go.kr/info/astmgmt/employ/list.do>

⁷⁾ Korea Tech: Korea University of Technology and Education

recognized qualification. The overall procedure is briefly illustrated in Figure 8-1.

[Figure 8-1] General procedure of an apprenticeship program



Source: Ministry of Employment and Labor (MOEL) & Human Resource Development Service of Korea (HRD Korea) (2020). Operation Manual for Korean Apprenticeship, p. 18.

2. Selection of companies and training centers

To provide a stable training environment for apprentices, the government has set minimum criteria for companies to participate in the apprenticeship system. A company that intends to participate in the apprenticeship system should be registered for unemployment insurance and have over 20 employees in case of the training center-led type and over 50 employees in case of the company-led type at the time of their application. However, companies with five or more full-time employees can also participate in the program if they are recognized for excellence in technology, growth potential, and HRD, or recommended by the work-learning support center or specialized industrial field (specialized region) for apprenticeship. Furthermore, the participating companies should have adequate human and material resources and management

skills to conduct apprenticeship training, and they must have in-company trainers specialized in the occupational fields in which the training is to be conducted.

The company selection process mainly consists of prior consultation services, document examination, and field evaluation. It is noticeable that after an initial application is submitted, companies can receive prior consultation services from consulting agencies recommended by HRD Korea and improve their application documents. During the document examination process, companies are assessed in the areas of the suitability of their objectives for training a skilled workforce, their willingness to train manpower, and their business conditions; if the requirements for their business conditions are not satisfied, they are disqualified. During the field evaluation phase, site visits are carried out for companies that have passed the document review in order to confirm the contents of their documents. In particular, the visits focus on the CEO's understanding of apprenticeships and nurturing of employees' skills, as well as the conditions of the training infrastructure.

Dual training centers play a key role in the Korean apprenticeship system, which implements Off-JT as an outsourcing organization and supports companies in adequately performing both Off-JT and OJT.⁸⁾ Currently, most dual training centers for apprenticeship are colleges, poly-techs, and ISCs. To qualify as a dual training center, an organization should have over 30 potential partner companies in a joint training agreement. The selection process of dual training centers also consists of a document examination, interview, and field evaluation. The selection criteria include the will to carry out business, the capability for business,

⁸⁾ It has some other important roles, such as recruiting partner companies and apprentices, supporting and consulting training program development, developing learning materials, performing apprentice evaluations (internal and external evaluations), supporting OJT and Off-JT, and general assistance for partner companies.

meeting the qualification requirements for application, the capability of the organization, being suitable for training, and having the infrastructure for training.⁹⁾

3. Development and verification of apprenticeship programs

By principle, companies should develop apprenticeship programs on their own. However, if a company does not have the capacity to develop a program independently, it can seek help from government experts. A program development team consists of two to three experts, who are expected to have equal authority and responsibility, but their requirements differ by apprenticeship type.

The process for developing an apprenticeship program has four phases: pre-work, job analysis, training program development, and verification. Pre-work includes forming a development committee and constructing a program overview. Job analysis involves designing a job model based on NCS and deriving the knowledge, technical skills, and attitude required for the job. Development of the training program includes constructing subjects, subject profiles, and a program management model. Lastly, the training program is verified and managed by HRD Korea. The training program should be developed within two months.

The contents of the apprenticeship program should be designed to include both general skills from related fields and firm-specific skills. The

⁹⁾ The criteria for selecting an apprenticeship high school project team is different from the general dual training center and consists of 1) field suitability, 2) the suitability of curriculum development and operation, 3) the suitability of participating companies, 4) the appropriateness of the operation of the apprenticeship training center, and 5) the availability of an alternative investment plan.

development of an apprenticeship program should not only reflect the opinions of a company, but should also be designed based on NCS and apprenticeship qualifications, while complying with the verification standards. The training period should be 1 to 2 years (maximum 4 years when the course is linked to a university degree), and annual training hours should exceed 200 hours. The proportion of Off-JT and OJT should be balanced, but minimum requirements differ by apprenticeship type.¹⁰⁾ Training program developers should create teaching and internal evaluation plans for each NCS competency unit in consultation with the relevant stakeholders.

Once a company develops an apprenticeship program, it should be verified as to whether it satisfies the requirements and meets the national standard for apprenticeship training. A company that intends to have its program verified can apply at the regional branch of HRD Korea. The main factors that will be verified include a) the quality of the program, b) the standardization of the program according to the type of job and level, c) the training conditions of the company, and d) the applicability of NCS. In terms of NCS applicability, stricter policies and standards have been applied since June 2017, requiring a higher proportion of NCS-based learning.

4. Selection and treatment of apprentices

The recruitment of apprentices follows the recruitment process practiced by each company. The range of potential apprentices includes vocational high school students or graduates, college students or graduates, job seekers, and employees working in a company for no more

¹⁰⁾ Industry-based type: OJT 25-75%, Off-JT 25-75 %
Company-based type: OJT 50-80%, Off-JT 20-50%

than one year. The company selects an apprentice based on a document examination and interview, and makes a training employment contract with him/her. When the company faces difficulty in finding apprentices, it can be supported by the regional employment office of MOEL.

An apprentice holds the status of both a learner and worker. As a worker, the apprentice is protected by labor laws after signing a contract that contains a salary, industrial safety standards, and fringe benefits. When the employer forms a contract with the apprentice, he/she should set a clear division between the period of OJT and Off-JT. The government developed the Act of Support for Work-Based Learning in Industrial Fields in order to legally protect the dual status of trainee and worker.

The training company and apprentices establish an agreement in the form of a training employment contract. The training employment contract is put into effect starting from the first day of training, when students are henceforth identified as apprentices, and the contract ends when the training is completed. If the working conditions fall short of the required standard, the contract can be invalidated in accordance with Article 15 of the labor law.

5. Operation of OJT and Off-JT

OJT is defined as training that is provided to an apprentice in the field and delivered through a well-prepared training plan by an in-company trainer. The duration of OJT should be included and specified in the training plan, whereby OJT should be conducted during the daytime as well as in less than 6 hours per day and 60 hours per month (100 hours per month in the case of apprenticeships for students). The in-company trainer uses the Learning Management System (LMS) on HRD-Net to create a daily study log for the competency unit.

Off-JT is a training concept that is operated in different venues such as classrooms or workshops where apprentices obtain theoretical and practical education. Off-JT is recommended to be conducted during daytime for less than nine hours per day, but it is usually conducted before/after work during weekdays or on weekends. For the training center-led type, Off-JT is conducted in the joint training center. For the company-led type, Off-JT is operated by the company itself, which conducts training in a different facility owned by the company. During Off-JT, the apprentice learns about theories that are applicable in the field. The apprentice also conducts experiments and practices in an environment similar to that of the company.

6. Internal and external evaluations

An apprentice evaluation consists of a) an internal evaluation, which is performed by either the company or dual training center during the apprenticeship program; and b) an external evaluation, which is performed by a team of external experts and an in-company trainer designated by HRD Korea.

An internal evaluation is a process of evaluation performed by an in-company trainer or teachers/instructors from an Off-JT institute when each unit of competency (subject) is completed. The range of internal evaluation includes all kinds of competency unit included in the apprenticeship program. The venue for the evaluation is either the same place as the OJT or a dual training center. In order to raise the credibility of the internal evaluation, staff from an ISC are required to conduct the evaluation at least once for the company-led type, while an Off-JT instructor from the training center visits and operates the test at least once for the training center-led type.

The company or dual training center should enter the results of the evaluation into the LMS of HRD-Net within 10 days of the test. The company/training center confirms the final lists of applicants who passed the internal evaluation for the whole competency unit. They can receive a completion certification specifying the NCS competency units they have passed and are considered as successful candidates for external evaluation.

An external evaluation is a form of results-based evaluation conducted by outside experts and trainers who have been designated by HRD Korea or an industrial council, after the completion of an apprenticeship program. The scope of an external evaluation includes all required competency units of the apprenticeship qualification. The evaluation is conducted for each competency unit focusing on practical capability rather than textbook knowledge, and the evaluation methods include paper tests, performance tests, and interviews. If the candidate passes 70% of the competency units of the apprenticeship qualification, he/she is considered successful and will acquire the apprenticeship qualification for passing the external evaluation. The qualification is issued under the names of MOEL and HRD Korea.

III . Implications of the Case

1. Outcomes

Although the apprenticeships were originally targeted at new workers only, they have been expanded to include students since 2015, as a means to diversify the program participants and promote apprenticeships at the national level.¹¹⁾ As a result, the proportion of

student apprentices has steadily increased since the introduction of the policy.¹²⁾ Apprenticeships achieved rapid growth in Korea, from 1,897 participating companies and 3,154 apprentices in 2014 to 16,222 companies and 101,512 apprentices as of September 2020.

<Table 8-2> Cumulative number of participating companies and apprentices

Year	2014	2015	2016	2017	2018	2019	September 2020
No. of companies	1,897	5,212	8,492	11,688	14,110	15,369	16,222
No. of apprentices	3,154	14,318	34,378	57,423	76,076	91,195	101,512

Note: Companies participating in apprenticeships for both new workers and students are counted as one.

Source: Apprenticeship statistics (internal resource of Human Resources Development Service of Korea (HRD Korea), 2020)

According to a survey conducted in 2019, 53.9% of participating apprentices answered that their vocational skills improved through the program (significant improvement 14.3% + improvement 39.6%) and overall participants including apprentices, participating companies, and OJT instructors showed above-average satisfaction levels. At the conclusion of the program, 79.9% of participating companies expressed interest in continued involvement, and approximately half had been recurring participants in the program (Kim et al., 2019). With the Act on Support for Apprenticeship in the Workplace taking effect from August 28, 2020, working conditions for apprentices such as job security and treatment are expected to improve. Based on the overall outcomes of the implementation of apprenticeships over the last few years by the Korean

¹¹⁾ Apprenticeship High Schools, Junior College level, IPP Work-Learning Dual Programs

¹²⁾ Among new apprentices who participated in training for the first time in the year, apprentices participating in the employee training programs account for 55.7% and apprentices participating in the student training programs account for 44.3% (as of September 2020).

government, it could be said that a foundation has been put in place for the stabilization and development of apprenticeships.

2. Challenges and policy implications

i. Changes in the policy environment

A significant decrease in the working-age population, resulting from low birth rates and aging demographics, has led to concerns over economic vitality, weakening productivity, and skills shortages and deficiencies due to retirements. The significance of apprenticeships will be further emphasized, as the programs counter the decrease in productivity from the smaller working population by improving the productivity of individual workers and providing an opportunity for skills transfer before experts retire. However, structural demographic changes, such as a decreasing student population, may become an impediment to the expansion of apprenticeships; thus, efforts to broaden the participant pool are needed. A new program needs to be developed for general high school students, who are currently excluded from apprenticeships, based on a detailed analysis of students' career paths. Since apprenticeship programs for new workers are also highly likely to stagnate, they should focus on the advancement of skills in existing employees through the expansion of the participant pool.

The labor market is becoming more volatile as the ways to work diversify, core job competencies change, and turnovers become more frequent owing to the new technologies and business models epitomized by the Fourth Industrial Revolution. To address the changes in industry demand, more apprenticeship programs need to be developed in new industries and using new technologies, while actively seeking new companies to join the programs based on demand surveys. Moreover,

automation has raised concerns over the decreasing number of jobs and heightened need for position transfer training for workers in traditional manufacturing sectors. Schemes to train workers in new industries and technologies through position transfers of existing workers should be considered as apprenticeships have the added benefit of learning in the field through OJT.

In light of the above-mentioned demographic changes and labor market volatility, social demand for consistent and active lifelong career management is expected to grow. Therefore, in the operation of the programs, the lifelong career management of apprentices needs to be taken into account. In particular, for participants to manage their careers and growth through the apprenticeship program, a detailed career path within the participating company must be provided.¹³⁾ In the case of apprenticeship schools, many companies only recognize the degree at the time of the initial employment contract, effectively not recognizing any further degrees apprentice students obtain in the future (Ahn et al., 2019). In this context, to select companies that would be willing to help apprenticeship students' settlement in the labor market and sustained development, having an established career path should be considered as a criterion in the company selection process. Furthermore, it could require participating companies to provide information on their support for apprenticeship students' further education and a career advancement roadmap in the apprenticeship work contract.

ii. Flexibility

Because the primary goal of apprenticeships is to raise the talents demanded by industries and companies by providing systematic

¹³⁾ In general, there is no official career path for apprentices within participating companies.

education based on the NCS, they must be able to adjust their training programs based on the environment and circumstances that industries and companies face. However, the current system follows a rigid single standard in training program design and operations, making it difficult to reflect diverse industry characteristics. Therefore, in order to operate the apprenticeship system more effectively, there is a need to reinforce the flexibility of training programs and develop various types of apprenticeship program.

First, the system should move on from the current government-driven approach to find ways to increase industry and civilian participation and develop management mechanisms based on the level of autonomy. Although active government involvement and support are needed, a control-oriented approach must be avoided to allow flexible workforce training fit for the accelerating changes in technology. The apprenticeship system should adopt various forms from industry-led autonomous programs with low control to government-driven models with extended control. The level of financial support could depend on the control level, and different forms of awarding qualification could be considered accordingly. Furthermore, it is essential to develop and implement management systems that discourage companies from abusing the apprenticeship system as a means to supply low-cost labor.

NCSs have not yet been developed for many competencies related to new industries and technologies. If training programs continue to be designed based on NCSs, they may have discrepancies from the field, in which case the effectiveness of the programs cannot be guaranteed. Therefore, considering the unique circumstances in new industries, the apprenticeship system should allow the participation of sectors yet to have NCS- or CS-based qualifications. Current apprenticeship standards are based on past industrial environments, such as the traditional manufacturing sector, prior to the Fourth Industrial Revolution, so more

flexible standards could be applied. While providing a high level of autonomy, the government should actively participate in areas such as adjusting company selection criteria and training OJT instructors, taking into account weak infrastructures and staff capacity to operate the training programs.

iii. Participation of companies

Since participating companies serve as both employers for apprentice students and training institutions, their active participation is essential to the sustainable outcomes of apprenticeships. However, there are difficulties in retaining participating companies and recruiting new ones because of negative perceptions and a lack of awareness of apprenticeships. The main reasons associated with negative perceptions are the absence of apprentice trainees and instructors during training periods, and workplace conflicts due to HRD personnel's increased workload. This indicates that for the streamlined operation of the apprenticeships, it is essential to improve the understanding and perception of the programs among members of the participating companies while identifying new participating companies.

One method to improve the participation of companies is awarding the "Certification of Excellent Participating Company" to those who have dedicated themselves to training talent and achieving a certain level of outcome. Various benefits could be considered for certified companies, including tax audit exemptions, tax benefits, and partial exemption from workplace safety controls through coordination among various ministries and agencies. Certified companies will also take pride in their contribution to the apprenticeships, and their external image will improve as well, which, in turn, would encourage further participation by other companies. The certification program will not only increase

awareness of the apprenticeships, but also serve as an important data point for apprentice-students selecting a participating company.

iv. Governance

Although coordination among the government, public agencies, and industry associations and private sector companies is critical for apprenticeships, it has not yet formed a flat governance structure and instead operates under a government-driven top-down governance system.¹⁴⁾ For example, HRD Korea establishes operation plans based on the policy direction of the Ministry of Labor and Employment, and institutions such as Korea Polytechnics, ISCs, and other support bodies all deliver tasks outsourced by HRD Korea. Because OJT and Off-JT, the core curricula of apprenticeships, are operated by the private sector,¹⁵⁾ the private sector's role is critical in implementing the training and delivering the outcomes. Therefore, a cooperative governance structure that allows public-private cooperation and partnership must be established. Such a governance structure must further allow the main issues of the system to be openly discussed to ensure streamlined operation. Moreover, because the current apprenticeship system has been driven by the central government since its inception, the program is focused on traditional manufacturing sectors outside of the greater metropolitan area, which does not allow it to reflect regional considerations. Each regional government seeks to identify and develop industries suited to its region; the apprenticeship system should reflect the regional governments' industry policies to serve as a key pillar for talent training.

¹⁴⁾ Ministry of Employment and Labor → Human Resources Development Service of Korea → Related Agencies.

¹⁵⁾ Participating companies, Joint Training Centers.

The basic premise of cooperative governance is an equal relationship and horizontal structure, under which various stakeholders can have active discussions and reach a consensus on a decision. As such, a governance structure needs to be established that allows active participation by those who represent the stakeholders of the apprenticeship system, such as Industry Skills Councils (ISCs), Regional Skills Councils (RSCs), and labor unions. It is also recommended that the key roles of each participant in the governance structure be stipulated. There are many cases where a governance structure has an exterior structure that incorporates diverse participants, but only in writing. Considering the complex nature of the apprenticeship system, a governance form with only a declarative meaning will only create further confusion and inefficiency. Therefore, it is critical that the roles and responsibilities of the participants in the governance system are clearly postulated.

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