



# Meister High School System in Korea

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Ministry of Education



Korea Research Institute for  
Vocational Education & Training



## Preface (President's Message)

Korean society has seen the necessity of establishing a system that enables high school graduates to find decent jobs and continue building their career without having to go to college. Such a system would solve the social problems of excessive pursuit of college education, serious waste of human resources and high unemployment.

Against this backdrop, the Meister high school system was introduced with the aim of ushering in a golden era of high school graduates landing good jobs. In 2010, 21 Meister high schools opened their doors to students. The Meister high school takes its name from the German word “Meister,” which refers to the highest level of professional skills and craft qualifications. The schools live up to their names by nurturing the “Meisters (masters)” that the industry looks for. These high schools teach students practical knowledge so they can perform in the industrial field as professionals immediately upon graduation.

As of 2021, ten years since the introduction of the system, there are 54 designated Meister high schools in Korea, and 52 of them are in operation. Well before the schools opened, the Korean government strived to nurture a core technical workforce with practical skills by enhancing the quality of vocational high schools. To this end, the government pursued policies for continued improvement of vocational education institutions and expanded investment in vocational education. From 2013, when Meister high schools produced the first group of graduates, they boasted

employment rates hovering around 90% for five consecutive years. Amid severely high unemployment in Korean society, Meister high schools stand out as an exemplary model of vocational education at the secondary school level that is backed by the Work-Study Dual Program and the Work First-Study Later scheme.

Korean Meister high schools are also drawing attention from overseas, as exemplified by the signing of international vocational education and training cooperation partnerships; global workplace learning programs in Germany, Switzerland, the US, Australia and the UK international conferences; and field visits to Southeast Asian nations.

As the public research institute for Korea's vocational education and training, Korea Research Institute for Vocational Education and Training (KRIVET) publishes this book with the support of Korea's Ministry of Education.

Chapters 1 and 2 provide an overview and the current status of Meister high schools in Korea, respectively. Chapter 3 provides details about Meister high schools, Chapter 4 introduces national policy support for Meister high schools, and Chapter 5 presents Meister high schools' achievements. Chapter 6 summarizes the previous chapters and suggests improvement measures for the future.

We hope this book deepens the readers' understanding of Korea's Meister high schools, and we appreciate their continued support.

December 31, 2021  
Dr. Jang-soo Ryu  
President, KRIVET



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## List of Acronyms and Abbreviations

<b>DOI</b>	Declaration of Intent
<b>HR</b>	Human resource
<b>IT</b>	Information technology
<b>KRIVET</b>	Korea Research Institute for Vocational Education and Training
<b>MAFRA</b>	Ministry of Agriculture, Food and Rural Affairs
<b>MCST</b>	Ministry of Culture, Sports and Tourism
<b>MND</b>	Ministry of National Defense
<b>MOE</b>	Ministry of Education
<b>MOF</b>	Ministry of Oceans and Fisheries
<b>MOLIT</b>	Ministry of Land, Infrastructure and Transport
<b>MOTIE</b>	Ministry of Trade, Industry and Energy
<b>MOU</b>	Memorandum of Understanding
<b>MSIT</b>	Ministry of Science and ICT
<b>MSS</b>	Ministry of SMEs and Startups
<b>PBL</b>	Project-based learning
<b>SMT</b>	Surface Mount Technology
<b>TP</b>	Techno Parks





## Chapter I

# Overview of Korean Meister High School System

1. History of Korean Meister High School System
2. Meister High School Operating Model







Chapter I

# Overview of Korean Meister High School System

## 1. History of Korean Meister High School System

As the Participatory Government was inaugurated in early 2003 with the ideal of participation and innovation, secondary vocational education entered a new phase. The new government had pledged to improve vocational education institutions during the presidential campaign, and in May 2004, the president himself officially mentioned a plan to “expand investment into vocational education” during a speech at the opening session of the National Assembly. In May of the following year, the Presidential Committee on Education Innovation and Ministry of Education and Human Resources Development announced the Plan for Vocational Education System Innovation, thereby establishing the role and future directions of secondary vocational education. The Plan for Vocational Education System Innovation included expanding and enhancing the quality of specialized high schools. The Presidential Committee on Education Reform proposed a new system to diversify and specialize high school education, and specialized schools began to open in 1998. 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. To achieve this goal, the plan envisaged turning 500 vocational high schools into specialized high schools for different industrial sectors by 2021, in order to help these schools take root in various fields.

However, despite these policy changes, vocational high schools faced challenges in attracting good students due to concerns about career stability after graduation. The biggest issues included vocational high schools' identity crisis, characterized by industry-school partnerships and students avoiding employment right after graduation. Poor treatment by companies in terms of compensation and work conditions made students hesitant to land jobs and blindly seek a college education. Specialized high school graduates showed a high college entrance rate, 73.5%, but a very low employment rate, 16.7% (Statistical Yearbook of Education, 2009). Also, students did not have confidence in their career paths due to perfunctory industry-school partnership programs that failed to render them skillful and employable, and companies were reluctant to hire high school graduates who had not finished Korea's mandatory military service. Also, students were not happy about getting jobs for short-term, trivial tasks. The average monthly income of high school graduate employees back then was only about KRW 1 million (Korean Education & Employment Panel, 2017).<sup>1)</sup> To solve these problems, the Lee Myung Bak administration announced 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

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1) Jang Myung Hee, Information Package, 2020 Special Training for Newly Appointed Principals of Meister High Schools, June 4, 2020. Page 38

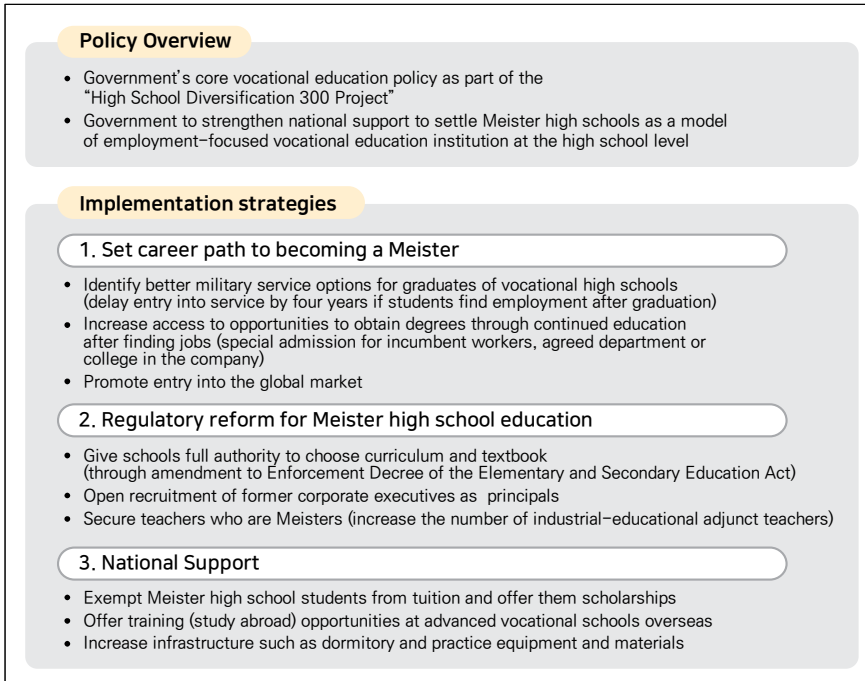


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present hopes and visions for professional vocational high school students to grow into experts in the fields they choose based on their aptitude and interest. In other words, high-performing vocational high schools that empower students to develop their careers through good jobs and to pursue college degrees while working would be transformed into Meister high schools. The main ideas behind this policy included ① Career path of Meister high school students, ② regulatory reform for Meister high schools, and ③ national support. Figure 1 shows strategies for developing and operating Korean-style Meister high schools.



[Figure 1] Policies to Develop Korean-Style Meister High Schools and Implementation Strategies



Source: Jang Myung Hee, Information package, 2020 special training for newly appointed principals of Meister high schools, June 4, 2020, page11

Based on this policy direction, 21 Meister high schools started operating in 2010. As of 2021, 54 schools are designated as Meister high schools, and 52 of them are in operation. The policy to develop Meister high schools is recognized for triggering a mindset change about secondary vocational education. It is deemed a success thanks to the close industry-school cooperation and customized curriculum. Since opening their doors, Meister high schools have achieved employment rates of more than 90% for five years, and human resources managers have highly appreciated the



performance of Meister high school graduates. (Korea Research Institute for Vocational Education and Training, 2017, 119-122)

## 2. Meister High School Operating Model

Amid this change, the Korea Research Institute for Vocational Education and Training (KRIVET) has served as the core research agency for executing Meister high school-related policies and providing field support. Since the Center for Meister High School opened at the research institute in 2009, KRIVET has made the following efforts to ensure the stable operation of the Meister high school system and control its quality.

First, KRIVET supports the selection of Meister high schools and preparation for opening of the schools. It helps identify new Meister high schools through the Meister high school selection program and provides consulting about how schools can take root after they open.

Second, for performance management of the Meister high schools, KRIVET helps schools secure educational excellence through continuous monitoring and consulting. It hosts progress check meetings for all Meister high schools four times a year, and it closely follows each school's operation through annual evaluations for the first three years. It also helps schools establish a second-phase mid-to long-term development plan, by supporting the five-year operation performance evaluations and providing advisory based on the evaluation results.

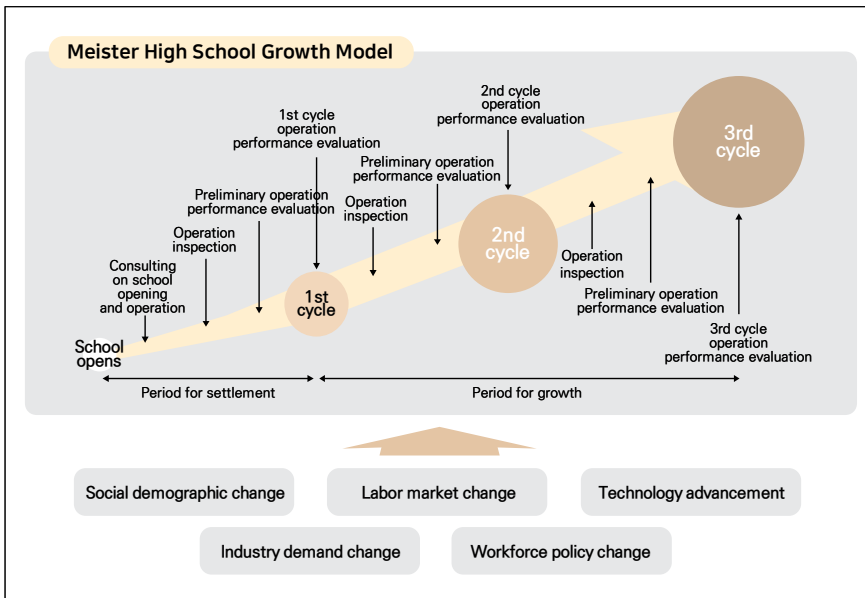
Third, KRIVET builds and runs each Meister high school's website, promoting the school system to the public and assisting performance management.



Fourth, KRIVET conducts research and training to develop competencies of Meister high school teachers. It builds their teaching competencies by identifying and disseminating project-based learning examples and helping build the competency of incoming principals and supervisors at metropolitan and provincial offices of education as well as Meister Directors.

Fifth, KRIVET continues to study policies on development and system improvement of Meister high schools, and it supports curriculum development as part of the school opening preparations and development of a graduate certification system (Korea Research Institute for Vocational Education and Training, 2017, 119–122). This operation model is captured in Figure 2.

[Figure 2] Meister High School Operation Performance Management Model (Draft)







Meister high school operation methods according to the Meister high school growth model are explained in Table 1.

**<Table 1> Meister High School Operation Methods**

Item	Details
Student recruitment	Students with high growth potentials are recruited nationwide, considering their aptitude and talent.
School operation	<ul style="list-style-type: none"> <li>- Open recruitment system for school principals guarantees the principal's responsible operation of the school.</li> <li>- Meisters from the industry can be hired as principals or teachers.</li> <li>- Curriculum should be flexible to meet industry needs.</li> <li>- Practical foreign language teaching is provided to help students study and find jobs abroad.</li> <li>- A class should have about 20 students.</li> <li>- Quality of education is ensured by the 5-year re-certification system.</li> <li>- Schools should use equipment, tools and materials that meet the standards of the industrial field.</li> </ul>
Student support	<ul style="list-style-type: none"> <li>- Students are exempted from paying tuition, entrance fee, and school operation fee.</li> <li>- Students from low-income families or high performing students can benefit from additional scholarships.</li> <li>- Students can participate in study abroad programs at vocational schools overseas, or various globalization programs at the national or local government levels.</li> <li>- Schools offer comfortable dormitory accommodation to help students focus on learning.</li> </ul>
Employment	<ul style="list-style-type: none"> <li>- Schools work with companies and local governments throughout the entire school operation, to help students land decent jobs.</li> </ul>
Military service	<ul style="list-style-type: none"> <li>- Those whose employment is confirmed can delay military service for up to four years.</li> <li>- Graduates can serve in their fields of expertise.</li> <li>- Graduates can serve as Skilled industrial Personnel if they are employed by SMEs.</li> </ul>
Pursuing work and college in parallel	<ul style="list-style-type: none"> <li>- After employment, graduates can receive higher education linked to their work experience, through special admission for incumbent workers, agreed department or college in the company, etc.</li> </ul>

Source: Korea Research Institute for Vocational Education and Training, <Meister High Schools of Technical Powerhouse Korea> leaflet

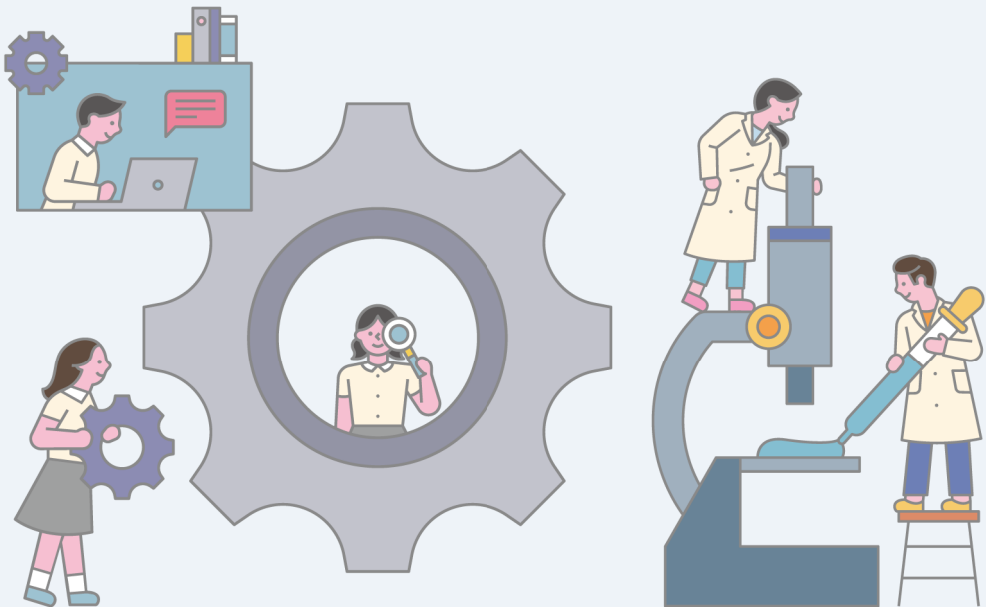




## Chapter II

# Current Status of Korean Meister High School System

1. Current Status of Korea's High School System
2. Current Status of Korean Meister High School







## Chapter II

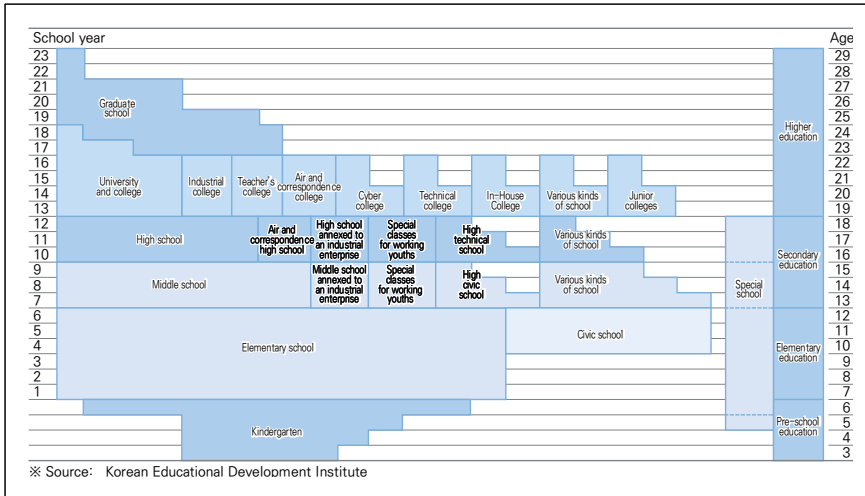
# Current Status of Korean Meister High School System

### 1. Current Status of Korea's High School System

A Meister high school is defined as a high school tailored to industrial demand, according to Article 90, Paragraph 1, Item 10 of Korea's Enforcement Decree of the Elementary and Secondary Education Act. More specifically, it is a "high school providing tailored curricula directly connected to the demand of industry for development of professional vocational education." Among Korea's high schools, specialized high schools and high schools tailored to industrial demand (Meister high schools) are classified as vocational high schools. Vocational high schools refer to all schools whose objective is to train experts in particular industrial fields. Figure 3 depicts Korea's overall educational system.



[Figure 3] Korea's School System<sup>2)</sup>



As shown in the Figure above, Korea's school system consists of six years of elementary school, three years of middle school, and three years of high school, followed by higher education. High schools are divided into general and vocational high schools. Table 2 captures the status of vocational high schools according to the educational statistics announced in 2019 by the Ministry of Education (MOE) and Korean Educational Development Institute.

2) EduinNews, <https://www.eduinnews.co.kr/news/articleView.html?idxno=8473> (Searched on August 20, 2020)



## Meister High School System in Korea

<Table 2> Status of Korea's Vocational High Schools (2020) ( : No., %)

Year	No. of schools				
	All high school	Specialized high school	Meister high school	Rate of Specialized high school(%)	Rate of Meister high school (%)
2015	2,344	498	40	21.2	1.7
2016	2,353	497	42	21.1	1.8
2017	2,360	491	45	20.8	1.9
2018	2,358	490	46	20.8	2.0
2019	2,356	489	47	20.8	2.0
2020	2,367	489	50	20.7	2.1

Source: Korean Educational Development Institute. Statistical Yearbook of Education (2020)

As of 2020, there were 2,367 high schools in Korea, and the number of Meister high schools and (vocational) specialized high schools combined is 539, accounting for 20.7% of all high schools.

<Table 3> Current Status of Vocational High Schools by Field of Study

Classification		Engineering	Agricultural and bio	Commercial and information	Fishery and marine	Home economics and business	Total
Meister high school	No. of schools	33	7	2	3	2	47
		70.2%	14.9%	4.3%	6.4%	4.3%	100.0%
	No. of students	14,014	1,622	469	1,059	590	17,754
		78.9%	9.1%	2.6%	6.0%	3.3%	100.0%
	No. of students per class	18.9	16.7	19.6	18.4	19.7	18.6
No. of students per teacher	6.5	5.3	6.4	6.8	6.0	6.3	



Classification		Engineering	Agricultural and bio	Commercial and information	Fishery and marine	Home economics and business	Total
Specialized high school (vocational)	No. of schools	194	36	177	7	52	466
		41.6%	7.7%	38.0%	1.5%	11.2%	100.0%
	No. of students	103,978	12,632	88,137	1,499	21,085	227,331
		45.7%	5.6%	38.8%	0.7%	9.3%	100.0%
No. of students per class	20.5	18.6	20.2	15.9	20.9	20.2	
No. of students per teacher	8.5	7.4	8.9	6.4	8.8	8.6	
Total	No. of schools	227	43	179	10	54	513
		44.2%	8.4%	34.9%	1.9%	10.5%	100.0%
	No. of students	117,992	14,254	88,606	2,558	21,675	245,085
		48.1%	5.8%	36.2%	1.0%	8.8%	100.0%

Source: Korean Educational Development Institute. Educational Statistics Service (as of April 1, 2019)

The average number of students per class is 18.9 at Meister high schools and 20.5 at specialized high schools. The average number of students per teacher is 6.5 at Meister high schools, about 2 students fewer than at specialized high schools (8.5). A closer look at the status by field of study shows that, of the 47 Meister high schools, 33 are engineering schools, accounting for 70.2%. Of the specialized high schools, 41.6% are engineering schools and 38.0% are commercial and information schools, which are the two main fields of study.

Of the Meister high schools, agricultural and bio schools have the lowest number of students per class and per teacher, while of the specialized high schools, fishery and marine schools show the lowest numbers for these two indicators.<sup>3)</sup>

3) Kim Seoungnam, Kim Namhee, Vocational High Schools' New Online Semester amid COVID-19 and Major Issues, Korea Research Institute for Vocational Education and Training, Issue Paper 2020-03, page 2-3





## 2. Current Status of Korean Meister High School

The 2008 policy on developing Meister high schools was implemented as part of the High School Diversification 300 Project, and the Plan to develop Korean-Style Meister High Schools was established in July 2008, focusing on national and regional strategic industries. As a result, the first selection of nine schools was designated in 2008, followed by 12 schools in the second selection in 2009. Two schools were added in the 15<sup>th</sup> selection in 2018, followed by one more school in the 16<sup>th</sup> selection in 2019. As of 2020, 52 schools are designated as Meister high schools. As mentioned earlier, Meister high schools are defined as “high schools providing tailored curricula directly connected to the demand of industry, for the development of professional vocational education.” They are special purpose high schools nurturing Young Meisters with a link to specialized industrial needs in promising sectors. As schools providing the best skill-centered education to foster Young Meisters, they are characterized by opportunities for “good employment after graduation, military service in the field of expertise, pursuing work and college at the same time.” Figure 4 describes a Meister high school graduate’s career path to becoming a Meister.



[Figure 4] Career Path of Meister High School Students

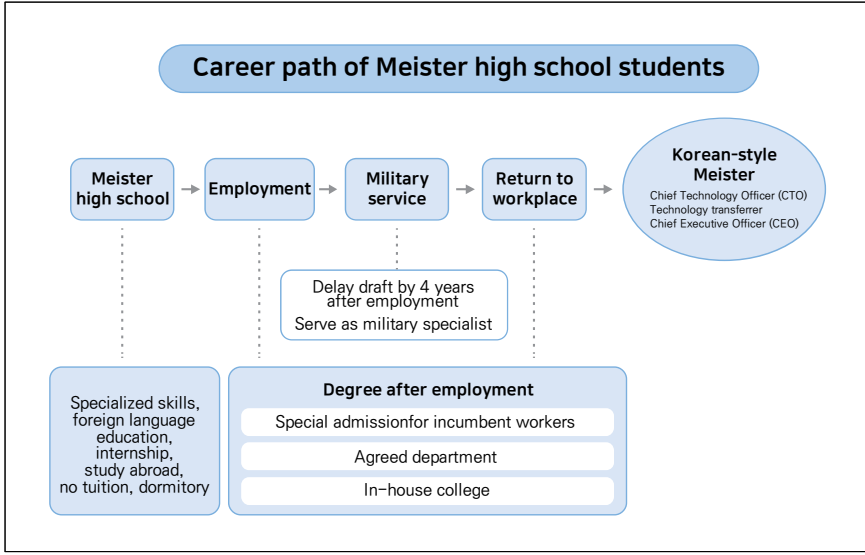


Table 4 is a summary of the number of Meister high schools, the maximum number of freshmen, and main industrial sectors tracked since 2010.

<Table 4> 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

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Year of school foundation	No. of schools	Max No. of freshmen	Main industrial sector
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
2021	1	64	Busan Software Meister High School
Total	52	6,518	52 schools are in operation

\* Six national schools, five private schools and 40 public schools

Since the first group of schools opened in 2010, new schools were designated as Meister high schools each year until 2021, and the sectors the schools specialize in have been diversified according to changing industry needs. Since the main characteristic of Meister high schools is that they provide a curriculum tailored to industrial demand, they can teach students according to the needs of industry by developing and operating a curriculum based on occupation analysis, exerting significant authority in curriculum and textbook use, and offering classes customized to corporate needs among other things. Also, the schools hire field experts as teachers or principals and fill up to one-third of their teacher positions with industrial-educational adjunct teachers. Students are recruited from across the country. They are exempted from paying the tuition, admission, and school operation fees and are offered dormitory accommodations.<sup>4)</sup> Table 5 shows the status of all Meister high schools in Korea, classified by their industrial sector.

<sup>4)</sup> Meister High School Advancement Plan, October 2016



**<Table 5> Current Status of Meister High Schools in Industrial Sector (As of 2021)**

Classification	Name of School	Designated field	No. of students
Machinery and metal	Gyeongbuk Machinery Technical High School	Machinery and mechatronics	283
	Gwangju Automatic Equipment Technical High School	Automation equipment	72
	Gunsan Mechanical Technical High School	Shipbuilding and Machinery	112
	Daegu iL Meister High School	Automobile	118
	Busan National Mechanical Technical High School	Machinery	254
	Busan Automobile High School	Automobile	95
	Seoul Robotics High School	Robotics	151
	Yeonmudae Technical High School	Automobile part manufacturing	75
	Ulsan Meister High School	Machinery and automation	108
	Cheonbuk Mechanical Technical High School	Machinery	226
	Pyeongtaek Mechanical and Technical High School	Automobile and machinery	159
	Pohang Jecheol Technical High School	Steel	181
Hapduk Steel High School	Steel	76	
Electric and electronics	Gongju Meister High School	Electric and electronics	63
	Gumi Electronic Technical High School	Electronics	223
	Kumoh Technical High School	Machinery and electronic mobile	200
	Dong-ah Meister High School	Electronics and machinery	200
	Suwon Hi-tech High School	Mechatronics	154
	Wonju Medical Equipment Technical High School	Medical equipment and bio	107
	Incheon Electronic Meister High School	Electronics and communication	126
	Chungbuk Semiconductor High School	Semiconductor equipment	118
	Korea Nano Meister High School	Nano convergence	94
Energy and chemistry	Samcheok Meister High School	Electricity generation	55
	Sudo Electric Technical High School	Energy	206
	Yeosu Petrochemical High School	Petrochemical	91
	Ulsan Energy High School	Energy	120
	Chungbuk Energy High School	Next-generation battery	74
	Korea Nuclear Meister High School	Nuclear power facility	77



## Meister High School System in Korea

Classification	Name of School	Designated field	No. of students
IT & software	Mirim Girls' Information Science High School	New media content	226
	Gwangju Software Meister High School	Software	73
	Daegu Software High School	SW and SW convergence	58
	Daedeok Software Meister High School	Software	80
	Busan Software Meister High School	Software	64
Agriculture and fishery, bio and food	Gimje Meister High School for Agricultural and Life	Agricultural and bio production and processing	87
	Daegu Agricultural Meister High School	Urban high-tech agricultural business	117
	Wando Fisheries High School	Fishing and fishery processing	69
	Jeonnam Life Science High School	Green agriculture and livestock	89
	Horseman High School	Horse industry	29
	Korea Bio Meister High School	Bio	112
	Korea Food Meister High School	Food	45
	Gyeongbuk Food Science Meister High School	Food quality control	55
Maritime	Busan National Maritime High School	Maritime	151
	Incheon National Maritime High School	Maritime	117
Aviation and shipbuilding	Geoje Technology High School	Shipbuilding	136
	Air Force Aviation Science High School	Aviation technology	150
	Samchunpo Technical High School	Aviation and shipbuilding	95
	Hyundai Technical High School	Shipbuilding maritime plant	114
Port logistics	Korea Port Logistics High School	Port logistics	87
Construction	Seoul Urban Science Technical High School	Overseas construction and plant	118
Firefighting	Korea Fire & Safety Meister High School	Firefighting	75
Global business	Korea Global Business Meister High School	Global business	57
Game	Gyeonggi Game Meister High School	Game contents	67
Total			6,089

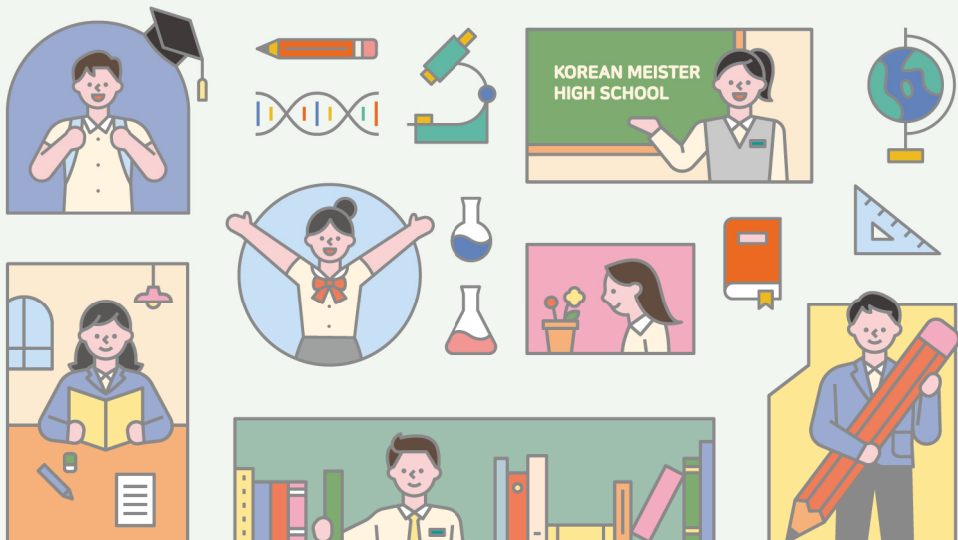




## Chapter III

# Development and Operation of Korean Meister High School Program

1. Developing Curriculum Tailored to Industry Demand
2. After-School Programs
3. Promotion of Project-Based Learning (PBL)
4. Graduate Certification System
5. Dormitory Accommodation
6. Promotion of Industry-School Cooperation









## Chapter III

# Development and Operation of Korean Meister High School Program

## 1. Developing Curriculum Tailored to Industry Demand

Meister high schools have established a curriculum operation system to nurture creative talents tailored to industrial demand, in accordance with the Enforcement Decree of the Elementary and Secondary Education Act. There are two major purposes of this curriculum operation: to nurture creative, convergence-type talents capable of actively responding to changes in the industrial environment and technologies; and to meet the demand of industry for good human resources through an objective mechanism of verifying graduates' competencies. The mismatch between school and industry can be resolved with a flexible curriculum system in which a curriculum is developed and operated to actively meet the rapidly changing needs of industry. For this, a tentatively called Industry-School Cooperation Committee\* is set up to meet regularly to reflect the changing industry demand to the school curriculum by frequently reviewing the types of talents that need to be nurtured and the curriculum's fit for the industry needs.

The Industry-School Cooperation Committee consists of representatives of companies that benefit the schools' talent development

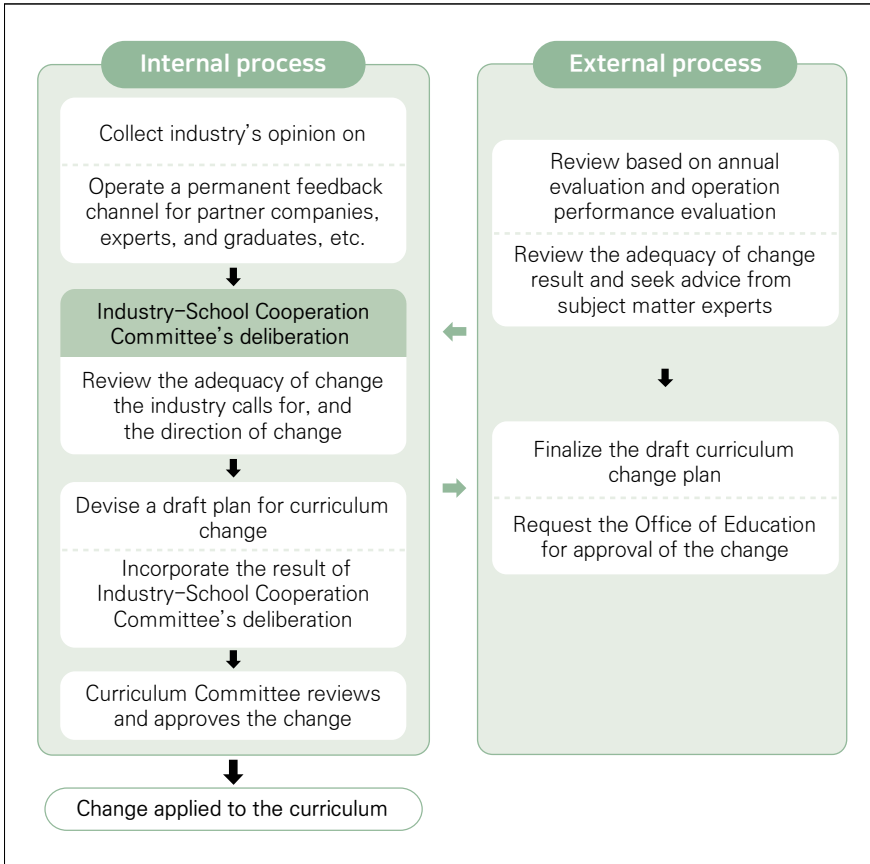


goals and experts capable of responding to changes in industry needs. As an example of reflecting changes in industry needs in a school curriculum, when the shipbuilding industry witnessed a decrease in workforce demand due to the recession in the sector, the school curriculum was changed to shift the fields of study from vessel electricity to electricity and power generation. However, to execute a change from the initial sector in the Meister high schools' designation (e.g., machinery to electronics), deliberation by the Committee on Designation and Operation of High Schools Tailored to Industrial Demand is mandatory (Amendment to Designation and Operation of Special Purpose High Schools). The Committee reviews this change with consideration of the intention of the designation and national talent development strategies. In general, when local offices of education request approval for a change of sectors (closing or opening new school departments), the committee, which operates under the Ministry of Education notifies the ministry of their decision after a deliberation process.

Table 6 shows an outline of the curriculum change procedures at Meister high schools.



[Figure 5] Curriculum Change Procedure at Meister High Schools



## 2. After-School Programs

Meister high schools have been offering after-school programs in off-class hours. The after-school programs, which are offered in various forms have evolved into different models and are in active operation nationwide. The programs strengthen the educational



effect by being aligned with the official curriculum and tapping into various community resources.<sup>5)</sup> A satisfaction level survey conducted with 21 Meister high schools that opened in 2010 recorded 5.39 points out of 6, showing that more than 89% of students are satisfied with after-school programs. (as of 2019)<sup>6)</sup>

A recent survey on students' participation in after-school programs at Meister high schools that opened in 2019 showed that 100.0% of students are taking part in the programs. Students also showed overall satisfaction with the benefits of taking part in after-school programs. Students at Meister high schools that opened in 2019 hoped to see more programs in experiments in the fields of their study, certificates, foreign language, arts and sports, and employment (occupational experience, interview preparation), among other things. They especially called for new programs related to their fields of study. (Kim Seoungnam et al., 2019, 123)

**<Table 6> Benefits and Satisfaction with After-School Programs Expressed by Students at Meister High Schools Opened in 2019 (out of 5)**

Classification		Benefit*	Satisfaction level**
Meister school A	(n=50)	Average	3.12
		Standard deviation	1.081
			3.16
			1.037

Note: \* Scale: 1=Not beneficial at all, 2= Not beneficial, 3=Neutral, 4=Beneficial, 5= Very beneficial

\*\*Scale: 1=Very unsatisfied, 2=Unsatisfied, 3=Neutral, 4=Satisfied, 5=Very satisfied

5) Ministry of Education, Model connecting school curriculum and after-school programs, [https://happyedu.moe.go.kr/happy/bbs/selectHappyArticle.do?bbsId=BBSMSTR\\_000000000211&nttlId=9780](https://happyedu.moe.go.kr/happy/bbs/selectHappyArticle.do?bbsId=BBSMSTR_000000000211&nttlId=9780) (searched on August 20, 2020)

6) Source: A survey conducted on 21 Meister high schools opened in 2010 is summarized. KRIVET internal data as of 2019

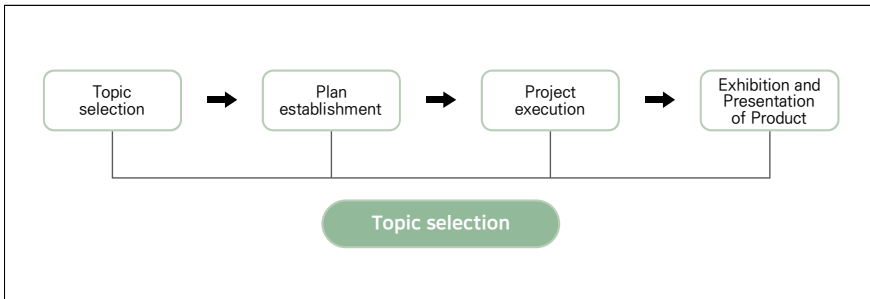


### 3. Promotion of Project-Based Learning (PBL)

Meister high schools offer PBL as part of their curriculum to nurture creative, convergence-type talents. PBL is aimed at promoting project teaching and learning to build students: “ability to identify and solve problems on their own.”

“Project” is a concept that refers to the producing meaningful products through the teachers and students’ teaching-learning process. Student-oriented teaching to achieve the learning goals in this process is called project-based learning. Figure 5 depicts the usual process of PBL. Students first select the topic for their product, make plans to complete the product, work on the project based on the plans, exhibit the product as the output of the project, and deliver a presentation.

[Figure 6] Procedures of Project-Based Learning



For students to follow this process successfully, they need their teacher to be involved from the beginning to the end of the class, suggesting creative ideas and thorough plans for the class, and providing coaching when necessary. An adequate level of coaching and participation in students’ projects is the least support the



teacher can offer to help the students or student groups build the capacity to finish their projects.<sup>7)</sup>

❖ Each group searches for and select their project → defines roles and responsibilities → engages in discussion and works on the project, utilizing school clubs as necessary → final presentation Through this process, students build communication skills, judgment, and confidence as Young Meisters.

To support and promote PBL, a conference to present the best practices of PBL is held every December to develop the teaching-learning competencies of Meister high school teachers. Also, at the Contest for Advancement, a contest on the best practices of school management and teaching-learning at specialized high schools and Meister high schools, a project-based learning research topic has been newly added. To share good examples and spread this type of class widely, a faculty of PBL developers and experts provide training for teachers of specialized subjects. Following are examples of PBL in 2019.

**<Table 7> Case of Project-Based Learning in 2019**

Year	Project topic	Applicable subjects	School
2019	Creating an urban orchard using environment control sensors (Subtitle: We make our own orchard in the city)	New fruit species cultivation project, complex environment control, practical pomology	Daegu Agricultural Meister High School
	Joseon Tongsin's sea route recreated through simulators and sequence control * Joseon Tongsin's: Korean missions to Japan during the Joseon Dynasty	Korean history, navigation, vessel electric and electronics	Busan National Maritime High School

7) Case study of teaching-learning competency building of Meister high school teachers, 2019. KRIVET



## Meister High School System in Korea

Year	Project topic	Applicable subjects	School
	Making toys for fun and skill-building (Making my own movable toys)	Project field practice, machinery component design, machine tool, computer-based manufacturing	Gumi Electronic Technical High School
	End game (Subtitle: Check the black box of the sea!)	Navigation basics, NCS navigation, admiralty law, vessel operation, maritime English	Incheon National Maritime High School
	Integrated steel mill	Mechanical drawing, ironmaking, steelmaking, hot rolling, electric circuit, electronic and mechanical control, electronic and mechanical theory, mechanical structure and function, electronic circuit	Hapduk Steel High School
	Making horse training manuals for BRT (Best Retired Thoroughbred) through project convergence class	Use of horse, horse-breeding, physical education, math, integrated science, music, horse management project	Horseman High School

## 4. Graduate Certification System

The graduate certification system encompasses various certification systems operated at different Meister high schools to achieve a holistic education. Under the system, schools set the standards students are expected to meet until graduation, encourage all students to reach the standards, and award a certificate to those who achieve this level upon graduation. This system can strengthen educational accountability at the school level. Students who receive the certificate upon graduation are recognized by the school principal for reaching the competency standard set by the school. Here, the standard means the level of competence all students are expected to reach. In this regard, a graduate certificate is different from a diploma, which means a student has graduated from a school.



There are three main reasons for introducing the graduate certification system.

The first is the advent of a knowledge-based society and social changes. To develop competent workers for a knowledge-based society, schools should go beyond cultivating students' personality and help them acquire general competencies, such as information utilization skills and communication skills, including foreign language communication.

The second is changes to the economic environment. As the economic environment changes, society calls for people who are creative, able to process a massive amount of information, and flexible enough to react to the changing world of work. Therefore, schools should teach students basic information technology (IT) skills, the basic foreign language skills necessary to obtain various types of information, and a sound mind to adapt to rapid social changes.

The third is the call of the times. Advanced countries are striving to reform their education to nurture good talents who will boost their national competitiveness. Good talents are people with creativity, the ability to collect and process information, and the ability to communicate. In other words, countries are working to nurture human resources who can collect various types of existing information and translate it into new knowledge. (Kim Jongwoo et al., 2018, page 158-159)

We take a close look at areas of graduate certification and operation methods in the global business sector as an example of the graduate certification system. Based on Meister high schools' ideals of talent and the ideals and certification system of Korea Global Business Meister High School as an example, the certification areas for the global business sector are identified as ① basic





vocational skills, ② skills in areas of specialization, ③ foreign language skills, ④ IT skills, and ⑤ professionalism/personality. (Kim Jongwoo et al., 2018, page 191) Table 9 lists the areas of certification at Meister high schools in the global business sector.

<Table 8> Areas of Certification at Meister High Schools in Global Business Sector

Area	Certification element	Certification standards	Certification methods	Approach
Basic vocational skills	Communication (Korean) Communication (English) Mathematics Problem-solving Adaptation to tasks	Achievement standards for level of basic vocational skills	Assessment based on the achievement standards	Taught through classes
Skills in areas of specification	Skills in areas of specification (project, portfolio) Acquisition of qualifications Award records On-the-job experience	Specialized subject skills standards Standards for acquisition of qualifications Record of awards from contests Industry's evaluation criteria	Project and portfolio presentation, Qualifications, Award from contests, On-the-job evaluation	Class, Internal evaluation, Qualifications testing, Company's verification
Foreign language skills	English listening comprehension English speaking skills (participation in training, record of awards, etc.)	Certified testing institutions' criteria	Evaluation by teacher at certified testing institutions	External test
IT skills	IT skills	Nationally accredited qualifications standards	ITQ grades (PowerPoint, Excel)	External test
Professionalism/personality	Volunteer work Reading Health and emotion activities Health and safety activities	Hours of volunteer work No. of recommended books read Activity at arts and sports clubs CPR(cardiopulmonary resuscitation) training	Points given based on the students' activity records	School's own criteria

Source: Kim Jongwoo et al., Development of Curriculum and Graduate Certification System for Meister High Schools in Global Business Industry. 2018, page 191



As specified in Table 9, each school has designed graduate certification systems in various areas and levels based on basic vocational skills, foreign language skills, practical skills in their areas of specialization, IT skills, basic math skills, personality, and so on as each school saw fit. The graduate certification system is aimed at certifying the excellence of graduates. Also, schools analyze the content, results, and industry feedback of the graduation certification system by field. Based on this analysis, individual schools develop a standard model of areas, levels and evaluation criteria by field, and they work to standardize the model for each field by sharing this information with other schools.

The use of the graduate certification system is proven by the feedback from employers about the results of the system. By establishing a feedback system and hosting meetings with company representatives, the competencies that are in demand can be updated and adjusted regularly. Specifically, the results of certification can be utilized for recommending students to employers or providing incentives for graduates' participation in global training.

## **5. Dormitory Accommodation**

Since Meister high schools recruit students nationwide, they had dormitories from the beginning. Meister high schools' dormitories started operation with the High School Diversification 300 Project mentioned above, and they are in line with the educational policy of "opening more good schools with diversity." Schools operate dormitories to enable students in rural or remote villages to study at schools with good teachers and programs without a difficult commute.



Table 10 shows details about the cost of operating a dormitory, the provided budget and students' per capita payment for dormitories.

Schools that opened in 2010 accommodated 403.7 students on average. The average dormitory operation cost was KRW 212,257,000, and the average food expense was KRW 630,111,700. Schools that opened in 2012 accommodated 315.0 students on average. The average dormitory operation cost was KRW 107,573,300 and the average food expense was KRW 563,473,600. Schools that opened in 2018 accommodated 57.0 students on average. The average dormitory operation cost was KRW 91,634,000, and the average food expense was KRW 115,660,000. The table below also shows the amount that is subsidized for dormitory operations each year.

**<Table 9> Subsidies for Meister High School Dormitories in 2020  
(by Year of School Foundation)**

(Unit: students, KRW 1,000)

Classification	No. of students	Expense		Student's per capita expense (month)		
		Dormitory	Food	Dormitory	Food	
Opened in 2010	Total	8,386	4,135.715	11,081,297	377	2,047
	Average	399.3	229,761.9	527,680.8	41.9	113.7
Opened in 2012	Total	2,156	827,212	3,940,625	92	390
	Average	308.0	137,868.7	562,946.4	30.7	97.5
Opened in 2013	Total	1,910	820,125	2,814,299	0	747
	Average	272.9	136,687.5	402,042.7	0.0	124.5
Opened in 2014	Total	201	63,206	279,127	0	97
	Average	100.5	31,603.0	139,563.5	0.0	97.0
Opened in 2015	Total	1,008	761,881	1,603,573	25	573
	Average	252.0	190,470.3	534,524.3	25.0	143.3
Opened in 2016	Total	385	270,202	530,202	0	252
	Average	192.5	135,101.0	265,101.0	0.0	126.0



Classification		No. of students	Expense		Student's per capita expense (month)	
			Dormitory	Food	Dormitory	Food
Opened in 2017	Total	750	454,567	850,199	0	208
	Average	250.0	151,522.3	283,399.7	0.0	104.0
Opened in 2018	Total	110	153,213	212,119	0	160
	Average	110.0	153,213.0	212,119.0	0.0	160.0
Opened in 2019	Total	90	0	43,171	0	170
	Average	90.0	0.0	43,171.0	0.0	170.0
Total	Total	14,996	7,486,121	21,354,612	494	4,644
	Average	312.4	178,241.0	454,353.4	38.0	119.1

Source: Kim Seoungnam et al., 2020, page 452

We also looked at the per capita cost students bear each month to live in dormitories. Among the schools that opened in 2010, there are two schools providing both room and board for free, 11 schools providing room for free, and three schools providing board for free. The average room fees of the ten schools with room charges was KRW 681,000, and the average board fees of the 18 schools with board charges was KRW 1,479,000. (Kim Seoungnam, et al. 2019, page 355-357)

## 6. Promotion of Industry–School Cooperation

### 6.1. Strengthening Industry-School-Government Cooperation

Meister high schools are establishing stable operation models thanks to strengthened cooperation among the industry, school and government. The industry-school-government cooperation system was established to enable Meister high schools to quickly detect and



actively react to changes in the industry and to effectively nurture core talents for national and local strategic sectors through their linkage with relevant government ministries. Also, the system helps relieve individual schools from the heavy burden of leading industry-school cooperation efforts and overcomes the practical limitations of such efforts made at the school level. By having government ministries and companies lead the Meister high school support system, cooperation with the government can be strengthened. The government ministry responsible for a given industry supports the curriculum development and operation, finances, and industry-school cooperation of Meister high schools that nurture talents in that particular industry. Also, the 28 Meister high schools that are not linked to any government ministries can be supported by the Government Ministry Policy Council. The Council is headed by the Vice Minister of Education and consists of around 10 members including the Director General or Director of relevant divisions at relevant ministries. The establishment of the Government Ministry Policy Council can enhance the quality of Meister high school operation and efficient cooperation among ministries. Through these systems and processes, the support and operation of Meister high schools can be gradually expanded from MOE-led to inter-ministry cooperation, and then to ministry-industry collaboration.

The following shows the purpose and status of Meister high schools with ministry participation.



**<Table 10> Meister High Schools with Ministry Participation (as of March 2020)**

❖ Meister high schools with ministry participation

\* Purpose: Ministries responsible for each industry sector sponsor Meister high schools to nurture good technical and skilled talents necessary for the industry.

\* Current status: Ministry of SMEs and Startups (MSS) (4 schools), Ministry of Oceans and Fisheries (MOF) (3 schools) Ministry of Agriculture, Food and Rural Affairs (MAFRA) (6 schools), Ministry of Trade, Industry and Energy (MOTIE) (3 schools), Ministry of Culture, Sports and Tourism (MCST) (1 school), Ministry of Land, Infrastructure and Transport (MOLIT) (1 school), Ministry of Science and ICT (MSIT) (4 schools<sup>8)</sup>, Ministry of National Defense (MND) (1 school): 23 schools in total

In addition, the national infrastructure operated by government ministries, such as the Techno Parks, the Technology Innovation Center (MOTIE), and the promotion agencies of each industry (each ministry), is being utilized for the education of Meister high school students. As a prime example, Dong-ah Meister High School utilized Daejeon Techno Park's advanced infrastructure for its education (a KRW 170 million/year program linked to education and employment started in 2012 and is still in operation).

Meister high schools also have networks with industry associations. Schools are strengthening cooperation with nationally supported employer associations to tackle the challenge of having to find employers at the individual school level, nurture tailored resources and ensure students find good employment. They are also working to convene regular councils with employer associations that have already signed Memorandum of Understandings (MOUs) to ensure practical values and are seeking to sign new MOUs with other associations.

Table 12 is a list of representative companies and associations that have signed MOUs with Meister high schools.

<sup>8)</sup> Including a Meister high school scheduled to open in 2021 (Busan Industrial Science High School)



<Table 11> 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

Source: English leaflet for promotion of Meister high schools

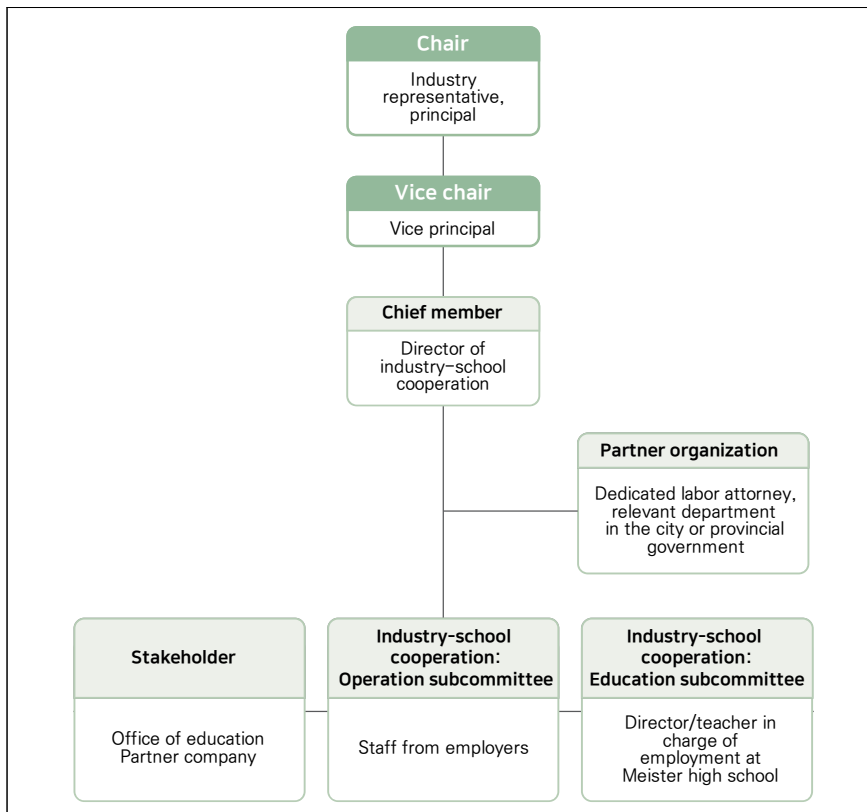
## 6.2. School-Specific Industry-School Cooperation Committee

There also are industry-school cooperation committees at the individual Meister high school level. Schools take the initiative in signing MOUs with good employers (large, medium, or small enterprises) in their sector, and they organize and operate an industry- school



cooperation committee. The main purpose of these committees is to create job opportunities at MOU partner companies, operate programs to strengthen students' employability, and provide students with job-hunting guidance customized to certain types of employers, such as public corporations or large corporations. The following Figure depicts the organization of Meister high schools' industry-school cooperation committees.

[Figure 7] Organization Model of Meister High School Industry-School Cooperation Committee<sup>9)</sup>



9) Evaluation Report on operation Performance of Meister High Schools Opened in 2010, Aug. 2019, page 29





## Chapter IV

# National Policy Support for Korean Meister High School System

1. Establishment of Center for Meister High School
2. Budgetary support
3. Support on Teachers







Chapter IV

## National Policy Support for Korean Meister High School System

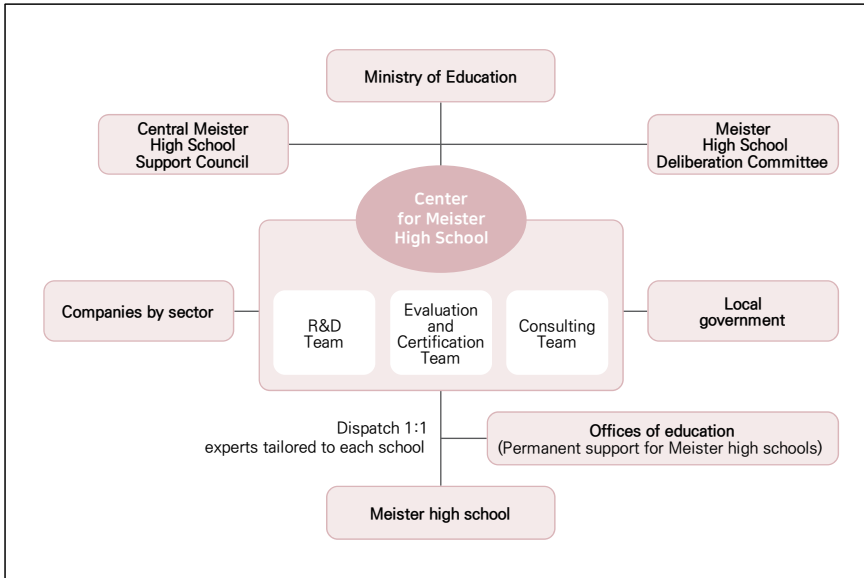
### 1. Establishment of Center for Meister High School

The Center for Meister High School was established on March 6, 2009, to support the smooth execution of Meister high school promotion policies and successful settlement of the schools. The Center started with three teams at KRIVET, whose major functions included research on policies related to Meister high schools; curriculum development; consulting for schools; and the selection, evaluation and certification of Meister high schools.

Figure 7 shows the organization of the Meister high school support system. The MOE and Center for Meister High School lie at the center, surrounded by the Central Meister High School Support Council, Meister High School Deliberation Committee, companies by sector, local governments, metropolitan and provincial offices of education, and Meister high schools. The Center for Meister High School consists of the R&D Team, Evaluation and Certification Team and Consulting Team.



[Figure 8] Meister High School Support System Organization



The R&D Team conducts research on policies; pursues institutional and legal improvement; and develops curriculum, programs, and career paths. It also supports industry-school cooperation and partnerships, field practice, and teaching and learning; develops textbooks and teacher training programs; and operates training programs. The Evaluation and Certification Team selects and supports Meister high schools, develops Meister high school evaluation and certification systems, and organizes Meister high school evaluation and certification committees. The team also executes and supports Meister high school evaluation and certification and develops evaluation and certification systems for individual schools. The Consulting Team organizes and operates Central Meister High School Support Council, supports the Meister High School Deliberation



Committee and industry-specific committees, and organizes and operates consulting teams for each school. It also analyzes Meister high schools' operation status and results, suggests system reform or policies based on analysis of the results, and creates and shares databases through monitoring. The Center for Meister High School has dedicated staff and a pool of researchers in and out of KRIVET who identify school-specific characteristics, conduct research evaluation, and build a consulting system based on the evaluation. The Center also has a system of cooperation with relevant institutions within and outside of KRIVET. (Kim Seoungnam et al., 2019, 40-41)

### 1.1. Strengthening and Supporting Meister High Schools' Operation and Performance Management Systems

Since the 2008 Plan to Develop Korean-Style Meister High Schools, 52 Meister high schools have been designated as such. Their quality has been monitored through performance management at different stages of operation since their foundation. Five-year evaluations start from the stage of preparation for schools' foundation, checking important matters each year in a timely manner and collecting feedback. Evaluation items include talent-nurturing goals, the industry-school-government cooperation system, the school management and education support system, and the quality and quantity of employment. The Center for Meister High School provides advisory based on the operation performance evaluation results and establishes a support system for planning school's advancement according to evolving industry needs. The Center has a pool of experts in vocational education and relevant industrial sectors who are capable of offering tailored advice at all times. Overall quality management of



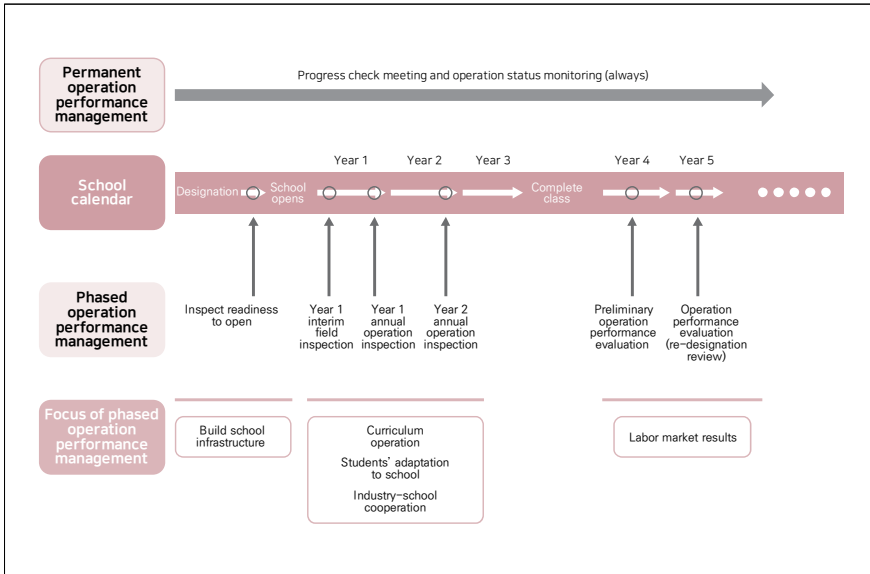
Meister high schools is done as follows.

First, in accordance with Article 90, Paragraph 4, Item 5 of the Enforcement Decree of the Elementary and Secondary Education Act (Presidential Decree No. 29203), if achievement of the purpose of designation is deemed impracticable as a result of the operation performance evaluation of the relevant school conducted by the superintendent of education every five years, as prescribed by the educational rules of the relevant city or province, the designation of a Meister high school can be annulled after consultation with the Minister of Education. The operation of Meister high schools should be re-evaluated every five years for re-designation, with school operation performance management divided into permanent operation performance management and phased operation performance management (Jang Myung Hee et al., 2016). Permanent operation performance management consists of progress check meetings and status monitoring. Meister high schools' operation performance is always monitored through this process. Phased operation performance management consists of checking the readiness for school opening (before the school opens) followed by a year 1 interim inspection, year 1 operation inspection, year 2 operation inspection, preliminary operation performance evaluation (year 4), and operation performance evaluation (year 5 or later). Feedback and consulting are offered at each phase (Kim Seoungnam et al., 2019, 111-112).

The below Figure provides an overview of the model of Meister high schools' operation performance management.



[Figure 9] Meister High School Operation Performance Management Overview



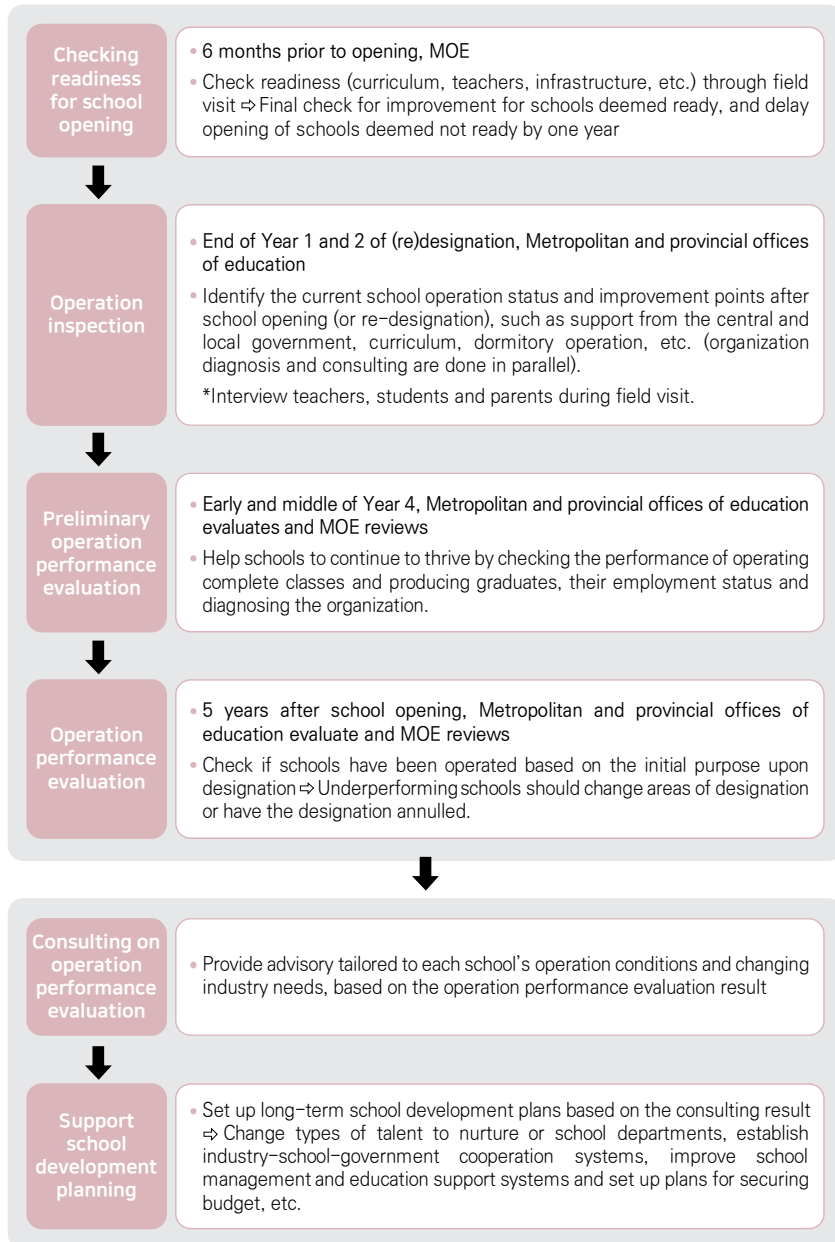
As shown in Figure 8 above, opening preparation support is provided before the school opens, followed by interim and operation inspections in years 1 and 2, a preliminary operation performance evaluation in year 4, and an operation performance evaluation in year 5. Systematic performance management is performed throughout this period. Other efforts include discussion of major issues and sharing of best practices at regular inspection meetings.<sup>10)</sup>

Meister high school operation performance management is listed by phase in Table 13.

10) Information session on selection of Meister high schools, 2020. Page 6-7



[Figure 10] Meister High School Operation Performance Management at Each Phase







As the second aspect of overall quality management, year 1 interim inspection includes checking the operation status during the first half of the year to improve the operation quality of schools that opened in March, and it includes providing a consulting service tailored to the areas that call for external support.

Third, a preliminary operation performance evaluation checks the results of running complete classes and producing graduates, which helps schools settle into sustainable operations and get ready for the upcoming five-year operation performance evaluation. Schools that show poor performance and low potential as Meister high schools should adjust their school operation plans before the five-year operation performance evaluation. On the other hand, schools that show good results can be promoted as exhibiting best practice and recognized as a new model of vocational education.

Fourth, operational performance evaluation is done to ensure the quality of schools' operation by evaluating schools every five years to see if the schools are run "to nurture talent tailored to industrial demand and promote their employment," as originally intended. The evaluation indicators (a total of 1000 points) consist of common indicators (800 points) and autonomous indicators (200 points). Common indicators (800 points) include both the process (talent-nurturing goals, school and curriculum operation, industry-school-government cooperation, etc.) and the output (employment results and satisfaction level of current students, graduates, employers, parents, and teachers) at each stage, while autonomous indicators (200 points) are selected by each office of education autonomously (Kim Seoungnam et al., 2019, xxix-xxx). The phased evaluation incorporates the recommendations from the Meister High School Advancement Plan. It is to include the detailed recommendations



from the Plan in the annual evaluation items, for long-term advancement of Meister high schools. Curriculum operation includes matters such as operation of the industry-school cooperation committee; promotion of project-based learning; availability of classes on business administration and software, among other things; and operation of the graduation certification system utilizing external infrastructure, such as national infrastructure.<sup>11)</sup>

## 1.2. Meister High School Operation Status Monitoring

Meister high schools' operation status is monitored to regularly collect status data, identify trends in elements of operation, compare schools (performance management), and swiftly respond to information requests from government stakeholders (the president of the Republic of Korea, presidential office, relevant ministries, etc.). Meetings are convened to share the results of analysis of the collected monitoring data (including the operation performance evaluation results of the Meister high schools) and discuss the implications. These data are utilized as the raw data for central-level management of individual schools' performance and provision of feedback, school diagnosis, and administrative measures. The data are submitted based on requests from the presidential office, relevant ministries, and the National Assembly (Kim Seoungnam et al., 2019, xxxi). Since 2010, monitoring has been done every quarter to check schools' status. The staff in charge of monitoring at offices of education and Meister high schools input this data into the Meister high school operation management system. Input items

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11) Meister High School Advancement Plan, October 2016



include budget, facilities and teaching materials, teachers, students, industry-school cooperation and councils, and graduate certification (Kim Seoungnam et al., 2019, 329).

### 1.3. Consulting on Schools' Opening Preparation and New Designation as a Meister High School

The MOE's basic criteria for a new Meister high school are the capabilities to develop and operate a curriculum tailored to industry demand based on systematic industry-school cooperation and to help students grow into Young Meisters. According to the designation deliberation standards, MOE screens the approval request submitted by the local office of education and conducts a field inspection before designating high-performing schools as new Meister high schools. Eligible areas are new industries related to the Fourth Industrial Revolution, state-of-the-art technology or innovative growth, and national or regional strategic sectors with sustainable resource demand, where graduates can work as Meisters for a long term. The MOE designates one or two schools and may not designate any school if no candidate meets the standards.

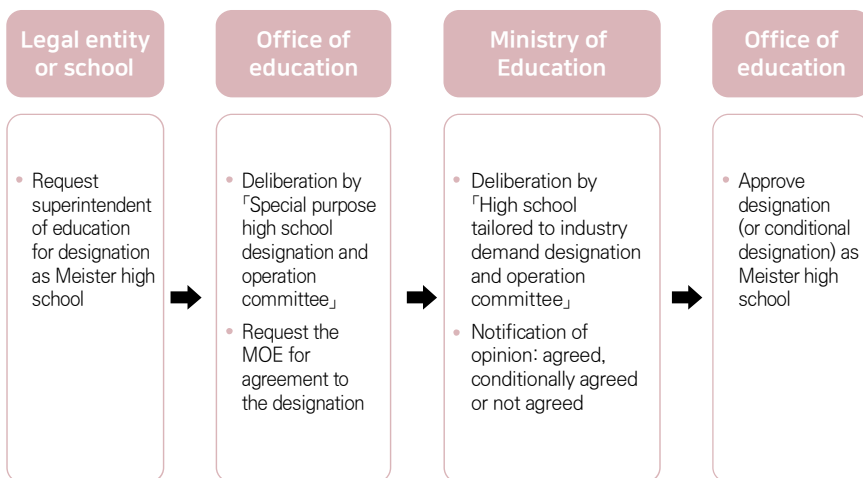
There are two designation methods that operate in parallel: government ministry-led designation and local government-led designation (formerly, office of education-led designation). Government ministry-led designation is different from the local government-led method in terms of the designation method and field, procedures, and employment support through industry-school cooperation. Under this method, schools are designated in areas linked to national and regional strategic sectors, and government ministries participate throughout the entire process of designation and support,



from application to school opening preparation, school operation, employment, and performance management. Schools are designated after thorough review based on the government ministry-led designation criteria and existing local government-led designation criteria. Evaluations of designated schools focus on several points: whether the school is in a sector with a sustainable workforce demand for Young Meisters; whether the school meets the standard requirements for a Meister high school; whether the school has track records and plans for industry-school-government cooperation, including local industry, companies, government ministries, the local government, and neighboring training institutions; and whether the school has passed the basic requirements for successful foundation and operation as a Meister high school.

The following is the procedure for designating a new Meister high school.

[Figure 11] Procedure of Designating a New Meister High School



Source: Information session on designation of Meister high school, 2020. Page 6-7



Schools at the 1<sup>st</sup> and 2<sup>nd</sup> designations were mostly focused on engineering or manufacturing. At the 3<sup>rd</sup> and 4<sup>th</sup> designation the sectors diversified to include maritime, surface mount technology (SMT) equipment, energy, bio and aviation. At the 5<sup>th</sup> and 6<sup>th</sup> designations, the sectors expanded even further to include robotics, agriculture and livestock, nuclear power, next-generation batteries, and petrochemical industries. At the 7<sup>th</sup> designation, the horse industry, fishing, and fishery processing were added. At the 8<sup>th</sup> and 9<sup>th</sup> designations, Meister high schools' areas became more diverse, as overseas construction and plants, shipbuilding and maritime plants, automobiles, software, and food industries were added. The 10<sup>th</sup> designation added software convergence, and food quality management, while the 11<sup>th</sup> designation included software, agricultural and bio resource production and processing, and urban high-tech agriculture. The 12<sup>th</sup> designation added nano-convergence, proving that Meister high schools cover promising areas linked to national and regional strategic industries. The 13<sup>th</sup> designation changed the area of SMT equipment to electric and electronics, and the 14<sup>th</sup> designation changed the area of medical devices to medical devices and bio, following the trends of new growth in industries. At the 14<sup>th</sup> designation, the first Meister high school was designated in the global business area, further diversifying fields of study. At the 15<sup>th</sup> designation, firefighting and game content were selected, becoming a leading model of vocational education where students receive industry-customized education land jobs first, and grow as Meisters. The school at the 16<sup>th</sup> designation focuses on software, an area related to the Fourth Industrial Revolution.



Around September and October every year, which is six months prior to opening a new school, a new Meister high school's readiness is checked. The responsible office of education takes the lead in providing this support, in collaboration with the school, professional institutions and subject matter experts, and the Center for Meister High School. The readiness checklist includes the development of school departments and curriculum, the hiring and utilization of teachers, student enrollment procedures, industry-school cooperation plans, the securing of dormitories and a budget for operation, and tuition waivers. (Kim Seoungnam et al., 2019, xxvii–xxix)

The following Table 15 is the roadmap for preparing to open a new Meister high school.



## Meister High School System in Korea

[Figure 12] Roadmap of Preparing for Opening a New Meister High School

Classification	Activity	Content and procedures	Time needed	Led by	
Preparation for opening of school	Set up a system and plan to switch to Meister high school		2 months	MOE, Office of education, relevant ministries, Meister high school	
	Develop Meister high school curriculum and certification system - Set up an industry-school cooperation committee - Discuss adequacy of school department change for Meister high school - Develop curriculum for Meister high school - Develop Meister high school graduate certification system	- Set up industry-school cooperation council at each school - Set up industry-school cooperation council at each office of education  - Develop curriculum and guidelines - Operate Curriculum Development Committee and review adequacy  - Develop graduate certification system - Operate Curriculum Development Committee and review adequacy		8 months (4-6 months for textbook and teaching material development)	MOE, Office of education, relevant ministries, Meister high school, KRIVET
	Develop programs other than school curriculum	- Develop field practice and training programs - Develop programs for recruiting excellent freshmen and helping them adapt to school life - Develop career guidance and career path exploration programs	Office of education, Meister high school, KRIVET		
	Set up a network for industry-school cooperation and employment support		MOE, Office of education, relevant ministries, Meister high school		
	Develop textbook and materials for Meister high school	- Develop textbook and materials for each school - Monitoring on the textbook and materials development - Consulting on the textbook and materials development		Office of education, Meister high school	
	Secure practice facility and equipment			Meister high school	
	Check readiness to open Meister high school	- Pre-inspection on record of preparation for school opening - Report the result of pre-inspection - Check readiness and submit improvement plans - Operate Readiness Inspection Committee - Notify the result of readiness inspection	2 months	MOE, Office of education, KRIVET	
	Recruit freshmen for Meister high school	- Develop methods and criteria for freshmen selection - Review the application and admission guidelines - Execute the admission process - Evaluate the admission result	3 months	MOE, Office of education, Meister high school	
	School opening and entrance ceremony			MOE, Office of education, relevant ministries, Meister high school, KRIVET	

Source: Kim Seoungnam et al., 2019, page 85-86



## 2. Budgetary support

The MOE provides administrative and financial support for newly designated Meister high schools.

Initially, KRW 5 billion is provided through special grants to create the foundation for Meister high schools. In general, a newly designated school receives a total of KRW 5 billion split over two payments. However, if the school fails to implement the “annual budget support plan of the office of education for four years” on the office’s designation agreement request, the amount equivalent to noncompliance each year is deducted from the total grant of KRW 5 billion. KRIVET’s Center for Meister High School works with the school and other institutional stakeholders to discuss the school’s readiness, and helps it improve if it has shortfalls.

Next, for the operation of Meister high schools, KRW 0.9 to 1.1 billion in general grants is provided each year. According to the Enforcement Rule of the Local Education Subsidy Act, KRW 0.9 billion is offered to schools with less than 18 classes, KRW 1 billion is offered to schools with 18 to 26 classes, and KRW 1.1 billion is offered to schools with 27 or more classes. A grant is also offered to pay for teachers and supplies for practice activities at Meister high schools, as stated in the plan specified in the designation agreement request of the office of education, local government and other relevant institutions.





### 3. Support on Teachers

Meister high schools are working to secure good teachers to ensure adequate teaching of the school curriculum and to support teachers' capacity building. They are also expanding mid-to long-term enterprise training for teachers of specialized subjects and vocational understanding training for teachers of general subjects. Vocational understanding training includes an understanding of Meister fields, teaching and learning techniques for basic learning skills and basic vocational skills, and basic vocational skill evaluation methods among other things. Training in subjects of secondary specialization was also begun for new industries not related to the teachers' current subjects teachers, such as bio, nuclear power, and software. Schools are also improving their systems to make sure teachers of specialized subjects can serve in schools in their field of expertise for the long term. They are working to link NCS-based curricula operation with the development, hiring, and training of secondary school teachers of specialized subjects.<sup>12)</sup>

Let us take a look at the number of hired teachers compared to the teacher hiring plans (as of 2018). Among schools that opened in 2010, eight schools ended up hiring more teachers than planned, while 13 schools hired fewer teachers. Of these 13 schools, seven schools experienced a shortage of ten or more teachers compared to the original plan. This requires investigation into the reasons for these circumstances and the office of education's help in securing teachers. Now, we take a look at the ratio of teachers with industry experience as a share of the total number of teachers. Schools that opened in 2015 showed the highest ratio of such teachers at 41.2%,

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12) Meister High School Advancement Plan, October 2016



followed by schools that opened in 2016 at 37.0%, schools that opened in 2012 at 33.8%, schools that opened in 2014 at 22.6%, schools opened in 2018 at 20.0%, schools that opened in 2010 at 19.2%, schools that opened in 2013 at 15.0%, and schools that opened in 2017 at 8.5%. Some schools have only a few teachers who have industry experience. Even when considering the special circumstances of such schools, this requires a review of their plan to hire teachers with industry experience in the future.

We compared the number of teachers per class at Meister high schools against the equivalent figure at science high schools in the same city or province (as of 2018). The average number of teachers per class at Meister high schools was 2.71, lower than the number at science high schools (2.77). Some schools had the same number or more teachers per class compared to the science high school in their community: 12 Meister high schools that opened in 2010, four Meister high schools that opened in 2012, three Meister high schools that opened in 2013, one Meister high school that opened in 2014, one Meister high school that opened in 2016, and one Meister high school that opened in 2017. Other than these schools, 25 schools have fewer teachers per class than those at science high schools in the same city or province, calling for continued efforts by the office of education to secure teachers for these schools. Below is a table showing the number of Meister high school teachers from 2013 to 2018.



<Table 12> Number of Teachers at Meister High schools

Classification	Total no. of classes (A)	Teacher						Temporary teacher				Total no. of teachers			No. of teacher per class in science high schools in the same city/province
		General subject		Specialized subject		General subject		Specialized subject		Total no. of teachers with industry experience (B)	Ratio of teachers with industry experience (%)	No. of teacher per class (B/A)			
		All teachers	Teachers with industry experience	All teachers	Teachers with industry experience	All teachers	Teachers with industry experience	All teachers	Teachers with industry experience						
2013	Total	791	5	1,074	329	85	0	117	26	2,122	492	-	-	-	
	Average	22.60	1.25	30.69	10.28	3.04	0	4.50	2.17	60.63	14.06	23.19	2.68	2.70	
2014	Total	804	4	1,118	326	92	1	119	29	2,136	451	-	-	-	
	Average	21.73	0.11	30.22	8.81	2.49	0.03	3.22	0.78	57.73	12.19	21.10	2.66	2.57	
2015	Total	876	15	1,231	382	113	3	167	43	2,447	593	-	-	-	
	Average	21.37	0.37	30.02	9.32	2.76	0.07	4.07	1.05	59.68	14.46	24.23	2.79	2.98	
2016	Total	903	19	1,266	363	102	2	184	51	2,474	562	-	-	-	
	Average	21.00	0.44	29.44	8.44	2.37	0.05	4.28	1.19	57.53	13.07	22.72	2.29	2.81	
2017	Total	938	22	1,336	392	110	8	184	38	2,462	582	-	-	-	
	Average	20.4	0.5	29.0	8.5	2.4	0.2	4.0	0.8	53.5	12.7	21.6	2.60	2.75	
2018	Total	933	31	1,343	360	109	8	213	64	2,508	550	-	-	-	
	Average	19.9	0.7	28.6	7.7	2.3	0.2	4.5	1.4	53.4	11.7	21.9	2.69	2.77	

Note: 1) The numbers of teachers per class at science high schools in the same city or province are cited as of the end of February in the following year.  
 2) Since 2017, the total number of classes (A), the numbers of teachers, temporary teachers, and total number of teachers are indicated to the first decimal place.

Data: Input data for monitoring of Meister high schools (per year)  
 Source: 2019 Human Resource Development Indicators in Korea, KRIVET, page 30









Chapter V

## Outcomes of the Korean Meister High School System

### 1. Outcome of the Meister High School System

A major outcome of Meister high schools, which are pioneering the advancement of vocational education at high schools, is their contribution to developing a technical workforce tailored to industry demand and ensuring its successful transition to the labor market. Meister high schools designated in national and regional strategic industries, such as machinery, metal, electricity and electronics (54 schools designated and 52 schools operated) are building a pioneering model of vocational education. Since sending off the first graduates in 2013, the schools have maintained a high employment rate, hovering around 90% for six consecutive years. They boasted employment rates of 90.3% in 2013, 91.4% in 2014, 91.2% in 2015, 91.0% in 2016, and 94.2% in 2017. The table below shows the employment status of Meister high school graduates until 2017.



**<Table 13> Employment Status of Graduates from Meister High Schools Opened from 2010 to 2015**

<Unit : person>

Year of Graduation	Total headcount	Graduate	Waived student	Job seeker	Employed	Entrepreneur	Unemployed	Employment rate (%)
Feb. 2013	3,600	3,341	0	3,341	3,017	0	324	90.3
Feb. 2014	3,600	3,429	0	3,429	3,133	0	296	91.4
Feb. 2015	4,390	4,299	82	4,217	3,846	1	370	91.2
Feb. 2016	5,170	5,098	190	4,908	4,462	5	441	91.0
Feb. 2017	5,290	5,211	96	5,115	4,819	1	295	94.2

Source: Meister school operation monitoring and consulting as a part of Meister High School Center operation support program in 2017. MOE, Gyeongsangnamdo Office of Education, KRIVET, 2017, page 196

## 2. Social Outcomes of Meister High School

Meister high schools provide quality vocational education, which stakeholders find highly satisfactory, and they pioneer the change of social perception. Stakeholders' feedback is very positive on the Meister high school education, including for theory and practical teaching on specialized subjects.

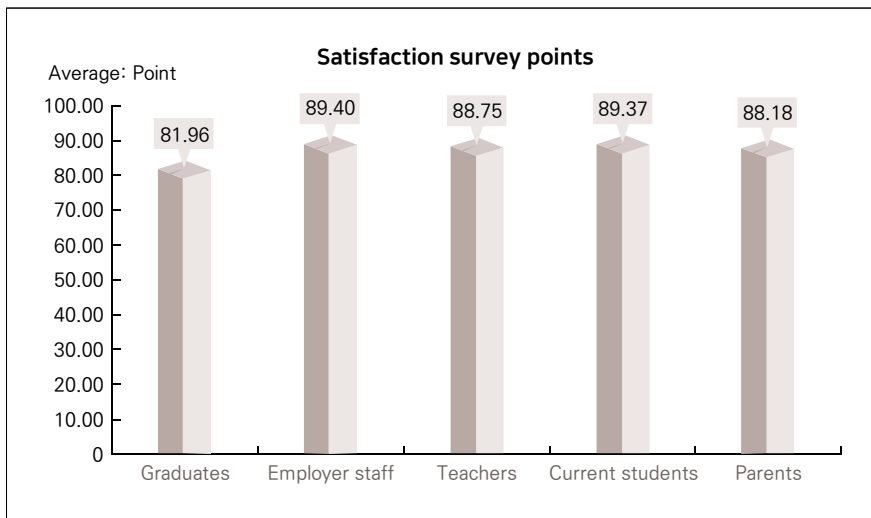
A survey of satisfaction with Meister high schools' operation (Kim Seoungnam et al., 2019) was conducted with graduates, employer staff, teachers, current students, and parents affiliated with Meister high schools that opened in 2010. The survey consisted of 18 questions over five areas and covered 21 Meister high schools. A total of 160 points for the five areas were divided as follows: 40 full points each for graduates, employer staff and teachers, and 20 full points each for students and parents. The result of the satisfaction survey was an average of 139.55 points out of 160 points. The average points for the five areas were rated as follows: 32.78 by graduates, 35.76 by employer staff, 35.50 by teachers, 17.87 by students, and 17.64 by parents (Kim Seoungnam et al., 2019,





249-250). Below, Figure 9 illustrates the results of the satisfaction survey of Meister high schools that opened in 2010, converted to 100 full points.

[Figure 13] Result of Survey on Satisfaction with 21 Meister High Schools Opened in 2010



Source: A survey conducted on 21 Meister high schools opened in 2010 is summarized. KRIVET internal data as of 2019

### 3. Changing the Social Perception of Vocational Education

#### 3.1. Contribution to Promoting Vocational Education at Secondary Schools and Change in Social Perception

Meister high schools' successful outcomes have contributed to promoting vocational education at secondary schools and improving social perception. This is making an especially significant contribution to changing the negative image of vocational education, as secondary vocational education is moving its focus towards employment, and



the quality of high school graduates' jobs and Meister high school applicants are both increasing. Freshmen's middle school record standing in percentage rose from 43.1 % in 2010 to 31.6% in 2012, and 34.5% in 2014, showing that higher-performing middle schoolers are applying for Meister high schools. Meister high schools have also created an environment where companies offer more jobs to high school graduates and transform their personnel and compensation systems from academic background-based to merit-based. As an example, some Korean companies offer the following benefits to graduates from vocational high schools.

<Table 14> Benefits Offered by Companies to Graduates from Vocational High Schools

<p>* <b>Samsung Electronics and SK Hynix</b> recognize the time graduates spent on tailored education as work experience (Samsung Electronics: 2 years, SK Hynix: 1 year)</p> <p>* <b>CJ, Korea Hydro &amp; Nuclear Power, and others</b> treat high school graduates as equal to university graduates in terms of promotions wage, and so on after they have served 4 years at the company.</p>
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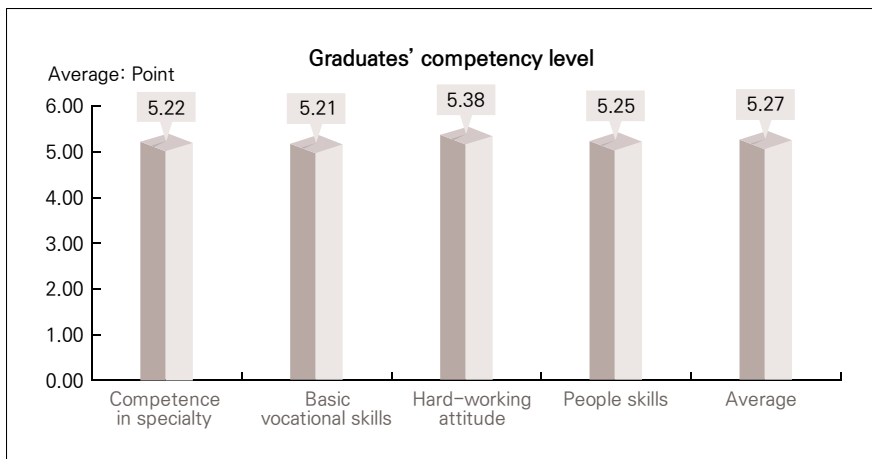
### 3.2. Meister High School Graduates' Successful Transition into the Labor Market

As already mentioned in previous chapters, Meister high school graduates are making successful entries into the labor market, as evidenced by the 80 to 90+% employment maintained steadily from 2013 to 2019. The quality of employment is also good, as most employed graduates landed full-time jobs. The ratio of full-time employees among Meister high school graduates stayed high at 97.9% in 2013, 97.7% in 2014, and 98.7% in 2015. Also, employers expressed their intention to keep hiring Meister high school graduates, as they are highly satisfied with them. In a 2013 survey of 504

representatives of companies that have hired Meister high school graduates, 88.3% responded they have “intention to keep hiring them.” In a different survey done in 2015 with 760 representatives of companies, 96.7% responded with the same intention (Meister High School Advancement Plan, October 2016).

The Figure below shows the result of a 2019 survey on the overall satisfaction level of companies with graduates of 21 Meister high schools that opened in 2010.

[Figure 14] Result of Survey on Companies’ Satisfaction with Graduates of Meister High Schools



Source: A survey conducted on 21 Meister high schools opened in 2010 is summarized. KRIVET internal data as of 2019

As the Figure shows, companies rate graduates, on average, 5.27 out of 6 points in this survey done in 2019. More specifically, the average points were 5.22 for competence in the specialty, 5.21 for basic vocational skills, 5.38 for a hard-working attitude, and 5.25 for people skills. This shows that companies are very satisfied overall with Meister high school graduates.



### 3.3. Increasing Global Interest and Exchanges in Meister High Schools

McKinsey Global Institute (2013) and The Economist (2013) covered Meister high schools as a good example of vocational education, reflecting the keen interest from overseas. The below table shows the increased interest and exchanges with overseas partners regarding Meister high schools since the first schools opened in Korea.

<Table 15> Global Exchange Regarding Meister High Schools

Topic of interest	Exchange activity
Lay the foundation for innovating international vocational education and training	<ul style="list-style-type: none"> <li>• MOE and MOEL (Ministry of Employment and Labor) sign a Declaration of Intent (DOI) on cooperation in vocational education and training with Germany. (Mar. 27, 2014)</li> <li>• The signing of Korea-Switzerland education research MOU and Korea-Germany vocational education and training DOI is announced. (May 12, 2014)</li> </ul>
Dispatch students at specialized high schools and Meister high schools to global on-the-job training (OJT)	<ul style="list-style-type: none"> <li>• Dispatch students at specialized high schools and Meister high schools to global OJT               <ul style="list-style-type: none"> <li>- Students go to Germany, Switzerland, US, Australia, UK, etc.(2011-present)</li> </ul> </li> <li>• Students from specialized schools on the OJT were introduced as “Young Meisters”               <ul style="list-style-type: none"> <li>- US (Sep. 2013), Australia (Nov. 2013)</li> </ul> </li> </ul>
Malaysia, etc. benchmark “Korean Meister high schools” (Global HR Forum, Nov. 4, 2013)	<ul style="list-style-type: none"> <li>• 15 Countries attending East Asia Summit discuss benchmarking Korea’s vocational education at the high school level.</li> </ul>
International Conference on Disseminating the Outcome of Meister Schools was convened (Nov. 11, 2013)	<ul style="list-style-type: none"> <li>• Agenda included the status and future plans of secondary vocational education policies in Germany, US and Korea, Achievements and challenges for Korea’s Meister high schools, and Outcome of secondary vocational education policies and students’ achievements from employers’ perspective, etc.</li> </ul>
The German Embassy in Korea hosted Korea-Germany Vocational Education Forum (Nov. 30, 2012)	<ul style="list-style-type: none"> <li>• Attendees from two countries shared cases of Meister high schools and explored bilateral cooperation plans on high school vocational education.</li> </ul>



## Meister High School System in Korea

Topic of interest	Exchange activity
Field visit to benchmark innovative Meister high schools in the world (Nov. 2012)	<ul style="list-style-type: none"> <li>China (Nov. 2012), Malaysia (Nov. 2012), Indonesia (Nov. 2012), Saudi Arabia (Jul. 2013), etc.</li> </ul>
Sudo Electric Technical High School participate in the nuclear reactor export package to UAE (2010 to present)	<ul style="list-style-type: none"> <li>The school provides basic nuclear power training to approximately 50 UAE students each year.</li> </ul>

Source: Jang Myung Hee, Background of Introducing Meister High Schools and Implementation Strategies, Updated in 2020

As listed in Table 19, the global interest in Meister high schools is being actively expressed in the signing of international vocational education and training cooperation agreements, global On-the-job training (OJT) trips to Germany, Switzerland, US, Australia and the UK; hosting of international conferences; and field visits to Southeast Asian countries, among other things.

Since many countries, especially developing countries in Southeast Asia, Latin America, and Africa, have shown enthusiastic interest in the Meister high school model, Korea worked to export the model as part of an official development assistance (ODA)<sup>13)</sup> program. In 2016, the education ODA program was implemented with the goals of meeting developing countries' requests for cooperation to benchmark Korea's effective education development and providing a substantial education ODA package that utilizes Korea's excellent infrastructure, including teachers and teaching and learning programs. Also, ideas were suggested for Korea to organize training programs on designing, developing, and operating the Meister high school model, and to dispatch Meister high school teachers to recipient countries to work as teachers and consultants.

13) Assistance provided by countries, local governments and official agencies to developing countries and international organizations to promote economic development and welfare of OECD-designated recipients.

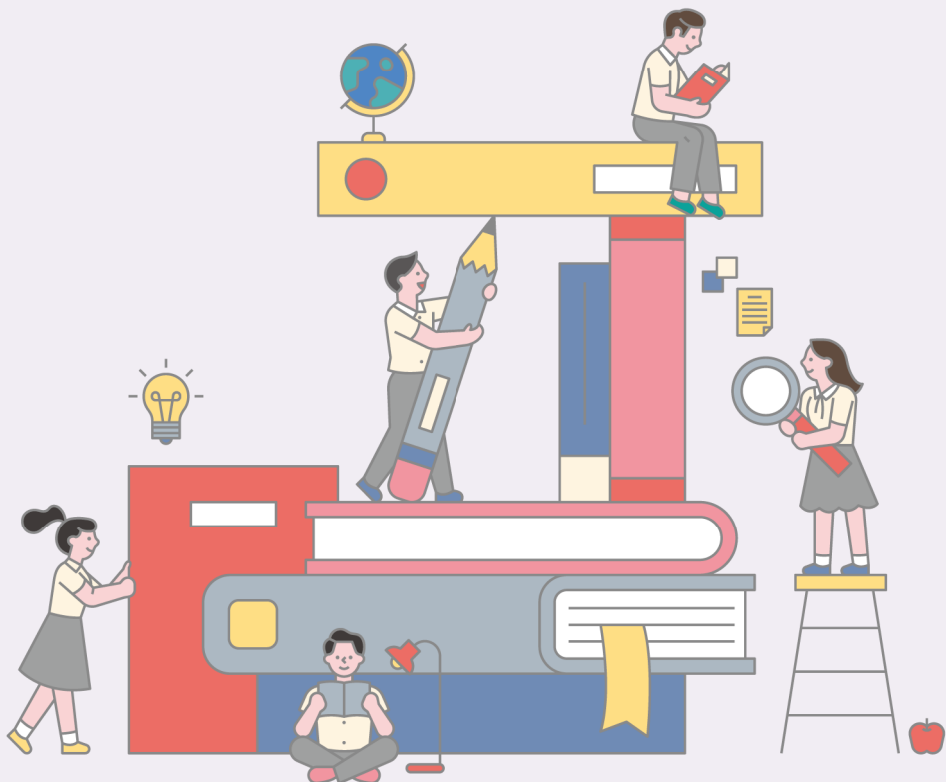




## Chapter VI

# Prospects and Implications for Meister High Schools in Korea

## 1. Summary and Improvement Plan









Chapter VI

## Prospects and Implications for Meister High Schools in Korea

### 1. Summary and Improvement Plan

The Korean government was exploring ways to help settle professional vocational high schools take root successfully in various fields since the beginning of the 2000s. But the government found it difficult to resolve the challenges of such schools at the time, including unstable careers after graduation. To solve this issue, the government proposed the “Plan to Develop Korean-Style Meister High Schools” as a new model. After a preparation period, 21 Meister high schools opened their doors in 2010. Now, ten years later, 54 schools have been designated as Meister high schools, and 52 schools are in operation. The major intention of introducing Meister high schools is to present hopes and visions to vocational high school students so that they can grow into experts in the field they choose based on their interest and aptitude. As mentioned in previous chapters, the core contents of the Plan included ① career path of Meister high school students, ② regulatory reform for Meister high schools, and ③ national support for Meister high schools. Since the first schools opened in 2010, new schools have been designated as Meister high schools every year until 2021, and their specialty sectors have become more diverse, reflecting the changing needs of



industry. Meister high schools can be characterized by a number of aspects: development and operation of a curriculum tailored to industry demand; after-school programs; project-based learning; graduate certification systems; dormitories; and active industry-school cooperation in the form of MOUs, committees, and curriculum for such cooperation. The Center for Meister High School, which was established in March 2009, supports the implementation of Meister high school development policies and successful establishment of the schools. The Ministry of Education also provides various types of administrative and financial assistance to newly designated Meister high schools.

Meister high schools are at the fore front of vocational education in high schools, and their achievements producing technical resources customized to industry needs and successfully putting them in the labor market are highly recognized. In particular, the schools specialized in national and regional strategic industries, such as machinery, metal, electricity and electronics are meeting stakeholders' high expectations through quality vocational education and changing the social perception of vocational education. Also, stakeholders have expressed a high level of satisfaction with school education, including theory and practice in specialized subjects. The plan for developing Meister high schools is deemed to have stimulated a change in the perception of vocational education at the secondary school level. The shining example of Meister high schools' accomplishments since the opening of the first schools is an employment rate over 90% for five years. HR managers in the labor market have high opinions of Meister high school graduates.

However, Meister high schools have a long way to go to maintain this good reputation. It is time to propose improvements for some



shortfalls to make the achievements so far sustainable. First of all, even though schools show high employment rates exceeding 90% and graduates show growth potential in their companies, schools should continue to secure sustainable employers, including small but robust companies, companies of middle standing, and stable SMEs. Second, schools are proposing the types and standards of talent development as part of their talent nurturing goals, but they need to make graduates' career paths more specific, reflecting their occupations' nature in the changing structure of industry. Third, despite the excellent track record of teams and committees in charge of industry-school-government cooperation, they need to make further efforts to identify good partner companies. Lastly, even though Meister high schools have built a strong link between regular classes and extra-curricular activities, they need to keep updating their school departments and curricula to meet the changing industry demands.

Also, to respond to internal and external changes in the environment, schools should explore good school operation models and continue to adjust their curriculum to meet industry needs. In addition, they need to secure a financial support system by working closely with offices of education and responsible government ministries, which can proactively deal with evolving industry demands. Lastly, schools should strive to present not only a career path upon graduation but also a lifelong career path for graduates to become Meisters, CTOs and CEOs in their field of expertise.





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## Appendix

[Appendix 1] Meister High Schools from 1<sup>st</sup> to 17<sup>th</sup> Designation  
(by year, 54 schools in total)

[Appendix 2] Laws Governing Operation of Meister High Schools

[Appendix 3] Distribution of Meister High School in Korea







## Meister High School System in Korea

### <Appendix 1> Meister High Schools designated from 1<sup>st</sup> to 17<sup>th</sup> Designation (by year, 54 schools in total)

City/Province	Round of designation	Classification	Name of school	Industry	Freshmen headcount	Year of foundation	Relevant ministry
Seoul (4)	1st	Private	Sudo Electric Technical High School	Energy	200	2010	
	2nd	Private	Mirim Girls' Information Science High School	New media content	120	2010	
	5th	Public	Seoul Robotics High School	Robotics	160	2013	MOTIE
	8th	Public	Seoul Urban Science Technical High School	Overseas construction and plant	140	2016	MOLIT
Busan (4)	1st	Public	Busan Automobile High School	Automobile	120	2010	
	2nd	National	Busan National Mechanical Technical High School	Machinery	300	2010	MSS
	3rd	National	Busan National Maritime High School	Maritime	160	2012	MOF
	16th	Public	Busan Industrial Science High School	Software	80	2021	MSIT
Daegu (4)	1st	Public	Gyeongbuk Machinery Technical High School	Machinery and mechatronics	300	2010	
	9th	Public	Daegu iL Meister High School	Automobile	120	2015	
	10th	Public	Daegu Software High School	SW and SW convergence	60	2016	MSIT
	11th	Public	Daegu Agricultural Meister High School	Urban high-tech agricultural business	120	2017	MAFRA
Incheon (2)	2nd	Public	Incheon Electronic Meister High School	Electronics and communication	160	2010	
	4th	National	Incheon National Maritime High School	Maritime	120	2012	MOF
Gwangju (2)	2nd	Public	Gwangju Automatic Equipment Technical High School	Automation equipment	80	2010	
	11th	Public	Gwangju Software Meister High School	Software	80	2017	MSIT
Daejeon (2)	2nd	Private	Dong-ah Meister High School	Electronics and machinery	200	2010	
	9th	Public	Daedeok Software Meister High School	Software	80	2015	MSIT
Ulsan (3)	2nd	Public	Ulsan Meister High School	Machinery and automation	120	2010	
	3rd	Public	Ulsan Energy High School	Energy	120	2012	
	8th	Private	Hyundai Technical High School	Shipbuilding maritime plant	120	2015	MOTIE
Gyeonggi (3)	2nd	Public	Suwon Hi-tech High School	Mechatronics	160	2010	
	2nd	Public	Pyeongtaek Mechanical and Technical High School	Automobile and machinery	160	2010	
	15th	Public	Gyeonggi Game Meister High School	Game contents	72	2020	MCST
Gangwon (3)	1st(14)	Public	Wonju Medical Equipment Technical High School	Medical equipment and bio	120	2010	
	5	Public	Samcheok Meister High School	Electricity generation	80	2013	
	15th	Public	Korea Fire Meister High School	Firefighting	80	2020	



City/ Province	Round of designation	Classification	Name of school	Industry	Freshmen headcount	Year of foundation	Relevant ministry
Chungbuk (3)	1st	Public	Chungbuk Semiconductor High School	Semiconductor equipment	120	2010	
	4th	Public	Korea Bio Meister High School	Bio	120	2012	
	6th	Public	Chungbuk Energy High School	Next-generation battery	80	2013	
Chungnam (5)	1st	Public	Hapduk Steel High School	Steel	100	2010	
	3rd(13)	Public	Gongju Meister High School	Electric and electronics	80	2012	
	4th	Public	Yeonmudae Technical High School	Automobile part manufacturing	100	2012	
	9th	Public	Korea Food Meister High School	Food	60	2015	MAFRA
	17th	Public	Asan Mechatronics High School	Smart Factory	80	2022	MSS
Jeonbuk (4)	1st	Public	Gunsan Mechanical Technical High School	Shipbuilding and Machinery	140	2010	
	2nd	National	Chonbuk Mechanical Technical High School	Machinery	260	2010	MSS
	7th	Public	Horseman High School	Horse industry	40	2014	MAFRA
	11th	Public	Gimje Meister High School for Agriculture and Life	Agricultural and bio production and processing	90	2017	MAFRA
Jeonnam (4)	2nd	Public	Korea Port Logistics High School	Port logistics	90	2010	
	5th	Public	Jeonnam Life Science High School	Green agriculture and livestock	90	2013	MAFRA
	6th	Public	Yeosu Petrochemical High School	Petrochemical	90	2013	
	7th	Public	Wando Fisheries High School	Fishing and fishery processing	72	2014	MOF
Gyeongbuk (7)	1st	National	Gumi Electronic Technical High School	Electronics	280	2010	MSS
	2nd	Public	Kumoh Technical High School	Machinery and electronic mobile	200	2010	
	5th	Private	Pohang Jecheol Technical High School	Steel	180	2013	
	5th	Public	Korea Nuclear Meister High School	Nuclear power facility	80	2013	
	10th	Public	Gyeongbuk Food Science Meister High School	Food quality control	60	2018	MAFRA
	14th	Public	Korea Global Business Meister High School	Global business	60	2020	MSS
Gyeongnam (4)	1st	Public	Geoje Technology High School	Shipbuilding	160	2010	
	2nd	Public	Samchunpo Technical High School	Aviation and shipbuilding	100	2010	
	4th	National	Air Force Aviation Science High School	Aviation technology	150	2012	MND
	12th	Public	Korea Nano Meister High School	Nano convergence	100	2019	MOTIE



<Appendix 2> Laws Governing Operation of Meister High Schools

Reference		Laws governing operation of Meister high schools	
Item		Content	Relevant clause (current)
Basis and name		High school tailored to industry demand	Enforcement Decree of the Elementary and Secondary Education Act (herein Enforcement Decree) Article 90, Paragraph 1, Item 10
Designation	Procedure for Designation and annulment	Superintendent of education (city or province) →Minister of Education agrees	Enforcement Decree Article 90, Paragraphs 2,3,5 Enforcement Rule of the Elementary and Secondary Education Act (herein Enforcement Rule) Articles 56, 57
	Operation performance evaluation	Superintendent of education may annul the designation after performance evaluation every 5 years (For national schools, Minister of Education consults with the head of relevant central administrative body)	Enforcement Decree, Article 90, Paragraph 4
	Details	Details including designation procedure	Enforcement Decree, Article 90, Paragraph 8 Enforcement Rule Articles 58 through 62 Directive, Article 3
Operation of designation committees		Organization and operation of designation committees, chairperson's roles, etc.	Enforcement Decree, Article 90, Paragraph 6, Article 105-3 Enforcement Rule Articles 63 through 69
Autonomous school		Autonomous school may be designated	Enforcement Decree, Article 105, Paragraph 1, Item 5
Development and operation of curriculum		Schools have authority to run their own curriculum differently from the general curriculum	Enforcement Rule, Article 73, Paragraph 2
Research school		Research school may be designated	Enforcement Rule Article 73, Paragraph 3
Teacher	Recruitment of Principal	Open recruitment of principals is mandatory	Directive, Article 20, Paragraph 1
	Invited teacher	Up to 1/2 of all teacher headcounts may be filled with invited teachers	Directive, Article 20, Paragraph 2
	Industry-school adjunct teacher	Up to 1/3 of all teacher headcounts may be filled with industry-school adjunct teachers	Enforcement Decree, Article 42, Paragraph 6 (amended on Feb. 15th,2013) Directive, Article 20, Paragraph 2
Student	Recruitment	First-term recruitment	Enforcement Decree, Article 80, Paragraph 1, Item 3
		Nationwide recruitment	Enforcement Decree, Article 81, Paragraph 3, Item 2
	Exemption from tuition and entrance fees	Students may be exempt from paying tuition and entrance fees.	Enforcement Rule, Article 75 Amended "Ordinance on School Tuition and Entrance Fees" by city and province



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## Distribution of Meister High School in Korea

### Round of designation

