

Global University-Industry Cooperation and Entrepreneurial Education Forum
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Education and Training Systems Based on Industry-Academia Cooperation in Korea

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- Education and training systems based on IAC in Korea
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- Overview of major manpower training projects based on IAC

2. Achievements in training human resources based on IAC

- Internship, Capstone design, Entrepreneurship education, etc.

3. Future policies and directions

- Regional Innovation System and Education (RISE)

Basis of IAC Education and Training System in Korea

1. Legal basis

- 1963 Enactment of the 'Industrial Education Promotion Act'
- 2003 Revised to 'Promotion of Industrial Education and Industry-Academic Cooperation Act'
- 2012 Revised to 'Industrial Education Enhancement and Industry-Academia-Research Cooperation Promotion Act' (abbreviated as Industry-Academia Cooperation Act ; hereafter, the Act)
- Dec.2022 Revised the Act in effect

2. Overall governance

- 1) Establishment and operation of the '**National Industry-Academia-Research Cooperation Committee**' (affiliated with the Prime Minister, Based on Article 14 of the Act)
 - Co-chairmen (the Prime Minister and a civilian nominated by the President), up to 25 members (Minister of Education as secretary)
- 2) Establishment and operation of '**Industrial Education Center**' (Based on Article 13-2 of the Act)
 - The National Research Foundation (NRF) of Korea

Basis of IAC Education and Training System in Korea

3. Establishment and implementation of a comprehensive plan

- 'Industrial Education and Industry-Academia-Research Cooperation Basic Plan' (Based on Article 5 of the Act)
- A plan is established every 5 years and confirmed after deliberation by the National Industry-Academia-Research Cooperation Committee
- The 1st (2019~2023) basic plan has been implemented and is almost complete, the 2nd basic plan (2024~2028) is being established

IAC Education and Training System in Korea

1. Goal of human resource education and training based on IAC

- Responding to rapid changes to an intelligent information society such as **digital transformation**
- Respond to and overcome **local university crises** such as concentration in the metropolitan area, decline in school-age population, aging society, and regional extinction
- Nurturing **local residential workforce and human resources** tailored to local industry needs

2. 7 key categories for nurturing talent based on IAC

1) Innovation in curriculum, teaching/learning method, and infrastructure

- nurturing hands-on experience and competency in cutting-edge new industries/new technologies

2) Revitalizing employment and entrepreneurship

- improving and strengthening local settlement conditions, revitalizing and strengthening the innovation ecosystem in regional specialized/key industries

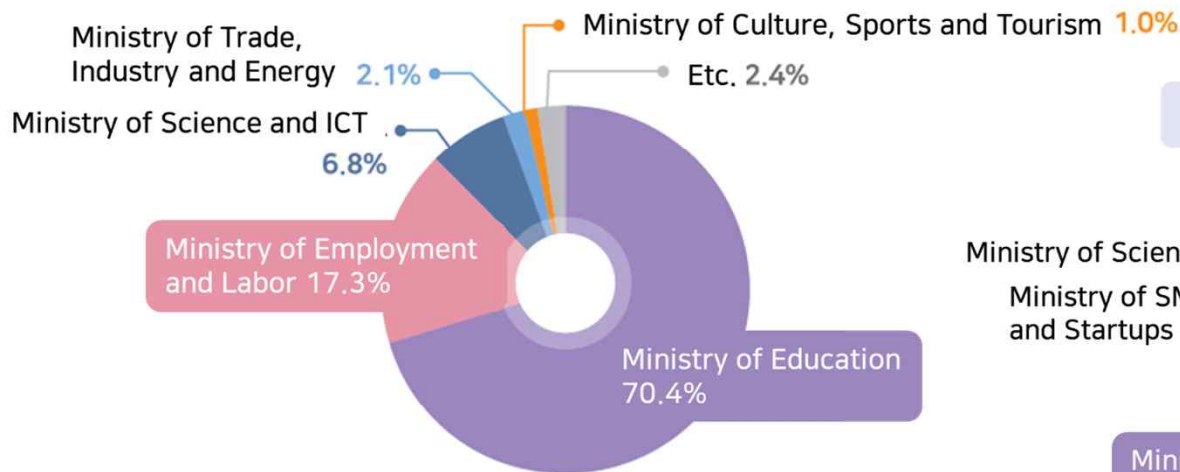
IAC Education and Training System in Korea

- 3) Strengthening industry-academia joint research and technology development**
 - Strengthening global competitiveness of local industry's technology
- 4) Strengthening technology transfer and commercialization capabilities and improving performance**
 - Expanding and upgrading the scale of university profit generation
- 5) Strengthening and expanding infrastructure, sharing and cooperation networks**
 - Expanding sharing and cooperation of human and material resources
- 6) Strengthening vocational and lifelong education**
 - Strengthening the expertise of various local residents including current employees, developing local communities and revitalizing the local economy
- 7) Governance innovation**
 - Establishment and operation of a practical local IAC system, and improvement through feedback

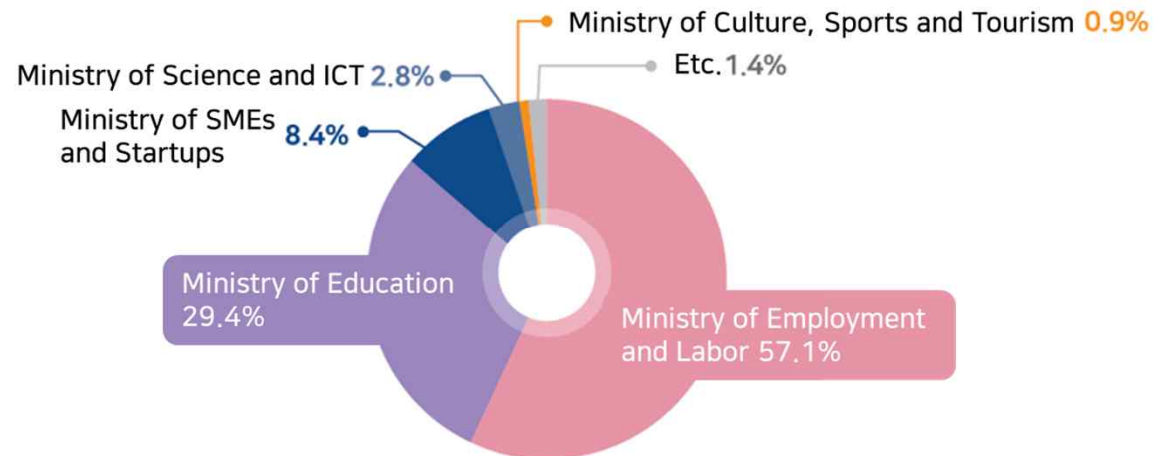
Current Status of Government-led Projects

Overview of talent development projects in 2023 – 20 central administrative agencies, 276 projects, 6.89 million beneficiaries, KRW 13.5027 trillion (13.1% increase compared to 2022)

Budget proportion by ministry



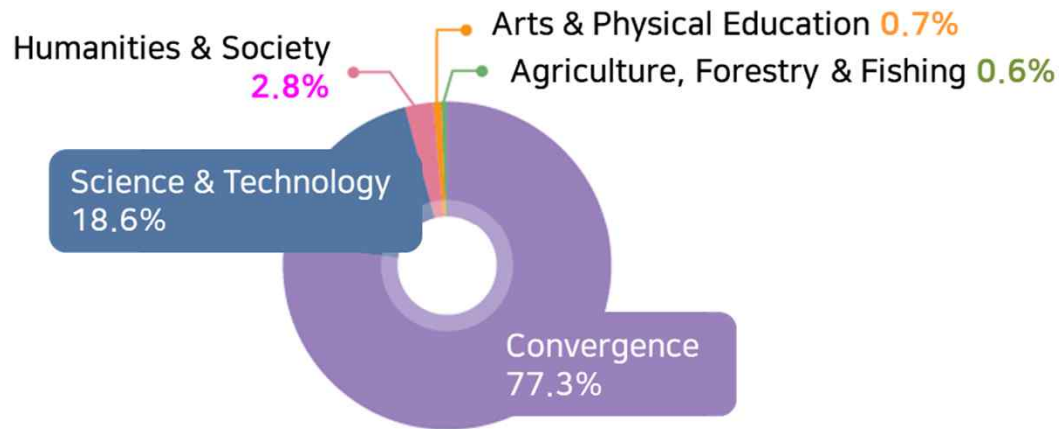
Proportion of beneficiaries by ministry



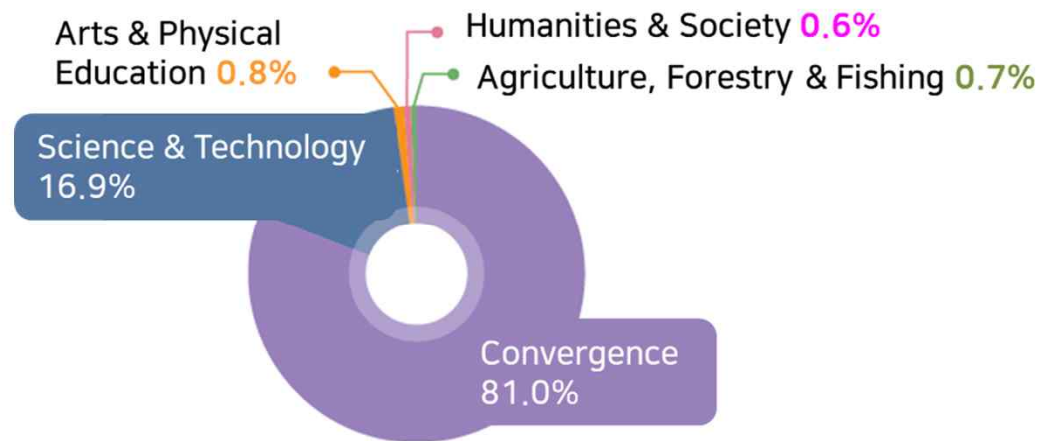
Source : Korea Talent Development Project Guide, Ministry of Education. 2023

Overview of Government-led Talent Development Projects

Budget proportion by 5 major area



Proportion of beneficiaries by 5 major area



Area	No. of Project	2023 Budget		2023 Beneficiaries	
		KRW Million	Ratio(%)	No. of people	Ratio(%)
Science & Technology	133	2,513,206	18.6	1,165,003	16.9
Humanities & Society	32	379,865	2.8	42,089	0.6
Arts & Physical Education	12	99,655	0.7	56,596	0.8
Agriculture, Forestry & Fishing	17	74,635	0.6	43,008	0.7
Convergence	82	10,435,305	77.3	5,583,576	81.0
Total	276	13,502,666	100.0	6,890,272	100.0

Source : Korea Talent Development Project Guide, Ministry of Education. 2023

Overview of Government-led Talent Development Projects

5 core and high-tech industries and technology ecosystem

첨단분야		No. of Project		2023 Budget		2023 Beneficiaries	
		Number	%	KRW Million	%	No. of people	%
A	Aerospace/Mobility	18	12.7	799,698	18.2	109,212	9.3
B	Biohealth	31	21.8	366,258	8.3	28,427	2.4
C	Component	24	16.9	940,003	21.3	698,969	59.3
D	Digital	47	33.1	1,521,526	34.6	275,294	23.4
E	Eco/Energy	22	15.5	775,845	17.6	66,360	5.6
Total		142	100	4,403,331	100	1,178,262	100

A. Aerospace/Mobility - drones, future automobiles, intelligent robots, space

B. Biohealth - healthcare, green/white/red-bio, new drug, genome analysis

C. Component - semiconductor, display, secondary battery, new materials

D. Digital - A.I., big data, next-generation communication, IoT, AR/VR, Blockchain, Cloud, Fintech

E. Eco/Energy - new energy, smart-city, smart factory, smart farm, smart ship

Source : Korea Talent Development Project Guide, Ministry of Education. 2023

Overview of Government-led Talent Development Projects

Status of support in high-tech fields by government department

Department	Number of Project	2022		2023	
		KRW Million	No. of people	KRW Million	No. of people
Ministry of Education	15	1,237,088	191,832	1,654,967	165,517
Ministry of Employment and Labor	10	1,139,189	456,710	1,461,574	353,065
Ministry of Science and ICT	43	771,932	60,684	822,294	54,732
Ministry of Trade, Industry and Energy	27	265,531	18,592	279,290	25,276
Ministry of Environment	5	43,425	4,511	45,381	4,842
Ministry of Health and Welfare	15	30,121	4,115	44,203	4,159
Ministry of SMEs and Startups	4	58,526	783,204	42,900	563,200
Ministry of Culture, Sports and Tourism	4	17,920	1,693	23,892	1,849
Ministry of Land, Infra. and Transport	8	11,657	2,599	14,537	2,490
Ministry of Food and Drug Safety	6	5,864	2,704	5,840	2,258
Ministry of Oceans and Fisheries	1	4,776	356	3,000	247
Maritime Affairs and Fisheries Admin.	1	-	-	1,850	130
Financial Services Commission	1	2,033	280	1,830	280
Ministry of Agriculture	1	1,080	78	1,620	160
Korea Disease Control Agency	1	153	57	153	57
Total	142	3,589,295	1,527,415	4,403,331	1,178,262

Source : Korea Talent Development Project Guide, Ministry of Education. 2023

Introduction to Talent Development Projects based on IAC

1. Planner ; Central government (ministry alone, ministry collaboration), local governments, universities, industries, research institutes
2. Execution system; University alone, consortium (university + local government + industry), linkage/union with domestic and foreign institutions
3. Target workforce; Undergraduate students, young people, employed people, newly mature adults/career breakers, master's and doctoral students, postdoctoral researchers
4. Type of education; Degree course (linked to course credits), non-degree course
5. Teaching method; Convergence/linked majors (shared between universities), contract-based departments, customized training courses, entrepreneurship education, capstone design, internship/field training, boot camps, etc.
6. Types and main projects of government-led human resource training projects
 - 1) Comprehensive package project; LINC
 - 2) Entrepreneurship/knowledge commercialization education; SCOUT, Entrepreneurship-oriented University

Introduction to Talent Development Projects based on IAC

3) Focus on manpower in high-tech industries/technology fields; COSS, matchup, semiconductor specialized university, leading college specializing in new industries, high-tech field boot camp, etc.

4) Focus on regional specialization/key industry manpower; RIS, HiVE, local university revitalization project (university innovation support project types 2 and 3), etc.

5) Regionally linked vocational education and lifelong education; DX-Academy, LiFE*

*LiFE : Lifelong Education at universities for the Future Education

6) Humanities and social science-based convergence talent; HUSS

7) Nurturing researchers ; BK21, Leading Research Center Project (**ERC, SRC, RLRC, IRC), ***KIURI, ****LAMP

** Research Center - Engineering, Science, Regional Leading, Innovation

*** KIURI – Korea Initiative for fostering University of Research & Innovation

**** LAMP - Learning & Academic research institution for Master's·PhD students, and Postdocs

LINC



- **L**eaders in **I**Ndustry-**U**niversity **C**ooperation
- **Comprehensive package talent development project covering all areas of industry-academia-research cooperation** – industry-academia linkage/socially customized education, infrastructure buildup, internship/field training, capstone design, technology commercialization and start-up, corporate support (non-R&D support such as industry-academia joint technology development, marketing, etc.), community issues solved, sharing/collaboration system establishment, etc.
- LINC (2012~2016), LINC+ (2017~2021), and LINC3.0 (2022~2027) – plan for 16 years
- LINC3.0
 - Support for a total of 76 universities nationwide ; Technology innovation leading type (13 schools), Demand-tailored growth type (53 schools), Cooperation foundation building type (10 schools)
 - Support for a total of 59 colleges; Demand-tailored growth type (44 schools), Cooperation foundation building type (15 schools)
- Budget (2023) – [University] KRW 302.5 billion, [College] KRW 104.5 billion

COSS



- **C**onvergence and **O**pen **S**haring **S**ystem
- Establish a cooperation system between universities in the metropolitan area and non-metropolitan areas, **jointly develop and operate convergence curricula for each cutting-edge new industry/new technology field**, and operate a flexible academic system to provide educational opportunities to any university/college student regardless of major
- Goal of nurturing 100,000 talents in the high-tech fields by establishing an innovative convergence university system through convergence, openness, and cooperation
- Promotion of corporate participation career-employment linkage project, **WE (Work-Experience)-Meet** ; An employment support program where universities and companies cooperate to provide work experience opportunities to improve adaptability to the workplace. Provide on-site internship opportunities where students directly carry out projects presented by companies and combine mentoring from incumbents (participating companies – SK Hynix, Microsoft, EBS, etc.)

COSS



- Planning/promoting a total 6-year project (2021~2026); A total of 13 fields, 53 schools participating, local government-led promotion system strengthened
 - **Selected in 2021 (8 fields)** ; Artificial intelligence, Big data, Next-generation semiconductors, Future automobiles, Biohealth, Realistic media(AR/VR), Intelligent robots, New energy industry
 - **Selected in 2023 (5 fields, 5 metropolitan local governments participated)**; Aerospace & Drone (Gyeongnam), Semiconductor material/parts/equipment (Jeonbuk), Secondary battery (Chungbuk), Next-generation communication (Gwangju), Eco-Up (Sejong)
- Budget and No. of people supported (2023) – KRW 144.3 billion, 106,714 people

HUSS

- **H**umanities **U**tmost **S**haring **S**ystem
- **Actively fostering competitive humanities-based convergence talent at universities to solve problems caused by social changes such as the 4th Industrial Revolution and post-coronavirus.**
- **Develop and operate a convergence curriculum to solve social problems and support the establishment of a foundation for cooperation between universities to foster convergence talents based on the humanities and social sciences through convergence, openness, and cooperation**
- **Planning and implementation as a total 3-year project (2023-2025); Local government participation and cooperation**
 - **Selected in 2023 (5 fields, 25 universities participating); Digital (values and norms of the digital age), Environment (climate crisis), Risk society (risk society and national strategy), Population structure (response to changes in demographic structure), Global·Culture (global society and leading cultural and artistic innovation)**
- **Budget and No. of Supported Persons (2023) – KRW 15 billion, 12,118 people (estimated)**

SCOUT

- **S**tartup **C**o-**O**p **U**niversity for **T**ransition of Education
- **Establishing a regional entrepreneurship education base and efficient university entrepreneurship education ecosystem through collaboration with local governments, etc**
- **Fostering universities as the center of entrepreneurship education in the community**
- **Nurturing local startup talent by operating specialized education programs linked to local key industries through collaboration with local governments**
- **Planning and implementation as a total 5-year project (2023~2027)**
 - **Selected in 2023 ; 5 university consortia and 3 college consortia**
 - **A total of 35 universities participated (23 universities, 12 colleges)**
- **Budget (2023) – KRW 5.19 billion**

HiVE (Higher Vocational Education Hub District)

- **(Type 1) Higher Vocational Education Base Zone (HiVE) Project** - Colleges cooperate with **basic local governments** to develop regional specialized fields (playing a central role in creating local jobs and strengthening competitiveness or contributing to regional development goals) that meet the mid-to long-term development goals of the region. Support to serve as a base for regional-based higher vocational education
- **(Type 2) Career conversion education institution (DX-Academy, pilot project)** - Colleges cooperate with **metropolitan governments** to provide level-specific DX competency training courses (DX literacy employees tailored to the needs of local industries to support the role of a career transition training center for new middle-aged and older people in preparation for the digital transformation era
- Planning and implementation as a 3-year project (2022~2025)
 - Selected in 2023 ; (Type 1) 30 consortia and (Type 2) 5 consortia (Gyeongnam, Gwangju, Busan, Chungnam, and Chungbuk) ; A total of 53 universities participated (39 Type 1, 14 Type 2)
- Budget and No. of Supported Persons (2023) – KRW 90 billion, 5,831 people

Regional University Revitalization Support Project (University Innovation Support Project)

- Support for **strengthening the competitiveness of universities through specialization linked to regional development**, based on partnerships between non-metropolitan universities and local governments
- Establishment and operation of **overall regional governance** in which both local governments and local universities participate to discuss project direction and plans for specialization, performance sharing/expansion, etc. - **Local governments, universities, local industries, etc. establish and operate governance for specialization to establish a strategy to cultivate local talent**
- Promoting university-local community coexistence by establishing a university specialization plan linked to local specialization or development plans
- Develop specialized talent tailored to regional industry/community needs
- Planning and implementation as a 2-year project (2023-2024)
- Budget and No. of supporting institutions (2023) – Non-metropolitan area universities (private universities) KRW 190 billion, 66 schools / Non-metropolitan area colleges KRW 60 billion, 69 schools

RIS (Regional Innovation System)

- Various local innovation organizations (such as local governments, universities, companies, and research institutes in the region) **build a regional innovation platform**
 - **Goal; (1) Select regional core fields that meet the region's mid- to long-term development goals, (2) Universities in the region reorganize the education system in connection with core fields and collaborate with regional innovation organizations to solve regional problems**
- The operating organization consists of the '**Regional Cooperation Committee**' (a deliberation and decision-making body) and the '**Dedicated Agency**' (general operation center ; a planning and execution body)
- Planning and implementation as a total 5-year project
- Budget and No. of supporting organizations (2023) – KRW 342 billion, a total of 9 platforms
- * More than 30% of the total project budget is provided by local government

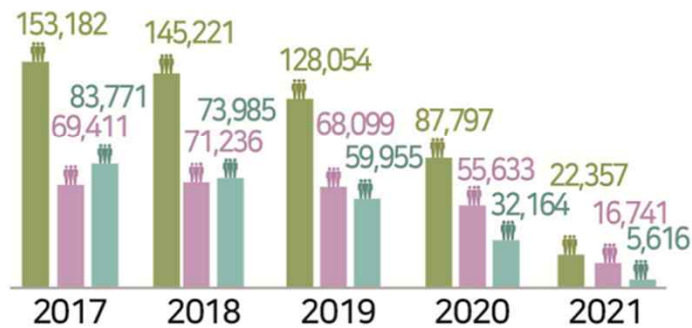
Achievements in Talent Development based on IAC

Field training (Internship) - A system in which universities and organizations (companies) jointly participate to provide practical training at industrial sites for a set period of time to cultivate talent with field adaptability and creativity and grant credits through this training

* Reasons for the decrease in the number of students completing field training - Strengthening the rights and safety of students participating in field training, policy changes to strengthen the field training system (application of the standard field training system), and decrease in participation in training institutions due to economic and social changes due to COVID-19

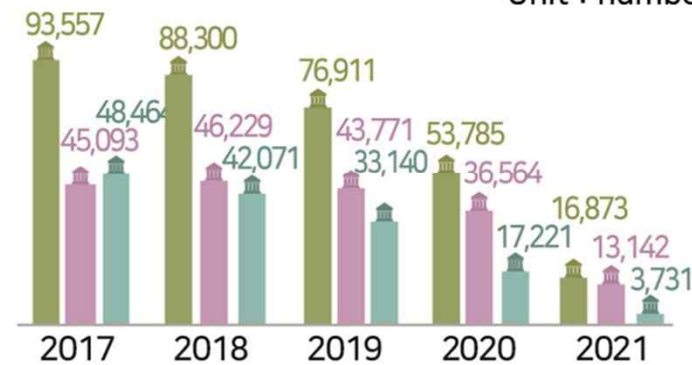
No. of students completing field training

Unit : person



No. of participating companies

Unit : number

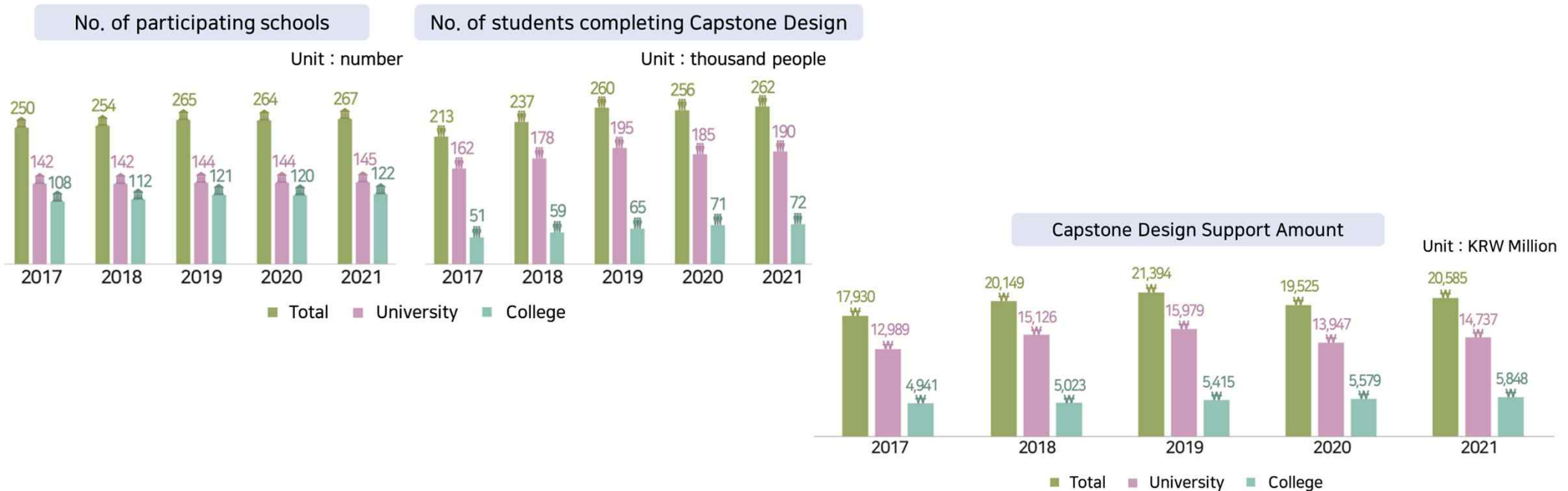


■ Total ■ University ■ College

Source : 2021 University industry-academia cooperation activity investigation report, Ministry of Education & National Research Foundation of Korea

Achievements in Talent Development based on IAC

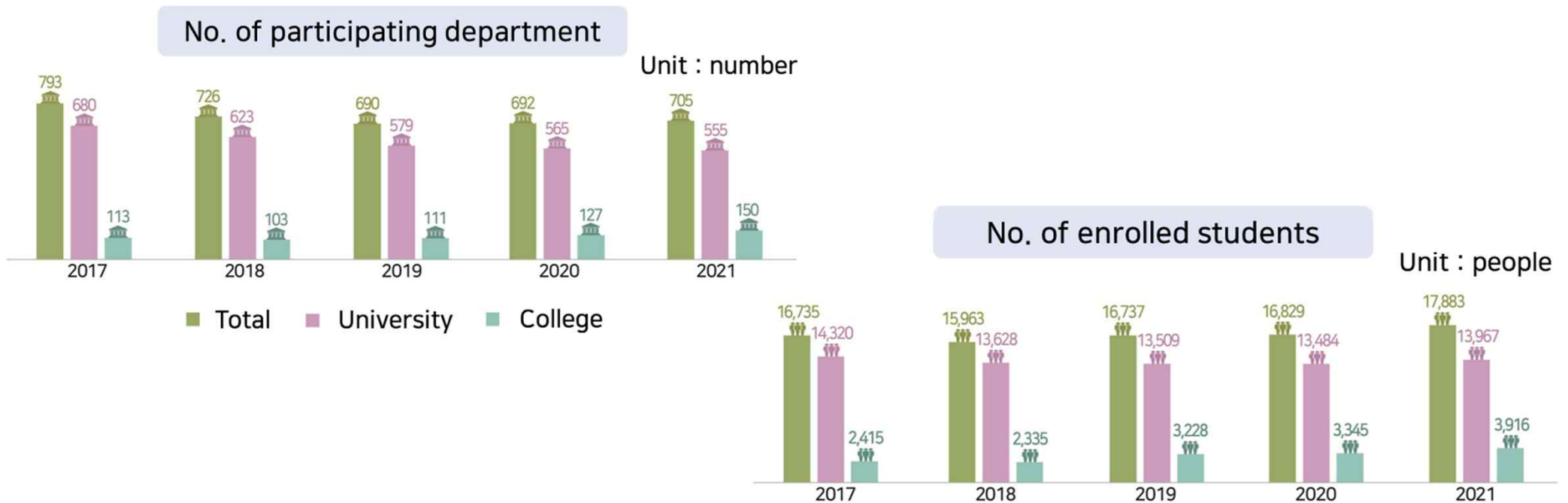
Capstone design - A regular subject that supports students to perform tasks required by industry (or society) based on the theory/practice learned through major courses. The goal is to foster students' creativity, practical skills, teamwork, and leadership through comprehensive problem solving



Source : 2021 University industry-academia cooperation activity investigation report, Ministry of Education & National Research Foundation of Korea

Achievements in Talent Development based on IAC

Contract-based department – A degree program opened and operated outside of the admission quota by contract with the national/local government, or industry, etc., on the premise of employment agreement

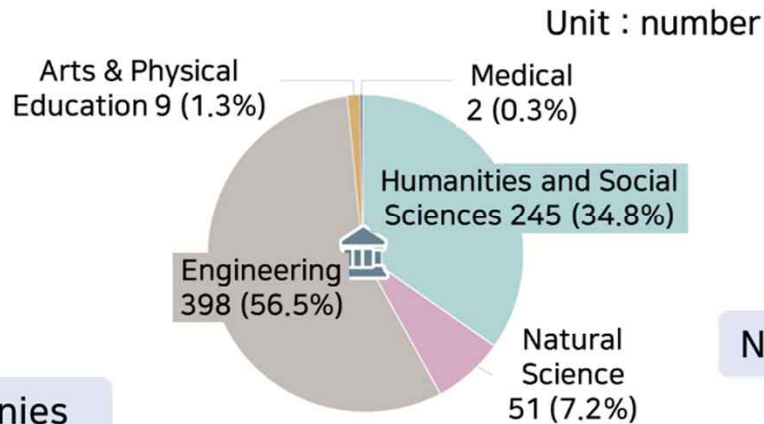


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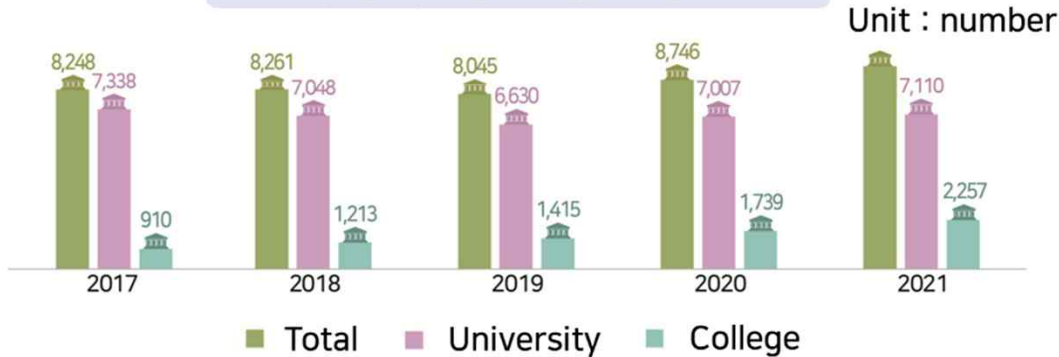
Achievements in Talent Development based on IAC

Contract-based department

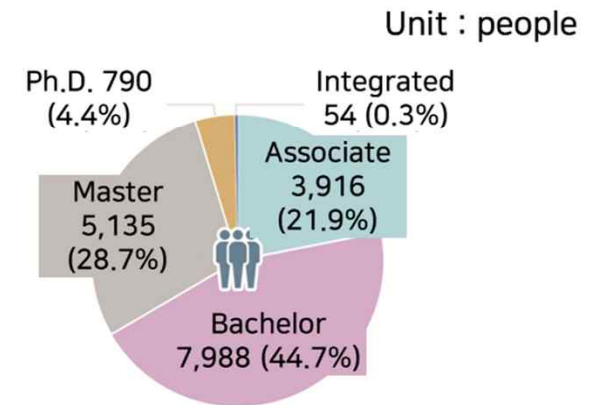
No. of departments by academic field



No. of participating companies



No. of students by degree program

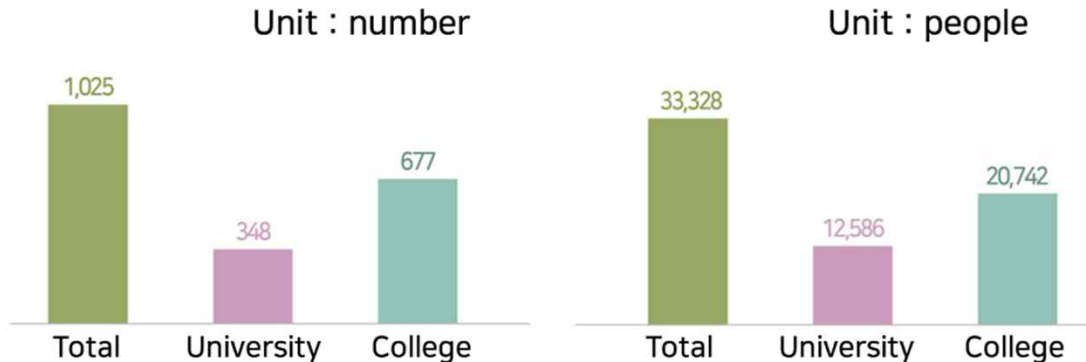


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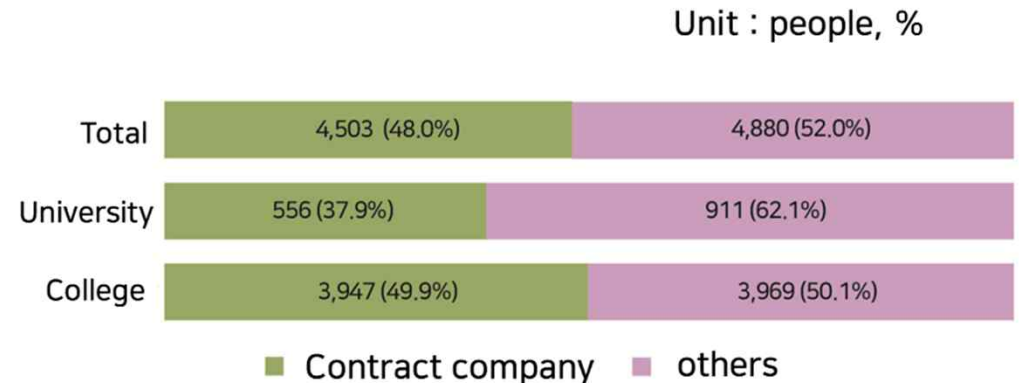
Achievements in Talent Development based on IAC

Industry-customized curriculum - A course that can be opened and operated within the admission quota by agreement with the national/local government, or industry within the scope of school regulations. Participating industries are not obligated to bear expenses, and provide employment agreements or preferential treatment to students who complete the course

No. of curriculum and enrolled students



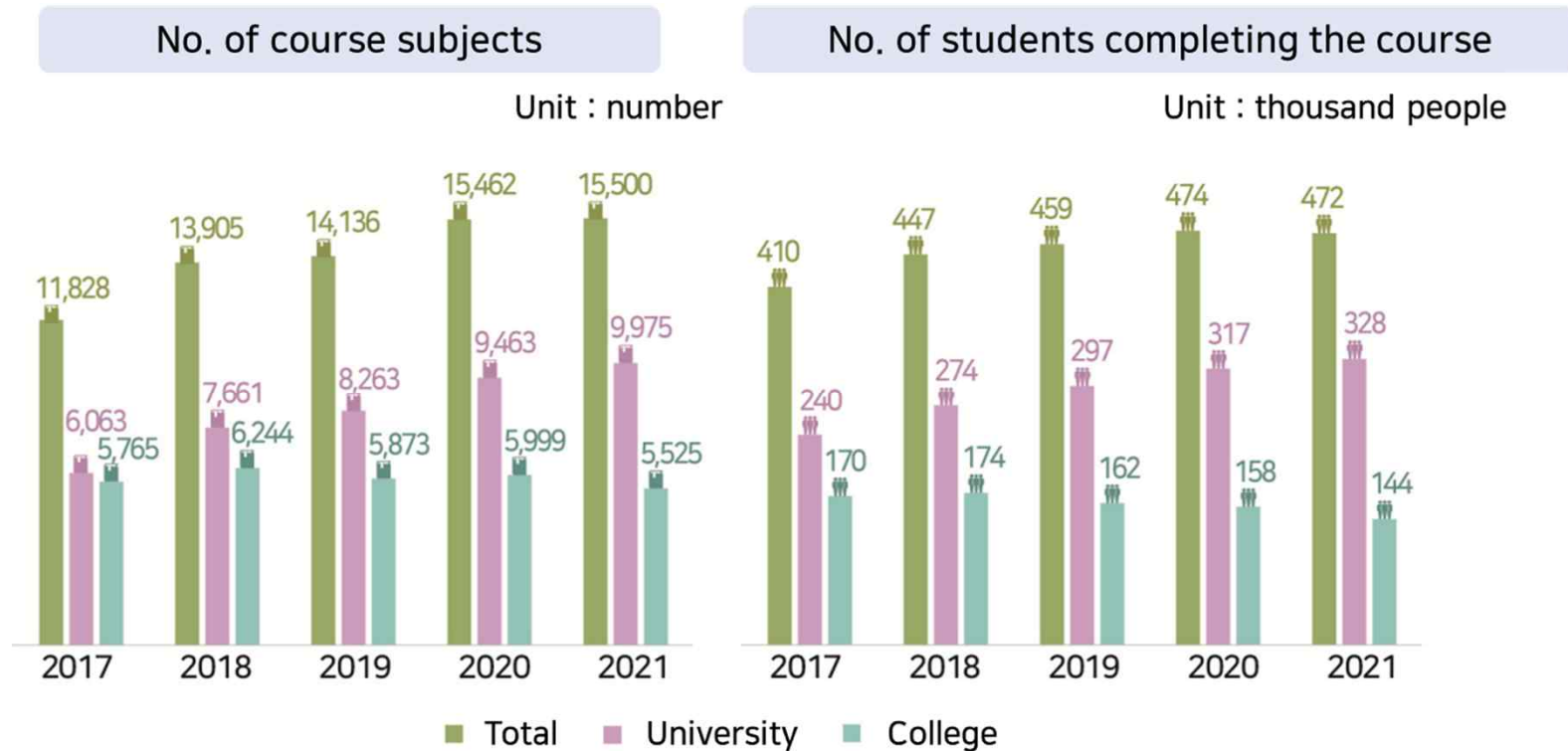
Employment rate



Source : 2021 University industry-academia cooperation activity investigation report, Ministry of Education & National Research Foundation of Korea

Achievements in Talent Development based on IAC

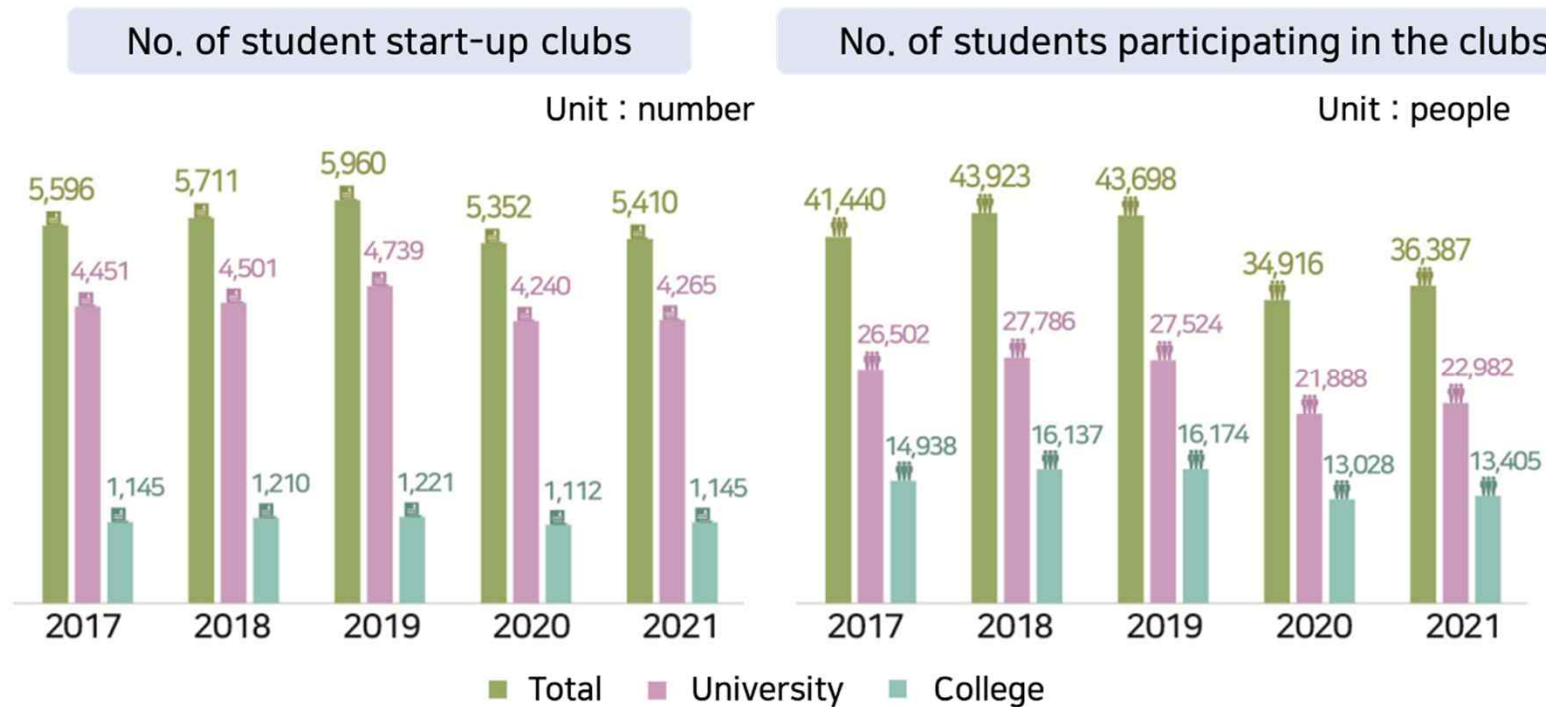
Entrepreneurship education



Source : 2021 University industry-academia cooperation activity investigation report, Ministry of Education & National Research Foundation of Korea

Achievements in Talent Development based on IAC

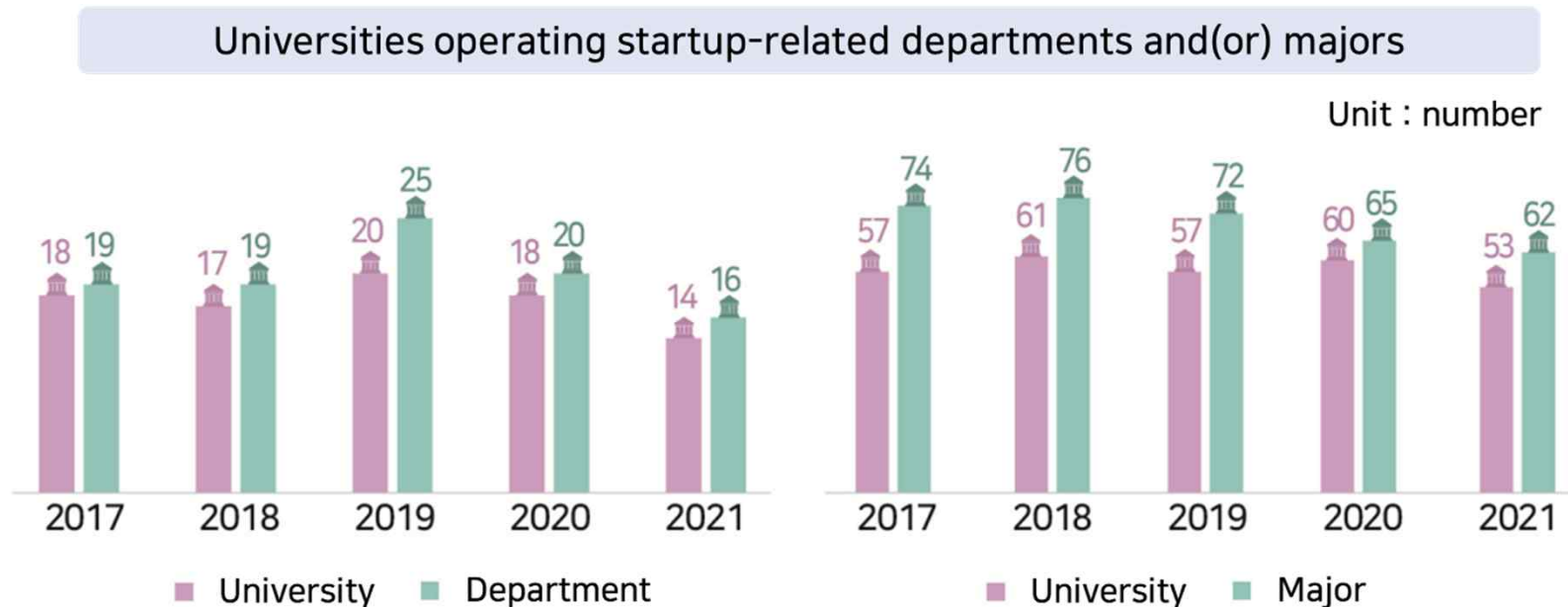
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Achievements in Talent Development based on IAC

Entrepreneurship education



Source : 2021 University industry-academia cooperation activity investigation report, Ministry of Education & National Research Foundation of Korea

Future Policies and Directions – RISE System

- **R**egional **I**nnovation **S**ystem & **E**ducation

- An initiative and a system in which the central government delegates and transfers administrative and financial authority for university support to local governments and promotes mutual growth between regions and universities through strategic support linked to regional development

Projects	'23 Budget (KRW Billion)	'23~24(pilot project)	After 2025
① RIS	354.0	<p style="text-align: center; color: red;">[In 7 metropolitan regions]</p> <p>*University: Strengthening cooperation between local governments and universities</p> <p>*Local government: Establishment of a university support organization</p>	Integration with RISE and expansion to all regions
② LINC 3.0	407.0		
③ LiFE	51.0		
④ HiVE	90.0		
⑤ Regional Univ. Revitalization	250.0		
Total Budget		1.152 KRW Trillion	Over 2 KRW Trillion

Future Policies and Directions – RISE System

- With the goal of **'making universities hubs for regional development'** and **'fostering competitive regional universities,'** we are promoting university innovation in terms of finance, regulation, and structure, and greatly transforming the role of the Ministry of Education to focus on support and furthermore **strengthening regionally-led policies government-wide**
- Strengthening efforts to improve competitiveness in various forms, such as strengthening the role of universities in connection with regional development, university innovation considering regional specialized industries, and conversion of university functions in connection with regional issues and demands.
- Universities become hubs of the regional innovation ecosystem, and local governments lead the establishment of a virtuous cycle of nurturing local talent, employment/entrepreneurship, and settlement through strengthening cooperation and connection between regions, universities, and industries.

Thank You !