

Geschäftschancen in Südkorea im Bereich Aus- und  
Weiterbildung (Webinar)  
20 May 2021

# Market Growth and Trend in Korea's TVET

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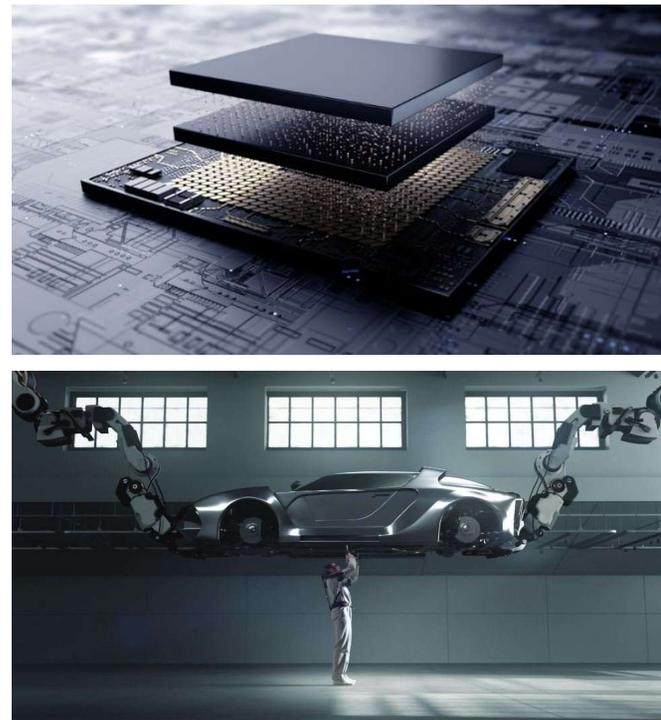
# Contents

Brief Review of **TVET System** in Korea  
Environmental Change & **Improving TVET System**  
**New Trend of** Korea' TVET Policies  
**The way forward** to TVET

# Brief Review of TVET System

## Understanding the Korea's Economic Development

- Advancement from one of the world's poorest country to a high income country after the Korean War



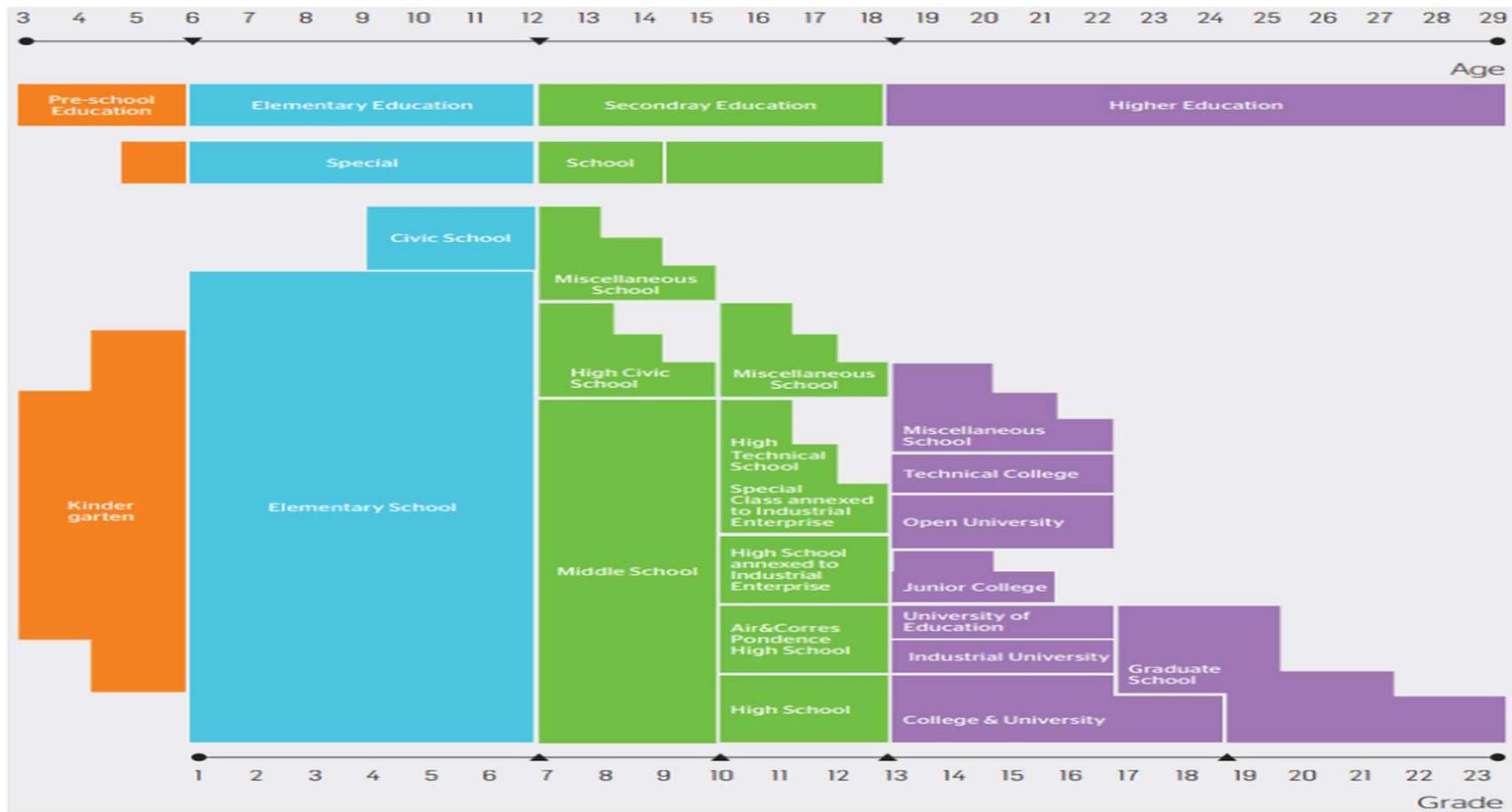
# Brief Review of TVET System

## Economic development & TVET

- The rapid development of Korea is attributed to the **government's decision** for modernization of industrial structures and a planned economy
- **Qualitative human resources** nurtured by a unique zeal for education in Korean society are also the main drive for the nation's development
- The goal of educational reform was a quantitative increase of education but it changed to the **quality improvement of education**
- Vocational education system which is cultivated human resources adapting **to workplace and meeting industrial demands**
- Government promoted a policy to **reinforce career education** to deal with youth unemployment in a highly educated society and insufficient vocational education in high school

# Brief Review of TVET System

## Korean Education System



Resource: [www.kuce.or.kr](http://www.kuce.or.kr)

# Brief Review of TVET System

## Vocational Education vs Vocational Training

Classification	Vocational education	Vocational training
Purpose	<ol style="list-style-type: none"> <li>1. To cultivate sound citizens and develop living abilities</li> <li>2. To acquire basic, general and procedural knowledge</li> </ol>	<ol style="list-style-type: none"> <li>1. To train skilled workers according to demand in each occupational area</li> <li>2. To develop adaptability to production circumstances</li> </ol>
Target group	<ol style="list-style-type: none"> <li>1. Students (unemployed)</li> </ol>	<ol style="list-style-type: none"> <li>1. Incumbent workers and job seekers</li> <li>2. People wounded in action and people with disabilities</li> </ol>
Characteristics	<ol style="list-style-type: none"> <li>1. Non-business facilities</li> <li>2. Not business-conscious</li> <li>3. Theory-oriented</li> <li>4. Short-term measure</li> </ol>	<ol style="list-style-type: none"> <li>1. Using business facilities</li> <li>2. Directly related to business consciousness</li> <li>3. Practice-oriented</li> <li>4. Continuous guidance</li> </ol>
Effects	<ol style="list-style-type: none"> <li>1. Long-term investment</li> <li>2. Heavy cost burden</li> <li>3. Mismatch between supply and demand</li> </ol>	<ol style="list-style-type: none"> <li>1. Short-term investment combined with production</li> <li>2. Reduced cost burden</li> <li>3. Short-term adjustment between supply and demand (quantity quality)</li> </ol>

Resource: MoEL & KRIVET(2012)

# Brief Review of TVET System

## Vocational Education System

- Vocational high school in Korea are **categorized into three groups:** specialized vocational high school, **Meister high school** and comprehensive high school
- **Meister high schools**, which only account for a few schools, are selected among other specialized vocational high school
- Vocational college are **two to three-year vocational education institutes** where high school graduates can attend
- The major roles of the college is to **provide professional vocational education** in various areas required by an industries, to develop a professional workforce, to offer **retraining programs and lifelong learning programs for the employed, to operate major intensive bachelor's degree program**, and more
- Directions for future **development**; It should vocational education that meets **industrial needs**, Needs to change to satisfy the **requirements of the labor market, Lifelong learning system** for adults and the elderly is highlighted, Support for **SME's HRD**

# Brief Review of TVET System

## Vocational Training System

- VT system led industrialization in the 70s and 80s by **training skilled manpower** that focused on the manufacturing industry
- The system was **based on labor market conditions** that estimated the supply and demand of skilled workers for each industrial development phase
- (60s~70s) Began implementation officially once the **Vocational Training Act** was established on 1967

(80s) In terms of quality as the necessity of **in-service training was recognized**

although the demand for workforce training decreased, **HRD Korea** was also

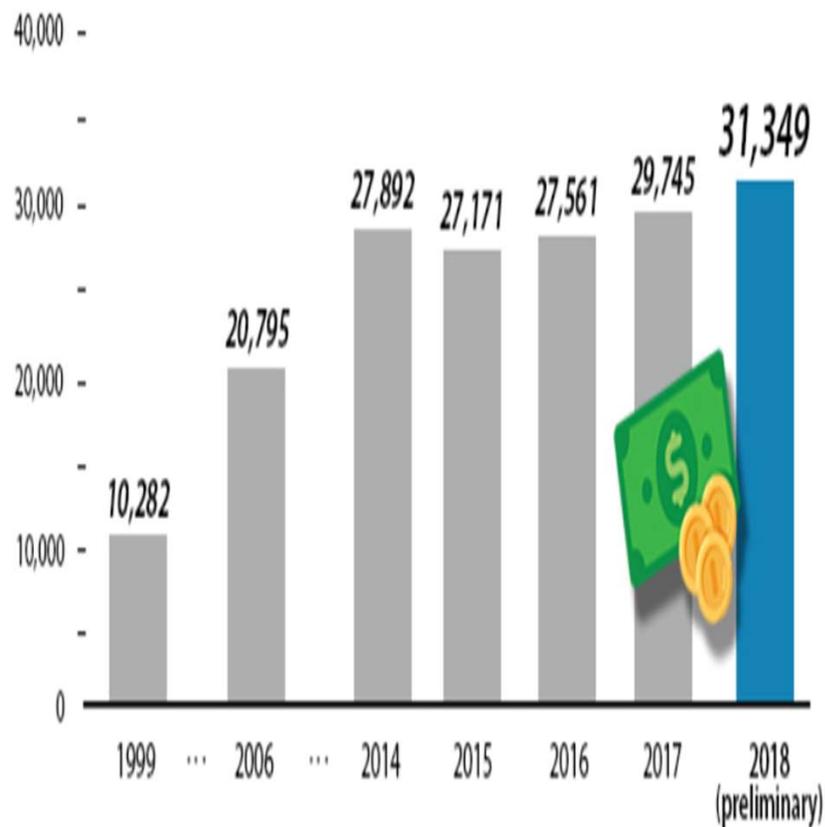
established in 1982

(90s) Public VT institutes were reorganized and integrated in to **Polytechnic, KCCI**

Financial crisis had served as **momentum** to move the center of Korea VT

# Environmental Change

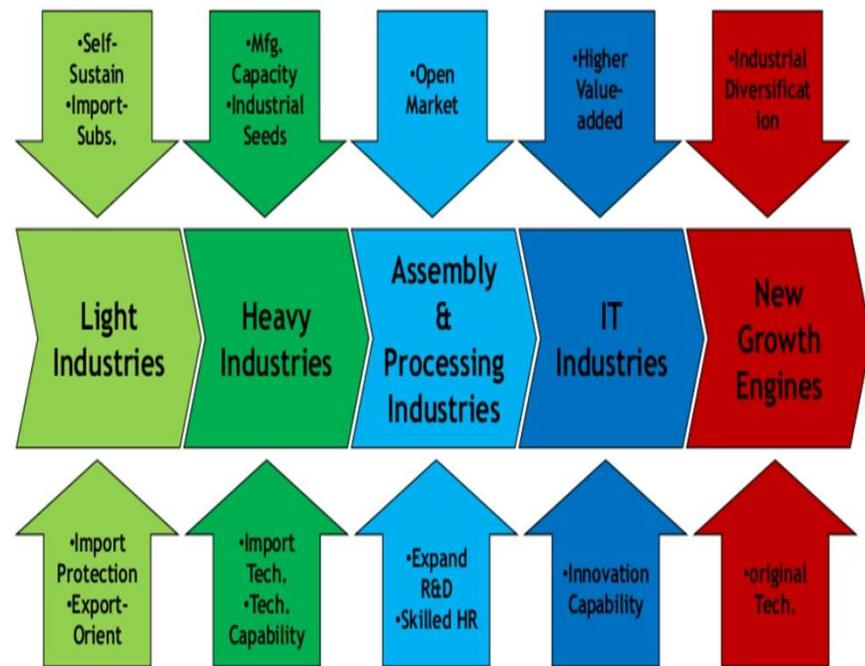
## Per Capita Gross National Income (USD)



Resource: Bank of Korea(2019)

## Industrial Shifts: Select and Focus

Demand Side



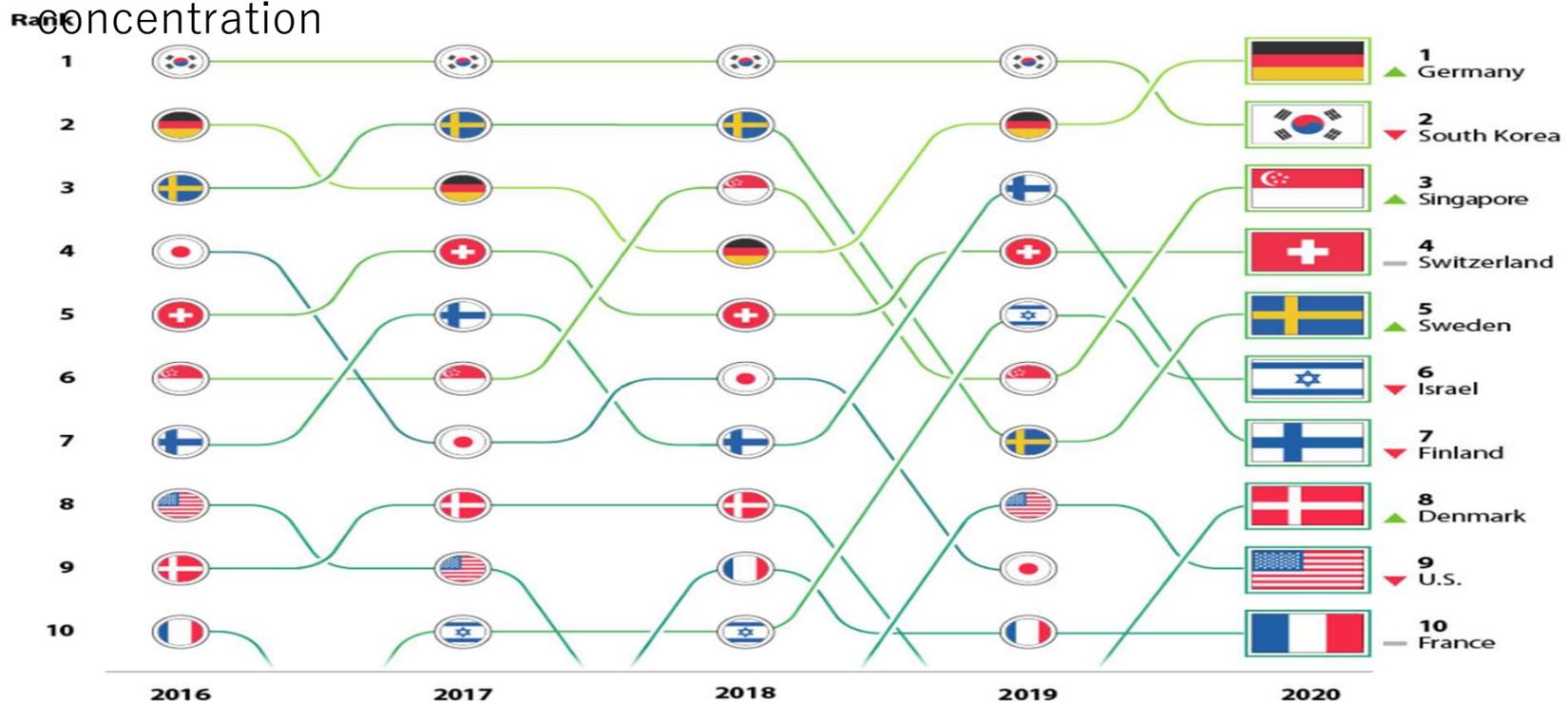
Supply Side

Resource: Seogwon Hwang(2013), STEPI

# Environmental Change

## World's Most Innovative Economies (2016~2020)

- Measured by R&D intensity, Patent activity, **Tertiary efficiency**, Manufacturing value-added, **Productivity**, **High tech density**, Researcher concentration

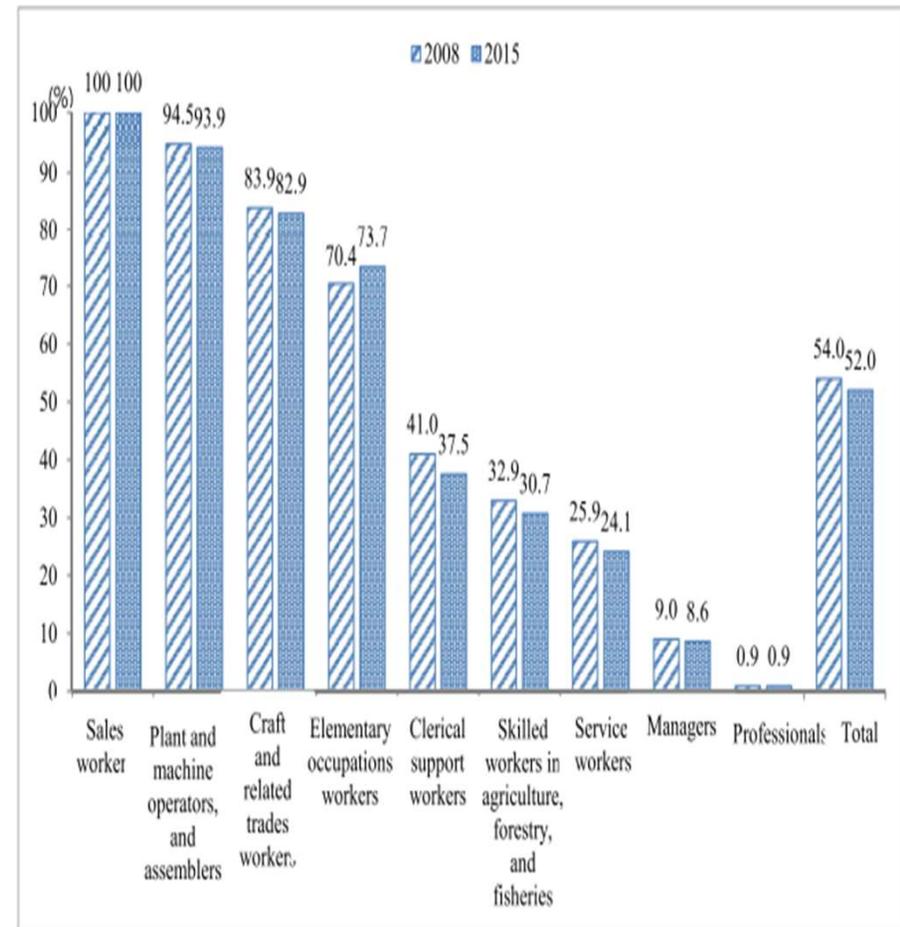


Resource: Bloomberg Innovation Index, [www.visualcapitalist.com](http://www.visualcapitalist.com)(2020)

# Environmental Change

## Changing Job Market with Automation

- When applying the methodology devised by Frey & Osborne(2013) to statistics on South Korea, it shows that **52.0% of the jobs** in South Korea are at **high risk of human labor being replaced with computers** over time with the progress of 4<sup>th</sup> industrial revolution
- Driving services and transportation(81.3%), wholesale and retail trade(81.1%), finance and insurance(78.9%), business facilities management and

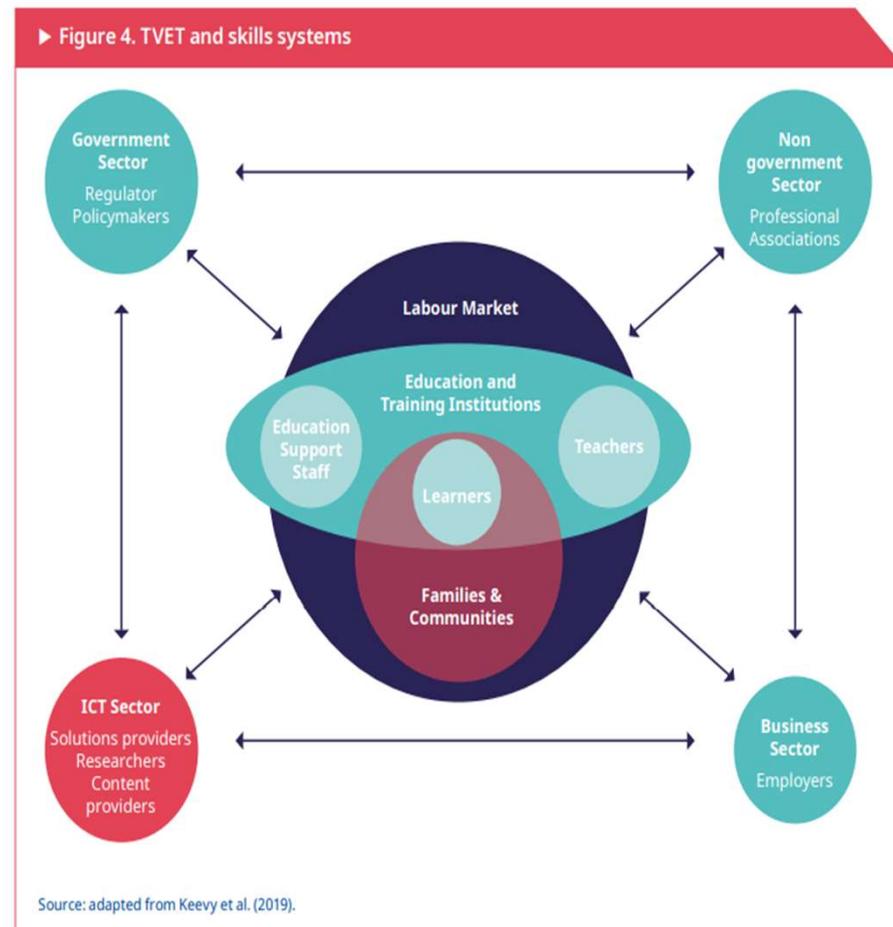


Resource: Hoyoung Oh et al.(2016) KRIVET

# Environmental Change

## Digital transformation in skills systems

- It is useful to think of the role of digital transformation in skills systems, which **involve multi-stakeholder partnerships breaking down competencies into discrete units** that are learned, practices and further developed in a lifelong context across formal education, employment and private life



Resource: ILO UNESCO(2020)

# Environmental Change

## Major Labor Market Indicators (Population aged 15 and over)

	2020.1	2020.2	2020.3	2020.4	2020.5	2020.6	2020.7
Changes in the number of the employed (y-o-y, unit: 10,000 persons)	56.8	49.2	△19.5	△47.6	△39.2	△35.2	△27.7
Number of the employed (Seasonal adjustment, unit: 10,000 persons)	2,750.3	2,752.2	2,684.2	2,650.4	2,665.7	2,673.6	2,680.8
Employment (Seasonal adjustment, %)	61.6	61.6	60.0	59.3	59.6	59.7	59.8
Unemployment (Seasonal adjustment, %)	4.0	3.3	3.8	3.8	4.5	4.3	4.2

Resource: MoEL(2020)

# Environmental Change

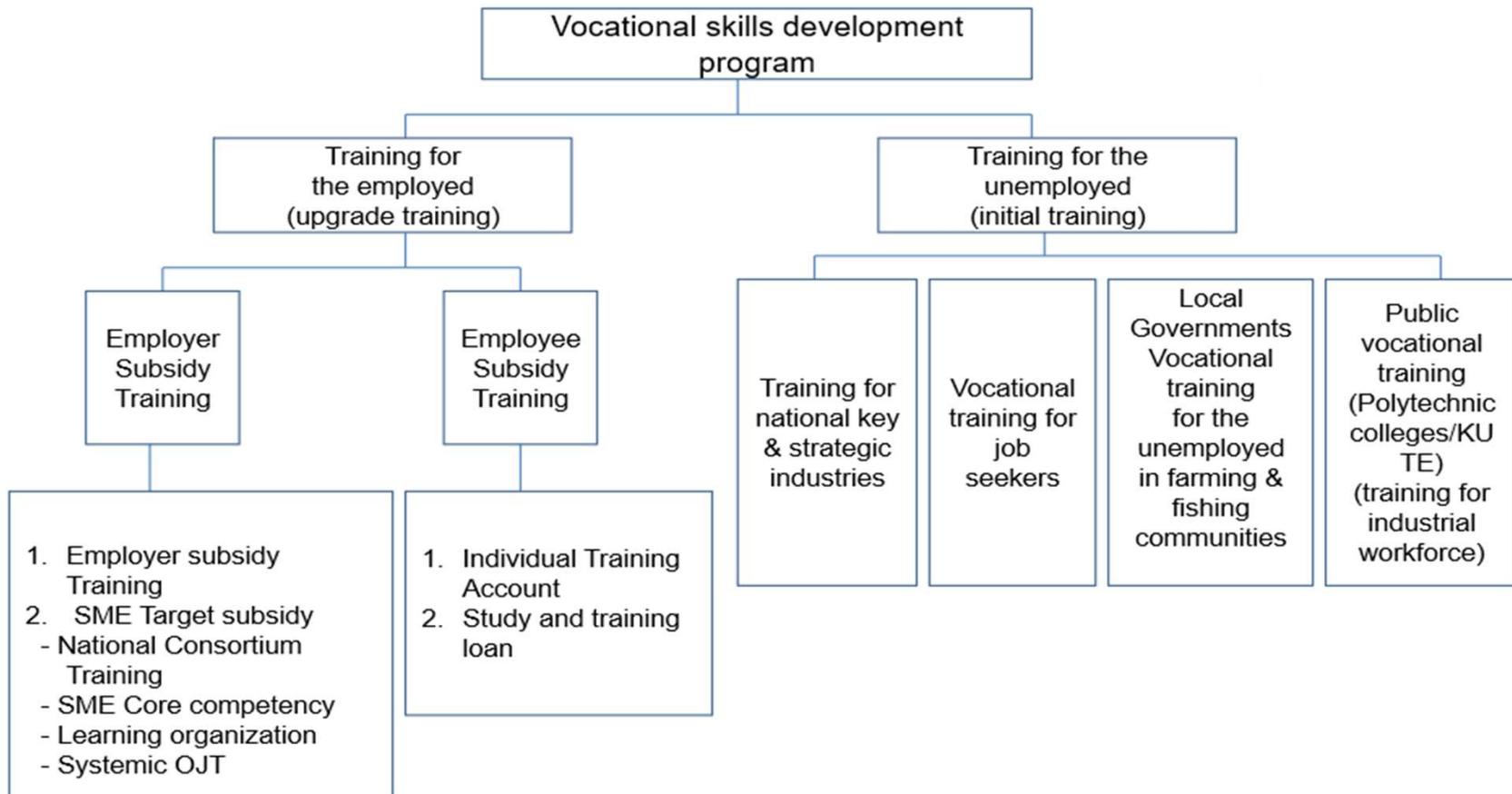
## Chronological overview of vocational education and training



Resource: <http://index.go.kr>

# Improving TVET System

## Skills Development Program in Employment Insurance System



# Improving TVET System

## Reforming the TVET system and policy

- Recently, in **2019**, it launched innovative measures to develop vocational skills responding to the changing labor market
- The purpose of these measures is to lay the foundation to involve people in extensive training programs for new technology areas and provide training opportunities that people can pursue in their lives
- Under the **reform of the vocational skills development Policy(2017)**, the primary goals are to expand vocational training over the course of the lifecycle, up-skill employees, create a market-centered environment, advance infrastructure, and establish a service system for lifelong vocational skills development
- The **Ministry of Education** proposed innovative measures for lifelong vocational education and training based on the basic research entitled **“Policy direction for lifelong vocational education in response to changes in the future society”** in 2018

# Improving TVET System

## Summary of Vocational Skills Development Policy Revision

Category	Innovative measures to develop vocational skills responding to the changing labor market (2019)	Reform of the Vocational Skills Development Policy (2017)	Vocational Skills Development Policy Revision for 4IR (2016)
Basic direction	<ul style="list-style-type: none"> <li>- Laying a foundation to involve people in extensive training programs for new technology areas and provide training opportunities that people can pursue in their lives.</li> </ul>	<ul style="list-style-type: none"> <li>- Expanding vocational training over the course of the lifecycle               <ul style="list-style-type: none"> <li>- Up-skilling employees</li> </ul> </li> <li>- Creating a market-centered environment</li> <li>- Advancing infrastructure</li> <li>- Establishing a service system for lifelong vocational skills development</li> </ul>	<ul style="list-style-type: none"> <li>- Establishing a training system preparing for 4IR</li> <li>- Creating a prompt response system for demand in the market and industries</li> <li>- Engaging in multi-faceted management of the quality of training results</li> <li>- Eliminating blind spots in vocational training</li> </ul>
Innovation tasks	<ul style="list-style-type: none"> <li>- Providing extensive opportunities to have training in new technology areas</li> <li>- Aiding the people to develop lifelong vocational skills</li> <li>- Improving infrastructure to help people develop vocational skills</li> </ul>	<ul style="list-style-type: none"> <li>- Creating an inclusive vocational skill system</li> <li>- Reforming the vocational skill-related environment and infrastructure befitting 4IR</li> <li>- Solidifying social foundations where abilities and competencies are recognized</li> <li>- Reorganizing working groups to build a futuristic vocational skill system</li> </ul>	<ul style="list-style-type: none"> <li>- Expanding training to include occupations in new industrial areas</li> <li>- Decentralizing training supply</li> <li>- Increasing support for high-performing training</li> <li>- Improving the quality of training               <ul style="list-style-type: none"> <li>- Easing time-related restrictions for training in target regions</li> </ul> </li> </ul>

Resource: Cheolhee Kim(2019)

# Improving TVET System

## Promotion of Master Plan for Vocational Skills Development

- It is stipulated that a **master action plan for vocational skills development** shall be **established every five years** in line with methods of developing the vocational skills of employees
- In 2007, the government launched the **1<sup>st</sup> Master Plan for Lifelong Vocational Skills Development**, combined the mid- to long-term vision and government-wide policy tasks for a lifelong vocational development system, followed by the 2<sup>nd</sup> Master Plan in 2012 and 3<sup>rd</sup> in 2017
- **The vision is to build a society where people grow together**, a competency-centered society where people share growth, and a labor-centered society where future leaders are fostered

# Improving TVET System

## Summary of the Master Plan for Vocational Skills Development

Category	1 <sup>st</sup> Master Plan (2007)	2 <sup>nd</sup> Master Plan (2012)	3 <sup>rd</sup> Master Plan (2017)
Vision	A high-skilled society where people grow together	A competency-centered society where people share growth	A labor-centered society realized by fostering a workforce leading the future
Goals	<p>Fostering companies that learn and innovate</p> <ul style="list-style-type: none"> <li>- Nurturing competitive knowledge employees</li> <li>- Creating a vibrant vocational skills development market</li> </ul>	<ul style="list-style-type: none"> <li>- Fostering 200k skilled employees suitable for companies in green, high-tech, and basic industries</li> <li>- Achieving a participation rate of 20% in work-related learning</li> <li>- Expanding support for the underprivileged to develop vocational skills (1.5M people)</li> </ul>	<ul style="list-style-type: none"> <li>- Reforming the vocational skills development system in preparation for 4IR</li> <li>- Invigorating lifelong vocational development for the nation aimed at engagement and social integration</li> </ul>
Implementation Tasks	<ul style="list-style-type: none"> <li>- Developing skills over the course of working life</li> <li>- Developing skills as a universal right</li> <li>- Establishing a market-oriented delivery system</li> <li>- Spreading the culture of competency-oriented systems</li> <li>- Improving implementation systems</li> </ul>	<ul style="list-style-type: none"> <li>- Supporting the growth and innovation of industries and companies</li> <li>- Bringing about the age of open employment and lifelong learning at an accelerated pace</li> <li>- Achieving social integration through skill improvement and tasks assigned</li> <li>- Cultivating a sound training market with synergy between the public and private sectors</li> </ul>	<ul style="list-style-type: none"> <li>- Creating an environment for 4IR vocational training</li> <li>- Developing vocational skills for engagement and social integration</li> <li>- Laying the foundation to invigorate lifelong vocational skills development</li> <li>- Reforming the infrastructure and governance in terms of vocational skills development</li> </ul>

Resource: Cheolhee Kim(2019)

# Improving TVET System

## 4<sup>th</sup> Industrial Revolution leading workforce development project(Ministry of Employment and Labor)

- The project has been **implemented since 2017 in response to 4<sup>th</sup> industrial revolution and supported the development of workforce for areas relevant to new industries and technologies** such as smart manufacturing, IoT, Big data, data security, biometrics, FinTech, unmanned vehicles, immersive content etc.
- In principle, training must be at the **advanced level, i.e., at least at level 5 of the National Competency Standards(NCS)**, with the exception that training programs for new industries without an NSC are allowed if the level of training is proven to be high
- High competencies can be supported by the **amount of less than 400% of the base price of the general training program**, it is mandatory to have trainees **spend at least 25% of their total training hours** on hands-on project experience sessions and ensure that they obtain complex problem-solving skills

# Improving TVET System

## Overview of 4<sup>th</sup> Industrial Revolution leading workforce development

Category	Remarks
Purpose	Operating advanced convergence training programs, developing a high-skilled workforce in new industries and technologies to proactively supply talents in response to changes driven by 4IR
Target	Students graduating from university or any unemployed person with a vocational skills development account
Support	The total amount for training fees* and training scholarship * Supported by the amount of less than 400% of the NCS base training price
Training highlights	<p>Designing and operating an advanced training program, actively reflecting industry demands</p> <p>* (General training) NCS Lv.3-Lv.5 for beginners vs. (4IR training) NCS Lv.5 for advanced trainees</p> <p>Private training institutions are allowed to select trainees at their discretion for an advanced course depending on their own standards.</p> <p>- Maximizing education and training results by selecting outstanding trainees</p> <p>* (General training) Institutions not allowed to select trainees vs. (4IR training) Institutions allowed to select trainees</p> <p>A project-based training system is applied to help trainees obtain complex problem-solving skills* (It is mandatory that the proportion of hands-on project experience sessions exceed 25% of the training program.)</p> <p>* This is a training method through which trainees gain practical work competencies by solving projects that companies assign.</p> <p>Training is provided at private institutions with sufficient training facilities and equipment and expert faculty members.</p>
Future plan	Planning to recruit 4IR-leading training institutions or designate training programs for the fourth round in 2019 (between May and July)

Resource: Sookyong Lee et. al(2019)

# Improving TVET System

## K-Digital Training

(180,000 person, 2021~2025)

- **43 innovative education and training institutions and excellent universities** that young people want to go to are participating
- Digital leading companies that want to work for young people **directly support training course design**
- **Personalized training** allows non-majors to grow into working-level digital workers
- The **government is responsible for the cost** of excellence courses

CONNECT

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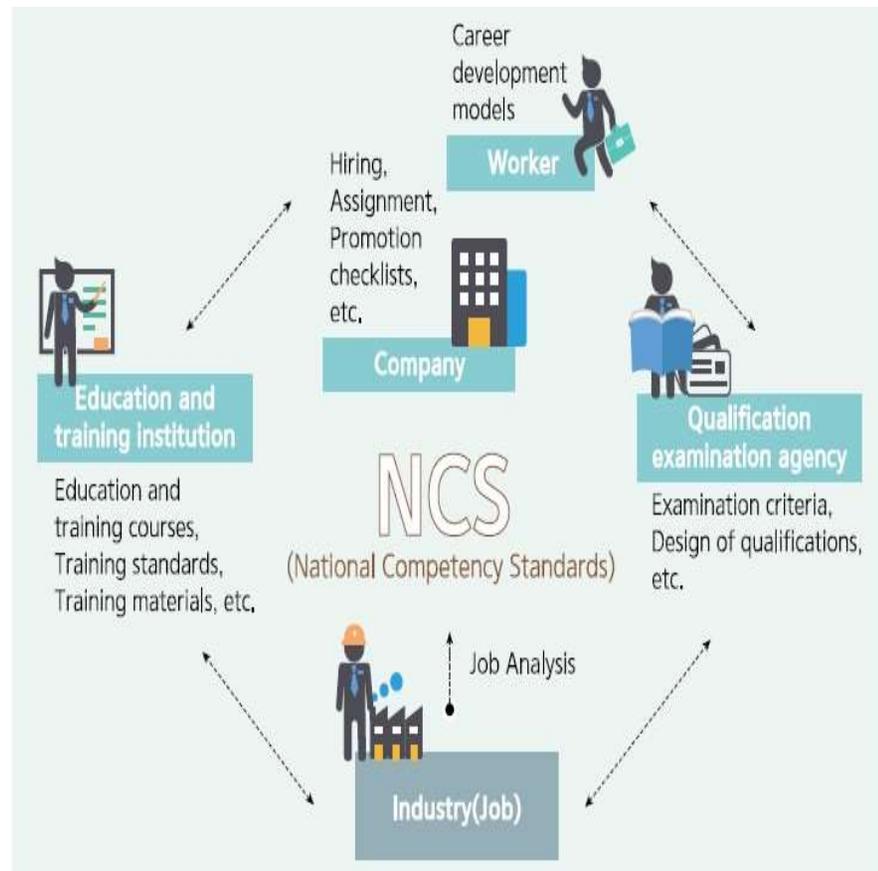
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# New Trend of TVET Policy

## National Competency Standards(NCS)

- NCS refer to competency units, such as **knowledge, skill and attitude required in industrial sites**, which are standardized by industrial sectors and competency levels (Framework Act on Qualification, Article2 Section1)
- The government systematized the competencies that workers need to successfully **perform the tasks in their occupations**
- Necessity of **reforming “Spec-centered”** (Specifications) employment requirements, such as schools, education backgrounds, etc.

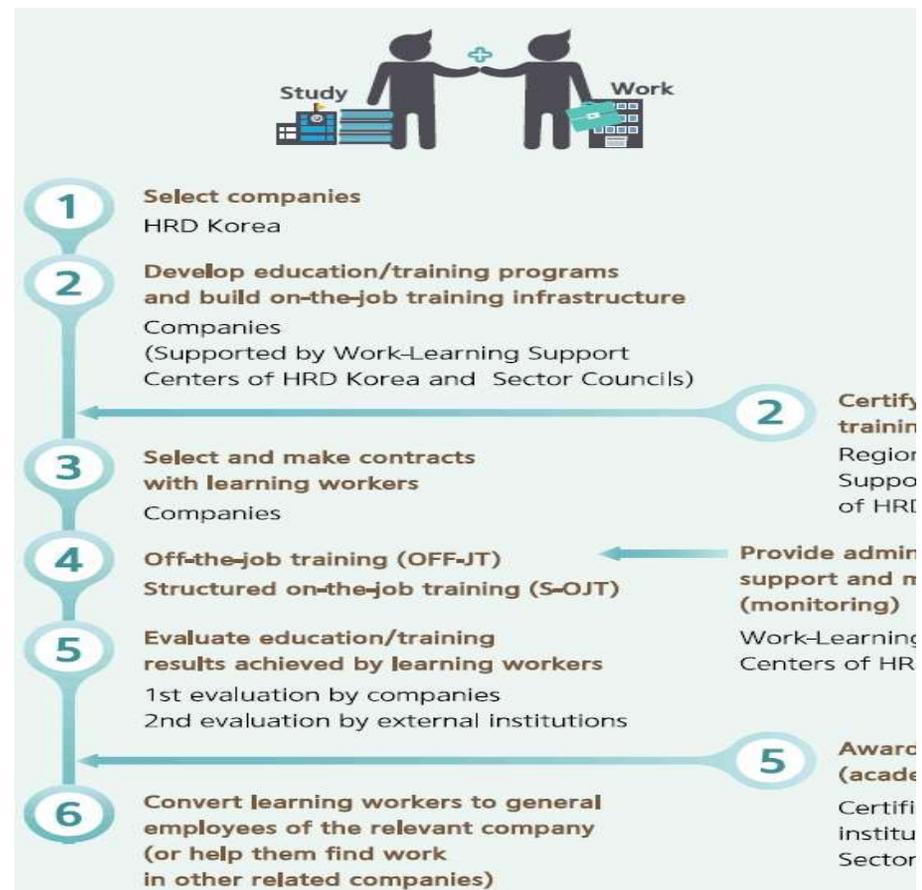


Resource: [www.moel.go.kr](http://www.moel.go.kr)

# New Trend of TVET Policy

## Work-Study Dual system

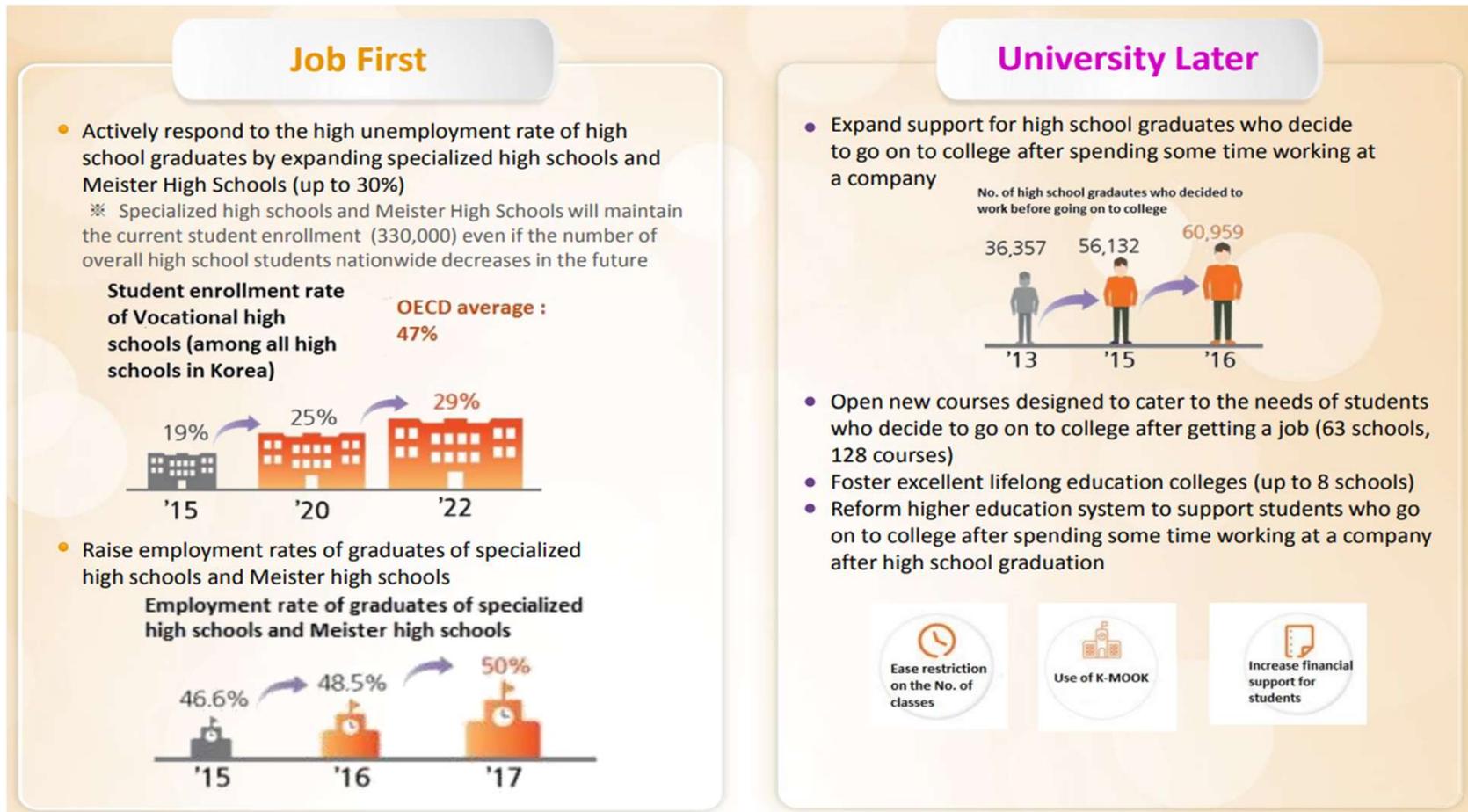
- **Work-based learning** such as **apprenticeship** training systems in Germany, Switzerland and apprenticeships in Australia and the UK
- It is a **demand-oriented education and training system** in which companies hire young people who desire to work and provide **structured theoretical and practical education** to help them acquire job competencies



Resource: [www.moel.go.kr](http://www.moel.go.kr)

# New Trend of TVET Policy

## Job First-University Later



# New Trend of TVET Policy

## History of Meister high school system in Korea

- **In 2007**, the Ministry of Education and Human Resources Development announced the plan on “**Developing Vocational High Schools Realizing Dreams**”, which had the goal of developing core technical human resources with practical skills by enhancing the quality of vocational high schools
- The High School Diversification 300 Project in 2008 and proposed a “**Plan to Develop Korean-Style Meister High Schools**” as a new model for vocational high schools
- The main intention of Meister high schools was to present hopes and visions for professional vocational high school students to grow into **experts in the fields they choose based on their aptitude and interest**
- 21 Meister high schools started operating in 2010. **As of 2020, 52 schools** are designated as Meister high schools, and 51 of them are in operation
- The policy to develop Meister high schools recognized for triggering a **mindset change** about secondary vocational education

# New Trend of TVET Policy

## Policies to develop Korean-Style Meister High Schools and

### Policy Overview

- Government's core vocational education policy as part of the "High School Diversification 300 Project"
- Government to strengthen national support to settle Meister high schools as a model of employment-focused vocational education institution at the high school level

### Implementation strategies

#### 1. Set career path to becoming a Meister

- Identify better military service options for graduates of vocational high schools (delay entry into service by four years if students find employment after graduation)
- Increase access to opportunities to obtain degrees through continued education after finding jobs (special admission for incumbent workers, agreed department or college in the company)
- Promote entry into the global market

#### 2. Regulatory reform for Meister high school education

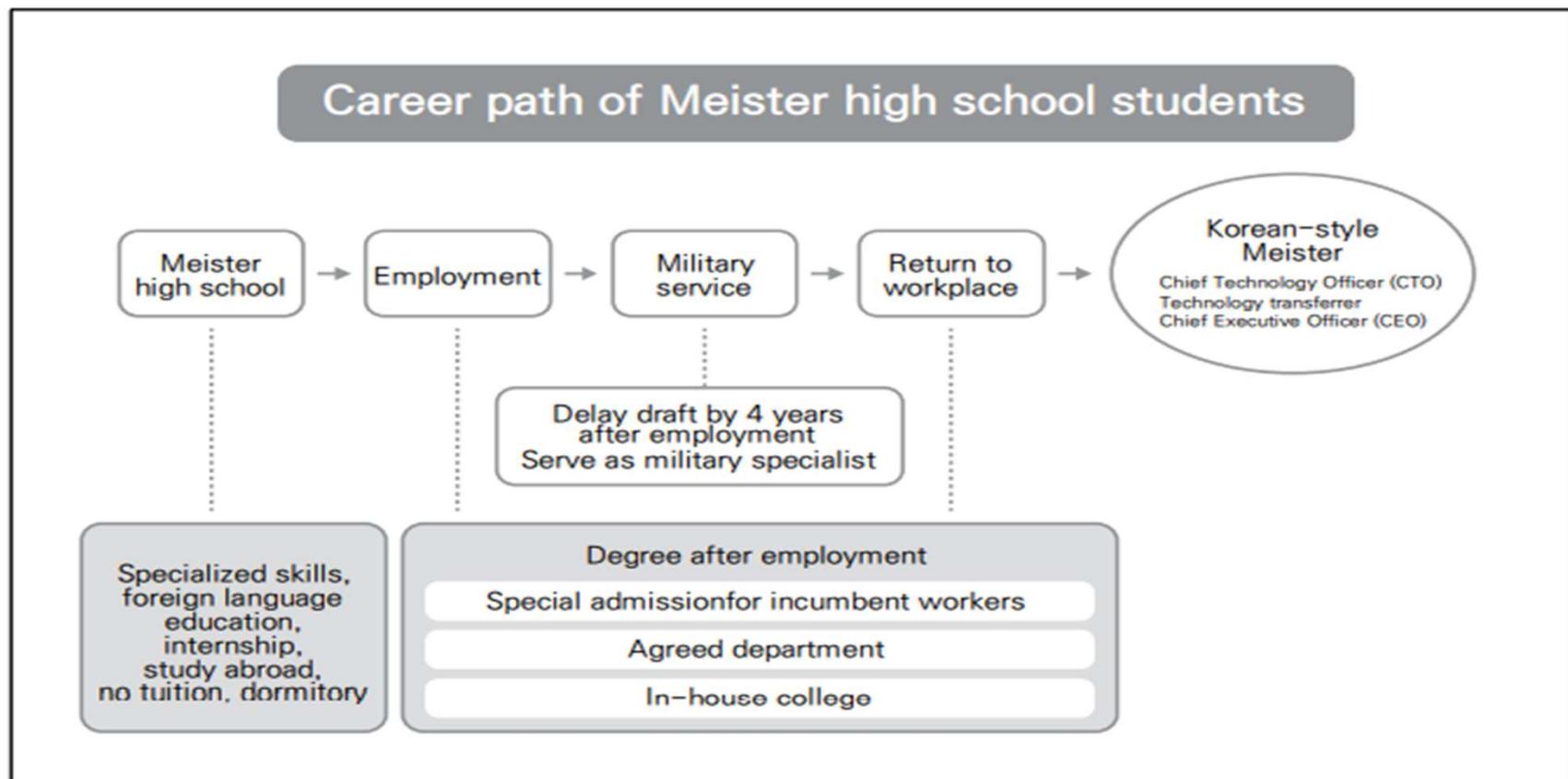
- Give schools full authority to choose curriculum and textbook (through amendment to Enforcement Decree of the Elementary and Secondary Education Act)
- Open recruitment of former corporate executives as principals
- Secure teachers who are Meisters (increase the number of industrial-educational adjunct teachers)

#### 3. National Support

- Exempt Meister high school students from tuition and offer them scholarships
- Offer training (study abroad) opportunities at advanced vocational schools overseas
- Increase infrastructure such as dormitory and practice equipment and materials

# New Trend of TVET Policy

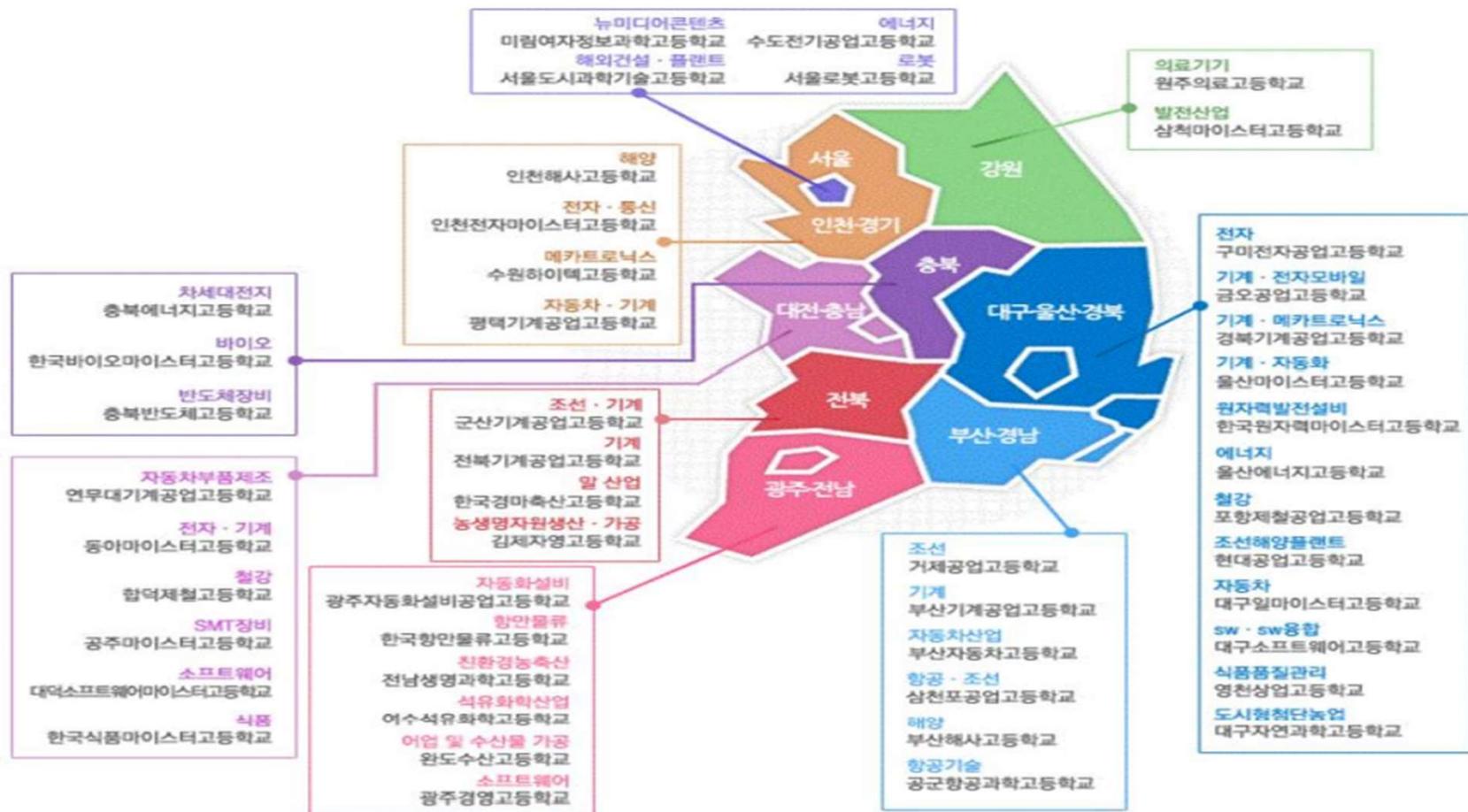
## Career path of Meister high school students



Resource: Jinyoung yu et al.(2020)

# New Trend of TVET Policy

## Map of Meister high schools in Korea



Resource: Juho Lee(2016)

# New Trend of TVET Policy

## Number of Meister high schools and main industrial sectors

Year of school foundation	No. of schools	Max No. of freshmen	Main industrial sector
2010	21	3,490	Energy, machinery, electronics, steel, port logistics, aviation, shipbuilding, etc.
2012	7	850	Maritime, energy, bio, automobile part manufacturing, aviation technologies
2013	7	760	Robotics, green agriculture and livestock, steel, nuclear power generation facilities, petrochemicals
2014	2	112	Horse industry, fishing and fishery processing
2015	4	380	Shipbuilding and maritime plant, automobiles, software, food
2016	2	200	Overseas construction & plant, software & software convergence
2017	3	290	Urban high-tech agricultural business, software, agricultural and bio production and processing
2018	1	60	Food quality control
2019	1	100	Nano-convergence
2020	3	212	Global business, game contents, firefighting
Total	51	6,454	51 schools are in operation

Resource: Jinyoung yu et al.(2020)

# New Trend of TVET Policy

## Companies and Associations with MOU with Meister high schools

Company or Association	Date of MOU	Content of MOU
Samsung Electronics	December 1, 2010	To hire 100 to 200 Meister high school graduates a year, and support curriculum development and industry-educational adjunct teachers
Hyundai Motor Company	March 22, 2011	To hire 1,000 Meister high school graduates over 10 years, support curriculum development and implement technical mentorship programs To hire 1,000 graduates of 9 Meister high schools as regular employees over 10 years (2010-2021)
STS Semiconductor & Telecommunications	July 22, 2011	To hire 40 sophomores from Meister high school and provide customized training
CJ Korea Express	April 9, 2012	To hire 30 students majoring in logistics at Meister high schools each year, provide on-the-job training, employment opportunities, and support after-school activities to develop tailored workforce
Advanced Technology Center Association	June 29, 2012	To collaborate and provide advisory on developing and hiring excellent resources
KICOX Leading Company	October 22, 2015	To provide scholarships to and give priorities to Meister high school students in hiring, provide field trips and on-the-job training
Worldclass 300	April 21, 2016	To promote joint use of training facilities in industry and schools To provide technical support, knowledge exchange To support curriculum and textbook development
INNOBIZ Association	April 14, 2017	Provide on-the-job experience and employment opportunities for Meister high school students Promote long-term employment of Meister high school students

Resource: Jinyoung yu et al.(2020)

# The Way Forward

## Trends for Future

- Education for **computational and statistical** thinking
- Teaching learning method based on **project learning and in-depth learning**
- **Innovation of evaluation method** according to various learning, teaching method
- **Convergence type major education** for fostering human resources suitable for convergent thinking and industry
- IT and statistical competency education for strengthening **data management capability**

## TVET for technology changes

- Cultivating leading human resources in the **new industry and new task**
- **Expansion of new training jobs**; Creation of best practices in the public sector and private proliferation
- Introduction of **new TVET method**; Development and expansion of Virtual Reality generation education contents – Smart education method, modular

# The Way Forward

## Responds to Digitalization

### ➤ Training innovative talent through TVET restructuring

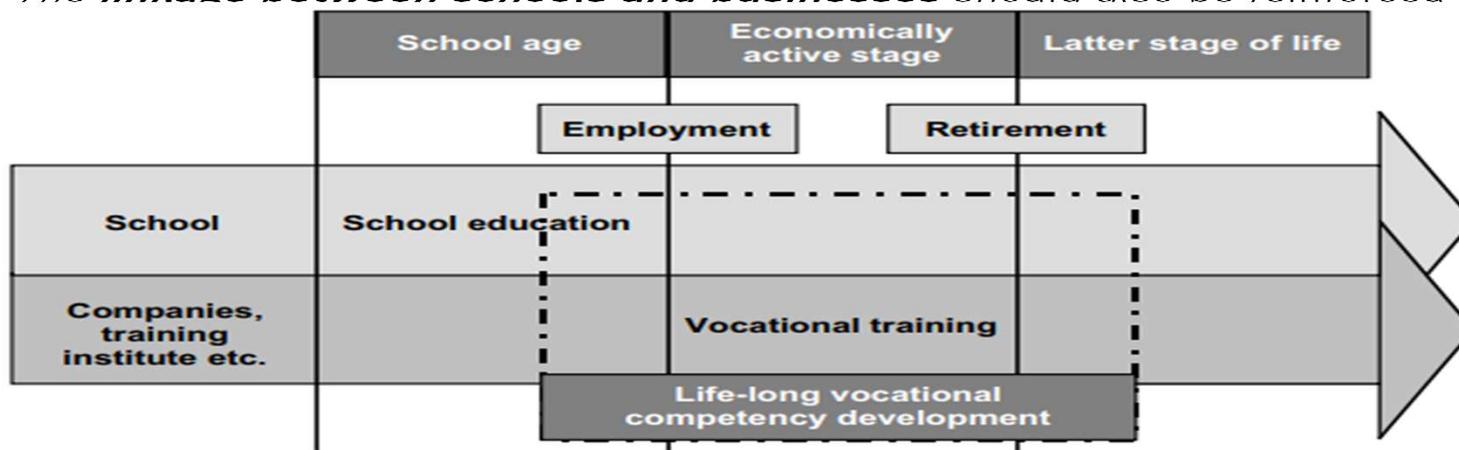
- Essential to have a system that predicts **future jobs and future skills demand** to develop

human resources who can effectively and efficiently respond to different changes

### ➤ Establishing a lifelong vocational TVET ecosystem

- Necessary to consider the establishment of a **lifelong TVET system**

- The **linkage between schools and businesses** should also be reinforced



# The Way Forward

## Construction of TVET platforms

- TVET management system is compatible with a platform economy and where **policy programs can be designed, implemented, and evaluated through open innovation**

## Improvement of TVET infrastructure

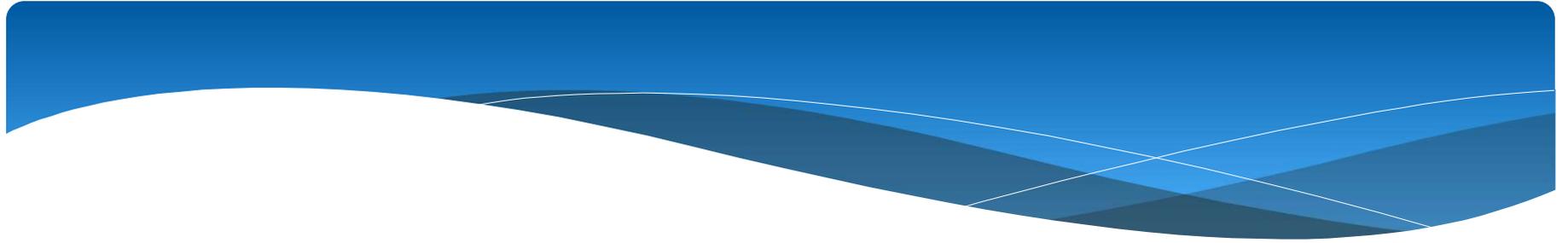
- Advance skill alert system should be established to realize a demand-focused training framework that can provide training programs in response to changing industry demand

## Building a Industry-Academia network

- To build a industry-academia cooperation framework with ISC or Universities, it is imperative to launch and ISC-linked training system, establish the work-learning dual system, and seek quality over quantity in universities on-the-job training

## Enhancing cooperation with higher education and support for startups

- It is necessary to build a system where trainee can participate in education<sub>32</sub> and training programs such as the Marker Movement



Thank you for your attention!

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