

AI education

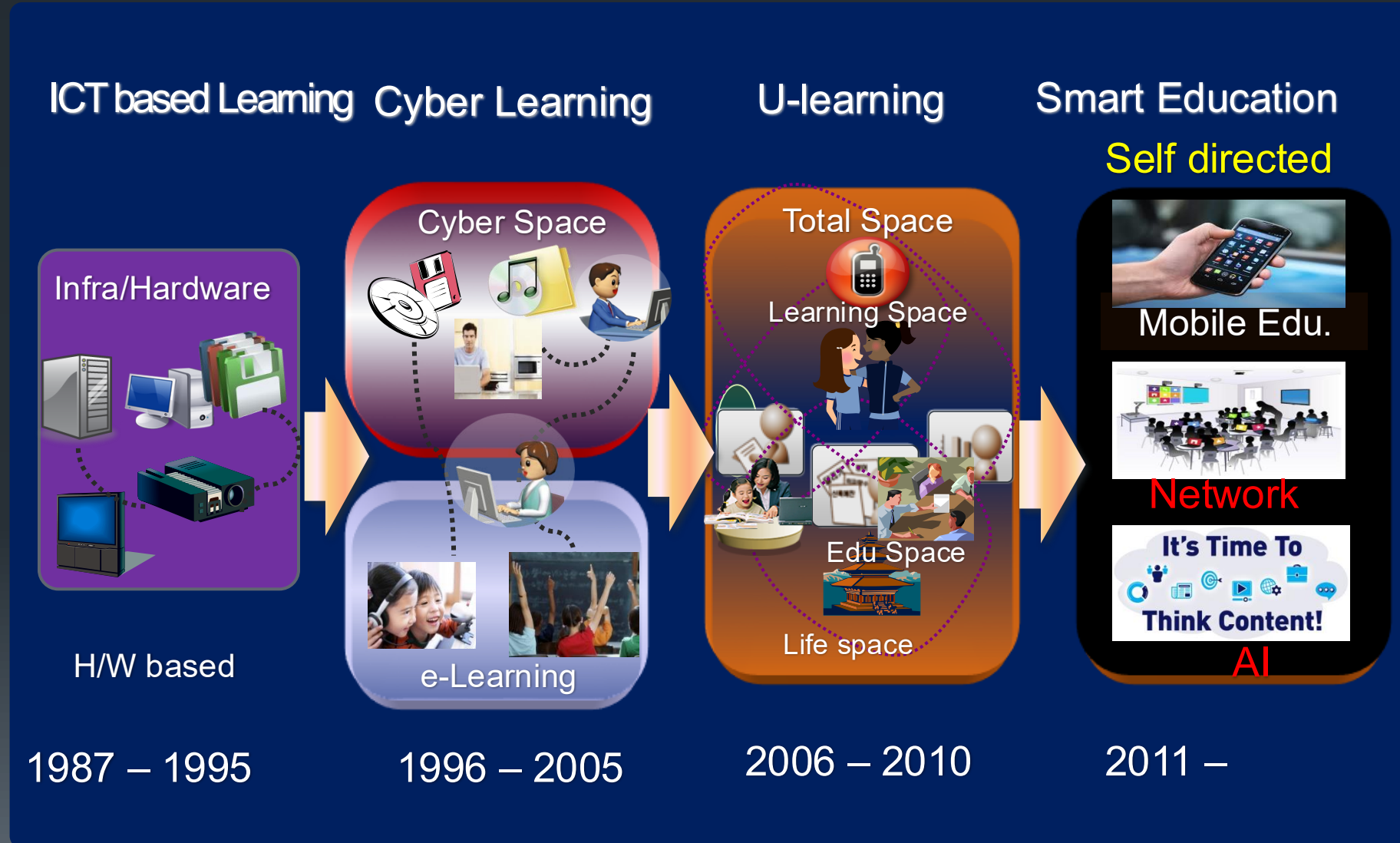
Dr. Dong Hwa Kim

Mega Trend of Education

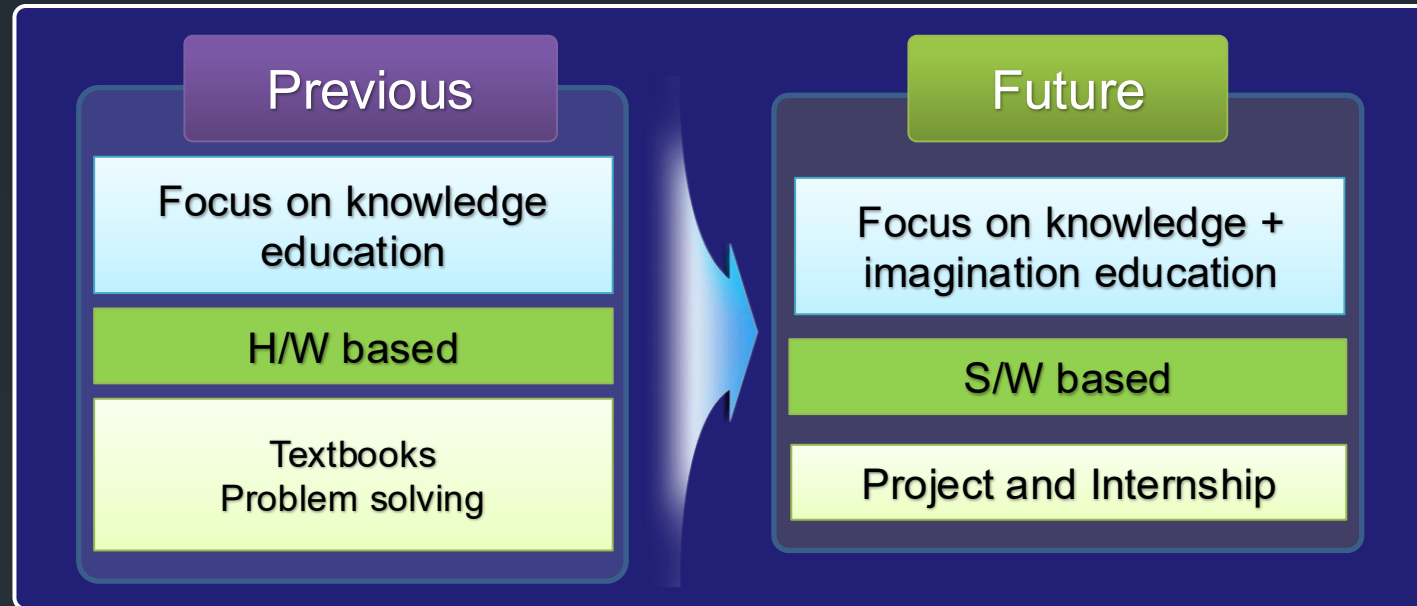
Mega trend of education



Trend of Smart Education

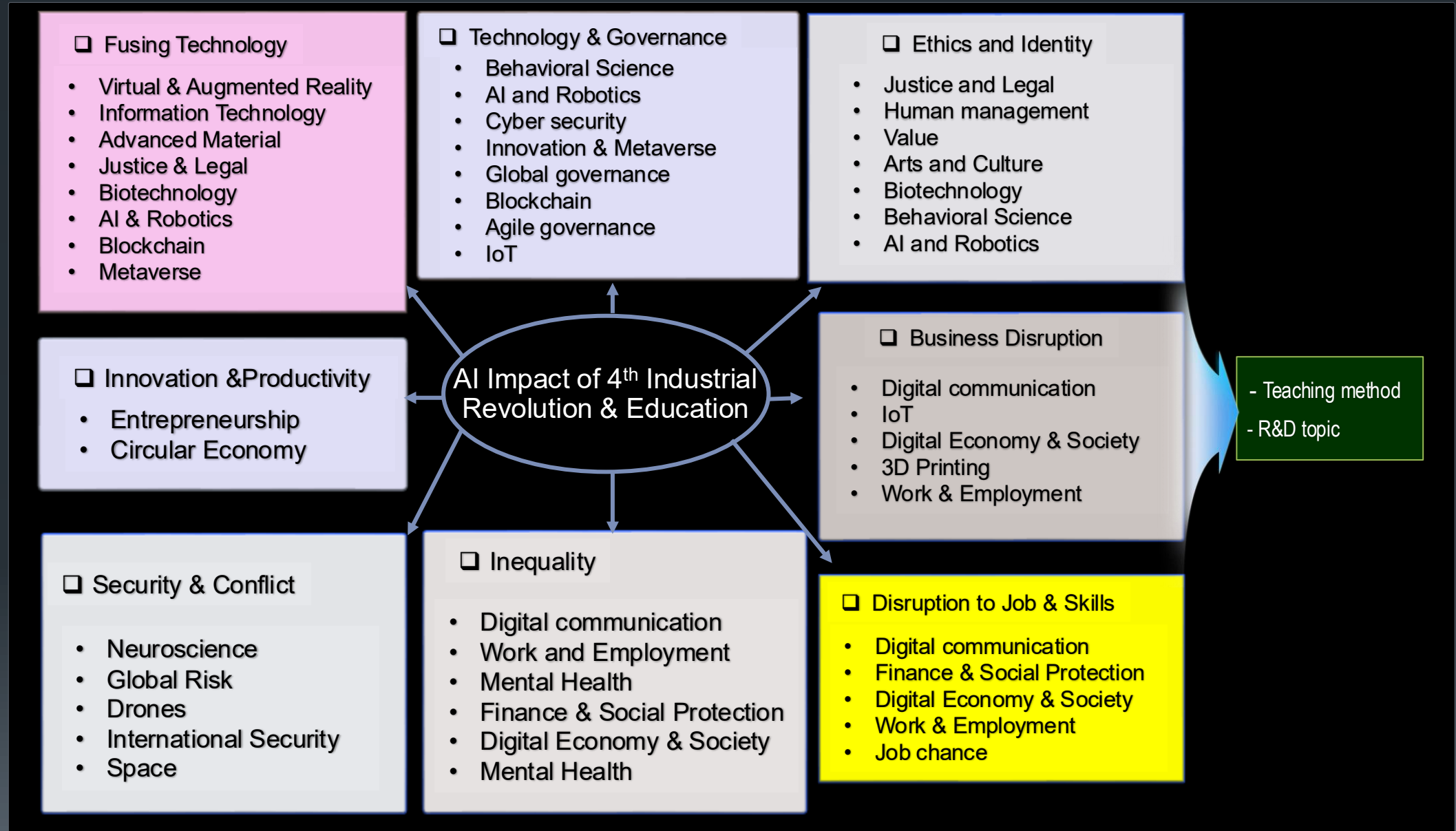


Education and R&D Paradigm



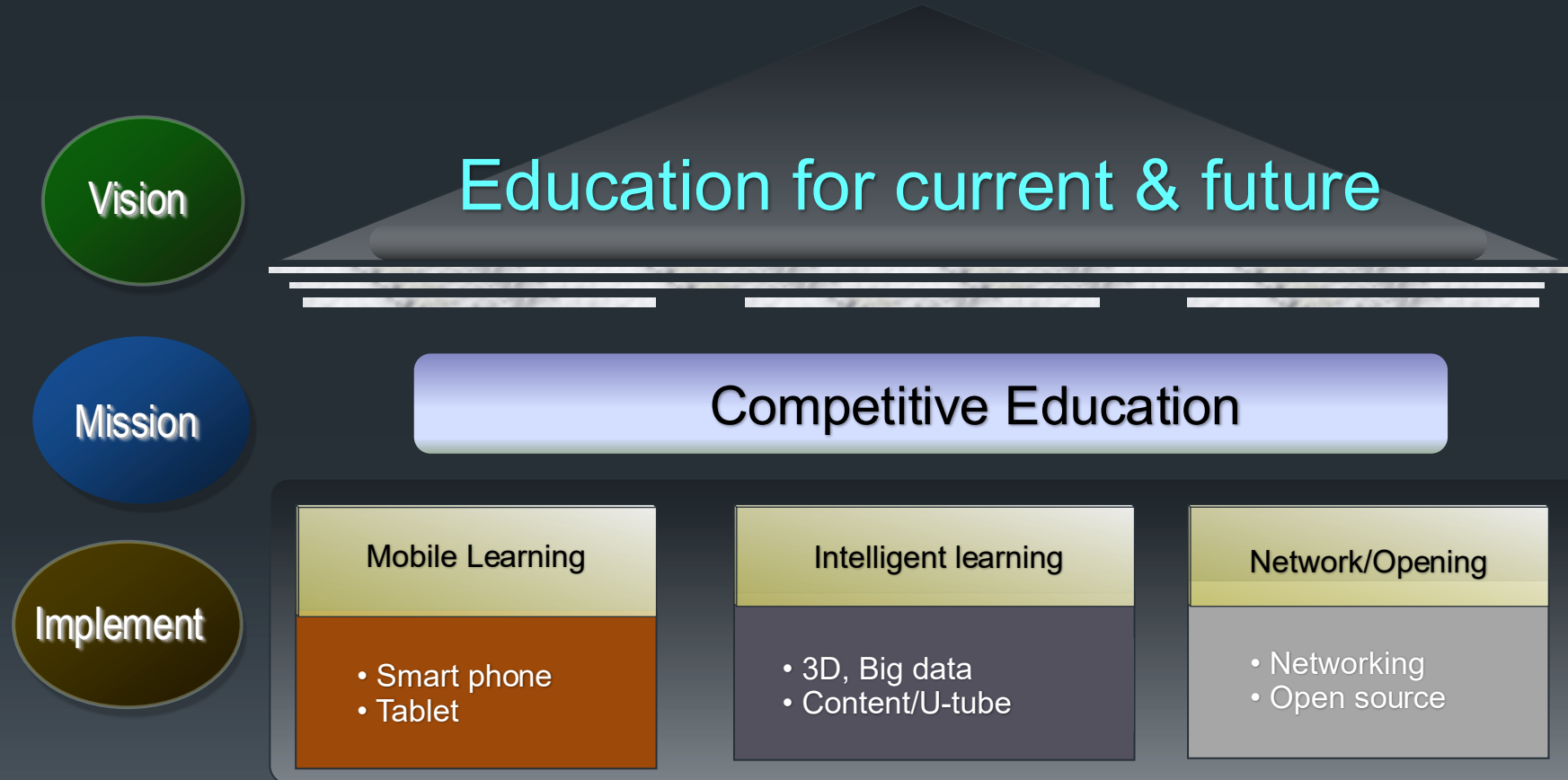
- Idea generation based education
- Open community and open source based education
- Project based education: Self-directed learning

DEVELOPMENT OF TEACHING METHOD AND R&D TOPIC FOR NEW PARADIGM



How to Teach AI?

How to Learn AI?



Education Philosophy

Education Vision

21th Global Specified Competitive Education for Economy and Job

Teaching method

Offline/Mobile/Online/Seminar/Conference/Inviting/Exchange program/Project

Implementation

Self directed learning



Motivation learning



State/School
core value chain

**It's Time To
Think Content!**

A collection of icons including a person, a target, a play button, a globe, a gear, and a speech bubble, arranged around the text "It's Time To Think Content!".

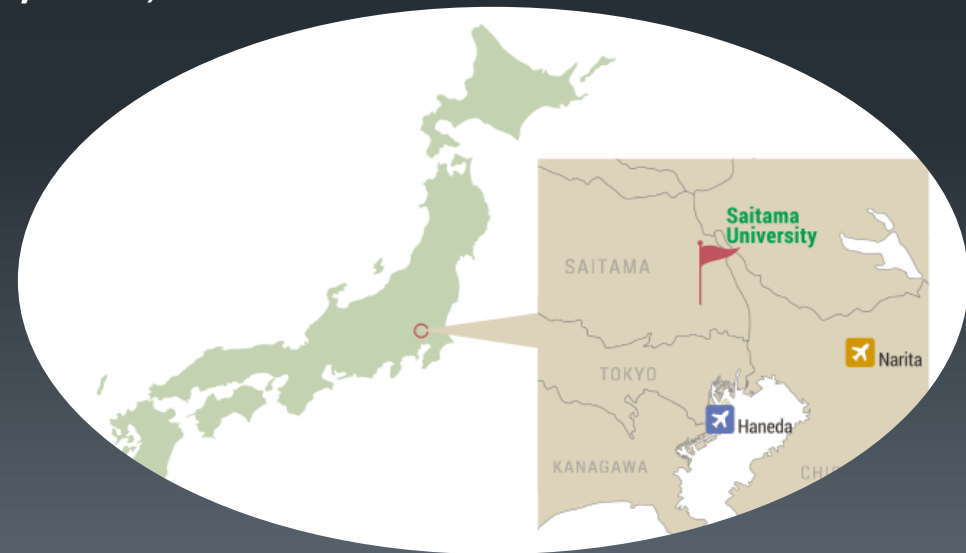
AI SCHOOL OF MIT



- *AI College (Oct. 2018)*
- *Donation: Stephen A. Schwarzman*

AI IN JAPANESE UNIV.

- Saitama University (2019, BS)
- Tokyo University (2019, BS)
- Osaka University (2019, BS)
- Waseda University (2019, BS)



AI IN CARNEGIE MELLON UNI

Carnegie Mellon : AI undergraduate degree

- From Sept , 2018
- Class: 25-30
- <https://thenextweb.com/artificial-intelligence/2018/05/15/carnegie-mellon-becomes-first-us-university-to-offer-undergraduate-degree-in-ai/>



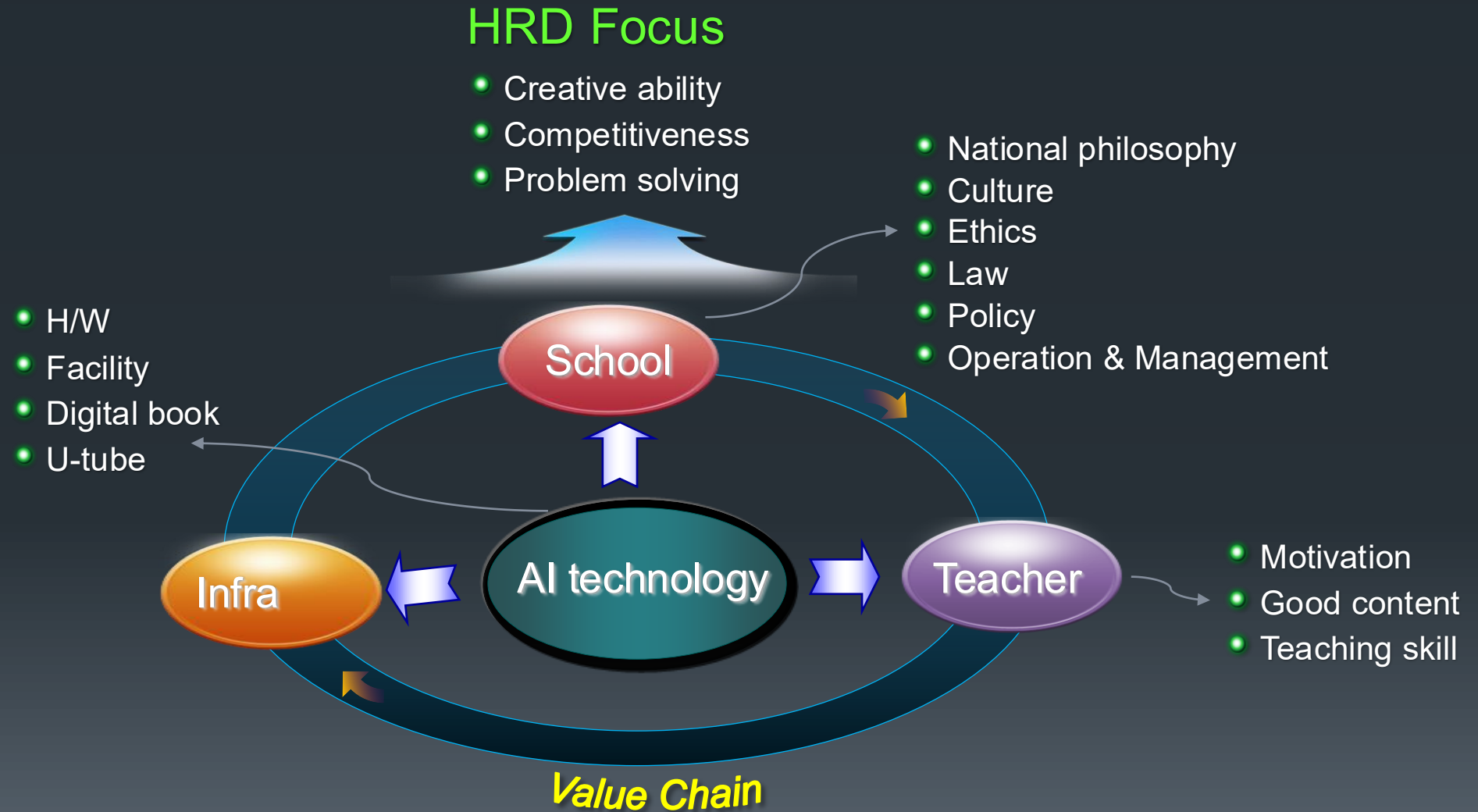
PURPOSE OF SMART EDUCATION SYSTEM

SMART Education Strategy

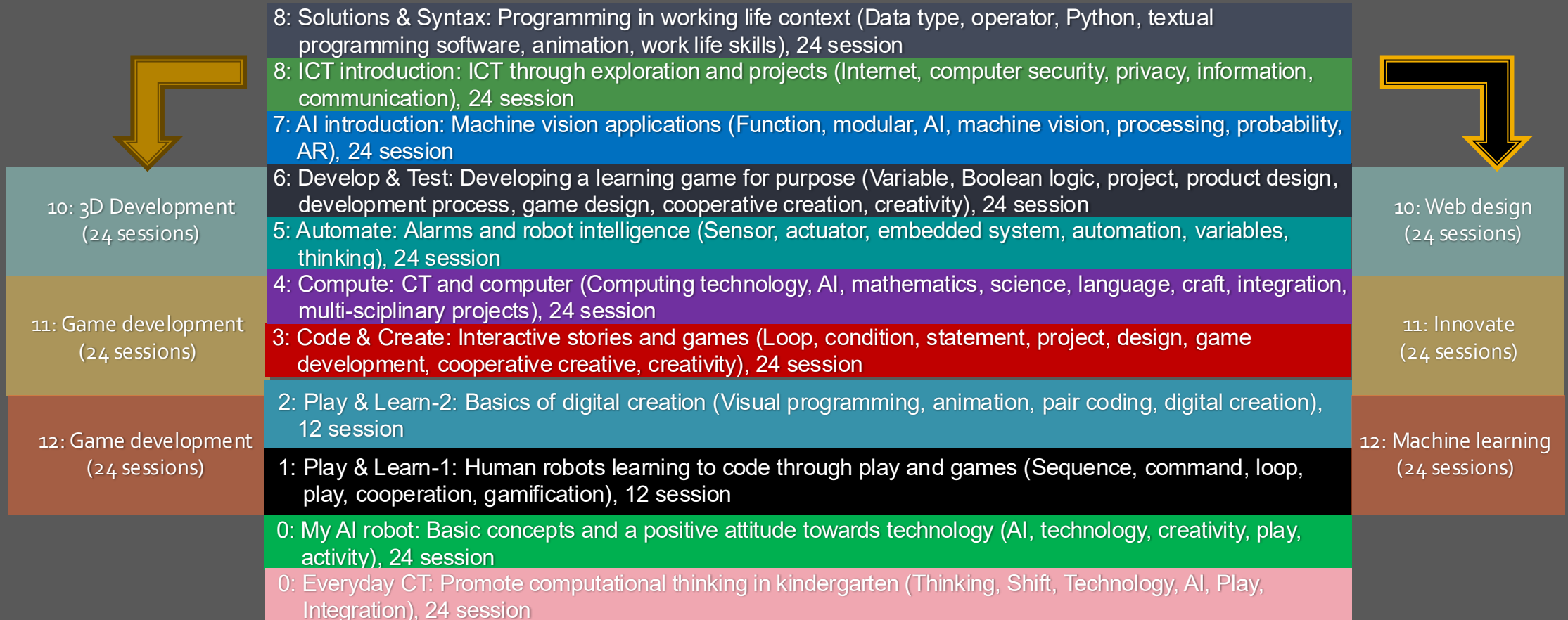
- To strengthen the capabilities of 21st century's learners
- To provide motivation
 - Self- directed (learning attitude): (자기주도적)
 - Motivated (interest): (동기 및 흥미)
 - Adaptive (aptitude and ability): (수준과 적성)
 - Resource enriched (plenty of learning materials): (풍부한 자료)
 - Technology embedded (ICT utilization): (정보기술 활용)

Know-How Building for AI education

EDUCATION PREPARATION FOR 4TH INDUSTRIAL REVOLUTION

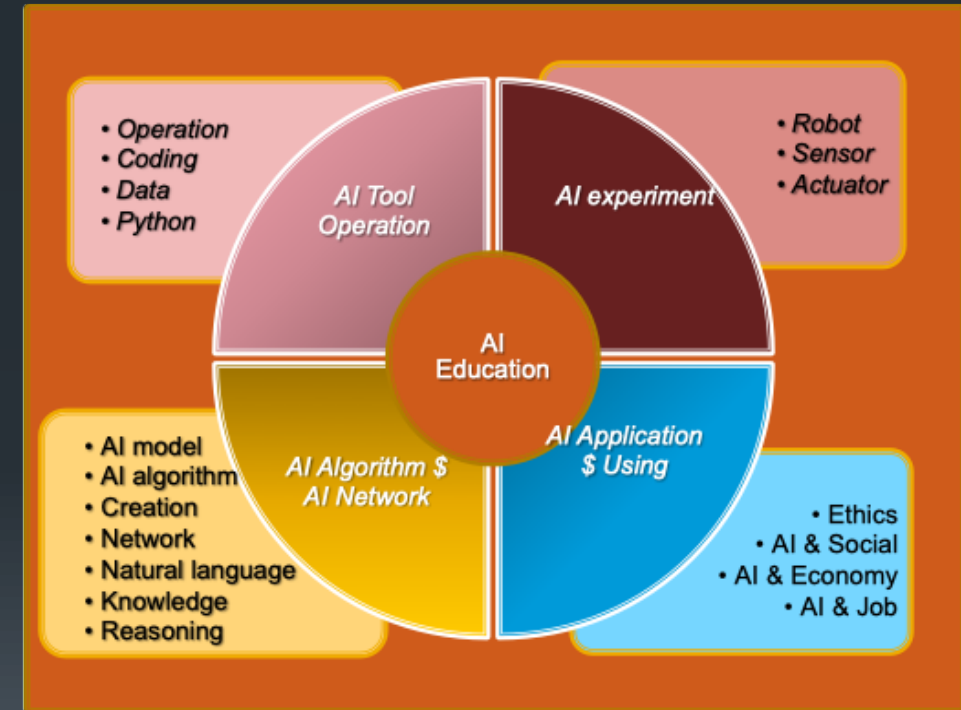
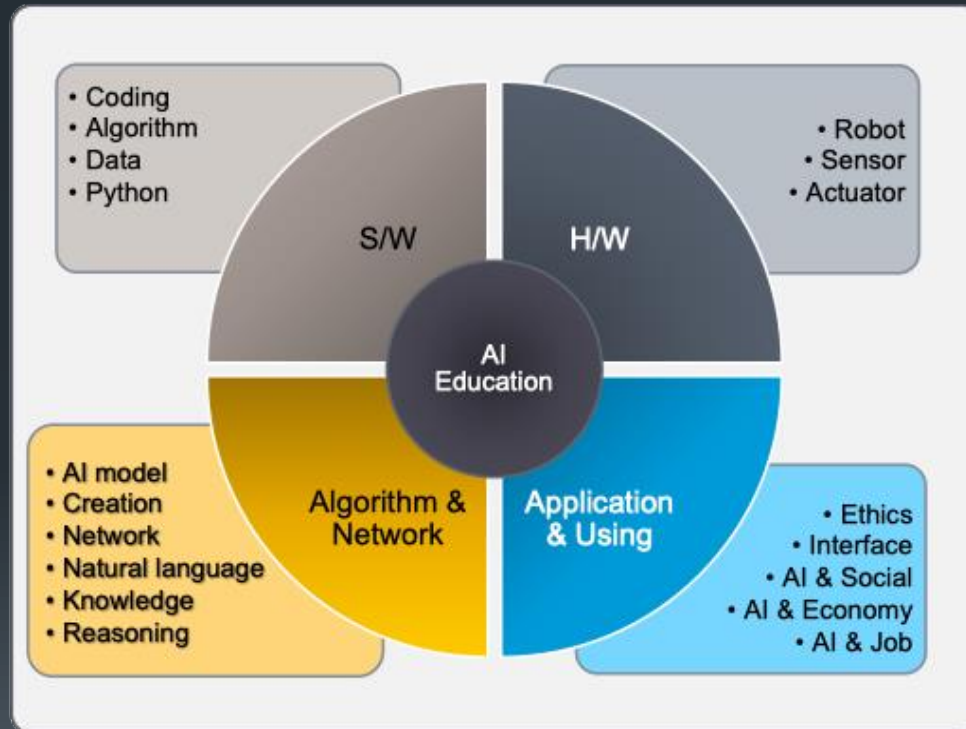


Finland K-12 AI Curriculum structure



- ❖ 앞의 숫자는 학년이 아니고 단계별 교육임
- ❖ 단계별 교육의 핵심 주제를 선정하고 이 주제에 적합한 교육 내용을 키워드로 제시

Example of Curriculum



Suggested AI Korea Curriculum structure for K-12

AI and solution	9: AI & Solutions & Network: AI and society (Safety, Impact), AI and Economy (Job, Impact), Speech and Image recognition, Knowledge and Inference, AI Programming in working life, AI ethics, Data governance, Python, Team multi-disciplinary project, AI and Innovation, Work life skills for Targeted project, and GaptGPT (Network operation, textual programming software, animation, Web design,)
Deeper AI develop and implementation	8: AI and ICT/network: Network and AI, AI robot, AI ethics, ChatGPT, AI and ICT (Internet, computer security, privacy, information, communication, Team multi-disciplinary project and Current AI)
	7: AI deep technology: AI category and implementation method, AI ethics, ChatGPT, AR/VR, and Machine/Deep learning (Function, modular, AI, machine vision, processing, probability, Team multi-disciplinary project)
Wide understanding AI	6: AI and developing: Developing a learning, AI ethics, Knowledge development, and ChatGPT (Variable, Boolean logic, project, product design, development process, game design, cooperative creation, creativity, knowledge development, Team multi-disciplinary project)
	5: AI and implementation: AI and intelligent robot, coding (Python and scratch), Knowledge inference, AI ethics, ChatGPT (Sensor, actuator, embedded system, automation, variables, knowledge and creative thinking, Team multi-disciplinary project)
AI deep understanding	4: Computing and AI: Computing technology, Coding and AI, AI robot, AI ethics, and ChatGpt (AI, mathematics, science, language, creativity, integration, Knowledge inference, multi-disciplinary projects)
	3: Code & Creative AI: Code AI, game AI, AI ethics, AI speech and recognition, AI and Data, and ChatGPT(Loop, condition, statement, project, design, game development, cooperative and creative,)
AI foundation	2: Coding & Learn AI: AI basic principle and coding, Code and robot (Smart machine), Data principle and AI, AI and Smart life, AI Ethics, and Chat GPT (Visual programming, animation, coding and playing, digital creation, cooperation, Team multi-disciplinary project)
	1: Play & Coding AI: Human robots and code introductions through play and games, Data, AI ethics, and Chat GPT (Sequence, command, loop, play, cooperation, animation)
Kindergarten	0: Playing game AI: Basic concepts and creative knowledge, Basic programming, ethics (AI, technology, creativity, play, activity, Useful using)
	0: AI play and Game: Computational & Knowledge thinking, AI definition (Thinking, Technology, AI play, and Cooperation with AI, Ethics and AI)

* Number (step): Main subject: education topic (contents)

Course	Content	Student Evaluation	Teacher Evaluation
Adult Informal	<ul style="list-style-type: none"> Ethics, culture Application Using method Technology pattern 	Adult	No
University (4-year)	<ul style="list-style-type: none"> Ethics, culture 4th Concept, crisp math. Fuzzy math, Natural society, Computer science, Internet & network, Optimization concept, Robot & AI essential, Economic & High tech. Personal characteristics and work, Science & Engineering, IoT, Data science, Blockchain, Distributed system, Digital money and Economy, Leadership, Science & Technology policy, Technology pattern, Economy & Job & Modern technology, AI application, AI & Data & IoT & Blockchain network technology Technology application, AR/VR Chat GPT using Natural & AI Knowledge & AI 	Student's self evaluation (Test or project)	Student's self evaluation. No evaluation for teacher (prof.)

Course	Content	Student Evaluation	Teacher Evaluation
High school (3-year)	<ul style="list-style-type: none"> Ethics, Culture 4th Concept, crisp math. Fuzzy math, Natural society, Computer science, Internet & network, Optimization concept, Robot & AI basic, Economic & High tech. Personal characteristics and work, Science & Engineering, Data science, Network principle, Distributed system, Network device, IoT society & Job, Leadership, Digital money, VR, AR, Knowledge thinking, Project and Creative 	The level of student's understanding of subject	The level of student's understanding of subject
Middle school (3-year)	<ul style="list-style-type: none"> Ethics, Culture 4th Concept, crisp math. Fuzzy math, Natural society, Computer science, Internet & network, Optimization concept, Robot & AI basic, Economic & High tech. Personal characteristic and work, Data principle, Network principle, Digital money, Knowledge & creative thinking Project 		
Primary Course (6-year)	<ul style="list-style-type: none"> Ethics, Culture, 4th concept, toy-based AI, Tech. & Leadership, AI algorithm, Data, Creative thinking project 		
Kinder-garten	<ul style="list-style-type: none"> AI-thinking, Positive tech. Play & Toy based AI learning & Teaching 	play and toy	Evaluation for teacher's playing

Thanks for your attention