

# Chapter 2: Human Capital and Work Styles in the Era of the 100-year Life

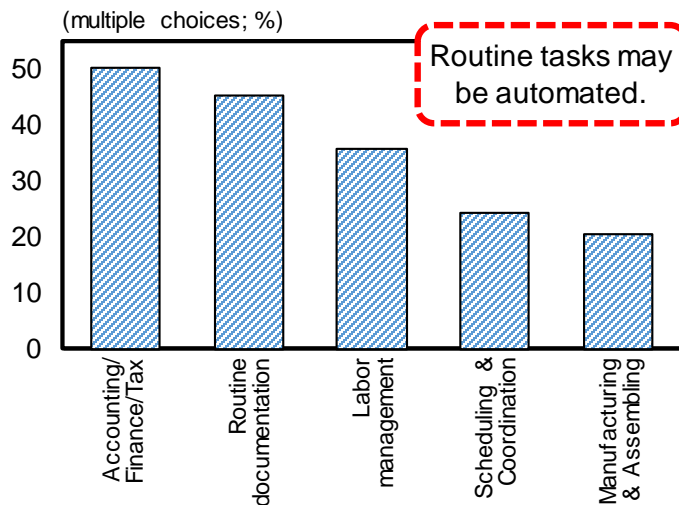
Innovation is expected to bring the task automation and changes in styles of work.

Impact of innovation on the labor market

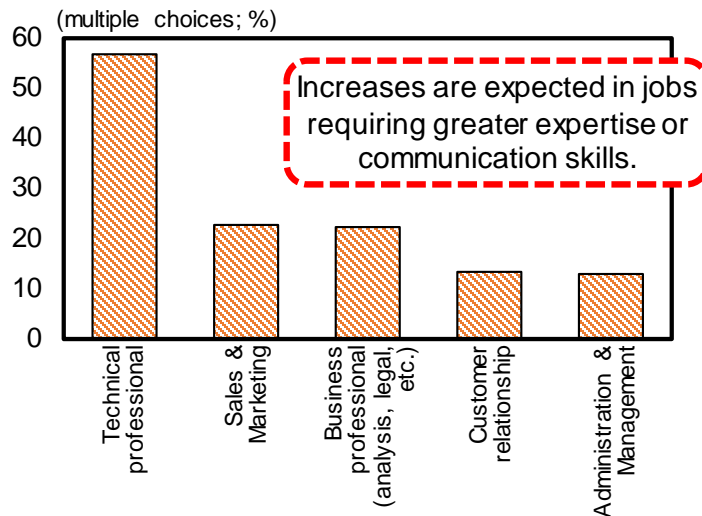
The development of new technologies such as AI (Artificial Intelligence) would automate routine tasks, while the development would also **increase the demand for the jobs that require greater expertise or communication skills.**

Introduction of the new technologies may also **allow more people to choose more flexible work styles including telework.**

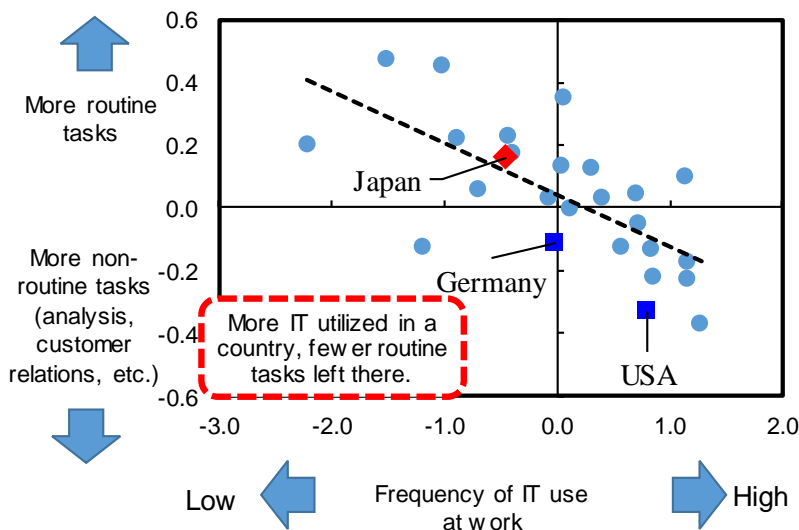
(1) Companies' willingness of the task automation



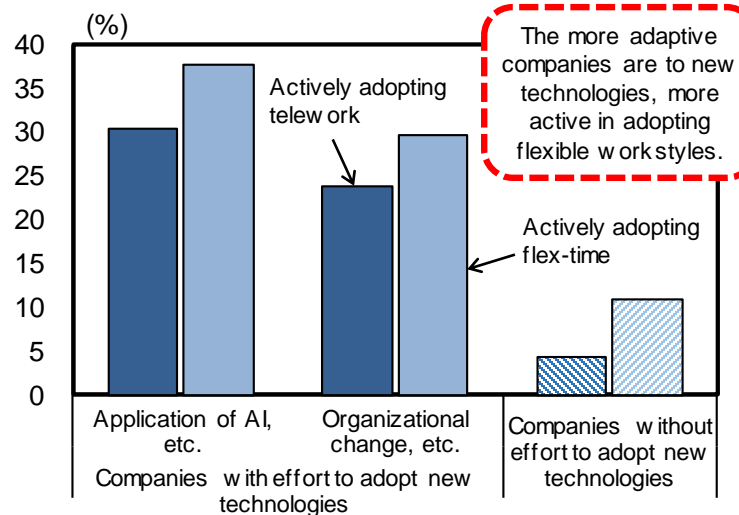
(2) Companies' expectation of the job increases with the introduction of AI



(3) IT utilization and Routine tasks (based on data from OECD)



(4) Share of companies adopting flexible work styles



Sources: OECD (2012 and 2015) "Survey of Adult Skills(PIAAC)", OECD (2016) "SkillsMatter: Further results from the survey of adult skills", JCER (2017) "Survey of Deployment of AI and IoT", Cabinet Office (2018) "Survey of Work Style, Education and Training".

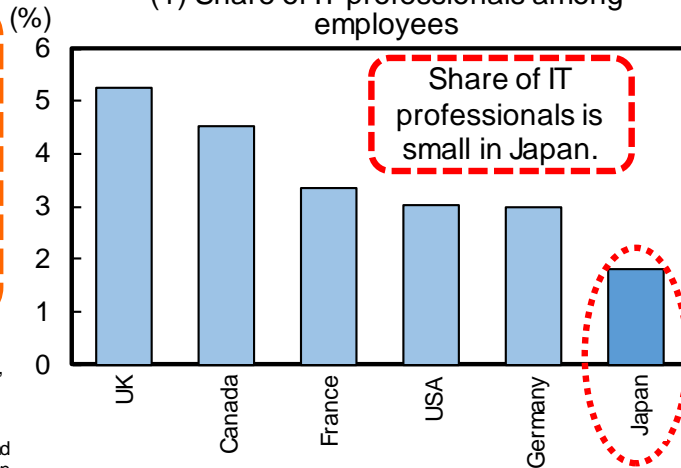
## 2-2. Human Capital Development in the Era of the 100-year Life

To embrace innovation, flexible responses of universities and enhancing in-house trainings are critical.

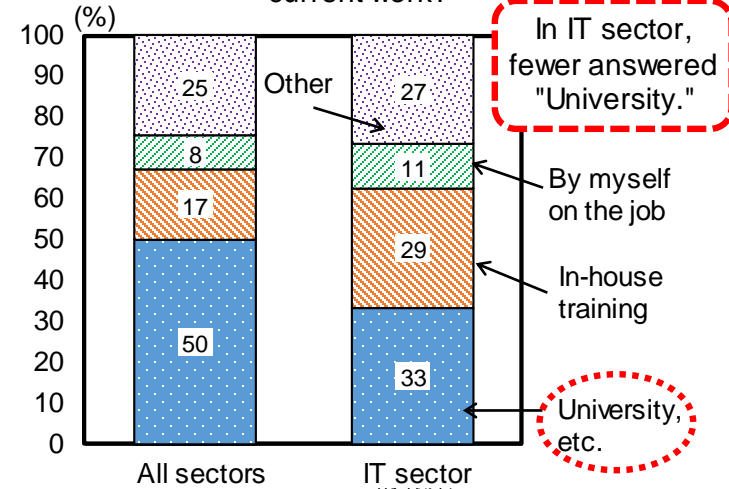
### 1. Need for developing IT professionals

IT professionals are in short supply, and **they must be developed**. As IT skills become obsolete quickly, **universities must assume greater roles** including recurrent education.

(1) Share of IT professionals among employees



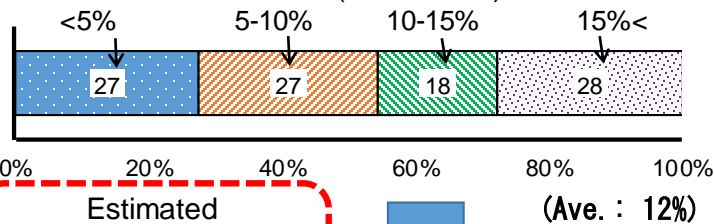
(2) Where did you learn skills needed for current work?



Sources: IPA (2017) "IT Professionals White Paper", ILOSTAT, and Ministry of Economy, Trade and Industry "Report of the Survey on Actual Needs of Industry".  
Note: IT professionals refer to system consultants and designers, software developers, and other information and communications engineers.

### 2. In-house training and its effects

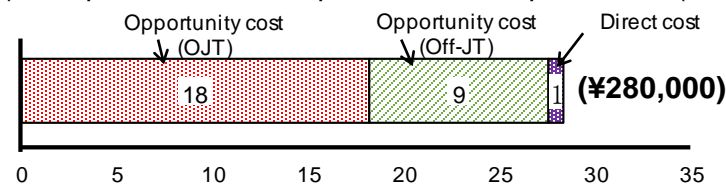
(3) Share of training hours (OJT & Off-JT) to total work time (distribution)



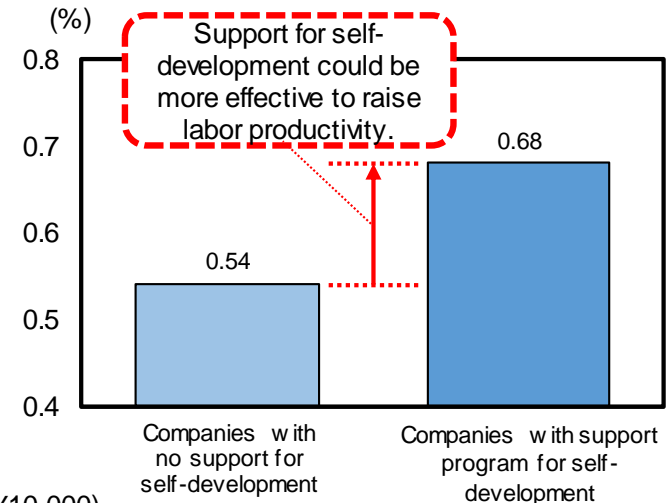
Promoting self-development opportunities, such as recurrent education, would make in-house training **more effective to raise productivity**.

Estimated ¥280,000/year/worker, including opportunity cost (wage) for training time

(4) Companies' human capital investment per worker (ave.)



(5) Effect on a 1% increase in human capital investment to labor productivity



Source: Cabinet Office (2018) "Attitude Survey of Companies on Work Style and Education & Training".

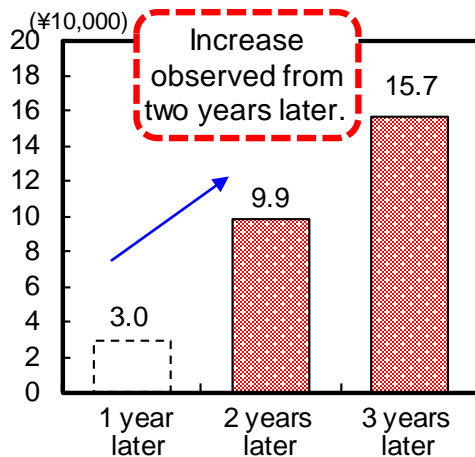
## 2-3. Re-learning of Adults in the Era of the 100-year life

Self-development is effective. More and better opportunities for re-learning and well-designed appraisal systems will be crucial.

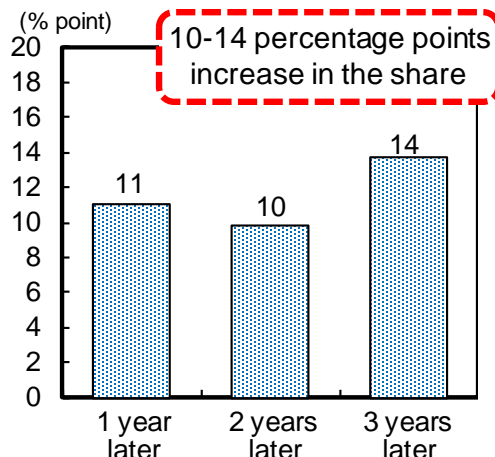
### 1. Effects of self-development

**Self-development (re-learning)** is likely to benefit workers. But in Japan, fewer learn again. Encouraging adults to re-learn is critical.

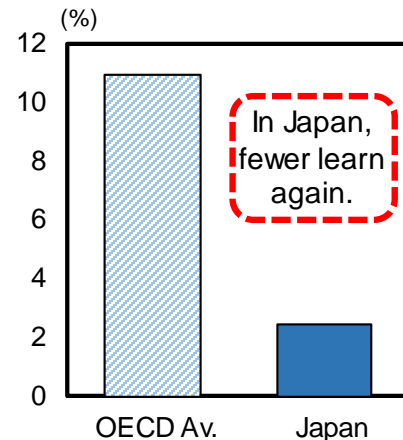
(1) Change in annual income after self-development (employees)



(2) Change in possibility of being employed after self-development (unemployed)



(3) Share of those learning at educational institutions (Age 25-64)

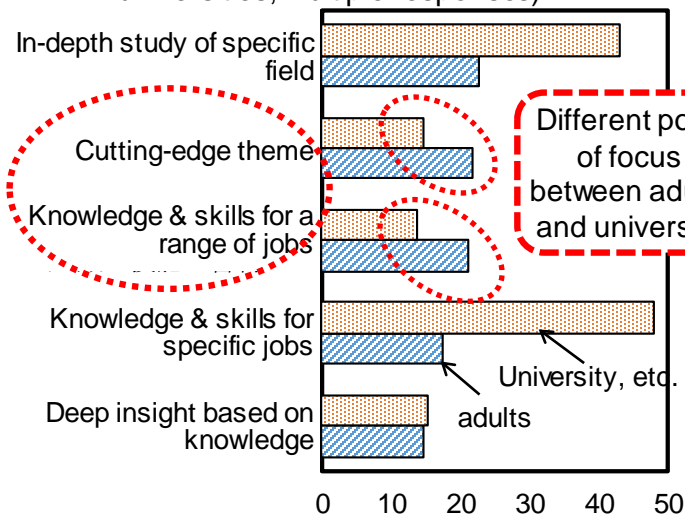


Sources: Keio University "Japan Household Panel Survey (JHPS/KHPS)", OECD (2017) "Education at a Glance 2017".

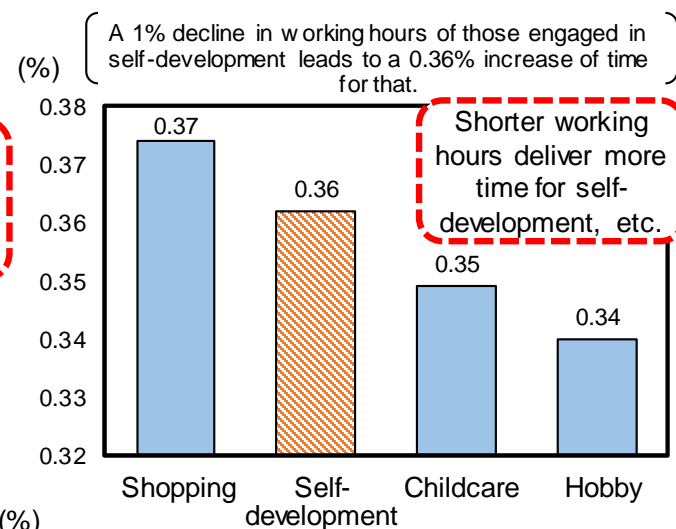
### 2. Challenges to encourage re-learning

What is critical: universities should offer **opportunities for more practical and high quality recurrent education; good work-life balance should be facilitated**; and companies should **fairly appraise self-development**.

(4) Important aspects of the curriculum for recurrent education (viewpoint from adults and universities, multiple responses)



(5) The effect of 1% decline of working hours to other activities (regular employee, weekday)



Sources: Ministry of Education, Culture, Sports, Science and Technology, "Survey of Relearning of Adults at Universities", Ministry of Internal Affairs and Communications, "Survey on Time Use and Leisure Activities", Cabinet Office. (2018) "Attitude Survey of Companies on Work Style and Education & Training".