4 Increasing Research Support Personnel

The roles of research support personnel are extensive and important in R&D. However, there have been too few research support personnel in Japan. Due to the uncertainty of career paths for such personnel, the long-term securing of appropriate human resources has not yet been realized. Consequently, there is the opinion that early-career researchers are busy with office work and are unable to concentrate on their own research. Following is a summary of current issues, undertakings and future directions involving research administrators, who are expected to be the core of research support personnel in the future.

(1) Present circumstances of research administrators in Japan
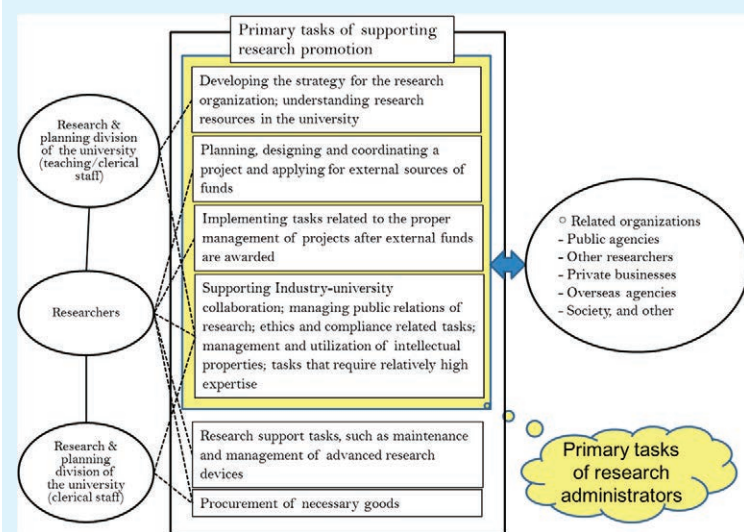
1) The need for research administrators

To advance research activities efficiently and effectively, it is important to allocate the right personnel, both in quantity and quality, to support research activities. This includes the planning and operation of projects, the management and administration of intellectual property, and the maintenance and management of facilities and devices. (Figure 1-2-70).

Recently, researchers have become extremely busy and have been spending large amounts of time preparing documents to apply for competitive external research funds and engaging in university-industry collaborations. Consequently they have less time for research. In addition, due to the drastic increase in competition among universities and research institutions due to globalization and other factors, universities are required to promote strategic research to differentiate themselves.

To this end, it is important for universities and research institutions, while coordinating with personnel in their organizations, to secure and utilize research administrators who can expedite the aforementioned tasks.
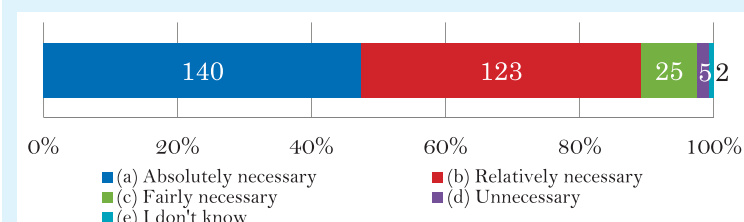
In an awareness survey of university deans, 90% of the survey subjects responded that there is the

Figure 1-2-70 / Outline of Activities of Research Administrators

Source: MEXT

Figure 1-2-71 / Results of a questionnaire survey on the necessity of deploying research administrators

- (a) Absolutely necessary
- (b) Relatively necessary
- (c) Fairly necessary
- (d) Unnecessary
- (e) I don't know

Source: The University of Tokyo, *Report on the Research and Study of the Jobs and the Skill Standard of Research Administrators*, March 2011

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need to deploy research administrators (Figure 1-2-71).

The Act on Enhancement of Research and Development Capacity and Efficient Promotion, etc. of Research and Development, etc. by Advancement of Research and Development System Reform (Act No. 63 of 2008), revised in December 2013, states that "In planning R&D projects, research funds shall be secured, intellectual property rights shall be obtained and utilized, and other operation and management activities related to R&D shall be implemented, toward securing personnel with professional knowledge and competencies and toward supporting other undertakings".

In order for competent, diverse personnel to be effectively utilized, research administrators are expected to contribute to the research support of female researchers during maternity and child-raising periods, of young researchers through reductions in non-research work to ensure sufficient research hours and of foreign researchers who have difficulties with the Japanese language barrier by assisting in clerical work.

2) The circumstances of research administrators

The Analytical Report for 2013 NISTEP Expert Survey on Japanese S&T and Innovation System (2013 NISTEP TEITEN Survey) reported that a large number of researchers think there is insufficient fostering and securing of professional research support personnel (research administrators) who work to facilitate research activities (Figure 1-2-72). Nevertheless, the research administrator introduction index has risen in universities since FY2011 indicates progress in fostering and securing research administrators.

Figure 1-2-72 / Survey of Researchers' Awareness of Circumstances for Fostering and Securing Research Administrators
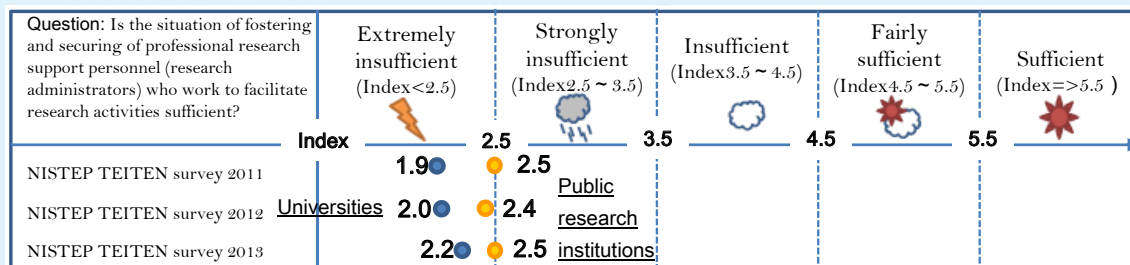
Source: Prepared by MEXT based on the Analytical Report for 2013 NISTEP *Expert Survey on Japanese S&T and Innovation System* (2013 NISTEP TEITEN Survey), NISTEP Report No. 157 (April 2014), NISTEP

In a MEXT survey of 757 universities and institutions around Japan at the end of FY2012 (March 2013), 58 organizations reported having research administrators [1]. This was an increase of eight organizations over the figure for the end of FY2011. However, in general, research administrators are not yet widely deployed (Figure 1-2-73).

In January 2014, the Cabinet Office conducted a questionnaire survey of the 34 independent administrative agencies that conduct research regarding their efforts to foster and secure personnel who engage in R&D management and support. Of the responding organizations, about 30% reported that they were training research administrators and about 40% reported that they have research administrators [2] (Figure 1-2-74). However, nearly half of the surveyed agencies reported not having a plan to train or deploy research administrators. This indicates that research administrators have not been widely accepted among the agencies in general.

The roles of research administrators differ from one organization to another. In some cases, research administrators directly work as a group under the president of the university and engage in the development of research strategy, intellectual property strategy and industry-university-government collaborations. In other cases, research administrators support projects conducted by individual research teams or researchers.
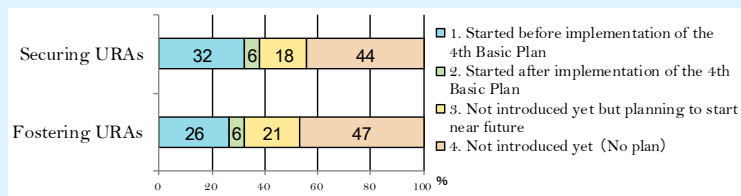
3) Examples of introduction

Already, some universities have been making the most of programs such as the Development of a System to Foster and Secure Research Administrators, and the Program for Promoting the Enhancement of Research Universities[3], and have introduced and utilized university research administrators (URAs in

Figure 1-2-73 / Deployment of Research Administrators

- National universities
- Other public universiteis
- Private universities
- Other
- No URAs
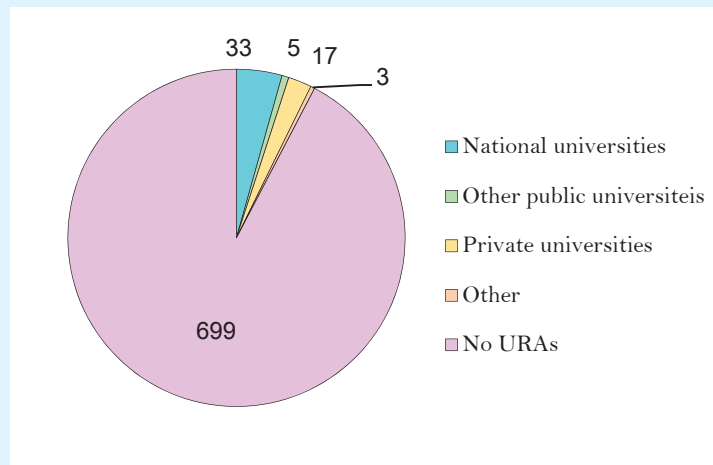
Source: An Affiliated Survey of the Implementation Status of
Industry-Academia-Government Collaborations at Universities
(2012), MEXT (FY2013)

Figure 1-2-74 / Training and Deployment of Research Administrators at Independent Administrative Agencies

- 1. Started before implementation of the 4th Basic Plan
- 2. Started after implementation of the 4th Basic Plan
- 3. Not introduced yet but planning to start near future
- 4. Not introduced yet (No plan)

Source: MEXT based on a survey by the Cabinet Office (January 2014)

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1   The survey defined "research administrators" as "personnel who dedicate at least half of their efforts to research administration".
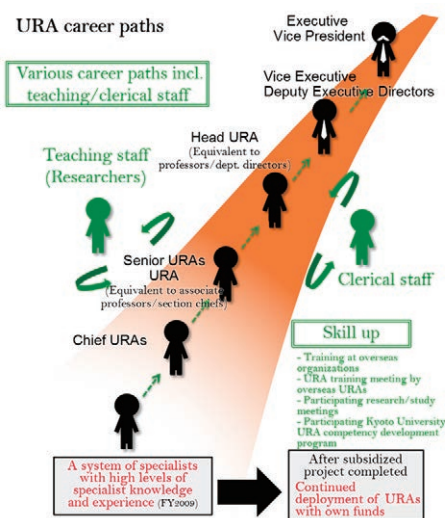2   This survey defined "research administrators" as "research management specialists who are responsible for the overall management of R&D activities".
3   Since FY2013, to increase and strengthen universities that conduct excellent, world-class research, 22 universities were selected for their achievements as indicated by indexes of the status of research activities, such as the number of competitive funds awarded, the share of the top 10% most highly cited papers, and the ratio of the internationally co-authored papers to the total number of papers, and through interviews. The universities will be supported in their programs to enhance their research capabilities by combining projects that secures and utilizes research management human resources, including URAs, and projects that concentrate on reforming the research environment. A budget of 20 to 40 thousand million yen per year will be provided for 10 years.

3).) Here, the circumstances of URA introductions and of approaches to establishing their career paths are introduced.

(i) Kyoto University

In FY2009, Kyoto University established a system for hiring administrative specialists with high levels of knowledge and experience, and in FY2011 Kyoto University introduced a system for URAs. With the Research Administration Office (URA Headquarters, known as KURA) at its center, a campus-wide URA network has been established, allowing for collaboration among URAs who work in departments, at KURA and at other internal and external research support organizations. Through domestic and global coordination and collaboration, the university has hired educators, researchers, posdocs, private-sector employees and university administrators as URAs, training and fostering them through capability-building and training programs since August 2013.

Toward achieving stable, sustainable URA networks, the university has deployed these administrators, who are skilled in academic research, under a promotion system that delineates a

Outline of career paths for URAs at Kyoto University
Source: Kyoto University

clear career path, beginning with URA and continuing upward to Managerial URA, Senior URA (equivalent to administrative section chief) and Executive URA (equivalent to department director). In addition, by having URAs visit foreign universities and attend overseas conferences, such as NCURA[1], and by encouraging them to train or spend time at R&D institutes, the university aims to expand the careers and mobility of URAs, including extending those careers to teaching positions.

(ii) Tokyo University of Agriculture and Technology

Tokyo University of Agriculture and Technology introduced a research administration system in FY2011. In April 2013, the university established the University Research Administration Center and clearly positioned URAs in its university-wide research administration system. The university outlined a vision for conducting each R&D project strategically from a university-wide perspective through the promotion of
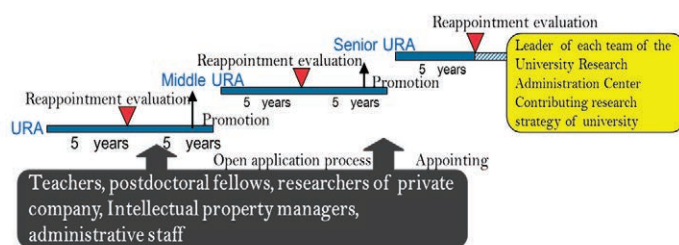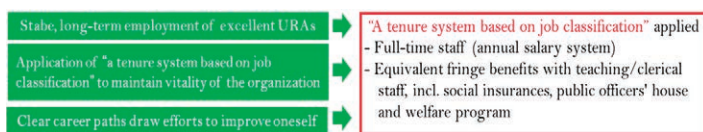
Outline of career paths of URAs at Tokyo University of Agriculture and Technology
Source: Tokyo University of Agriculture and Technology

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1   The National Council of University Research Administrators (NCURA) is a professional organization of URAs in the USA established in 1959. Membership numbered 7,200 (as of March 20, 2014). The organization aims to develop the domain of research administration and members' capabilities through training, information-sharing and the fostering of a highly valued professional community

prioritized R&D projects and support for young researchers' projects.

Regarding career paths for URAs, the university has introduced a tenure system based on job classification with the three classes of the Senior URA, Middle URA and URA. This enables qualified URAs to be steadily employed for the long term. In FY2013, the university launched URA training at its graduate school.

(iii) Kanazawa University

Since FY2007, Kanazawa University has deployed research support personnel with doctoral degrees, forerunners of the research administration system, and has been introducing the system through a grant project since FY2011. In April 2012, the university established the Organization of Frontier Science and Innovation and divided URAs into five groups: research strategy, planning and coordination; research promotion; program coordination; industry-university-government collaboration and intellectual property promotion; and regional innovation.

Outline of career paths for URAs at Kanazawa University
Source: Kanazawa University
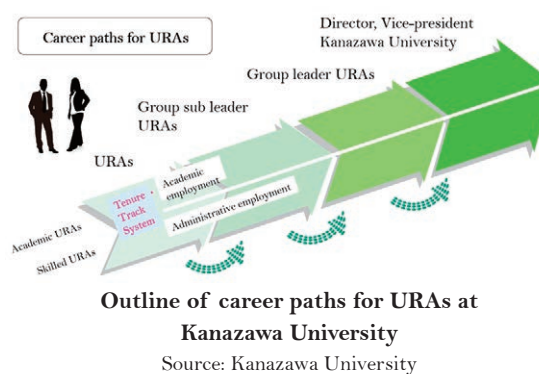
The university has developed two types of URA career paths: one for Academic URAs and another for Skilled URAs. As Academic URAs, doctoral researchers have been employed as tenure-track assistant professors. Similarly, as Skilled URAs, persons with expertise have been screened and then employed as permanent staff. The university's URA position classification consists of URAs, group-sub-leader URAs, group-leader URAs and, at the top, a Director (Vice-President in Charge of Research and International Affairs).

4) Overseas approaches

In the West, the importance of research administrators has been recognized for many years. After World War II, the importance of securing competitive research funds increased, especially in the USA. There were calls for the appropriate management and operation of research that relied on external funds. That was in the background of the development of the research administration system.

(i) Approaches in the USA

In the USA, the tasks in research promotion support have been divided into two by phases of any given project: one is the pre-awarding phase, from planning to applying for competitive research funds, and the other is the post-awarding phase, from being awarded competitive research funds to compiling the final report. Each university has its own research administration organization based on the scale of the university and prioritized projects. Depending on the research strategy, the structure of research administrator organizations may differ greatly among universities.

To foster research administrators and to promote information-sharing among research administrators, there are professional organizations such as the NCURA, the SRAI [1] and RACC [1].To improve the

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1　The Society of Research Administrators International (SRAI) is a professional organization for research administrators. It was established in 1967. Its membership is 4,500. Members are from more than 40 countries, although most are from the USA. (as of March 20, 2014). The organization promotes information exchanges among research administrators and research promotion at research institutes.

competencies of the members, the NCURA and the SRAI organize training sessions and information exchange meetings with governmental ministries and funding agencies, as well as selling study materials. In addition, toward establishing research administrators as professionals, the NCURA has been providing a graduate-level online education program in collaboration with universities in the USA.

RACC[2] certifies CRA[3]. CRA guaranties the competency of research administrators. Applicants must have graduated from university at least three years prior to applying for this certificate. The examination covers the fundamental knowledge required of experts. The certificate is valid for five years. Every five years, the members must meet the conditions set by the RACC to renew the certification. Being certified is advantageous in applying for positions such as those at a university.

Research administrators are highly regarded by universities due to the active undertakings of these professional organizations and due to the inclusion of research administrators as a requirement of the execution management system of public research funds. One reason that the R&D systems in the USA boast very high efficiency is the abundance of research administrators in a wide-range of specialties and at various levels.

(ii) Other countries

In the U.K., the research support system has gradually developed since the 1990s, when the RAE[4], which assesses the research activities of universities, was introduced. The ARMA[5] has been active as a professional organization for research managers. The ARMA has been promoting research excellence by enhancing professional competencies in research management of members and by identifying, establishing and sharing successful examples of research management.

In Germany, the need for science management[6] has been recognized by universities and research institutions since the 1990s. Challenges to establish science managers as experts who conduct science management have recently started there, as they have in Japan. The education and training of science managers at various levels has been conducted by universities, research institutions and private companies.

5) Issues in enhancing the capabilities of research administrators

The need for research administrators has been recognized in Japan. However, the introduction of research administrators has just started. The number of research administrators is still insufficient. One reason is that their duties and positions within organizations greatly differ from organization to organization, and the research administrator job has not been widely recognized and established. This is because each university and research institution has been introducing research administrators to meet their needs on a trial-and-error basis.

Further improving and securing research administrators, clarifying required skills and establishing

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1   The Research Administrators Certification Council (RACC) is an accreditation organization established in 1993. It consists of certified research administrators. About 2,000 research administrators have been certified (as of March 20, 2014).

2   For certification, a candidate must meet either of the following conditions. a) During the five-year validity of certification, the candidate must have spent at least 80 hours in training or other activities to improve skills. At least 80% of such training and other activities must relate to the pre-awarding tasks. b) The candidate must have passed the recertification examination.

3   A Certified Research Administrator (CRA) is a person who has been certified as possessing the basic knowledge and competency required of a professional research administrator.

4   Research Assessment Exercises (RAE) is an assessments made by the Higher Education Funding Council for England.

5   The Association of Research Managers and Administrators (ARMA), established in 1991 and with a current membership of 2,000, is an organization of mainly university-related persons.

6   In addition to research management, their tasks include management and administration, such as planning, operations and human resources development (consultation with employees).

research administration as a career are urgent tasks. Other issues are the need to clarify career paths based on required skills and to develop a system that systematically fosters and secures research administrators.

(2) Clarifying the skills of research administrators

Since 2011 MEXT has been working to develop indexes to clarify and systematize the capabilities required of research administrators. It established the research administrator skill standard in March 2014. In parallel with the development of the research administrator skill standard, a nationwide education and training program to make the most of research administrator skill standard has been developed and instituted.

1) Establishing the research administrator skill standard

With the aim of constructing a research administrator system that can be widely adopted by universities, MEXT outlined roles, tasks and competencies for future research administrators.

A needs survey was conducted regarding these roles and tasks. Necessary tasks were clarified and classified into the following four tasks and 22 skills: 1) support tasks for research strategy promotion in which research and analysis of national science and technology policies and information collection on internal research resources are conducted (three skills); 2) pre-award tasks of project planning and design, coordination and making applications for external funds (five skills); 3) post-award tasks for supporting appropriate project management (five skills); 4) expert tasks that require relatively high expertise, which relate to the three core tasks (nine skills) (Table 1-2-75).

Table 1-2-75 / Outline of Tasks under the RA skill standard

Task	Outline of the task	Roles (details of the task)
Research strategy support	Researching and analyzing national science and technology policies and understanding research resources within the university	1) Researching and analyzing policies and other information
		2) Researching and analyzing research capabilities
		3) Developing research strategies
Pre-award	Planning, designing and coordinating projects and applying for external funds	1) Supporting research project planning
		2) Collecting information on external funds
		3) Negotiating internally for research project planning
		4) Negotiating externally for research project implementation
		5) Supporting the preparation of external funds application documents
Post-award	Implementing tasks related to the proper management of projects after external funds are awarded	1) Negotiating and coordinating externally to implement the research projects
		2) Managing project progresses
		3) Managing project budgets
		4) Responding to project assessment requirements
		5) Preparing reports
Related specialties	Tasks that require relatively high expertise, which are related to each of the three core tasks	1) Supporting educational projects
		2) Supporting international collaboration
		3) Supporting partnerships between universities and industry
		4) Managing intellectual property
		5) Promoting strength in information dissemination as a research institution
		6) Conducting public relations on research
		7) Organizing events
		8) Overseeing safety management
		9) Ensuring ethics and compliance

Source: MEXT

Three levels (elementary, intermediate and advanced) have been set for tasks 1), 2) and 3). (Figure 1-2-76). For task 4), no level has been set in consideration of collaboration with other departments.

For each level of skill, a skill card was developed and submitted. The skill card contains the performance indexes of past achievements or experience (on responsibility, complexity, importance and internal/external contributions), and task implementation capability indexes of comprehension and problem-solving capabilities (projects, knowledge, tasks, language and communication) (Figure 1-2-77).

Figure 1-2-76 / Task classifications under RA skill standard
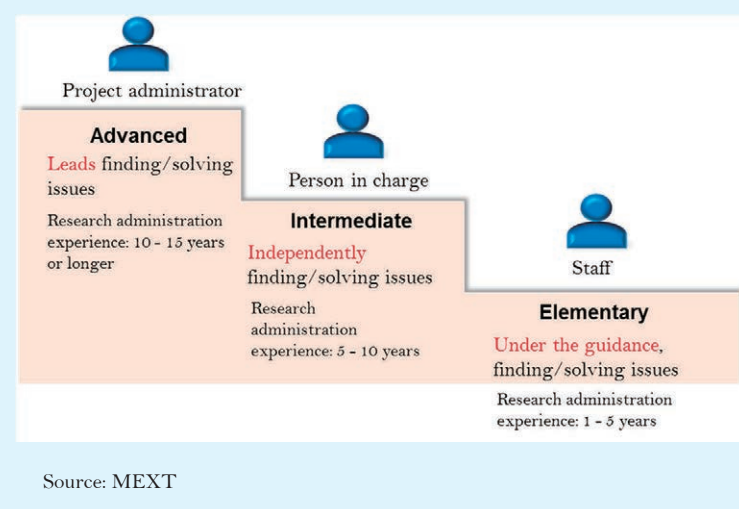
Source: MEXT

Figure 1-2-77 / Contents of the skill card for the Research Administrator skill standard

Performance indicator ((1)- (4))

Each item under (1)- (4)are evaluated under

(1)Responsibility: the responsibility of the person

(2)Complexity: what and how the person did (tasks)

(3)Importance: the effects of the person's contribution (Outcomes of the task)

(4)Internal/external contributions: how the person contributed to the improvement of the university/the field or domain (fostering followers, information dissemination, external committee participation)

Task implementation capacity index ((1)- (5))

Each item under (1)- (5)are evaluated under

(1)Project: understanding of the mission of the project (comprehension level of the project)

(2)Knowledge: related laws and acts, regulations and technology

(3)Expertise: knowledge and skills necessary for doing the tasks (mission implementation)

(4)Language skill: comprehension of necessary English
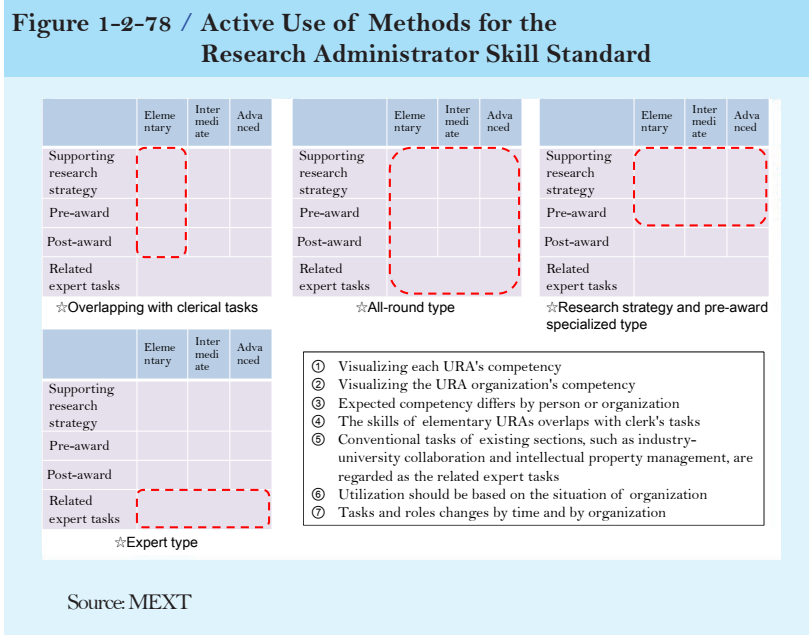
(5)Person to person: communication ability

Source: MEXT

2) Active application of the research administrator skill standard

Based on the research administrator skill standard, research administrators are able to confirm what tasks and competencies are required of them. Then, by understanding the details of their tasks and the required competencies, they are able to plan ways of improving their skill set, setting career targets and clarifying their career development.

Organizations that employ research administrators are able to understand their present needs for research administrators, with respect to the needed number of research administrators and their competencies. They are able to set organizational targets for employment plans. The research administrator skill standard can also be used as an assessment tool for research administrators and for recruiting and promoting research administrator[1] (Figure 1-2-78).

Figure 1-2-78 / Active Use of Methods for the Research Administrator Skill Standard

Source: MEXT

3) Establishing training and educational programs

MEXT has developed a general training and educational program for research administrators based on the research administrator skill standard, to improve the task implementation capabilities of research administrators. The program is available to universities throughout Japan.

The program consists of 22 subjects in the three categories of "introductory subjects," "common subjects" and "specialized subjects". The subjects are : introduction to research administration (2 subjects), two groups of common subjects aiming to provide fundamental and

Figure 1-2-79 / Teaching Subjects of Training and Educational Programs

Source: MEXT

compulsory knowledge (10 subjects) and three groups of special subjects to provide practical skills

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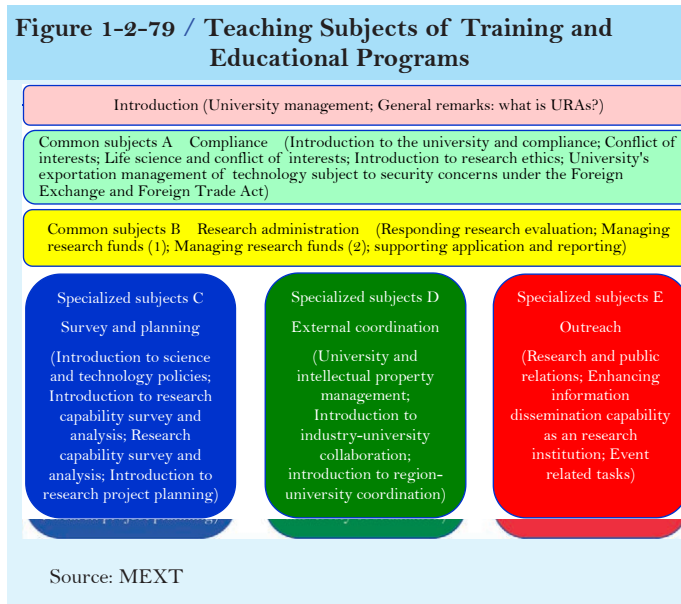
1   There are factors that cannot be quantified or documented in writing, such as relationships of mutual trust with researchers.

depending on individual interests (10 subjects)(Figure 1-2-79).

Training and educational programs target elementary and intermediate-level research administrators under the research administrator skill standard. The compliance subjects are compulsory because they are necessary for every research administrator. Other subjects are classified as special subjects. Research administrators can select special subjects based on their own interests.

4) Addressing issues regarding the research administrator skill standard and future for three skills, the introduction of training and educational programs

Toward the introduction and continuation of the research administrator system, each university should utilize the research administrator skill standard as well as the training and educational program according to its organizational scale and research strategies. To this end, it is important to clarify the sharing of roles with other research support staff, administrative staff and teaching staff, and to review the research promotion system (the conventional administration system and researchers) as necessary.

For the effective and efficient introduction and continuation of a research administrator system, it is important for universities to share information on its progress at each university, with successful examples and improvements. Networking is also important. Toward the nation-wide development of a research promotion support system, MEXT will foster collaboration among universities and will support networking by hosting symposiums and providing other opportunities.

The Ministry also will train research administrators around the country by making the most of established training and educational programs, in an effort to improve the quality of research administrators. The Ministry will contribute to the continuation of research administrators through the implementation of training at each university by disseminating training and educational programs.

Toward the ongoing education and quality improvement of research administrators, studies are expected to address the feasibility of mutual dispatches of personnel with organizations that have been supporting the management of research projects and industry-university collaboration research, such as Japan Science and Technology Agency, The feasibility of implementing systematic training for people aiming to be research administrators will also be addressed.

(3) Toward the establishment of career paths for research administrators

Through the aforementioned undertakings, each university and research institution is expected to introduce and maintain a research administrator system. Currently, however the number of research administrators employed by any single organization is low. If research administrators can only be employed by the same university or organization at which they first acquired a position, they have no chance of moving to another organization in the same line of employment. Such a situation may have issues in terms of the establishment of long-term career paths and mobility for research administrators.

Also, for the continuation of a research administrator system, various career paths need to be established. Such career paths include, not only those within the group of research administrators, but also a career path for researchers to become research administrators, or a career path for research administrators to become program managers or technology managers at a private company after receiving support for R&D management that bridges innovative technical seeds and the practical application of those seeds.

Based on this, any array of institutions, including universities and public research institutions, and private companies should collaborate to secure a quota of research administrators. Then, the future issue

of system development is to accommodate various career paths to meet the competencies and desires of research administrators, while their mobility and employment stability must develop.

As is mentioned in Section 1.3 of this chapter, to introduce various career paths for researchers while maintaining their mobility and employment stability, the establishment and operation of a consortium is about to start, through collaboration among universities, public research institutions and private companies. Deploying and managing research administrators through a consortium can be one method of addressing future issues regarding research administrators.

Furthermore, in order to maintain the mobility of researchers, the utilization of capable human resources at appropriate positions based on proper assessments of research achievements is important. To this end, it is expected that senior researchers and engineers who have knowledge and expertise from many years of experience at private companies will be spun off as research administrators, and that training will be provided for them.

Chapter 2