The Changing Academy – The Changing Academic Profession in International Comparative Perspective 11

Akira Arimoto
William K. Cummings
Futao Huang
Jung Cheol Shin *Editors*

The Changing Academic Profession in Japan

Springer

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Scope of the series

As the landscape of higher education has in recent years undergone significant changes, so correspondingly have the backgrounds, specializations, expectations and work roles of academic staff. The Academy is expected to be more professional in teaching, more productive in research and more entrepreneurial in everything. Some of the changes involved have raised questions about the attractiveness of an academic career for today's graduates. At the same time, knowledge has come to be identified as the most vital resource of contemporary societies.

The Changing Academy series examines the nature and extent of the changes experienced by the academic profession in recent years. It explores both the reasons for and the consequences of these changes. It considers the implications of the changes for the attractiveness of the academic profession as a career and for the ability of the academic community to contribute to the further development of knowledge societies and the attainment of national goals. It makes comparisons on these matters between different national higher education systems, institutional types, disciplines and generations of academics, drawing initially on available data-sets and qualitative research studies with special emphasis on the recent twenty nation survey of the Changing Academic Profession. Among the themes featured will be:

1. Relevance of the Academy's Work
2. Internationalization of the Academy
3. Current Governance and Management, particularly as perceived by the Academy
4. Commitment of the Academy

The audience includes researchers in higher education, sociology of education and political science studies; university managers and administrators; national and institutional policymakers; officials and staff at governments and organizations, e.g. the World Bank.

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Preface

This volume provides an empirical and qualitative analysis of the nature and extent of the Japanese academic profession and especially changes that took place over the period 1992–2007. It is based on responses to the Carnegie Survey 1992, in which the Japanese survey was conducted as a part, and the following Japanese Survey 2007, two comprehensive surveys with similar questionnaires administered to faculty samples in Japan, and has been developed, with enlargement, from *Henbousuru Nippon no Daigakukyojushoku* (*The Changing Academic Profession in Japan*), published in 2008. It covers key aspects of Japanese faculty members' academic activities and their views on these activities.

Academia has a long history going back more than nine centuries worldwide to the birth of universities in the middle ages and about 140 years to the birth of the first modern university in Japan. Recent social changes include globalization, emergence of the knowledge-based society, marketization, corporatization, mass higher education, and lifelong learning. A specific important social change in Japan in recent years has been population decline, including that in the college-age population.

In addition to the social changes, national government policies have had huge effects on academia in terms of conditions, structures, and functions. The reform of university establishment standards in recent years has emerged as a key development in the field of higher education through a series of government policies of relaxation of regulations by PCAR (the Provisional Commission on Administrative Reform) and the UC (University Council). Accordingly, quality assurance and evaluation of teaching and research have become the focus of reforms since 1991, when the UC made proposals focusing on teaching reforms.

Teaching reform has been encouraged even more strongly since 2008, when the CCE (Central Council for Education) further made proposals focusing on teaching reforms in relation to areas including general education, curriculum, syllabus, tutoring system, small-group teaching, office hours, IT (information technology), GPA (grade point average), CAP, credit system, semester system, coursework, educational environment, and rigorous assessment of student academic achievement.

These social changes and government policies have inevitably impacted strongly on the academic profession. First of all, social changes affect faculty consciousness as well as their actions as regards the knowledge-based society, globalization, marketization, lifelong learning, and population decline. Second, higher education policies such as the reports of the UC and the CCE have brought variations in faculty status and created a professional career path. In relation to these policies, transformations of academia have included national universities' corporatization, differentiated universities and colleges, and top-down governance and management. Third, "reconstruction of knowledge" has brought changes in university curricula, organizational bodies, and the roles and functions of faculty. Thus, faculty members have been subjected to social expectations as well as pressures bringing about changes in their status, standing, role, and academic productivity. In particular, expectations of academic productivity have dramatically shifted to a teaching orientation from a research orientation as a result of FD (faculty development), which has been carried out since 1998, even though Japan's academics still maintain a strong preference for research.

As a result of these pressures and new visions of academia, the academic profession has been forced to form a new identity, with consequently many conflicts accompanying psychological stress. Academics have been required to reform the profession and reconsider the nature of scholarship through the integration of teaching and research and making further progress in academic productivity. The profession is increasingly expected to be sustainable in quality as well as ability so as to develop and create changes in society, policies, and knowledge.

In a major sense, the volume not only focuses on the empirical analysis but also pays great attention to the study of the Japanese academic profession from historical and comparative perspectives. The following aspects are particularly worth mentioning: First, some of the chapters deal with the social and economic environment as well as the educational context under which changes had taken place in the Japanese academic profession between 1992 and 2007. Second, a wide range of variables are employed in individual chapters with an aim of exploring the essential characteristics of the Japanese academic profession and the changes that had occurred in their activities and their views. Third, some efforts have been made to deal with the real effects of changes on Japan's academic profession, what drives these changes, and how national policymakers may push the academic profession forward in their own national settings.

Anchored as the 2007 survey is in the original 1992 Carnegie Foundation for the Advancement of Teaching Survey of the International Academic Profession, the volume provides an opportunity to document and assess the progress and prospects for the Japanese academic profession over the period.

Finally, we would like to acknowledge Professor Keith Morgan, who passed away in 2012 while contributing with much endeavor to the translation of Japanese articles into English.

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Chapter 1
Introduction: The Changing Academic Profession in Japan: Its Past and Present

Akira Arimoto

Surveys of university history reveal that universities have overcome many crises and challenges in the 900 years since the establishment of medieval European universities. Developments in the roles of universities have never been accompanied by a smooth relationship with society, and this is perhaps especially true today. At present, universities and higher education are pressured by social changes, such as emergent knowledge-based societies, globalization, and marketization; confronted by national demands for increased international competitiveness; and faced by the ever-accelerating rate of scientific growth that requires continuous reconstruction of knowledge.

Universities worldwide are thus now facing a crisis. It is also very clear that both the missions and roles of the academic profession, as a profession, are significant for the inevitable review and organizational reconstruction of the universities. The academic profession in Japan provides no exception. The studies included in this volume are directed to a general consideration of the impact of such issues, mainly from the viewpoints of research, social change, university reform, and changes in the academic profession.

1.1 Viewpoints of This Volume

1.1.1 What Is the Academic Profession?

As the main title of this volume is "The Changing Academic Profession," at the outset it is important to define the academic profession. Many previous studies in

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this field, in Japan and elsewhere, have attempted to do so (Cummings 1973; Amano 1977; Shinbori 1965, 1984; Arimoto 1981, 2005, 2008b; Arimoto and Ehara 1996; Yamanoi 1990, 2007). From the viewpoint of the profession itself, it could be defined as a general term for those professors, associate professors, lecturers, assistant professors, and research associates who serve in universities and institutes, are major contributors to academic disciplines, engage in academic work, and provide leadership in specific cultural activities. The former post of assistant is now divided into assistant and assistant professor. The latter is included in the academic career structure, while the post of assistant is no longer included as a category in the academic profession (Arimoto and Ehara 1996; Arimoto 2005).

Of course, such a definition is far too simple, and needs supplementary explanations (Arimoto 2007a, b). First, the academic profession is not only university faculty but also a "profession." This generally implies that it has features that embrace extended education, scholarship, academic freedom, professional ethics, social authority, and high academic productivity. The professional curriculum vitae would include doctoral studies leading to a PhD at around 30 years of age, a career path of appointments and promotions, through grades of assistant, lecturer, associate professor, and professor, and of structural mechanisms such as examination, probation, term-limited appointment, and tenure. The culture developed through such experience would have specific features: (1) a familiarity with the scholarship of some academic disciplines; (2) a respect for "academic freedom"; (3) the pursuit of scholarly productivity (both research and teaching productivity); (4) a preparation for self-discipline in regard to professional ethics; and (5) an attainment of generally high social prestige. The relationship between scholarship and the profession is particularly important. In addition to the teaching that constituted the whole requirement of the medieval university, research, service, and administration and management have come to be invested in the scope of the modern university. In particular, by adopting the philosophy identified with Wilhelm von Humboldt of integrating teaching and research, the academic profession has cultivated this image of scholarship (Von Humboldt 1910; Ushiogi 2008).

Second, the work that involves the academic profession is based on knowledge (Arimoto 1987; Clark 1983). Scholarship lies at the core of learning, and the use of knowledge is based on the corpus of advanced knowledge or academic disciplines. This means that the academic profession could be defined by the processes of discovery, dissemination, application, and control, which are the implicit functions of knowledge. Academic work, the profession's main function, is established through academic disciplines, conveniently grouped as the various fields: human science, social science, and natural science. According to their fields, university faculty have a mission to contribute toward developments in their academic discipline as well as in society. Within each discipline characteristic cultures develop, each reflecting the inherent standards, environment, and climate of the individual academic discipline—be it sociology, education, economics, mathematics, physics, medical science, engineering, or whatever. As the academic profession contains these diverse

cultures, according to the differentiated academic disciplines, it cannot be considered as a single entity; rather, it constitutes the "small worlds, different worlds" recognized by Burton Clark (Clark 1987).

With combinations of gender, age, institution, job classification, and degree, the academic profession has become increasingly complicated and diverse. At the same time, it has been subject to continual restructuring due to the metabolism, interdisciplinarization, and integration identified as the "reconstruction of knowledge."

Third, academic disciplines have two aspects, internal and external: the one is narrow and confined by chairs, departments, or faculties; the other is cooperative, inclusive, and worldwide. Furthermore, their aspirations tend to be both local and cosmopolitan, while the wider academic world increasingly addresses a cosmopolitan and universal culture. So the growth and diversity of the academic profession has been accompanied by dynamic change in international society that has incorporated the evolving academic society. One feature of this form of integrating knowledge and globalization is the tendency toward universalism rather than particularism, openness and mobility rather than restriction and non-mobility, and outbreeding rather than inbreeding.

Fourth, the academic profession has itself become massified together with the institutions as they have switched from the elite to the mass stage and further to the universal stage of provision of higher education. Table 1.1 shows the number of full-time faculty in Japan. As of 2007, there were 178,000 full-time faculty who worked in universities and 2-year junior colleges in Japan (universities 167,000, junior colleges 11,000) (MEXT 2008). Figure 1.1 shows the changes in numbers of full-time (permanent) and part-time academics. As of 2008, there were more part-time than full-time academics.

This study targets only universities, with the number of full-time faculty in 2007 distributed as follows. By gender: male 137,000, female 30,000. By institution: national 60,000, public 11,000, private 94,000. The proportion of female faculty is 18 % (in the case of junior colleges, the proportion is 48.4 %).

Table 1.1 Number of full-time academic staff (universities)

Section	Total	Male	Female	National universities	Local universities	Private universities	Share of female
Year	Number	Number	Number	Number	Number	Number	%
1997	141,782	125,217	16,565	58,855	8,880	74,047	11.7
2002	155,050	132,160	22,890	60,930	10,860	83,260	14.8
2003	156,155	132,200	23,955	60,882	10,977	84,296	15.3
2004	158,770	133,397	25,373	60,897	11,188	86,685	16.0
2005	161,690	134,740	26,950	60,937	11,426	89,327	16.7
2006	164,473	135,876	28,597	60,712	11,743	92,018	17.4
2007	167,636	137,113	30,523	60,991	11,786	94,859	18.2

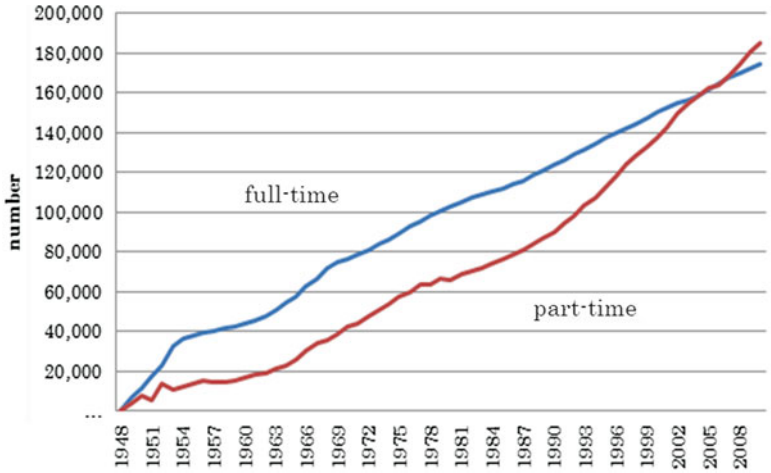

Fig. 1.1 Changes in numbers of full-time and part-time academics

The total number of faculty has increased over time: 11,000 in 1950 after World War II; 57,000 in 1965 when universities plunged into massification; 123,000 in 1990 when full-scale university reform started; and 167,000 in 2007 when accreditation and evaluation of undergraduate courses started. Taking 1950 as a starting point, the number of faculty has consistently increased, and by 2007 was 15.2 times greater than in 1950. Over the same period, the number of universities has increased by 3.8 times (from 201 to 756) and the number of students by 12.6 times (from 224,000 to 2,826,000). While the average size of universities in Japan in terms of students and faculty has increased by a factor of 3 over this period, it remains low in comparison with those in many other countries. However, this figure conceals a wide variation in size, with some accommodating large numbers of undergraduate students and some also accommodating enlarging graduate schools.

These numbers show that higher education has remarkably popularized since World War II. Nowadays, the word "student" in the saying "If you throw stones, it will hit a student," said around the 1960s, could equally well apply to "faculty." Of course, there has been a shift from the elite university model to that of the mass university model in institutional philosophy, mission, role, and faculty consciousness. Actually, this shift presents a series of clear conflicts between current expectations and the former view which remains persistent among faculty that universities should be limited to students with high natural endowment as well as high abilities.

Fifth, as long as universities and the academic profession are defined by both external changes in society and internal changes in learning, the academic profession's philosophy, structure, and function will be subject to changes in accord with both the internal and external expectations to the academic profession. Inevitably this implies that the task of establishing a transcendent and universal philosophy for

the academic profession will be difficult. It could be said that the academic profession has much experience of conflicts over traditions and innovations competing not only against conservative persistence of medieval traditions and innovative speculation on future social changes, but also between consistency and necessity.

1.1.2 The Past and the Present

The next issue is the period that this study covers. In reviewing the history of the academic profession, the effects of time, from the past to the present and the future, are readily identified (see Fig. 1.2). Considering its long history worldwide, this study has focused on the following two phases: (1) the period when modern universities were being established, when an identifiable academic profession in the modern sense was emerging; specifically, this includes the period identified by Donald Light (1974), when graduate schools were being established in the U.S. and research work was incorporated in the career path of the academic profession; (2) a comparison of the quantitative data provided by survey results in 1992 and 2007, that is, the Japanese survey conducted in 1992 as a part of the Carnegie International Comparative Study of the Academic Profession, and a second Japanese survey conducted in 2007, replicating most of the issues covered in the original Carnegie study. The findings of these surveys will be discussed below. Results of the 1992 survey are analyzed in *The International Academic Profession: Portraits of Fourteen Countries* (Altbach 1996; Arimoto and Ehara 1996).

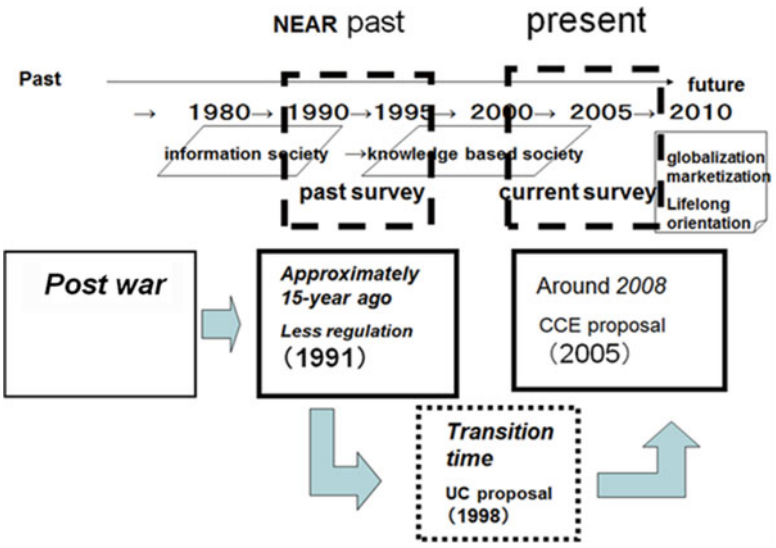

Fig. 1.2 Past and present

This volume deals with the changes identifiable in the 15 years between the two surveys. These 15 years span a revolutionary period in Japan characterized by dramatic social changes and university reform. Focusing on the social changes, there was a full-scale move from an information-based society to a knowledge-based society. The consequential symptoms of globalization, marketization, and lifelong learning appeared simultaneously. For the universities, reforms were enacted by the Japanese government: a relaxation of regulation, which started with reform of university establishment standards in 1991, was accelerated by a significant implementation of market mechanisms. At this time, the era now named "the third university reforms" began, and a master plan stretching from the beginning of the twenty-first century to the middle of the century was envisaged in the Reports of the University Council in 1998 and the Reports of the Central Council for Education on "The Future of Japanese Higher Education" in 2005.

Although the period on which this study focuses is a brief episode in a university history that has lasted nine centuries, it occurs at perhaps a "tipping point" between the past and a present characterized by traditional certainties and an uncharted future. There are 7-year intervals of these Councils' proposals, which are thought to be master plans of Japanese higher education, in 1991, 1998, 2005, and 2012. Thus it is clear that during these 15 years the future visions of Japanese higher education were modified three times.

1.2 Social Changes and University Reform—The Relationship with Society

As indicated in Fig. 1.3, the environment surrounding the universities (academia and the academic profession), such as social changes, national government policies, and "reconstruction of knowledge," initiated reform of universities as well as university faculties (as the direction of arrows a, c, e and g indicates). At the same time, the academic profession would not only be affected by these changes but would also influence them (note the direction of arrows b, d, f and h) by faculty development (FD).

Through these processes of initiating and implementing change, faculty would pursue their university roles and modify their self-image, reconsider the principles and mission of the academic profession, and explore the establishment of a changing profession. Thus university faculty have experienced a variety of changes through their relationship with environmental changes affecting society, universities, and knowledge. The relationship with society includes its differing dimensions with international society, national government, and local communities. Internationally, knowledge-based socialization, globalization, marketization, and lifelong learning have contributed to the reforms of higher education systems as powerfully as individual national government reforms on their universities. At the same time, they have encouraged changes in both the conceptions and the attitudes of faculty.

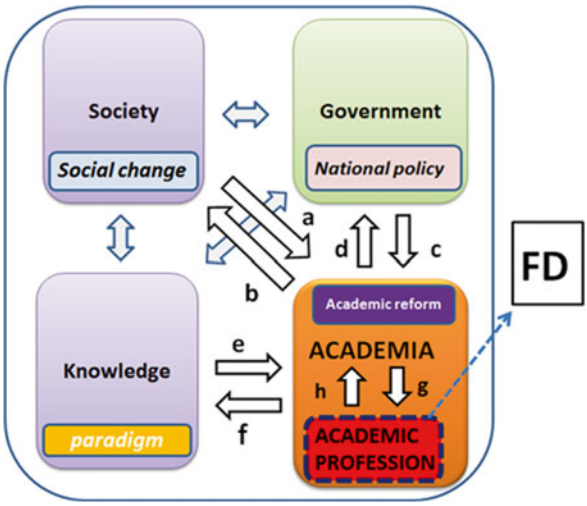

Fig. 1.3 Environmental changes of the academic profession and institutionalization of FD

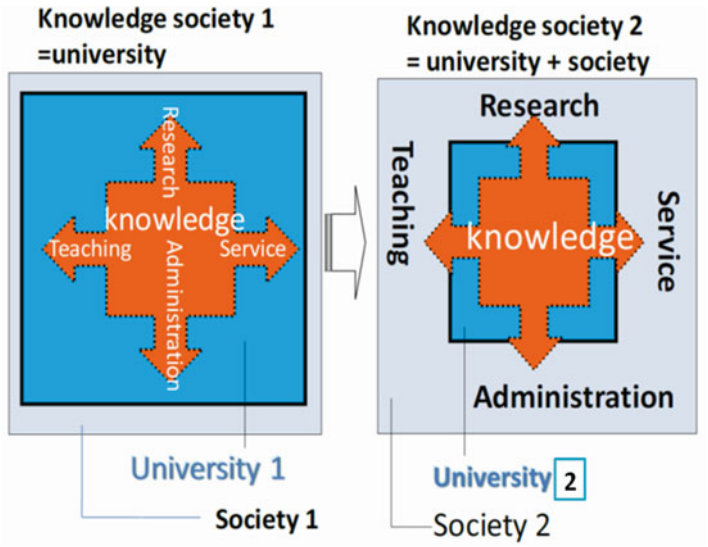

Fig. 1.4 Development from knowledge society 1 to knowledge society 1

1.2.1 Knowledge-Based Socialization

Hitherto it has been arguable that the universities, whose whole work was based entirely on knowledge, constituted a knowledge-based society (or, knowledge society). They could be identified with the "knowledge society 1" shown in Fig. 1.4. In this structure, the research, teaching, services, and administration and management were confined within the university. The current "knowledge society 2" has seen an

opening of this knowledge to and from society, which shares with the university a commitment to knowledge (Arimoto 2006a). Consequently, there now exist not only cooperation but also competition between university and society over functions of knowledge such as research, teaching, services, and administration and management.

Taking research as an example, in knowledge society 1, an ethos of CUDOS (Communality, Universalism, Disinterestedness, and Organized Skepticism), as defined by Robert Merton, was emphasized. On the other hand, in the current knowledge society 2, the boundary has become blurred between Mode 1 and Mode 2 of knowledge production: the established, academic discipline-based format of Mode 1 now blending with the problem-focused, interdisciplinary, non-hierarchical Mode 2 procedures as described by Michael Gibbons and his coauthors (Merton 1973; Gibbons et al. 1994).

Society strengthened its expectations and involvement, not only in generating knowledge but also in teaching, services, and administration and management at universities. Furthermore, university accountability has become increasingly tested by society. The knowledge economy, which combines knowledge with the economy, has strengthened a trend towards academic capitalism in the context of university corporatization, most notably in the U.S. (Slaughter and Leslie 1997).

In adjusting to a transition from knowledge society 1 to knowledge society 2, faculty has been required to reconsider its principles, missions, and roles and to accommodate the increased conflicts brought about by these values in the new society.

1.2.2 Globalization

While traditional internationalization would ensure continuity and integrity for each country's culture, globalization would make the world borderless and also increase pressures for supranational uniformity. The academic profession offered similar global prospects to scientists and researchers and created opportunities for universalism, cosmopolitanism, and internationalism through academic communities, though now the driving forces are increasingly social as well as academic. Once the knowledge-based society has combined with globalization, it increases pressures on the knowledge economy and yields significant impacts on universities and the academic profession in terms of the rationalization and efficiency orientation of knowledge itself. In principle, this would apply to testing the quality standards of academic teaching, research, and service worldwide, and to the comparison of educational abilities, research abilities, and institutional abilities competitively.

Academics and institutions would be required to review the transitions from particularism to universalism and from closed-door to open-door policies, and to replacement of their old cultures, climates, and inclinations. For example, the U.S. in the late nineteenth century, in controlling academic nepotism and inbreeding and in its aspiration for open structures, anticipated globalization as

well as internationalization. Japan exercised no such foresight, leaving it now anachronistically clinging to closed structures, with a gender bias in its universities and lagging far behind other countries in a context of fierce international competition (Arimoto 1981).

1.2.3 Marketization

The dominant market mechanism of the economy has extended to marketization of universities and led to evaluation of academic work by economic value judgments. The logic of "supply and demand" operating at the center of marketization has been judged to work well in influencing university reputation and survival, just as responses to student population shifts and consumerism work well. The extent of these criteria has cast a shadow over university selection. Specifically in Japan, they have resulted in a crisis in universities as well as the academic profession, particularly in the private sector, caused by the under-enrollment of students: For example, as far as the private sector is concerned, as many as 67.5 % of junior colleges were involved in 2008 in the under-enrollment phenomenon, while even 47.5 % of universities were involved in the same phenomenon.

1.2.4 Massification of Japanese Higher Education

According to the definitions introduced by Martin Trow, enrollment of high school graduates in higher education can be divided into three stages: an elite stage of less than 15 %, a mass stage of 15–50 %, and a universal stage of more than 50 % (Trow 1974). During the 15 years 1992–2007, some advanced countries moved rapidly into the universal stage (Arimoto 2006b). In accordance with this worldwide trend, Japan increased its enrollment in universities through the second half of the 20th century. The increased access required the universities to improve both their structures and their functions.

Even in 1992, when the survey showed a rate of enrollment of 40 %, Japanese faculty indicated a strongly negative response to both the rising rate and the responses to provide adequate accommodation of the massification. The academic view remained rooted in the ethos of the elite university rather than adapting to the requirements of the mass university in provision and extension of secondary education. In part this can be ascribed to the continuity of the elite-type academic tradition. However, academics' change of consciousness is necessary as Japan has moved beyond massification into universalization. The faculty-mix in Japan has a high percentage of senior faculty, as indicated by the average age of 48.1 years in 2005; these are academics who graduated from research universities steeped in the elite traditions. While they find the changes necessary to accommodate universalization to be challenging, their successors must be expected to bring experience relevant to the diverse needs of the new century.

1.2.5 Lifelong Learning

The move to lifelong learning clearly requires that universities entering the universal stage of access have substantial responsibility to accept an important role in a lifelong learning society. On the whole, conservative faculty members have similar difficulties in accepting moves to lifelong learning as they have with universalization. Delays in reforming their consciousness are exposed in an era that requires an environment where anyone could learn whatever, wherever, and whenever.

1.2.6 Demography

The issue of the declining population in Japan constitutes a special circumstance. The declining birthrate coupled with an aging population is expected to have serious consequences for universities. The 18-year-old cohort achieved a peak of 2,040,000 in 1992 and has now fallen to 1,200,000, and is expected to fall further to 900,000 in the future. Consequently, the era of the "open door university," where all applicants can be enrolled, is already in sight. In practice, universities and colleges would be polarized by competition into the survivors and the selected, or the haves and have nots.

It will be necessary for universities and colleges to increase the enrollment of high school students and accept mature and adult students as well as international students in order to survive. It follows that even wider student diversification becomes unavoidable. The challenges faced by faculty in responding to universalization and lifelong learning will become instruments of survival. Innovation in teaching as well as student learning supports may become even more significant than integration of research and teaching.

1.3 Social Changes and University Reforms—The Relationship with Government

1.3.1 The Reform of University Establishment Standards

The rapid progress of social changes from 1992 to 2007 has been accompanied and matched by changes in government policies during the 15 years. It could be claimed that "University Education," a Report of the University Council in 1991, was the starting point of university reform and its key concept was the reform of university establishment standards. This Report of the University Council addressed relaxation of regulations in the field of higher education in response to the policies offered by the government's Provisional Commission on Administrative Reform. The reform of university establishment standards removed government control of

the curriculum to the extent that it allowed universities to devise their own curricula. In particular, the regulation on general education was reduced by allowing it to be integrated with subject-specialized education. At the same time, a reform was introduced requiring institutional self-inspection as well as self-evaluation in order to limit any decline in educational standards.

Even though the reform sought to balance relaxation of regulation nationally by introduction of university self-regulation, the consequence was a decrease in the quality of education. This ensues from the combination of the policy with major implementation of market mechanisms, notably in regard to funding and student recruitment. It is undeniable that acceleration of the growth of universities and mass production of higher education brought declines in student quality and their academic abilities. Inevitably, quality assurance and evaluation of education research became the most controversial elements in this period when an increase in quantity of higher education brought conflicts between its quality as well as its quantity.

1.3.2 A Shift from Self-Evaluation to Third Party Evaluation

Educational reforms have focused on the quality assurance of education, and it has become an overarching imperative to improve the quality of education and attain academic abilities with international standards. Although universities in Japan had little experience of self-evaluation, the reform of university establishment standards in 1991 made it obligatory to institutionalize self-evaluation. However, there was deep suspicion of the outcomes from self-evaluation from the very beginning, notably because their requirements were beyond the abilities of most universities for satisfactory compliance.

Predictably, in 1998 the report of the University Council, "A Vision for Universities in the 21st Century and Reform Measures," determined that self-inspection and self-evaluation were inadequate and recommended their replacement by third party evaluation. The government transformed the National Institution for Academic Degrees (NIAD) into the National Institution for Academic Degrees and University Evaluation (NIAD-UE) in 2000 as the third party to handle these evaluations. In 2004, Institutional Certified Evaluation and Accreditation started with participation of NIAD-UE, the Japan University Accreditation Association (JUAA), and the Japan Institution for Higher Education Evaluation (JIHEE). Although universities in Japan had a very limited culture and climate of evaluation before and after World War II, the era of evaluation has now fully embraced them and they have entered a phase of evaluation saturation.

As elsewhere, evaluation exhaustion has become pervasive among faculty because of increased evaluation preparation, execution, and formalities; a decline in quality; and an eruption of routine paperwork. Involvement in evaluation of teaching in "the era of educational reforms" proved to be a particularly onerous and unpleasant aspect, regarded by many as a descent from an academic heaven to a dull, different evaluated hell.

1.3.3 The Reforms of Undergraduate Education

In implementing the universal stage of higher education, it is easily predicated that universities would need to deal with the many immature students and inadequately prepared students with lower academic abilities who would enter universities. The unprecedented issue for universities of how to raise student quality as well as their academic abilities becomes a prime concern. At least two issues need to be resolved: confusion in general education, and reconstruction of undergraduate courses. As higher education in Japan reached the universal stage, its undergraduate education required general education or liberal arts education to fill the widening gap from the expansion of secondary education and to establish interdisciplinary knowledge; equally it needed to remedy inadequate preparation for study of special subject areas that were themselves expanding. In fact, however, it came to both produce retrogression in general and liberal arts education and lose its substance in specialist study (Special Committee at the National University President Association 2006).

Standing at the advent of an era of declining enrollment, universities would be required to do two things: (1) raise standards for diverse students to a reasonable level by their graduation; and (2) build world-class academic abilities in their graduates. Therefore, consistent reform from entrance to exit of undergraduate education would be necessary. The reform of university entrance procedures searched for reform of the unified preliminary entrance examination, the recommendation entrance examination, and the Admission Office (OA) entrance examination. Furthermore, delivery of education, pre-entrance education, remedial education, first-year experience, and career education all were revealed to be in disorder. By focusing on the processes of teaching and learning, various reforms of teaching could be identified: syllabus, curriculum, tutoring systems, small-group teaching, office hours, IT, GPA (Grade Point Average), CAP, credit systems, semester systems, coursework groups, educational environment, rigorous assessment of student academic achievement, and Faculty Development (FD).

On the assumption that those reforms could be achieved by improving student academic abilities and other abilities such as the "skills of undergraduates" suggested by the Central Council for Education in 2008 and the "basic skills of working people" proposed by the Ministry of Economy, Trade and Industry in 2006, it would take some time to achieve the expected results (Central Council for Education 2007).

Again, time is needed to establish effective continuity between undergraduate education and graduate education, because of the current lack of consistency and integrity between them. More widely there are serious issues to be resolved on the connection between universities and society, which include some difficult-to-reach problem groups: the "stay-at-homes" who seek to isolate themselves from society; the NEETs, young people "Not in Education, Employment or Training"; the "part-time jobbers"; the working poor; and the internet café refugees. These situations result in malfunction of connections between universities and society as well as in transition from learning to employment. Their prevalence surely establishes a lack of continuity in education, which has failed to respond to human growth and developments (Arimoto 2007c; Yamauchi 2008).

1.3.4 Incorporation of the National Universities

Following the incorporation of the national universities in 2004, the number of national universities decreased from 99 to 86 through elimination and consolidation. But much greater changes followed in their administration and management. Specifically, direct government control of the national universities was replaced by indirect control and took the form of a supervisory role. Internally, their administration and management shifted from a bottom-up to a top-down structure, and their presidents and the new boards of administration acquired great authority. In other words, an emphasis on rationalization, streamlining, and efficiency in university organization has been reinforced at the expense of the authority previously held by the traditional faculty council and academic profession. This indicates one of the root causes of why it is said that the "university is dead" (Ichikawa 2008). While the government role has shifted from control of university governance to a supervisory role, a new bureaucracy, familiar in American and European universities, has emerged in Japanese universities and has come to hold sway over university faculty and staff.

1.3.5 Financial Crisis and a Gap-Widening Society Among Universities

The current financial crisis represents one of the most acute issues facing the universities. As the Reports of the Central Council for Education noted, expenditure by the Japanese government on higher education accounted for only 0.5 % of GDP as of 2003; it rated as the lowest level among the U.S. (0.9 %) and other OECD countries (around 1.0 %) (Gouda and Sugino 2008) and would justify the view that Japan is one of the internationally "poor universities countries." Under such circumstances, the resources available in Japan are quite inadequate to develop the international competitiveness demonstrated by American and European countries. Even so, it is unlikely to be remedied anytime soon as the government, with debt amounting to ¥1,300 trillion, 250 % of GDP, faces profound financial difficulty.

Indeed, the current subsidy for operating expenses in the national universities is being reduced by 1.0 % each year: specifically, in 2007 this deduction amounted to ¥125 billion. During the 15 years from 1992 to 2007, university finance has presented three features: a huge increase in the proportion of funds allocated competitively; more emphasis on funds assigned to individuals rather than to institutions; and expansion of the proportion of funds assigned competitively to institutions. As a result, wide differences in levels of funding among the national universities have become evident (Amano 2008). In particular, a wide gap exists in resource distribution between research universities and non-research universities. Furthermore, discussion of plans for adjusting the subsidy for operating expenses by applying selectivity to its residual research provisions has taken place. The proposals of the Ministry of Finance, by adopting a standard of competitive allocation

for research funds, would result in reduced operating subsidies for 74 (85 %) of the national universities. Even the plan proposed by MEXT predicted that over half of the national universities would suffer reductions in funding. Such simulations imply a strong probability that funding of small local universities and teachers' colleges would be cut to levels inadequate for their continuing function and so would accelerate the widening gap in society.

In accordance with the framework of classifying universities into seven types, the Reports of the Central Council for Education in 2005 suggested: international center of research and education; training high standard professional; training diverse professional; comprehensive cultural education; education and research in specific area of specialization (arts and gymnastics); center of opportunity for lifelong learning in communities; and functions of social contribution (regional contribution, collaboration with industries, governments and universities, and international interactions). In such circumstances, that is, promoting a gap-widening society instead of developing the university classification into the individual university types, there would be a risk that the classification might be transformed into a gap-widening society with a monothetic social ladder. A review of government policies is needed: (1) to enhance the support provided from public funding that would allow Japanese universities to become more competitive internationally; and (2) to maintain basic operating funds and allocated competitive funds at levels sufficient to ensure the vitality of each national university.

1.4 The Relationships Within Universities

One of the key features of the academic profession is that its members belong to university institutions. In the mutual relationship between universities and the academic profession, there are two aspects: one is that universities affect faculty; the other is that faculty affect universities. The former includes those aspects of reform of university principles, functions, and structures that affect faculty. Over the 15-year period, the demands for accountability have called into question the nature of an efficiently oriented academic society. University administrations have taken strong action towards rationalization and explicitly in the National University Corporations have shifted their management structure from bottom-up to top-down. The consequent changes in organization have resulted in a reduction of faculty power not only to participate and influence university administration and management but also to perform teaching and learning duties.

The changed relationship between administration and management and teaching and learning constitutes a new development. The 23 mammoth private universities whose complement is more than 3,000 students account for only 4.0 % of the total of 600 private universities, and they oligopolize half of total enrollment in the private sector. While such mammoth universities with more than 10,000 students seemed to have stable management, the other 96 % of private universities including those facing a crisis of university selection have competed for obtaining the remaining 50 %

students and have unstable management. In the history of universities in Japan, there have never been as many universities with unstable status and problems in their management as there are now. In other words, their management facing crisis should pressure on sustaining teaching and learning.

Naturally, some changes have also occurred in the relationship between students and universities. Currently, demography has determined that universities no longer select students; rather is it that students are able to select their university. This carries an implication of enhanced status for students and a diminished status for faculty. At present this situation is evident only among private universities but its implications for faculty are widespread. One indicator is the increase in the number of part-time and fixed-term faculty appointments: recently, the number of part-time faculty in Japanese universities (168,000) has exceeded that of full-time faculty (167,000), a trend that may be expected to continue in the future. Furthermore, the official policy of placing high emphasis on undergraduate education, by increasing the teaching load on faculty at the expense of research, may well be a major factor which contributes to the strain on faculty, which was already the highest in the world according to the 1992 survey.

1.5 The Relationships with Academic Disciplines

As illustrated in Fig. 1.5, the functions of knowledge as the base of scholarship include understanding, transmission, discovery, application, and control, and these are directly linked to the academic functions of learning, teaching, research, services, and administration and management. These functions have been around to a greater or lesser extent since the medieval universities were established, though their priorities have varied. At present, learning which has existed since the medieval period is weak, and it would be highly desirable if its importance could be rediscovered and emphasized at universities in the twenty-first century. While teaching has held an important role for 900 years, research has been institutionalized and become a dominant function among modern universities only over the past 200 years. In recent times, services and administration and management have become increasingly important. It must be said that the need to regenerate the academic profession to reflect the reorganization of the functions of knowledge as well as the redefinition of university roles has become a crucial issue for today's universities where these functions compete against each other and generate increased conflicts.

In this it is especially the relationships between research, teaching, and learning that are important. Generally faculty demonstrate a strong aspiration to acquire and increase knowledge. Furthermore, the 1992 international survey indicated that faculty showed a high degree of conformity in ranking the importance they assigned in the order: academic disciplines > departments > faculties > universities. Japanese faculty was no exception and, moreover, they showed the strongest tendency worldwide towards a research—rather than a teaching—orientation. Although they have this strong, research-oriented tendency, changes during the 15-year period have

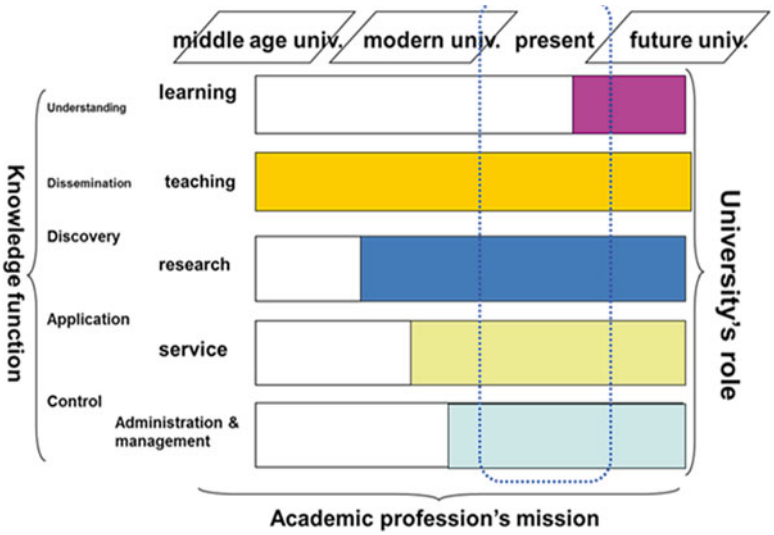

Fig. 1.5 Knowledge function, university's role, and academic profession's mission

required them to put more effort into teaching than research. This is exemplified by the development of FD, which became an obligation in 1998 and so was a requirement in 2007.

1.6 Changes in the Academic Profession

Changes in society, government policies, and knowledge inevitably promote changes and reforms in the academic profession. Therefore, it can be inferred that the relationships between faculty and society, universities, and knowledge will have influenced the status as well as the role of the academic profession and effected changes in academic productivity and faculty consciousness.

1.6.1 Some Macroscopic Changes

First, there have been some macroscopic changes directed by social changes. (1) The establishment of the knowledge-based society required society as a whole, and not just the universities, to foster it. Accordingly, this wider competition challenged the existential base of the universities and increasingly tested the functions of the academic profession. At the same time, the emergence of a knowledge-based economy transformed universities into knowledge-based corporations, encouraged to require efficiency and streamlined faculty. (2) Globalization encouraged attainment

of international standards and quality by both universities and faculty especially through identifying professional qualities. It expanded the growth of transnational education and led to development of national strategies for higher education (Arimoto 2008a). In Japan, the ambition of the former Prime Minister Yasuo Fukuda to achieve 300,000 exchange students by 2008 remains a fresh memory; such expectations could only exist for faculty whose abilities matched international standards of quality assurance. (3) The introduction of market mechanisms applied the criteria of economic rationalization to judgments of faculty. Accountability, flexibility, and responsiveness to the markets were accompanied by specialization, enhanced competition, short-termism, and instability to the academic profession. (4) Lifelong learning, implicit in the relationship with universalization of higher education, extended demands on the academic profession through a presumption that universities could best develop this relationship with society and also provide high quality education appropriate to lifelong learning. (5) The demographic decline and the consequent dramatic decrease in number of applicants for enrollment in universities have yielded under-enrolled institutions. Not only has it brought university polarization in the form of "successful universities" and "unsuccessful universities," but for the academic profession it has increased the pressures on displacement and part-time employment.

1.6.2 Impact of Government Policies

Second, there is the impact of government policies. The Report of the Central Council for Education, "The Future of Japanese Higher Education," in 2005 revised the traditional four job classifications—"*joshu*" (research assistant), "*koushi*" (lecturer), "*jokyouju*" (assistant professor), and "*kyouju*" (professor)—into five new designations: "*joshu*" (assistant), "*jokyou*" (assistant professor), "*koushi*" (lecturer), "*junkyouju*" (associate professor), and "*kyouju*" (professor). The re-grading aimed to enhance the professional characteristics of an academic career. To the extent that the academic career in Japan has followed the pattern established in the U.S., following the creation of graduate schools and the U.S. system for recognition of professional achievement, it could be said that the changes enhance the significance of research, as shown by a surge in the number of PhDs—now required for appointment as a full professor. However, it is not deniable that rather too much emphasis on developing a teaching orientation has been placed on faculty development programs to implement government policy.

It is also important to note that the Reports of the Central Council for Education, while they had an impact on university education as well as research, caused a lowering of the status of the academic profession by requiring an improvement in academic quality. In other words, the Reports dealt a crushing blow to the features of the guild and collegiality, which had prevailed since the medieval universities. Universities metamorphosed into corporations of knowledge from communities of knowledge and from a peer-to-peer structure to a bureaucracy; faculty autonomy

and academic freedom became vulnerable. The bureaucratic system, originating in Europe and the U.S., has now spread to Japan to replace its traditional faculty autonomy. Incorporation of the national universities has rendered this change inescapable. The conjunction with the effects of fiscal restraint, reduction of basic operating grants, and selectivity in funding has inevitably widened the differences between universities and increased the dissatisfaction of faculty. Generally, the tone of the Ministry of Finance, the Council on Economic and Fiscal Policy, and the Education Rebuilding Council follows the path of rationalist reform. Even MEXT, with its relatively inactive attitude, adopted a similar stance with its "Structural Reform of the Universities (National Universities)" (the so-called "Toyama Plan") in 2001, which was submitted to the Council on Economic and Fiscal Policy.

1.6.3 Construction of Knowledge

Third, the reconstruction of knowledge should be reflected in the university curriculum and provide a basis for change in the functions of faculty and the academic organization. Ideally, the front-line development of knowledge would provide fast-evolving progress and invite a metabolism of knowledge. Universities, dependent on activities based on knowledge, have to change themselves by responding to developments in transmission, application, and control of knowledge. The impact on both research and teaching, as the two wheels of one cart, is significant, and together they work towards reviewing the progress of scholarship including the relationship between research and teaching (Boyer 1990). When a move to seek integration of teaching and research in scholarship began in the U.S., a move to separate research and teaching rather than assimilate them started to be encouraged in Japan.

1.6.4 The System's Specialization and Segmentation

Fourth, it should be noted that social changes as well as reconstruction of knowledge include the demand for the system's specialization and segmentation, rather than assimilation and integration. It would be expected that university academic bodies and faculty would be motivated to move in this appropriate direction so as to conform specialization and segmentation. Accomplishment of academic work in universities is incomplete unless it is assimilated and integrated. In fact, however, universities have a great tendency to be content with achieving results through specialization and segmentation (Clark 1995). So faculty tend to be either research-oriented or teaching-oriented and to separate research from teaching; again both faculty and institutions create barriers between academic work and non-academic work and establish conflicts between them. In the latter case, the conflicts between faculty and non-academic staff would be increased. How to control such frictions and conflicts arising out of the system and how to integrate such activities present key challenges.

1.6.5 Changes in Academic Productivity

It is implicit that the value of the academic profession should be assessed by the quality and quantity of its academic productivity. If it were to lose the ability to generate academic production, the academic profession would have been degraded to merely salaried workers. Will academic productivity be maintained and increasingly improved in the situation of today where faculty status, position, and roles need to be changed in response to the environmental changes discussed above? Has its quality been raised now by the segmentation of research and teaching? In order to answer these questions, the outputs of academic production need to be examined. Specifically, individual aspects such as "research productivity" and "teaching productivity" should be assessed.

As already discussed, the academic profession in Japan has traditionally held strong aspirations for research. The Carnegie Survey in 1992 indicated that they could be classified as conforming to a German research-oriented model in company with Germany, the Netherlands, Sweden, and Korea; and that they showed low aspirations for teaching. Reflecting on this, an obligation for faculty to participate in FD, which was semi-regulated in 1988, became a requirement in 2004. By its implementation in graduate courses since 2007 and undergraduate courses since 2008, universities took a step toward a new era. If the intentions of this new system could be internalized, it would be expected that aspirations for teaching could become dominant. The apparent gradual success of these reforms in raising the level of teaching productivity suggest that the first fundamental change in the 140-year history of the Japanese university system may be being implemented.

However, the policy of continuing segmentation of research and teaching remains and has not been clarified by the suggestions about segmentation in the Reports of Council or government policies. Therefore, evidently, this advice has been misunderstood or regarded as abstract (Arimoto 2007d, 2008b). This neglect of the principles of scholarship has resulted in social and psychological isolation and anxiety in faculty. When government policies are unable to show a direction of reform, it becomes crucial for faculty to identify an appropriate professional vision independently. Its success or failure to do so will influence the outcomes of universities in Japan and around the world.

1.7 Methods Applied in the Surveys

Brief descriptions of the data collected and used in the surveys are given here:

1. The questionnaire survey of 1992 was conducted by targeting 4,000 faculty in 19 four-year universities, which were selected by university type and size. It adopted the Japanese version of the Carnegie International Comparative Study of the Academic Profession. Responses were received from 1,889 faculty (a response rate of 47.2 %).

A detailed explanation of the sampling method is available in a note on p. 37 of *International Comparative Study of the Academic Profession* (Arimoto and Ehara 1996). For convenience it is quoted in full in translation here:

"Questionnaires were sent in March 1992 to 4,000 academics (22.7 % or 908 of the sample belonged to research universities and 77.3 % or 3,092 belonged to non-research universities). Questionnaires were delivered to respondents by designated researchers in the institutions to which questionnaires were sent and the responses were returned by mail. Based on the information available in July 1990, all universities on the list of Japanese universities in 1990 were categorized as research universities (30) or non-research universities (475).

The method of classification was based on the criteria identified in *Study of University Evaluation* (Keii 1984). The 505 universities were divided by size as large, middle, and small institutions according to the procedure used by the Carnegie Foundation for the Advancement of Teaching for institutions in the U.S. The institutions to be sampled were selected to provide a 5 % sample (4,181) of all permanent academics (83,619). In total 19 universities were selected: 4 research universities (3 national universities, all of which were former imperial universities; 1 private university) and 15 non-research universities.

Full details are available in *University Evaluation and the Academic Profession: Intermediate Report of the International Study of the Academic Profession* (Arimoto 1993)."

The 2007 survey targeted the same 19 four-year universities as in 1992 and used the same questionnaire. Questionnaires were distributed to 4,498 faculty and responses were received from 1,100, a response rate of 24.5 %.

2. Tables A (Gender), B (Age), C (Degree acquired), D (Sector), and E (Discipline) show attributes of faculty who answered the surveys of 1992 and 2007 by gender, age, degrees awarded, university institutional sector, and academic disciplines. The most clearly evident features of change between 1992 and 2007 are increases in the numbers of female faculty and of those who have been awarded PhD degrees. Comparing the survey of 1992 with that of 2007, the institutional sector was dominated by responses from national universities in 2007. In addition, some significant associations were found among the distribution of academic disciplines with probability $p < .001$ (the family-wise error rate). More answered in Social Science and Medical Science and fewer answered in Arts.
3. The areas investigated by the questionnaire in this study are seven as follows: (1) the profile of the academic profession; (2) access to higher education; (3) professional activities; (4) conditions of employment; (5) university administration and management; (6) higher education and society; and (7) international dimensions of academic life.
4. The areas identified in paragraph (3) above are discussed in the following 5 parts and 17 chapters in this volume.

1.8 Summary of the Volume

The Introduction introduces a statement of the book's main purpose, argument, and framework, providing historical, comparative, and conceptual overviews of the academic profession in Japan and a set of striking dimensions of faculty activities affected by social and economic factors as well as internationalization.

Part I discusses the changing environment of the academic profession. Chapter 2, "Higher Education Policy and the Academic Profession" mainly illustrates university policy reports regarding professorship since the establishment of the Ad Hoc Council on Education, and particularly during the roughly two-decade period following establishment of the University Council of 1987, in order to assess how policies have been codified in university regulations and how these policies have changed actual practices at universities. "Mobility" (Chap. 3) deals with the mobility of Japan's academics, the faculty appointment system, and academic productivity in Japan from an international perspective. A framework for the study of mobility and the functions of mobility is suggested. Finally, the trends and changes in mobility due to recent reforms are considered. The first part of Chap. 4, "Academic Funding and Allocation of Research Money," examines changes that have taken place in higher education funding since the early 1990s. Later in the chapter, changes in research fund allocation and the influence of those changes on research activities are analyzed. "Changes in University Teachers' View Towards Students: Impact of Universalization" (Chap. 5) focuses on the viewpoint of university teachers, in which the scale of higher education exceeds the level they believe appropriate. They have changed their teaching methods in order to meet the downward pressure on quality and these education reforms will continue in the future. "Gender Bias: What Has Changed for Female Academics?" (Chap. 6) is a comparative study of gender and is mainly concerned with changes in teaching and research activities and the levels of awareness held by the academic profession in Japan with regard to gender. These changes were induced by social changes and university reforms.

Part II discusses academic organization and academic life. "Governance, Administration, and Management" (Chap. 7) examines the Japanese faculty's perceptions of their institutions focusing on the governance models. This chapter further seeks a way to resolve the tension between professors and administrators in Japanese universities. "Labor Conditions" (Chap. 8) focuses on the situation and change of working condition of faculty members in Japan. The first part of the chapter considers physical conditions for work in the university, and of human relationships in the university and the university institutions as organizations together with faculty members' own specialties. The second part, by focusing on the individuals, is concerned with the main determinants of faculty salaries. "Working Time and Personal Strain" (Chap. 9) aims to clarify changes in the time allocated by faculty members and the impact of the changes on their psychological attitudes. It is particularly concerned with changes in distribution of working time of Japanese faculty members and their personal strains over the period.

Part III discusses academic productivity. "Research Productivity" (Chap. 10) attempts to clarify the factors for the promotion of research activity by faculty

members in the Japanese 4-year universities and identify ways to improve the productivity of research activities in the universities. “Teaching and Research in the Academic Profession: Nexus and Conflict” (Chap. 11) mainly discusses the changes that have happened to the Japanese academic profession in terms of research and teaching activities, particularly their interrelationships. It also discusses some significant changes which have occurred in the Japanese academic professions during the 15-year period and their positive and negative effects. “The Academic Profession and Evaluation” (Chap. 12) reviews the implementation of higher education evaluation from the point of view of individual academic staff.

Part IV deals with the effects of the academic profession on society. “Internationalization” (Chap. 13) deals with not only the overall changes in the internationalization of Japan’s academic profession, but also relevant changes in the internationalization of Japanese higher education institutions by sector and discipline between 1992 and 2007. “Higher Education and Society” (Chap. 14) elucidates accessibility to higher education and its quality, functions of higher education, and governance of higher education in detail. It also makes an analysis of diversity and disparity of the views of the academics on the roles of higher education in society.

Part V deals with the Japanese academic profession as observed by scholars from the West and Asia. “The Academic Profession: A Comparison Between Japan and Germany” (Chap. 15) discusses three main issues in Japan viewed in comparison to the academic profession in Germany: the challenge of comparative research, comparative analysis of the academic profession, and the academic profession in Japan. The academics’ views and activities vary substantially in both countries according to their rank and institutional setting. These differences are so substantial in Germany that the idea of a single academic profession clearly could not work at all. In Japan, these differences are smaller, but clearly not negligible. As a consequence, one might suggest that comparative studies on the academic profession should not focus so much on differences between all academics of the respective countries, but should pay attention as well to the variations among the academics of each country. “The Invisible Academy: A U.S. Perspective on The Japanese Academic Profession” (Chap. 16) discusses Japanese professors from the viewpoint of an American scholar. The great passion of the Japanese professor is to conduct research and publish interesting findings. While objectively the scale and productivity of the Japanese academic system is very substantial, subjectively the Japanese system may not receive the respect it deserves—particularly in the West. “Similar but Different Worlds: A Korean Perspective on The Japanese Academic Profession” (Chap. 17) overviews similarities and differences between Japanese academics and Korean academics, finding that both Japanese and Korean scholars are similar, yet they are quite different at the same time. Similarities and differences are related to the historical development of the higher education in the two countries. Korean academics are more akin to those in U.S. higher education while Japanese scholars still hold to strong German traditions. Korean academics have shifted more rapidly toward a teaching-focused approach than Japanese academics, while Korean academics are still lagging behind their Japanese colleagues in research because Japanese academics have well-established research hubs, develop their own research topics, and network widely both regionally and globally.

The Epilogue, the final chapter, considers the problems and prospects which the Japanese academic profession is facing. Specifically, it deals with the function and pathology of the academic profession and the perspective of the academic profession, and ends with concluding remarks.

Table A Gender

	1972	2007	Total***
Male	1,725	966	2,691
	92.1 %	88.1 %	90.6 %
Female	147	131	278
	7.9 %	11.9 %	9.4 %
Total	1,872	1,097	2,969
	100.0 %	100.0 %	100.0 %

Note: ***p < 0.001

Table B Age

	1992	2007	Total***
Less than 30	190	121	311
	10.2 %	11.1 %	10.5 %
40th	616	317	933
	33.0 %	29.1 %	31.6 %
50th	643	370	1,013
	34.5 %	33.9 %	34.3 %
More than 60	417	283	700
	22.3 %	25.9 %	23.7 %
Total	1,866	1,091	2,957
	100.0 %	100.0 %	100.0 %

Note: ***p < 0.001

Table C Degree acquired

	1992	2007	Total***
Bachelor	312	81	393
	16.9 %	7.4 %	13.4 %
Master	458	224	682
	24.9 %	20.4 %	23.2
Doctor	1,053	788	1,841
	57.1 %	71.7 %	62.6 %
Others	20	6	26
	1.1 %	0.5 %	0.9 %
Total	1,843	1,099	2,942
	100.0 %	100.0 %	100.0 %

Note: ***p < 0.001

Table D Sector

	1992	2007	Total***
National	893	650	1,543
	47.3 %	59.4 %	511.7 %
Private	996	445	1,441
	52.7 %	40.6 %	48.3 %
Total	1,889	1,095	2,984
	100.0 %	100.0 %	100.0 %

Note: ***p<.001

Table E Discipline

	1992	2007	Total***
Humanities	273	128	401
	15.7 %	12.2 %	14.4 %
Social science	201	152	353
	11.5 %	14.5 %	12.6 %
Science	338	191	529
	19.4 %	18.2 %	18.9 %
Engineering	406	249	655
	23.3 %	23.7 %	23.5 %
Agriculture	123	88	211
	7.1 %	8.4 %	7.6 %
Medicine/pharmacology	249	172	421
	143 %	16.4 %	15.1 %
Teacher training	28	33	61
	1.6 %	3.1 %	2.2 %
Arts	124	37	161
	7.1 %	3.5 %	5.8 %
Total	1,742	1,050	2,792
	100.0 %	100.0 %	100.0 %

Note: ***p<0.001

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Chapter 2
Higher Education Policy and the Academic Profession

Yoshimasa Kano

2.1 Introduction

The most important roles expected of university professors are education and research. However, as part of the transformation of universities over the last 20 years, they have also been asked to develop identities as teachers. This change is motivated by a number of factors, including the fact that university professors in Japan have traditionally identified themselves primarily as researchers rather than teachers and that, in the global knowledge-based society, there is increasing demand on universities to demonstrate clear learning outcomes. In addition, in the era of universal access to higher education, there is increasing pressure on universities to maintain and improve the level of education. In this chapter, I track university policy reports regarding professorship since the establishment of the Ad Hoc Council on Education, and particularly during the roughly two-decade period following establishment of the University Council of 1987, in order to assess how policies have been codified in university regulations and how these policies have changed actual practices at universities.

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2.2 Progress of the "Educational Revolution"

2.2.1 Higher Education Policy and Reports Issued by the University Council

In the past, the decision-making power of universities was held primarily by the centralized bureaucracy of the Ministry of Education and, within universities, by departments, disciplines, and programs of study. The authority of university federations and individual universities, by contrast, was relatively weak. To change this state of affairs, national universities were transformed into independent corporate entities, giving more authority to university presidents with the goal of revitalizing educational and research activities under their leadership. However, it is necessary to maintain some degree of centralized management to coordinate the roles of individual universities so that there is a coherent system of national universities and, thus, the role of the Ministry of Education, Culture, Sports, Science and Technology (MEXT) as the policy-making agency has not been reduced. On the contrary, it is possible that, in this day and age where the ability to compete in ever-intensifying global competition is based on "knowledge," government control of higher education is increasing. In order to understand the "transformation of professorship," it is necessary to first understand the trajectory of university policy and, as such, it is impossible to ignore the context of university policy at the national level.

Of course, higher education policy does not only entail deliberations or reports issued by the University Council or its successor, the Subcommittee on Universities of the Central Council for Education. One such example would be a directive issued by the Office of the Prime Minister, which, needless to say, lies outside the framework of MEXT. In 2001, the then Prime Minister, Junichiro Koizumi, proposed a series of bold structural reforms of universities, including (1) restructuring and consolidation of national universities, (2) conferring corporate status on universities, and (3) establishing centers of excellence (COE) as foci for advanced studies. This was called the Toyama Plan, named after the then minister of MEXT. The Education Rebuilding Council was established between 2006 and 2008 under Shinzo Abe, who succeeded Koizumi as Prime Minister. As illustrated by this example, education policy has, on occasion, been influenced by the office of the Prime Minister, but the impact of such outside influence has been limited. Due to Japan's vertical governing structure, formulation of education policy is primarily the responsibility of MEXT. Policy is implemented by a sequence of steps including inquiry and reporting by the University Council and the Central Council for Education, I felt that 'subject to' could be removed since the steps relate to policy implementation, and policy wouldn't be implemented unless the bills were approved. Thus, examining policy reports issued by the University Council or the Subcommittee on Universities of the Central Council for Education, and particularly their implications for the roles of university professors, is indispensable to understanding the transformation of professorship.

2.2.2 *Legacy of the Ad Hoc Council on Education (1984–1987)*

Before examining policy reports issued by the University Council, it is necessary for us to first examine the Ad Hoc Council on Education, established in 1984 under the administration of Prime Minister Yasuhiro Nakasone. The Prime Minister's council was strongly influenced by the ideologies of neo-liberalism and market-based principles advocated by Ronald Reagan, the then President of the United States, and Margaret Thatcher, the then Prime Minister of the United Kingdom. These ideologies, which at the time were new, encouraged a shift from a "planned" higher education policy to more "liberalized" policies that remain the basis for today's policies.

Reform of higher education was discussed over a period of approximately 3 years by the Fourth Subcommittee of the Ad Hoc Council on Education. The result was a proposal, communicated in the Council's second policy report issued in 1986, calling for establishment of a "permanent university council," tasked with deliberating the basic course of Japan's higher education policy, offering necessary advice and support to universities, and having the right to make recommendations to the Minister of Education. The proposal was carried over to the fourth and final policy report, and the University Council was formally inaugurated in September 1987, a month after publication of the Ad Hoc Council's final report. The establishment of the first independent body with the exclusive task of investigating and examining issues related to universities and higher education served as a significant driving force to advance the reformation of higher education. The University Council issued numerous policy reports that eventually had considerable impact on universities and institutions of higher education and played a significant role in establishing the direction of subsequent reform of higher education in Japan. In 2001, the University Council was merged with the Central Council for Education as part of a reorganization of government ministries, arriving at its current incarnation as the Subcommittee on Universities within the Central Council for Education.

The Ad Hoc Council on Education policy reports called for individualization, diversification, and advancement of higher education, increased linkage of universities with society, opening up of universities, aggressive promotion of academic research, establishment of independent and autonomous organization and management, improvement of teacher quality, and development of economic infrastructure as a precondition for supporting liberalization policies. Relevant to the topic of this chapter, these reports comment on the background, work conditions, and professional development of university professors, as illustrated in the fourth policy report of the Ad Hoc Council on Education issued in 1978:

1. To widely and flexibly recruit even company employees as teachers regardless of nationality;
2. To open up the decision-making process on personnel affairs and pave the way for introduction of a tenure system for professors in order to encourage personnel flexibility and to examine their treatment and research conditions;

3. To promote proactive measures for nurturing current and future researchers, and to examine job descriptions, treatment, and job titles of assistants;
4. To request universities to commit themselves to evaluating educational and research achievements, and to encourage teachers to develop themselves through friendly competition;
5. To reorganize and improve efficiency of administrative structures, and systematically promote professional training for university professors and staff in order to improve quality of education and research.

In this section, we do not address the fifth item (administrative staff development) above, as it is not directly related to professorship, although there has been practical effort since the end of the 1990s to promote staff development and even establishment of academic societies by university administrative staff. What is important is that, for the first time, attention had been paid to the multiple dimensions of university professorship, a subject that had previously been ignored in university policy. Policy reports make recommendations regarding the qualifications, tenure, and evaluation of professors. Discussion of these issues was taken over by the University Council, leading to the issuance of reports and changes in codified policy.

Of course, professors have always been subject to a variety of opinions, especially critical ones. They often faced strong criticism from students during the era of student movements in the 1960s and their attitude toward research and education has been fiercely criticized, primarily by journalists. However, very few policies have been directed at professors. Up to this point, higher education policy dealt solely with issues of system and scale and little reference was made to the role of professors who stood at the forefront of university education. Professorship had been treated as sacred ground, protected from public scrutiny in the name of university autonomy.

2.2.3 Policy Report University Education (1991)

The first policy report issued by the University Council in 1988 was entitled *Flexibility in Graduate School Programs*. The report calls for, with respect to graduate school faculty, "recruiting individuals from the society at large who are confirmed to have outstanding knowledge or experience in a major field of study and a high level of ability in terms of education and research and providing them with teaching certification." It was believed that experience of actual research, development, and practice in leading-edge fields of science and technology, and international economic activities, would revitalize education and research in graduate schools.

Two and a half years after publication of the first policy report, 1991 saw the issuance of a significant report entitled *On University Education*. Specifically, the document outlined a roadmap for universities and called for: (1) design of distinctive curricula as well as flexible and well-developed educational systems,

(2) improvement in the learning environment for students, (3) improvement in liberal arts and professional education, and (4) offering of diverse learning opportunities. Most importantly, the *Outline of Standards of University Establishment* removed the framework separating liberal arts from professional education. As a result, university reform progressed, leaving it, as much as possible, to each university to design its own curriculum based on its principles and objectives. The rush to create new curricula by each university led to unprecedented enthusiasm in discussions regarding university education, focusing particularly on what kind of curriculum should be created and on both pedagogical and practical aspects of incorporating a liberal arts curriculum. In addition, in exchange for the increased freedom, i.e. deregulation, it was understood that universities were obliged to incorporate a system for continual self-evaluation in their respective standards of practice.

2.2.4 Policy Report for the 21st Century (1998)

The report *A Vision for Universities in the 21st Century and Reform Measures: To Be Distinctive Universities in a Competitive Environment* (hereafter, *Policy Report for the 21st Century*), issued in 1998 by the University Council, was comparable in its influence to the *University Education* report issued in 1991. As is evident from the title, the aim of this policy report was to outline a grand design for higher education in Japan. The report proposed four principles for reform: (1) nurturing an ability to tackle challenges, (2) making education and research systems more flexible, (3) promoting responsible decision-making and implementation, and (4) establishing a multi-faceted evaluation system. With regard to professorship, the report emphasized the role of professors as teachers. University education, at the time, was unable to deal with the universalization of higher education and the increased student diversity. The majority of professors were unable to respond to the new paradigm and were perceived to be overly focused on research and insufficiently cognizant of their responsibilities as educators.

The following quotation from the report is illustrative of this perception of professors:

> Although it is important for universities to institutionally reform curricula as well as handling of courses and credit structure, it is even more important for professors themselves to become more aware of their responsibility as teachers and to make continuous efforts to improve their teaching skills and to conduct classes that stimulate students' willingness to learn.

However, well-established customs and thinking cannot change overnight simply because of government policy. There is a tendency among academicians to place emphasis on research, not only because the majority of professors in Japan are accustomed to do so, but because research is often the primary criterion for evaluation and is related to the acquisition of external funding for scientific research. Subsequent policy reports have continued to emphasize the "educational responsibility" of professors and their "evaluation as educators" as pillars of an

education-focused policy. The language of the reports emphasize the insufficiency of reforms, often using wording such as, "while the recommendations made several years ago have begun to show results of changes thanks to the efforts of each university, the current level of reform is insufficient. In order to improve, …"; additional requirements or measures are introduced with the phrase, "in order to keep reforms moving forward, it is necessary to …." In this manner, recommendations were transformed into requirements as they became codified in university regulations and systems, strongly directing the behavior of university professors and administrative staff.

Then, what kinds of systems have been introduced to reform university education? If syllabi, term systems, office hours, grade point average (GPA) and teaching assistant (TA) are considered "small instruments" of university education, mandatory faculty development (FD), teacher evaluation, change in requirements for teacher certification, and the establishment of professional graduate schools are "larger instruments" of educational reform. Next, we would like to investigate the transformation of professorship from the standpoint of these "large instruments."

2.3 Large Instruments of "Educational Reform"

2.3.1 Mandatory Faculty Development (FD)

Around the time of the initial University Council discussions, the acronym FD was so little-known that it was mistaken by some as an abbreviation for floppy disk. In policy reports from the University Council, FD is defined as "institutional efforts to improve the content and teaching methods of teachers; specific examples include mutual observation of classes by teachers, seminars on teaching methods, orientation for new teachers." As is clear from this definition, FD primarily targets improving the teaching ability of professors.

The concept of FD was imported to Japan from the US during the 1980s. While the General Education Society began to hold symposia on this concept in the mid-1980s, and while FD drew some interest from a few researchers and groups such as the Academic Society, it was rarely addressed by universities (Arimoto 2005, p. 191). In this respect, its inclusion in the *Policy Report for the 21st Century* led to the rapid spread of FD to universities around Japan. The report states that "it is necessary for each university to define in its standards for establishment a systematic means to implement faculty development with respect to principles, objectives, class content and teaching methods at the university or department level in order to improve the content and teaching ability of individual faculty members." The result was the incorporation of policies requiring universities to make an effort to implement FD into university standards.

FD as non-binding university policy was further emphasized in a policy report entitled *Higher Education in the Age of Globalization* issued by the Central Council for Education in 2000, which stated that "it is necessary to promote the

implementation of faculty development that was newly institutionalized at each university in the previous fiscal year for improving teaching skills of teachers," and "it is important to evaluate both the institutional educational activities of the university as well as the educational activities of individual teachers. In doing so, it is necessary to appropriately evaluate efforts to improve educational activities at both the institutional and individual levels from a variety of perspectives and to ensure that these evaluations are reflected in improved educational quality through modification of FD and rewarding and better treatment of excellent teachers." This policy report led to a revision in 2007 of the standards for establishing graduate schools and, in 2008, a revision of the standards to establish universities. The latter revision stipulates that "a university shall implement institutional training and research for improving class content and teaching methods." With this change, FD, which had heretofore been a non-binding policy, became mandatory practice.

2.3.2 Evaluation of Educational Activities of Teachers

As mentioned earlier, the issue of teacher evaluation was first proposed by the Ad Hoc Council on Education. However, the issue did not resurface until some time after the transition from the Ad Hoc Council to the University Council. The 1994 policy report *Improvement in Recruitment of Professors* stated that, "it is necessary to strive for improving the evaluation of teachers so that excellent human resources can be secured for education and research activities at universities and maximize their abilities in accordance with their roles." A report entitled *Facilitation of University Management*, issued the following year, stated that, "teacher evaluation is a very important factor for ensuring university quality and a key means for realizing the principles, objectives and future plans of universities. Therefore, university presidents are requested to raise questions about issues such as criteria for selection and evaluation of teachers that are to be addressed holistically." The report identified efforts to implement systems for teacher evaluation as indispensable for not only recruiting excellent teachers but also for improving the performance of existing teaching staff. A further report entitled *Further Improving Higher Education*, issued in 1997, expounded that, "it is essential to even more proactively consider methods of evaluating the educational activities of teachers." The overlap of "evaluation of teachers" and "evaluation of educational activities" resulted in the creation of a new category, "evaluation of educational activities of teachers."

Evaluation of educational activities has, so far, been an exercise in trial and error. Although several criteria have been used, including student feedback, numbers of classes, numbers of students, efforts towards FD, and employment status of graduates, none of these have emerged as a definitive measure. As individual circumstances for educational activities vary from teacher to teacher, it is difficult to develop a single external evaluation that is appropriate for all circumstances, unlike the evaluation of research. Therefore, evaluation of educational activities, in many cases, relies on teachers' self-evaluations. In addition, the weight given to evaluations

in different categories differs from university to university. Research performance will be a key criterion for evaluating professors at a university that emphasizes research, while teaching performance will be important at a university that places more emphasis on educational activities. The important point here is the underlying belief that maximizing teachers' educational and research abilities is crucial for revitalizing a university and that teacher evaluation is essential for invigorating educational activities.

Teachers have been more closely evaluated since 2004, when national universities were transformed into independent corporate entities. Such close evaluation is said to have started at Okayama and Nagasaki Universities. Briefly, a professor's tasks are classified into four categories: "education," "research," "regional contribution," and "administrative operation." Performance in each category is quantified to arrive at an overall evaluation, which is reflected in the professor's salary and research funding. This style of professorial evaluation is spreading to universities all around Japan. The precedence for such evaluation is provided by similar performance evaluations in business organizations. According to the National University Corporation Law, each entity (university) must formulate mid-term (6-year) goals and plans, which are subject to approval by MEXT. In addition, each national university must file a financial statement and performance report every fiscal year, to check progress with respect to mid-term plans and financial status. In this case, if a university introduces a system of teacher evaluation that reflects an evaluation in conditions of individual employment, it receives a higher evaluation in the form of a "significantly improved" rating. In this way, the policy encourages universities who are seeking to improve their reputation to adopt evaluation systems that differentiate in the treatment of professors based on their evaluations. Put simply, the evaluation system policy is guiding national universities to implement a teacher evaluation system. Universities that are anxious about their current situation or are not confident about themselves are more likely to be "guided." In this manner, teacher evaluation systems have started to gradually penetrate into universities around Japan, despite resistance from some professors.

2.3.3 Revision of Standards to Establish Universities—From Educational and Research Capabilities to Teaching Abilities

The policy report *Future of Higher Education in Japan* (hereafter, *Report on the Future*), issued by the Subcommittee on Universities of the Central Council for Education in 2005, characterizes Japan's higher education policy in the last decade as having shifted dramatically from "planning and regulating" to "envisioning and guiding." In this context, standards for establishing universities have been relaxed. Most indicative of this change was the "Outline" of the *Standards of University Establishment* in 1991. The result of this relaxation of standards was elimination

of the division between professional and liberal arts education, coursework requirements, and standards for teachers' organizations. Curriculum structure had previously been fixed by law. With elimination of the divisions, each university began to develop its own structure, often causing confusion in faculty councils. In addition, this change prompted faculty council members to become more conscious of their role as teachers. Moreover, in the amended standard for establishing universities, the qualification for becoming a teacher of "being an expert in a major field of study with excellent knowledge and experience" was relaxed and replaced by the condition "having educational and research capabilities."

Furthermore, the 2001 amendment of standards for establishment led to further revision of qualifications for becoming a teacher. Those qualifications were specified in Article 14, which stated that, "individuals qualified to become professors shall fall into any of the following categories or shall have teaching abilities that are considered to qualify them to teach at a university." One of the key revisions was the replacement of "educational and research capabilities" with "teaching abilities" as a qualification. From this wording, it is apparent that universities are considered educational institutions with priority given to teaching over research. This, of course, does not mean that professors do not need to have research capabilities. Among the categories, referred to above which, qualifying individuals to become professors are the following related to research capability: (1) "those who have doctoral degrees (including ones granted overseas) and have a record of successful research," and (2) "those whose research records are considered to be equivalent to that specified in the previous category." However, some new categories were added, including (6) "those who are considered to have excellent knowledge and experience in the major field of study," with the implication that research capabilities were no longer were a necessary qualification for becoming a professor.

Clearly, there is no guarantee that an excellent researcher is a good teacher. Many universities are unsure as to what kind of candidate they should hire: a person whose teaching abilities are unknown but who has an excellent research record, or a person who has less research experience an insufficient research record but is an excellent teacher. However, there was a clear expectation that universities would recruit teachers not only from among those with so-called academic careers, but also from among those having a broad range of backgrounds, including companies and non-academic organizations, in order to nurture the kind of human capital demanded by the times and by society. This means that the line separating university professors from elementary, junior high, and high school teachers has become blurred.

2.3.4 Establishment of Professional Graduate Schools

The standards to establish graduate schools stipulate the following as qualifications for teaching at the graduate level: "individuals qualified to teach at the master-level shall fall into one of the following categories and shall be individuals who

are considered to have high-level teaching and research abilities in their specialized fields," and individuals qualified to teach at the doctorate level shall have "very high-level educational and research abilities." In other words, both teaching and research abilities are expected. However, a different take on this emerged from a very different point of view. In 2004, a new system of "professional graduate schools" was inaugurated whose goal was to foster the development of professionals with high expertise in a given field. A unique characteristic of this system is the existence of "expert teachers." While the professional graduate schools were established as a part of a new system to nurture legal experts, the standards state that, "courses for professional degrees need to be established and expanded in various fields in which high-level and professional knowledge and abilities at an internationally-accepted level are required, such as law, MBA, MOT (management of technology), public policy, and teacher training. The courses are expected to contribute to further agility and revitalization of the society as a whole by improving practical education and professional ethics that bridge theory and practice and by nurturing professionals with a high level of expertise in a variety of fields, coming from a broad range of backgrounds, including former company employees" (*Report on the Future*, 2005).

At law schools, the expert teachers are primarily judges and lawyers. In the professional graduate school for teachers, which began enrolling students in 2008, the expert teachers are mainly elementary and junior high school teachers. In contrast to conventional graduate schools in Japan that continue with the twin goals of research and education, such professional graduate schools were established with the specific goal of professional education which does not require the preparation of a master's thesis.

Even before the establishment of professional graduate schools, a growing number of professors who had acquired substantial knowledge and skills in former non-academic jobs had been entering academic positions. The penetration of "vocationalism" has made it impossible to ignore the existence of professors who are at universities by virtue of their practical abilities and experiences, rather than having taken the orthodox academic path of graduate school to become researchers and professors (Amano 2006, p. 81). Former government officials, lawyers, researchers working for private companies, news correspondents, corporate managers, engineers, nurses, and school teachers have been accepted as professors. The ranks of new professors even include former prefectural governors. This is because the knowledge and skills acquired through vocational life are seen as critical to university education and such practical expertise has come to play an important role in university education. The penetration of vocationalism has dramatically changed the nature of undergraduate and postgraduate education and, at the same time, has led to a diversification of professorship. There are now many professors who have arrived at their current positions via non-academic paths, rather than the traditional academic path centered around the graduate school.

2.4 Introduction of the Limited Tenure System

The University Council issued a number of policy reports regarding tenure systems, including *Improvement in Recruitment of Teachers* (1994) and *Facilitation of University Management* (1995), followed by *Tenure System for University Teachers* (1996). These reports resulted in the enactment of the "Law Concerning Term Limitation of University Educators." The three reports may be considered a three-part series aimed at re-energizing university organization and management in order to invigorate the educational and research activities at universities.

The report *Improvement in Recruitment of Teachers* called for each university, on a voluntary basis, to be flexible in hiring professors, adopt an open application system, improve selection criteria and methods, improve teacher quality, and hire more international professors. The underlying belief is that educational and research activities would be invigorated by bringing in teachers with experience at other Japanese or foreign universities or from a variety of other backgrounds, such as individuals with university degrees who had worked elsewhere.

The report *Facilitation of University Management* specifies measures to facilitate and improve university management according to three pillars: (1) facilitation of internal decision-making and implementation, (2) open management, and (3) cooperation between the executive board and educational organizations within the university. The transformation of national universities into independent corporate entities can be regarded as a revolution in management, resulting in a dramatic increase in the authority of the president and the system to support the president with the participation of an increasing number of outsiders in university management. However, with enhancement of the president's authority, the authority of department chairs or heads of research groups over such issues as personnel issues and budgets has been weakened, lowering the latter positions to those of mere on-site leaders.

As indicated by its subtitle, "For revitalizing education and research at universities," the report *Tenure System for University Teachers* was intended as a shot in the arm to help ailing universities. The policy report issued by the University Council justifies introduction of a limited tenure system in the following manner: "It is important to invigorate the education and research activities of universities by hiring excellent teaching staff with a variety of academic and experiential backgrounds and creating an environment in which they can engage in friendly competition that encourages improvement in their teaching and research abilities. It is important to creatively recruit employees and to increase flexibility in employment after they are hired. Flexible employment will lead to increased exchange between staff with differing backgrounds that will stimulate academic inquiry and will be effective in improving educational and research capabilities." The report also makes the point that, "it has been suggested that it is difficult for some professors to explore novel ideas in their educational and research activities as they have been restricted to work within research themes and policies set by specific superior professors who have held the few available high-level positions over long periods of time."

The limited tenure system is directly related to teacher status and each university is required, by introduction of the system, to take various measures and to endeavor to assign teachers more flexibly. Many universities have introduced a tenure system based on the requirements of the law, but only in a limited manner that has not necessarily led to more flexible assignment of teachers. While limited tenure systems have been applied in specific areas such as project-based employment represented by the COE program, younger staff such as assistant professors, and professors from foreign countries, it has not been applied universally and flexibility in teaching assignment remains a challenge. Traditionally, Japan has valued lifetime employment and forcible layoffs or transfers are extremely rare. It would seem that implementing more flexible employment in such a cultural context is difficult.

As stated in the policy report *Facilitation of University Management*, "it is important to increase flexibility in an early stage for young teachers." Accordingly, the overwhelming majority of those hired within the limited tenure system are young researchers. How useful this system is for revitalizing educational and research activities remains to be seen. On the other hand, the limited tenure system is also linked with instability in the social status of such young researchers. As a result of the expanding enrollment in graduate schools in the last two decades, it has become increasingly difficult to get a job at a research institute such as in a university even after the completion of a doctoral degree. Coupled with this background, the limited tenure system has led to a precarious status for young researchers. As reported in the book *Higher-educated Working Poor* (Mizuki 2007), graduate school students tend to avoid research jobs due to the very slim possibility of being hired at a university. Given this situation, will the introduction of the limited tenure system succeed in terms of securing excellent human resources? The policy report of the University Council states that the introduction of the system is not a goal in and of itself, but is a means to achieve revitalization of educational and research activities through the flexible assignment of university positions. Young researchers are forced to compete under precarious circumstances while senior researchers cling to their vested rights, causing conflict between both generations.

2.5 Inauguration and Expansion of GP (Good Practice)

The 21st Century COE (Center of Excellence) Program began in 2002, based on the *Structural Reform Policies on Universities* issued in June of 2001. The program was introduced to increase international competitiveness by providing intensive support for establishing world-class research and education centers in Japanese universities to improve research quality and nurture creative human capital capable of becoming global leaders.

The Program to Support Unique University Education, or Unique Good Practice or educational COE was established the following year. This educational program soon spread to university faculty and staff under the name GP (Good Practice). The main criteria for evaluation centered on "excellent and successful efforts" specified under the Unique Good Practice guidelines and universities started to compete for approval as a GP university. Universities endeavor to achieve GP-certification, not

only because GP-certification makes universities eligible to receive financial assistance for new educational programs from the national government, but also because the GP designation is beneficial in terms of public relations, indicating that the university is making significant efforts to provide excellent education.

The Program to Support Efforts for Modern Educational Needs, or Modern GP, began in 2004, aimed at promoting revitalization of higher education. The program, in consultation with various councils, selects themes related to issues for which there is high public demand and provides funding to support high-quality project proposals from universities dealing with these themes that are selected through a competitive application process. In contrast to the Unique GP, the Modern GP places greater emphasis on novel approaches and ideas rather than past performance. Priority themes, for which excellent projects have been selected, have included "Contribution to community revitalization," "Fostering Japanese who can use English in business," "Practical distance education using IT (information technology)," "Promotion of practical education for general careers," and "Promotion of environmental education for sustainable society."

In addition, the Program to Support Students Associated with New Social Needs, or Student-Supporting GP, began in 2007. The objective of this program was to identify and provide financial support to exceptional and unique efforts for institutional and holistic support to students from entrance to graduation from university, junior college, or technical college that were expected to produce remarkable results. In 2008, the Unique GP and the Modern GP programs were merged to form the Program to Promote High-Quality University Education. In addition, GP programs targeting graduate school education and brush-up programs for returning students were established, resulting in, perhaps, an overabundance of GP statuses.

More time is necessary before we can evaluate how these GP policies have contributed to revitalization of university education and whether they have benefited students. GP funding has been criticized as being pork-barrel spending for universities and there is no guarantee that GP programs will continue in the future. However, this represents the first case in Japan's history in which universities have competed on the basis of their educational programs, and it is undoubted that the GP policies have stimulated university education. GP funding has led to the creation of new educational programs, improved the overall teaching ability of teachers, and greatly contributed to making university professors more conscious of their teaching role. Only a handful of universities can apply for programs such as the 21st Century COE Program or the Global COE Program. Basically, only universities that not only have doctoral courses but also have a proven track record for producing cutting-edge research are eligible to apply. Such universities represent only a small fraction of the total number of universities. On the other hand, the educational program targets all higher educational institutions, including universities, junior colleges, and technical colleges. It is certain that the budget for individual GPs is insignificant compared with the huge budgets for COEs. However, universities and junior colleges that have won the GP status span a wide range of institutions and the policy is accessible to almost all institutions of higher education and hence to their faculty and staff. The GP policies have encouraged a large majority of university employees to become conscious of the educational role of universities.

2.6 Concluding Remarks

The change in professorship that has taken place in the past two decades reflects the "educational revolution" that has occurred at universities in Japan. The US has served as the model and great effort and money have been spent to introduce US-style higher education to Japan. In exchange for export of automobiles and electric appliances, Japan has imported, in addition to grains and aircraft, the spirit and methods of university education.

While it is certain, as evidenced by programs such as the COE, that money to improve the research quality and to support university professors as researchers has increased, the efforts of councils involved in university matters have focused on improvement and revitalization of university education. The result has been an expectation that professors become aware of their role as teachers, and since change in consciousness alone does not lead to changes in practice, effort has been made to implement concrete measures such as making FD mandatory, evaluation of professors' educational activities, and reform of teaching qualifications. These changes have led to enhancement of the teaching role of professors and to increased time spent in educational activities. However, if professors are responsible only for teaching, they are no different from junior high and high school teachers. The distinction between professors and school teachers comes from the former's role as researchers. In this sense, the distinction between universities and other educational institutions and the distinction between university professors and school teachers has become muddled. In contrast, the division of labor within universities is increasing, with a handful of professors specializing in research and the majority of professors focusing on educational activities.

At present, Japanese universities are faced with the challenge of formulating new curricula and diploma policies as a result of the "educational revolution." Now, even the content of syllabi is dictated under the slogan, "What is important is not what the students learn, but what they will be able to do." That said, it is difficult to control activities that occur behind the closed doors of classrooms and much room exists for individual professors to do as they see fit. Professors' mindsets will not change overnight and there is always Japan's cultural context. It seems that despite the vast amount of energy spent on the "educational revolution," the results have not necessarily been satisfactory.

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Chapter 3
Mobility

Atsunori Yamanoi

3.1 Introduction

According to OECD, the relative position of knowledge compared with industrial society should rise in a knowledge-based society. The status of the university as the center of scientific knowledge and academic productivity also should become high. In the knowledge-based society now, universities are not just centers of research but also a form of social capital which is incorporated in the social network, and which extends beyond national boundaries. In this meaning, mobility among universities is not just an internal issue within the academic sector as before but also affects the welfare of the broader society. Therefore, it is important to see how mobility within the university sector relates to the knowledge-based society as a whole and also to academic productivity (Yamanoi 2007a).

This chapter organizes prior research on mobility within the university sector as well as its basic concept from both historical and social viewpoints through this new framework. At the same time, the chapter also studies mobility research and its structures as well as functions from the level of university society as a whole. Setting up the framework of this research, the study examines periodic classifications of university society after World War II (WWII), and refers to the mobility of the academic profession in relation to its classification from the points of view of government, the marketplace, university institutions, and buffer institutions.

Furthermore, based on previous research on mobility, this study theoretically reorganizes the trends of 15 years of structural reforms within the knowledge-based society with a focus on mobility comparing the Carnegie International Survey of

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Academic Profession conducted in the period of university structural reforms (1990–2005) and the re-survey in 2007.

It would not be too much to say that research on mobility in Japan is one of the most important fields of higher education research with considerable positive theoretical accumulation. The purpose of this chapter is to enhance theorizing about mobility research, placing the results of national surveys within a historical perspective.

3.2 The General Idea of Mobility and the Expansion of Relevant Research

3.2.1 The Meaning of Mobility

The general idea of mobility was originally conceptualized by P Sorokin, an American sociologist, and the theory was further developed by L Warner, who belonged to the Chicago school (Yamanoi 1990). The concept of mobility generally refers to the fact that things flow and move. The "things" here include not only materials but also human beings and information. In society, mobility has been established as an overarching concept that includes social mobility, social stratification, and prestige. The theme of this chapter is derived from these backgrounds.

Essentially, the concept of mobility is not evaluative. However, it tends to be interpreted from the points of view of the history and cultural background of each country. For example, in Japan, both geographical and occupational mobility were prohibited during the feudal era. Furthermore, it has often since been asserted that the higher the amount of mobility, the better. This might be because mobility in Japanese university society has been low. In addition, there is a difference between economic or material mobility and social mobility.

Mobility is derived from the Latin, "mobilitas." The original meanings includes: (1) mobile and quick; (2) lightness and rapidity; and (3) caprice and agitation (Tanaka 1985). The former two imply positive meanings but the third includes negative connotations. Based on such origins, therefore, the general idea of mobility includes both positive and negative meanings. This should be noted when considering the mobility of the academic profession.

In either case, the general idea of mobility developed in general society would be translated into "*idosei*" or "*ryudosei*" in Japanese. As is well known, the concept of mobility has been converged into "mobility and social class" in sociology and "academic career-based society" or "equal opportunities in education" in educational sociology.

Research on mobility in university society also has a long history. It is a little-known fact that Sorokin had interests in research on mobility in general society as well as in university society (Yamanoi 1990). In the 1930s, when he was active, university society and career formation of the academic profession had already

begun to be considered. What should be noted here is that both the mobility of university society and the career formation of academics have been based on the general idea of mobility.

3.2.2 *The Structure of Research on Mobility*

Table 3.1 shows the general structure of mobility research. There are three vertical dimensions in this structure: (1) research on measuring mobility itself (mobility measurement research); (2) research on regulating mobility (regulated mobility research); and (3) research constrained by mobility (prescribed mobility research). There are also five horizontal dimensions: government, faculty, institutions, the marketplace, and disciplines. Each study may have themes that cross the fields of both the vertical and horizontal dimensions. So far, the author has concentrated on this sociological concept only (Yamanoi 2007b). The point here is that mobility is different from degree of mobility. The former questions the ease of movement while the latter addresses not only the degree of mobility but also its quality, speed, and direction. Furthermore, Tasks of the this research are to measure them specifically

Table 3.1 Comprehensive research on mobility within university society and knowledge-based society

<table>
<tr><th>Dimension of mobility research</th><th>Government</th><th>Faculty</th><th>Institutions</th><th>Market</th><th>Discipline</th></tr>
<tr><td rowspan="3">Mobility measurement research</td><td rowspan="8">Policies for mobility and its introduction and process within knowledge-based society</td><td rowspan="3">Research on academic mobility</td><td>Research on inbreeding in each institution</td><td rowspan="8">Research on mobility within and outside the academic marketplace</td><td rowspan="8">Mobility research on disciplines</td></tr>
<tr><td>Research on academic cycle</td></tr>
<tr><td>Mobility research among institutions</td></tr>
<tr><td rowspan="3">Regulated mobility research</td><td>Research on personnel systems</td><td>Research on internal organization and job classification</td></tr>
<tr><td colspan="2">Research on open recruitment</td></tr>
<tr><td colspan="2">Research on the fixed-term system</td></tr>
<tr><td rowspan="3">Prescribed mobility research</td><td colspan="2">Research on academic productivity and evaluation</td></tr>
<tr><td colspan="2">Research on academy awards</td></tr>
<tr><td>Research on career formation</td><td>Research on educational research within university institutions</td></tr>
</table>

and also to measure the academic productivity accurately and clarify the relations between the two. It could be said that mobility research, the theme of this chapter, would be initially involved in dimensions of the academic profession's mobility, personnel systems, open recruitment and fixed-term systems, career formation and government policies and specialized institutions' policies, the academic marketplace, and academic productivity.

It should be noted that there is a difference in structures between the structural framework of mobility research and the regulated dimension that defines mobility. Even this cooperative research could define academic productivity properly only by organizing the structural position of research and the theoretical framework.

3.2.3 The Regulated Dimension of the Academic Profession

What are the dimensions that regulate the mobility of the academic profession? Generalizing the theory proposed by Clark, there seem to be four dimensions, as described in the following paragraphs (Clark 1983). Behind each regulated dimension, there is leadership through people and politics. In other words, it is not social change that directly reforms universities. It would be impossible to understand the realities that universities are facing without clarifying the "black box" which is composed of a series of processes. Therefore, those who are concerned with universities are required to read and define the current situation surrounding universities that is knowledge-based, globalized, and marketized.

The first dimension is regulation by government. Universities in Japan have been regulated centrally by a controlled budget and legal regulations for university establishment, structures of internal organizations, and job classification. University reforms in the period of structural reforms involved amending the School Education Act and the Standards for Establishment of Universities, and they especially brought an introduction of the fixed-term system, changes in the titles of jobs, and reform of internal university organization.

The second dimension is the academic marketplace. The mode and maturity of the marketplace differs for each country, culture, tradition, and custom. While the personnel system and internal organization varies from institution to institution, the marketplace has its shared mode beyond each institution. The academic marketplace in Japan seems to be under the control of Japan's customs and cultural mode.

The third dimension is the regulation by each institution, and this specifically defines the marketplace mode. Reviewing the process of the changing academic profession in Japan, their status, roles, and prestige within each institution have become rapidly diversified by university marketization policies. The marketization has not only widened a gap between successful universities and unsuccessful universities but has also brought the academic profession into the gap-widening society. While the average faculty's authority and research funding have been impoverished by marketization, people in the spotlight have started to gain prodigious funding

from within and without universities by having enough time for research and establishing a competitive marketplace of funding.

As for the fourth dimension, besides the government, marketplace, and institutions, there are buffer institutions where professionals play important roles. When considering theories and policies for the academic profession, the roles that such buffer institutions have should be crucial. However, the buffer institutions in Japan have insufficient authority to influence government or institutions. Rather, there is a situation that some specialists have been abused by government controls and this has affected each institution. One of the exceptions today would be the action plan for gender equality among national universities led by the National University Association (Yamanoi 2006a). As the bureaucracy in Germany shows, the delay in forming autonomy groups by professionals depends on government policy, which is swayed by certain people (Ushiogi 1993).

In any case, university reforms in Japan have always started from the regulated dimension with a series of processes. What should be noted here is that the factors to reinforce social reforms caused by social changes such as knowledge socialization, globalization, and marketization go through such regulated dimensions in order for university reforms to take place. The author formulated this process as the "renormalization theory" (Yamanoi 2006b). As previously mentioned, there is a social mechanism through people behind its renormalization. In Japan, the strongest power of regulation would be the government control on each institution. In addition, the marketplace controls have developed marketization in the following order: student marketplace, academic marketplace, research funding marketplace, and staff marketplace. However, the research funding marketplace seems to have a tendency to be a semi-marketplace which is intentionally provided with a competitive fund by the government. Furthermore, the marketplace of university staff is still poorly established. In Japan, the level of university reforms through the market's power of regulation is still low. Although the student marketplace is comparatively open, it has been strongly regulated by the central power. Therefore, this indicates that the academic profession itself will undergo many changes and also gaps will be created depending on government policies and the responses by each institution. Thus, the structure of regulation is not arranged sufficiently for the marketplace and professional groups to lead the academic profession to change. Accordingly, it could be said that the way of sampling targeted institutions in a survey would strongly affect the results.

3.2.4 Development of Mobility Research

As previously mentioned, mobility research is composed of various research sub-fields.

First, Caplow and McGee (1958) pioneered research on the academic marketplace. As for the market of the academic profession in Japan, Michiya Shinbori, an associate professor of Hiroshima University at that time, conducted a national survey from

the viewpoint of academic cliques. The survey showed that academic cliques would not only affect resource allocation but also regulate mobility. Furthermore, it also proved that they would restrain faculty careers and academic productivity as well. In contrast, William Cummings has published *The Japanese academic marketplace and university reform* in which he developed the relationship between the academic marketplace and university reforms standing on action theory and also expanded it theoretically from Japanese culture into action theory.

The present author explained the mobility of the academic marketplace and faculty career formation empirically as well as theoretically in *Nihon no Daigaku Kyojushoku Shijo* [*The Academic Marketplace in Japan*] by setting mobility as the center of the concept. Furthermore, the author also revealed the historical trends of the academic marketplace before and after WWII. It can be concluded that the exchange of human resources has become an issue that has ramifications beyond the academic marketplace (Yamanoi 2007a).

Similarly, among the research field of scientific sociology in the US, Robert Merton and his pupils, called the Merton school, developed the field of academic career formation, and the Shinbori group has inherited it in Japan. It could be said that the career formation of the academic profession is inextricably associated with mobility research. Other papers refer to the details of trends in these fields during the last 15 years (Yamanoi 2006c).

3.3 The Framework of Mobility and the Regulated Dimension

3.3.1 The Regulated Dimension for University Policy After WWII and Its Relationship with Mobility

In the previous section, four dimensions were reviewed relating to the concept and the structure of mobility. What kind of differences occurred between the Carnegie International Survey in 1992 and its re-survey in 2007? It could be said that this 15-year interval between the two surveys would mostly correspond with the period of university structural reforms in Japan. Therefore, analyzing the results of two surveys using the regulated frameworks as previously mentioned would make it possible to place them in the period after WWII and also to consider them within more universal frameworks. While it would be important to find significant differences comparing the two, the approach-centered analysis would assist in theorizing about them in a larger social context.

In order to study such issues, it is necessary to consider the relationship between the regulated structure for university policies and the mobility before the structural reform. For this, it is required to analyze these university policies after WWII by period. As is shown in Table 3.2, a 15-year cycle theory after WWII is suggested and can be divided into five eras: the consolidated era (1945–1960); the high growth

Table 3.2 Stages and policies of university developments after WWII

Name of period	Stage of development	Policies
1945–1960: consolidated era	Elite stage: −15 %	Improvement of newly-established universities
1961–1975: high growth era	Mass stage I: 15–38 %	Expansion of national and private universities
1976–1990: moderate era	Mass stage II: 38–37 %	Decentralization of public and private universities
		Introduction of professional school system
1991–2005: structural reform era	Mass stage III: 37–50 %	Market principles
		Consolidation
		Transition into four-year college
		Emphasis on graduate schools
(2006–2020: reorganized era)	Universal stage: 50 %–100 %	Shrinking, restructuring, and consolidation
		Reconstruction

era (1961–1975); the moderate era (1976–1990); the structural reform era (1991–2005); and the reorganized era (2006–2020). Table 3.2 shows how each era correlates with the college enrollment rate of 18-year-olds and with the policies of the Ministry of Education.

The first thing to be noted here is that the responses for social changes have been developed at the initiative of the government (the Ministry of Education) or the bureaucracy in Japan. This is completely different from the US model suggested by Clark (1983) that is market-dominated as well as decentralized. The Japan model is also not similar to the Italian oligarchy, which encourages changes through individual initiatives and peer plans; nor the designed government control model, which was dominant in socialist countries. However, the designed government control model has three types of institutions: government regulated universities that are similar to Japan's national universities; those that are different from Japanese, public universities; and those that are in the middle, private universities. While France has a strong centralized national authority, the UK has buffer institutions run by relatively powerful professionals (Arimoto 1994; Clark 1983).

The most distinctive feature of higher educational institutions in Japan is that private universities dominate more than 70 % of the student market. They are regulated by the government to some degree but are required to have independent responsibility for their management with little financial support by government. Viewing the relationship with the market, the Japan model is similar to the US model. As is shown in Table 3.2, there is the expansion period and the reorganization period in the developmental process of Japanese private universities. While private universities seemed to make important contributions in the former period, small universities faced many issues in the latter period.

Analysis of such circumstances indicates that the mode of the Japanese higher education system cannot be regarded as a typical model; rather, it seems to be at the

periphery of the international map. Reviewing the relationship between faculty mobility and the policies after WWII, there can be seen a system in which private sectors, local autonomy sectors, and individual institutions act in concert with the government-initiative policies and then the number of institutions and faculty, and student advancement rate, respond to them.

It is only since 1968 that data have been available for the computation of an index of faculty mobility. The average mobility rate using 1968 data in the high-growth period indicates a figure of 4.5 times for all academic life. By contrast, the 1987 data in the suppressive period shows the lowest rate as 1.9 times for all academic life. It is well known that there are strong statistical correlations of these figures with the number of universities and faculty posts (Yamanoi 2007a).

3.3.2 Mobility Policies of Each Regulated Dimension

As is shown in the author's previous studies, it is obvious that changes in the number of university institutions would bring the maximum indirect effects on mobility at the government policy level. To establish new institutions, new faculty need to be appointed. But once these developments were stopped, it could neither ask for increasing faculty posts for new university institutions nor for higher mobility associated with such developments. Considering the number of institutions in the period of structural reform, more than 200 new universities have been established over the past 15 years.

If universities were closed because of university selection, it is natural for faculty who had posts there to find new posts in other universities. During the period of structural reform, many junior colleges were closed because of their transitions into 4-year colleges. In other words, it is obvious that the increase and decrease of university institutions themselves raises mobility. As the origin of mobility in Latin includes both positive and negative meanings, it should be noted that mobility in university society also implies both.

By contrast, if both decrease and increase in number of university institutions were stopped, the mobility for new posts would be stopped and there should be only pure mobility among the existing institutions. The author named the former as "compulsory mobility" and the latter as "pure mobility."

Secondly, among government policies in the period of university structural reform, the introduction of a fixed-term system and reorganization of the faculty of liberal arts at national universities directly affects mobility. However, the introduction and modalities of the former varies by institution because these were left to each institution. In Japan, no buffer institutions have existed in order to discuss the academic profession. Even if there were such institutions, most of them could not reformed Japanese traditional system. As such a background encouraged the situation previously noted, a variety of fixed-term systems have been introduced in Japan.

The biggest issue of the Japanese fixed-term system seems to lie in the relationship between the non-tenure system and the tenure one. Ironically, there is the possibility that various fixed-term systems raise mobility without any relationship to academic productivity.

Thirdly, reorganization of the faculties of liberal arts raised mobility within institutions, especially at the huge national universities, although this was temporary. However, it is assumed that such internal mobility had little impact on academic productivity. Rather, the mobility within universities was strongly affected by politics within the each institution. In extreme cases, some faculty who transferred within universities and had the same courses as before were not allowed to teach students in the specialized course. Therefore, some professors in the faculties of liberal arts tried to find new posts in external institutions. Our interview survey has identified such cases.

A fourth issue is regarding academic knowledge versus practical knowledge in terms of the direction and quality of mobility. During the period of structural reforms, many bachelor programs offering various certificates as well as professional graduate schools were established at the initiative of the Japanese government. As for the background of the former program establishments, it was assumed that universities needed to pay more attention to the mode II style knowledge in the knowledge-based society. In addition, universities created new curricula and structures such as faculties and departments that put their highest priority on qualifications and certificates for the knowledge-based society. On the other hand, as for the graduate school level, professional schools began to be introduced in the 2000s. The new graduate schools welcomed new human resources in such professional fields as management, law, health and welfare, and teacher training (Table 3.3).

3.4 Analysis of Mobility in the Period of Structural Reforms

3.4.1 Trend of the Fixed-Term System

In Japan, it was in 1997 that changes were made in the post of lecturer, the most junior stage of the fixed-term system. Although the fixed-term system had been discussed for a long time, it was the university structural reforms that led to the changes. The process of introducing the fixed-term system by type of institutions and faculty was clarified by the national survey on types of fixed-term systems from 1997 to 2001: fluid type; project type; research assistant type. The survey also included the terms, reappointments, and the number of reappointments could be made. In addition, the national survey of the fixed-term system also considered the trends of faculty's opinions to fixed term system.

To be precise, this survey of the period of structural reform determined the permeation of both old and new fixed-term systems operating concurrently in 1997, which was through 1992 to 2007. The old system did not permit making a contract of more than a year, based on the labor standard of the time, and this implied that the

Table 3.3 Policies viewed from each regulated dimension

	Policies and responses	
Dimension of central (local) government	Legislation	Deregulation of the standards for establishment of universities
		Reorganization of the faculty of liberal arts
	Preparing budget	Introduction of a system of external competitive funds
		Transformation into independent administrative institutions
		Introduction of professional graduate school
		Shift to non-civil servant
		Regulation of fixed-term system
		Liberalization and deregulation of class system
Dimension of academic marketplace	Quantitative aspect	Stable development of academic marketplace
		Flexibility for the retirement age system and effective use of senior faculty
	Qualitative aspect	Self-regulation of inbreeding
		Release from alliance of market and segmentation
Dimension of each institution	Organizational aspect	Class system, subject system
		Scrapping and building of organizations
		Deregulation of class system
		Separation of educational research organizations
	Personal aspect	Shift from tenure system to fixed-term system
		Reviewing a proportion of job classification: professor; associate professor; and assistant professor
		Open recruitment system
		Introduction of tenure track system
Dimension of professional group	Staff association	Improvements in treatment
	Academic association	Supports for postdoctoral students
	University accreditation institutions	Introduction of accreditation
	National university association	Action plan of gender equality (national universities: ratio of female faculty 20 % in 2010)

system was conducted as a gentleman's agreement. This was common for research assistants of national research universities and senior faculty of private universities. Therefore, it would be unreasonable to simply compare the old fixed-term system and the current system in terms of enacted types, terms, and reappointment. With such limitations, however, we will consider the transition for the past 15 years.

Table 3.4 Possible mobility from the fixed-term system

	No term & promotable	No term & unpromotable	Fixed term	Others	Total
1992	1,718	59	43	14	1,834
	93.7 %	3.2 %	2.3 %	0.8 %	100.0 %
2007	901	41	129	13	1,084
	83.1 %	3.8 %	11.9 %	1.2 %	100.0 %
Total	2,619	100	172	27	2,918
	89.8 %	3.4 %	5.9 %	0.9 %	100.0 %

Note: $p < .001$

As is shown in Table 3.4, only 2.3 % of the total answered "He/she has a fixed term" in the 1992 survey; however, 15 years later, 11.9 % answered so in the 2007 survey. By contrast, the response rate for "He/she has no term and is able to promote," which was almost like the tenure system, decreased from 93.7 % in 1992 to 83.1 % in 2007. The breakdown of the current system is about 80 % with tenure and about 20 % without tenure. Reviewing this by type of institutions, there was a significant difference ($p < .001$) between national research universities and private universities. The proportion of professors with tenure among the former was lower than the latter by 10 %, while that of those without tenure was higher by 8 %. The employment systems and job classifications have become diverse among young faculty at national research universities and among senior faculty at private universities. As for the career prospects that the former faculty have, about 26 % of them, especially those at postdoctoral level, were unemployed around the age of 35. The employment rate of postdoctoral students was around 56 %. It will be impossible to resolve this issue within the academic marketplace, and hence their future prospects seem dim. On the other hand, it would be highly possible for the latter faculty to be allowed more flexibility for diversity and also in retirement age, as in the US. In the future, there is a high risk of university closures, in which case it is the career prospects of middle and senior faculty that would be affected the most.

3.4.2 Mobility Trends Between Universities

The questionnaire surveys conducted in 1992 and 2007 asked the average length of affiliation with higher educational institutions. Table 3.5 shows that this was 20.47 years in 1992 and decreased by about 2 years to 18.73 years in 2007, a statistically significant difference ($p < .001$). However, no significant difference was found in the number of affiliated institutions: the overall mean was 1.54 institutions in 1992 and 1.60 institutions in 2007. According to the moving out ratio in the Report of School Teachers Survey, which is re-surveyed every 3 years, the national average of mobility in the period of structural reforms was 2.63 % in 1992 and slightly decreased to 2.79 % in 1995 and 2.58 % in 1998, but increased to 3.19 % in 2001. If our surveys exactly reflected the Japanese situation, it would indicate that

Table 3.5 Mobility by university type

	Number of higher educational institutions that one has ever affiliated			Total years of experience at higher educational institutions			Total years of experience worked for other than higher educational institutions (full time or profession)		
	1992	2007	*p*	1992	2007	*p*	1992	2007	*p*
Total	1.54	1.60	n.s.	20.47	18.73	***	5.29	6.60	**
National & research university	1.69	1.78	n.s.	21.83	19.08	n.s.	3.20	4.49	n.s.
National & general universities	1.57	1.55	n.s.	19.42	19.54	n.s.	4.09	5.05	n.s.
Private & research universities	1.38	1.66	n.s.	21.29	22.23	n.s.	2.45	10.09	**
Private & general universities	1.48	1.54	n.s.	20.53	17.07	**	7.08	8.75	n.s.
Research universities (replaced)	1.63	1.76	n.s.	21.73	19.76	n.s.	3.05	5.82	n.s.

Notes: $^{**}p<.01$, $^{***}p<.001$

mobility has rapidly decreased since 2002. However, there are two possible factors that might have resulted in biased samples of the surveys. One is that the sample universities were biased toward major national universities and private research universities. The other is that the job classifications may be biased: it could not be ruled out that there was a lack of samples of young research assistants or senior faculty, whose mobility rates tend to be high. In general, most of the other surveys show that academic mobility has been growing. In the future, the Report of School Teachers Survey should show the accurate picture.

It is also interesting to review the value of years of experience in institutions other than higher educational institutions (see Table 3.5). Comparing the values of 1992 and 2007, the years of experience increased from 5.29 to 6.60 ($p<.01$). In particular, the figure for private research universities increased four times to 10.09 in 2007 compared with 2.45 in 1997. As previously noted about policies conducted in the period of structural reforms, this would indicate that practical knowledge in general society had been achieved by the flow of human resources from private organizations. Furthermore, this would be caused also by diversification in graduate schools and bachelor degree programs that demand qualifications. At the same time, it is also suggested that the thick walls of the ivory tower were finally removed, and the era of the knowledge-based society has started.

Finally, our questionnaire surveys also included some questions that were rarely asked in the previous surveys. These were about future perspectives other than the

Table 3.6 Time-series changes in possibilities of mobility

	High possibility	← →	Intermediate	← →	Low possibility	Total
1992	337	110	391	105	770	1,713
	19.7 %	6.4 %	22.8 %	6.1 %	45.0 %	100.0 %
2007	241	80	263	75	381	1,040
	23.2 %	7.7 %	25.3 %	7.2 %	36.6 %	100.0 %
Total	578	190	654	180	1,151	2,753
	21.0 %	6.9 %	23.8 %	6.5 %	41.8 %	100.0 %

Note: $p < .001$

facts in the past. There were two reasons behind the questions. The first was to understand the possibility of mobility, which is the main title of this chapter. And the other was to understand the consciousness of university people who would have to face the most harsh university selection over the reorganization period of the next 15 years. Specifically, the latter question was "Is there a possibility to leave the current affiliated university within five years." As is shown in Table 3.6, there was a significant difference ($p < .001$) between the 15-year responses. In the 2007 survey, no significant differences were found among national and private research universities and national and private general universities, with 26 % of private research universities and 24 % of national universities answering that "There is the possibility." Comparing them by generations, those respondents in their 1940s and 1950s showed significantly high possibilities of quitting their current job within the next 5 years. At any rate, more than 30 % of these indicated the possibility of leaving their current affiliations in some way or another. While the results obviously suggested positive mobility, it also reflected some negative aspects, such as the fixed-term system and the collapse of universities.

3.5 Conclusion

Although this chapter does not refer to some important aspects of mobility such as inbreeding, international mobility, and gender differences, it has empirically revealed several trends in mobility flows, which are in continuous change. It is extremely important to measure the quality (characteristics), period, flow and direction, or speed of mobility. The point here is that the goal is not just to enhance mobility but to develop its quality.

From the various aspects, it was revealed that mobility within and without the academic marketplace in Japan has changed and improved though the structural reforms. However, whether the majority of the mobility was meaningful in relation to academic productivity of educational research depended on the nature of the moving (types of mobility). Although mobility seems to be growing thanks to the introduction of the fixed-term system as opportunity, such an unregulated fixed-term system, in tandem with the tenure system, would never contribute to the

welfare of the academic profession. Another possible factor in the growth of mobility would be the increase in compulsory transfers. These include many elements that do not relate directly to the selection and allocation of the academic professionals, and do not reflect serious investigation of the conditions affecting academic productivity. Moreover, the compulsory transfers might disappear if the university society stopped growing or there is no university to close. Anyhow, mobility in a real sense should be a necessary element for activating university society. Also, it should be noted that mobility is a basic condition which is essential for constructing a fair and open university society.

It should be noted that the academic profession should relocate to an appropriate level (status or job classification) in response to their prestige (educational and research productivity). At the same time, also the prestige of each university institution should undergo a change according to these. The ultimate aim is to optimize the academic productivity of educational research as a whole system of higher educational institutions among university society. Recently, university reconstructions responding to social changes have been marched through each regulated dimension. Such reconstructions ultimately require really creative, universal, and global policies that are assumed by advanced human resources with professional skills.

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Chapter 4
Academic Funding and Allocation of Research Money

Akihiro Asonuma and Hiroaki Urata

4.1 Introduction

The funding that goes into higher education strongly influences what university professors teach and research, and therefore it has been one of the issues most central to higher education reforms since the early 1990s. While higher education reforms are largely affected by the finance of higher education, higher education funding has been used as a vehicle to push higher education reforms. In the first part of this chapter, changes that have taken place in higher education funding since the early 1990s are examined. Changes in research fund allocation and the influence of those changes on research activities are analyzed later in this chapter.

4.2 Higher Education Funding in Japan

The structures of funding for higher education in Japan developed together with the "massification" of higher education in the wake of the country's rapid economic growth in the 1960s, taking shape most prominently around 1970. Though some of the basic structures of higher education funding have been maintained to this day, the finance of higher education has gradually changed since then. Most notably, the changes that have taken place since the early 1990s are more salient and significant than those that occurred in the 1970s and 1980s.

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Based on this premise, we first provide an overview of the basic structures of Japan's higher education funding that were formed before World War II and further developed after the war. These structures are to a large degree a product of Japan's higher education system, which differs from the systems of many other developed countries in that there is a large private sector. Next, we examine the changes to national and private university finances that have taken place since the early 1990s.

4.2.1 Structure of Japan's Higher Education Funding

In order to get an overall picture of the scheme of Japanese higher education finance up to the end of the 1980s, see for example Ichikawa (1979, 1984), Kaneko (1989), and Asonuma (2002). See also OECD (1990) for a better picture of Japanese financing patterns in comparison with OECD countries, and also Irvine et al. (1990) for a better view of government funding of academic research in Japan in comparison with other developed countries.

4.2.1.1 Japan's Higher Education System: The Public and Private Sectors

One of the important characteristics of the Japanese higher education system is that there are many private institutions. In 1950 the system consisted of 70 national 4-year university institutions and 105 private 4-year university institutions, which does not represent a large difference in size between the national and private sectors. The private sector, however, grew rapidly with the massification of higher education in the 1960s. As a result, the number of private universities increased to 274 in 1971, to 372 in 1990, and to 589 in 2008. If professional training colleges, most of which are private institutions, are included, the number of higher education institutions would be over 4,000, over 90 % of which are private ones. The national universities, on the other hand, did not increase substantially in number during this time. The number of national universities is still only 86, about one-seventh of the number of private universities (Table 4.1).

Table 4.1 Number of higher education institutions

	National		Private		Prefectural & Municipal		Total	
	4-year	2-year	4-year	2-year	4-year	2-year	4-year	2-year
1950	70	0	105	132	26	17	201	149
1970	75	22	274	414	33	43	382	479
1990	96	41	372	498	39	54	507	593
2008	86	2	589	386	90	29	765	417

Source: Ministry of Education, *School Basic Survey* (1950, 1970, 1990, 2008)

Table 4.2 Distribution of university students by sector

	National	Private	Prefectural & Municipal	Total
1950	80,025	148,112	10,458	238,595
	33.5 %	62.1 %	4.4 %	100.0 %
1970	295,926	1,268,911	63,946	1,628,783
	18.2 %	77.9 %	3.9 %	100.0 %
1990	479,234	1,960,382	82,897	2,522,513
	19.0 %	77.7 %	3.3 %	100.0 %
2008	623,863	2,242,455	234,680	3,100,998
	20.1 %	72.3 %	7.6 %	100.0 %

Source: Ministry of Education, *School Basic Survey* (1950, 1970, 1990, 2008)

Student enrollment numbers also show the dominance of the private sector. Many private institutions had been already established before World War II. Students of private 4-year university institutions, including the students of their graduate schools, accounted for 60.4 % of all university students in 1950. Students of national universities then constituted 35.8 %, and students of prefectural and municipal universities only 3.8 %. Subsequently, in the 1960s many private universities, schools, and departments were established, and student capacities were expanded rapidly to meet demands for higher education. In 1980, the proportion of students in private universities was 75.6 %, and in national institutions was 20.9 %, while in prefectural and municipal universities the proportion was only 3.5 %. As of 2008, the proportions have changed only slightly to 71.0 % private, 21.3 % national, and 7.7 % prefectural and municipal (See also Table 4.2 which shows figures including 2-year institutions as well as 4-year institutions).

The Japanese system differs substantially from both the American system, which includes many private institutions, and the European system, which consists almost entirely of public institutions. For example, while over 70 % of students go to state universities in the United States, over 70 % of students go to private universities in Japan. This predominance of the private education sector is a consequence of the growing demand for higher education stemming from the economic growth of the 1960s and a simultaneous result of the lack of Japanese government funds needed to establish more national universities to meet the rapidly expanding student capacity demands. While, in the US, large universities are generally public ones, in Japan, the universities with over tens of thousands of students are all private. It may be said that Japan's private sector is a "demand-absorbing sector" (Levy 1986) or a "mass private sector" (Geiger 1986). The Japanese government, meanwhile, has concentrated its financial resources for higher education on the national universities, with the expectations that they will bear the relatively high-cost burdens of fostering human resources in areas of science and technology, of training graduate students, and of conducting research. It has generally been difficult for private universities to bear the high costs associated with such education and research. This has led to the present functionally-differentiated system of higher education: the public sector giving greater importance to education in science and technology, graduate training and research; and the private sector contributing to mass higher education.

4.2.1.2 Basic Structures of Higher Education Funding in Japan

National universities have traditionally depended on institutional funding from the national government for most of their financial resources. In fact, the ratio of income from tuition and fees to the total revenues of national universities was almost negligibly small until the early 1970s, because the level of tuition fees for the national universities was kept very low. Over 90 % of the total revenue of national universities, excluding revenues from university hospitals and Grants-in-Aid for Scientific Research, came from the government until the early 1970s. But because of growing pressure to narrow the tuition fee gap between national universities and private universities, the tuition fees for national universities began to be increased in the middle of the 1970s, and this trend has continued. Nevertheless, the average tuition fee at private universities has been generally two to three times higher than that of national universities. Thus, the ratio of tuition income to total income in the finances of national universities has been far smaller than that of private universities (Table 4.3).

In contrast, private universities depend on institutional funding from the national government for only a small portion of their financial resources. In 1970 the government initiated a program of "subsidies for current expenditures" to private institutions of higher education through the Japan Private School Promotion Foundation. These subsidies were intended to support a maximum of half of the annual current expenditures of private institutions, which had been suffering financially because of rapid increases in their student capacities (in response to demand) and investments made to meet those capacities. As suggested above, the subsidies were introduced in response to calls for the narrowing of the gaps in educational conditions and tuition rates between national universities and private universities. The subsidies increased until 1982, and as a percentage of total current expenditures subsidies reached 29.5 % in 1980. However subsequently, the subsidies decreased throughout the rest of the 1980s, and as a percentage of total current expenditures had fallen to 12.4 % in 1993. Conversely, the ratio of income from tuition fees to the total revenues of private universities increased in the 1980s, reaching 75 % in 1990 (See also Table 4.4 which shows changes of revenue sources of private universities). This demonstrates how private universities, while eligible for some institutional government funding, depend mostly on tuition incomes. When one considers that over 70 % of all students attend private universities, as mentioned above, it becomes clear why government spending on Japanese higher education is often said to be the lowest among developed nations.

Table 4.3 Revenue sources of national universities

	Government subsidy (%)	Tuition & other fees (%)	Others (%)	Total (%)
1965	92.3	2.5	5.1	100
1970	94.0	2.2	3.8	100
1980	86.8	6.0	7.2	100
1990	77.2	12.2	10.7	100

Source: Zaisei Chosa Kai, *Kuni no Yosan* [*National Budgets*], Haseshobou (1965, 1970, 1980, 1990)

Note: Revenues of University Hospitals and Grants-in-Aid for Scientific Research are not included

Table 4.4 Revenue sources of private universities

	Government subsidy (%)	Tuition & other fees (%)	Others (%)	Total (%)
1971	9.2	70.3	20.4	100
1980	21.9	63.4	14.7	100
1990	11.6	67.1	21.4	100
2000	10.9	76.4	12.7	100

Sources: Ministry of Education, *Report of Survey on financial situation of private schools* (1971); The Promotion and Mutual Aid Corporation for Private Schools of Japan, *Today's finance of private schools* (1980, 1990, 2000)
Note: Revenues of University Hospitals and Grants-in-Aid for Scientific Research are not included

Table 4.5 Public expenditures for higher education

	Institutional funds for national universities (%)	Institutional funds for private universities (%)	Grants-in -Aid for Scientific Research (%)	Budgets for student aid (%)	Total (%)
1960	89.0	0.0	2.6	8.5	100
1970	91.5	0.0	2.6	5.9	100
1980	72.0	19.6	2.4	6.0	100
1990	75.4	15.8	3.5	5.2	100
2000	73.1	14.5	6.7	5.7	100

Source: Zaisei Chosa Kai, *Kuni no Yosan* [*National Budgets*] (1970, 1980, 1990)
Note: Research grants of government agencies other than the Ministry of Education are not included

On the other hand, non-institutional funding, for example funding in the form of research grants and student financial aid, which is distributed from the government not to institutions but directly to individual researchers and students, is very small compared with, for example, the institutional funding from the government which makes up the university general funds (UGF) of national universities.

Table 4.5 shows breakdowns of the main public expenditures for higher education and academic research: institutional funding to national universities, institutional funding to private universities (subsidies for current expenditures), Grants-in-Aid for Scientific Research, and budgets for student loans and scholarship programs. Over 80 % of Grants-in-Aid for Scientific Research from the Ministry of Education, the biggest and most important research grant for academic research among the different research grants subsidized by the government, are allocated to national universities. The ratio of the Grants-in-Aid for Scientific Research to total governmental expenditures for higher education and academic research has been very small: 2.6 % in 1960, 2.6 % in 1970, 2.4 % in 1980, and 3.5 % in 1990. Similarly, the ratio of budgets for student loans and scholarship programs to total public expenditures for higher education has only reached around 5 %. Scholarship programs have been available to only a small number of students. Aside from the institutional funding funneled to national and private universities in Japan, students and their families still bear the brunt of the costs of higher education. These data confirm that the institutional funding to national universities and private universities accounts for most of the governmental budgets for higher education and academic research.

Structures for higher education funding in Japan can be summarized as follows: (1) national universities depend heavily on the government's institutional funding; (2) private universities depend heavily on income from tuition and fees; and (3) a very small amount of non-institutional funding is provided in the form of research grants and student aid. These structures developed after World War II and became established around 1970. Funding for higher education has since seen gradual changes, but the basic structures for funding have largely remained the same.

4.2.2 Characteristics of Higher Education Funding After the Early 1990s

4.2.2.1 Substantial Decrease in the Governmental Institutional Funding to National Universities

Revenues for national universities consist mainly of: (1) institutional funding from the government; (2) non-institutional funding from the government in the form of Grants-in-Aid for Scientific Research and various research grants and contracts from government agencies; (3) tuition and fee income; (4) income from university hospitals; and (5) donations from industries and individuals. Institutional funding from the government includes line-item budgets of salaries of academic and non-academic staff, budgets for land and facilities, and the other budgets for education and research.

The core element of the budgets for education and research has been the traditional formula-based fund for faculty (Kyoukan-tou-sekisan-kouhi), which was in place from around 1920 until 1999. The formula-based fund for faculty was characterized by uniform unit-costs which were derived by calculating the number of faculty members and then allocating funds to each national university as a block grant. The unit costs were determined uniformly by the type of activities done by operational units (clinical, experimental, or non-experimental), and level of education (undergraduate, master's, or doctoral). There was also a formula-based fund for students, which was similarly allocated by multiplying the unit-costs by the number of students for each national university. Budgets outside these formula-based funds were line-item budgets. Generally speaking, after defraying the administrative costs of a university's central administrative body, the residue of the formula-based fund, which was less than half the total amount, was allocated to department chairs and faculty members. This fund was the main financial resource for research and teaching. See also Ushiogi (1993) in order to get a fuller understanding of unit costs.

These basic budgets for education and research at national universities began to stagnate substantially in the early 1970s (Asonuma 2002, pp. 113–118). While every national university saw major overall investments in the 1960s, in the 1970s only specific schools and colleges at national universities, such as medical schools and teachers' colleges, were subject to preferential subsidization. For example, the unit costs of the formula-based fund for faculty decreased in real terms in the 1970s,

although the unit costs in the formula continued to increase at nominal prices. Thus, the total amount of the formula-based funding began to stagnate in real terms in the early 1970s, though the total amount continued to increase at nominal prices because of the rise of the unit costs at nominal prices and the increases in the number of faculty and students. In addition, the unit costs of the formula-based funds for faculty did not only decrease in real terms, but also remained unchanged even in nominal prices through the 1980s.

In order to make up for the decrease in the formula-based funding, the government introduced special budgets for teaching and research in 1976, and increased the ratio to the formula-based funding for faculty from 3.06 % in 1976 to 31.8 % in 1990. This new budget was provided for specific projects or specific institutions to be selected by the Ministry of Education. This meant that the procedures for distributing institutional funding began to change from flat-rate allocations to selective allocations. National universities made efforts to increase their income from donations and research grants from private companies, and increased the ratio of funds from industry to the formula-based funding for faculty from 5.35 % in 1975 to 35.6 % in 1990. As a result, in the 1980s the financial resources available for research at national universities became more diverse than during the 1970s.

However, because of the austere fiscal policies of the government in the 1980s, the total amount of financial resources continued to substantially level off, and budgets for land and facilities decreased. This led to a worsening of the fiscal outlook and of provision for teaching and research at national universities. In addition to this budget tightening, certain attitudes in industry toward education and research undertaken at national universities led to under-investment in these institutions. In the 1980s, many private-sector companies took advantage of the overall atmosphere of economic growth and provided in-house job training and development, established their own laboratories for basic research, and invested enormous amounts into research and development. Japanese companies no longer relied on the vocational education and the research functions provided by the universities.

This situation began to change in the early 1990s (Asonuma 2002, p. 118). The collapse of the bubble economy and the subsequent economic recession after around 1992 generated a demand for improvement in teaching and research environments at national universities, because the economic climate meant that it was more difficult for private companies to invest sufficient funds in in-house training and in research and development. In response to this demand, in the 1990s the government increased budgets for land and facilities for national universities as well as Grants-in-Aid for Scientific Research. Furthermore, beginning in 1996, new types of research grants emerged and rapidly grew in terms of funding, as we shall see later.

Meanwhile, the formula-based funds for faculty and students continued to stagnate. What is more, in 2000, the method for calculating and distributing these core funds was drastically changed for the first time in over 50 years. The formula-based funds were reduced to approximately 30 % of the core funds. The different unit costs used to produce the budgets were integrated into uniform unit costs (a unit cost per faculty member and a unit cost per student). The remaining 70 % was then distributed to each university as a block grant. This meant a shrinking of formula-based

funds from the forms of institutional aid available from the government. Furthermore, in 2004, national universities were transformed into public corporations in an effort to impart to the national universities a greater degree of autonomy than they had previously enjoyed. In accordance with this transformation, the method of calculating and distributing institutional aid was transformed into a new type of block grant: "institutional funds for operating costs." Though some of the new institutional funds is still calculated by formulas, a substantial part of them lost their previous formulaic bases. On top of this, financial difficulties on the part of the government led to the introduction of an annual 1 % reduction in institutional funds for operating costs, plus a 1 % reduction in budgets for salaries. This marked the institutionalization of a gradual decrease of institutional funds.

4.2.2.2 Rapid Increases of Non-institutional Funding

In stark contrast with the stagnation of institutional funds, non-institutional funds at national universities have increased dramatically since the early 1990s (Asonuma 2002, pp. 118–120). The main financial resources for academic research have been the formula-based funds for faculty (FBFF) and Grants-in-Aid for Scientific Research (GIAs). While FBFF contributed to research generally, GIAs were originally meant to provide for specific research projects developed on the basis of the general research infrastructures funded by FBFF. Though this dual system has continued, the relationship between FBFF and GIAs has gradually changed. Following the substantial increase in FBFF in the 1960s, the ratio of GIAs to FBFF fell to about 20 %. But since the end of the 1960s, the ratio of GIAs to FBFF has continued to rise consistently, due to both the stagnation of budgets for the formula-based funds and the increase of GIAs. As a result, the ratio rose to 40 % in 1980, 50 % in 1990, and 80 % in 1999. Since the year 2000, although the stagnation of formula-based funds mentioned above has continued, GIAs have been increased: by 35 % from ¥141,900 million in 2000 to ¥191,300 million in 2007. The budget of GIAs has now exceeded that of FBFF. GIAs no longer play a supporting part but rather a central role in academic research at the present time (Fig. 4.1).

Additionally, starting in 1996, new types of research grants and contracts provided by several government agencies began and subsequently grew. These grants were allocated by corporations under the jurisdiction of the various relevant ministries, and many were distributed to national universities. For example, the Ministry of Education started a program, Research for the Future (RFTF), for which the funds were allocated by the Japan Society for the Promotion of Science. Many ministries and government offices also began to provide research grants and contracts that were funded through capital investments made by the government to promote and expand the frontiers of basic scientific research. Despite the severe economic and fiscal environment, the financial resources of the new research contracts were financed by government construction bonds, based on the idea that basic science and its outcomes should be considered a form of social capital and therefore deserved concentrated investment. The fruits of such basic research were expected to contribute to innovation leading to economic growth. The amount of

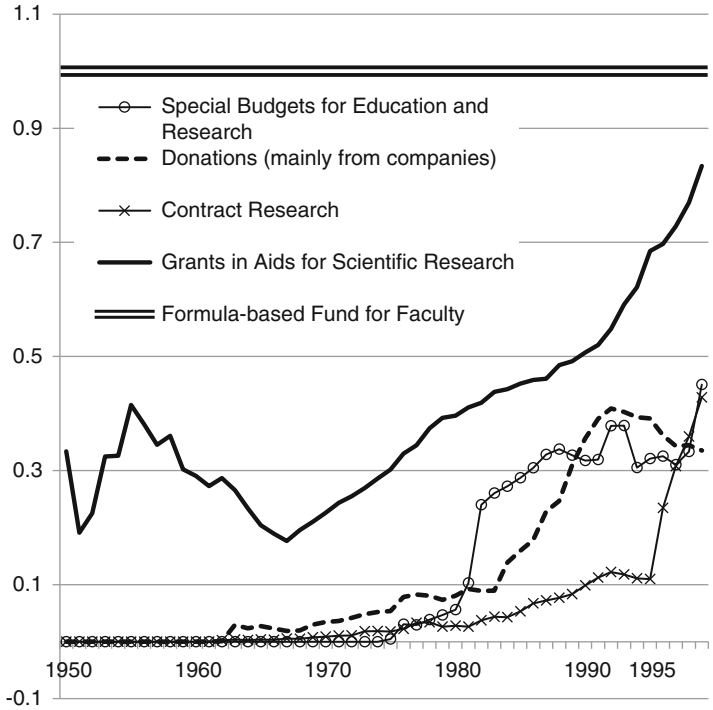

Fig. 4.1 Main research funds compared with the formula-based funds for faculty (Formula-based fund for faculty = 1.0) (*Source*: Zaisei Chosa Kai, *Kuni no Yosan*, various years)

these funds distributed to national universities increased rapidly, eventually totaling ¥31,265 million in 2000.

The increase of these types of research grants and contracts led to the diversification of research funding from ministries other than the Ministry of Education. Both the traditional Grants-in-Aid for Scientific Research and the new types of research grants and contracts constitute Competitive Research Funds, and differ in this respect from formula-based funds. They are also known as External Research Funds and are distinct from institutional aid. Figure 4.2 shows changes in the amount of external research funds distributed to national universities as well as institutional funds to national universities distributed by the government from 1959 to 2007 (at 2005 prices). The former consists of Grants-in-Aid for Scientific Research, the new types of research grants and contracts provided by several government agencies, as well as research grants and contracts from private companies. The latter includes subsidies for current expenditures and excludes subsidies for land and facilities. External funds to national universities were much smaller than institutional funds to national universities for quite some time. The ratio of external funds to institutional funds began to increase gradually in the 1970s, and especially after the mid-1990s, when the ratio rose dramatically to 28 % in 2007. In particular, the stagnation of institutional funds and the contrasting increase in external research

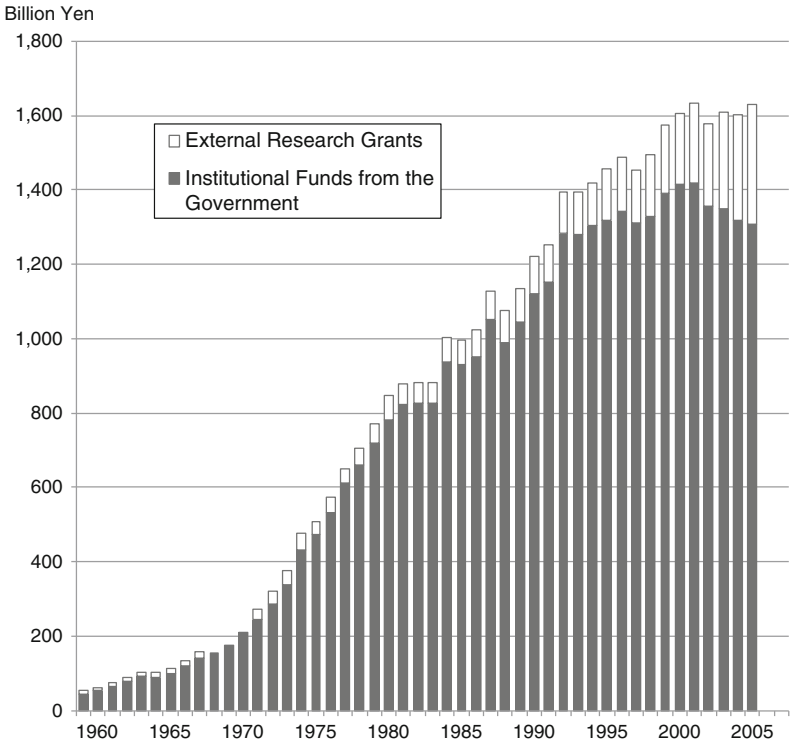

Fig. 4.2 Institutional funds and external research grants to national universities (¥ billion in 2005¥) (*Sources*: Zaisei Chosa Kai, *Kuni no Yosan* [*National Budgets*], various years; Ministry of Internal Affairs and Communications, *Report on the survey of research and development*, various years. *Note*: Deflated by the CPI)

grants largely contributed to this change. There seems to be a trade-off between institutional funds and external research funds. In accordance with this change, a system of support for the indirect costs from research funds received by the university was introduced in 2001 as reimbursement for services rendered in support of grants and contracts, because institutional funds could not fill the gap between the full costs of research and external research funds.

While each university is facing difficulties with financial management due to decreases in general university funds, including salaries, each teacher is subjected to a competitive environment in which there are great pressures to get more research grants and to publish more results. In spite of the efforts by individual professors, the lack of support staff means that they do not have enough time to concentrate on both teaching and research.

This kind of shift can be seen in the allocation of funds for education. In contrast to the stagnation of the institutional funds going to national universities and private universities, governmental funding for student aid, most of which is student loans, has been increasing since the early 1990s, and has drastically increased in the 2000s. Most of the governmental funding is in the form of subsidies or loans to the Japan

Student Services Organization, which provides over 80 % of all student aid in Japan. The student aid budget of the Japan Student Services Organization increased by a factor of five, from ¥175,045 million in 1990 to ¥901,329 million in 2008, with much of the increase largely due to a rise in interest-bearing loans.

4.2.2.3 Changes in the Management Environment of Private Universities

Governmental funding of national universities has changed, and resource allocation has become increasingly competitive, especially in the 1990s and 2000s. However, the situation has not been much different for private universities. Subsidies for current expenditures to private institutions of higher education had dropped off substantially in the 1980s. The subsidies had increased again in the 1990s, but the proportion of the institutional funds from government to total current expenditures of private universities fell to 11.1 % in 2007 because of a larger increase in expenditures of private universities. Furthermore, most of the increase in the nominal amounts of subsidies for current expenditures to private universities has depended not on increases in general grants based on teacher and student numbers, but on increases in special grants allocated competitively since the mid-1980s (Fig. 4.3).

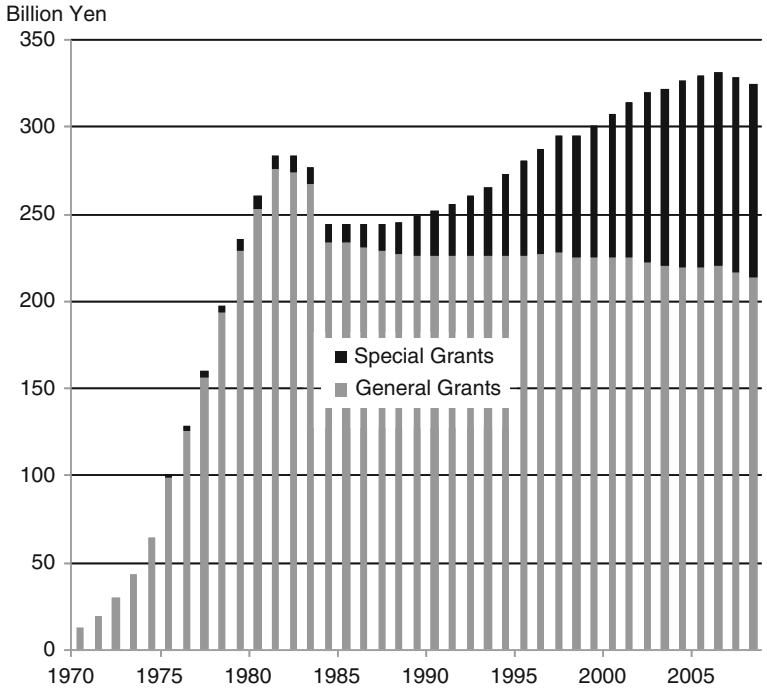

Fig. 4.3 Subsidies for current expenditures in private institution of higher education (¥ billion at current price) (*Source*: The Promotion and Mutual Aid Corporation for Private Schools of Japan)

In 2000, the Ministry of Education began a new system of grants called "Support for University Education Reform throughout National, Public, and Private Universities." The grants are allocated competitively among both national and private universities. The budgets for the grants increased from ¥18,200 million in 2000 to ¥68,000 million in 2008.

In recent years, however, private universities have been confronted with more serious changes in financial environments than those brought about by changes in governmental subsidies (Yonezawa and Kim 2008; Goodman and Yonezawa 2007). More specifically, they have been caused by demographic changes. College student numbers are usually described as the number of members of the college-age population multiplied by the college enrollment rate. The population of 18-year-olds, which effectively defines the college-age population in Japan, increased in the 1980s and 1990s, reaching a peak of about 200 million around 1990 with the entrance of members of the "second baby boom" into universities. But the population of 18-year-olds has decreased since then, dropping to a figure of 130 million in 2007. In other words, the population of 18-year-olds shrank by 35 % over 17 years. If the enrollment rate had not changed, the number of students going to universities would have decreased drastically. Any decrease in enrollment has direct harmful effects on private universities, because private universities depend heavily on tuition and other fees for their income. In fact, the enrollment rate at 4-year colleges rose to 47.2 % in 2007 from 24.5 % in 1990. Nevertheless, to meet the demands of more students, private universities had increased faculty sizes and expanded facilities up to the end of the 1980s. Subsequently, however, 2-year colleges waned in popularity, so private organizations offset this by increasing student capacities at their 4-year colleges. As a result, private universities began to compete seriously with each other over student enrollment. Some universities were unable to fill their rosters. The number of such universities has only grown since. As a proportion of the total number of universities, those not meeting enrollment limits accounted for about 30 % in 2000 and about 40 % in 2007, and this is up from only about 5 % in the middle of the 1990s. The total number of students who wish to enter university fell below the total student capacity of all universities around 2007. It is said that anyone can enter a university if he or she chooses to do so.

This situation has had a significant impact on the financial management of private universities. If the imputed income (excluding debt) is less than that of the current expenditure (minus capital expenditures) of a university, that university will naturally run into financial trouble. Accordingly, the difference between imputed income and current expenditure becomes a significant indicator of the fiscal health of a university. The number of universities where this indicator is negative has continually risen in recent years. As a percentage of the total, universities not meeting capacity rose to 25.1 % in 2003 and to 44.3 % in 2008, from only 2.6 % in 1989 (Table 4.6). Financial difficulties have caused some universities to close and others to merge. Within the next decade, such numbers are likely to increase. Given these circumstances, professors and instructors are under strong pressure to produce better results in their teaching and research responsibilities in order to attract more students.

Table 4.6 Financial situation of private universities (¥ million at current price)

	Average imputed income per institution (I)	Average current expenditure per institution (E)	Index (B) = (I) – (E)	Percentage of universities whose index (B) is negative (%)
1989	17,860	14,243	3,617	2.6
1993	23,014	18,492	4,522	6.6
1998	27,780	22,519	5,261	7.6
2003	30,378	26,331	4,047	25.1
2008	32,394	30,748	1,646	44.3

Source: The Promotion and Mutual Aid Corporation for Private Schools of Japan, *Today's finance of private schools* (2009)
Note: Revenues of University Hospitals are not included

4.3 Allocation of Research Funding Between and Within Universities

Research funding to universities is an important resource for the academic profession, comparable to the importance of human resources, time, space, and information. At the same time, many expenses necessary for a university can be spent in accordance with subjective decisions of individual university teachers or a group of teachers. For this reason, teachers are sensitive to the amount and the degree of freedom on spending, and research funding is considered to significantly determine the research process and outcome.

Research activities in the search for truth continue indefinitely; therefore some may think that an ideal for research funding as an input is that as much as is necessary should be supplied. However, just as in the case of production activities in general, the marginal productivity of research might be expected to decrease as the research funding input increases. In particular, sufficient outcome will not be achieved if only research funding increases and other conditions such as research time and space are not maintained.

As the focus of academic funding in Japan shifted from institutional grants to individual grants, what differences were caused among universities or among university teachers? How did research activities change? The purpose of this section is to summarize, analyze, and provide basic information on these problems.

4.3.1 Characteristics of Research Funding to Universities and Allocation Among Universities

4.3.1.1 Comparison with Corporations

Since academic research is also conducted by corporations and research institutes, research funding is not only spent by universities. According to the Survey of Research and Development by the Ministry of Internal Affairs and

Communications, total research and development funding in Japan in 2007 was ¥18,943,800 million. Total research funding by sector consisted of 18.1 % to universities (including junior colleges, technical colleges, and inter-university research institutes in addition to 4-year colleges), 73.0 % to corporations, and 8.9 % to non-profit organizations and public agencies. In 1992, it consisted of 18.5 % to universities, 68.7 % to corporations, and 12.7 % to research institutes (almost equal to non-profit organizations and public agencies in 2007); therefore the proportion spent by universities has hardly changed during these 15 years. When a longer period is investigated, from the 1960s and subsequent years, it can be seen that the proportion spent by universities peaked in 1965 at 36.1 % and continued decreasing until 1991. While a little increase was subsequently observed, it has been on a declining trend again since 2000. In other words, the proportion of university spending, in comparison with corporations has declined considerably from the beginning of the 1990s.

When research funding per researcher (excluding labor costs) for 2007 is calculated by limiting the field to natural sciences and technologies in accordance with the Survey of Research and Development, it is ¥4.53 million in universities vs ¥17.39 million for corporations; that is, a ratio of 1: 4. Although it should be noted that the number of researchers at universities includes students enrolled in doctoral courses and trainee doctors in university hospitals, this ratio is hardly different from that in 1992. Despite the fact that R&D expenses at corporations have not grown due to the sluggish economy since the 1990s, research funding in universities is not improving when compared with corporations.

4.3.1.2 Disparities Among Universities

As we have seen above, research funding in universities has not changed very much when compared with corporations; however, it might have changed within the university sector, that is, the allocation among universities, because universities are positioned in a competitive environment. This issue can be considered by using the Grant-in-Aid for Scientific Research (GIA) as an example, the representative of competitive funding allocated to university teachers by the Japan Society for the Promotion of Science (JSPS). For convenience the available data for 1997 are compared with those for 2009. Since the budget of the overall scientific research fund was ¥112,200 million in 1997 and ¥197,000 million in 2009, it had increased by a factor of 1.76 over these 12 years.

When this is considered per university, 54.4 % of GIA allocated to 4-year universities in 1997 was awarded to the top 10 universities. This proportion had decreased to 51.8 % in 2009. However, the number of universities increased from 586 to 773 during this period. When the share of scientific research fund awarded to the top 10 %, rather than the top 10 universities, was calculated based on the above, it slightly increased from 83.0 % in 1997 to 84.9 % in 2009. Either way, the structure of scientific research fund selectively allocated to a few top universities did not change significantly over these 12 years.

Reshuffling of the top universities meant that allocation of the scientific research fund changed, even if the structure of the selective allocation to top universities did not change. The top 10 universities awarded GIA are all national universities. Among them, the top 9 (seven former imperial universities, Tokyo Institute of Technology, and University of Tsukuba) in 1997 are the same as 2009, and only the tenth university has changed.

Changes between the 2 years in regard to national universities are indicated in Fig. 4.4. In this figure, national universities are ranked in the order of the amount of scientific research fund awarded in 1997. The amounts in 2009 for each university are indicated with dots and the 1997 amounts are connected with a line. Therefore, displacement of a dot from the line indicates a difference in the amounts awarded in the two years. There are dots far from the line and higher than dots on the left, that is, there are universities ranked higher in 2009. There is no change in the ranking of the top 9 universities as mentioned above, while a slight change is observed for universities ranked 10th or lower. The change in ranking increases after the 50th. This is suggesting that there are opportunities for universities with fewer awarded amounts to be ranked higher. It is assumed that these universities are enthusiastically trying to win more GIA. The top universities are also developing strategies to maintain and further improve their status.

According to the data for 1997, there was one national university awarded a GIA total of only ¥1 million for the whole university. Eight universities, including this university, were awarded less than ¥30 million, while in 2009 the university with the lowest rank was awarded more than ¥36 million. This means that the scientific research fund had become widespread, and that at least all national universities are involved in the competition to win GIA.

Including public and private universities, 683 universities were awarded GIA in 2009 amounting to 88.4 % of the total fund (82.6 % in 1997). The proportion of universities that submitted applications will be more. It is considered that competition to win GIA is expanding when we consider this on a per university basis.

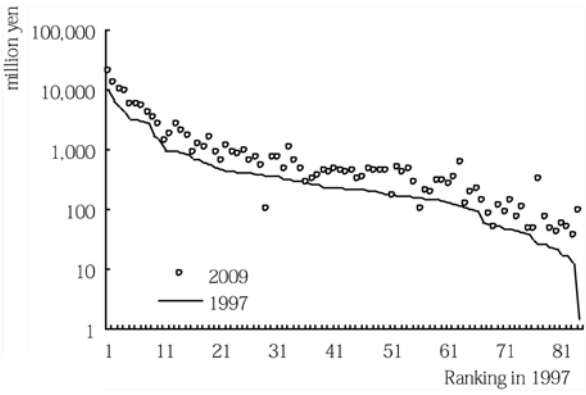

Fig. 4.4 Changes in the amount of GIA awarded, 1997–2009 (national universities only)

4.3.2 Changes Brought to University Teachers

4.3.2.1 Changes in Allocation of Research Funding

When we examine the numbers of individual proposals, applications for GIA have not expanded uniformly. The number of new applications for the scientific research fund was approximately 85,000 in 1997 and approximately 92,000 in 2009; but on the assumption that the number of new applications by each research representative is limited to one, and controlled by the number of university teachers, 61 % of university teachers in the previous year submitted applications in 1997 and 54 % in 2009, indicating a decrease. As mentioned above, each university encourages application for GIA; however the proportion of university teachers applying peaked at 63 % in 2006. Since research time is decreasing (MEXT 2008b), it is likely that there are a significant number of university teachers who are not able to crystallize their research ideas sufficiently to apply for GIA. There might also be an immobilized layer of academics who have given up on applications due to reasons including a low success rate, at the 20 % level, as well as the inability to secure research time even though a grant is successfully awarded.

Let us give further thought to how the increase of competitive funds including GIA is influencing university teachers. The competitive research fund from the government rapidly increased from ¥124,800 million in 1995 to ¥467,200 million in 2005 (Tanaka 2006). Although subsequent growth has been smaller, it reached ¥481,300 million in 2008 (MEXT 2008a). On the other hand, according to the Survey of Research and Development, the overall research fund to universities (excluding labor costs) was ¥1,061,400 million in 1995, while it was ¥1,204,000 million in 2008. Although competitive research funds are not awarded only to universities, the major part is issued to universities as typically observed in GIA.

An estimate of the basic research fund available to universities can be obtained by subtracting the competitive research fund from the overall research fund, by assuming that 90 % of competitive research funds from the government were issued to universities. The results are given in Table 4.7. The ratio between competitive

Table 4.7 Competitive research funds and basic research funds for researchers at universities

		1995	2008
Total (¥billion)	Overall research funds	1,061	1,209
	Competitive research funds	112	433
	Basic research funds	949	776
Proportion	Competitive research funds	11 %	36 %
Per researcher (¥thousand)	Overall research funds	450	437
	Competitive research funds	48	156
	Basic research funds	403	280
Number of researchers (thousand)		236	277

Sources: The overall research fund (excluding labor costs) and the number of researchers are based on *Survey of Research and Development* (Ministry of Internal Affairs and Communications), and the competitive research fund is based on Tanaka (2006) and MEXT (2008a)

research funds and the basic research fund is found to have changed dramatically, that is, 11 %:89 % in 1995 to 36 %:64 % in 2008. When we look at this on a per person basis, the amounts per person from the basic research fund averaged ¥403,000 in 1995 and ¥280,000 in 2008; and from competitive research funds, ¥48,000 in 1995 and ¥156,000 in 2008. In other words, the overall average research funding per university researcher slightly decreased during this period, though that from externally competitive research funds increased more than three times. Needless to say, applications for competitive research funds are not all successful. Supposing that half of them are, the amount of research funding to researchers who obtain support from the competitive research fund combined with the basic research fund would be ¥593,000 on average, while the amount of research funding available to those who are unsuccessful would be ¥280,000 from the basic research fund only, that is, a difference of more than a factor of 2.

The results of the estimation shown in Table 4.7 represent the overall average picture including researchers relating to natural science as well as inter-university research institutes. Depending on the field or individual university/researcher, the basic research fund is even smaller, and might be insufficient for some researchers to be able to continue their research. Similarly, since some researchers receive competitive research funds at the level of a billion yen, there must be other researchers who receive only a very small amount of funds.

The problem of the competitive research fund is that it is helping disparities among researchers to expand and at the same time a stable research fund is not always guaranteed every year. Kato (2008) conducted a comparative analysis of the effects of the research fund on university teachers in 2001 and 2004 based on a large-scale questionnaire survey of university teachers at national and private universities in Japan. Based on this analysis, the research funds awarded to individual teachers considerably changed during these years (Kato 2008).

4.3.2.2 Results Caused by the Amount of Research Funds

How is this variable research fund influencing the research activities of university teachers? Let us look at the influence on research productivity. As indicated in Chap. 9, the number of papers published by university teachers has been increasing significantly during the past 15 years. In Fig. 4.5, the average number of papers published is categorized by research funding as well as by field of study. In regard to humanities and social sciences, university teachers awarded larger amounts of research funding certainly published more papers, though in comparison with university teachers receiving the same level of research funding, the number of published papers was greater in 1992 than 2007. In regard to natural science, engineering, and agriculture, some irregularity is observed, but the more research funding that was awarded, the more papers were published in both 1992 and 2007. If research funding remained at the same level, the number of papers also remained at the same level. However, the number of papers slightly decreased for those receiving a high amount of research funding, that is, exceeding ¥13 million. For medicine, dentistry,

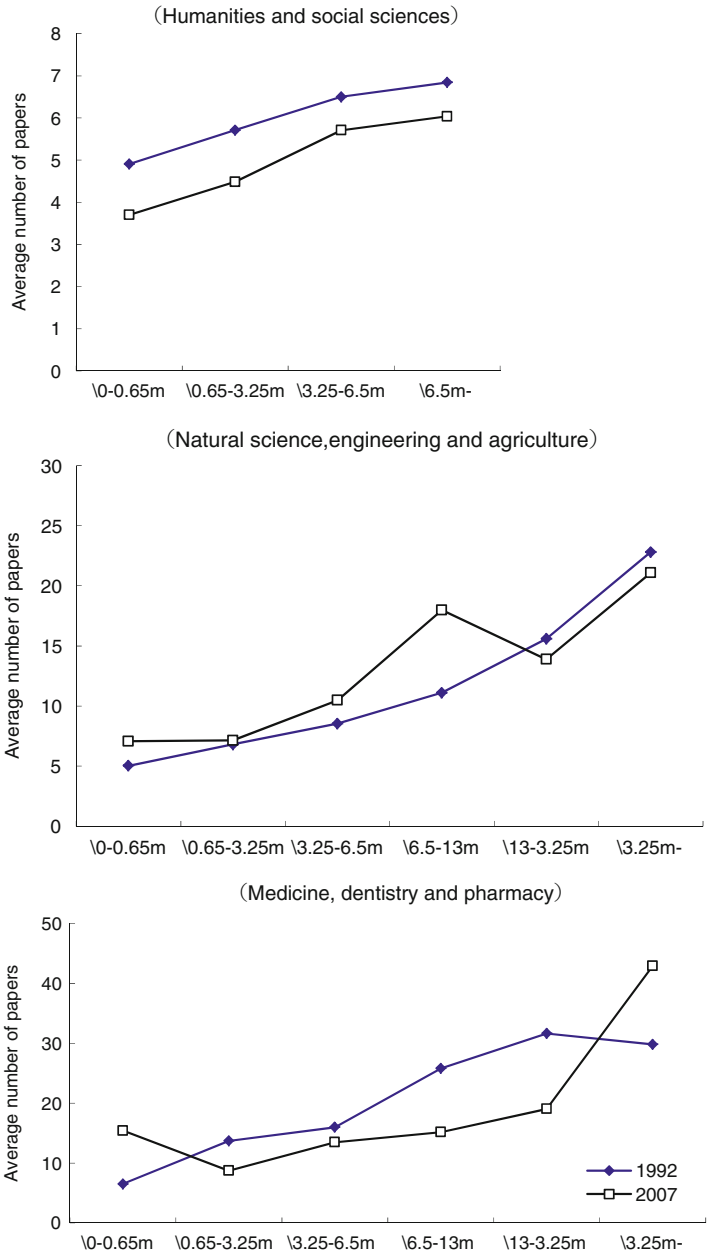

Fig. 4.5 Number of papers published during the previous 3 years by extent of research funding

and pharmacy, on the other hand, where again the range of research funding is wide, the number of papers tends to be significantly smaller in 2007 compared with 1997.

Therefore, while the tendency for all fields is that the more research funding that is granted, the greater is the number of papers published, when 1992 and 2007 are compared in regard to researchers who received the same level of research funding, the number of papers does not always increase. This suggests that productivity per research grant is not improved but rather decreased in some cases.

As for reasons causing these results, decrease of research time as pointed out in Chap. 8 or deterioration of the overall quality of life due to busy schedules can be considered. Research funding itself might have already been in a saturated condition in some cases. Takeuchi (2005) obtained results based on the analysis of the amount of scientific research funding obtained by each university and data on the number of papers that indicated that, while these two factors lie in a proportional relationship, the number of papers per scientific research grant decreases at universities awarded large amounts from the scientific research fund. Takeuchi explains that these results arise because human resources to perform research do not catch up with the increase of research funding. Based on these results, he presents a model indicating that increases of research outcome slow down when research funding exceeds a certain threshold causing a saturated condition. This model is probably applicable to the results obtained from our research data.

The average values of the "satisfaction level with overall work" in the 1992 Carnegie and the 2007 CAP surveys by subject area and by research funding provided are indicated in Fig. 4.6. As indicated in the figure, there was a tendency that increase of research funding corresponded to an increase of satisfaction level in 1992. In 2007, however, increase of research funding does not linearly contribute to an increase of the satisfaction level. In particular, the satisfaction level is not high for university teachers who are in the humanities and receive a large amount of research funding or for those in the natural sciences and receive an intermediate level of research funding. There is a number of possible reasons for this, including: (a) a

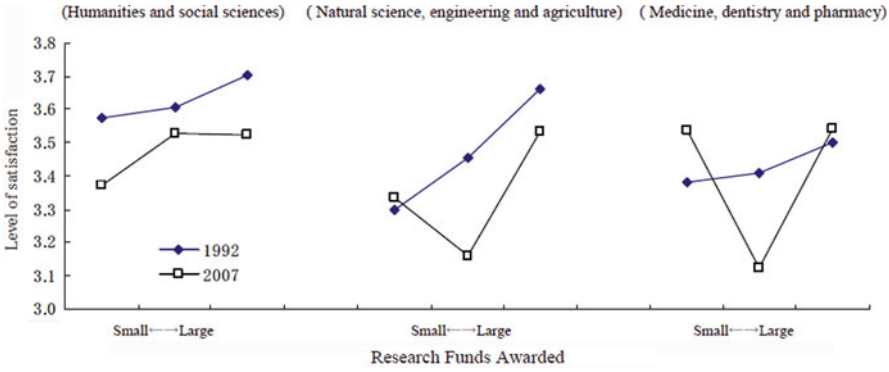

Fig. 4.6 Research funding and job satisfaction level (*Note*: Level of satisfaction is estimated on a 5-point scale from 1 (very dissatisfied) to 5 (very satisfied))

majority of research funding at the intermediate or higher level was provided by the competitive research fund in 2007 and the application process to acquire research funding constituted a substantial work pressure; (b) research conditions to support a large amount of research funding is not sufficiently maintained even though it is awarded; (c) the research period is limited resulting in lack of stability. These problems were not serious in 1992 when the proportion of competitive research funding was small, and an increase in research funding was considered to have been directly connected to the satisfaction level as well as an improvement of productivity.

4.4 Conclusions

Structures of higher education funding in Japan can be summarized as follows: (1) national universities depend heavily on government institutional funding; (2) private universities depend heavily on tuition and other fees for income; and (3) there is a very small amount of non-institutional funding, such as research grants and student aid. While these basic structures have largely been maintained, higher education funding has been changing gradually. Resource allocations to national universities are becoming more competitive. Furthermore, since the early 1990s there has been a trade-off between institutional funds and external research funds. Resource allocation to private universities has also become more competitive. Specifically, some of the private universities are facing financial problems because of a decrease in enrollment-age students. On the surface, these changes are ostensibly a manifestation of market forces on Japanese higher education, but it should be noted that higher education in Japan has always been driven by market forces. Both national universities and private universities are facing unforgiving financial circumstances, and as a result, the teaching faculties at both are under constant pressure to attract more students by delivering the kind of teaching and research results that will lead to more funding.

Funding for research in the universities is important. Not merely is it fundamental to enable the academic profession to engage in its commitment to research, it is also an essential component of the nation's research output. Universities account for more than 18 % of all research expenditure, provide research training for increasing numbers of graduate students, maintain the major contribution to fundamental research and national research reputation, and do so at a cost of one quarter that of industry and commerce.

Within the university sector, disparities in the resource allocation had become established by the 1990s, and since then no significant change in such structure has been observed even after systemic revision such as transformation of the national universities into national university corporations. However, a change has been observed in regard to those national universities receiving intermediate or lower levels of operating and research funding, and a tendency is recognized that disparities between the national and private universities are expanding in the field of natural science. As the extent of the competitive research fund increases further, it is

clear that provision of individual research funding has been weakened at the level of individual university teachers.

When we look at the relationship between research funding awarded and research productivity, there is a demonstrated tendency to achieve higher productivity with larger amounts of research funding, though in 2007 productivity versus the research funding provided to university teachers has not improved compared with 1992. The relationship of larger amounts of research funding to increased levels of individual satisfaction also disappeared in 2007, suggesting the possibility that other conditions such as reinforcement of human resources have not caught up with an increase of research funding. While research funding to university teachers in Japan has increased, mainly by virtue of the competitive research fund, however, as typically observed in the decrease of research time, conditions necessary to utilize the increased research funding have rather tended to deteriorate.

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Chapter 5
Changes in University Teachers' View towards Students: Impact of Universalization

Naoyuki Ogata

5.1 Introduction

Circumstances surrounding students' advancement into higher education in Japan have largely changed in the period from 1992 to 2007 as is documented by surveys conducted in those 2 years. The purpose of this chapter is to identify the changes in university teachers' views of and attitudes towards students during the 15 years from three viewpoints. First, the scale of higher education provision that university teachers believe to be appropriate is overviewed. Second, the changes in their evaluation of students' performance, ability, and attitudes to study are examined. Finally, how their views towards students are reflected in classes is explored. From the viewpoint of university teachers, the scale of higher education exceeds the level they believe appropriate. They have changed their teaching methods in order to meet the downward pressure on quality and these education reforms will continue in the future.

5.2 Impact of Universalization

Circumstances surrounding students' advancement into higher education in Japan have largely changed during the 15 years from 1992 to 2007, when two surveys were conducted on the academic profession (Fig. 5.1). In 1992, the proportion of new high-school graduates who sought to advance to higher education was only 36 % and the proportion who actually enrolled in higher education was only 26 %.

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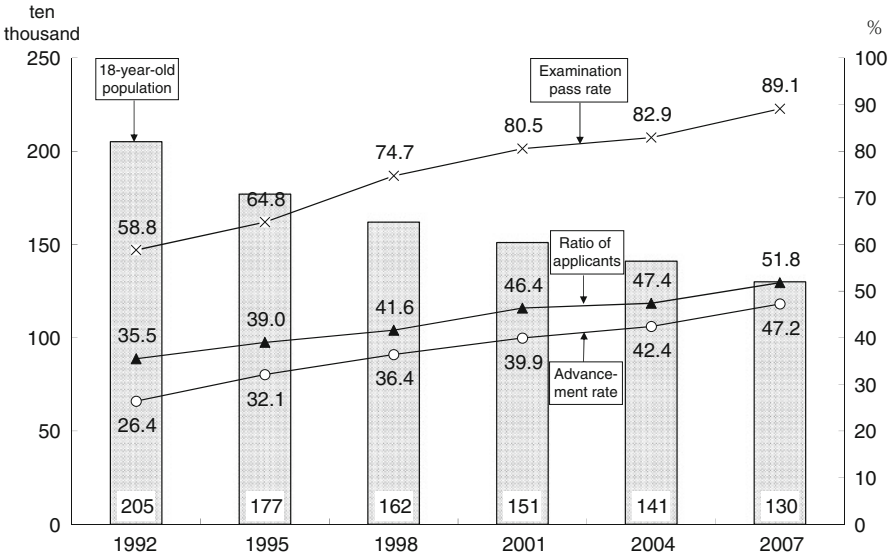

Fig. 5.1 Changes in university applicants and enrollments (1992–2007)

The entrance examination pass rate was a mere 59 %, partly due to the 18-year-old population standing at its highest-ever level. However, by 2007, the proportion of new high-school graduates who sought to advance to higher education had surged to 52 % and the proportion who enrolled in higher education reached 47 %. The entrance examination pass rate had climbed to 89 %, following the drastic decrease in the 18-year-old population by 750,000. Meanwhile, extensive education reforms have been implemented in order to meet diversification of students in terms of both academic ability and academic motivation. In focusing on changes between 1994 and 2007, based on the **Current Status of Reform in Education at Higher Education Institutions** (Ministry of Education, Culture, Sports, Science and Technology [MEXT]), the numbers of universities that "gave consideration to curriculum at high schools" increased from 240 to 463, while those that conducted "curriculum reform" extended from 375 to 628. Universities that implemented "course evaluation by students" increased from 138 to 571, those that "prepared syllabuses" from 176 to 691, and those that implemented programs of faculty development (FD) from 183 in 1996 to 664 in 2007.

Attention tends to focus on the enlargement in the number of students who advance into higher education and their diversification, but the number of university teachers also increased, from 131,000 to 168,000, during the 15 years from 1992 to 2007 according to MEXT's *School Teacher Survey*. However, while the new and recently implemented graduate schools' doctoral courses have absorbed some of this expansion, the growth in numbers of university teachers has not accommodated the growth of doctoral graduates. The numbers of students enrolled in doctoral courses rapidly increased from 32,000 to 75,000, while possibilities for careers

other than as university teachers have not increased commensurately. Accordingly, obtaining employment as university teachers for those completing doctoral courses has become even more competitive.

As it has now become difficult to be employed as a university teacher without postdoctoral experience, the average age for employment of university teachers has become higher: while the proportion of university teachers aged below 30 years has decreased from 33 to 21 %, those aged 35 years or older has increased from 35 to 49 %.

These who are finally able to begin their careers as university teachers, after having spent a longer period on research-oriented activities, including more time spent acquiring academic credentials, than their seniors, now encounter students typical of the time of universalization, less well prepared for and less oriented towards academic study.

5.3 Framework of analysis

The purpose of this chapter is to identify the changes in university teachers' views of and attitudes towards students during the 15 years from 1992 to 2007. Therefore, it will by necessity focus on the issue of how university teachers have been viewing changes in students. However, as described above, the job market for university teachers has also changed. One should not forget the fact that changes in teachers themselves are reflected on changes in teachers' view towards students, although this issue cannot be dealt with in this paper.

The changes in university teachers' view towards students will be considered from three viewpoints. First, the scale of higher education provision that university teachers believe to be appropriate is overviewed. Second, the changes in their evaluation of students' performance, ability, and attitudes to study are examined. Last, how their views towards students are reflected in classes is explored (Fig. 5.2).

Differences in the universities to which the teachers belong (research-oriented universities and non-research-oriented universities) and in their disciplines ("arts" faculties including humanities, social science, education, and arts; and "science" faculties including science, technology, agriculture, and medicine and health) are also considered.

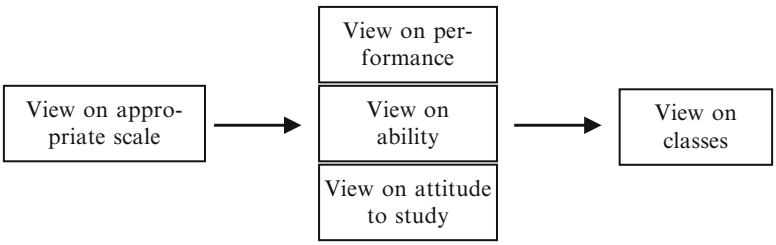

Fig. 5.2 Framework of analysis

5.4 Appropriate Scale of Higher Education

Arimoto (1996) noted that, based on the survey conducted in 1992, the proportion of students advancing to universities and junior colleges had already exceeded 41 % of the 18-year-old population, the ratio that university teachers then viewed as appropriate for higher education. At that time, the trend of massification of higher education was far more advanced than university teachers believed appropriate. It was also shown that at that time Japanese university teachers showed a more restricted view of appropriate scale when compared internationally, and put greater emphasis on the quality of students at the entrance to higher education than those elsewhere.

In the 2007 survey, answers to the question "What percentage of the students finishing secondary education should be allowed into higher education?" indicated a proportion of 58 %, higher than that of the previous survey. On the other hand, answers to the question "What percentage of the students do you think have the ability to complete secondary education?" indicated 69 %, lower than the 75 % of the previous survey. As a result, the proportion of students that university teachers believe is appropriate for advancement into higher education (58 % × 69 %) is 40 %, one percentage point lower than the result of 1992 survey. In reality, as much as 54 % of high-school graduates entered universities and junior colleges in 2007, far exceeding the level that university teachers believe appropriate.

As the number of students advancing into higher education increases, emphasis in ensuring the quality of university education has shifted from controlling at the entrance to controlling at the exit. The fact that Japanese university teachers still put emphasis on controlling entrance quality can be criticized as a lack of realistic appreciation in the university teachers. On the other hand, it is also true that the quality of higher education largely depends on the quality of secondary education. The low level of the appropriate scale seen by university teachers can be understood as their critical commentary on secondary education.

This attitude of university teachers towards the appropriate scale shows that the gap between the opinions of teachers and the reality of students has become even clearer than before. In fact, as shown below, university teachers' views of students have changed considerably during the 15 years.

5.5 Changes in View on Academic Performance, Ability, and Study Attitude

In answers to the survey questions dealing with student performance and ability, respondents indicated declining standards. Those rating "How would you rate the quality of the students currently enrolled in your department" as "Poor" increased from 29 % in 1992 to 33 % in 2007. And in "How would you compare the quality of students currently enrolled in your department with the quality of the students

Table 5.1 Evaluation of students' academic performance

	Quality of current students "Poor"		(%) "Better 5 years ago" (Scale 4 or 5)	
	1992	2007	1992	2007
Total	28.6	32.9	41.1	57.4
University types				
Research-oriented univ.	11.3	34.1	42.0	59.1
Non-research-oriented univ.	33.5	32.0	40.8	56.2
Disciplines				
Arts faculties	22.9	23.7	33.7	56.4
Science faculties	31.6	38.1	44.5	59.1

Note: 4-point scale from Excellent to Poor in the question on current students' quality, and 5-point scale from Better Now to Better 5 Years Ago in the question on comparison with 5 years ago

enrolled 5 years ago," the answer of "Better 5 years ago," already as high as 41 % in 1992, was further increased to 57 % in 2007. Perceptions of performance and quality of students by university teachers have worsened steadily.

In terms of the type of universities, the issue of students' poor academic performance was evident in non-research-oriented universities in 1992, and had become recognized equally at research-oriented universities by 2007. Effects of an increase in the proportion of students advancing into higher education should be more evident at non-research-oriented universities, which tend to have somewhat lower entrance requirements. However, if considering the controversy over academic performance triggered by revision of the Ministry's curriculum guidelines during this period, it can be understood that influences from a decline in high-school graduates' quality affected the entire higher-education system. This issue of academic performance is being viewed more seriously in the science faculties, where accumulative study is required more than in the arts faculties (Table 5.1).

In recent years, it has been pointed out that students' communication ability is deteriorating. Official guidelines, *Basic Competencies for Employees* [*shakaizin-kiso-ryoku*] (Ministry of Economy, Trade and Industry [METI] 2006) and *Competencies Expected of College Graduates* [*gakushi-ryoku*] (MEXT 2008) both advocate fostering communication skills. Basic competencies for employees comprise Action, Thinking, and Teamwork; while competencies expected of college graduates comprise Knowledge and Understanding, Generic Skills, Attitude and Orientation, and Comprehensive Learning Experience and Creative Thinking.

Within universities, as much as 40 % of the evaluation of students' communication skills by university teachers was negative, though overall this has not worsened in during the past 15 years (Table 5.2). Similarly poor perception of mathematics and quantitative reasoning skills also exists with again more than 40 % of respondents

Table 5.2 Evaluation of students' ability and study attitude

			(%)	
	Students' ability			
	Written and oral communication skills		Mathematics and quantitative reasoning skills	
	1992	2007	1992	2007
Total	42.5	40.3	44.4	46.9
University types				
Research-oriented univ.	30.5	43.8	20.6	51.8
Non-research-oriented univ.	45.6	37.8	50.6	43.6
Disciplines				
Arts faculties	38.8	34.1	45.3	43.1
Science faculties	45.1	43.9	43.9	48.9
	Students' attitude			
	Studying just to get by academically		Studying more seriously than 5 years ago	
	1992	2007	1992	2007
Total	61.5	47.6	13.1	8.1
University types				
Research-oriented univ.	50.4	50.1	13.5	8.1
Non-research-oriented univ.	63.1	45.7	13.0	8.1
Disciplines				
Arts faculties	54.0	41.7	15.4	9.1
Science faculties	64.0	61.7	11.7	7.6

Note: About students' ability, the ratio of "Disagree" and "Rather disagree" on 5-point scale from Agree to Disagree in the question "They are adequately prepared in written and oral communication skills" and "They are adequately prepared in mathematics and quantitative reasoning skills." About students' attitude, the ratio of "Agree" and "Rather agree" on 5-point scale from Agree to Disagree

giving negative answers and little change during the 15 years. But in both cases there are differences between the different types of universities and the different groups of disciplines with the larger increase of negative opinions in the research-oriented universities. On the other hand, those with negative opinions have decreased at non-research-oriented universities. However, it is not clear whether this means that these abilities have improved when judging from the standard of teachers at non-research-oriented universities, or that the standard of teachers at non-research-oriented universities has degraded.

More positively, it has been suggested that students have become more serious about their studies in recent years, based on a trend of greater emphasis on study in students' life and improved attendance rates (Takeuchi 2003, 2005).

University teachers who agreed "Students do just enough to get by academically" remain as high as 48 % on 2007, but this figure is more than 10 percentage points lower than 1992, and this trend of improving is especially evident at non-research-oriented universities and in arts faculties. On this basis one might conclude that students have become more serious about studying, irrespective of whether this has occurred spontaneously or compulsorily. However, only some 10 % of teachers agreed in 2007 that "Students are more studious than the students I had 5 years ago," a proportion slightly lower than in 1992. From the viewpoint of substantiation of attitudes to study, teachers' views are that situations have not improved (Table 5.2). A National University Students Survey conducted by the University of Tokyo (2008) showed that more than half of students spent only 1–5 h a week for homework, preparation, and review for classes and experiments.

5.6 Reform in Teaching Methods

Responding to changes of students due to the achievement of universalization of enrollment, university teachers' teaching methods have been changing. (The questionnaire asked about requirements for acquiring credits.) The two surveys sought to assess the changes in terms of organization, that is, class attendance and submission of papers, and of form, that is, oral presentation and participation by students. Over all universities, adoption of these activities has increased during the past 15 years (Table 5.3). While class attendance has clearly improved to more satisfactory levels, oral presentation and classroom participation by students remain low, particularly in research-oriented universities and in science disciplines though their rates of increase have been notably rapid. The proportion of adoption of both items has been increasing for liberal/general subjects, though both the level and speed of increase are lower than for specialized subjects. This might be the result of influence from the size of classes, because class sizes are relatively larger for liberal/general subjects.

For all the listed changes, non-research-oriented universities were more responsive to their introduction in 1992, but the differentials between the two types of universities have diminished: over the past 15 years implementation of the changes has been more rapid at research-oriented universities. Requirements for students to submit papers, make oral presentations, and participate in class discussion have become more evident in arts faculties during the 15 years. In science faculties, where accumulation of knowledge is viewed more important, introduction of oral presentation and participation in class discussion have made much less progress (Table 5.3). In this regard, however, one should not jump to the conclusion that education reform has made more progress in arts faculties than in science faculties, because implicitly some teaching methods are more suitable to the purposes and contents of one discipline than another.

Table 5.3 Reform in teaching methods

			(%)	
	Class attendance		Submitting papers	
	1992	2007	1992	2007
Total	66.6	75.8	41.0	50.2
University types				
Research-oriented univ.	54.5	77.3	36.9	48.9
Non-research-oriented univ.	69.9	74.4	42.0	51.2
Disciplines				
Arts faculties	65.8	71.6	45.3	58.9
Science faculties	65.5	75.1	37.0	45.0
			(%)	
	Oral presentation		Participating in class discussion	
	1992	2007	1992	2007
Total	28.9	39.6	20.3	36.0
University types				
Research-oriented univ.	22.6	36.2	13.4	32.9
Non-research-oriented univ.	30.4	41.9	22.0	38.0
Disciplines				
Arts faculties	43.8	64.7	34.6	60.7
Science faculties	20.0	27.9	12.1	24.4

Note: The question is "Requirement of your students for successful completion of a course for specialized subjects" on attending class regularly, writing several short papers, making a formal presentation, and participating actively in class discussion as multiple question method

5.7 Downward Pressure on Quality and Required Prescription

The 15 years between the two surveys was a period when various education reforms were implemented in order to respond to the rapidly increasing number of students advancing into higher education. From the viewpoint of university teachers these reforms were implemented under a system that already contained an excessive number of university students and by means of an increasing pass-rate in the university entrance examination.

While it is necessary to be cautious in making comparisons over time, because standards for evaluating levels of students' performance and quality of students set by university teachers can change, it is clear that teachers' perceptions of quality of students have fallen during the 15 years. Teachers at research-oriented universities are the more conscious about the decline. With the various reforms made in the secondary and lower education systems, the loss of selectivity of the entrance examination, uncertainty in career prospects after graduating due to the long-lasting economic stagnation, and other composite factors in the background, a deterioration in academic performance and also in incentives for studying have affected the entire system of university education.

In order to meet such changing conditions, as already noted the methods of teaching have changed. Improvement in teaching methods advanced first at non-research-oriented universities, but changes during the past 15 years have become more obvious also at research-oriented universities. This result proves that quality of education is an important issue not only for some types of universities, but also for the entire system of university education.

Of course, there are some factors, such as communication skills, that are not perceived to have deteriorated. If it can be presumed that university teachers' evaluation of students has been reasonably constant throughout, we should avoid judging all the items as deteriorating without exception, although there is a tendency to imagine that deterioration is happening in all aspects when talking about deterioration in academic performance and quality of students.

Ben-David, who advocated the necessity of general higher education to provide for an increase of students who have no specific future aim, explained that the content of education should not be uniform or idealistic, but should be continuously reformed according to students' needs. But in identifying the needs of a more diverse student body he noted that it will inevitably result in the kind of dynamics that causes deterioration in educational standards, and that it would be difficult to maintain a high quality education (Ben-David 1982).

Downward pressure on quality will not cease in the future. And, of course, success in reform of university education will be influenced by secondary and lower education systems and the graduate employment system. Measures to improve the quality of students enrolling in universities could be found in provisions for selecting excellent students by enlarging the numbers of scholarships or restoring competition by curtailing the quotas for admission, although these would serve only a limited number of universities. However, there can still be measures to be taken in the framework of the whole university system, such as a bachelor's program system for ensuring substantiation of study, or a graduate school system to ensure fostering university teachers with superior teaching abilities.

Expansion of students advancing into higher education and issues accompanying universalization are not only evident in Japan. While the demand for higher education is being heightened all over the world, are there any characteristics either unique to Japan, or common in the world, in university teachers' view towards students and teaching practice? In order to analyze the positioning of Japanese university teachers in the world more clearly, there is a need to continue to collect data from international comparative surveys, which enable time series variations and comparisons, and to review the data from a global viewpoint.

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Chapter 6
Gender Bias: What Has Changed for Female Academics?

Naomi Kimoto

6.1 Introduction

The aim of this chapter is to trace how gender has changed teaching and research activities as well as interest in these activities in the Japanese academic female profession under the influence of social change and university reform in the past 15 years. Data from a 15-year period (1992–2007) were examined.

After the Imperial University was established in 1886, Japanese universities remained closed in access to university-level education for all but a very small number of women (see Fig. 6.1).

Although women were given the opportunity to enroll in higher education when the new university system was established, 60 years later after the end of WWII, in the academic disciplines of natural sciences, engineering, and agriculture, the proportion of females is still quite low (Kawano 2009) (Table 6.1). Furthermore, the proportion of female scientists in Japan is extremely low compared with the proportions in other countries (Kano 1988, 2007) (Fig. 6.2).

The International Women's Year in 1975 and the United Nations Decade for Women initiated in 1976 influenced Japanese gender issues, leading to the 1986 Equal Employment Opportunity Law for Men and Women and the 1999 Basic Act for a Gender-equal Society. The realization of gender equality in society is a vitally important issue for the twenty-first century. The Japanese government set a numerical target in 2007 to promote female participation in decision-making processes for policies and administrative measures, aiming for a 30 % participation rate by 2020. The Japan Association of National Universities issued a report entitled *Promotion of Gender Equality in Japanese National Universities*, which proposed a goal

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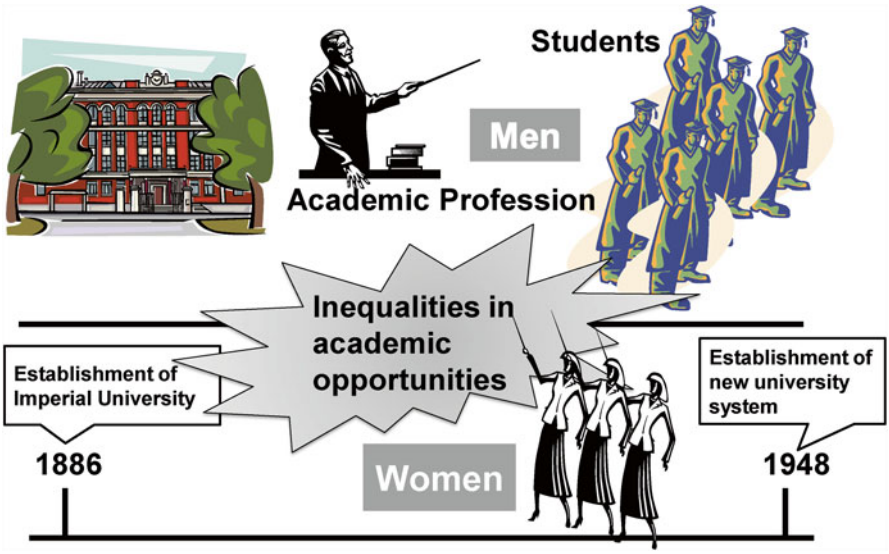

Fig. 6.1 The Japanese pre-war higher education system

Table 6.1 Proportion of female faculty in each academic discipline

			(%)
Academic discipline	Professor	Associate professor	Assistant professor
Humanities	18.8	30.5	42.1
Education	15.2	26.2	39.1
Social sciences	7.7	21.5	30.1
Natural sciences	4.0	6.6	15.9
Engineering	1.5	3.9	7.0
Agriculture	2.8	6.2	13.8
Health related sciences	17.3	21.3	27.8
Home economics	55.4	72.3	85.6
Arts	18.3	27.3	37.7

Source: MEXT (2009), *School Basic Survey*

wherein, by 2010, 20 % of academics (not including assistants) at national universities would be women. In addition, this report recommended establishing an open recruitment system to increase the number of women.

The careers of women in Japanese universities today are affected by two factors: policies for women related to the realization of a gender-equal society; and university reforms driven by globalization and changes in employment markets. Do these factors present benefits or disadvantages for women?

Using data from the responses of Japanese individuals in the academic profession to the 1992 and 2007 rounds of the International Survey of the Academic Profession, sponsored by the Carnegie Foundation for the Advancement of Teaching,

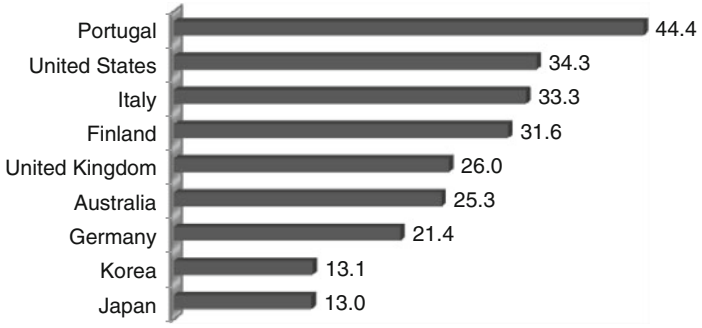

Fig. 6.2 Proportion of female scientists (%) (*Source*: Cabinet Office (2009), *White Paper on Gender Equality*

changes over these 15 years were traced by gender. In this chapter, data on these professionals and reported time spent on, and interest in, teaching and research activities are analyzed. In addition, a gender-based comparison of working environment and evaluation of work is explored. Finally, an overview of female academics in the twenty-first century is provided.

6.2 Career and Professional Situation

According to the *School Basic Survey* (MEXT 2009), the proportion of female academics in Japanese Universities was 9.4 % in 1992 and 17.4 % in 2007. However, the proportion of female respondents to the Japanese survey was only 7.9 % in 1992 and 12.0 % in 2007. The low proportion of women in the survey makes it difficult to generalize results obtained by analyzing the data. However, the paucity of verifiable research based on the representation of women on research staff in higher education in Japan and the fact that research data has not been accumulated leaves us little choice but to use the data. The respondents are classified by pertinent factors in Table 6.2.

There were fewer respondents from private universities in 2007 than in 1992 and more from national universities. In particular, the proportion of women responding from national universities (18.4 % in 1992 and 35.1 % in 2007) increased by 16.7 percentage points, which was higher than the 13 percentage point increase for men (49.7 % in 1992 and 62.7 % in 2007).

All Japanese national universities were incorporated in April 2004, and the proportion of female respondents may have been influenced by this move. With regard to age, there was no change in the proportion of men between 1992 and 2007, with 10 % in their 30s or younger, about 30 % each in their 40s and 50s, and about 20 % in their 60s or older. There was also no significant change in the proportion of professors. On the other hand, the proportion of women in their 30s or younger increased by 10.1 percentage points (8.2 % in 1992 and 18.3 % in 2007), and the

Table 6.2 Career and professional situation of subjects

					(%)		
		1992			2007		
		Male	Female		Male	Female	
Item	Classification	N = 1,725	N = 147		N = 966	N = 131	
Institutional type	Nationl university	49.7	18.4	***	62.7	35.1	***
	Private university	50.3	81.6		37.3	64.9	
Age	20–29	0.5	0.7	*	0.0	0.8	**
	30–39	9.8	8.2		10.0	18.3	
	40–49	33.7	24.5		29.7	24.4	
	50–59	33.9	41.4		34.0	33.6	
	60–69	19.6	25.2		25.2	22.9	
	70–	2.5	0.0		1.1	0.0	
	Average	51.3	52.0		52.2	50.4	
	Standard deviation	9.5	8.5		9.7	10.0	
Number of years the academic has belonged to an institution	−5	14.8	11.2	**	20.0	28.9	
	6–10	17.0	9.8		19.5	22.5	
	11–15	14.1	8.4		16.2	13.2	
	16–20	18.6	15.4		13.6	10.9	
	21–25	17.2	17.5		10.7	5.6	
	26–30	11.7	23.0		7.4	2.4	
	31–	6.6	14.7		12.6	16.5	
	Average	16.6	20.9		15.7	14.8	
	Standard deviation	9.3	10.7		10.9	11.7	
Academic rank	Professor	56.4	41.4	**	59.8	42.0	***
	Associate professor	33.7	42.7		31.3	33.6	
	Lecturer	9.5	15.9		8.5	24.4	
	Other	0.4	0.0		0.4	0.0	
Academic discipline	Humanities	14.7	15.6	***	11.2	14.6	***
	Social sciences	11.2	6.4		12.6	24.0	
	Science	19.7	2.8		18.9	6.9	
	Engineering	23.7	2.1		25.5	3.1	
	Agriculture	7.1	2.1		8.6	3.8	
	Biomedical sciences	13.6	12.8		15.2	20.0	
	Health sciences	0.1	0.0		0.2	1.5	
	Home economics	0.1	10.6		0.1	13.8	
	Teacher training	1.4	3.5		3.2	1.5	
	Arts	3.9	39.1		3.0	6.2	
	Physical sciences	3.3	4.3		0.7	1.5	
	Other	1.2	0.7		0.8	3.1	
Degrees	Doctoral degree	59.7	25.0	***	74.7	49.6	***
	Master's degree	24.3	31.6		18.1	36.6	
	First degree	15.2	38.3		6.6	13.0	
	Other	0.8	5.1		0.5	0.8	

Notes: *$p < .05$; **$p < .01$; ***$p < .001$

proportion of women in their 50s or older decreased slightly, bringing the average age down by about 2 years. This change is also evident in the number of years spent at an institution. The average number of years for men has decreased by just 1 year since 1992. However, for women it decreased by 6.1 years, from 20.9 to 14.8. The proportion of female academics with under 5 years of service increased by 18.3 percentage points (11.2 % in 1992 and 28.9 % in 2007), those with 6–10 years of service increased by 12.7 percentage points (9.8 % in 1992 and 22.5 % in 2007), and those with 11–15 years of service increased by 4.8 percentage points (8.4 % in 1992 and 13.2 % in 2007). In summary, the proportion of female academics with 15 or fewer years of service was 29.4 % in 1992 but increased to 64.6 % by 2007. Two conclusions can be drawn. First, a large number of women became university academics between 1992 and 2007. Second, young female researchers possess a great interest in current teaching and research activities.

Was there any change in the proportion of men and women in academic subject areas? There was no change from the sciences being dominated by men, who occupy over 60 % of the positions. On the other hand, the proportion of women increased by 17.4 percentage points (6.4 % in 1992 and 24.0 % in 2007) in the social sciences, and by 7.2 percentage points (12.8 % in 1992 and 20.0 % in 2007) in the biomedical sciences. In contrast, the ratio of female academics in the arts declined by 32.8 percentage points (39.1 % in 1992 and 6.2 % in 2007). The mobility of women appears to be linked to social change arising from policies for women. With regard to doctoral degrees, a far higher proportion is held by men than by women, which may be linked to the higher number of men in the sciences; nevertheless, the proportion of women holding doctoral degrees has increased. This is due to the increase in female academic staff over the 15-year period (24.6 percentage points), which has greatly surpassed the increase in male staff (15.0 percentage points).

The following conclusions can be drawn from the classification of respondent data. (1) There were more responses from staff at national universities in 2007 than in 1992. There were almost twice as many female respondents compared with the previous survey (in 1992). From the increase in the number of respondents, it can be inferred that university reforms have had an impact on awareness and action among women. (2) There was little difference in age among men. However, there were fewer women over 50 and more in their 30s or younger. This reduced the average length of service by 6 years. In addition, there was a high degree of mobility in women. (3) The proportion of male professors was higher than that of female professors. However, the proportion of female lecturers was higher,

showing that women appear to be concentrated in lower-level positions. (4) There was no significant change in the proportion of men in different academic areas; however, there were more women in the social sciences and biomedical sciences. (5) More men than women held doctoral degrees. However, the proportion of women with doctorates has doubled over the 15-year period, and their academic position has improved.

In Japan, it has been pointed out that men hold a strong aspiration for research, and women are devoted to teaching activities. However, from the results of this classification of data regarding academics, it appears that there has been a change in

teaching and research activities as well as interest in the integration of these activities in female academics.

6.3 Teaching and Research Activities

Academics undertake work such as teaching (preparing instructional materials and lesson plans, providing classroom instruction, advising students, reading and evaluating student work), research (reading literature, writing, conducting experiments, doing fieldwork), social service (services to clients and/or patients, unpaid consulting, public or voluntary services), and administrative tasks (committee work, department meetings, paperwork). This study examined time reportedly devoted to teaching and research activities as well as interest in these activities by gender.

6.3.1 Hours Academics Spend on Each Activity (When Classes Are in Session)

Average hours spent on academic activities during 1 week when classes were in session are shown in Table 6.3. The average total time spent decreased by 1.9 h for men but increased by 1.1 h for women over the 15-year period. The time spent by women in social service, administrative tasks, and other academic activities increased; however, the time spent on research decreased. Female academics spent half as much time on research in 2007 (12.8 h) as they did on teaching (27.2 h). The teaching time for men did not change; however, women spent one additional hour teaching ($p < .001$).

Table 6.3 Hours per week worked in different activities

			(Hours)	
	1992		2007	
	Male	Female	Male	Female
Teaching	19.3	26.2	19.5	27.2
Research	21.9	17.4	17.3	12.8
Social service	3.5	2.1	4.1	3.4
Administration	6.0	4.7	7.7	6.8
Other academic activities	2.9	1.7	3.1	3.0
Total	53.6	52.1	51.7	53.2

Table 6.4 Do your interests lie primarily in teaching or in research?

			(%)	
	1992	***	2007	
	Male	Female	Male	Female
Teaching	25.9	47.1	31.1	41.6
Research	74.1	52.9	68.9	58.5

Notes: ***$p < .001$
Teaching = "Primarily teaching" and "In both, but leaning toward teaching"
Research = "Primarily research" and "In both, but leaning toward research"

6.3.2 Teaching–Research Nexus

It appears that women spend more hours teaching than men. Do academics have a preference for either teaching or research, and is there a gender difference? The answer to the question "Regarding your own preferences, do your interests lie primarily in teaching or in research?" are summarized in Table 6.4. In the 1992 survey, men showed a greater interest in research than did women ($p < .001$). However, the 2007 survey showed no significant difference in teaching interest. Both male and female remain more interested in research than teaching. A closer look at the 2007 results for women indicates that interest in research for those with 15 years of service or less (61.8 %) was 10.7 percentage points higher than those with longer periods of service (51.1 %). Furthermore, affirmative responses to "If I want tenure in my subject, I need to have more articles or papers published" increased by 7.8 percentage points for males (48.4 % in 1992 and 56.2 % in 2007) and by 15.1 percentage points (37.5 % in 1992 and 52.6 % in 2007) for females.

Young academics who are still building their careers have no choice but to be interested in research. Research activities are also linked to their evaluation as university academics. Eighty percent of academics agreed with the statement "Excellent research results are critical to an academic's reputation" (men: 78.0 % in 1992 and 80.4 % in 2007; women: 74.6 % in 1992 and 79.4 % in 2007). University academics must not fail to realize that their own self-evaluation and reputation among colleagues is determined more than ever by research (Arimoto and Ehara 1996).

6.3.3 Research Activities

Academics in different disciplines use different methods to make public their research results. The graph in Fig. 6.3 illustrates the number of articles published in academic books or journals in the 3 years prior to the survey dates. The following three points are clear from an analysis of this data. First, most respondents, men or women, in the 3-year period published in the range 1–5 papers. Second, the number of female academics who have had no work published has decreased (29.3 % in

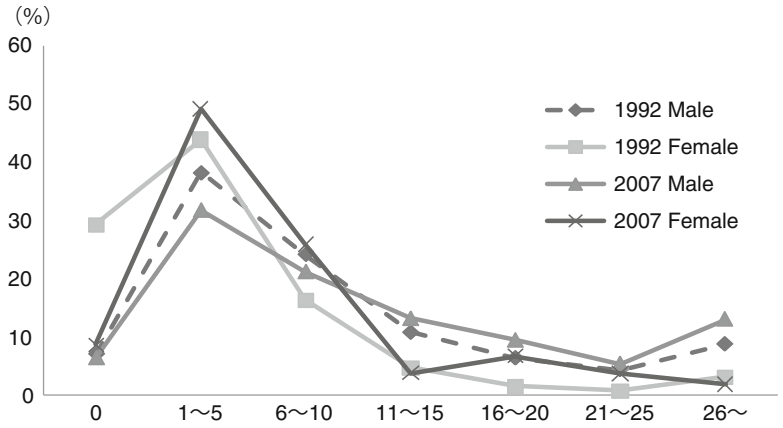

Fig. 6.3 Articles published in an academic book or journal in the 3 years prior to the survey dates in Japan

Table 6.5 Teaching activities

			(%)	
	1992	***	2007	***
	Male	Female	Male	Female
Undergraduate programs	34.7	68.1	13.3	43.1
Undergraduate programs & Master's programs	62.6	30.5	82.6	55.4
Doctoral programs	2.0	1.4	2.5	0.8
Others	0.7	0.0	1.4	0.8

Note: ***$p < .001$

1992 and 8.7 % in 2007), and the amount of research has increased correspondingly. Third, men published more research results than women according to the 1992 and 2007 surveys ($p < .01$). Although it may vary depending on the subject area, men are considered to conduct joint as well as individual research. The lack of published research among women may well in part be the result of an inability to participate in an adequate research network.

6.3.4 Details of Teaching Activities

Full-time faculty members are required to teach both undergraduate and postgraduate courses. Teaching activities at the postgraduate level are dependent on an academic's career and ability to conduct educational research. Table 6.5 shows the distribution of teaching responsibilities. Men were responsible for the greater proportion of undergraduate, masters' and doctoral programs in both the 1992 and 2007 surveys ($p < .001$). Women were the majority in undergraduate-only programs. Postgraduate education also influences research activities. If postgraduate education

is linked to large-scale joint research, then female academics with fewer opportunities for higher-level education face greater difficulties in the integration of academic research with teaching compared with male colleagues.

In recent years, the burden placed on academics has increased due to the addition of first year teaching, remedial teaching, undergraduate teaching, and quality assurance. This effect is starting to show in private and non-research universities with a high proportion of female staff. One reason for women spending more time than men on academic activities could be that they have issues with their working environment. Incidentally, 64.1 % of women and 51.1 % of men answered the question "How much involvement have you had in faculty development activities in your institution in the last 3 years?" with "As much as possible" (a response option only in the 2007 survey); more men (32.2 %) than women (26.5 %) answered "Not very much"; the proportion of men who answered "Never" (14.7 %) was also higher than that of women (9.4 %; $p<.05$). Women show more enthusiasm for faculty development activities than men. However, unlike research results, teaching activities are difficult to evaluate. For example, men responded positively to "A better method is necessary for the evaluation of teaching abilities" (71.6 % in 1992 and 74.5 % in 2007; there were five levels of response, these numbers were for "Strongly Agree" and "Agree"), showing an increase of 2.9 percentage points. The positive response from women (65.9 % in 1992 and 75.4 % in 2007) showed an increase of 9.5 percentage points. Women, who spend more time on teaching activities than men, clearly expect more guidance through evaluation of their teaching.

This report has already discussed the greater passion expressed by female academics for teaching. However, a strong inclination to conduct research added to the desire to teach suggests a difficult situation for female academics. In short, women who consider both research and teaching important are under much more psychological stress than men.

6.4 The University as a Workplace

How do academics see universities in terms of an environment in which they conduct their teaching and research?

6.4.1 Relative Importance of Academic and Institutional Affiliations

Academics work within their own academic discipline, which gives meaning to their position at the university. The extent to which academics felt a sense of belonging within the university structure is shown in Table 6.6.

The number of academics who responded that they felt their academic discipline was "Very important" was the highest. The importance of other levels of university structures was substantially lower. In addition, positive responses were all lower in

Table 6.6 Relative importance of affiliations

			(%)	
	1992	***	2007	***
	Male	Female	Male	Female
My academic discipline	68.7	70.7	67.5	66.9
My course	55.6	55.2	51.8	39.7
My department (at this institution)	38.8	40.5	32.6	31.7
My faculty (at this institution)	29.3	36.2	24.0	22.6
My institution	30.6	37.5	22.5	25.2

Notes: ***$p < .001$

Responses were on five-point scale with 1 = Very important and 5 = Not at all important. Numbers in the table show the proportion of "Very important" responses

Table 6.7 Evaluation of teaching and research environment

			(%)	
	1992	***	2007	***
	Male	Female	Male	Female
Interest and enthusiasm of teachers	33.7	38.5	38.5	36.9
Intellectual environment	31.3	35.4	37.3	31.5
Clarity of the university's educational research objectives	28.1	36.2	31.3	30.6
Sense of community	27.0	29.9	23.5	20.7
Relationship between education and management	24.9	23.8	28.0	31.3

Notes: ***$p < .001$

Responses were on five-point scale with 1 = "Very high" and 5 = "Very low." Results in the table show the proportion of "Very high" and "High" responses

2007 than in 1992. This drop was sharper for women than for men. In other words, women's sense of belonging to the university structure has become even weaker than that of men. This suggests that women, more than men, consider recent university reforms to be negative.

6.4.2 Evaluation of the University Environment and Requirements for Teaching and Research

The basic requirements for a teaching and research environment are facilities such as classrooms and laboratories, office space, teaching technology, research equipment and instruments, library services, professional relationships, and cultural aspects of the university. The physical and cultural factors that surround academics affect their ability and motivation to conduct teaching and research activities.

Responses from academics with regard to the teaching and research environment in their university are shown in Table 6.7. A comparison of the 1992 and 2007 survey responses from male academics reveals that their appraisal was higher than that of female academics for all categories except "Sense of community." The highest

increase was 6.0 percentage points for "Intellectual environment" (31.3 % in 1992 and 37.3 % in 2007). However, the only category that saw an increase among women was "Relationship between education and management."

The lowest-scoring category was "Sense of community," which dropped by 3.5 percentage points for men (27 % in 1992 and 23.5 % in 2007) and 9.2 percentage points for women (29.9 % in 1992 and 20.7 % in 2007). Whereas men seemed to view changes in the teaching and research environment optimistically, women were more pessimistic.

How fulfilled or frustrated did academics feel in their institutional environments? Their responses to seven different categories are shown in Table 6.8. Satisfaction with "Classroom instruction/lecturing," "Relationships with colleagues," and "Job security" were higher among both men and women in 2007 than in 1992. Particularly, men showed an increase of 7.8 percentage points (53.6 % in 1992 and 61.4 % in 2007), and women showed an increase of 6.9 percentage points (61.1 % in 1992 and 68.0 % in 2007) for "Classroom instruction/lecturing." By contrast, the three categories that showed a drop for both men and women were "Freedom in teaching and research," "University management policies," and "Overall satisfaction with your current job." The category with the steepest drop in approval was "University management policies," which dropped by 8.1 percentage points for men (30.1 % in 1992 and 22.0 % in 2007) and 12.2 percentage points for women (26.8 % in 1992 and

Table 6.8 How would you rate your overall satisfaction?

					(%)			
	1992				2007			
	Male		Female		Male		Female	
	Satisfied	Dissatisfied	Satisfied	Dissatisfied	Satisfied	Dissatisfied	Satisfied	Dissatisfied
Classroom instruction/ lecturing	53.6	10.9	61.1	11.6	61.4	8.7	68.0	11.8
Relationship with colleagues	51.3	10.2	51.4	13.4	57.1	10.3	61.0	10.7
Job security	62.3	6.0	65.7	11.5	63.2	8.9	67.9	9.9
Promotion prospects	34.6	16.2	29.9	27.3	25.9	16.4	29.3	15.6
Freedom in teaching and research	70.1	9.2	63.6	17.9	67.9	11.6	56.6	21.8
University management policies	30.1	27.4	26.8	34.1	22.0	35.7	14.6	39.7
Overall satisfaction with your current job	53.6	14.3	51.8	14.9	52.4	15.2	46.2	21.5

Notes: Responses were on five-point scale with 1 = "Very high" and 5 = "Very low." In the table, the proportion who are "Satis(fied)" are those who responded "Very high" and "High"; "Dissatis(fied)" responded "Very low" and "Low"

Table 6.9 How do you evaluate your salary?

			(%)	
	1992	***	2007	*
	Male	Female	Male	Female
High	10.6	21.1	20.2	30.8
Low	45.2	26.8	31.3	23.1
Neither	44.2	52.1	48.5	46.1

Notes: *$p < .05$; ***$p < .001$
Responses were on five-point scale with 1 = "Very high" and 5 = "Very low." In the table, the proportion recorded as "High" are those who responded "Very high" and "high"; those recorded as "Low" responded "Very low" and "Low"

Table 6.10 My job is a source of considerable personal strain

			(%)	
	1992	***	2007	*
	Male	Female	Male	Female
Agree	54.3	74.3	49.2	57.4
Disagree	14.6	5.6	17.5	10.1
Neither	31.1	20.1	33.3	32.5

Notes: *$p < .05$; ***$p < .001$
Responses were on five-point scale with 1 = "Strongly agree" and 5 = "Strongly disagree." In the table, the proportion indicated as "Agree" are those who responded 1 and 2; "Disagree" corresponds to those who responded 4 and 5

14.6 % in 2007). It appears that academics no longer agree with management's view of what is important to run the university.

With regard to differences by gender, the sharp (8.7 percentage-point) decline among men for "Prospects for promotion" (34.6 % in 1992 and 25.9 % in 2007) was particularly noticeable. Other than that, there were no significant gender-based differences, even for salary. However, there was a significant difference between the percentage of men and women who said their salary was "Low" (Table 6.9.): in 1992, 45.2 % and 26.8 %, respectively ($p < .001$); in the 2007 survey, men gave a more negative response (31.3 %) than did women (23.1 %; $p < .05$). There was a greater degree of dissatisfaction among men regarding salary and promotion. A greater awareness among Japanese men of being the breadwinner could be a reason for the significant gap.

On the other hand, the most significant result for women was their response to "My job is a source of considerable personal strain" (Table 6.10). Affirmative responses from women (74.3 % in 1992 and 57.4 % in 2007) were much higher than those from men (54.3 % in 1992 and 49.2 % in 2007; $p < .001$ in 1992 and $p < .05$ in 2007). Women were more stressed by overall academic work than men.

University reforms, precipitated by outside pressure, have revitalized all academics' activities. However, university management has not necessarily gone in the direction that members of faculty had hoped, leading to a breakdown in the sense of community. While male academics are frustrated by lack of promotion and salary,

female academics are concerned by lack of freedom in their teaching and research activities and feel stressed by their academic work.

Considering this, how do they see their own academic profession? One hint can be found in the following question. Affirmative responses to "If I had it to do over again, I would not become an academic" dropped both among men (16.2 % in 1992 and 10.4 % in 2007) and women (16.1 % in 1992 and 15.6 % in 2007). That is, 90 % of male and 85 % of female academics are still attracted to the academic profession.

6.5 Considerations

Progress towards a gender-equal society has promoted a higher educational standing for women and given them the opportunity to acquire higher degrees. Young female researchers are staying on at the university after earning their degrees and are pursuing new career fields by undergoing training as researchers. However, university reforms have had different effects on different academics. Male researchers have proactively engaged in research activities to secure research funding and extend their research publications, and their sense of insecurity related to undergraduate teaching is less pronounced than that in women. The main findings in this study suggest that men are dissatisfied with the financial aspects of their profession, such as prospects for promotion or salary. Women are struggling to create a balance between increased undergraduate teaching and the effort required to be put into research. This means that the closer their desire for research comes to that of men, the more they will be stressed. There is, of course, a limit to how much can be inferred from this study, as men respondents were mainly in the sciences, and there was a very small sample of women. However, gender differences in the amount of, and interest in, teaching and research activities in Japan have been greatly influenced by the country's historical background.

As mentioned at the beginning of this chapter, men were the only members of the university academic profession involved in academically research-centered teaching for over 60 years, from the establishment of the Imperial University in 1886 until the end of WWII. Women could only enroll in the university after WWII when the new university system popularized higher education (Kimoto 2005). There had been absolute gender inequality in university education in Japan until that point, in accord with the Japanese pre-war higher education system.

In the 21st century, measures for a gender-equal society are pushing forward a new generation of women. Going forward, both a serious examination of academic disciplines and various support systems will be necessary for women to embrace the academic profession. For example, prioritizing a sabbatical system for research time or being appointed to a decision-making body as a reward for the results of her teaching would be desirable. In this widely publicized crisis of the universities, there is an opportunity to increase the viability of universities for young female researchers who are attracted to the academic profession.

This research represents only a part of the research on gender bias in the academic profession. Many other questions remain, particularly from the perspectives of academic disciplines as well as academic institutions and systems.

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Chapter 7
Governance, Administration, and Management

Masashi Fujimura

7.1 Introduction

Academia in Japan has now entered a difficult phase, in common with many other countries, in which academic communities have become knowledge enterprises due to the worldwide trend of what has been called managerialism in higher education (Arimoto 2011). Japanese academics are increasingly required to become agents of their principals (president and academic administrators). The government has seemingly succeeded in controlling academics through the New Governance, and the shift of power from professoriate to administrator has changed the role of academics as professionals. With the increase of managerial involvement, feelings of distrust and alienation have occurred among Japanese academics. The way to avoid the tension between a formal authority (principal) and its designated, more specialized agency (the academic profession) is through trust and discretion. The conclusion of this chapter is in this respect.

7.2 Changing Governance

In this chapter we focus on the administrative burden of professors and their attitude toward their own organization. Before we draw on evidence from the findings using the Carnegie Study of 1992 and CAP Survey of 2007, we sketch the relevance of this focus and the context of the governance of higher education in Japan during the 15-year period.

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First, we focus on the management in order to understand the core issue of individual autonomy. Indeed, within the academic community in the universities, faculties want to take part in the judgment of entrance and graduation, the credit recognition, the formation of curricula, and the selection and promotion of administrators. In academic organizations, unlike the employees and the labor unions of commercial enterprises, professors have more power over the jurisdiction of many matters besides wages, working hours, public welfare, and so on (Abott 1998).

Nevertheless, the most cumbersome work for faculty is the administration. Such miscellaneous duties are not considered proper education and research activities; rather, they interfere with teaching and research commitments. The professors need to make many time commitments outside of the classroom: course conferences, various committees, department meetings, all-campus conferences, and council, often needing to overcome inertia and strong vested rights rooted in the department and the faculty. Clark (1983) reveals that a feature of university management in Japan is the polemic forms of academic authority between the Ministry of Education and the collegial rule. So, the role of the Japanese university's presidents was then just coordination among faculties and with the Ministry of Education.

However, even if university is commonly described as an academic community which is controlled by collegial rule, it is frequently argued that the professor is a lone wolf for whom individual autonomy is strong and loyalty to their institution is weak. On the other hand, faculty meetings look like "mutual aid associations," because in Japan they are welcoming of such lone wolves. Where there is a temporary dean or rector, in general they do not have more power than individual professors. Nevertheless, in spite of such anarchic governance, faculty takes part in the regulative and normative decision-making process of the institution, and they have insisted on jurisdiction of various issues. So, to understand the reality of management in university, we must look beyond the law to the faculty's actual practice.

Second, it is interesting to investigate the "universal problem" which was revealed in the 1992 Carnegie International Survey (Lewis and Altbach 1996). This survey found internationally a marked distrust and alienation on the part of faculty with the administrators of their organization except in Japan and the Netherlands. For the statements "Top-level administrators are providing competent leadership" and "The administration supports academic freedom," the favorable responses in Japan were 60 % and 71 % respectively, while these statements were evaluated much more negatively in other countries. Similarly, for the statement "The administration is often autocratic," the response of the Netherlands was low at 37 %, and that of Japan was 40 %. Also Japanese teachers have the strongest preference for research after the Netherlands in the 14 nations surveyed. It is certain that this Japanese clear preference for research gave impetus to the subsequent teaching-oriented higher education policy.

However, for Japan this result can be seen to be natural. The year 1992, when the Carnegie Survey was conducted, was only a year after the deregulation of the Standards for Establishment of Universities Act, which decreed that a university should endeavor not just to avoid falling short of the standards for establishment specified by this Ministerial Ordinance, but also to further improve the level of its

standards. The age of evaluation of universities in Japan had just started. But, in those days, individual autonomy was believed in within the community of scholars. And as mentioned previously, power was widely dispersed at the university and even at departmental level, with a common perception that nothing was determined in Japan's faculty meetings. Because each department protected vested rights, compromise was eliminated. As Thompson (2007, p. 141) pointed out, "When the power is widely dispersed, compromise issues can be ratified but cannot be decided by the dominant coalition in toto."

Internationally, academics were affected by the major trends of worldwide accountability, massification, managerial controls, deteriorating financial support from public sources, and others. These factors negatively affected the working conditions of the academic profession. The collegial control was exposed to the neoliberal whirlpool and the Neo-Conservatism of Thatcher's UK in the 1980s which itself was imported from the United States under the Reagan government. Hard management techniques were adopted by university governance, leading to loss of confidence by the academic profession (Trow 1994; Enders 2005). Universities were involved in the "grand contradictions" of reduction of budgets and response to stakeholders' needs (Clark 1998). Therefore, in the 1992 Carnegie Survey, it can be seen that a negative attitude to corporate control—or its twin, enterprise-based authority—appeared in the participating countries of Europe and America. The research question is therefore the extent to which such hard managerialism has been confirmed in the awareness of faculty in current Japan.

Third, we do not know yet the impact that structural reform has exerted on academic work. Various reforms have been implemented since 1991, ignited by the deregulation of the Standards for the Establishment of Universities Act (Amano 2006, 2007). Drastic measures implemented in Japanese universities included: liberal arts department reorganization; recommendation of self-study and evaluation; external evaluation and third party evaluation; relief of subsidiary business regulation of professors; revision of faculty's qualification benchmark; various good practices; resource allocation by evaluation; free design of faculty organization; the legal obligation of faculty development; and the strengthening of systematic deployment of graduate education.

The upshot of these developments was the National University Corporations (hereafter, NUCs) Act and the revision of Private School Law in 2004. Due to the rapid decrease in the 18-years-old population being near at hand, fiscal tightness, popular frustration with the cost and effectiveness of higher education, and the neoliberal education reform seen in the Anglo-American countries, government was being challenged to be subjected to information disclosure, performance tests, and contracting out of public services. Eighty-seven national universities were transformed into NUCs with a juridical public body separated from the central government and were expected to differentiate according to their characteristics and features (Central Council for Education 2005). Before corporatization, the national universities were just branches of the administrative organizations (Ministry of Education) where they were directly controlled under the National Government Organization Law.

By separating the ownership of the property right and the management right, government may succeed in "indirect governance" of their national universities. Although it looks as though the government has withdrawn from its official governance, it actually has not. The government can control NUCs like a "puppet master" through block grants which are to reduce by 1 % every year. In general, when government delegates public service to a third party (in this case national universities), it turns out that people receive an uncertain service. Therefore in order to avoid an asymmetry of the public service, medium-term (6-year) management by objectives was introduced to assure the quality of higher education. This is now being executed as a third-party evaluation not only at the stage of planning but also after implementation. It may be said historically that the structural reform of national universities in Japan began immediately after WWII when the new higher education system started and ended with this NUCs Act. So, the national universities entered a new and difficult phase in the twenty-first century.

The structural reform is theoretically explained by the administrative theory called New Governance, which incorporates the Principal–Agent Theory (hereafter, PA Theory) developed by the New Institutional Economics, which explains the existence of organizations in a market system. PA Theory proposes that despite the apparent influence that the principals in such a hierarchical relationship have by virtue of their grasp of the purse-strings, they cannot wholly control the behavior of agents who receive some money from their principal to contribute something on behalf of him (Salamon 2002). Because the agents, such as the academic profession, typically have more information than their principals about what they are doing, discretion is inevitably left in their hands. What is relevant for this chapter is the insight that this theory provides into one of the central paradoxes that arises in the relationship between principals (government or university presidents) and agents (president or faculties) in contractual or third-party arrangements of the sort that third-party government entails. Therefore, PA Theory proposes that every principal has to be ready for the block grant and incentives in order to keep control and avoid moral hazard and shirking by their agents (NUCs).

But the application of PA Theory to corporatization of national universities is complicated, because the president is a principal to the faculties as well as an agent to the government (Fujimura 2008). This principal–agent chain means that national universities after corporatization were built into the "vertical integration" advocated by Williamson (1975). Therefore, an investigation of the impact of corporatization on work conditions within the national university would illustrate the extent to which the new governance works. However, there are few studies on the influence of the reform, even though the first 6-year term was completed in 2009. Then what are the consequences of this New Governance for Japanese academics? Admittedly, as long as universities deliver the educational services, it may not matter to the Japanese citizens what kind of governance there is, or whether the problem of asymmetric information has been solved. But, it does matter to the academics concerned.

From these contexts, the following sections will reveal how the involvement of academic staff in administrative matters has changed during the 15 years

1992–2007. And as a result, we confirm that institutional differentiation within the national system of higher education in Japan is increasingly evident. The CAP survey in 2007 was investigated by same universities in 1992. Respondents were tenured full-time faculty above lecturers.

7.3 Involvement of Administration

7.3.1 Increasing Load of Management

We begin by reporting the mean, median, and ratio of time faculty spent in administration such as committees, faculty conferences, and clerical work by rank and year (see Table 7.1) The median is added to the table because the data is a skewed distribution. Table 7.1 also provides costs of the time spent on administration converted by salary. Of course, caution is required in the interpretation of time because data is self-reported. Moreover, we cannot separate out the administrative time taken for communications to obtain consensus from that taken to carry out activities.

The following three points are clear when we use these three indicators of administrative time. First, administrative time has increased during the 15 years. In 1992 the median time in-session in private universities was 3.7 h (7.3 %) per week, while in 2007 it had increased to 5.6 h (10.3 %). In national universities it increased from 4.9 h (9.6 %) to 5.7 h (12.2 %).

Second, the administrative time increased more in the not-in-session period compared with the in-session increase. In private universities the not-in-session time increased from 1.7 h in 1992 to 4.0 h, and in national universities from 3.0 to 4.5 h, an increase to more than double and to half as much again respectively. The official position was that the number of lecturers in private universities, and the number of professors in national universities, had increased in 2007 compared with 1992. In addition (not shown in the table), the coefficient of variation of administrative time decreased. This means that not only are academics at national and private universities increasingly involved in administrative activities, but they also share the burden more equally.

Third, the right column of Table 7.1 shows another indicator of administrative involvement, that is, the management cost on the basis of a 40 h per week contract and on a real-time base (Geurts and Maassen 2005). As is expected, the administrative cost of the real-time base is less expensive than the contract base, and had increased in 2007 compared with 1992. The table reveals that professors of national universities are the most expensive, costing 1,680 thousand yen ($19,000) per year for administrative activities.

There are reasons why the burden of administrative work of professors increased. One is that, as mentioned earlier, the work of evaluation and planning of business which cannot be carried out only by office personnel has increased since deregulation. So, ordinary academic staff are required to do some of the administrative work

Table 7.1 Involvement of academics in institutional governance

			Hours (per week)				Ratio of hour (%)				Cost (1,000 yen)			
			In session		Not in session		In session		Not in session		In session		Not in session	
			Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Private university	1992	Professor	5.8	4.0	3.6	1.8	10.9	8.6	7.0	3.9	1,036	696	1,380	853
		Associate Pro.	4.7	3.4	3.5	1.6	8.6	6.4	6.4	3.2	698	517	956	650
		Lecturer	4.9	3.1	3.0	1.7	9.6	6.6	6.1	3.5	611	403	801	469
		Total	5.4	3.7	3.5	1.7	10.0	7.3	6.8	3.6	882	601	1,182	748
	2007	Professor	7.3	5.4	5.8	3.5	14.5	10.8	11.6	7.1	1,547	1,089	1,948	1,377
		Associate Pro.	6.6	5.2	5.6	3.9	12.1	10.4	10.1	8.2	1,013	794	1,387	1,012
		Lecturer	6.7	5.3	5.8	4.8	12.7	9.2	12.0	9.7	826	625	1,103	764
		Total	7.1	5.6	5.7	4.0	13.7	10.3	11.3	7.8	1,326	954	1,706	1,202
National university	1992	Professor	7.7	4.4	4.9	3.4	14.6	11.2	9.2	6.8	1,382	984	1,828	1,290
		Associate Pro.	5.4	4.0	4.2	2.8	10.7	8.7	8.1	5.3	736	570	952	733
		Lecturer	5.2	7.3	3.4	2.7	8.8	7.7	6.3	5.6	534	505	747	600
		Total	6.6	4.9	4.5	3.0	12.5	9.6	8.5	5.8	1,057	769	1,393	979
	2007	Professor	9.0	7.3	7.3	5.1	17.6	14.2	14.2	11.1	1,680	1,426	2,130	1,650
		Associate Pro.	7.1	4.9	6.0	4.4	13.6	10.1	11.8	8.3	1,043	750	1,354	991
		Lecturer	5.3	4.2	3.7	2.7	9.9	8.5	7.2	5.2	657	421	840	630
		Total	8.0	5.7	6.5	4.5	15.5	12.2	12.8	9.2	1,358	1,002	1,735	1,218

which supports top management. The second reason is the reduction in office staff, so that, without a professor's cooperation, routine work of administration cannot be performed. Therefore, it is important to regard administration as work which needs professionalization and which contributes to the productivity of a university, rather than to regard it as only miscellaneous business. An elaboration and systematization of administrative work must be considered (Rhoads 1998, 2007). However, before thinking about professionalization of administrative work, we will examine how Japanese faculty perceives the university governance.

7.3.2 Alienated Faculty

First of all, we will compare Japanese faculty's perceptions of university governance in 1992 with that of 2007. Most decision-making in higher education arrangements is characterized as centralized or decentralized. The Carnegie Survey explained that "centralized usually means that key decisions are made by top administrators (or a government board). Decentralized means that such executive decisions are made by faculty of the institution" (Altbach 1996).

Of course, in practice real governance is a blend of both. Specifically, university governance comprises seven items: (1) selecting the key administration; (2) choosing new faculty; (3) making faculty promotion and tenure decisions; (4) determining budget priorities; (5) determining the overall teaching load of faculty; (6) setting admission standards for undergraduate students; and (7) approving new academic programs.

In Fig. 7.1 we have plotted the percentage of both "strongly agree" and "agree" responses for each of these seven items (horizontal axis 1992; vertical axis 2007) by national and private institutions. The items located on the upper left of the diagonal have become more decentralized, while those on the lower right have become more centralized in 2007. For private universities, items are located on or close to the diagonal line, thus indicating that there was little change between 1992 and 2007, and show a more centralized view of governance with the exception of choosing new faculty.

By contrast, for national universities the seven items are located more in the centralized direction in 2007 than in 1992. In particular, budget determination is perceived to be most centralized among the seven items because line-item control was replaced by a block grant or incentive system after national universities became NUCs in 2004. Such items as "approving new academic programs," which was previously decided at the departmental level, is now perceived as an administrative matter. Since corporatization, as pointed out by Ehara and Sugimoto (2005), decoupling between educational affairs and management has been progressing in NUCs. All in all, the principal and agency relationship, in which vertical integration is a feature, was built into NUCs.

Next, we show how opinions about the governance have changed during the 15 years. The question is, "Looking at this institution, how do you feel about the

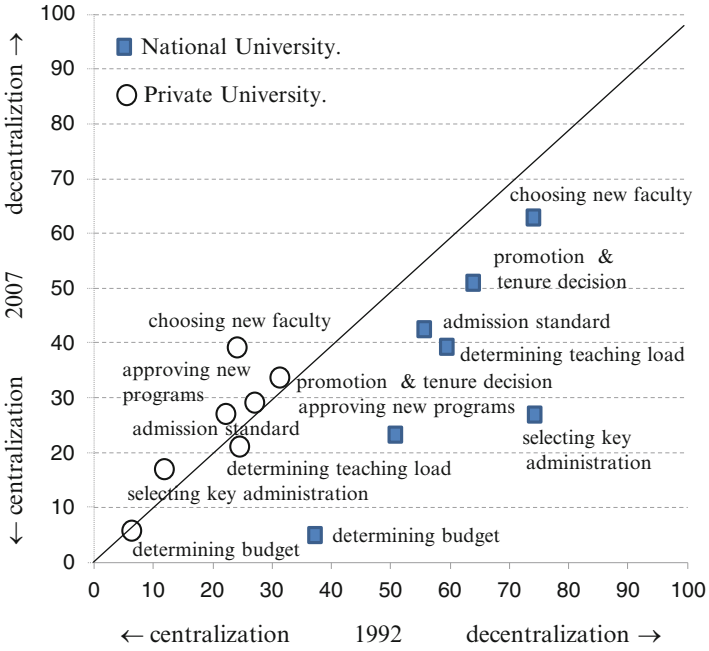

Fig. 7.1 Change of location of authority

following statements which relate to the management and decision-making process?" The statements are: (1) Top-level administrators are providing competent leadership ("competent leadership"); (2) I am kept informed about what is going on at this institution ("keep information"); (3) Lack of faculty improvement is a real problem ("poor communication"); (4) The administrators are often dictatorial ("autocratic"); (5) The faculty not participating in the decision-making process is a real problem ("lack of involvement"); (6) Students should have a stronger voice in determining policy that affects them ("student participation"); and (7) The administration supports academic freedom ("academic freedom").

In Fig. 7.2, the horizontal axis is 1992 and the vertical axis is 2007. Items located on the upper left of the diagonal indicate an increase of positive opinion (% of "strongly agree" and "agree"); those on the lower right indicate an increase of negative opinion (% of "strongly disagree" and "disagree"). Those items on the diagonal show no change. While respondents of private universities remained nearly constant in their views during the 15 years, those of national universities changed considerably, with four items ("competent leadership," "poor communication," "autocratic," "lack of involvement") located on the upper left and one ("competent leadership") on the lower right. After national universities became NUCs, top-down control was brought on faculty.

Here, we examine two items which were evaluated positively in the Carnegie Survey in 1992. That is, "Top-level administrators are providing competent leadership" and "The administration is often autocratic." The percentage of "competent leadership" is

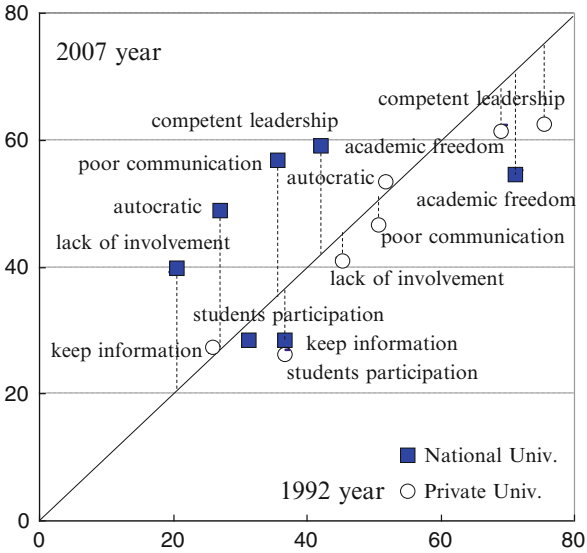

Fig. 7.2 Change of opinion on governance age

still 60 % compared to 15 years ago. As previously seen, this view is strong in national universities, while weak in private universities. But, the percentage of "autocratic" increased from 40 % in 1992 to 51 % in 2007 as a whole. This is because the percentage for private universities was 52 % in both surveys, while that for national universities increased from 27 to 49 %. Presidents' leadership is evaluated positively in national universities. But, on the other hand, the percentage of "autocratic" increased from 28 to 48 %. This puzzling fact shows that the concept of leadership is in-maturity for respondents.

7.3.3 Discretion and Control

Academic freedom is one of the core values of higher education. Especially, intellectual freedom is indeed at the heart of academia. However, when it comes to perceptions of restrictions on what a professor can teach or research, some variations were noted between 1992 and 2007. The two items here are: (1) At this institution, I am fully free to determine the content of the courses I teach; and (2) I can focus my research on any topics of special interest to me. Table 7.2 shows the percentages of "strongly agree" and "agree." While a majority of the respondents feel free to determine course content and research projects, there is a statistically significant difference between 1992 and 2007 for the national universities. The respondents of national universities in 2007 felt more constrained than those in private institutions. This is because, after the deregulation of the Standards for Establishment of Universities, national universities began to control the content of curriculum and to shift research funds from individual projects to collaborative ones.

Table 7.2 Perception of degree of control (%)

	Private university				National university			
	1992		2007	Sig	1992		2007	Sig
(1) Discreation								
(a) Designing the courses	79.0	>	71.4	**	82.0	>	68.0	***
	(926)		(430)		(843)		(632)	
(b) Research project	84.3		85.8	n.s.	85.6	>	80.7	*
	(925)		(430)		(842)		(637)	
(2) Level of academic power								
(a) At the smallest academic unit	67.6		72.3	+	82.9	>	78.7	*
	(798)		(394)		(813)		(629)	
(b) At the departmental level	50.1	<	57.0	*	62.0	>	52.2	***
	(849)		(412)		(800)		(619)	
(c) At the faculty level	24.4	<	30.3	*	35.2	>	28.8	**
	(855)		(413)		(833)		(631)	
(d) At the institutional level	14.6	<	19.4	*	11.2		10.5	n.s
	(845)		(413)		(818)		(630)	

Notes: The number of respondents is given in parentheses
***$p<.001$; **$p<.01$; *$p<.05$; +$p<.1$

Then, how did faculty's perceptions of their influence change? Academics were asked to rate their personal influence in helping to shape key academic policies on the smallest academic unit, the department level, the faculty level, and the institutional level. Table 7.2 confirms the conventional view that personal influence is relatively high at the smallest unit and low at the institutional level. However, we note that, in 2007, the private universities' academics considered themselves more influential than those in national universities, except for the smallest academic unit. Yet, academics in national universities considered their control decreased except at the institutional level. This result suggests that individual autonomy, which was described in the School Education Act in Article 93-1 (University should have a faculty meeting in order to deliberate an important matter) and has been cultivated since WWII, has been seriously damaged due to the top-down elements of the new steering management brought by NUCs.

7.3.4 Loyalty

Loyalty to one's institution is an indispensable element within organizations, because loyalty enhances the efforts of the individual faculty. Even if there is dissatisfaction with the governance, according to Hirschman (1970) loyalty to the organization acts as a brake on one's decision to exit. On the other hand, academics generally consider their academic discipline more important than their institution.

Thus, it is an empirical question whether the increased power of university governance and the decreased academic discretion lead to stronger affiliation with their

Table 7.3 Importance of affiliation (%)

	My institution			My academic discipline		
	1992		2007	1992		2007
Very important	31	>	14	69	>	52
Important	48		49	28	<	41
Total	79	>	63	97		93

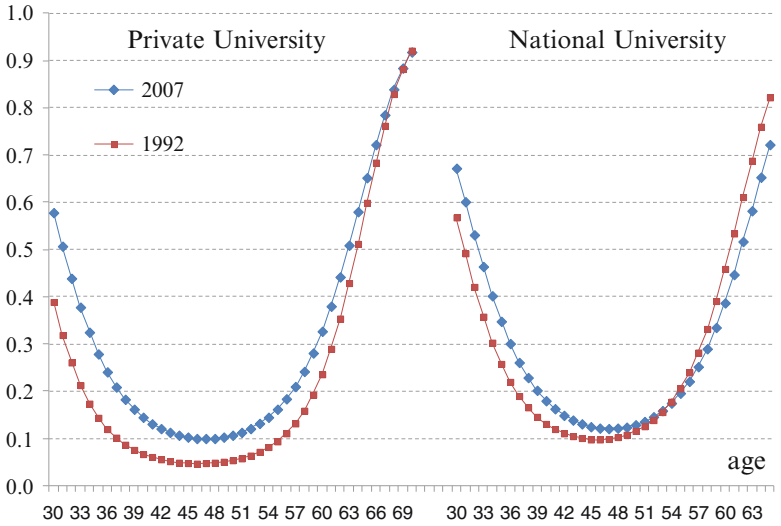

Fig. 7.3 Probability of transfer disposition within 5 years

institutions. Table 7.3 shows the degree to which affiliation with their institution and academic discipline is important for 1992 and 2007. Table 7.3 surprisingly suggests that not only academics' affiliation ("very important") with their institution but also with their academic discipline both decreased by 17 percentage points in 2007 compared with 1992. The loss of affiliation with their institution may lead to that with their academic discipline.

In the face of such an alienated environment, it may be a difficult decision for academics to remain in an institution. Loyal faculty may not exit, but something happens to them. So, we examine the inclination to exit option using the question "How likely is it that you will leave this institution in the next five years?" The percentage of respondents who are likely ("very likely" and "likely") to leave was 24 % in 1992 and 27 % in 2007 for the national universities, and 18 % and 28 % respectively for the private universities. So, we can estimate the probability of transfer disposition regressed by age and age-squared using the logistic model: logit $(p/1-p)=\beta_0+\beta_1$ (age) $+\beta_2$ (age^2). In Fig. 7.3 the horizontal axis measures the age of respondents. The vertical axis measures the probability of transfer

disposition. This figure shows a U-curve probability, decreasing from the 1930s to the 1940s and then increasing to the 1960s.

We found that the probability of transfer disposition for private universities in 2007 was higher than that of their predecessors in 1992. This result suggests that, as pointed out earlier, academics in private universities were more centralized than those in national universities and more involved in the governance process. So, "silent exit" or suspicion and fearing may be increasing in Japanese private universities.

7.3.5 Divided Universities

So far, we have revealed how the involvement of academic staff in administrative duties and faculty perceptions of university governance have changed during the 15 years between the surveys. Three facts have been clarified. The first is that while management duties increased, in 2007 academics were not involved in decision-making in important issues such as selecting senior administrators and were experiencing a centralized trend of governance. Second, the individual autonomy of teaching content and research project was felt to be controlled, especially in national universities. Third, affiliation and loyalty to their institution had decreased and "silent exit" was increasing, especially in private universities.

It can be said that now the conflict between faculties versus administration, observed by many participating nations in the Carnegie investigation in 1992, have come to be generally recognized as a "universal problem" also in Japanese academia. Further, one more fact is added, that the perception of the governmental higher education policy differs significantly among university types.

Table 7.4 compares the pros and cons of perceptions of how decision-making in higher education policy by the government is differentiated by the four university types. The two items here are: (a) Government should have the responsibility to define the overall purposes and policies for higher education; and (b) In this country there is far too much governmental interference in important academic policies. Generally, academics like to distance themselves from government interference and respondents are critical of the government's involvement in higher education. There was no significant relation between the four university types and respondent opinion in 1992.

However, in 2007, overall there were fewer negative opinions, but there was a significant difference among university types. The respondents who approved of governmental responsibility were those affiliated in the research universities. Respondents in research universities also tended to agree that there is too much governmental interference in important academic policies.

There is further data to support the change in perception of the research universities, from the statement about the status and role of higher education in Japan: "Higher education is threatened by bureaucratization of university management." There was a statistically significant difference between the types of national

Table 7.4 Perception of decision-making in higher education policy by the government (%)

University Type	1992					2007				
	Agree	Nuetral	Disagree	N	Sig.	Agree	Nuetral	Disagree	N	Sig
	(a) The government should have the responsibility to define the overall HE policy									
National-Research Univ.	20.4	26.9	52.7	313		39.3	27.4	33.3	18	
National-non-Research Univ.	17.9	33.7	48.4	502	n.s	30.6	35.8	33.6	428	*
Private-Research Univ.	18.2	31.8	50.0	66		32.7	48.9	18.4	49	
Private-non-Research Univ.	19.4	34.7	45.9	804	n.s	24.0	37.6	38.4	359	*
	b) Government interference in important academic policies is far too much									
National-Research Univ.	59.4	31.1	9.5	315		45.9	38.1	16.0	181	
National-non-Research Univ.	52.3	38.7	9.0	499	+	50.5	41.5	8.0	424	*
Private-Research Univ.	46.9	40.6	12.5	64		38.8	46.9	14.3	49	
Private-non-Research Univ.	41.7	46.7	11.6	777	n.s	38.1	52.5	9.4	352	n.s

Notes: *$p < .05$; +$p < .1$

universities in 2007. In 1992, positive opinion in national research universities was 63 % and national non-research universities was 62 %. However, while that of the national research universities decreased to 55 % in 2007, in national non-research universities it increased to 67 %. Why was the perception of the governmental policy divided by the university type in 2007?

Speaking of the national universities, before corporatization academic freedom was protected by what is called a "convoy organization" in which national universities were institutionally within the Ministry of Education. Although the government had direct responsibility for the national universities, the national flagship universities had some privileges of financial and personnel management autonomy owing to their specific nature of teaching and research: in finance, the Special Account for National School; and in personnel, the Special Act for Educational Civil Servants. Therefore, though it was paradoxical, national universities were able be critical of the government in spite of university type. However, as pointed out above, Japanese national universities were transformed into NUCs in 2004 and came to be further bound as agents to implement the intention of the government, which owns property rights.

By the way, the financial distribution of the government differs remarkably between university types (Doi 2007). The government positioned competitive research universities as "pseudo-agencies" and government subsidies promoting scientific research such as COEs (Centers of Excellence) were mostly provided to the research universities in order to strengthen their research function and to improve the national economy. The Japanese national research universities are mostly comprised of science and technology departments, and became the implementing organizations for governmental scientific policy. So, they acknowledge themselves as a partner of government.

Thus, even if the conflict of professor versus administrator originates in New Governance, there is a cognitive dissonance among university types about the role of government as a string-puller. Division among universities was produced by indirect governance through purse-strings.

7.4 Conclusion

This chapter has examined Japanese faculty's perceptions of their institutions focusing on the governance using the 1992 Carnegie Survey and the 2007 CAP Survey. In this conclusion, we look for the way to resolve the conflict between professor and administrator. The perceptions of respondents, mentioned above, were frank opinions on the appearance of hierarchical relations within the universities. Admittedly, the purpose of introducing the hierarchy in the university is to achieve the integration, efficiency, and the rationalization of management to overcome the agency problem, but the faculty cannot respond rapidly to a role as an agent working on behalf of their principal.

Therefore, introducing the hierarchy in an academic community has not necessarily removed the uneasiness towards administrators. According to the survey of the Center for National University Financial and Management, though only a year after national universities became NUCs in 2004, the opinions of the presidents of national universities, to whom strong power was given by the corporatization, were that all-campus consensus and unity were not yet formed (Amano 2007). This result suggests that even if centralization of power is progressing, universities need some kind of decentralization in which each faculty participates in the decision-making processes.

Anyway, under the New Governance the miasma of distrust or alienation towards the governance is increasing among faculty, whose priority is educational and research activity. Then, if the faculty pretends to be falsely obedient as a survival strategy, the principal becomes fearful and suspicious. In order to avoid this dilemma, the principal may construct a dictatorial decision-making or monitoring system. However, the agency problem will not disappear as long as the university is expanding its functions.

An important way for the planner to avoid the professor's opportunism is not so much to set a standard and strengthen the monitoring as to take use of knowledge. With respect to different kinds of knowledge, Hayek's (1945) classical article entitled "The Use of Knowledge in Society" in which he criticized the centralized planned economy could be useful. Hayek says:

But a little reflection will show that there is beyond question a body of very important but unorganized knowledge which cannot possibly be called scientific in the sense of knowledge of general rules: the knowledge of the particular circumstances of time and place. It is with respect to this that practically every individual has some advantage over all others in that he possesses unique information of which beneficial use might be made, but of which use can be made only if the decisions depending on it are left to him or are made with his active cooperation (Hayek 1945 p. 521).

If we change the wording of the title to "The Use of Knowledge in the Organization," an important thing for the administrator is that it depends on the cooperation of the person who possesses unique knowledge and shares the decision-making process. The hierarchy of the organization is approved only by cooperation with the subordinates. However, the Japanese academic community has now replaced the entrepreneurial model by one which focuses on the innovation and knowledge production for the company, emphasizing research and graduate education, and being bureaucratically controlled. The key to resolving the conflict between intellectual labor and the administrator is to widen the confidence interval for the faculty, because trust reduces the monitoring cost. But, today's university is so exposed to hard managerialism that such an interval of confidence for the academics is very narrow. So, we can conclude from statistical analogy that principal tends to choice "Type I error", which restricts the desirable agency behavior and lessens the very purpose of trust.

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Chapter 8
Labor Conditions

Hirotaka Nanbu and Tomomi Amano

8.1 Introduction

In general, it is considered that the designation of a profession constitutes an occupation that combines expertness, autonomy and a public nature. In this regard, the academic profession (AP) is undoubtedly a profession. In addition to these characteristics, the precondition that it operates in the university is a key aspect for the AP. That is to say, the AP could be defined as "all of the faculty members such as *Kyoju* (professor), *Jokyouju* (associate professor), *Koshi* (lecturer), *Joshu* (assistant), etc. who *enter into the service of the university*, major in their own fields, participate in academic activities, and have their own culture," or "the profession who *belongs to the university*, which is perceived as the highest educational institution or center of learning, and engages in academic matters" (emphasis added) in Japan (Arimoto 2005, pp. 3–4). As seen in this definition, it is to be expected that the definition of AP should include the point of belonging to a university. Although the base of identity of the AP as a profession, which is as a faculty member, is mostly on knowledge of their own academic specialty or academic society, their base of activity is in the university and their actual performance of academic work is done mainly in the university. As large societal changes, such as globalization, orientation to the knowledge-based society, or marketization, have occurred, they will affect faculty members in various ways. In terms of labor conditions, however, influences can mainly be seen through university bodies (Fig. 8.1). As a result, when one considers the actions of faculty members in a university, it is essential to examine the condition of the university body itself.

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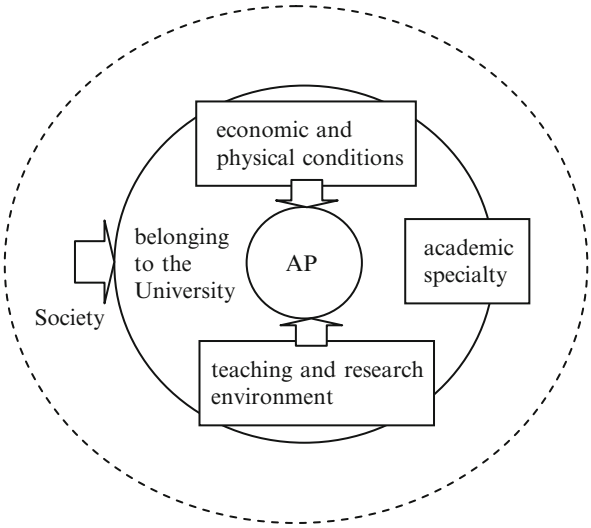

Fig. 8.1 Labor conditions surrounding faculty members

This chapter conducts an analysis of the situation and changes in the labor condition of faculty members. In Sect. 8.2, we examine the physical conditions for work in the university in the form of labor conditions, human relationships in the university, and evaluations of the university as an environment for teaching and research by evaluations for faculty members' own specialties. In Sect. 8.3, by focusing on individuals, we consider topics affecting salaries. Among the data from questionnaires there is information about annual salaries paid to respondents that allows us to investigate the main determinants of faculty salaries. Based on these investigations we consider faculty working conditions.

8.2 The Environment Surrounding Faculty Members

This section focuses on the working environment of faculty members and analyses the evaluation of labor conditions in 2007 compared with that in 1992. Furthermore, we explore how these evaluations and changes differ between types of university. This study identifies four university types from the viewpoint of the sector and its commitment to research: national research universities, private research universities, national non-research universities, and private non-research universities. The reason the study focuses on the university type is that belonging to the university is a pre-requisite for faculty members, as previously noted. So, it seems that they are necessarily affected by the environment of their university.

As society has undergone tremendous change, Japan has conducted various academic reforms. Such movements have taken place not in the former "convoy system" but with the claim of promoting individual variations in universities or of promoting their own unique developments. As a part of this movement, the national universities have been turned into independent administrative entities and greater

proportions of their budgets have been provided through competitive funds not only in research but also in the area of education. These academic reforms have brought about differences between universities in various ways. As is well known, even before these reforms there were great differences between universities in Japan; however, through such reforms, the differences now appear to be greater. That is to say, it is to be expected that the evaluation of labor conditions will vary more markedly among the types of university than before.

8.2.1 Physical Conditions

First we consider the physical conditions of facilities and resources available in 2007 (Table 8.1). Among classrooms, technology for teaching, laboratories, research equipment and instruments, computer facilities, library facilities and services, and office space, the facilities which the highest proportions of APs evaluated as "good" (the responses of both "excellent" and "good") were library facilities and services (41.4 %), computer facilities (34.8 %), individual office space (30.8 %), and classrooms (30.3 %). The lowest evaluation was for laboratories at 22.9 %. As all items received ratings of less than 50 % "good," these responses indicate that faculty members were far from satisfied with the facilities and resources in 2007. But when compared with the responses of 15 years before, the levels of positive assessment greatly increased with every item. More than 10 percentage points of increase are seen for most items, and in respect of classrooms and technology for teaching there is about a 15 percentage point increase.

Table 8.1 Evaluation of facilities (% "good")

	Year	Total	National research	Private research	National non-research	Private non-research
Classrooms	1992	15.0	10.3	12.5	29.7	17.1
	2007	30.3	28.2	21.6	44.2	39.4
Technology for teaching	1992	14.4	6.7	8.7	23.3	19.9
	2007	29.6	31.7	18.0	53.8	38.5
Laboratories	1992	12.0	8.1	6.8	13.2	17.3
	2007	22.9	33.5	16.7	38.5	21.9
Research equipment and instruments	1992	14.1	14.7	7.1	17.4	17.9
	2007	26.1	42.9	19.9	37.5	23.2
Computer facilities	1992	24.9	24.1	13.6	30.4	32.0
	2007	34.8	45.3	26.6	38.5	38.2
Library facilities and services	1992	31.4	30.7	11.6	69.4	40.4
	2007	41.4	47.6	33.6	51.9	45.9
Faculty offices	1992	17.3	14.8	12.0	21.6	21.1
	2007	30.8	39.3	25.9	38.5	31.5

Note: The percentages are of responses of "good" ("excellent" and "good" combined) for each item

Table 8.2 Evaluation of facilities (by country, 1992) (% "good")

	Technology for teaching		Research equipment and instruments		Computer facilities		Library holdings	
Hong Kong	60.7	①	44.0	⑤	69.2	①	49.1	⑤
The Netherlands	58.8	②	57.0	①	69.2	②	65.4	①
US	50.5	③	52.7	②	68.3	③	61.6	②
Sweden	46.7	④	49.8	③	67.9	④	61.6	③
Germany	44.0	⑤	46.5	④	59.7	⑤	53.2	④
Australia	35.9	⑥	27.7	⑦	53.2	⑦	39.9	⑥
Mexico	33.3	⑦	22.0	⑧	43.2	⑨	38.8	⑦
UK	29.8	⑧	30.7	⑥	48.2	⑧	37.1	⑩
Israel	28.7	⑨	21.8	⑨	55.8	⑥	38.3	⑨
Chile	22.3	⑩	14.5	⑪	33.1	⑩	22.4	⑬
Brazil	21.4	⑪	14.8	⑩	25.1	⑪	33.8	⑪
Russia	17.5	⑫	7.0	⑭	15.5	⑬	38.7	⑧
Japan	14.4	⑬	14.1	⑫	24.9	⑫	31.4	⑫
Korea	9.4	⑭	8.9	⑬	13.3	⑭	7.2	⑭
Average	36.1		33.5		50.9		45.0	

In 1992, the level of satisfaction with facilities and resources in Japan was internationally low (Table 8.2). In particular, the fact that the environment for research was poor was well-known in Japanese society around the 1990s. The University Council repeatedly reported the need for Japan to find corroborative evidence and adopt appropriate financial measures related to the maintenance of facilities and resources. Setting aside how much this measure was actually carried out, it can be seen that facilities and resources at Japanese universities were improved over the 15-year period.

Additionally, although the level of satisfaction with facilities and resources is greatly different among university types, a rise in the proportion of positive evaluations by faculty members can be seen regardless of the university type. The extent of positive evaluations of all items by faculty members has been increasing in all university types, with the exception of library facilities and services by faculty members in national non-research universities where it has decreased. Statistically, in national research universities and private research universities, the "good" ratings of all items have significantly increased. Overall, the increases are greater in national universities than in private universities.

One consequence of these changes is a shift in levels of satisfaction among the different types of universities. In 1992, the satisfaction with facilities and resources by faculty in non-research universities was higher than in research universities. However, by 2007, in terms of the three research-based components—equipment and instruments, computer facilities, and laboratories—the extent of positive evaluations was highest in national research universities, though remaining lowest in private research universities. These results suggest that at least in the national

research universities, some of the necessary improvements of facilities and resources had taken place.

8.2.2 The Teaching and Research Environment

8.2.2.1 Human Relationships Within the University

In regard to the intellectual climate, relationships between faculty members and administrators, and enthusiasm of faculty members within the university, the proportions of "good" evaluations by faculty members were 36.6 %, 28.5 %, and 38.4 % respectively in 2007; and the proportion of faculty members who evaluated relationships with their colleagues as "good" was 57.7 % (Table 8.3). By university type, in all these elements, the evaluations of faculty members were highest in national research universities: thus the proportions of the faculty members who evaluated the intellectual climate as "good" was 56.0 % in national research universities, 35.5 % in private research universities, 32.7 % in national non-research universities, and 28.6 % in private non-research universities; and positive evaluation about enthusiasm of faculty members was 54.2 % in national research universities, 33.5 % in private research universities, 35.3 % in national non-research universities, and 36.8 % in private non-research universities.

In 1992, the proportions of faculty members who rated as "good" the intellectual climate, relationships between faculty members and administrators, enthusiasm of faculty members, and relationships with their colleagues were 31.8 %, 24.8 %, 34.1 %, and 51.5 % respectively. In each case the ratings increased over the 15-year period. As a whole, it can be said that the human relationships in the university improved.

Table 8.3 Evaluation of the teaching and research environment (%)

	Year	Total	National research	Private research	National non-research	Private non-research
Intellectual climate	1992	31.8	55.8	20.3	68.9	26.5
	2007	36.6	56.0	35.5	32.7	28.6
Relationships between faculty members and administrators	1992	24.8	32.6	19.3	50.7	23.2
	2007	28.5	33.9	25.5	30.8	28.9
Enthusiasm of faculty members	1992	34.1	53.8	25.8	56.8	29.7
	2007	38.4	54.2	33.5	35.3	36.8
Relationships with their colleagues	1992	51.5	49.6	45.1	69.4	54.5
	2007	57.7	61.7	55.6	42.3	59.6

Note: The percentages are of responses of "good" or "satisfied" (the responses of both "strongly satisfied" and "satisfied") for each item

However in terms of type of university this is not true for national non-research universities where the extent of positive evaluation of all four items decreased over the 15-year period. The ratings of "good" for relationships with colleagues, for example, in national research universities increased from 49.6 to 61.7 %, in private research universities from 45.1 to 55.6 %, and in private non-research universities from 54.5 to 59.6 %; but in national non-research universities, the rating decreased from 69.4 to 42.3 %. The proportion of "good" for the relationship between faculty members and administrators in national non-research universities fell dramatically from 50.7 to 30.8 %, and those for the intellectual climate and enthusiasm of faculty members showed similar large decreases of 36.2 percentage points (68.9–32.7 %) and 21.5 percentage points (56.8–35.3 %). In 1992, while national non-research universities had "good" ratings of more than 50 % in their respondents' evaluations of those items, in 2007 the proportion had dropped to one-third. In addition, given that in other university types the extent of positive evaluations by faculty increased in every item, it seems that complaints by faculty members themselves about the human relationships in the university, which can be regarded as a part of teaching and research environment, worsened in national non-research universities.

In response to the question "How would you evaluate the academic ability of the students who are in your faculty?" the proportion indicating "good" in 2007 was 29.4 %, an increase from 20.7 % in 1992. By university type the proportions vary: a decrease in national universities from 48.8 to 43.6 % in national research universities and dramatically from 74.3 to 28.8 % in national non-research universities. In contrast, in private universities it increased, from 11.3 to 32.4 % in private research universities and from 11.6 to 19.3 % in private non-research universities. On the other hand, to a question asking about the quality of students comparing current students with those who studied 5 years ago, the proportion of "better" decreased from 16.7 % in 1992 to 3.3 % in 2007 (answers were chosen from "better," "almost the same," and "worse" in this question). Although in this short-term trend the private research universities appear to be exceptional in showing no change, responses from the other three types of universities indicate a clear declining trend. The extent of the assessment of "better," already low in national research universities, became lower (6.9–1.7 %), and also declined in the non-research universities: national from 22.5 to 5.9 % and private from 27.8 to 3.0 %.

8.2.2.2 University as an Institutional Organization

The extent of positive evaluations ("good") within a respondent's university in terms of clarity about university teaching and research goals, collegiality, freedom of teaching and research activities, and university management policies were 31.4 %, 23.4 %, 66.5 %, and 21.1 % respectively in 2007 (Table 8.4). In terms of freedom of teaching and research activities, about two-thirds of faculty members evaluated it as "good," but it cannot be said that there are many faculty members

Table 8.4 Evaluation of the university as an institutional organization (%)

	Year	Total	National research	Private research	National non-research	Private non-research
Clarity about university teaching and research goals	1992	28.7	44.8	12.8	47.3	30.6
	2007	31.4	41.9	27.6	34.6	30.1
Collegiality	1992	27.3	29.6	17.9	55.4	29.6
	2007	23.4	25.8	18.5	28.8	27.0
Freedom of teaching and research activities	1992	69.6	75.7	70.9	83.1	65.5
	2007	66.5	76.8	67.5	71.2	59.3
University management policies	1992	29.8	32.8	20.1	47.2	33.1
	2007	21.1	23.7	15.0	26.9	26.2

Note: The percentages are of responses of "good" or "satisfied" for each item

who evaluated the other items positively. By university types, in responses to the questions about the clarity of university teaching and research goals, collegiality, and university management policies, the proportion of positive evaluations in private research universities was a little low, and that for freedom of teaching and research activities in private non-research universities was also low.

Compared with 1992, although the extent of positive evaluations of clarity about university teaching and research goals increased, a downward tendency can be seen in the other three items. Specifically, the proportion of "good" in collegiality decreased from 27.3 to 23.4 %, in freedom of teaching and research activities it decreased from 69.6 to 66.5 %, and in respect of university management policies it decreased from 29.8 to 21.1 %. By university type, the proportions of "good" in collegiality (55.4–28.8 %) and in university management policies (47.2–26.9 %) greatly decreased in national non-research universities, and in university management policies in private non-research universities (33.1–26.2 %). On the other hand, in the point of clarity about university teaching and research goals, there was a clear increase in private research universities from 12.8 to 27.6 %. However, elsewhere among the different types of university types, there do not seem to be any significant changes.

On the whole, although the extent of "satisfaction" with freedom of teaching and research activities was high in 2007, that for collegiality fell, especially in national non-research universities, as did the proportion of faculty members who were "satisfied" with university management policies in national non-research universities and in private non-research universities. By the university type, however, only the extent of positive evaluations of the clarity about teaching and research goals in private research universities increased exceptionally, so it is accordingly not possible to say that evaluation of the university as an institutional organization improved in any of the university types.

8.2.3 Evaluation According to Academic Specialty

Respondents generally regarded the situation of their individual academic specialty as good in 2007. The proportion who claimed "My specialty is now extremely creative and productive" was 57.0 % and who considered "My specialty does not have many possibilities for young people who wish to start working in it" was only 12.2 %. By university type, while there were not big differences, faculty members in national universities tended to show higher evaluations. Those who agreed that "My specialty is now extremely creative and productive" amounted to 68.4 % in national research universities and 66.0 % in national non-research universities, but 55.0 % in private research universities and 52.8 % in private non-research universities. And again, those who thought "My specialty does not have many possibilities for young people who wish to start working in it" amounted to no more than 9.5 % in national research universities and 7.5 % in national non-research universities, but were 12.6 % in private research universities and 13.6 % in private non-research universities.

Compared with the responses in 1992, there was no change in the overall proportion of faculty members who thought "My specialty does not have many possibilities for young people who wish to start working in it." However, the overall proportion of those who thought "My specialty is now extremely creative and productive" showed some decline (63.3–57.0 %). By university type, only in private non-research universities was there a clear decline (62.9–52.8 %).

8.2.4 Summary

From the above analyses, the following four points can be established. First, many faculty members were not satisfied with the physical condition of their universities. Even so, the proportion of faculty members who thought their university's provision was "good" increased remarkably in each of the designated items over the 15-year period. Particularly in research universities, the proportion of faculty members with positive responses greatly increased. Second, regarding the human relationships within their university, while more than half of the faculty members were satisfied with the relationships with their colleagues, only around 30 % of faculty members were satisfied with the intellectual climate, enthusiasm of faculty members, or relationships between faculty members and administrators. On these issues, particularly in national non-research universities, the extent of positive evaluation greatly decreased. Because in the other three types of university the positive responses to all these items increased, the mounting dissatisfaction with the human relationships in national non-research universities was pronounced. Third, while satisfaction with freedom of teaching and research activities was high, satisfaction with collegiality and with university management policies decreased. From this perspective, the trend was more marked in non-research universities than in research universities. Fourth, evaluation of respondents' own specialties was high.

Overall, in comparing the changes from 1992 to 2007 by university types, it was those in private research universities that most increased their positive evaluation of labor conditions. This applies also to private non-research universities, with the exception of the perception of the university as an institutional organization. On the other hand, in national universities, while it can be said that the evaluation of facilities and resources saw a small improvement, in national non-research universities the situation notably worsened in the evaluation of human relationships and of the university as an institutional organization.

8.3 Salaries

In this section, factors which impact on Japanese faculty salaries are described and discussed. This topic has been the focus of only limited research in Japan. Recently, some research studies have clarified the actual situation of faculty salaries through analysis of individual institutions' personnel expenses, but these studies have not focused on the impact of each professor's profile, activities, and so on. Through analysis of the relationship between these factors and faculty salaries, it is possible to assess whether faculty are paid on standardized bases (seniority-based pay) or on achievements (merit pay), and, if the latter case applies, what achievements are determinants.

An earlier research article using the same data for the academic profession survey in 1992 analyzed the relationship between faculty salaries and the length of their service (experience), the type of institution, research achievements, and so on (Fujimura 2002). This section is based on that earlier article, and focuses on the changes from 1992 to 2007 through adding new data for 2007.

However, as a precursor, an outline of faculty salary system is described by means of the relevant laws and official statistics, and by using data from the surveys of the academic profession; the total income of their current institutions and others is also sketched.

8.3.1 Sketch of the Faculty Salary System

National university faculty used to be national civil service personnel whose salaries were prescribed by the laws and rules of the National Personnel Authority. Fundamental matters concerning government employee working conditions including salaries may at any time be changed by the Diet to bring them into accord with general conditions of society, and the National Personnel Authority has the duty to recommend such changes (National Public Service Act, Clause 1, Article 28). Salary schedules for civil servants are to be determined after taking into consideration the cost of living, prevailing wage rates in the private sector, and other appropriate circumstances determined by the National Personnel Authority (ibid., Clause 2, Article 64).

Under the Act on Remuneration of Officials in the Regular Service, and Rule of the National Personnel Authority, the Educational Service (I) Salary Schedule was applied to national universities' faculty irrespective of the type of institution. The Educational Service (I) Salary Schedule included a clearly specified range of salary for each grade, which typically corresponds to each academic rank. In each grade there was a ladder of monthly salaries, and annual pay increases corresponded to ascent of the steps of the ladder. Occasionally more than two increments could be permitted when, for example, remarkable research achievements were recognized.

Various allowances are also components of government employee salary. The largest parts of them are a terminal allowance and a diligence allowance. The former is a bonus paid in accordance with length of service; the latter is a bonus paid competitively in accordance with their service records. The sum total of the annual bonus with respect to regular service was equivalent to 4.15 months salary of the total membership in 2009. Some other allowances are mentioned later.

Formally these arrangements ended in 2004 when national universities became national university corporations. National university faculty are no longer civil servants and each national university corporation has much more discretion about its staff salaries. But the basis of their payment must be determined in accordance with the general conditions of society (Act on General Rules for Independent Administrative Agencies, Clause 3, Article 63); and it is not easy for institutions to create original salary systems. As a result, each university seems to continue to follow the government's employee salary system.

Private universities may select more varied salary systems than national universities, though some of them seem to be similar to or based on the government's employee salary system. The details of their systems are obscure, but average salaries for the whole of private university faculty are known as well as those of national university faculty through official data. By *Gakko Kyouin Toukei Chosa Houkokusyo* [*The Statistical Survey Report of School Teachers and Faculty*], the average monthly salary in September 2007 of national university professors was ¥540,000 and of national university associate professors was ¥440,000, while the figures for private universities were ¥580,000 and ¥470,000 for professors and associate professors respectively; these figures do not include various allowances.

In subsequent paragraphs, it is data from the academic profession surveys in 1992 and in 2007 that are used (which exclude any data for part-time employees).

8.3.2 A Report Based on the Academic Profession Surveys

8.3.2.1 Total Income

The questionnaires required respondents to select from among 10 categories of yearly total income and ask for the proportion of income from the respondent's current institution in the previous year. For analytical convenience these categories have been reformed into groups of four, each of which includes about the same

Table 8.5 The proportions of income received from respondents' current institution (%)

	1992	2007
Group 1	94.1	93.9
Group 2	93.0	95.9
Group 3	91.8	94.3
Group 4	83.4	86.8

Table 8.6 The average time spent on each activity per week (hours)[a]

		Teaching	Research	Service	Administration
2007	Group 1	23.4	16.9	2.7	7.3
	Group 2	21.3	15.7	2.7	7.8
	Group 3	20.0	18.3	3.7	7.4
	Group 4	19.3	16.0	5.7	7.7
1992	Group 1	20.5	22.3	2.0	5.6
	Group 2	20.6	22.9	2.7	5.1
	Group 3	20.1	21.8	3.0	5.9
	Group 4	18.3	20.1	4.6	6.7

[a]During periods of scheduled classes

number of respondents, and permits comparison of the average proportions of income from respondents' current institutions. Group 1 is formed from those respondents whose total annual income is under ¥7.15 million, Group 2 is those receiving from ¥7.15 to ¥9.10 million, Group 3 is from ¥9.10 to ¥11.05 million, and Group 4 is for those receiving above ¥11.05 million. As is shown in Table 8.5, those receiving the highest income, Group 4, obtain the lowest proportion from their own institutions. Again, in the data in Table 8.6, which shows the average hours spent on each activity (teaching, research, service, and administration) per week when classes are in session, we see that the time spent on service by Group 4 is the longest among the four groups. Furthermore, the percentages of respondents who have served in business or industry are as follows: Group 1 is 27 %, Group 2 is also 27 %, Group 3 is 29 %, and Group 4 is 37 %. So, earnings from extramural activities in business or industry seem to be occasion for a high income; still, more than 80 % of income is earned from their current institutions.

About teaching hours, there is a statistically significant difference between Group 1 and Group 4 (and Group 3). This suggests that faculty spending more time in teaching tend to have comparatively smaller incomes.

8.3.2.2 Factors Affecting Annual Salaries from Respondents' Current Institutions

The factors affecting salary from a respondent's current institution, which is the greater part of total income, were investigated by means of multiple regression analysis. The dependent variable is based on the median of each of the total income

categories of the ten used in the surveys. This value is revised in accordance with the proportion of income respondents receive from their current institution; data for the category of under ¥0.650 million, which is the lowest rank, and for the category of above ¥15.0 million, which is the highest rank, are removed from the data-set.

The independent variables are based on (1) the type of institution, (2) seniority, (3) academic rank, (4) discipline, and (5) achievements. The details are as follows:

(1) *Sector* (dummy = 1 if a respondent's current institution is a private university, 0 if it is a national university). *Prestige* (dummy = 1 if it is not a research university, 0 if it is a research university).
(2) *Years of Service* in higher education institutions. *Number of Institutions* a respondent has worked at.
(3) *Academic Rank* (dummy = 1 for full professor, 0 if not).
(4) *Medical Science* (dummy = 1 if the respondent's academic discipline is medical science, dentistry, or pharmacology, 0 if the discipline is another science or field).
(5) The number of *Scholarly Books authored* in the past 3 years. The number of *Scholarly Books edited* in the past 3 years. The number of *Articles* published in an academic book or journal in the past 3 years. *Teaching Hours*, *Research Hours*, *Service Hours*, and *Administration Hours* spent in a typical week when classes are in session.

Table 8.7 shows first that, irrespective of survey year or sector, *Academic Rank* and *Years of Service* in higher education institutions are major factors affecting salaries. But in 1992, the *Number of Institutions* one has worked at, or the number of transfers between institutions, were negative factors on salaries in the private sector. The length of service at the same institution was a more profitable condition. However in 2007, the *Number of Institutions served* had no influence; neither did the number of transfers between institutions.

Second, *Sector*: faculty salaries including various allowances at the private universities tend to be higher than salaries at the national universities.

Third, *Prestige* has influence on salaries at the national universities, to the extent that faculty salaries at national research universities tend to be higher than salaries at non-research national universities. As one of the reasons for this we can point to the regional allowance which is a component of government employee salaries. It is an allowance to bring salaries into accord with prevailing wage rates of the private sector in each area, and also reflects regional commodity prices. In 2009 monthly regional allowances for national civil service personnel were equivalent to 3–17 % of each monthly salary. Faculty salaries at national research universities, which tend to be located in more expensive urban rather than rural areas, still contain a regional allowance. Another advantage of national research universities is the existence of an allowance for teaching graduate school programs, and national university corporations provide those who serve as chief academic supervisors in doctoral programs with higher allowances than those who serve for master's programs.

However research achievements or the number of *Scholarly Books authored*, *Scholarly Books edited*, and *Articles* have no influence on faculty salaries in either

Table 8.7 Factors in the determination of faculty salaries by multiple regression (standardized estimates)

	1992			2007		
	All universities	National	Private	All universities	National	Private
Years of service	0.286***	0.367***	0.238***	0.283***	0.297***	0.276***
Number of institutions served	−0.087***	−0.023	−0.163***	−0.003	0.019	−0.041
Sector (Private)	0.174***			0.145***		
Prestige (Nonresearch)	−0.161***	−0.216***	−0.010	−0.051	−0.136**	0.056
Academic rank (Professor)	0.400***	0.405***	0.381***	0.378***	0.390***	0.404***
Medical science	0.125***	0.093**	0.183***	−0.004	−0.030	−0.090
Scholarly books authored	0.017	0.015	0.023	−0.031	−0.072	0.023
Scholarly books edited	−0.037	0.046	−0.072*	0.037	0.058	0.021
Articles	−0.018	−0.027	−0.024	0.066	0.030	0.107
Teaching hours	−0.016	−0.052	0.016	−0.047	−0.029	−0.031
Research hours	0.022	0.010	0.034	0.040	0.063	0.019
Service hours	−0.070**	−0.038	−0.086*	−0.075*	0.018	−0.224***
Administration hours	0.065**	0.025	0.083*	0.051	0.036	0.085
Adj.R^2	0.378	0.527	0.254	0.378	0.417	0.376
N	1,260	648	612	609	404	205

Notes: ***$p<0.001$; **$p<0.01$; *$p<0.05$

sector. However, higher achievements may be rewarded with employment at national research universities or some private universities, and then become linked to an advantage of salaries.

Fourth, in both surveys, *Service Hours* are a negative factor in private university salaries. That may be because faculty whose salaries are insufficient tend to spend more time in earning their side incomes. However, we should remember that devoting time to extramural services is also a characteristic of those who achieve relatively large incomes, as mentioned above.

Fifth, *Teaching Hours*, *Research Hours*, and *Administration Hours* have no influence on faculty salaries. In 1992 *Administration Hours* was a positive factor at private universities but 15 years later devotion of time to administrational activities was no longer rewarded. The administrative allowances may have been insufficient because of the general increases of the administrative workload.

8.3.3 Summary

Faculty salaries in Japan tend to have been determined on the standardized basis of seniority and academic rank according to the data from both surveys. Of course that does not mean individual achievements have no influence on faculty salaries at all, even if there is no promotion to a higher academic rank and no transfer to a private university or national research university that pays somewhat higher salaries. But considering the limited availability of occasions for promotion and transfer chances, there is room for further discussion of whether achievements should be rewarded with a short-term salary raise. And if achievements are to be rewarded more, consideration of what those achievements should include is required. As far as motivation is concerned, it would seem to be important to consider how to reward teaching and administrative contribution.

8.4 Conclusions

The survey in 1992 discovered that the extent of positive evaluations by Japanese faculty members in universities of their facilities and resources and teaching and research environment was low by international standards (Nanbu 1996). In 2007, while the positive evaluations of facilities and resources and human relationships as a teaching and research environment increased, that of the university as an institutional organization had diminished. And the trend of change differed by type of university. Especially in national non-research universities, evaluation of the teaching and research environment declined remarkably. Such teaching and research environments need to be created through a long-term basis of mutual relationships between related persons including faculty members, for they cannot be created only by handling fiscal measures. Such basic physical conditions need to be better

developed so that universities can fulfill their important role in a knowledge-based society. Moreover, the teaching and research environment in a wider sense has to be improved, and it is important to ensure the establishment of such a basic environment in all university types. To accomplish this, it seems to be necessary for each person related to universities, including faculty members, to think actively about what their university should be.

Second, as faculty salaries have tended to be determined mostly on the standardized basis of seniority and academic rank and uninfluenced by achievements over the 15-year period, we can conclude that providing explicit salary differentials based on achievements has not been popular in Japanese universities. So, in national universities the same salary schedule has been applied irrespective of the type of institution and inconspicuous adjustments made by various allowances. This perception of a uniform salary system may cause poor opinions of salaries by high achievers. However, national university corporations are now free to introduce salary systems that contain salary differentials that do reflect achievements. Because a new personnel performance evaluation system which responds to ability and achievements in salaries is being introduced to national civil service personnel, this can have an influence on national university corporations. If so, the issue is whether teaching and administrative contributions can also be included in the achievements to be appreciated. Giving full consideration to these issues and carrying out a prudent reform are important in providing an extrinsic motivation and, furthermore, in not spoiling an intrinsic motivation for teaching and administration.

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Chapter 9
Working Time and Personal Strain

Yusuke Hasegawa

9.1 Introduction

This chapter aims to clarify changes in the working hours of faculty and the consequential impact of any changes in their psychological attitudes. This arises from a general concern that faculty has become busier. For instance, Hirota (2002) looked back on his own life and pointed out that "Recently, faculty keep becoming busy." Many faculty in Japan might agree with this opinion, but there is little research on the issue. In this chapter, we seek to analyze the evidence for and consequences of changes in working time.

In considering issues about "faculty becoming busy," we need to adopt two perspectives. The first is to establish the actual changes in working hours over the 15 years from 1992 to 2002. The second is to analyze the impacts of these changes: specifically this involves consideration of whether changes in working hours have any influence on the personal strain reported by faculty. In considering the issue of "faculty becoming busy," we need also to focus on its impacts on the responses of faculty. If, for example, the work related to administration is important for faculty, an increase of working hours related to administration might lead to the acquisition of a sense of well-being and accomplishment; however, if work related to administration is not seen as important, any increase of working hours related to it may have a negative psychological impact and result in increased personal strain. If Hirota accurately represented the feelings of faculty, it is expected that the changes have increased working hours and added to perceptions of personal strain among faculty during the 15-year period.

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Consequently, first we consider the changes in working hours during the 15 years; then the reported data on personal strain is analyzed; and finally the evidence for the impact of changes in working hours on personal strain is examined.

9.2 Data

Two surveys of faculty in Japan provided data for the analyses: the 1992 Carnegie International Survey of the Academic Profession (1889 respondents), and the 2007 International Survey of Academic Profession (AP survey) (1,100 respondents) (research representative in Japan, Akira Arimoto). The AP survey in 2007 is different from the CAP survey, which was conducted independently in Japan. The AP survey was conducted at the same universities as the earlier 1992 study, using almost the same question items. However, only the data for the categories listed in Table 9.1 are analyzed in this chapter. Data were collected for typical weeks when classes were scheduled and when classes were not scheduled.

9.3 Changes in Working Hours

9.3.1 The Overall Tendency

I analyzed cross-tabulation in order to clarify changes in working hours. The procedure for the cross-tabulation (Tables 9.2, 9.3, 9.4, 9.5, 9.6, and 9.7) was as follows. For each category of working time, the responses were regrouped into a five-point scale in such a way that the respondent ratio for each point was about 20 %.

In the Japanese Labor Standards Law, working hours are set at 40 h per week. Certainly, in 1992, the modal value of total time worked was 40 h per week both during periods when classes were scheduled and when no classes were scheduled

Table 9.1 Categories of working time

Considering all your professional work, how many hours do you spend in a typical week on each of the following activities?	
Category	Specific content
Teaching	Preparation, classroom instruction, advising students, reading, and evaluating student work
Research	Reading literature, writing, conducting experiments, fieldwork
Service	Services to clients and/or patients, paid or unpaid consulting, public or voluntary service
Administration	Committees, department meetings, paperwork
Other academic activities	Attending conferences, professional activities not clearly attributable to any of the categories above
Total	The sum of the five categories

Table 9.2 Changes in total working hours

	Typical week when classes are in session (h/week)		Typical week when classes are not in session (h/week)	
	1992	2007	1992	2007
Mean	53.5	51.9	51.7	50.9
Median	50.0	49.0	48.0	47.0
Mode	40.0	40.0	40.0	40.0
Standard deviation	15.7	14.6	16.2	15.2

Distribution of time worked		40 h/week or less (%)	41–48 h/ week (%)	49–56 h/ week (%)	57–64 h/ week (%)	65 h/week or more (%)	
Typical week when classes are in session	1992	20.0	25.4	21.6	13.5	19.4	**
	2007	25.9	22.8	22.4	12.0	16.9	
Typical week when classes are not in session	1992	25.5	26.2	19.9	12.1	16.2	
	2007	31.3	22.1	19.3	11.4	16.0	

Notes: ***$p < .001$; **$p < .01$; *$p < .05$

(Table 9.2). However, during periods when classes were scheduled, many faculty had been working over 40 h. This is indicated by the mean (53.5 h) and median (50.0 h) values. In comparison, by 2007, while the modal value of the total time worked was unchanged, both the mean (51.9 h) and the median (49.0 h) values had decreased. Moreover, the proportion of respondents working for less than 41 h per week had increased from 20 % in 1992 to 25.9 % in 2007. In contrast to the expectation of "faculty members becoming busy," the proportions working for 41 or more hours per week had decreased relative to 1992.

The data for periods when classes were not scheduled show very similar trends (Table 9.2). The mean, median and modal values were similar to those when classes were in session. Application of a chi-square test, based on cross-tabulation, showed that there was no significant difference statistically during the 15-year period. Thus, overall, the total of working hours was reduced or suffered no change during this time.

Faculty are engaged in complex activities such as teaching and research, and their orientations may well differ for each activity. If faculty spend many hours working on activities they find less congenial, they may feel the work has become more onerous. To explore this it is necessary to analyze the change in each activity individually.

The basic statistics of working hours in each category are shown in Table 9.3. In 1992, when classes were scheduled, the median time per week devoted to teaching activities was 20 h, and was also 20 h for research activities. Together they accounted for 80 % of the median working time and confirm the importance to faculty of teaching and research. When classes were not scheduled, the median time spent on teaching was 5 h per week, a decrease of 15 h when compared with a typical week when classes were scheduled. Conversely, the median time spent on research had risen to 30 h, an increase of more than 10 h compared with a typical week when

Table 9.3 Working time by category of work (hours/week)

		Typical week when classes are in session		Typical week when classes are not in session	
		1992	2007	1992	2007
Teaching hours	Mean	19.7	20.5	8.0	8.8
	Median	20.0	20.0	5.0	7.0
	Mode	20.0	20.0	10.0	10.0
	Standard deviation	11.4	11.8	8.4	8.3
Research hours	Mean	21.6	16.7	32.4	27.6
	Median	20.0	15.0	30.0	25.0
	Mode	20.0	10.0	30.0	20.0
	Standard deviation	12.8	11.4	14.3	13.5
Service hours	Mean	3.4	4.0	3.8	4.3
	Median	1.0	2.0	2.0	2.0
	Mode	0.0	0.0	0.0	0.0
	Standard deviation	6.3	6.7	6.1	6.7
Administration hours	Mean	5.9	7.6	4.0	6.2
	Median	4.0	5.0	2.0	5.0
	Mode	2.0	10.0	0.0	5.0
	Standard deviation	5.9	6.9	5.4	7.1

Table 9.4 Distribution of teaching time (cross-tabulation results) (%)

	Typical week when classes are in session					
	8 h or less	9–16 h	17–24 h	25–32 h	33 h or more	
1992	14.4	29.1	27.5	18.5	10.5	
2007	13.8	26.4	28.1	20.4	11.2	
	Typical week when classes are not in session					
	4 h or less	5–8 h	9–12 h	13–16 h	17 h or more	**
1992	38.7	21.8	21.7	5.6	12.2	
2007	29.7	25.6	24.5	6.8	13.3	

Notes: ***$p < .001$; **$p < .01$; *$p < .05$

Table 9.5 Distribution of research time (cross-tabulation results) (%)

	Typical week when classes are in session					
	8 h or less	9–16 h	17–24 h	25–32 h	33 h or more	***
1992	10.7	29.5	25.9	18.5	15.4	
2007	21.2	38.7	19.5	11.5	9.1	
	Typical week when classes are not in session					
	20 h or less	21–25 h	26–30 h	31–35 h	36 h or more	***
1992	25.8	8.7	23.8	7.7	33.9	
2007	40.4	10.6	20.3	4.7	24.0	

Notes: ***$p < .001$; **$p < .01$; *$p < .05$

Table 9.6 Distribution of time spent on service work (cross-tabulation results) (%)

	Typical week when classes are in session					
	0 h	1–2 h	3–4 h	5–6 h	7 h or more	***
1992	38.7	27.5	9.3	10.3	14.2	
2007	29.5	30.9	10.1	13.4	16.1	
	Typical week when classes are not in session					
	0 h	1–2 h	3–4 h	5–6 h	7 h or more	
1992	36.3	24.6	10.1	11.5	17.4	
2007	31.1	26	10.3	12.7	19.9	

Notes: ***$p<.001$; **$p<.01$; *$p<.05$

Table 9.7 Distribution of time spent on administration (cross-tabulation results) (%)

	Typical week when classes are in session					
	4 h or less	5–8 h	9–12 h	13–16 h	17 h or more	***
1992	51.9	23.8	14.8	4.3	5.2	
2007	36.9	29.5	19.0	5.4	9.2	
	Typical week when classes are not in session					
	0 h	1–2 h	3–4 h	5–6 h	7 h or more	***
1992	24.1	30.6	13.7	14.3	17.2	
2007	13.4	23.9	11.9	19.3	31.5	

Notes: ***$p<.001$; **$p<.01$; *$p<.05$

classes were scheduled. Together, teaching and research still accounted for 73 % of median working time but when classes were not scheduled, research occupied the vast majority (85 %) of this time.

By 2007, working hours remained generally similar to those in 1992. The main activities were still teaching and research during both periods when classes were scheduled or were not scheduled, though the median times devoted to these activities had fallen to 71 % and 68 % respectively of total median times. But the distribution of time amongst the five categories of work had changed.

9.3.2 Teaching Time

Over the 15-year period, teaching hours did not change to any great extent during periods when classes were scheduled (Table 9.4). However, this result is unexpected because teaching loads increased during this time. For instance, numbers of undergraduate courses (except introductory courses) increased. To accommodate this, faculty may have reduced time spent on preparation for classes, which would be expected to have led to a decline in the quality of education. But this in itself would be an unexpected outcome as the institutionalization of faculty development had progressed during the 15 years with the aim of improving the quality of education.

In contrast, the teaching hours per week when classes were not scheduled appear to have increased somewhat (Table 9.4, $p < .01$). The proportion of those teaching for 4 h or less decreased by about one-quarter (38.7 % → 29.7 %), with the proportion of those teaching more than 5 h having proportionately increased by about 15 %. It is arguable that in 1992, when the teaching load was relatively smaller, faculty were able to concentrate a larger part of their teaching activities in the periods when classes were scheduled. However, by 2007, when the teaching load and other work had increased, this became difficult. Accordingly, more class preparation work was displaced to the periods when no classes were scheduled.

9.3.3 Research Time

Research hours decreased greatly, regardless of whether teaching was scheduled or not (Table 9.5). In periods when teaching was scheduled, whereas in 1992 some 60 % of faculty devoted more than 16 h per week to research, by 2007 the same proportion were spending no more than 16 h per week on research. Even more noteworthy are the changes when classes were not scheduled. Whereas in 1992, one-third of faculty spent more than 35 h per week on research and only one-quarter less than 21 h, by 2007 these proportions had been inverted: only one-quarter spent more than 35 h and well over one-third spent less than 21 h. Clearly, relative to 1992, by 2007 many faculty were unable to secure the amount of time they had previously devoted to research activity across the whole academic year. A direct consequence may well have been a deterioration of both the quantity and quality of research in Japan.

9.3.4 Service Time

In recent years, the importance of service activities has been emphasized both by societal change and by government policy. The time devoted to service work by faculty increased and increased significantly during periods of scheduled teaching in the 15-year period (Table 9.6). In part this reflects the emphasis placed on industry–university cooperation. Even so, about 30 % of respondents to the survey still recorded no time at all spent on service work though a similar proportion spent more than 7 h per week on it.

9.3.5 Administration Time

The frequent assertion that in recent years the administrative burdens on faculty have increased is confirmed by the survey data (Table 9.7). When classes were scheduled, the results show that while in 1992 over half of respondents (51.9 %)

spent 4 h or less on administration, by 2007 almost two-thirds (63.1 %) spent 5 h or more on it.

Similar results are seen for periods when classes were not scheduled. In 1992, more than half of faculty (54.7 %) spent no more than 2 h per week on administrative work but by 2007 almost two-thirds (62.7 %) spent 3 or more hours on it. By 2007, the proportion of faculty with no commitment to administrative work in periods when no classes were scheduled had fallen from one in four in 1992 to fewer than one in seven; conversely while fewer than one in six spent more than 7 h per week on it in 1992, this had risen to almost one in three by 2007.

9.3.6 The Differences According to Sector and Discipline

The actual activities of usage of time by faculty will vary widely. It is expected that demands will differ according to circumstance and inclination, but systematically according to institutional priority and disciplinary requirements.

Comparison of the national and private university sectors might be expected to reflect the priorities attached to teaching in private universities and to research in national universities (Table 9.8). In 2007, faculty in private universities did indeed spend more time on teaching during periods when classes were in session and the gap in time spent on teaching between national and private universities widened over the 15-year period.

Disciplinary differences between major fields are largely restricted to medical sciences. This is seen especially in the time and distribution of time spent on service

Table 9.8 Working time according to sector (national and private)

		Typical week when classes are in session		Typical week when classes are not in session	
		National university	Private university	National university	Private university
		Mean	Mean	Mean	Mean
Teaching time	1992	16.2	23.2	6.8	9.1
	2007	16.9	26.2	7.8	10.4
Research time	1992	24.0	19.3	33.5	31.3
	2007	18.6	13.8	27.2	28.3
Service time	1992	3.8	3.0	4.2	3.5
	2007	4.5	3.3	4.6	3.9
Administration time	1992	6.6	5.3	4.5	3.5
	2007	7.9	7.1	6.5	5.7
Total time	1992	53.8	53.2	52.9	50.7
	2007	51.5	52.8	50.4	51.7

Note: Score is mean value

Table 9.9 Working time according to discipline (medical science and other disciplines)

		Typical week when classes are in session		Typical week when classes are not in session	
		Medical sciences	Other disciplines	Medical sciences	Other disciplines
		Mean	Mean	Mean	Mean
Teaching time	1992	10.7	21.1	3.9	8.5
	2007	13.9	21.8	7.1	9.1
Research time	1992	26.7	20.9	31.6	32.5
	2007	20.0	16.1	26.2	27.8
Service time	1992	9.9	2.4	9.7	3.2
	2007	9.7	2.9	8.6	3.6
Administration time	1992	5.7	6.0	4.0	4.0
	2007	6.3	7.9	4.5	6.5
Total time	1992	57.1	53.0	53.7	51.5
	2007	53.4	51.6	50.8	50.8

Note: Score is mean value

work (Table 9.9). Service, in the form of clinical work for clients and patients, is as important for medical science as is teaching and research. It constituted approximately double the time spent on service work by other faculty both when classes were and were not scheduled. Moreover, while two-thirds of faculty in other disciplines spent no more than 2 h per week on service work, in the medical sciences almost half of faculty spent more than 7 h per week.

9.4 Changes in Personal Strain

The two surveys sought responses to a specific statement on personal strain: "My job is a source of considerable personal strain." The responses were recorded on a five-point scale from "Strongly Agree" to "Strongly Disagree." For analysis, the responses were regrouped into a three-point scale: Agree ("Strongly Agree" and "Agree"), Neutral, and Disagree ("Disagree" and "Strongly Disagree").

The results indicated that personal strain of faculty did not increase, but rather decreased during the 15 years, with the proportion of those agreeing with the statement falling from 55.9 % in 1992 to 50.1 % in 2007 (Table 9.10). Even so, while in 1992 only one in seven did not perceive that there was strain associated with academic work, in 2007 this was still true for only one in six.

To Japanese faculty, this result is unexpected. While perception of personal strain is necessarily subjective and affected by expectation as well as experience, there is abundant evidence of explicit increase in the demands placed on faculty since 1992. In the 15 years since 1992, there was increased pressure to provide educational improvement at both undergraduate and graduate levels, and teaching received the organizational priority previously attached solely to research. Yet increased competition for funding

Table 9.10 Changes in personal strain (cross-tabulation result)

	My job is a source of considerable personal strain				
	Agree (5,4)	Neutral (3)	Disagree (2,1)	Total	**
1992	55.9	30.2	13.8	100.0	
2007	50.1	33.4	16.5	100.0	

Notes: ***$p<.001$; **$p<.01$; *$p<.05$

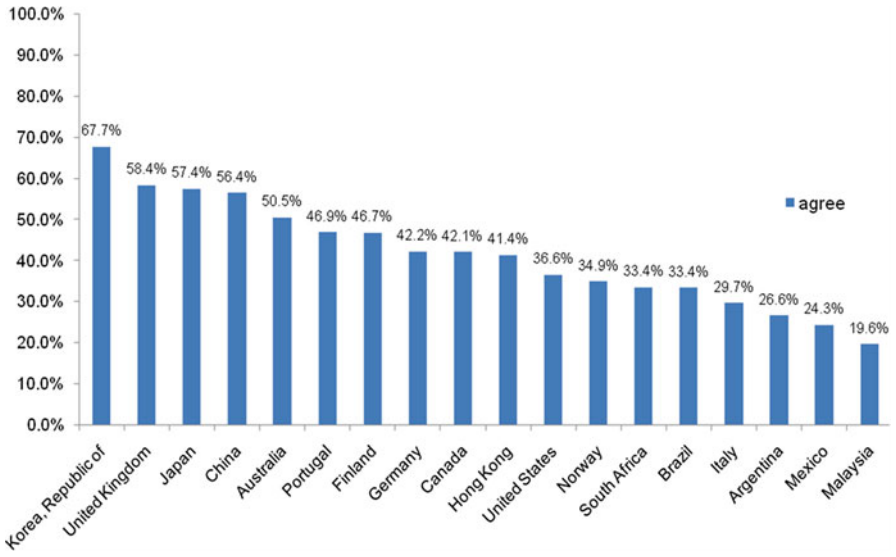

Fig. 9.1 International levels of personal strain

implied improved research productivity, increased administrative burdens, and demands for extended contributions to society. In order to work firmly in this environment, faculty need to learn new and appropriate techniques to deal with these pressures and to alleviate personal strain.

To a large extent, such pressures are international. While the traditional academic emphasis on research in Japan resulted in Japanese faculty indicating the highest level of personal strain in 1992, by 2007 similar levels of strain were reported in other countries. The international comparison of the CAP survey, in which some 18 countries participated, showed Japan with the third highest level of personal strain (Fig. 9.1).

9.5 Factors Contributing to Personal Strain

To examine factors that may contribute to the level of personal strain, a multiple regression analysis was conducted.

As a matter of fact, Ogata (1996) clarified factors contributing to faculty's personal strain by using 1992 Carnegie data. However, there was a problem in Ogata (1996)'s analysis in that it was only cross-tabulation. That is, only the relation between two variables was clarified. However, it is expected that level of personal strain is determined by not one factor but two or more factors. Therefore, it is necessary to do a multivariate analysis such as multiple regression analysis. Referring to Ogata (1996), the independent variables were set as follows.

The first is "Working hours." As described earlier, it is an important concern of this chapter that the evidence for impact of working hours on personal strain is examined. For the analysis, it is necessary to relate the working hours per week to teaching, research, service, and administration.

As working hours differ between periods when classes are scheduled and are not scheduled, a problem arises in the use of these two measures. Correlation is high between the two measures, raising the likelihood that serious problems of multicollinearity would arise if they were both included as independent variables. Accordingly, to be able to compare their relative contributions, two models were constructed: Model 1 uses working hours for periods when classes are scheduled; and Model 2 uses working hours for periods when classes are not scheduled.

The second is "Poor treatment." The treatment one receives is an important incentive to work. Therefore, it is expected that the level of personal strain rises if the treatment deteriorates. The variable concerning "Poor treatment" is the score obtained by principal component analysis that uses answers to the question "How would you rate the following benefits available to you at this university? Please select the appropriate number (Poor = 4 to Excellent = 1) for each item." The items are: "Retirement arrangements," "Paid sabbatical leaves," "Travel funds for academics," "Other fringe benefits (e.g., medical insurance, life insurance, housing, education)." As a result of the analysis, one principal component was calculated (Table 9.11).

The third is "Dissatisfaction concerning work." It is expected that the level of personal strain rises if satisfaction concerning work deteriorates. The variable concerning "Dissatisfaction concerning work" is the score obtained by principal component analysis that uses answers the question "To what extent are you satisfied with the following aspects of your job? Please select the appropriate number (Very dissatisfied = 5 to Very satisfied = 1) for each item." The items are: "The courses you teach," "Relationships with colleagues," "Your job security," "Your prospects for promotion," "The opportunity to pursue your own ideas," "The way this institution is managed," "Your job situation as a whole." As a result of the analysis, one principal component was calculated (Table 9.11).

The multiple regression analysis was restricted to the academic disciplines other than medical sciences. The data in Table 9.9 indicate a clear difference in the time spent on service work by faculty in the medical sciences and those in other disciplinary areas. To avoid the distortion of the data that would arise from conflating the two groups, it is desirable that they should be analyzed separately. Unfortunately, the size of the sample for faculty in medical sciences precludes analysis for this

Table 9.11 Results of principal component analysis

	1992	2007
Poor treatment	Factor loading	Factor loading
Retirement arrangements	0.676	0.738
Paid sabbatical leaves	0.729	0.714
Travel funds for academics	0.734	0.736
Other fringe benefits	0.713	0.750
Eigenvalue	2.035	2.160

	1992	2007
Dissatisfaction concerning university	Factor loading	Factor loading
The courses you teach	0.613	0.584
Relationships with colleagues	0.687	0.680
Your job security	0.797	0.736
Your prospects for promotion	0.662	0.643
The opportunity to pursue your own ideas	0.739	0.734
The way this institution is managed	0.689	0.654
Your job situation as a whole	0.807	0.838
Eigenvalue	2.035	2.160

group; the multiple regression analysis was therefore restricted to the academic disciplines other than medical sciences.

The variables actually used for the multiple regression analysis are listed in Table 9.12.

Tables 9.13 and 9.14 show the results. In interpreting the analysis, we must be careful since both coefficients of determination (adj. R^2) were small. As for this questionnaire, various items were set and it might not have contained all variables. For example, in future analysis of personal strain it might be necessary to include a psychological aspect. However, the analysis showed significant ($p < .001$) results (F-values). Although the analysis may not have covered all possible factors, it certainly covered many of them.

A result shared by both Model 1 and Model 2 is that dissatisfaction concerning work and female dummy has a statistically significant positive impact on personal strain. Regardless of age, it might be a common phenomenon that the level of personal strain increases if satisfaction concerning work deteriorates. On the other hand, it was a factor that the level of personal strain was higher for women than for men.. Also, poor treatment had a positive impact only in 2007.

About working time, a result shared by both Model 1 and Model 2 is that teaching and research hours do not have any statistically significant impact on personal strain. On the other hand, those working hours that do contribute to personal strain are those spent on service and administration.

For Model 1, time spent on administration had a statistically significant positive impact ($p < .05$) in 2007. However, the value of the standardized coefficient (β) was

Table 9.12 Variables used for multiple regression analysis

Dependent variable	
Personal strain	My job is a source of considerable personal strain. (Agree = 5 ~ Disagree = 1)
Independent variables	
Female dummy	Female = 1, male = 0
Working hours related to teaching	Hours per week (real number)
Working hours related to research	
Working hours related to service	
Working hours related to administration	
Poor treatment	Principal component score obtained by principal component analysis that uses the following items: "Retirement arrangement," "Paid sabbatical leaves," "Travel funds for academics," "Other fringe benefits" (Excellent = 5 ~ Poor = 1)
Dissatisfaction concerning work	Principal component score obtained by principal component analysis that uses the following items: "The courses you teach," "Relationships with colleagues," "Your job security," "Your prospects for promotion," "The opportunity to pursue your own ideas," "The way this institution is managed," "Your job situation as a whole" (Very dissatisfied = 5 ~ Very satisfied = 1)

Table 9.13 Results of multiple regression analysis Model 1

Model 1	1992			2007		
	B†	β††	Sig.	B†	β††	Sig.
Constant	3.394		***	3.054		***
Female dummy	0.551	0.136	***	0.497	0.159	**
Dissatisfaction concerning work	0.113	0.104	**	0.175	0.175	**
Poor treatment	0.016	0.015		0.152	0.143	**
Working hours related to teaching (during periods when classes are in session)	−0.002	−0.025		0.005	0.059	
Working hours related to research (during periods when classes are in session)	−0.001	−0.010		0.003	0.029	
Working hours related to service (during periods when classes are in session)	0.014	0.064		0.006	0.025	
Working hours related to administration (during periods when classes are in session)	0.010	0.051		0.014	0.090	*
F value		3.744	**		7.300	***
adj. R^2		0.026			0.087	

Notes: ***$p < .001$; **$p < .01$; *$p < .05$. † unstandardized coefficients, †† standardized coefficients

Table 9.14 Results of multiple regression analysis Model 2

Model 2	1992			2007		
	B†	β††	sig.	B†	β††	sig.
Constant	3.389		**	3.047		***
Female dummy	0.430	0.100	*	0.488	0.151	**
Dissatisfaction concerning work	0.112	0.103	*	0.175	0.166	**
Poor treatment	0.045	0.042		0.116	0.112	*
Working hours related to teaching (during periods when classes are not in session)	0.002	0.018		0.009	0.067	
Working hours related to research (during periods when classes are not in session)	−0.004	−0.047		0.003	0.035	
Working hours related to service (during periods when classes are not in session)	0.021	0.088	*	0.008	0.038	
Working hours related to administration (during periods when classes are not in session)	0.016	0.089	*	0.022	0.144	**
F value		4.235	***		6.101	***
adj. R^2		0.045			0.099	

Notes: ***$p < .001$; **$p < .01$; *$p < .05$. † unstandardized coefficients, †† standardized coefficients

too small (0.090) to provide a major contribution. The results from Model 2 indicate that both service and administration had statistically significant impacts in 1992, though in both cases the value of the coefficients was small. In 2007, time spent on service work showed no statistically significant effect.

9.6 Summary

The purpose of this chapter was to examine changes in working hours for faculty and the common presumption that these are related to the high levels of personal strain indicated by Japanese faculty in surveys in 1992 and 2007. The main findings are as follows:

- When classes are in session, the main activity of faculty is teaching and research. When classes are not in session, the main activity is research. This situation has not changed during the 15-year period. Neither has the total number of hours worked.
- However, time spent on each of the five activities (teaching, research, service, administration, and other) has changed. In particular, time spent on research has decreased significantly. In contrast, time spent on administration has increased significantly.

- Personal strain reported by Japanese faculty has declined slightly during the 15 years. However, even in 2007, the levels of personal strain of Japanese faculty remained amongst the highest reported internationally.
- Regardless of age, "Dissatisfaction concerning work" and "Gender female" were factors raising the level of personal strain. "Poor treatment" was a factor of personal strain in 2007.
- Statistical analysis suggests that time spent on service and administration work when no teaching was scheduled may contribute to personal strain.

Based on the findings of the analysis, we should consider the following two issues. First is the issue of "faculty becoming busy". If faculty felt that the issue of "faculty becoming busy" was becoming worse, the cause might be an increase of working hours related to administration. As administration might be work of marginal importance to faculty, increase of administration hours tends to result in negative feelings. This tendency is stronger when classes are not in session, so that increase in administration hours is a cause of personal strain.

Second is about causes of personal strain other than working time. Dissatisfaction concerning work and poor treatment were more important factors than working time. This result means that there is a limit to individual faculty's ability to reduce personal strain. The effort of each university is indispensable for reducing dissatisfaction concerning work and poor treatment. However, by 2007, there was not much scope for universities to improve. The competition between universities had become severe, and each university had had cuts in their finances. However, we must not forget that it is the performance of faculty that decides the success or failure of academic activities in university.

Moreover, we should pay attention to the fact that female faculty's personal strain is higher than that of male faculty, even though by 2007 there had been improvements in gender equality. Universities need to make more efforts in this direction in the future.

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Chapter 10
Research Productivity

Tsukasa Daizen

10.1 Introduction

Society in the twenty-first century has been identified as a knowledge-based society. To sustain and develop society, the creation, communication and application of new knowledge are important (Technology and Science Council 2005). Specifically, the university, which is primarily concerned with conducting education and research activity, is very important in respect of the formation of students' character, the training of young researchers and for the advanced professions, the progress of national strategy such as the promotion of culture, and increasing global competitiveness. Higher education reforms, such as the advancement of education and research activity, the individualization of higher education institutions, and the activation of higher education management, have been instituted in response to social and national expectations. For example, the education and research activities of those universities that had established high research potentiality was supported by "the 21st Century COE program", which was implemented from 2002.

As a result of such higher education reforms, many fields of academic research in Japan are located at a high level internationally or play a leading role in the Asian region. On the other hand, Japanese academic research does not possess a large stock of researchers and the breadth of academic research is insufficient (Negishi 1999). In the future, creating an environment in which various areas of research with substance and depth are established at the leading edge internationally will be a major task.

Based on an awareness of these issues, and through clarifying the factors leading to promotion of research activity of faculty in the Japanese 4-year universities, in this chapter we try to show the means by which the productivity of research activities in the universities may be improved.

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To achieve this purpose, in Sect. 10.2, we review the average amounts of each research achievement according to the forms they take and their specialized fields, and clarify the forms of research achievement that are most suited to each disciplinary area.

In Sect. 10.2, a range of factors is examined that may contribute to research productivity. To this end, productivity is estimated as indicated by the number of research papers published, a common research measure that is applicable in many disciplinary areas. Analysis by cross-tabulation allows determination of the significance of the contributions to research productivity of the various factors to be assessed.

In Sect. 10.4, by using multiple regression analysis (stepwise procedure) with the variables identified in Sect. 10.2, it is possible to recognize those that contribute significantly to research publication. It is also possible to examine the differences between the determinants according to fields of specialization and over time.

In the concluding section, the analyses allow us to examine ways in which research productivity could be improved.

10.2 Change in Research Achievement According to Specialized Fields and Time

10.2.1 Change in the Amount of Research Achievement

In the Carnegie survey (1992) and in the repeated survey (2007) with the same questionnaire, information was sought from respondents on their scholarly contributions in the previous 3 years. Mean values for the numbers of these are shown in Table 10.1. Between 1992 and 2007, the number of "Articles published in a book or journal," "Research reports or monographs," and "Papers presented at conferences" increased significantly.

10.2.2 Research Achievements According to Specialized Fields

There is a statistically significant difference in the average number of research contributions identified according to academic discipline. For example, in both 1992 and 2007, faculty in the health and medical sciences published more books than those in other specialized fields. Similarly, faculty in natural sciences, engineering, agricultural, and health and medical sciences provided more papers in academic journals and papers at meetings than those in other fields; faculty in agricultural science presented more research reports or monographs than those in other fields; and faculty in art, not unexpectedly, presented more artistic work, and performed and exhibited more than those in other fields.

Table 10.1 Average research outputs by category according to academic discipline in 1992 and 2007

							(1992)	
	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health and medical sciences	Art	Overall mean value
Scholarly book authored	0.67	1.15	0.72	0.71	1.33	2.64	0.40	1.07
Scholarly book edited	0.33	0.46	0.49	0.33	0.24	0.71	0.24	0.42
Article published in a book or journal	3.92	5.32	8.24	7.34	8.87	15.97	0.80	7.72
Research report or monograph	0.34	0.97	1.33	1.39	1.85	2.29	0.25	1.26
Paper presented at a conference	1.17	2.19	7.72	10.09	9.18	15.79	0.31	7.43
Professional article written for magazine	1.91	3.05	1.21	1.27	2.19	3.15	2.74	2.00
Patent secured	0.00	0.00	0.14	0.34	0.18	0.23	0.65	0.19
Computer program written for public use	0.00	0.05	0.25	0.16	0.01	0.17	0.00	0.12
Artistic work performed or exhibited	0.96	1.72	0.29	0.30	0.41	1.23	12.07	1.41
Video or film produced	0.08	0.10	0.07	0.12	0.05	0.57	0.27	0.17

(continued)

Table 10.1 (continued)

							(2007)	
	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health and medical sciences	Art	Overall mean value
Scholarly book authored	0.82	1.09	0.76	1.00	1.92	2.21	0.48	1.21
Scholarly book edited	0.44	0.44	0.24	0.25	0.29	0.41	0.30	0.33
Article published in a book or journal	3.15	4.42	10.24	12.58	9.99	13.94	0.91	9.15
Research report or monograph	0.78	0.84	1.45	2.16	3.14	2.14	0.27	1.65
Paper presented at a conference	2.49	2.96	10.78	12.09	10.90	15.00	0.36	9.06
Professional article written for magazine	1.55	2.81	1.89	1.37	0.73	1.92	0.94	1.73
Patent secured	0.01	0.00	0.15	1.73	0.36	0.25	0.06	0.50
Computer program written for public use	0.01	0.01	0.12	0.13	0.00	0.06	0.00	0.06
Artistic work performed or exhibited	0.83	1.39	0.43	0.87	0.49	0.90	11.58	1.26
Video or film produced	0.26	0.10	0.23	0.16	0.03	0.32	0.52	0.20

Notes: For "Article published in a book or journal," individual responses of 101 or more were excluded from the data base. For "Paper presented at a conference," individual responses of 181 or more were excluded from the data base

10.2.3 The Number of Research Articles According to Fields of Specialization and the Change Over Time

The mean number of research articles according to academic discipline in 1992 and 2007 is displayed in Table 10.2.

Over all academic disciplines the mean number of research articles rose from 8.15 in 1992 to 9.49 in 2007 ($p < .01$).

Between the specialized fields there are differences. While there are statistically significant increases in the average mean number of research articles in the natural sciences and engineering, there are decreases in the fields of the humanities and social sciences.

In 2007, in all disciplinary areas, the minimum number of research articles published by individual respondents remained at zero but the maximum number across all disciplines had, with the exception of engineering, fallen by varying factors from 4 in humanities to 0.9 in medical and health sciences. But the purpose of this chapter lies in exploring the causes of the differences that occur in the number of research articles in each specialized field. In particular, there is interest in clarifying those variables that contribute uniquely to disciplinary areas and those which provide common characteristics.

Table 10.2 Changes in the average number of research articles according to academic discipline, 1992 and 2007

Discipline	Research year	Average		Standard deviation	Survey respondents	Minimum	Maximum
Humanities	1992	3.92	n.s.	4.97	264	0	55
	2007	3.15		3.17	106	0	15
	Mean	3.70		4.54	370	0	55
Social sciences	1992	5.32	n.s.	7.53	192	0	80
	2007	4.42		4.28	134	0	30
	Mean	4.95		6.41	326	0	80
Natural sciences	1992	8.24	*	9.59	323	0	72
	2007	10.24		9.53	160	0	45
	Mean	8.90		9.61	483	0	72
Engineering	1992	7.34	***	8.74	393	0	60
	2007	12.58		15.42	191	0	85
	Mean	9.05		11.61	584	0	85
Agriculture	1992	8.87	n.s.	8.70	119	0	41
	2007	9.99		6.27	77	0	28
	Mean	9.31		7.84	196	0	41
Health and medical sciences	1992	15.97	n.s.	17.70	239	0	100
	2007	13.94		13.68	136	0	90
	Mean	15.24		16.36	375	0	100
All disciplines	1992	8.15	**	10.90	1,530	0	100
	2007	9.49		11.36	804	0	90
	Mean	8.61		11.08	2,334	0	100

Notes: ***$p < .001$, **$p < .01$, *$p < .05$

10.3 The Relationship Between Operational Variables and Research Productivity

In this section, the influence of a range of operational factors on research productivity, assessed as the publication of research articles is examined. The selected variables conform to those which have been generally employed in discussions of research productivity (Bellas and Toutkoushian 1999; Bland et al. 2006; Bonzi and Day 1991; Daizen 1996a, b; Kotrlik et al. 2002; Stack 2004) and were available from the surveys conducted in 1992 and 2007. The operational factors are arranged into six arbitrary categories for which the effects of independent variables on productivity can be estimated: social, career, organizational, resource, attitudinal, and professional.

10.3.1 Social Attributes

10.3.1.1 Gender

The average numbers of research articles produced by men and women respondents are shown in Table 10.3.

The average number of research articles is larger for men than women overall and in each specialized field. However, because the number of women academics included in the surveys is relatively small, the results for individual disciplines do not achieve statistical significance.

10.3.1.2 Age

The average number of research articles according to the age of respondents is shown in Table 10.4. Overall and in almost all specialized fields, those aged from 45 to 54 years are the most prolific publishers. Beyond the age of 65 years, retirement causes the rate of publication to fall rapidly. Numerically, only the overall results and those for the humanities carry statistical significance.

Table 10.3 Average number of research articles published by gender

	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health and medical sciences	Overall Total
	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	**
Male	3.35	4.43	10.42	12.64	10.23	14.82	10.84
Female	2.26	4.38	5.67	0.00	5.50	8.85	6.09
Mean value	3.15	4.42	10.24	12.58	9.99	13.94	10.45

Notes: $^{**}p < .01$

10.3.2 Career

10.3.2.1 Highest Degree Obtained

The average number of research articles according to the highest degree obtained is shown in Table 10.5.

Overall, those respondents with doctorates published significantly more research articles than those with master's or bachelor's degrees; but for individual fields of specialization, the numbers are statistically significant only in the humanities.

10.3.2.2 Academic Rank

An attempt was made to test whether significant differences occurred in the number of academic articles published according to academic rank The results showed no evidence of meaningful differences either overall or for any individual specialization.

Table 10.4 Average number of articles published by age

	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health and medical sciences	Overall total
	**	n.s.	n.s.	n.s.	n.s.	n.s.	*
Less than 45	3.46	4.62	8.76	13.46	10.44	13.53	9.07
45–54	4.26	4.26	12.93	13.56	10.34	15.03	10.74
55–64	2.05	4.70	10.03	12.25	9.42	12.70	9.30
65 or more	1.50	3.30	6.57	3.22	9.00	13.00	4.98
Mean value	3.04	4.41	10.26	12.56	10.01	13.94	9.49

Notes: $^{**}p<.01$, $^{*}p<.05$

Table 10.5 Average number of articles published by level of degree

	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health and medical sciences	Overall total
	**	n.s.	n.s.	n.s.	n.s.	n.s.	***
Doctor	4.22	5.56	10.57	13.15	10.07	14.29	11.20
Master	2.62	3.75	3.88	2.17	4.00	7.00	2.92
Bachelor	2.43	3.77	–	7.00	–	3.33	2.38
Mean value	3.15	4.46	10.24	12.61	9.99	13.94	8.77

Notes: $^{***}p<.001$, $^{**}p<.01$

– indicates that there were no respondents in this category

10.3.3 Organizational Climate

10.3.3.1 Type of University

The average number of research articles published according to the type of university is shown in Table 10.6. Respondents in the national universities publish more than those in private universities and those in research universities publish more than those in non-research universities, with those in national research universities publishing the most research articles. This is true both overall and for the individual specialized fields, and statistically significant in all disciplines except the social sciences and agriculture.

10.3.3.2 Evaluation of Research Activities

Explicit institutional measures to encourage research productivity have included assessment of research activities. The average number of research articles according to the presence or absence of research activities evaluation in respondent's institutions is shown in Table 10.7.

Over all disciplines, faculty reporting that their research is regularly assessed published significantly more research articles than those that were not assessed ($p < .01$).

Table 10.6 Average number of articles published by type of university

	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health & medical sciences	Overall Total
	***	n.s.	**	***	n.s.	***	***
National Research Univ.	7.50	5.73	13.50	24.59	11.09	21.36	17.58
National non-Research Univ.	3.41	4.70	10.61	12.96	10.16	13.08	10.25
Private Research Univ.	4.40	4.25	9.40	10.94	9.75	3.33	8.61
Private non-Research Univ.	2.24	3.83	6.31	5.56	7.69	8.73	5.91
Mean value	3.15	4.42	10.20	12.62	9.99	14.01	10.46

Notes: ***$p < .001$, **$p < .01$

For individual disciplines, however, the numerical results are not significant in the humanities or agriculture; while for engineering the results actually indicate a reduction in publications from assessed faculty, though this is not significant.

10.3.3.3 Expectations of Research Activity in Faculty Evaluation

Faculty were asked, in responding to the surveys, whether in their institution there was an expectation of a strong research record. The results (Table 10.8) show overall clear evidence that this expectation is reflected in research publication. In those institutions that attach importance to research achievement, a higher than average number of publications is achieved by faculty overall. In terms of the individual disciplines, however, this remains statistically significant only in the high-publishing disciplines of natural sciences and engineering; the humanities, social sciences, agriculture, and health and medical sciences show neither numerical nor significant increases.

Table 10.7 Effect of institutional evaluation of research activity on average number of articles published

	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health and medical sciences	Overall Total
	n.s.	*	**	n.s.	n.s.	*	**
Presence	3.15	5.02	11.50	11.93	10.34	15.43	10.21
Absence	3.15	3.37	7.29	13.98	9.05	9.81	7.95
Mean value	3.15	4.42	10.24	12.58	9.99	13.94	9.49

Notes: $^{**}p<.01$, $^{*}p<.05$

Table 10.8 Influence of institutional expectations on average number of articles published

	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health and medical sciences	Overall total
	n.s.	n.s.	*	*	n.s.	n.s.	**
Important	3.14	4.44	12.15	15.60	10.36	14.34	10.76
Fairly important	3.44	4.40	9.73	10.15	10.19	13.47	8.89
Others	2.86	4.56	6.37	9.14	8.42	13.67	7.52
Mean value	3.18	4.45	10.24	12.48	9.99	13.90	9.48

Notes: $^{**}p<.01$, $^{*}p<.05$

10.3.3.4 Intellectual Atmosphere

In the surveys, respondents were asked to indicate how they assessed the intellectual character of their institutions. The relation between the average number of research articles published and the institutional intellectual atmosphere is shown in Table 10.9. Over all disciplines, faculty reporting a good or excellent institutional intellectual atmosphere published significantly more research articles and at a high level of significance. A similar trend is shown also by faculty in natural sciences and engineering. But, elsewhere, the trend is less evident: in the humanities, social sciences, and agriculture the numerical results lack statistical significance; and in health and medical sciences an excellent intellectual atmosphere corresponds to a lower than average rate of publication.

10.3.4 Research Resources

10.3.4.1 Research Funding

Availability of research funding might be expected to be directly related to research output. The question arises, however, about the lag between provision of funding and publication of research articles. To accommodate this, respondents were asked to identify research funding over the 3 years previous to the survey. The results (Table 10.10) over all disciplines show a clear relationship that is replicated in all the individual disciplines except social sciences in terms of statistical significance. The largest effects in terms of increased publications are shown by the natural sciences, engineering, and health and medical sciences, with factors of 4–10 between those receiving no research funding and those receiving $250,000 or more. It is, though, these disciplinary areas that have the greater ability to conduct research through larger research teams and consequently produce larger numbers of multi-authored articles for publication, so further distorting any comparisons between disciplines.

Table 10.9 Influence of institutional intellectual atmosphere on average number of articles published

	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health and medical sciences	Overall Total
	n.s.	n.s.	*	***	n.s.	*	***
Excellent	5.00	4.36	15.10	27.29	9.00	9.46	13.27
Good	3.06	4.34	11.85	13.00	12.06	19.24	10.86
Fair	3.23	4.18	8.64	9.27	9.15	11.97	7.91
Poor	2.31	5.24	8.20	11.58	10.12	10.58	8.54
Mean value	3.15	4.42	10.28	12.44	9.99	13.94	9.46

Notes: ***$p < .001$, *$p < .05$

Table 10.10 Effect of access to research funding over the previous three years on average number of articles published

	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health and medical sciences	Overall Total
	**	n.s.	***	***	**	**	***
Zero	2.20	3.44	3.89	2.64	4.67	6.00	3.37
Less than $25,000	3.05	4.41	6.88	6.59	6.88	9.77	5.80
$25,000 to $49,999	4.00	6.07	9.80	9.88	11.90	12.96	9.64
$50,000 to 249,999	5.92	4.29	15.47	18.44	10.85	17.26	14.35
$250,000 or more	–	6.67	15.11	25.81	13.67	23.15	20.82
Mean value	3.13	4.43	10.55	12.97	9.97	14.02	9.76

Notes: ***$p < .001$, **$p < .01$
– indicates that there were no respondents in this category

10.3.4.2 Assessment of Research Equipment and Instruments

The satisfaction expressed by faculty in the facilities for research, as indicated by research equipment and instrumentation over all disciplines, is related to the average number of research articles published (Table 10.11). For individual disciplines, the relation is weak and statistically not significant except for engineering. While this is perhaps not unexpected in the humanities and social sciences, it is perhaps unexpected for disciplines such as the natural sciences and health and medical sciences.

10.3.4.3 Quality of Students

In the surveys, respondents were asked to rate the quality of students enrolled in their department. Over all disciplines those respondents reporting that the quality was good or excellent published significantly more research articles (Table 10.12). For individual disciplines, the numerical results show a similar trend but statistically the results are significant only for the humanities and engineering. In other disciplines the numerical results suggest that the trend is more marked for perceptions of "good" rather than for "excellent" students.

10.3.5 Attitude

10.3.5.1 Preference for Teaching or Research Activity

In the surveys, faculty were asked whether their interests lay primarily in teaching, in research, or in both. The overall average number of research articles published by faculty across all disciplines increases in parallel with an increased interest in research (Table 10.13). This pattern is echoed in all the individual disciplinary areas.

Table 10.11 Influence of satisfaction with research equipment on average number of articles published

	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health and medical sciences	Overall total
	n.s.	n.s.	n.s.	***	n.s.	n.s.	*
Good	3.58	4.86	11.25	16.06	11.92	12.60	10.97
Fair	3.41	4.22	10.03	15.41	9.68	16.73	10.04
Poor	2.65	4.66	10.46	6.93	9.52	11.37	7.97
Mean value	3.30	4.48	10.53	12.56	9.99	13.93	9.68

Notes: ***$p<.001$, *$p<.05$

Table 10.12 Influence of quality of students on average number of articles published

	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health and medical sciences	Overall total
	+	n.s.	n.s.	***	n.s.	n.s.	***
Excellent	8.00	6.71	11.00	39.40	9.00	14.77	14.05
Good	3.28	4.35	12.29	15.15	13.15	16.66	9.96
Fair	3.04	4.63	10.92	12.98	8.81	13.52	8.14
Poor	2.70	3.79	8.92	9.47	10.26	8.35	7.60
Mean value	3.15	4.46	10.37	12.38	9.99	13.91	8.73

Notes: ***$p<.001$, +$p<.10$

10.3.6 Professional Activities

The survey data for the independent variables treated in this section were analyzed by bivariate linear regression with the average number of research articles published.

10.3.6.1 Time Spent on Research

The relationship between time spent on research (in hours per week) and the number of research articles published is indicated by the correlation coefficients listed in Table 10.14. The positive values confirm that expenditure of more time does yield more publications though the correlations are not strong. Numerically similar results are shown for both the correlations over all disciplines and individual disciplines. However, while the values for the overall result and those for the natural sciences, engineering, and health and medical sciences are all statistically significant, this is not so for the remaining disciplinary areas. The result for agriculture suggests that, uniquely, in this discipline publication is essentially not dependent on the time devoted to research.

Table 10.13 Influence of individual preference for research on average number of articles published

Interest in teaching or research	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health and medical sciences	Overall total
	+	*	*	***	+	**	***
Primarily in research	4.17	5.31	11.80	19.62	13.86	15.10	12.78
In teaching and research	3.59	5.10	10.98	15.10	10.15	16.67	10.86
Primarily in teaching	1.94	3.16	5.48	3.77	7.60	8.11	4.59
Mean value	3.13	4.42	10.20	12.37	9.99	13.94	9.44

Notes: ***$p < .001$, **$p < .01$, *$p < .05$, +$p < .10$

Table 10.14 Coefficients for linear correlation of time spent on research and number of research articles published

Humanities	0.155	n.s.
Social sciences	0.135	n.s.
Natural sciences	0.220	**
Engineering	0.285	***
Agriculture	0.010	n.s.
Health and medical sciences	0.176	*
Over all disciplines	0.209	***

Notes: ***$p < .001$, **$p < .01$, *$p < .05$

10.3.6.2 Attendance at Disciplinary Conferences

Attendance at conferences is valued by academics as a means of both demonstrating and strengthening research commitment. Accordingly it might be expected that attendance at disciplinary conferences as well as providing the opportunity to present research papers might stimulate the publication of research articles. The results of regression of attendance at conferences with numbers of articles published by faculty support this expectation (Table 10.15). Over all disciplines, the correlation coefficient is positive, confirming that the extent of research publication increases with the number of disciplinary conferences attended. In individual areas of discipline, in the humanities, natural sciences, engineering, and health and medical sciences, a significant correlation is indicated; though this does not extend to social sciences and agriculture, the correlation for agriculture is at least stronger for conference attendance than for research time.

Table 10.15 Coefficients for linear correlation of number of disciplinary conferences attended and number of research articles published

Humanities	0.310	***
Social sciences	0.159	n.s.
Natural sciences	0.294	***
Engineering	0.425	***
Agriculture	0.093	n.s.
Health and medical sciences	0.385	***
Over all disciplines	0.352	***

Note: ***$p < .001$

10.4 Determinants of the Number of Articles Published in Academic Books or Journals

To explore which of the explanatory variables identified in Table 10.16 offer significant contributions for the numbers of research papers published, a multiple regression analysis was performed by a stepwise procedure. The results for data from 2007 are displayed in Table 10.17 and for 1992 in Table 10.18. In both tables, partial regression coefficients and the statistical probability of the significance of the explanatory variables are shown. Only regression coefficients for those variables yielding results of statistical significance are shown in the tables.

10.4.1 Results for Responses Over All Fields, 2007

Across all disciplines, the analysis of the data for 2007 showed that seven of the explanatory variables contributed significantly to the results (Table 10.17). Together, these seven variables account for about 20–30 % of the variations in the reported range of research articles published. Of these seven variables, those showing the highest level of significance were research funding, conference attendance, and the level of degree followed by preference for research.

10.4.2 Results for Individual Specialized Fields

For the individual fields, the results are considerably different from those for the overall responses. Only two variables contribute significantly to more than one specialized area: research funding and attendance at conferences. Three contribute to only one specialized area: age, research preference, and research time. No other variables yield results of statistical significance.

For two of the specialized areas, three variables make significant contributions: for humanities these are age, research funding, and attendance at conferences;

Table 10.16 The explanatory variables used in this paper

Variables	Category
Gender	Male = 1, Female = 0
Age	The actual number
Highest degree obtained	Doctor = 1, Others = 0
Academic rank	Professor = 1, Others = 0
Type of university	National research university = 1, Others = 0
Faculty reporting that their research is regularly assessed	Yes = 1, No = 0
Intellectual atmosphere	Good = 1, Others = 0
Importance or a strong record or successful research activity in faculty evaluation	Important = 1, Others = 0
Research funding in the previous 3 years	0 = 1, Less than $25,000 = 2, $25,000 to $49,999 = 3, $50,000 to $249,999 = 4, $25,000 or more = 5
Assessment of research equipment and instruments	Excellent = 1, Others = 0
Quality of students	Good = 1, Others = 0
Preference for teaching or research	Primarily in research = 1, Learning toward research = 1, Learning toward teaching = 0, Primarily in teaching = 0
Research hours per week	The actual number
Number of times of attending disciplinary conferences	The actual number

and for engineering they are research funding, time for research, and attendance at conferences. For natural sciences and for health and medical sciences, the two variables of research funding and attendance at conferences prove to be significant. For agriculture only research funding appears to have significance. In the social sciences, uniquely, none of funding, time, nor attendance at conferences appears significant; the sole significant variable is preference for research. Yet with the exception of the social sciences, the significant variables for the other areas of specialization do contribute about 20 % of the reported variation in the number of published research articles.

10.4.3 Variation Over Time

Applying the same multivariate analysis to the data for 1992 permits comparison with the results for 2007 to indicate what changes have occurred over the period of 15 years. In general, the analytical results suggest that the variables made wider and more significant contributions to assessment of research productivity in 1992 than they did in 2007 and account for 30–40 % of the variations in numbers of research articles published (Table 10.18).

Table 10.17 Determinants of research productivity (2007)

Explanatory variables	Humanities		Social sciences		Natural sciences		Engineering		Agriculture		Health and medical sciences		Overall total	
Gender														
Age	–0.265	*												
Highest degree obtained													0.141	***
Academic rank														
Type of university														
Research regularly assessed													0.071	*
Intellectual atmosphere													0.078	*
Importance of a strong record of successful research activity														
Research funding over the previous three years	0.301	**			0.350	***	0.389	***	0.446	***	0.285	***	0.306	***
Assessment of research equipment and instrumentation														
Quality of students														
Preference for teaching or research			0.260	*									0.098	**
Research hours per week							0.188	**					0.078	*
Number of times of attendance at disciplinary conferences	0.246	*			0.173	*	0.219	**			0.322	***	0.203	***
R^2	0.238		0.058		0.173		0.320		0.186		0.204		0.295	

Notes: ***$p<.001$, **$p<.01$, *$p<.05$

Table 10.18 Determinants of research productivity (1992)

Explanatory variables	Humanities		Social sciences		Natural sciences		Engineering		Agriculture		Health and medical sciences		Overall total	
Gender														
Age														
Highest degree obtained					0.160	**			0.211	*	0.159	*	0.106	***
Academic rank							0.132	**			0.164	*	0.053	*
Type of university	0.191	*			0.154	*	0.325	***	0.286	**			0.114	***
Research regularly assessed														
Intellectual atmosphere							0.128	**						
Importance of a strong record of successful research activity														
Research funding over the previous three years	0.199	**			0.210	**			0.269	*	0.153	*	0.173	***
Assessment of research equipment and instrumentation														
Quality of students														
Preference for teaching or research							0.172	***						
Research hours per week	0.200	**							0.348	***			0.061	*
Attendance at disciplinary conferences	0.252	***	0.277	**	0.290	***	0.292	***			0.436	***	0.398	***
R^2	0.163		0.069		0.306		0.409		0.324		0.319		0.352	

Notes: ***$p < .001$, **$p < .01$, *$p < .05$

For the responses across all disciplines, six variables made significant contributions. Four were identical with those doing so in 2007: level of degree, research funding, research time, and attendance at conferences. The value of the coefficient for research funding in 1992 was about half that for 2007, perhaps reflecting the generally greater availability of research funding in 1992; and conversely the coefficient for conference attendance had doubled by 2007, perhaps reflecting the increased importance attached to networking. No significance was attached to the effects of research assessment or intellectual atmosphere in 1992 but significance did attach to academic rank and type of university.

As in 2007, the pattern of variables contributing significantly to the multivariate analysis differed markedly from those contributing to the overall response. Attendance at conferences contributed to five of the specialized areas (all except agriculture), research funding and type of university contributed to four areas, and level of degree to three. Time spent on research was significant for only two disciplinary areas and a preference for research, academic rank, and an intellectual atmosphere were significant in only one area, that of engineering. With respect to the individual disciplinary areas, all with the exception of the social sciences showed an increased number of variables that contributed significantly to research productivity. While attendance at conferences was widely shared as a significant variable, the coefficients for research funding—also a widely significant variable—were notably smaller in 1992. Conversely, the significance of type of university and of level of degree had vanished in 2007. Contrary to the expectation that selective research funding has widened the differences between types of university in research output, the results suggest that differences in 2007 were less widespread than they were in 1992.

10.5 Conclusion

The building of a knowledge-based society, which presupposes that knowledge will become an important factor, is demanded mainly in the economically advanced nations. Because research contributes substantially to the generation of new knowledge, improving the effectiveness of research activities is important in a knowledge-based society. Based on such recognition, the Law for Orientation of Science and Technology was enacted in Japan in 1995 and the government implemented a science and technology policy deemed to be systemic and consistent with this long-term objective.

In this chapter, an analysis has sought to clarify the determinants of factors contributing to research output as indicated by the number of research articles published. The results show that research funding over the previous 3 years and attendance at disciplinary conferences were two common determinants of the number of research articles published in many academic fields in both 1992 and 2007.

To promote science and technology effectively under financial retrenchment, the proportion of research funds allocated competitively, such as the 21st Century COE funding, has been expanding in recent years. As a result, it seems that the differences in the amount of research funds among researchers have expanded. While leading to

expansion of research output, this policy has also altered relative levels of funding between the specialized fields. To promote science and technology fully, it becomes an important aspect of policy to clarify the relation between the method employed in allocating research funding and research productivity.

In this study, some of the determinants of the quantitative expansion of research results have been clarified. In the future, it will be necessary to examine in more detail other factors that contribute both to research and to a knowledge-based society.

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Chapter 11
Teaching and Research in the Academic Profession: Nexus and Conflict

Hideto Fukudome

11.1 Introduction

Under the higher education reform since 1990s which emphasizes effectiveness of undergraduate education, what kind of change has happened in Japanese academic professions in terms of research and teaching, particularly their interrelationships? This is the main question of this chapter. Relationship of research and teaching can be talked either on the premise of conflict or integration. Both perspectives are important to think about the academic profession in theoretical and empirical ways. Based on these assumptions, the author compared and analyzed the results of academic profession surveys conducted in two different points in time. He analyzed data especially in terms of following items; faculty members' preferences between teaching and research, their working conditions (time allocation and teaching load), their senses of belonging to organizations, and the process of training of academic professions, particularly graduate education. He found some significant changes in Japanese academic professions during these 15 years, which we can see from both positive and negative perspectives. Research and teaching are core academic work of the academic profession. Based upon the analyses in this chapter, it is important to more intensively discuss what our academic professions should be.

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11.2 Context and Background

Since the 1990s, Japanese higher education has changed drastically, with a particular emphasis on enhancing the quality of undergraduate education. Japanese higher education has expanded since the early 1990s; even though the population of 18-year-olds has been decreasing sharply, more of them have been enrolling in universities. In fact, the portion enrolling has risen from 26.4 % in 1992 to 47.2 % in 2007. Corresponding to this expansion of students, teaching at the undergraduate level has been the most critical issue in the higher education policy in Japan since the 1990s. National advisory councils to the Minister of Education have published key reports on undergraduate education (Fukudome 2010).

However, even if teaching is considered the key to Japanese higher education reform, enhancing many other aspects of university activities has also been critical. In this regard, the quality of faculty members' academic work is seen as crucial in effecting major changes in universities' activities. The academics in Japan are expected to play various roles in providing the core functions of universities. Particularly in recent years, through activities such as university evaluation, faculty evaluation, and faculty development, faculty members have been required to improve their core skills. However, at the same time, faculty members have become increasingly occupied with non-academic work such as administration, committee work, and other services. Thus, focusing on academic work, namely teaching and research, becomes increasingly difficult for the faculty members, and this situation appears to present a serious dilemma for them. Among these trends, what kinds of changes are occurring in faculty members' activities? This chapter will focus on the relationship between teaching and research in the Japanese academic profession.

Ideally, teaching and research in universities should be integrated, and this is the core ideology underlying the academic mission of university faculty. Ernest Boyer (1990) conceptualized integration of teaching and research and identified four categories of scholarship as key components of the academic profession: discovery, integration, application, and teaching (Table 11.1). In our rapidly changing environment, conceptualization of core values for the academic profession, such as Boyer's, is essential and stimulating.

However, considering the daily work of faculty members, we find some conflicts between teaching and research. Faculty members are expected to devote considerable time and energy to each activity in order to perform them effectively. Teaching and research require their individual capacities, resources, and methodologies. Joseph Ben-David stated the following:

> Teaching may thus interfere with research, and vice versa, not only because they compete for time, but also because—in spite of their close relationship—they have different aims and require different approaches, different talents, and different facilities. Far from being a natural match, research and teaching can be organized within a single framework only under specific conditions. (Ben-David 1977, p. 94)

Table 11.1 Essence of Ernest Boyer's four scholarships

Discovery	Commitment to knowledge for its own sake; freedom of inquiry; following a disciplined approach to research; contribution to the stock of human knowledge and to the intellectual climate
Integration	Giving meaning to isolated facts, putting them in perspective; establishing connections across disciplines; placing specialties in larger context; educating non-specialists
Application	Equipping people for service associated directly to one's field of knowledge; relating one's work to areas of life that flow directly out of professional activities; arising of new intellectual understandings
Teaching	Based on hard work and serious study; a dynamic endeavor to build bridges between the teacher's understanding and students' learning; not only transmitting knowledge but also transforming and extending it

Source: Boyer (1990)

Burton Clark (1995) investigated the conditions for integrating research, teaching, and learning and found that one important condition was a differentiation between the research sector in a national higher education system and the tier for graduate education in each institution.

These observations indicate that the integration of teaching and research is an inherent issue for universities, and that realizing such integration is generally extremely difficult, requiring various preconditions. On one hand, there is the issue of how the theory of integrating teaching and research can be applied in the real world. On the other hand, it is also vital to clarify the actual conditions of divergence and conflict between teaching and research. Especially during the last 20 years of Japanese higher education reform, the relationship between teaching and research, as two essential aspects of academic work, has been an important question.

To consider this complicated relationship between teaching and research, in this chapter I will analyze preferences, activities, and the process of training of the Japanese academic profession. I will examine the results of two surveys of Japanese academics, conducted 15 years apart in 1992 and 2007. Section 11.2 will seek to discover how faculty members' preferences between teaching and research have changed and will focus on the understanding of teaching and research within the Japanese academic profession. Section 11.3 will focus on the amount of time faculty members require for their various activities and the number of courses for which they are responsible, so as to understand the actual situation of their academic work. Section 11.4 will delve into the academics' sense of belonging to organizations, such as disciplines, universities, and departments, and how it has influenced their teaching and research. Finally, Sect. 11.5 will discuss the training process for the academic profession in graduate schools.

11.3 Preferences of Academics Between Teaching and Research

11.3.1 Research Orientation as a Characteristic of the Professoriate of Japan

In the Carnegie academic profession survey of 1992, the most significant result was that the academics in Japan had a very strong orientation toward research compared with teaching (Arimoto and Ehara 1996). The Carnegie survey asked respondents: "Regarding your own preferences, do your interests lie primarily in teaching or in research?" Across all 14 countries, 44 % of the respondents preferred teaching and 56 % preferred research. The category of "teaching preferences" includes the total percentage of respondents who indicated that their interests were either "primarily in teaching" or "both [teaching and research], but more in teaching." Similarly, "research preferences" includes those who responded that their interests were "primarily in research" or "both [teaching and research], but more in research." In Japan, only 27.5 % preferred teaching, the second-lowest figure among the 14 participating countries (Table 11.2). This result appears to have become one of the factors prompting higher education policy in Japan to emphasize teaching since the 1990s.

Following the deregulation of the undergraduate curriculum under Japan's university enactment act in 1991, higher education policy has shifted drastically, pushing universities to undertake "educational reform," which particularly emphasize on teaching at the undergraduate level. Given this trend, comparing the 1992 Carnegie survey with survey data obtained in 2007 on the Japanese academics' preferences and activities should be highly informative.

Table 11.2 Percentages of teaching-oriented faculty members (Carnegie survey in 1992)

Russia	67.6
Chile	66.6
Mexico	64.9
Brazil	61.9
USA	49.2
Australia	48.2
Hong Kong	45.9
Korea	44.4
UK	44.3
Israel	38.6
Germany	34.3
Sweden	33.1
Japan	27.5
Netherlands	24.8
Average	44.0

Source: Ehara (1996)

Table 11.3 Teaching and research preferences of the academics in Japan (1992 and 2007)

(%)	Primarily teaching	Both, more teaching	Both, more research	Primarily research
1992	3.5	24.0	55.2	17.3
2007	5.0	27.3	53.6	14.1

What had changed in the characteristics of Japan's academics 15 years after the Carnegie survey? When asked the same question in 2007, 32.3 % of respondents expressed a preference for teaching, while 67.7 % favored research (Table 11.3). This is not a great change, but it does represent a statistically significant increase in interest in teaching as compared with 1992.

Reflecting the "massification" of higher education during this 15-year period, various measures have been introduced to improve and enrich teaching at universities. One such measure required the clarification of objectives and targets for teaching by each institution. Higher education reform has placed greater emphasis on the teaching function of universities. Considering these trends, it seems fair to say that the shift in preferences toward teaching among Japanese academics over the past 15 years reflects a real trend in higher education, but not a remarkable shift. As of 2007, two out of three academics still indicated that their major interest was in research. There is certainly stronger emphasis on teaching in the world of higher education, and some faculty members are indeed adjusting their inclination accordingly; nevertheless, we can still see that the overall interest of most faculty members remains mainly on research.

11.3.2 Teaching and Research Preferences by Academic Field

In order to more specifically understand the overall shift in preferences among academics, I will analyze the answers to the above question in further detail, focusing on the relationship between teaching and research among faculty members with teaching responsibilities. Research associates ("Joshu" or "Jokyo" in Japanese) and other staff who do not usually engage directly in teaching have been excluded from this analysis. Only professors, associate professors, and assistant professors have been included in the target population for analysis.

First, I consider teaching and research orientation by academic specialty (Table 11.4). We find significant differences. Academics in both the humanities and natural sciences displayed almost no change in their orientation. In 1992, preferences for teaching were more common in the humanities than in other disciplines, but by 2007 teaching orientation in the humanities was below that in the social sciences and approximately equal to that in the engineering and medical, dental, and pharmacy sciences. Research orientation was stronger in the natural sciences than in other fields in 1992, and this trend remained true in 2007. Perhaps reflecting the overall trend, interest in teaching has grown somewhat in the engineering and agricultural sciences. Although the teaching orientation in the social sciences and medical, dental, and pharmacy sciences was not very strong in 1992, it has grown significantly since then.

Table 11.4 Teaching and research preferences of the academics by academic field

(%)	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Medical/dental/ pharmacy
1992 Teaching preferences	32.0	24.2	18.2	26.6	17.2	16.4
2007 Teaching preferences	32.8	38.4	18.6	31.1	21.6	29.0
	n.s.	**	n.s.	n.s.	n.s.	**

Note: $^{**}p < .01$

Table 11.5 Teaching and research preferences of the academics by age group

(%)	Below 40	40s	50s	60s and above
1992 Teaching preferences	17.8	17.9	31.6	40.0
2007 Teaching preferences	16.7	28.4	32.4	43.6
	n.s.	***	n.s.	n.s.

Note: $^{***}p < .001$

11.3.3 Teaching and Research Preferences by Age and Academic Rank

Next I analyze the disparities or similarities existing when examining the orientation of academics by age and academic rank. An outstanding characteristic for Japan according to the 1992 survey was that full professors had a greater orientation toward teaching than other job ranks, in contrast to the other countries, where associate professors and assistant professors showed a stronger teaching orientation than full professors. This implies that a large number of Japanese faculty members in the older age groups were more teaching-oriented. Conversely, younger faculty members had a stronger orientation toward research than toward teaching.

From the survey results of 1992 and 2007 according to age segments (Table 11.5), we see that the inclination toward teaching grew stronger for faculty members in their 40s. As for the other age groups, the slight rise in the teaching orientation for faculty in their 60s and above is not statistically significant, and the levels remained essentially unchanged for those in their 50s and those below 40.

From the analysis by academic job rank (full professors, associate professors, and assistant professors; see Table 11.6), we find that in 2007 the teaching orientation had become stronger among associate professors and assistant professors and had reached almost the same level as that for full professors, among whom teaching orientation was originally strong. However, the change is not statistically significant.

From the above information, we can conclude that the strengthened inclination toward teaching among the ranks of relatively younger people, who often are

Table 11.6 Teaching and research preferences of the academics by academic ranks

(%)	Assistant professors	Associate professors	Full professors
1992 Teaching preferences	23.1	22.9	31.2
2007 Teaching preferences	31.3	28.7	34.4
	n.s.	*	n.s.

Note: *$p < .05$

Table 11.7 Teaching and research preferences of the academics by institutional control

(%)	National universities	Private universities
1992 Teaching preferences	15.3	38.5
2007 Teaching preferences	24.7	43.4
	***	n.s.

Note: ***$p < .001$

associate professors and assistant professors, has given an overall boost to the inclination toward teaching.

11.3.4 Teaching and Research Preferences by Institutional Type

Finally, I consider the situation of disparity in preferences for teaching or research by institutional type based on two factors: institutional control (national versus private universities) and research intensiveness (research versus non-research universities). The data from the perspective of institutional control showed a tremendous disparity in orientation between national and private universities (Table 11.7). According to the 1992 survey, the disparity in teaching orientation between national and private universities was greater than 20 %; in the 2007 survey, this gap had narrowed somewhat, as the percentage with teaching orientation had increased considerably at national universities, while the rise was not as great at private universities. However, the continuing existence of large differences in inclination toward teaching according to institutional control cannot be ignored when the focus is on the structure of higher education in Japan.

From the data by research intensiveness, we again find tremendous disparities in the 1992 survey (Table 11.8). Fewer than 10 % of the teachers at research universities expressed teaching orientation, compared with more than 30 % at non-research universities. However, in the 2007 survey, this gap had almost entirely disappeared. During the intervening 15 years, although the inclination to teach at non-research universities, which had originally been stronger, showed virtually no change, the teaching inclination at research universities greatly increased.

Table 11.8 Teaching and research preferences of the academics by research intensiveness

(%)	Research universities	Non-research universities
1992 Teaching preferences	9.4	32.6
2007 Teaching preferences	31.4	32.9
	***	n.s.

Note: ***$p < .001$

Overall, although there has been a decided shift toward greater emphasis on teaching among the Japanese academics, research orientation continues to predominate. However, when we analyze the details of this shift, we discover that a strong shift in orientation toward teaching has occurred in certain specific subgroups of the profession. Specifically, this shift appears most strongly in the social sciences and in medical, dentistry, and pharmacy sciences; among teachers in their 40s; at the job rank of assistant professors and associate professors; and at national universities and research universities. A characteristic shared by all of the above groups is that they did not show a strong inclination toward teaching prior to the period of higher education reform. That is, the reform focusing on teaching activities, although it did not have a large effect on those groups who had already demonstrated a relatively strong inclination toward teaching, changed the orientation of those who had not shown such an inclination. The result was more homogenization in the degree of inclination toward teaching and research among the various segments of the academic profession.

11.4 Activities of Japanese Academic Professionals

11.4.1 Time Allocation

In this section I analyze several aspects of the actual situation that Japanese academics experience with regard to teaching and research. First I consider the time allocated for teaching, research, and other activities. The survey questionnaire used in both 1992 and 2007 asked each respondent to estimate the time in a typical week spent on different types of professional activities: teaching, research, service, administration, and other activities. The questionnaire asked about the time spent both while classes are in session and during vacations. In my analysis, I used only the data on times when classes are in session. The results indicate that the amount of time devoted to teaching did not change over the intervening 15 years (Table 11.9), while the average time spent on research sharply decreased from 21.7 to 16.7 h. In contrast, time spent on both administrative operations and services increased, and the increase in administrative operations time is particularly conspicuous.

Evidently the academics in Japan have been experiencing a dilemma with regard to dividing available time between not only teaching and research but also between academic and non-academic work. Clearly, the amount of time faculty members can devote to research has been constrained by the increase in time devoted to

Table 11.9 Average time spent per week by faculty members on professional activities (periods when classes are in session)

		Teaching	Research	Services	Administration	Others
1992	Average time	19.7	21.7	3.3	6.0	2.8
	Standard deviation	*11.3*	*12.8*	*6.1*	*5.9*	*3.8*
2007	Average time	20.4	16.7	4.0	7.6	3.1
	Standard deviation	*11.9*	*11.5*	*6.7*	*6.9*	*4.2*

Table 11.10 Levels of courses that faculty members teach

(%)	1992	2007
Undergraduate only	37.0	16.9
Undergraduate and graduate	60.5	80.1
Graduate only	1.9	2.3
No class	0.6	0.7

administrative operations and various kinds of services. We tend to assume that conflicts arise because of the attempts to balance teaching with research, especially in view of the trend toward greater emphasis on teaching related to the recent reforms. On the contrary, however, more serious conflict has arisen between academic work and other activities. In fact, contributing to society through services is one of the three principal missions of the academic profession. Moreover, it is critical for faculty members to be actively involved in the administrative operations of their respective institutions. However, if academic work is strongly demanded as the raison d'être for the academic profession, then the conflicts engendered by actual conditions certainly exacerbate the faculty members' dilemma. As the statistics demonstrate, the decrease in the amount of research time has been especially conspicuous, and there is concern that this trend could adversely impact the research activities of Japanese academics.

11.4.2 Courses Required to Teach

Next I analyze the number of courses by educational level (undergraduate or graduate) for which the faculty members are responsible (Table 11.10). Data indicate that major changes have occurred with regard to the levels of courses the faculty members are responsible for. In general, the proportion of teachers involved in graduate courses has greatly increased, while the number of faculty members responsible only for undergraduate courses has decreased. Since the 1990s, in addition to educational reforms centering on the undergraduate level, the expansion and enrichment of graduate education have been promoted as another key aspect of higher education reform in national policy and at various institutions. This trend is clearly reflected in the types of courses for which the faculty members are responsible.

Table 11.11 Number of courses that faculty members teach in undergraduate programs

	1992		2007	
Number of classes (%)	General education	Major/specialized education	General education	Major/specialized education
0	38.9	5.3	27.4	2.3
1–2	44.0	39.5	57.3	32.5
3–4	11.6	34.2	9.6	30.7
5–7	4.0	17.5	3.9	23.5
More than 8	1.4	3.5	1.7	11.0

I further analyze the number of courses in undergraduate programs for which the faculty members are responsible, classifying the programs into two categories: general education courses and major or specialized education courses (Table 11.11). In 1992, a significant number of the faculty members (38.9 %) were not responsible for general education courses. By 2007 this proportion had decreased, while the proportion of faculty members teaching one or two general education courses had increased. On the other hand, the number of faculty members not teaching any courses whatsoever in a major or specialized area was quite small in 1992 and had declined further by 2007, while the percentage of faculty members responsible for at least five courses of this type had increased substantially. In addition, besides teaching general education courses, as the data from Table 11.10 pointed out, nearly all teachers are responsible for some courses at graduate schools. Since the 1992 survey did not include a question on the number of graduate courses, comparisons on this item are impossible. In 2007, approximately 70 % of faculty members teaching in master's programs were responsible for one or two courses. In doctoral programs, approximately 40 % had no teaching responsibilities and another 40 % were responsible for only one course.

As we have already seen, the amount of time that faculty members devote to teaching has not increased considerably in the 15-year period. However, their teaching load has definitely increased, as shown by the increasing number of courses for which they are responsible. In addition, we can deduce from the relationship between time allocation and the number of courses taught that the amount of time devoted to each course has decreased. Because the amount of time actually spent in classrooms has increased, it is probable that, for many teachers, the amount of time spent on class preparation, giving grades, and commenting on tests and papers has been decreasing. Within the limited amount of time available, faculty members are required to provide teaching in higher density than in the past.

11.5 Changes in the Sense of Belonging

Here, I examine the organizations to which the academic professionals indicate a sense of belonging. Although this sense of belonging is not a factor directly related to the teaching and research conducted by the faculty members, it can have a

Table 11.12 Sense of belonging of faculty members

	(%)	Specialized field	Institution (University)	School/college	Department	Chair/laboratory (Smallest unit)
Overall	1992	96.6	79.7	79.6	85.2	89.2
	2007	96.4	74.9	75.8	82.6	85.0
		n.s.	**	*	n.s.	*
Teaching-oriented faculty members	1992	94.2	85.8	84.3	90.9	92.1
	2007	94.3	77.3	77.6	84.7	86.2
		n.s.	*	*	**	*
Research-oriented faculty members	1992	97.5	77.4	77.6	83.0	88.0
	2007	97.5	73.6	74.9	81.5	84.4
		n.s.	n.s.	n.s.	n.s.	*

Notes: $^{**}p<.01$, $^{*}p<.05$

profound relationship with an individual faculty member's mental or emotional condition when he or she engages in teaching or research. According to the results of the 1992 survey, there are clear differences in the sense of belonging between faculty members with a teaching orientation and those with a research orientation. I focus on whether changes occurred over the intervening 15 years.

I analyze the data according to the following five categories: the specialized field, institution (university), school or college, department, and smallest organizational unit, which includes the chair or laboratory. Results for both teaching-oriented and research-oriented faculty members in the two surveys are shown in Table 11.12.

From an overall perspective, nearly all faculty members responded stating that their specialized field was important to them. As for the other four categories, faculty members' sense of belonging declined across the board in the 2007 survey. Furthermore, examining the results based on the division of teaching- and research-oriented faculty members, the teaching-oriented faculty members showed a comparatively larger decrease in their sense of belonging. The teaching-oriented faculty members had a slightly higher sense of belonging at these levels, but the differences had narrowed. This is because of a greater decline in the sense of belonging among teaching-oriented academics.

Academic research has a cosmopolitan character that is easily compatible with a sense of belonging to one's own specialized area. Commitment to teaching, which has a more local character rooted in the workplace, should be reflected in the sense of belonging to one's own organization, such as one's university, school and other small unit (Ehara 1996). Although the proportion of teaching-oriented faculty members is certainly on the rise, their sense of belonging to their local organization is declining. These results no doubt reflect to some extent the shift in recent years to top-down university management systems based on presidential leadership. In recent years, it has become increasingly difficult for general faculty members to make their views heard in the operation of higher education institutions. Anyhow, the rise in orientation toward teaching does not have a direct connection to the sense of belonging to educational organizations. We can interpret this fact as indicating

certain fragility in the rising tide of interest in teaching. In the context of university evaluation, efforts to highlight the characteristics of individual organizational units, spell out specific educational objectives by department and/or school, and systematic structure and operation of educational programs are expected. However, the teaching orientation of individual faculty members appears to be taking place at a level different from the locally organized units of university education.

11.6 Training for the Academic Profession at Graduate Schools

Investigating the reasons why the Japanese academics have a high research orientation is no easier than discovering why some of them are teaching-oriented. The reasons may lie in some combination of individual predisposition, cultural environment, sense of professional responsibility, alternatives to research (or teaching), institutional practice, career prospects, or evaluation systems, among others.

One reason for Japanese academics' preference may be related to the training processes in the academic profession. In the process of academic training, the key function is graduate education. Through the teaching and research guidance that graduate students receive, along with informal interactions with their advisors and peers, they gradually develop a code of conduct and attitude as members of the academic profession. In that sense, the impact of graduate education on the role consciousness of faculty members is likely to be substantial. The main role of graduate education is, of course, to give research training to future academics. However, in recent years, higher education policy has identified training in teaching skills to have increased importance at graduate schools. For example, the Central Council for Education's report *Graduate Education for a New Era* (2005) recommended that graduate education should provide four types of training: creative research skills for researchers; advanced skills and abilities for professionals; teaching and research skills for university faculty; and advanced academic skills for talented people to enable them to actively participate in a knowledge-based society. How to integrate the first and third functions is a critical issue for graduate education as it shapes the future of the academic profession. How do Japanese academics evaluate the education that they experienced as graduate students?

The questionnaire asked two questions with regard to graduate education: provision of education as a researcher in their own discipline, and education for university teaching. (The questionnaire asked respondents to evaluate the education of their "final degrees," so I excluded the data from those with only bachelors' degrees.) Comparison of the results for 1992 and 2007 shows that both questions elicited more positive responses in 2007 (Table 11.13). Graduate education for university teaching received positive evaluation from about 10 % more of the respondents than in 1992 (55.1–65.4 %), and education as researchers got far higher approval ratings (62.9 % in 1992, 77.5 % in 2007). These data represent a very hopeful sign for the quality of graduate education in Japan.

Table 11.13 Evaluation of quality of graduate education received

(%)	1992	2007	
Training for college teaching	55.1	65.4	***
Training for research in disciplines	62.9	77.5	***

Notes: ***$p<.001$; figures indicate the percentage of respondents who answered "very good" or "good"

Table 11.14 Cross-references of evaluations of research training and training for college teaching

			Training for research in disciplines	
(%)			Good	Not good
Training for college teaching	1992	Good	77.0	18.3
		Not good	23.0	81.7
	2007	Good	79.3	17.0
		Not good	20.7	83.0

It is of interest to analyze the relationship between these two sets of responses. How often did people who indicated positive evaluation for the training for researchers also respond positively about the training for university teachers? Comparison of the results between 1992 and 2007 shows no significant change in the overlap between positive answers or between negative answers for the two functions (Table 11.14).

These results can be interpreted in two ways. From a positive perspective, we can say that both functions are delivered well and in an integrated fashion. But if the general consensus that graduate education is almost entirely a process of research training is accepted, then the situation is that provision for teacher training overlaps, while constituting only a small part of, the provision for research training. In other words, training for university teachers is not seen as an independent function separate from research training. On this basis, a preferable interpretation of the provision of training for teachers could be that it is in fact an adjunct to research training. At present, training for university teachers in each institution's graduate program is still at an initial stage and is not yet a complementary activity. Fujimura (2006) compared the results of the 1992 Carnegie Survey for Japan with those for the United States and found that the US responses were less consistent than those in Japan. He concluded that this is because in the United States, graduate training for university teachers is considered to be largely independent of research training.

If teaching is to assume a better-defined and more important role for the Japanese academic profession, some kind of training for university teachers should be brought into the training process for future academics. As shown above, in recent years research training at graduate schools has received high evaluations from faculty; now, in addition, we need to think about how training as university teachers can be introduced effectively and compatibly with research training.

11.7 Findings and Consideration

In this chapter I have considered teaching and research, particularly focusing on their interrelationships. First, we found that, in line with recent reforms that have emphasized undergraduate education, Japanese academics have somewhat strengthened their teaching orientation, although their research orientation remains predominant. However, although the research orientation of the academics is often construed in a negative way, there is no need to conclude that the entire situation is negative. This is especially true when we emphasize the integration of research and teaching, and if we take the stance that much of teaching is based on research. However, in light of the various costs and time commitments involved and the limited resources of faculty members, it is not realistic to seek some uniform, comprehensive principle on how faculty should approach and integrate both teaching and research into their work. As I pointed out earlier, the reform trends since the 1990s have had a strong influence on particular academic strata, especially those that previously did not have a strong teaching orientation. The emphasis of reform has clearly contributed toward an overall increase in consciousness of the importance of teaching. Alternatively, considering the situation from the standpoint of a distribution of teaching and research activities within each academic stratum, it may be fair to state that reform has resulted in a more consistent dispersal of research and teaching functions across fields.

Next, through analysis of faculty members' actual working conditions, we found that academic work is being adversely impacted. Based on the increasing number of classes for which each faculty member is responsible, we can infer that the amount of time that he or she can devote to each class is constrained. With current conditions that seem to run counter to the development of more fully rounded and advanced teaching capacities, currently the pressure to cut costs in various areas is winning out. Even as the inclination to teach grows stronger, we detected a decrease in faculty members' sense of belonging to campus organizations, including their universities, schools, and departments. This trend is especially evident among teaching-oriented faculty, and the current orientation toward teaching differs from the intent of national policies. Thus, there is reason to doubt whether this trend necessarily has any straightforward connection with organized efforts.

As for graduate education, consciousness concerning teacher training is steadily increasing. However, under the present conditions, this function is regarded as taking a back seat to, or at best as being associated with, the function of training researchers. Of course, if the primary function of graduate education is to train researchers, then in light of the premise of integrating teaching and research, we should not necessarily interpret this situation negatively. Nevertheless, if the teaching function is to be more fully positioned as one of the productive and significant roles in the academic profession, it will be necessary to develop policies designed to place greater value on the role of teaching during the process in which future faculty members acquire their behavioral patterns and attitudes as university teachers.

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Chapter 12
The Academic Profession and Evaluation

Masataka Murasawa

12.1 Introduction

This chapter reviews the expansion of higher education evaluation from the point of view of individual academic staff based on the Carnegie survey of the academic profession in 1992 and the 2007 Japanese survey that repeated (and extended) the questions of the 1992 Carnegie survey.

As is generally recognized, one of the most important impacts on Japanese higher education during this period of 15 years has been reform of the standards for establishment of universities including introduction of self-evaluation systems. Subsequently, various levels, targets, and aims have been specified for the evaluation systems—such as national university evaluation, certified evaluation and accreditation, external or third-party evaluation, professional school evaluation, evaluation of institutional and departmental levels, and levels of individual academics' activities. This range of diversity makes it difficult to establish the purpose and procedures appropriate to each evaluation. Moreover, a mushrooming of the various institutions responsible for evaluation and their differing practices has led to confusion and a burden on academics.

As a consequence, many studies and reports on evaluation have been published (Kitamura 2000; Shinbori 1993; Yonezawa 2000; Yonezawa et al. 2000). These range from case studies of the impact of introducing evaluation activities in individual universities to analyses of the effects of introduction of evaluation systems in other countries. Unfortunately, these studies appear to lack any discussion of the impact of the introduction of evaluation on individual members of academic staff and their consciousness.

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Among the purposes of evaluation is assessment of academic output and productivity. Accordingly, it seems desirable to establish what effects are evident on individual academic staff. The collected data sets of the 1992 and 2007 surveys provide an opportunity to examine some of the relevant factors.

12.1.1 Data

Data collected through the two surveys of the academic profession in 1992 and 2007 were used. Preliminary screening of the responses was done at three levels:

1. Implementation of periodical evaluation at respondent's institution (Yes or No).
2. Implementation of evaluation of research, education, and social service activities at respondent's institution (each activity Yes or No).
3. Evaluation of each individual activity and its reflection in provision of research funding and salary level of respondent (Yes or No).

   (Items 1 and 2 were included in both the surveys; item 3 was included only in the 2007 survey.)

Before starting to discuss the results, it is important to note the nature of the survey, which is based on the response from academics: that is, the surveys only identified academics' perceptions of the situation within their university, not necessarily an objective picture. It is, however, important to know the perception of academics in order to construct what is the real picture for them.

12.1.2 Implementation of Periodic Evaluation

In 1992, 30 % of national university and 57 % of private university respondents said that their institution had introduced some form of periodic evaluation. By 2007, the proportions had increased to more than 70 % of respondents in both national and private universities (Fig. 12.1).

12.1.3 Implementation of Evaluation for Research, Teaching, and Social Service

In 1992, for those institutions where it had been introduced, evaluation was predominantly concerned with research; this was the case for over 80 % of respondents who were subject to evaluation, in both national and private universities. At that time much smaller proportions of respondents identified evaluation of teaching or social service activity: for teaching, 25 % of those in national universities and 46 % of those in private universities; for social service there were even lower proportions,

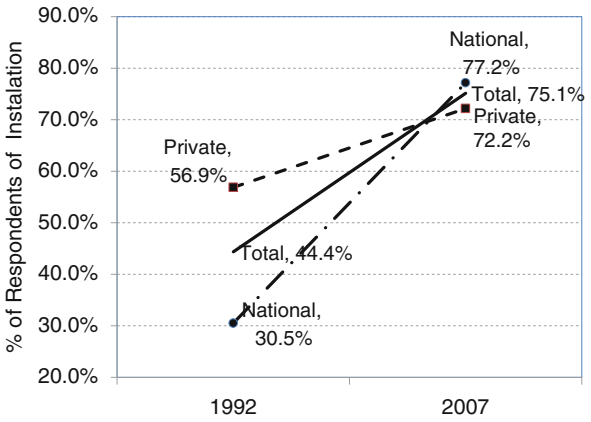

Fig. 12.1 Implementation of periodic evaluation

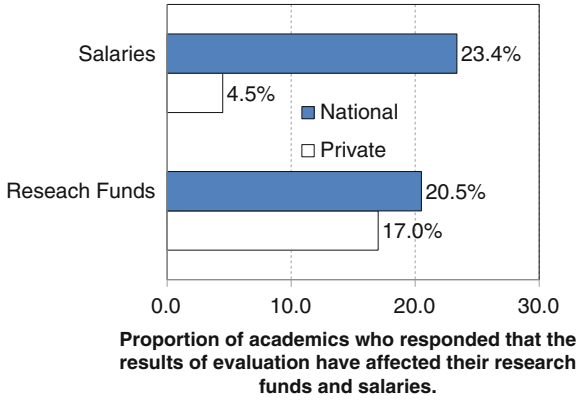

Fig. 12.2 Impact of evaluation on research funding and salary level

10 % in national universities and 17 % in private universities. By 2007, the scope of the evaluations had broadened so that for both national and private universities, respondents indicated that in those institutions where evaluations took place, over 80 % of them included both research and teaching. An equally large increase in both the national and private university sectors had occurred for evaluation of social service, but to a lower overall level of 50 % of the respondents.

12.1.4 Impact of Evaluation on Research Funding and Salary Level

The survey in 2007 sought information about any impact of evaluation on the provision of funding for research or on the level of salary. The results (Fig. 12.2) show that 20 % of national and 17 % of private university academics recognized

that their research funding was affected. For salaries, however, while a similar proportion, 23.4 %, of national university academics recognized an effect on salary, this occurred for a very small proportion, 4.5 %, in private universities.

12.2 Statistical Analyses of the Effects of Evaluation

One of the purposes of instituting evaluation was to establish the extent to which academics were able to fulfill their professional commitment to teaching and research. Included in this was the idea that the benefits might include both encouragement to extend academic productivity through recognition of its achievement and facilitation of the process by directing the distribution of financial resources more effectively. The results of the 1992 and 2007 surveys provide data that permit statistical analyses of effects of evaluation on these two outcomes at the level of individual respondents.

12.2.1 Variables

The major components of academic productivity are research productivity and teaching productivity. Research productivity is commonly assessed quantitatively in terms of research publications. In the surveys, respondents indicated the number of academic articles they had published in the previous 3 years (both 1992 and 2007 surveys), and the number of these that were refereed papers (2007 survey only). These measures provided convenient outcome (dependent) variables in order to assess the effects of evaluation on research. For teaching productivity, no such convenient quantitative indicator exists. Qualitatively, the surveys asked respondents to indicate whether their interests lay primarily or mainly in teaching or in research. The responses indicate that overall interests lie predominantly in research in Japan. However, it is possible to quantify these responses by assigning a nominal value of 1 to those respondents who indicated that their interests lay primarily or mainly in teaching, and a nominal value of 0 to those whose interests were chiefly in research. These values were then able to be used as dependent variables in order to identify the effect of evaluation on teaching.

The surveys provided a wide range of independent variables. These were either included in the analyses numerically or coded as shown below:

1. Gender (dummy variable, 1 = male, 0 = female)
2. Age (in years)
3. Possession of a doctoral degree (1 = yes, 0 = no)
4. Academic status (two dummy variables indicating associate professor and lecturer, baseline is professor)
5. Fixed-term appointment (1 = f-t appointment, 0 = not)

6. Research hours (in service, hours per week)
7. Academic discipline (dummy variables indicating humanities, social science, science, technology, agriculture, medical sciences, education, home economics and "other"; baseline is "other")
8. Educational sector (1 = national, 0 = private)
9. Number of students (in thousands taught)
10. Year of survey (1 = 2007, 0 = 1992)
11. Research evaluation (1 = yes, 0 = no)
12. Teaching evaluation (1 = yes, 0 = no)
13. Effect of evaluation on funding (1 = changed research funding, 0 = no change)
14. Effect of evaluation on salary (1 = changed salary, 0 = no change)

12.2.2 Statistical Model

Generalized Liner model (GLM) are fit using the statistical software R to the CAP full survey data sets (for GLM and R, please see Crawley 2005; Faraway 2006; Gelman and Hill 2007). After preliminary trials, a negative binomial distribution was selected as appropriate for the hypothesized error distribution because the dependent variable for research is the number of published papers, which is a count, not a normal distribution. Logarithmic functions were used as link functions.

12.3 Results

The results are shown in Tables 12.1, 12.2, and 12.3. Figures in the tables show the results in a standard statistical form. In this, entries in the columns headed "β" indicate the relative effects of the independent variables on the dependent variable and the sign indicates a positive or negative effect. The column headed "EXP(β)" indicates the magnitude of the effect of a given independent variable relative to its base value (0).

12.3.1 Evaluation and Research Outcomes

As shown in Table 12.1, when personal and organizational profiles are controlled, implementation of research evaluation shows no clear evidence of increasing research productivity. Only for the data from the 1992 survey do the results suggest that the research productivity is higher for those in institutions where research evaluation had been implemented. Even so, the outcome for national universities where evaluation had been implemented is shown to be lower than for private universities. We should not, however, interpret this as an indication that implementation of

Table 12.1 Evaluation and research outcomes

	Dependent variable: number of academic articles and papers								Dependent variable: number of refereed papers		
	Total			1992			2007		2007		
	β		Exp(β)	β		Exp(β)	β	Exp(β)	β		Exp(β)
Intercept	0.82	**	2.28	0.79	+	2.21	0.81	+	2.25	0.38		1.46
Sex: male	0.27	*	1.31	0.18		1.20	0.26	+	1.30	0.03		1.03
Age	–0.02	***	0.98	–0.02	***	0.98	–0.01	*	0.99	–0.03	***	0.97
Job status [Baseline: Professor]												
Lecturer	–0.25	*	0.78	–0.20		0.82	–0.26		0.77	–0.62	***	0.54
Associate professor	–0.28	***	0.76	–0.28	**	0.75	–0.23	*	0.80	–0.41	***	0.66
Doctoral degree	0.77	***	2.16	0.91	***	2.48	0.61	***	1.85	1.03	***	2.81
Fixed-term contract	0.08		1.09	–		–	0.21		1.23	0.40	**	1.50
Research hours (per week)	0.01	***	1.01	0.01	**	1.01	0.01	***	1.01	0.02	***	1.02
Number of students (thousands)	0.01	***	1.01	0.01	**	1.01	0.01	*	1.01	0.02	***	1.02
National sector	0.77	***	2.16	1.15	***	3.17	0.33		1.39	0.43		1.53
Research evaluation	0.13		1.13	0.34	*	1.40	–0.09		0.91	0.16		1.18
National × evaluation	–0.23		0.79	–0.64	**	0.52	0.21		1.23	0.13		1.14

Discipline [Baseline: Others]												
Humanities	0.31	*	1.37	0.52	**	1.69	0.02		1.02	–0.64	+	0.53
Social science	0.50	**	1.65	0.66	***	1.94	0.46	+	1.59	–0.17		0.85
Science	0.50	**	1.65	0.29		1.33	0.76	**	2.15	0.99	**	2.70
Technology	0.54	***	1.72	0.22		1.24	0.95	***	2.60	1.25	***	3.47
Agriculture	0.51	**	1.66	0.36	+	1.44	0.71	*	2.02	1.06	**	2.89
Medical sciences	1.07	***	2.90	1.15	***	3.14	1.01	***	2.74	1.14	**	3.12
Teacher training	0.64	**	1.89	1.15	***	3.16	0.02		1.02	0.39		1.48
Home economics	1.01	***	2.75	1.19	***	3.29	0.72	+	2.06	1.01	+	2.74
Year of survey	0.07		1.07	–		–	–		–	–		–
Deviance	1,307.6			681.31			624.82			606.6		
Df	1,132			591			523			523		
AIC	6,804.9			3,384.0			3,396.8			2,772.5		

Notes: ***$p<0.001$, **$p<0.01$, *$p<0.05$, +$p<0.1$

Table 12.2 Effects on research outcomes of evaluation on funding and salary

	No. of refereed papers			No. of refereed papers		
	β		Exp(β)	β		Exp(β)
Intercept	1.23	*	3.42	1.35	*	3.86
Sex: male	–0.02		0.98	–0.01		0.99
Age	–0.04	***	0.96	–0.04	***	0.96
Job status [Baseline: Professor]						
Lecturer	–0.85	***	0.43	–0.72	***	0.49
Associate professor	–0.58	***	0.56	–0.55	***	0.58
Doctoral degree	1.11	***	3.03	1.07	***	2.92
Fixed-term contract	0.52	**	1.67	0.59	***	–
Research hours (per week)	0.02	***	1.02	0.02	***	1.02
Number of students taught (thousands)	0.02	**	1.02	0.02	**	1.02
National sector	0.58	***	1.79	0.53		1.71
Evaluation change to res. funds	–0.01		0.99	–		–
National	–0.18		0.83	–		–
National × change to res. funds	–		–	–0.34		0.71
National × evaluation to salary	–		–	0.26		1.30
Discipline [Baseline: Others]						
Humanities	–0.80	+	0.45	–0.75	+	0.47
Social science	–0.34		0.71	–0.43		0.65
Science	0.79	*	2.20	0.86	*	2.35
Technology	1.16	**	3.20	1.20	**	3.31
Agriculture	0.88	*	2.42	0.93	*	2.53
Medical sciences	0.92	*	2.51	0.85	*	2.35
Teacher training	0.69		2.00	0.80		2.22
Home economics	0.71		2.03	0.73		2.07
Deviance	500.6			477.91		
Df	428			406		
AIC	2,288.2			2,208.2		

Notes: ***$p<0.001$, **$p<0.01$, *$p<0.05$, + $p<0.1$

research evaluation has had a negative impact on the research outcome in the national universities. This survey data is not longitudinal but cross-sectional, so the direction of any causal effect is not clearly determined. It could perhaps better be described as indicating that lower academic outcomes in the national universities affect implementation of research evaluation.

The results from analyses of the effects of changes to research funding and salaries are shown in Table 12.2. Any effects of linkage between personal evaluation and either research funding or salary are not found to have statistical significance. Consequently, no conclusions can be drawn from these analyses on the effects of evaluation-based incentives on research productivity.

Table 12.3 Evaluation and aspiration for teaching

	Dependent variable: aspiration for teaching										
	Total			1992			2007 (1)			2007 (2)		
	β		Exp(β)	β		Exp(β)	β		Exp(β)	β		Exp(β)
Intercept	–2.98	***	0.05	–2.88	**	0.06	–2.86	**	0.06	–3.42	**	0.03
Sex: male	–0.08		0.92	–0.39		0.68	0.09		1.10	0.21		1.23
Age	0.05	***	1.05	0.06	***	1.06	0.04	**	1.04	0.06	***	1.06
Job status [Baseline: Professor]						1.00						
Lecturer	0.19		1.21	–0.62		0.54	0.68	+	1.98	0.96	*	2.62
Associate professor	0.14		1.15	–0.11		0.89	0.29		1.34	0.53		1.70
Doctoral degree	–1.35	***	0.26	–1.53	***	0.22	–1.24	***	0.29	–1.12	***	0.33
Fixed-term contract	–0.08		0.92	NA		NA	–0.24		0.79	–0.21		0.81
Number of students (thousands)	–0.01		0.99	0.00		1.00	–0.02	+	0.98	–0.03	*	0.97
National sector	–0.82	**	0.44	–1.09	**	0.34	–0.06		0.94	–0.68	**	0.51
Teaching evaluation(1)	0.33	+	1.40	0.27		1.31	0.61		1.84	–		–
Evaluation change to salary(2)	–		–	–		–	–		–	–1.17		0.31
National×teaching eval.(1)	0.25		1.28	0.60		1.82	–0.47		0.63	–		–
National×change to salary(2)	–		–	–		–	–		–	1.15		3.17

(contiuned)

Table 12.3 (contiuned)

	Dependent variable: aspiration for teaching										
	Total			1992			2007 (1)			2007 (2)		
	β		Exp(β)	β		Exp(β)	β		Exp(β)	β		Exp(β)
Discipline [Baseline: Others]												
Humanities	–0.74	*	0.48	–0.86	*	0.42	–0.39		0.68	0.22		1.24
Social science	–0.36		0.70	–0.60		0.55	0.05		1.05	0.29		1.34
Science	–0.57	+	0.56	–0.70		0.50	–0.27		0.77	–0.35		0.71
Technology	0.16		1.17	0.06		1.07	0.55		1.74	0.68		1.97
Agriculture	0.09		1.09	–1.09	**	0.34	0.17		1.18	0.58		1.79
Medical sciences	–0.03		0.97	–0.08		0.92	0.33		1.40	0.33		1.39
Teacher training	0.58		1.79	–0.19		0.83	1.41	+	4.11	1.41		4.11
Home economics	–0.17		0.85	–0.60		0.55	0.22		1.25	0.93		2.53
Year of survey	0.27		1.30	–		–	–		–	–		–
Deviance	1,320.1			585.34			712.65			533.31		
Df	1,252			588			646			486		
AIC	1,362.1			623.34			752.65			573.31		

Notes: ***$p<0.001$, **$p<0.01$, *$p<0.05$, +$s<0.1$

12.3.2 Evaluation and Aspiration for Teaching

Table 12.3 presents the results from the analyses of the impact of teaching evaluation on teaching aspiration. None of the results relevant to this issue have any acceptable statistical significance even though the extent of implementation of teaching evaluation based on the surveys rose from around 80 % in 1992 to over 90 % in 2007. Neither is there any analytical evidence to indicate a linkage between salary levels after evaluation and teaching aspiration.

12.4 Conclusion

This paper has illustrated the extent to which the higher education evaluation system has become established and spread to affect almost all Japanese academics.

The absence of significant results for the impact of evaluation on research productivity as indicated by publications or on teaching orientation must be considered surprising given the extent to which it extends across universities in Japan. However, neither does it permit any conclusions to be drawn about the wider impact of evaluation or of the effect of explicit incentives based on the results of evaluation. These are issues which require further exploration and discussion.

These findings remind us that some important research findings for current Japanese companies showed that a pay-by-merit system does not work; rather, the traditional age-based remuneration system and raising intrinsic incentives by giving challenging goals have good effects on productivity (Takahashi 2004). Activities in colleges and universities are naturally far from a pay-by-merit system; however, it is believed that the incentive for academics is not the merit, but their interest in the issue and the investigation in themselves. To support this incentive, research and teaching funds and salaries have traditionally been allocated not according to a merit-based system but according to professional scales based on age, experience and seniority, and this should continue in the future.

In Japan, however, evaluation has been introduced without discussion and validation, only importing and imitating systems from foreign countries out of context. A merit-based allocation system, together with a top-down management style, is solely a political initiative. Based on the findings of this chapter, now is the time to rethink the appropriateness of such a system.

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Chapter 13
Internationalization

Futao Huang

13.1 Introduction

Since the latter part of the 1990s, affected by various domestic and international factors, significant changes have occurred in internationalization of the academic profession in Japan. Except for a very few publications, which are concerned with the life style of the academic profession or the teaching and research activities undertaken by the academic profession in some selected countries in a comparative perspective (Arimoto 1993; Arimoto and Ehara 1996; Altbach 2003; Welch 1997; Huang 2006, 2007, 2009), little research has been published on the internationalization of the academic profession in recent years with a quantitative perspective focused on Japan. However, it is generally acknowledged that one of the most remarkable changes in higher education worldwide, including the academic profession, since the latter part of the 1990s is that internationalization has been integrated into almost every aspect or dimension of teaching and research activities conducted by faculty members in higher education institutions in most industrialized nations. Moreover, the international activities with which both faculty members and students are involved have been increasingly considered as important indicators to measure top quality or world-class universities in many well-known higher education ranking systems, such as those of the Times Higher Education Supplement, Shanghai Jiaotong, University (Academic Ranking of World Universities), and US News Week. In the Japanese context, since the 1980s, many strategies have been developed to facilitate internationalization of higher education at both policy and institutional levels. Compared with great achievements that have been accomplished in accepting international students and dispatching local students abroad, it is argued that further

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efforts should be made in the internationalization of the academic profession, including attracting more foreign faculty members, and developing English-language degree programs in Japanese higher education institutions in particular.

As indicated in other chapters in this volume, the data to be analyzed in this chapter come from two similar surveys in Japan. The first survey was carried out in 1992 as part of the International Survey of the Academic Profession by the Carnegie Foundation for the Advancement of Teaching; the second survey was implemented in 2007 based on the Changing Academic Profession project with 21 nations and one region involved. Due to the fact that similar questionnaires were adopted with almost the same target institutions in the two surveys, it is possible to identify what changes had happened to Japan's academic profession over the period 1992–2007.

This chapter is mainly concerned with the changes in the actual situation of Japan's academic profession and their views on internationalization during the 15 years. The chapter deals with not only the overall changes in the internationalization of Japan's academic profession, but also relevant changes in the internationalization of Japanese higher education institutions by sector and discipline between 1992 and 2007. The chapter comprises four sections. In the first, changes in the extent of the international academic activities undertaken by the academic profession will be identified by year, sector, and discipline. In the second section, the changes in the extent of the respondents' institutions will be discussed. In the third section, a focus will be placed on changes in the Japanese academic profession's views and their perceptions of internationalization or international exchange activities. In the fourth section, the distinguishing characteristics of the international activities carried out by the Japanese academic profession are examined and the views of the academic profession on internationalization over the period 1992–2007, as well as major issues facing the academic profession in Japan, are explored.

13.2 Changes in the Extent of Personal Academic Activities in an International Dimension

With respect to the extent to which faculty members are engaged in international activities, three aspects of their activities are touched on. They include work published as articles or books in another country, work written and published in a language other than their mother tongue, and classes organized for students from another country.

First, as indicated in Table 13.1, the data for the 3-year periods preceding the surveys show significant differences in the responses to the items "Articles or books published abroad" and "Articles or books written in foreign languages." To illustrate, the average numbers provided by the survey responses had increased from 1.68 in 1992 to 2.28 in 2007 and from 3.89 in 1992 to 5.93 in 2007 respectively. In contrast, no significant difference is identifiable in response to the item "Lectures providing for international students." Therefore, it is reasonable to assume that Japanese faculty members had endeavored to undertake more international research

Table 13.1 International academic activities (past 3 years)

			Sector		Discipline						
	Year	Average number	National	Private	Humanities	Social sciences	Science	Engineering	Agriculture	Medicine and dentistry	Teacher training
Articles or books published abroad	1992	1.68	2.33	0.97	0.14	2.63	1.32	2.03	2.77	0.53	0.20
	2007	2.28	2.92	1.23	0.33	1.95	2.88	3.12	3.47	0.58	0.52
	Average	1.90	2.58	1.05	0.22	2.34	2.00	2.44	3.03	0.55	0.29
	p	**	ns	ns	ns	ns	**	ns	ns	ns	**
Articles or books written in foreign languages	1992	3.89	5.60	2.02	0.50	6.66	4.67	4.74	5.77	0.81	0.47
	2007	5.93	7.63	3.09	0.53	9.37	5.90	7.50	7.07	1.12	1.14
	Average	4.64	6.44	2.35	0.51	7.80	5.20	5.79	6.25	0.93	0.66
	p	***	***	**	ns	*	ns	**	ns	ns	***
Lectures provided for international students	1992	1.15	1.45	0.83	0.55	1.33	1.55	1.02	0.58	2.50	1.09
	2007	1.25	1.41	0.89	0.60	1.85	1.65	0.86	0.75	2.05	0.87
	Average	1.19	1.43	0.85	0.57	1.55	1.59	0.96	0.64	2.32	1.03
	p	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns

Notes: ***$p<0.001$, **$p<0.01$, *$p<0.05$

activities, which concentrated on making publications abroad and writing their articles or books in a foreign language, rather than more teaching activities.

Second, by sector, while the data indicate that in both national and private sectors there had been an increase in average numbers of publications abroad and in foreign languages, only those in foreign languages are statistically significant.

Third, by discipline, while the responses show a general tendency to have increased over time, significant changes are shown only in limited areas. In terms of publications in foreign countries, significant differences are shown for Science and Teacher Training, rising from 1.32 to 2.88 and 0.20 to 0.52 respectively; for articles or books written in foreign languages, significant increases are found in Teacher Training, from 0.47 to 1.14, in Social Sciences, 6.66 to 9.37, and Engineering, from 4.74 to 7.50 respectively.

Table 13.2 provides similar data for publications over the two 10-year periods (i.e., 1982–1992, 1997–2007) preceding the two surveys. First, while numerically in all categories the responses showed increased activity over the 15-year period, only in limited areas were the changes statistically significant. In particular, there was little evidence that Japanese faculty members had devoted any significant effort to international teaching activities. Second, by sector, the data confirm an increase in the numbers of articles or books published abroad and written in foreign languages, particularly by faculty in the national universities. Third, by discipline, significant increases in numbers of "Articles and books published abroad" are confirmed for faculty in Humanities and Agriculture and for "Articles and books written in foreign languages" by faculty in Science, Engineering, and Medicine and Dentistry. However, in the response to the item "Lectures provided for international students," except for the Humanities, none of the numerical increases has statistical significance.

13.3 Changes in the Extent of International Activities at Respondents' Institutions

The overall changes by year are indicated in Table 13.3. While no significant changes could be found in the item "Foreign academics have taught courses," there had been an increase in the mean percentage of the responses to the other three items over the period 1992–2007. For example, the mean percentage of the responses "Frequently" alone to the item "International conferences and seminars have been held" had grown from 23.1 % to 31.0 % between 1992 and 2007. Similarly, the mean percentages of the responses "Frequently" to the items "Foreign students have been enrolled" and "Our students have studied abroad" had risen from 58.4 % to 62.8 % and from 53.2 % to 55.1 % over the period respectively. However, it is worth stressing that though the growth in the percentage of the responses "Frequently" to both "Foreign students have been enrolled" and "Our students have studied abroad" could be identified, the percentage of the responses "Never" to both items had also expanded, growing from 3.1 % to 3.6 % and 4.7 % to 6.0 % respectively.

Table 13.2 International academic activities (past 10 years)

			Sector		Discipline						
	Year	Average	National	Private	Humanities	Social sciences	Science	Engineering	Agriculture	Medicine and dentistry	Teacher training
Articles or books published abroad	1992	4.72	6.30	2.99	0.53	1.38	7.76	6.28	3.65	6.54	0.41
	2007	6.58	8.20	3.91	1.82	1.57	10.05	9.31	7.69	5.31	1.20
	Average	5.40	7.08	3.28	0.90	1.46	8.61	7.44	5.41	6.02	0.73
	p	**	*	ns	**	ns	ns	ns	*	ns	ns
Articles or books written in foreign languages	1992	10.79	15.32	5.85	1.53	2.26	15.42	13.35	14.08	18.10	1.82
	2007	17.01	21.55	9.41	3.21	3.02	20.73	21.28	17.77	26.49	1.20
	Average	13.09	17.89	6.96	2.01	2.56	17.39	16.38	15.68	21.64	1.57
	p	***	***	***	***	ns	**	**	ns	*	ns
Lectures provided for international students	1992	2.43	2.94	1.87	1.60	4.70	1.43	2.26	3.28	3.13	1.14
	2007	2.79	3.21	1.96	3.88	3.96	1.80	2.20	2.44	3.55	3.40
	Average	2.56	3.05	1.90	2.25	4.41	1.57	2.24	2.92	3.31	2.05
	p	ns	ns	ns	*	ns	ns	ns	ns	ns	ns

Notes: ***$p<0.001$, **$p<0.01$, *$p<0.05$

Table 13.3 During the past three years at this institution, how frequently have the following occurred? (by year)

	Year	Frequently (%)	Occasionally (%)	Rarely (%)	Never (%)	Total (%)	
Foreign academics have taught courses	1992	43.2	34.1	11.4	11.3	100.0	ns
	2007	43.2	32.9	13.8	10.1	100.0	
	Total	43.2	33.6	12.3	10.8	100.0	
International conferences and seminars have been held	1992	23.1	39.5	21.3	16.1	100.0	***
	2007	31.0	40.9	17.6	10.5	100.0	
	Total	26.1	40.0	19.9	14.0	100.0	
Foreign students have been enrolled	1992	58.4	28.1	10.5	3.1	100.0	**
	2007	62.8	26.8	6.8	3.6	100.0	
	Total	60.0	27.6	9.2	3.3	100.0	
Our students have studied abroad	1992	53.2	28.2	13.9	4.7	100.0	*
	2007	55.1	29.0	9.9	6.0	100.0	
	Total	53.9	28.5	12.4	5.2	100.0	

Notes: ***$p<0.001$, **$p<0.01$, *$p<0.05$

Table 13.4 reveals that there had been increases in the mean percentages of the responses to the three items "Foreign academics have taught courses," "International conferences and seminars have been held," and "Foreign students have been enrolled" by the national sector. According to the data, with respect to the item "Foreign academics have taught courses," though there was no major change in the response "Occasionally," its mean percentage of the responses "Frequently" had increased from 33.8 % to 38.9 % over the 15-year period. In relation to both "International conferences and seminars have been held" and "Foreign students have been enrolled," their percentages of the responses "Frequently" had increased; in particular, the percentage of the response to the former had a relatively noticeable growth, from 22.9 % to 37.4 % over the period 1992–2007.

However, in private institutions, the only significant difference could be found in the response to the item "Our students have studied abroad." In contrast to a slight decrease in the percentage of the response "Frequently" to the same item, from 57.2 % to 61.7 %, the percentage of the response "Occasionally" had risen from 26.6 % to 34.1 % during the 15-year period. Both results put together show that there had been a clear rise in the percentage of the responses to the item. This suggests that among the four major activities, much more progress had been made in dispatching their students to study abroad than in the other three activities in private institutions.

Table 13.5 indicates the changes in the extent of the international activities at respondents' institutions by discipline. Significant differences were found in Humanities and Social Sciences in the responses to the statement "Foreign academics have taught courses" and "International conferences and seminars have been held," while in Medicine and Dentistry and Others, statistically meaningful

Table 13.4 During the past 3 years at your institution, how frequently have the following occurred? (by sector)

	Year	Frequently (%)	Occasionally (%)	Rarely (%)	Never (%)	Total (%)	
Foreign academics have taught courses							
National	1992	33.8	35.5	16.0	14.7	100.0	*
	2007	38.9	35.6	15.9	9.6	100.0	
	Total	36.0	35.5	15.9	12.5	100.0	
Private	1992	51.5	32.7	7.5	8.3	100.0	ns
	2007	50.1	28.6	10.9	10.4	100.0	
	Total	51.1	31.4	8.6	9.0	100.0	
International conferences and seminars have been held							
National	1992	22.9	40.4	21.6	15.1	100.0	***
	2007	37.4	42.4	16.4	3.8	100.0	
	Total	29.4	41.3	19.3	10.1	100.0	
Private	1992	23.3	38.7	21.0	16.9	100.0	ns
	2007	20.1	38.7	19.2	22.1	100.0	
	Total	22.4	38.7	20.5	18.5	100.0	
Foreign students have been enrolled							
National	1992	66.0	26.8	4.8	2.4	100.0	*
	2007	73.4	21.8	2.6	2.3	100.0	
	Total	69.1	24.7	3.9	2.3	100.0	
Private	1992	51.3	29.2	15.8	3.7	100.0	ns
	2007	46.9	34.2	13.2	5.7	100.0	
	Total	49.9	30.8	15.0	4.3	100.0	
Our students have studied abroad							
National	1992	57.2	29.9	9.2	3.6	100.0	ns
	2007	61.7	25.8	7.9	4.6	100.0	
	Total	59.1	28.1	8.6	4.1	100.0	
Private	1992	49.5	26.6	18.2	5.7	100.0	**
	2007	45.1	34.1	12.8	7.9	100.0	
	Total	48.2	28.9	16.5	6.4	100.0	

Notes: ***$p<0.001$, **$p<0.01$, *$p<0.05$

data are evident in the statement "Foreign students have been enrolled." In terms of the statement "Our students have studied abroad," meaningful change could only be found in the minor disciplines grouped as Others.

Table 13.5 During the past 3 years at your institution, how frequently have the following occurred? (by discipline)

		Foreign academics have taught courses		International conferences and seminars have been held			Foreign students have been enrolled			Our students have studied abroad		
Discipline	Year	Frequently (%)	Occasionally (%)	Frequently (%)	Occasionally (%)		Frequently (%)	Occasionally (%)		Frequently (%)	Occasionally (%)	
Humanities	1992	69.0	24.2	25.4	35.7	**	67.6	21.2	ns	63.6	23.0	ns
	2007	78.8	16.1	39.3	39.3		76.7	18.3		75.8	16.7	
Social sciences	1992	54.0	26.7	27.6	31.2	**	71.4	23.4	ns	64.7	26.2	ns
	2007	50.0	35.3	26.6	48.4		68.8	25.5		60.0	30.7	
Science	1992	42.9	31.3	25.4	44.1	ns	62.5	25.6	ns	53.3	26.5	ns
	2007	37.9	37.9	39.1	36.7		62.6	29.1		55.7	26.4	
Engineering	1992	40.7	30.9	21.3	42.4	ns	62.0	26.5	ns	54.3	26.6	ns
	2007	31.7	35.8	30.1	38.8		57.0	28.7		45.5	30.9	
Agriculture	1992	32.7	37.5	24.0	44.2	ns	67.2	27.6	ns	60.2	31.0	ns
	2007	39.5	30.3	34.1	42.7		77.6	18.8		64.3	26.2	
Medicine and dentistry	1992	22.6	36.9	23.2	47.3	ns	44.3	42.1	*	44.9	38.3	ns
	2007	31.8	36.4	25.8	47.1		57.7	28.2		50.6	31.6	
Others	1992	36.2	52.3	16.5	28.4	ns	37.3	29.3	***	36.4	26.7	***
	2007	44.0	36.0	13.6	36.4		63.0	22.2		44.0	40.0	

Notes: ***$p<0.001$, **$p<0.01$, *$p<0.05$

Respondents were asked to indicate the frequency on a 4-point scale: 1 Frequently, 2 Occasionally, 3 Rarely, 4 Never

13.4 Respondents' Views on International Activities

As shown in Table 13.6, the proportions of respondents who agreed with all of the four international activities identified had declined by 2007. Except for the percentage of the responses to the item "In order to keep up with developments in my discipline, a scholar must read books and journals published abroad," there had been an increase in the percentages of respondents who disagreed with the other three statements. As a result, it would be possible to assume that respondents held negative perceptions on international activities in their institutions. However, it should be pointed out that, except for the responses to the statement "The curriculum at this institution should be more international in focus," the proportion of respondents who "Agreed" with the other three statements all had exceeded 60 % in 1992. Though there had been a drop in the proportion of the respondents who agreed with most of the statements from 1992 to 2007, the percentages of the respondents who "Agreed" with the statement "Connections with scholars in other countries are very important to my professional work" accounted for 53.3 % of the total; and those who "Agreed" with the statement "In order to keep up with developments in my discipline, a scholar must read books and journals published abroad" still amounted to as high as 70.5 % of the total. Overall, an overwhelmingly large majority agreed rather than disagreed with the statements; disagreement was shown by less than 7 % of respondents in 2007. Especially, the percentage of respondents

Table 13.6 We would like to know more about your attitudes toward international connections in higher education. Please indicate how you feel about the following issues (by year)

	Year	Agree (%)	2 (%)	Neutral (%)	4 (%)	Disagree (%)	Total (%)	
Connections with scholars in other countries are very important to my professional work	1992	62.7	25.2	10.5	0.9	0.8	100.0	***
	2007	53.3	28.8	15.0	1.9	1.0	100.0	
	Mean	59.2	26.5	12.1	1.3	0.9	100.0	
In order to keep up with developments in my discipline, a scholar must read books and journals published abroad	1992	76.2	17.0	4.7	1.2	0.9	100.0	**
	2007	70.5	21.4	6.3	1.1	0.7	100.0	
	Mean	74.1	18.7	5.3	1.1	0.8	100.0	
Universities and colleges should do more to promote student and faculty mobility from one country to another	1992	58.5	29.2	11.6	0.5	0.2	100.0	***
	2007	43.3	34.7	20.3	1.2	0.5	100.0	
	Mean	52.9	31.2	14.8	0.8	0.3	100.0	
The curriculum at this institution should be more international in focus	1992	35.6	30.9	31.1	1.6	0.8	100.0	***
	2007	25.3	26.9	41.1	3.9	2.8	100.0	
	Mean	31.7	29.4	34.9	2.4	1.6	100.0	

Notes: ***$p<0.001$, **$p<0.01$
Respondents were asked to indicate attitudes on a 5-point scale from 1 Agree to 5 Disagree

disagreeing with the statement that "Universities and colleges should do more to promote student and faculty mobility from one country to another" only constituted 1.7 % of the total by 2007.

By sector (Table 13.7), first, significant differences could be identified in the responses by faculty members in the national sector to both "Connections with scholars in other countries are very important to my professional work" and to "In order to keep up with developments in my discipline, a scholar must read books and journals published abroad." The percentages of the respondents who "Agreed" with both items fell from 67.7 % to 51.1 % and from 80.7 % to 72.9 % from 1992 to 2007 respectively.

Second, in relation to "Universities and colleges should do more to promote student and faculty mobility from one country to another" and to "The curriculum at this institution should be more international in focus," there had been similar reductions in the percentages of the respondents in both the national and private sectors who agreed to these statements by 2007. However, it is noticeable that the percentages of the respondents who "Disagreed" with the former statements in both sector were less than 1.0 % of the total, whereas the percentages of the respondents who disagreed with the latter statement constituted no more than 3 % of the total. Interestingly, with the reduction in the proportions of respondents who agreed with the statement "In order to keep up with developments in my discipline, a scholar must read books and journals published abroad," the proportions of respondents who disagreed also declined. In contrast, though decreased over the period, the percentages of respondents who agreed with the statements "Universities and colleges should do more to promote student and faculty mobility from one country to another" still exceeded 40 % of the total in both national and private sectors. Furthermore, if the percentages of the responses in agreement (1) or somewhat in agreement (2) are aggregated, for both of the last two statements the totals constitute majorities.

By discipline, as shown in Table 13.8, with relation for the responses to the statement "Connections with scholars in other countries are very important to my professional work," except for faculty members in Social Sciences and Others, no statistically significant differences between the responses for 1992 and 2007 could be found in other disciplines. Similarly, though there had been a decrease in the percentage of the respondents in Social Sciences who agreed to the statement by 2007, the percentage of those who agree and held an attitude of general agreement (i.e., responses 1 "Agree" and 2 "Agree somewhat") amounted to over 70 % of the total, indicating that a substantial majority of the respondents still believed that it was important for them to have connections with scholars in other countries. With respect to the responses to the statement "In order to keep up with developments in my discipline, a scholar must read books and journals published abroad," significant differences between the responses for 1992 and 2007 were only found in Medicine and Dentistry and Others. Compared with the decreased percentage of the respondents who answered "Agree" from 91.4 % to 81.6 %, the percentage of those who

Table 13.7 We would like to know more about your attitudes toward international connections in higher education. Please indicate how you feel about the following issues (by sector)

	Year	Agree (%)	2 (%)	Neutral (%)	4 (%)	Disagree (%)	Total (%)	
Connections with scholars in other countries are very important to my professional work								
National	1992	67.7	22.2	8.3	1.2	0.6	100.0	***
	2007	55.1	27.4	14.3	2.0	1.1	100.0	
	Mean	62.4	24.4	10.9	1.5	0.8	100.0	
Private	1992	58.1	27.9	12.4	0.7	1.0	100.0	ns
	2007	50.6	30.7	16.2	1.6	0.9	100.0	
	Mean	55.7	28.7	13.6	1.0	0.9	100.0	
In order to keep up with developments in my discipline, a scholar must read books and journals published abroad								
National	1992	80.7	12.9	4.5	0.9	0.9	100.0	**
	2007	72.9	18.9	6.3	1.3	0.6	100.0	
	Mean	77.4	15.4	5.3	1.1	0.8	100.0	
Private	1992	72.1	20.8	4.8	1.4	1.0	100.0	ns
	2007	67.1	24.9	6.3	0.9	0.7	100.0	
	Mean	70.5	22.1	5.3	1.2	0.9	100.0	
Universities and colleges should do more to promote student and faculty mobility from one country to another								
National	1992	62.0	28.0	9.4	0.5	0.1	100.0	***
	2007	44.3	33.1	21.0	1.4	0.2	100.0	
	Mean	54.5	30.2	14.3	0.9	0.1	100.0	
Private	1992	55.4	30.2	13.5	0.5	0.3	100.0	***
	2007	41.8	36.9	19.5	0.9	0.9	100.0	
	Mean	51.2	32.3	15.4	0.7	0.5	100.0	
The curriculum at this institution should be more international in focus								
National	1992	37.1	31.0	29.3	1.7	1.0	100.0	***
	2007	25.7	26.7	40.3	4.3	3.0	100.0	
	Mean	32.2	29.2	34.0	2.8	1.8	100.0	
Private	1992	34.2	30.8	32.8	1.5	0.6	100.0	***
	2007	24.7	27.3	42.1	3.3	2.6	100.0	
	Mean	31.2	29.7	35.7	2.1	1.3	100.0	

Notes: ***$p<0.001$, **$p<0.01$
Respondents were asked to indicate attitudes on a 5-point scale from 1 Agree to 5 Disagree

Table 13.8 We would like to know more about your attitudes toward international connections in higher education. Please indicate how you feel about the following issues (by discipline)

		Items											
		Connections with scholars in other countries are very important to my professional work			In order to keep up with developments in my discipline, a scholar must read books and journals published abroad			Universities and colleges should do more to promote student and faculty mobility from one country to another			The curriculum at this institution should be more international in focus		
Discipline	Year	Agree (%)	2 (%)		Agree (%)	2 (%)		Agree (%)	2 (%)		Agree (%)	2 (%)	
Humanities	1992	51.2	29.6	ns	71.8	14.3	ns	57.5	27.8	ns	35.4	30.0	ns
	2007	58.7	17.4		72.7	9.9		47.1	33.1		25.0	25.8	
Social sciences	1992	62.4	23.9	**	77.0	16.8	ns	61.5	28.2	*	42.5	24.9	**
	2007	47.3	30.4		68.0	25.9		47.6	33.3		26.5	25.9	
Science	1992	70.0	22.7	ns	86.4	11.5	ns	62.7	23.3	**	37.3	29.7	**
	2007	63.8	26.6		85.1	12.2		46.3	31.9		29.8	26.6	
Engineering	1992	57.9	27.0	ns	70.2	22.7	ns	51.3	34.6	**	30.3	32.3	***
	2007	50.8	30.9		64.8	28.7		39.6	35.5		21.3	28.7	
Agriculture	1992	65.0	23.3	ns	81.7	15.0	ns	62.5	27.5	*	27.4	36.8	*
	2007	51.7	36.8		74.7	21.8		43.5	41.2		18.8	27.1	
Medicine and dentistry	1992	73.7	19.8	ns	91.4	7.0	*	65.6	24.5	**	41.0	29.1	*
	2007	59.2	28.2		81.6	15.5		48.3	32.2		32.0	23.8	
Others	1992	61.0	28.7	**	58.6	29.3	**	53.7	37.0	**	36.7	32.6	**
	2007	26.7	30.0	*	26.7	46.7		20.0	40.0	*	6.7	33.3	*

Notes: ***$p<0.001$, **$p<0.01$, *$p<0.05$

Only the results of the responses to (1) Agree and (2) Agree somewhat are shown

answered "Agree somewhat" (2) had increased from 7.0 % to 15.5 % between 1992 and 2007. Moreover, by 2007 the percentages of the respondents who answered "Agree" and "Agree somewhat" added up to over 95 % of the total. Particularly in the discipline of Medicine and Dentistry, a huge number of the faculty members confirmed the importance of reading foreign books and journals. As to the last two statements, except for Humanities, significant differences between 1992 and 2007 were shown by all other disciplines. However, compared with the percentage of the responses to the statement "Universities and colleges should do more to promote student and faculty mobility from one country to another," there were proportionately fewer respondents who agreed with the statement "The curriculum at this institution should be more international in focus." For example, only 6.7 % of the respondents from Others who agreed to the statement in 2007 and 18.8 % of the respondents from Agriculture held the same perceptions. Even in the disciplines of Science (29.8 %), Engineering (21.3 %), and Medicine and Dentistry (32.0 %), no more than 35 % of the respondents agreed to the statement.

Perhaps various interpretations could be made in this regard. One of the possibilities is that as tremendous achievements in these four areas, especially in the internationalized curriculum, had already been accomplished in Japan, there was no need to make further efforts to promote the internationalization of these activities. In contrast, another possible explanation might be that as there had been no marked effects on each individual's teaching or research activities resulting from stimulating the internationalization of these activities over the 15-year period, the importance of facilitating such activities had been reduced.

13.5 Concluding Remarks

First, generally speaking, by 2007 one of the most distinguishing characteristics of Japanese faculty members in international academic activities was that they had undertaken more research activities, such as writing more numbers of books and articles in foreign languages and publishing more books and articles abroad, than providing lectures for international students. By sector, faculty members in national universities especially had been more involved with international research activities. By discipline, though faculty members in Social Sciences, Teacher Training, Agriculture, Science, and Medicine and Dentistry had also contributed to the international research activities, those in Engineering had more achievements in writing articles or books in foreign languages than those in any other disciplines within either the past 3 years or the past 10 years by 2007. Therefore, it might be assumed that faculty members in Engineering from national universities had played the most prominent and central role in writing books or articles in a foreign language.

Second, in relation to the changes in the extent of international activities at respondents' institutions, a great deal of progress had been made especially in holding international conferences and seminars, though increased efforts had also been made in enrolling international students and sending local students abroad.

By sector, it seems that in the national universities activities corresponding to "Foreign academics have taught courses," "International conferences and seminars have been held," and "Foreign students have been enrolled" were more frequently carried out, while in the private institutions they were more engaged in sending their students abroad. By discipline, clear evidence shows that more endeavors had been made in Humanities and Social Sciences in the activities concerning "Foreign academics have taught courses" and "International conferences and seminars have been held." As a result, noticeably, more efforts had been made in such activities concerning courses provided by foreign academics and organizing international conferences and seminars in Humanities and Social Sciences in national universities. In comparison, private institutions had taken part in more activities in sending their students abroad, but no detailed information is provided about in which discipline these activities were implemented.

Finally, in terms of the views by faculty members on the four international academic activities in Tables 13.6, 13.7, and 13.8, though there existed a wide range in the percentages of responses to different statements, it is evident that there was an overall drop in the proportions who agreed to make further efforts to stimulate international academic activities in Japan over the 15-year period. Notably only 25.3 % of respondents "Agreed" that the curriculum at their institutions should be more international in focus and, by 2007, more than 70 % of the faculty members did not think it was necessary to give fresh impetus to internationalize the curriculum in their institutions. They included faculty members in both national and private sectors and they came from such disparate disciplines as Social Sciences, Science, Engineering, Agriculture, Medicine and Dentistry, and Others. However, it should be also mentioned that over half of the respondents still confirmed that connections with scholars in other countries are very important to their professional work and that in order to keep up with developments in their disciplines, scholars must read books and journals published abroad.

Seemingly, in comparison with much more progress that had been made by Japan's faculty members especially in international research activities, it might be true that fewer achievements had been accomplished in teaching activities. This occurred at both individual and institutional levels. For example, individual faculty members concentrate more on writing books or articles in foreign languages and making publications abroad, but less on providing lectures for international students. At institutional level, more efforts had been made in holding international conferences and seminars, but less on the courses taught by foreign academics. This is consistent with the results from their views on the four relevant international academic activities. As stated earlier, a greater proportion of respondents confirmed the importance of establishing connections with foreign scholars and reading foreign books and journals for their own professional work or for the development of their own disciplines. In contrast, only a smaller proportion of respondents showed very high interest in the promotion of mobility of students and faculty across countries, and particularly in a further internationalization of their curriculum.

However, as faculty members are considered to be the most important engine to stimulate internationalization of higher education, more sophisticated and empirical research should be undertaken to identify all the possible factors which had affected the drop in the proportion of respondents who agreed to the need to make further efforts in the four major international academic activities at their institutions over the period 1992–2007.

Note The majority of the data in the article are also discussed in another article by the author (Huang 2009).

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Chapter 14
Higher Education and Society

Hirotoshi Yamasaki

14.1 Introduction

Due to the decline of the 18-year-old population, 90.5 % of applicants were entered into universities and junior colleges in Japan in 2007. Less prestigious universities and colleges faced difficulties in recruiting qualified applicants, and were forced to admit applicants who were unprepared for college education. Japanese academics accepted reluctantly the deterioration of quality resulting from the required levels for college entrance not being reached. However, since they saw their function more as researchers than as teachers and social service providers, they accepted the poor "scholarship of integration" though they evaluated any changes to the corporation negatively, and were worried about the future prospects.

14.2 Social Changes Towards Higher Education After the 1990s

Higher education in Japan has experienced a transitional period of progression and great changes from the 1990s through the early part of the twenty-first century. One of these great changes was that of demography. As a result of the decrease in the 18-year-old population, the expansion of higher education ceased and the "examination hell" well known over the world subsequently came to an end while a new problem emerged. Many institutions of higher education were forced to implement

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an open admission policy to cope with the difficulty in recruiting applicants, with consequent reduction in quality of students. A second big change was due mainly to the higher education reform in which the economic depression and financial difficulties in the national budget were influential factors. In the 1990s, many reforms were enacted in higher education: college curriculum, introduction of evaluation, expansion of graduate school, and changes of governance and administration. National Universities were changed from part of the national bureaucracy to independent corporations, and grants for national universities were reduced annually by 1 %. Thus these universities were forced to become dependent on tuition fees and external funds. In other words, Japanese universities were gradually required to face market forces.

In this chapter, accessibility to higher education and its quality, functions of higher education, and governance of higher education are elucidated. The diversity and disparity of the views of the academics on the roles of higher education towards society are analyzed by comparing the results of the 1992 Carnegie survey and the subsequent 2007 Japanese survey.

14.3 Accessibility to Higher Education and Its Quality

Higher education continued its expansion after WWII until the 18-year-old population peaked in 1992 and began to decrease in 1993. As a result, the number of new entrants to higher educational institutions (universities and junior colleges) began to decrease from about 1994 onwards. At this transitional point, the number of the candidates reaching the standards for entering higher education and the enrollment capacities of universities and junior colleges were still well matched.

However, following the decline in the 18-year-old population since the early 1990s, the proportion of young people entering higher education and postsecondary education has increased, as shown in Table 14.1. Thus, by 2007, more than half of

Table 14.1 Demographic changes after the early 1990s

	1990	1995	2000	2005	2007
18-year-old population (thousands)	2,010	1,770	1,510	1,370	1,300
New entrants to higher education (thousands)	730	800	740	700	700
New entrants to postsecondary education (thousands)	1,070	1,140	1,050	1,030	980
New entrants of HE/number of applicants (%)				88.1	90.5
Applicant ratio of high school graduates (%)	30.6	37.6	45.1	47.3	51.2
Entry rate of 18-year-old population to higher education (%)	36.3	45.2	49.1	51.5	53.7
Entry rate of 18-year-old population to postsecondary education (%)	53.7	64.7	70.5	76.2	76.3

the 18-year-old population entered universities and junior colleges, and more than three-quarters of them entered some kind of postsecondary institution. Altogether, 90.5 % of applicants to universities and junior colleges in 2007 were accepted.

Consequently, less prestigious universities and junior colleges which faced difficulties in recruiting bright and qualified applicants employed non-achievement entrance examinations and were accordingly forced to admit applicants who were unprepared for college education. Remedial education programs were introduced in those higher institutions. Mathematics and science courses of high school level were taught in the freshman year before offering college formal courses.

Respondents to the 1992 and 2007 studies were asked for their views on the accessibility to higher education in the context of the academics criticizing the decline of the quality of applicants and freshmen. The respondents were asked "What percentage of the students do you think have the ability to complete secondary education?" The response was 75 % in 1992 and 70 % in 2007, a decrease of about six percentage points (allowing for rounding errors). The response to the question "What percentage of the students finishing secondary education should be allowed into higher education?" showed a slight decrease from 55 % in 1992 to 52 % in 2007. Thus the academics in 2007 viewed that access to higher education should be slightly more limited than in 1992. However, they accepted reluctantly the inevitable deterioration of quality that followed from the need to keep up student numbers, which implied accepting a higher percentage of students than they would like.

The academics agreed on the need for economic support for students in the period of universal access to higher education under the economic depression. Thus 86 % of the academics agreed with a statement to "establish an institutional scholarship system for economically disadvantaged students" while 37 % of the academics agreed with a statement for "individuals and industry to give financial assistance to higher education." However, only one-third of those academics agreed that there should be no tuition fees for public higher education institutions. In addition, only 4 % of the academics agreed that the entrance standards of higher education should be lowered.

14.4 Functions of Higher Education

The respondents were asked for their views on the eight functions of higher education (Table 14.2). These eight roles or functions were divided into three categories: education, research, and social services. In detail, the academics regarded "Promotion of scholarship and research" (54 %), "Education for leaders" (39 %), "Protection of freedom of intellectual inquiry" (32 %), and "Solving of fundamental social problems" (29 %) as most important in 2007. These results reveal the strong research orientation of Japanese academics. As for "Vocational education," academics rated its importance as only 16 % in 2007, though this was an increase from 12 % in 1992. Although by 2007 many academics were gradually admitting the need for vocational

Table 14.2 The functions of Japanese higher education (%)

	2007	1992
Education for leaders	39	46
Vocational education	16	12
Lifelong education for adults	16	21
Conservation of cultural heritage	16	29
Protection of freedom of intellectual inquiry	32	42
Promotion of scholarship and research	54	68
National contributions for resolution of international conflicts	12	18
Solving of fundamental social problems	29	40

education in the era of open admission to higher education, nevertheless they remained generally elite-oriented.

Table 14.3 shows the views of academics on these eight functions according to their discipline. The academics from the education field, perhaps not surprisingly, regarded the function of educating leaders as the most important. As for the academics from the fields of humanities, natural sciences, and agriculture, the research function was of primary importance. For the academics from the field of humanities, social sciences, and also education, the function of solving social problems was highly important as well.

More widely than the functions of higher education, the academics were asked "What are the fundamental social problems of the world?" The percentages of nine issues which the respondents agreed as most important are shown in Table 14.4. "Environment" (54 %), "Development of fundamental education" (46.5 %), and "Disarmament" (39.4 %) were the top three social problems according to the 2007 respondents. Compared with the 1992 survey, "Development of fundamental education" was the only issue for which the importance increased.

14.5 Governance of Higher Education

The most important reform in governance in Japanese higher education since the 1990s has been the incorporation of national universities. All national universities, previously part of the Ministry of Education, were reorganized as corporations in 2004. The official aims were to improve their independence and autonomy as well as to improve the quality of education and research. A direct budget from the Ministry to universities was proposed for the expenditures on management, facilities, and maintenance of the university's corporation. The university, which was to establish its management system under the president, would set its mid-term objectives and plan. They were expected to be evaluated regularly by external accreditation bodies and by the Ministry.

In the above respect on governance of universities, in the 2007 survey the academics were questioned on the changes and future prospects of national universities.

Table 14.3 Functions of Japanese higher education by academic fields

	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health/medical sciences	Education	Total 2007
Education for leaders	36	42	39	35	37	43	58	39
Vocational education	16	19	11	13	15	20	24	16
Lifelong education for adults	23	20	9	13	23	15	24	16
Conservation of cultural heritage	30	11	10	11	22	17	36	16
Protection of freedom of intellectual inquiry	48	32	38	21	32	27	42	32
Promotion of scholarship and research	60	59	63	45	61	46	45	54
National contributions for resolution of international conflicts	18	11	6	14	13	11	19	12
Solving of fundamental social problems	37	42	20	27	33	23	32	29

Table 14.4 Percentage of respondents selecting the global problems considered the most important

	1992	2007
Human rights	51.3	37.3
Development of fundamental education	43.3	46.5
World economy	29.3	17.1
Environment	63.5	53.5
Population increase	46.1	31.5
Worldwide food supply	46.7	37.6
Health problems such as Aids	49.7	34.4
Racial, ethnic, and religious problems	36.3	31.4
Disarmament	55.0	39.4

Table 14.5 Percentage of respondents answering "Yes very much" by control

Due to the incorporations	National	Private	Total
Setting the mid-term objectives and plan is good	8.2	20.3	12.7
Autonomy of national universities is increasing	1.4	7.6	3.6
Centralization of national universities is increasing	40.4	18.4	32.7
Differences among national universities will increase	43.6	36.9	41.1
Differences within national universities will increase	24.3	26.4	25.1
Access to higher education will be limited because tuition will increase	32.6	20.5	28.0
Restructuring of national universities will be possible	31.9	29.4	31.0

Answers showed differences between the academics of national and private universities. Generally, the academics of national universities had evaluated any changes negatively, and were worried about the future.

Only 8.2 % of the academics of national universities agreed that "Setting the mid-term objectives and plan is good." And only 1.4 % of them agreed that "Autonomy of national universities is increasing," as shown in Table 14.5.

The academics of national universities were afraid of centralization of administration and the increasing of differences within the university. They also were wary of increasing differences among universities, and possible restructuring of national universities as well.

It is seemingly ironic that the academics of national universities saw the future as negative and were pessimistic, rather than recognizing the merits of deregulation and becoming autonomous. The reason could be because they were being forced to become competitive in the environment of decreasing size of higher education.

They also were afraid of more limited access to higher education due to the increased cost of tuition. These negative views were resulting from the national policy of an annual 1 % reduction of grant for national universities in the future.

14.6 Roles of the Academics in Society

Academic research has discovered new knowledge, and advanced theory, thought, and technology, leading to the development of industries and our lives. Researchers have enormously benefited from the academic researches already carried out, which strengthen the capacity of new researchers and advanced professionals and, of course, leads to the education of future good citizens. Higher education also helps promote public services in a wider range of communities. Academics are, as always, expected to disseminate knowledge developed in their research via publications, media, public services, and teaching.

In this regard, Boyer describes four types of scholarship recognizing the diversity of contributions which today's faculty can make: "…the scholarship of discovery; the scholarship of integration; the scholarship of application; and the scholarship of teaching" (Boyer 1990, p. 16). The scholarship of integration is "…making connections across the disciplines, placing the specialties in a larger context, illuminating data in a revealing way, often educating non-specialists, too" (Boyer 1990, p. 18).

However, it is a difficult task for Japanese academics to carry out those roles stated since they acknowledge the poor scholarship of integration. According to the research, only 9 % of the academics agreed strongly that "Academics are the most influential opinion leaders in the society." When adding in those who agreed to some extent, 37 % of them agreed in 2007 as compared with 40 % in 1992. And 67 % and 37 % of them in 2007 and 1992 respectively agreed strongly and to some extent that "Academics are gradually respected less." Indeed, many of the commentators of the TV news are non-academics. A consequence of this is that some academics have been criticized on TV and in newspapers for misuse of government research money and for sexual scandals. It is also worthy of note that Japanese academics have acknowledged that there are many problems needed to be solved in the modern world. However, many of them, especially those in pure sciences, place stress on academic research and education for future leaders instead of resolution of the problems concerned, including the promotion of vocational education.

Japanese academics are, somehow, expected to pay attention to what is being stated by Boyer: "Now is the time, we conclude, to build bridges across the disciplines, and connect the campus to the larger world. Society has a stake in how scholarship is defined" (Boyer 1990, p. 57).

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Chapter 15
The Academic Profession: A Comparison Between Japan and Germany

Ulrich Teichler

15.1 Introduction

The views and activities of the academic profession in any country—for example in Japan in this volume—cannot be interpreted convincingly without international comparison. In looking at any single phenomenon in this volume—for example the number of weekly hours spent on research—we tend to ask ourselves: Is this high or is this low? And if we do so, we need a yardstick which we most likely get by comparing the respective activities in other countries. In some instances, such a comparison is viewed as most interesting and relevant, if a comparison is undertaken with countries which can be viewed as similar as regards key issues to be addressed, but possibly different in many other related aspects. In aiming to analyse the views and activities of the academic profession in Japan, a comparison with Germany is interesting, because we know that professors at institutions of higher education putting emphasis on research in both countries have similar views on research and teaching in their self-understanding of their academic role. Therefore, a chapter addressing the academic profession in Germany and Japan comparatively in this volume certainly is helpful in addition to many chapters focusing on the latter.

Similarities and differences between the academic profession in Japan and Germany can be identified through a glance at the already available publications, notably the comparative overview publications of the surveys undertaken in the early 1990s (Altbach 1996) and the most recent ones in 2007 and 2008 (Teichler et al. 2013). Therefore, this article could focus on select themes, i.e. the academics' mobility in their life-course in terms of the number of employing institutions in the course their career, their preferences for research and teaching, and finally their job

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satisfaction. This article, however, puts a strong emphasis on methodological issues of comparing the academic profession of these two countries on the basis on available surveys. In this framework, first, the opportunities and problems of conducting surveys comparatively are addressed, if a research team is composed from all scholars of all the countries addressed. Second, the chances and drawbacks are discussed of comparing the surveys on the academic profession actually undertaken in Japan and Germany. Third, attention is paid to the fact that the composition of the academic professions in Japan and Germany obviously is different in various respects, thereby most striking in the number of junior academic employed on average per senior academic (see Jacob and Teichler 2011). The question will be raised in this article, whether we do not also have to take into consideration such differences of composition or whether we even should challenge the idea of a singly academic profession in a country: Are academics in senior positions so different from those in junior positions and academics at institutions with a strong emphasis on research so different from those at institutions concentrating on teaching that one has to view the respondents as belonging to either clearly divided sub-groups or even distinctive professions?

15.2 The Challenge of Comparative Analysis

Comparative analysis is an important area of higher education research. As in other areas of the humanities and the social sciences, our attention tends to focus first in higher education research on cultural and social phenomena in our vicinity. Special operational effort is needed to gather information on phenomena beyond our vicinity, such as learning other languages and undertaking field research in an alien environment, as well as special intellectual effort in order to understand whether such phenomena are merely curiosities from far away or really relevant for us.

In looking at the academic literature about the character of comparative research, we come to the conclusion that comparative research is not a branch of research with a unique theoretical background. Rather, comparison is a basic logical approach of observation and interpretation. Additionally, comparative research establishes a borderline between a familiar cultural and social space and other non-familiar cultural and social spaces; thereby, most frequently a nation is viewed as the familiar space, and comparative research is "international comparative research" in comparing phenomena across nations. Moreover, comparative research is likely to be a specific branch within a discipline, with collection of information and interpretation of findings predominantly focusing on a familiar cultural and social space—for example, law research concentrating on the legal system of a specific country. In that case, comparative analysis is likely to be undertaken by a small, additional branch of that discipline. Finally, comparative research in the humanities and social sciences is characterized by two features: the enormous efforts needed to collect a breadth of information; and continuous debates on the relevance of knowledge beyond one's vicinity for understanding one's ways of thinking, culture, and society. In sum: Comparative higher education research obviously differs only moderately from mainstream higher education research, but offers interesting insights beyond the mainstream (see the various views expressed in Teichler 1996).

About five decades ago, most publications on higher education in economically advanced countries—no matter whether they were written by policy makers, practitioners, journalists, or higher education researchers—had a national focus or addressed smaller units within a country, for example individual universities, individual disciplines, or individual study programs. If, for example, the difficult route between the doctoral award and the appointment to a professor position was discussed, no country was likely to be named at all in such a discussion; rather, it was taken for granted that one's own country was meant. And if occasionally somebody argued that the route looks different in another country, she or he could be sure to get the reaction: "This cannot be compared." But there were clear differences according to country. In some countries, such as the US, interest in international comparison was low, and "internationalization" meant primarily knowledge export. In countries such as Germany, an enormous variety of views in this respect was noted among the scholars and the practical actors. Japan could be named as a country where interest in international comparison was very strong.

Irrespective of the different national traditions, we might argue that international comparison is highly important for higher education research, because higher education is a social arena in which border-crossing (knowledge transfer, mobility, and cooperation) is a matter of procedure. The logic of science and various disciplines are characterized as universal. Search for new knowledge all over the world is conceived as necessary in order to be on the cutting edge. Academics can transgress borders in their professional career relatively easily as compared with other professions. And temporary visits abroad of academics, as well as temporary study abroad, have a long history of being regarded as beneficial. Cosmopolitan values are believed to be more widely spread among academics than among most other professions. An international reputation is believed to indicate an exceptional quality of academic work (cf. Teichler 2004). However, the regulatory and funding systems of higher education are national as a rule. Curricula vary between countries more strikingly than one would assume, according to the knowledge system. Kerr (1990), in describing this divide of national and international dimensions, noted a conflict between "the internationalization of learning and nationalization of the purposes" of higher education.

Comparison in this domain—as in other domains—is important, first, as contributing to clear reasoning. It makes us conscious of our permanent ignorant comparative reasoning. We often argue, for example, that "junior academic careers are long and risky" without explicitly stating what we would consider shorter and less risky and what is really worth comparing. Additionally, comparison—and we more or less always mean "international comparison" if we talk about comparative higher education research—is needed to deconstruct assumptions about the general and universal nature of certain phenomena. For example, even the most widely used terms such as "universities," "students," and "professors" have different meanings from country to country. Beyond that, such a deconstruction is even more needed as regards assumed causal relationships. For example, we note many speculations about the effects of paying tuition fees on study behavior, but a closer view shows that there is no general rule, but rather a variety of different links across countries. Ideally, comparative analysis can serve as a testing ground for theories that have

been developed on the knowledge base confined to a single country or a small number of countries.

Second, comparison makes us aware that things can be done differently than we do them at home. Comparative research is often called a "goldmine" for identifying something that we have not known before in our vicinity. We detect that there is more than one policy option. And we might even become aware of "functional equivalences," that is, different mechanisms serving the same purposes (or, in reverse, that identical mechanisms serve different purposes from country to country). Often this strength is hailed for practical purposes: "benchmarking" is undertaken for identifying "best practice." Similarly—somewhat less normatively—we are interested in finding out the areas in which common or "convergent" trends occur worldwide or among countries which we take seriously as comparable, or areas where variety between countries persists or even grows.

Third, comparative analyses have gained momentum in recent years when we noted a growing internationality or the globalization of higher education. When knowledge transfer across borders becomes more important, when students' and scholars' physical mobility increases, and when we even tend to assume that universities—at least the qualitatively most ambitious ones—act in a global arena as "world-class universities," in-depth knowledge about similarities or differences in higher education across countries becomes even more salient because they affect directly the experiences of all the actors in higher education.

Yet, one cannot merely name the potentials of comparative higher education and call for an increase of research activities in this domain on that basis. Obviously, there are dangers and pitfalls of comparative research in comparison to research on one's vicinity. The following problems have been voiced frequently with respect to higher education research.

Comparative research certainly often does not fulfill its expectations, because many studies are undertaken which could be called "higher education abroad": detailed descriptions on a single other country without—or at most with occasional—comparative reasoning. Additionally, many comparative studies are characterized by a lack of information: while an analysis of one's home country can draw from rich experience, scholars turning their attention to other countries cannot draw from such a wealth of experience and often undertake analyses with a notable lack of contextual knowledge and understanding. Moreover, comparative studies, particularly those undertaken by single scholars, tend to be limited in their scope because of the authors' lack of awareness of the national or cultural relativity of the terms and concepts employed; they might not know, for example, that we do not have universal concepts of "research," "tertiary education," "graduate education," "professional," and "vocational"; misunderstandings are spread because home concepts are taken for granted.

We further note an abundance of over-descriptive comparative studies: scholars seem to be so busy collecting masses of information according to conventional thematic categories that conceptual frameworks remain pale. Some comparative studies are even overwhelmed by strong, uncontrolled value judgments: comparative judgments frequently mirror "comparative chauvinism."

Moreover, the composition of countries included in multi-country comparative studies turns out to be coincidental in many cases. The scholars undertaking the study happened to have prior knowledge about certain countries and to know scholars from some countries whom they could invite to cooperate. Among the coincidental factors shaping comparative research, language proficiency of the individual scholar or within a research team has to be named as well, because it tends to be highly influential for the choice of countries to be compared. Ironically, the spread of English as a single lingua franca contributes to an erratic choice of countries, because scholars pay less attention to the knowledge of foreign languages as essential means for undertaking meaningful selections of countries and for undertaking in-depth comparisons.

One might try to draw from the potentials and to avoid the dangers of comparative analysis by undertaking very complex comparative studies: including a large number of varied countries, having scholars from all these countries involved in joint research, covering a variety of disciplinary and paradigmatic perspectives, and making sure that sufficient time is available for a thorough research procedure ranging from developing a joint conceptual framework via similar ways of information-gathering to eventually a thorough analysis that allows the participating researchers to learn from each other.

The author of this chapter, however, himself has been involved in a substantial number of large comparative empirical research projects, notably on employment and work of university graduates, student mobility, and the academic profession. He came to the conclusion that large projects of this kind are quite vulnerable (see Teichler 2014). Obviously, the time required tends to explode in the process: collaborative projects often take about twice as many years as envisaged in the preparatory phase. A minimum consensus about the rationales and the procedures of the project turns out to be hardly reached. At the end, the authors present different "truths." Certainly, there are clear discrepancies between the high expectations as regards the potentials of such studies and the actual achievements at the end. The results look from various respects as compromises. But most participants of such projects tend to report valuable experiences and increased insight into the complexity of the issue being analyzed. Let us finish this account with the assumption that most scholars involved in such a project would say at the end: "It was hard, but I would do it again."

15.3 The Comparative Analysis of the Academic Profession

Possibly the most ambitious comparative activities in the area of higher education research were pursued in two interlinked projects on the academic profession. The Carnegie Study on the Academic Profession was undertaken between about 1990 and 1996—it is impossible to determine clear beginnings and ends of such complex projects—with the empirical focus on 1992. It included 15 countries (one of them not appearing in the final report) and could draw from the information provided by more than 18,000 academics (see Altbach 1996). The second study, the Changing

Academic Profession (CAP) study, was undertaken between 2004 and 2014 with the empirical focus on 2007. It covered 19 countries and could draw from more than 25,000 questionnaires (see Teichler et al. 2013). To be politically correct: Hong Kong participated in both surveys not as an independent state, but rather initially a colony and subsequently a "special administrative unit."

Among the many issues discussed in such projects to reach a common understanding essential for cooperation, four might be named that certainly help to explain what the projects achieved and what they did not achieve: the composition of countries included; the degree of centrality and decentralization of the projects; the analysis of change over time; and finally the issue of delineation and of sub-groupings of the academic profession.

The selection of countries in the first project can be explained in part by the views of the initiator of the project, the Carnegie Foundation for the Advancement of Teaching. It had previously undertaken surveys on the academic profession in the United States and now wanted to see the results in a comparative perspective: the intention was to include various economically advanced and middle-income countries' approaches with the view of including the big countries and assuring a certain variety. Actually, the participation of countries depended on success in finding suitable scholars and raising funds nationally on the part of the economically advanced countries. The initiator of the CAP study invited the—identical or other—scholars from the countries involved in the Carnegie study, and efforts were made through a snowball system of communication to include additional countries, whereby again qualified and interested scholars as well as success in raising funds nationally eventually determined the composition of countries. Actually, Australia, Brazil, Germany, Hong Kong, Japan, Korea, Mexico, the Netherlands, the United Kingdom, and the United States participated in both studies, with the identical scholars coordinating the national teams in Brazil, Germany, Hong Kong, and Japan. Efforts had failed to include France and India in both surveys as well as China in the first survey and Russia and Sweden in the second survey. Altogether, the composition by country did not turn out to be the major issue for the projects: on the one hand, the inclusion of an interesting variety was achieved. On the other hand, the projects did not want to generalize strongly according to economically advanced countries vs. emerging countries, large countries vs. small countries, etc.

Both projects were understood to be not completely centralized administratively. This was in contrast to many comparative projects led by scholars from a single or a few countries and including other countries merely as data deliverers. However, the Carnegie study had some strong centralized elements. Initially, there was a belief that the questionnaire previously employed in the US could be taken by and large for a comparative project, and the process of modifying the questionnaire in order to meet the diversity of conditions and notions in many countries was not without complication. Second, the US initiators wanted the other partners to write idiosyncratic country reports, that is, without any explicit discussion of country differences, and to reserve the explicit comparison for themselves. Actually, a mix of approaches was chosen, whereby the authors of some countries followed that

concept while others presented explicit comparisons. The CAP project experienced all the strengths and weaknesses of a decentralized project: scholars from a broad range of countries were involved in specifying the conceptual framework and the questionnaire; participating countries were free to modify the country version of their questionnaire; conferences were organized that prepared books notably on five thematic areas whereby the authors from the individual countries each could contribute an essay for which they decided themselves about the conceptual framework, the thematic focus, and the extent to which they concentrated on their own country or presented information across a variety of all countries. The overall coordination concentrated on joint procedures, joint decisions to be taken after discussions, as well as the merger of the national data set to a comparative data set.

Analyzing changes in the context relevant for the academic professions as well as changes in the academics' views of activities certainly is a fascinating feature. The second study even was named "The Changing Academic Profession." Operationally, the best way of measuring change would have been to use the Carnegie questionnaire again 15 years later and thus identify exactly the extent of change. However, change implies also that new themes become salient that had not played a role before. Moreover, scholars in charge of a second survey can identify weaknesses of the first one and opt for new formulations. Nevertheless, even though change may not be measured by identical questions, other means can be found to measure it. First, one can ask the respondents in the second survey to respond retrospectively: for example, what was the quality of resources for teaching and research some years ago as compared to now? Second, one could make a comparison between generations and consider the different information provided by junior scholars and senior scholars as a sign of change. Third, even if no respective data were gathered, certain information could be interpreted as a sign of change: for example, the current use of computers could be interpreted by and large as an obvious sign of change, as such use was far more limited in the early 1990s.

Actually, the majority of the CAP team participants wanted to take up several new themes and to improve the questions in so many instances that only a minority of questions of the Carnegie questionnaire were integrated identically into the CAP questionnaire. Moreover, skepticism prevailed as regards the validity of retrospective questions. The Japanese CAP team, in contrast, preferred a strong element of repetition of the Carnegie questions in order to measure change directly. Actually, a bold and luxurious decision was made in Japan: two representative surveys of the Japanese academic profession were undertaken in the year 2007—one with a complete repetition of the Carnegie questionnaire and another one with the CAP questionnaire. The results of the former approach are reported in this book, while the results of the latter are the focus of this chapter.

Such a double approach obviously has enormous advantages. However, it poses the problem that the Japanese respondents of the 2007 Carnegie questionnaire might respond differently from the Japanese respondents of the 2007 CAP questionnaire to questions that are identical in both questionnaires. For example, the share of women among Japanese academics increased from 8 % in 1992 to 12 % in 2007 according

to the renewed Carnegie survey (see Chap. 6 of this book), but to 17 % according to the CAP survey; the latter percentage actually happens to be identical to the one reported in the official Japanese statistics (the *School Basic Survey 2007*). To take a second example: in response to the item "My job is a source of considerable personal strain," a very high proportion of academics from Japan—55 %—answered affirmatively in 1992. According to the 2007 Carnegie survey, this declined to 50 % (see again Chap. 6 of this book). According to the 2007 CAP survey, in contrast, we note an increase up to 59 %. By and large, the differences of the results between the two surveys undertaken in the year 2007 are not striking, but they are not negligible and pose problems of interpretation.

The fourth issue of the definition of academic profession is important on the one hand regarding the inclusion or exclusion of certain groups. A joint decision was taken in the CAP study to include academics with teaching and/or research functions who are regularly employed at least half-time in officially recognized higher education institutions of the respective country that offer at least bachelor programs. The surveys undertaken in the individual countries could be broader and possibly include academics at junior colleges or other tertiary education institutions, part-timers with less than half of the regular work load, persons remunerated through honorarium contracts (for example according to the hours taught), university managers, auxiliary staff, or academics working in research institutes outside higher education, but those persons were not included in the comparative data set. This joint decision posed a real problem only for the Latin American countries, where many professors, though being hired for less than half of the regular work time, can be crucial figures within the study program and the university.

On the other hand, the issue whether the data analysis should consider the academic profession as a single one or as a clearly segmented one according to types of higher education institutions and study programs, as well as according to the career stages and ranks, was discussed controversially. Obviously, the data show that academics at universities both in charge of research and teaching to more or less the same extent differ substantially from academics at higher education institutions predominantly in charge of teaching in some countries, while this difference is moderate in other countries. Similarly, we note striking differences between the views and the activities in various respects between academics in senior ranks (here defined as professors and associate professors in US terms) and those in junior ranks in some countries, while the respective differences are small in other countries. The higher education researchers involved in the projects drew different conclusions: for example, the Japanese scholars almost consistently compared all the academics surveyed in Japan to all of those surveyed in other countries. In contrast, the German scholars involved in the Carnegie project and in the CAP project always sub-divided the respondents into four groups in their comparative analysis: university professors, university junior staff (including assistant professors), professors at other higher education institutions, and junior staff at these institutions (see for example the German CAP-country report: Jacob and Teichler 2011).

15.4 The Academic Profession in Japan Viewed in Comparison to the Academic Profession in Germany

A comparison of the academic profession in Japan to its equivalent in Germany is attractive for various reasons. It is often said that Japan in the process of modernization opted for various solutions in higher education similar to those in Germany. Moreover, the attitude of university professors towards research and teaching seemed traditionally to be similar in these two countries, and this was underscored in the Carnegie Survey undertaken in the 1990s. In contrast, there are some obvious differences between the two countries as regards the development of higher education after World War II, and it might be interesting to note what this altogether means for the current academics' views and activities.

A comparison between the academic profession in Japan and Germany can be undertaken on the basis of the findings of the Carnegie study 1992 and the CAP study 2007. It is not possible to draw from the Japan 2007 study based on the Carnegie questionnaire, which is in the center of this book, because in 2007 only the CAP questionnaire was employed in Germany (as well as in the other countries participating in the CAP survey except for Japan).

In this framework, it is an interesting question, both methodologically and substantively, whether the academic profession is most appropriately viewed as a single entity, as the previous analyses of the Japanese higher education researchers suggest, or whether it should be viewed as fairly divided according to rank and institutional type, as the previous analyses of the German higher education researchers suggest. Such a comparison requires making the sub-divisions according to the German approach and eventually assessing the findings: if the responses on average of the four sub-groups chosen are by and large similar, this would support the "Japanese approach," and if they are often quite different, this would support the "German approach."

In looking at the ranks, we note that 81 % of the respondents from research-oriented universities in Japan are senior academics (full professors or associate professors), while only 19 % can be named junior staff (assistant professors, assistants, lecturers, etc.). The ratio is similar at other, predominantly teaching oriented, universities in Japan, that is, 79 % vs. 21 %. In Germany, the pattern differs dramatically at universities, that is, institutions in charge of both teaching and research: only 15 % are in professorial ranks equivalent to full and associate professors, while 85 % hold junior staff positions. At other institutions primarily in charge of teaching (in Germany called Fachhochschulen), persons in professor positions prevail (69 % as compared to 31 %), yet the proportion of the latter at these institutions in Germany is also higher than in their Japanese counterparts. Among the countries participating in the two surveys, Japan is an extreme case of the highest proportion of academics in senior ranks while Germany is the opposite extreme of the highest proportion of academics in junior ranks at research-oriented universities (see Teichler et al. 2013, p. 32).

This difference in the composition of the academic profession certainly calls into question a comparison of the "totals" in both countries. To take a simple example: the

average age of all respondents in Japan in 2007 was 51 years, while the respective average was 41 years in Germany. In looking only at those in senior ranks at universities with a research emphasis, we note a similar average in both countries: 52 years in Japan and 53 years in Germany.

Yet, it is certainly more interesting to note how much the responses differ according to these sub-groups with regard to key issues of the academic profession. The academics were asked both in the 1992 and 2007 surveys whether they have been mobile between institutions of higher education in the course of their career. In looking only at the responses of senior academics (because junior academics had fewer chances to be mobile in their life-course), we note (Teichler et al. 2013, p. 83):

- Forty-four percent of professors at research-oriented universities in Japan surveyed in 1992 had changed the institution at least once, and 37 % at the other institutions. The mobility rate had increased by 2007 to 70 % and 66 % respectively.
- At German universities, the mobility rate at universities was the highest among the countries participating in both surveys, and it increased during this period from 78 % to 92 %; at other institutions of higher education, the rates—59 % and 73 %—were still higher in Germany than in Japan but not as high as at German universities.

In estimating the weekly work time over the whole year as reported in the two surveys, we note that Japanese senior academics at both groups of institutions worked 48 h and junior academics 44 h on average in 2007. In Germany, we note substantial differences: senior academics at universities report 52 h on average while senior academics at other institutions only 41 h. The respective averages for junior academics are substantially lower (39 h and 28 h respectively), but this is largely due to high numbers of part-time employment. If we take this into consideration we note that university professors in Germany report that they work 1.3 times as much as the usual hours required, while all the other three groups in Germany work 1.1 times as much as the required work hours (ibid., p. 100).

In looking at the proportion of time spent on research and teaching over the whole year, we can estimate that professors at research-oriented universities in Japan spent in 2007 1.5 times as much time on research as on teaching while their colleagues in Germany spent only 1.3 times as much time on research. Junior academics at these institutions were more strongly involved in research: in Japan 2.2 times as much as in teaching and in Germany even 2.4 times as much. At teaching-oriented institutions, German professors spent only half as much time on research as on teaching, while their colleagues in Japan, surprisingly in reverse, spent 1.2 times as much time on research as on teaching. Also, junior staff at these institutions in Germany spent more time on teaching than on research, while the reverse was true for their colleagues in Japan. Thus, we observe noteworthy differences between these four groups in both countries as regards work time, but these differences are striking in Germany and moderate in Japan.

In looking at the preferences the academics express for teaching and research, we note that some reports differentiate between respondents with a clear preference for research and those caring both for research and teaching with a stronger leaning to

the former on the one hand, and on the other those with a clear preference for teaching or caring for both functions with a stronger leaning to teaching (e.g., Arimoto 2014). We assume, however, that those caring for research and teaching, no matter in which direction they lean, can be viewed as adhering to the Humboldtian ideal of a strong link between teaching and research, while those with a strong preference for either research or for teaching can be viewed as adhering to more segmented functional settings in higher education. The CAP survey shows that 80 % of all Japanese academics surveyed favor both teaching and research, even though more than half of them lean more strongly to research than to teaching. Surprisingly, the respective proportion is lower in Germany, 63 %. A clear preference for research is expressed by 26 % of the German and 14 % of the Japanese respondents, and the respective figures for a clear preference in teaching are 12 % and 6 % respectively (Teichler et al. 2013, p. 120).

Looking at the four sub-groups, we observe different patterns: there are more senior academics at research-oriented universities in Japan having a clear preference for research than in Germany (22 % as compared to 12 %). Japanese junior academics at research-oriented institutions are similar to their seniors in this respect (19 %), while a very high proportion of junior academics at these institutions in Germany have a clear preference for research (33 %).

Again, we observe more substantial differences between academics of the two institutional types in Germany than in Japan in this respect: among senior academics of the teaching-oriented institutional type, only 1 % state a clear preference for research, but 44 % for teaching; in Japan the respective figures are 12 % and 6 %. Among junior academics at teaching oriented higher education institutions in Japan, 18 % stated a clear preference for research and 46 % for teaching, while the respective figures are 12 % and only 8 % in Japan.

The differences between the sub-groups are striking both in Japan and Germany as regards publication activities. According to an index employed in the CAP study, the "academic productivity" of all respondents in 2007 was about one-third higher on average in Japan than in Germany (index 32.9 vs. 24.4). In looking the various categories, however, we note that notably senior academics at predominantly teaching-oriented institutions and junior academics at both types of institutions in Japan published more than their counterparts in Germany. In reverse, professors at German universities in charge of both research and teaching published more (55.8 vs. 50.2) than their colleagues in Japan (ibid., p. 150).

A final comparison presented here refers to the overall job satisfaction (cf. Bentley et al. 2013). On a scale from 1 = "very high" to 5 = "very low," professors at (research-oriented) Japanese and German universities both rated 2.4 on average in 1992. The ratings were somewhat more positive in 2007 (2.1 and 2.2). On the part of academics from other institutions, the ratings of professors were slightly less positive and also improved slightly over time; at these institutions, junior academics expressed slightly less favorable views than senior academics. The major difference between Japan and Germany can be found in the average ratings of junior staff at (research-oriented) universities. On the one hand, the junior academics in Japan expressed a similar degree of satisfaction as the senior academics (2.5 in 1992 and

2.2 in 2007). On the other hand, junior academics at German universities were clearly less satisfied in 1992, that is, 3.1; their ratings substantially improved to 2.5 in 2007, but still remained less positive on average than those of the senior academics in Germany and both the senior and junior academics in Japan.

15.5 Concluding Observations

International comparative studies in the area of higher education research have enormous potentials. And these potentials come most impressively to the fore if scholars from all the countries addressed in such a comparison participate in the analysis and mobilize their knowledge about higher education in their respective country and in a comparative perspective. But one should not overlook that these studies are costly, time-consuming, and difficult to manage given the various concepts and the various research practices of the scholars from various participating countries.

The comparative studies on the academic profession in more than a dozen countries, each undertaken in the early 1990s and in the latter half of the first decade of the twenty-first century, illustrate the strengths of comparative analysis, but they were certainly not free of conceptual divergence and of operational problems. For example, the views varied among the scholars in charge of the comparative analysis regarding the question how much the latter survey should repeat questions of the former survey and thus be strong in the analysis of change over time, or how much the latter survey should pose new questions to overcome the weaknesses of the initial questionnaire and to tackle themes that had gained momentum in the meantime. While the majority of the participating scholars opted for the latter, the team of researchers in Japan decided to administer two representative surveys at the same time—one by using again the earlier questionnaire and the other by using the questionnaire jointly formulated for the new survey. The results of the first of these 2007 questionnaires, which cannot compared directly with other countries, are presented in this volume. In contrast, selected results of the second 2007 questionnaire are addressed in this chapter in order to compare the academic profession in Japan with their counterparts in Germany.

This chapter discusses another conceptual divergence among the scholars involved in the comparative analysis of the academic profession: the issue whether the academic profession can be viewed more or less as a single entity or whether it is clearly sub-divided by institutional profiles and by career ranks of academics. The findings presented allow us to conclude that a comparison of the totality of academics in the two countries is misleading for two reasons. First, the composition of the academics in both countries is strikingly different with many senior and few junior positions in Japan and, in reverse, with more junior than senior positions at German universities; as well as with a dominance of employment of academics in Japan at institutions with a prime emphasis on teaching and in Germany with a dominance of those with a close link to both research and teaching. Second, the academics' views and activities vary substantially in both countries according to their rank and institutional

setting. These differences are so substantial in Germany that the idea of a single academic profession clearly could not work at all. In Japan, these differences are smaller, but clearly not negligible. As a consequence, one might suggest that comparative studies on the academic profession should not put so much country differences between all academics of the respective countries in the limelight, but should pay attention as well to the variations among the academics of each country (see also Cavalli and Teichler 2010).

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Chapter 16
The Invisible Academy: A US Perspective on the Japanese Academic Profession

William K. Cummings

16.1 Introduction

The Japanese academic system is relatively young, founded in the Meiji era to "seek knowledge from throughout the world." Thus the system's original goal was to digest foreign, and especially western, knowledge. Over the past century and a half, the Japanese system has accomplished much—and its focus has shifted to the creation of new knowledge (Cummings 1990a). Today the Japanese academic system is impressive both in accomplishing its initial goals and in achieving its new agenda. It is second in the world in terms of total expenditure as well as expenditures on research and development. It is the third largest in terms of the number of full-time professionals and the number of enrolled students. It is third in the world in terms of the number of articles published in internationally recognized journals. Yet few, especially in the West, are cognizant of the recent accomplishments of the Japanese system.

16.2 The No-Longer-Noisy Students

My first encounter with Japan dates back to the era of the Tokyo Olympics when the Japanese economy was just beginning to take off, with high-speed growth leading to the Japanese economic miracle of the 1960s (World Bank 1993). Higher education was also expanding at a rapid rate in response to the demands of the baby boom generation. But in many institutions the quality of higher education was lacking. Moreover, Japan's conservative government had aligned with the US in military

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initiatives in South-east Asia. Thus many students were discontented, and they sought to express their concerns with volatile protests that on occasion brought daily life on and off the campuses to a standstill. It was an explosive and exciting time. At that time, student protest was prominent in many other countries, but arguably Japanese student protest was the most dramatic.

It was during this period that I developed a keen interest in Japan and Japanese education that I have sustained for five decades. For example, I took up the Japanese language and Japanese studies at the University of Michigan. Later at Harvard, I completed a doctoral dissertation on the Japanese Academic Marketplace that was initially published in translation and later in English (Cummings 1990b). And over the years since, I have had numerous occasions to visit Japan, collaborate with Japanese colleagues, and lecture and teach in Japan.

Japanese higher education and research are very different today when compared to the 1960s. The quality is up—as seen in the beauty of many of the campuses, the modernity of the building designs, the technology available in the classrooms, the equipment in the research laboratories, and the research publications of the professors. Whereas it was difficult for a student to gain admission to higher education in the 1960s, today many institutions are unable to attract a sufficient number of students. Whereas the students were noisy in the 1960s, today they are quiet. Thus much has changed between 1960 and today. But much is the same. So let me illustrate with a few examples, particularly as they influence the life of the Japanese professor.

16.3 The Strong State to the Strong Academy

One of the most striking features of the Japanese system is its pattern of governance and management. Historically, most of the lead institutions were established by the national government both to train civil servants and to master modern science and technology. Meanwhile many private institutions were established with the approval of the national government. Through WWII, all of these institutions were significantly regulated by the national Ministry of Education through its declaration and enforcement of establishment standards (concerning the fields of study, the numbers of faculty and students in each field, the prices for tuition and fees, the allocations of research money, and other related matters). While a distinction was made between academic matters and operational matters, the national Ministry had a prominent role in both spheres.

Especially in the national/public sector, during the early days of the system's development the Ministry placed considerable emphasis on the exploration of academic fields in science and technology. Thus in many of the national universities over half of the academic appointments were in these fields. In contrast, the private sector placed greater emphasis on the humanities and social sciences. These differences continue down to the present.

Another feature of this earlier period was the Ministry's role in shaping the direction of academic research. The Ministry authorized small block grants to each academic unit of the national sector instead of authorizing an open competition for

research funds. Over time the Ministry began to open up increasing amounts of funds for open research competitions—but there has been a tendency to stress the funding of applied research rather than basic research. Thus the overall amount of research funds for basic research provided by the Ministry has always seemed somewhat small when compared to the amounts in other advanced countries.

At the conclusion of WWII it was argued that the Ministry had misused its power and undercut the value of academic freedom. Thus new rules limiting the Ministry's interventions were established. These rules gave the Japanese professoriate more power over academic matters than could be observed in most other systems around the world. And it also gave the professoriate exceptional power in some operational matters. For example, the selection of deans and even the selection of university presidents are turned over to the faculty. But with these responsibilities also comes the duty of discharging them. Thus, as reported in the CAP survey (Teichler et al. 2013), the Japanese professoriate appears to spend more time on issues of governance and management than does the professoriate in most other academic systems.

16.4 Developing Self-Sufficiency in Academic Training

The Japanese academic system has a shorter history than do the systems in Europe and North America, and in the early days it drew heavily on western precedents. Many western academics were invited to Japan to share their understanding of western scholarship, particularly in the sciences and engineering. At the same time promising young Japanese scholars were sent to the West to learn. Through this reliance on foreign training, the new system was launched. For some time, the Japanese system continued to rely on foreign training.

But gradually in most fields, increasing reliance was placed on Japanese academics to supervise the training of the younger generation. Thus over time the Japanese system became self-generating, at least for basic training, though it continued to look to foreign settings for advanced training and cutting edge research opportunities. Today in Japan most aspiring academics complete their graduate studies in Japan, though once they obtain a secure job they may venture overseas for a "post-doctoral" experience. As the basic training is completed in Japan, Japanese academics acquire a Japanese style in their research, including a preference to publish much of their research in the Japanese language. In this way the system became insular in terms of the conduct of basic training and academic publishing while at the same time remaining open to foreign ideas.

16.5 Academic Staffing and Networks

Japanese professors tend to stay at one institution over the course of their career. The historical staffing design was to establish chairs responsible for the different academic fields recognized by academic leaders. Within a chair, the top position

went to a full professor with a second-level position going to an associate professor and possibly the appointment of another scholar as a lecturer or assistant. At the lead universities, these appointments were extended only to the graduates of the respective institutions—thus all junior positions at the University of Tokyo were open only to graduates of the University of Tokyo.

A notable feature of the system's development was the tendency for lead universities to emerge to take charge of the responsibility for the staffing of second-tier institutions. Thus the University of Tokyo came to dominate many of the new appointments in the North and East of Japan while Kyoto University dominated those to the South and West. This pattern of domination was referred to as *gakubatsu.* While it led to stability in the process of building the national system of higher education and research, it also limited the competition for academic posts that many experts consider essential to academic creativity.

As the Japanese system conducted its teaching as well as much of its research in Japanese, the search for new academics was invariably a national search. Academics born and trained outside of Japan were excluded from these searches.

Another shortcoming of the system development was the tendency to exclude women from consideration. The Japanese system is exceptionally sexist, particularly at the point of entry. But there is the anomaly that women who get in at the base move up as fast as men (Cummings and Bain 2000).

The systemic reliance on *batsu* determined appointments and the low level of mobility following the initial appointment has fostered a strong sense of loyalty to the *batsu* and hence to the institutions within each *batsu*. Thus professors work hard to insure the survival of their home institutions. Hence they engage in much committee work, spending long hours in planning and the execution of their duties. The long hours spent on administrative work combined with long hours devoted to research leads to a heavy schedule with little time for leisure. Thus Japanese professors report that their job is stressful.

16.6 Neglect of Teaching

Japanese higher education is built on the strong foundations of the Japanese school system. This was as true in the 1960s as today. International studies of educational achievement repeatedly show that Japanese youth lead the pack in reading, mathematics, and science. These same studies show that Japanese young people do very well in terms of exhibiting higher reasoning skills and in identifying multiple ways to solve problems. So the young person entering the Japanese university is considerably ahead of his or her counterpart in most other countries—perhaps 2 years ahead of the average American college student, 1 year ahead of the typical European student. The superior preparation of the entering Japanese student eases the work of his/her professors. They need not work as hard as their counterparts elsewhere to get the same educational result.

Perhaps just as important, the young people entering Japanese higher educational institutions are not as educationally demanding as their counterparts in other countries. The typical Japanese first year student believes he/she has worked hard to gain entrance to higher education so they deserve time to relax, develop new friendships, and grow up. They may not attend class on a regular basis as studying interferes with their other more private goals. Thus the Japanese student puts little pressure on his/her professor. The Japanese professor, likewise, puts little pressure on his/her students. In most classes, particularly in the lower grades, attendance is not taken and there are few assignments, either written or oral.

Shigeru Nakayama, a renowned science historian, once observed that the learning tradition in the West reflects a rhetorical tradition whereas that in Asia builds on a documentary tradition (Nakayama 1984). In the rhetorical tradition, scholars seek to advance their thinking through engaging in debates such as Socrates' arguments with others on the grounds of the Parthenon. Reflecting this tradition, western scholarship features academic conferences where papers are presented, discussants comment on the papers, and then the presenters respond to the discussants. This discourse can at times be quite sharp. The rhetorical learning tradition also shows up in classrooms where students are expected to respond verbally to questions advanced by their teachers. And the teachers often are encouraged to react to the presentations of their students.

In contrast is the documentary tradition characteristic of Japan (and other East Asian systems) that focuses primarily on the written word and the expectation that scholars should focus on memorizing, recanting, and improving on what is written—with little or no verbal exchange. The documentary tradition, by placing major weight first on understanding what is written in the core documents, tends to promote a more passive style of learning—exemplified by the written exams for the civil service in ancient China. The more passive documentary tradition eases the burden of professors as their job is to see that students learn what is in the textbooks and not to go beyond them.

16.7 Passion for Research

The Japanese professor is more likely to have his/her heart in research than in teaching, and thus prefers this less burdensome passive style of learning. The typical professor has faced a long uphill battle to obtain a doctorate. Relatively few senior faculty have doctoral degrees so they are reluctant to award this prestigious achievement to their lower rank and younger colleagues. The junior faculty are expected to earn their degrees through making contributions in the group projects organized by their senior colleagues. Participation in these projects is both intellectually and socially rewarding. And for many professors, the only way to gain access to research opportunities and funds is to participate in these group endeavors. Thus the research role of faculty yields benefits whereas the teaching role is simply a duty.

The commitment of professors to research in combination with the extensive availability of outlets enables the Japanese professor to be highly productive, more so than in any other country except possibly Korea. Japanese professors report that they publish over three research articles a year and about one book a year (Shin et al. 2014).

Japanese academics understand the expectations for serious scholarship and channel much of their energy into carefully researched and crafted scientific publications. At the same time, many Japanese academics also like to engage in more popular publications. Japan has been called a nation of readers. Perhaps because the Japanese public has to spend more time commuting to work than is common elsewhere, they have developed the habit of passing the time away by reading books and magazines. Much of this popular material is written by Japanese academics (for monetary compensation), and often this popular material is fascinating. Thus the accomplished Japanese academic has two distinctive sides to his/her scholarship—a serious scholarly side and a playful popular side.

16.8 Internationalizing the Japanese Academy?

The Japanese academy in earlier times was somewhat insular—seeking to import foreign practices and knowledge but doing little to reach out to foreign audiences. More recently Japanese academic leaders have expressed a desire to "internationalize" the system, by which they primarily mean attracting more foreign students to Japan.

But this inclination has met with limited success. After all, instructional and research activities of the Japanese system are carried out primarily in Japanese, a language that few foreigners understand. Thus the internationalizing activities are largely focused on Japan's neighbors in East and South-east Asia rather than on North America or Western Europe (young people in both China and Korea can read and understand the characters (kanji) that are the heart of the Japanese language). The great majority of the Japanese system's foreign students come from nearby Asian countries. And a substantial proportion of the collaborative research of Japanese scholars is with Asian counterparts rather than with Americans or Europeans. Thus despite the impressive size of the Japanese system and its research productivity, its outward-reaching internationalizing activities are not very visible to western academics.

16.9 Conclusion

Japan has an impressive academic system—in terms of its scale, the quality of its scholarship, and its attention to scholarly trends in other parts of the world. Japanese professors are hard-working, creative, serious, but also fun-loving. While their

teaching may not be very stimulating, they often establish warm personal relations with their students. The great passion of the Japanese professor is to conduct research and publish interesting findings. The publishing energy of Japanese professors is quite astounding, but the great majority of this publishing is in the Japanese language rather than in a western language. Thus much of the research achievements of Japanese academics is invisible to western academics. Hence, while objectively the scale and productivity of the Japanese academic system is very substantial, subjectively the Japanese system may not receive the respect it deserves—particularly in the West.

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Chapter 17
Similar but Different Worlds: A Korean Perspective on the Japanese Academic Profession

Jung Cheol Shin

17.1 Introduction

I had a chance to take close look at Japanese colleagues during my sabbatical leave last year. I chose Japanese universities for my study because I recognized that Japanese academics are quite different from Korean academics though we share more similarities than we do with many western colleagues. My first academic visit to Japan to work with Japanese colleagues was in 2008 when I joined the Changing Academic Profession (CAP) project. Before I participated in that conference, I had no knowledge of the academic world and scholarly life in Japan because the only academic life that I had experienced was American academia where I studied for my doctoral degree. The CAP data gave me primary sources for understanding Japanese academics and my 1-year stay in Japan provided me with a chance to closely observe the real academic life of Japanese academics. Through my empirical data analysis and my experience, I found that Japanese and Korean academics are similar, yet in many ways they are also quite different.

The similarities and differences are related to the historical development of higher education in the two countries. The similarities come from the historical roots of the higher education development in both countries. Japanese higher education was influenced by the German universities and this tradition was implanted in Korea during the colonial period. After independence in 1945, both countries were influenced by US higher education, but this influence was in slightly different ways in the two countries—Korean academics aggressively studied in US universities while few Japanese academics did. As a result, Korean academics are more akin to those in US higher education while Japanese academics still hold to strong German traditions.

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As well as sharing similar historical roots, higher education development in both countries also shares Confucian culture, which holds scholarly work in high regard. This cultural tradition influenced academic and organizational culture in both countries (Shin 2014). For example, both have a strong seniority-based academic culture where junior academics respect seniors' works, so that academic criticism is not well institutionalized. The cultural tradition influences too the patterns of academic activities in both countries. The following sections discuss the similarities and differences between the two close academic societies based on my observations and some empirical evidence from the CAP data and its reports.

17.2 The Similar Species

Japanese academics are hard-working. I often observed that some Japanese academics come to their office in the early morning with two lunch bags (*bento*) and do not leave until late at night (10 pm). Of course many of them are not always in their office: instead they are on field trips to conduct their research. Many Japanese academics seemed to have their main focus on their academic life, and paid little attention to enjoying their leisure time. I often saw them on Saturday and Sunday in their office. Similarly, many Korean academics are hard-working. I am always struggling with arranging meetings with professors near me because everybody has a tight time schedule. The CAP data also showed that Japanese and Korean academics were the hardest working academics among the 19 higher education systems included in the comparative study (Teichler et al. 2013).

The hard-working habits of the academics impact their job satisfaction and job stress. The CAP data showed that they feel very stressed about their academic job. The stress may be related to their workloads, which cause them to work more than 50 h per week. Ironically, however, they feel very happy with their job despite the level of stress. This high level of job satisfaction might be related to their social reputation through having an academic job as well as internal motivation for scholarly work (Shin and Jung 2014). In both Korea and Japan, the position of a professor (and of teachers in general) is highly regarded. In addition, they are relatively well paid and their academic freedom is protected. I do not know whether it is true in Japan, but many Korean academics encourage their children to become professors.

Unlike in western society where the relationship between professors and students is based on a kind of "contract" between equals, Korean and Japanese professors are viewed as superior to their students. There is a strong social hierarchy between professors and students in both Confucian countries. Also, ideologically, all professors are equal, but in reality their status on campus is very hierarchical. However, the seniority-based relationships are changing with the emphasis on academic productivity in the era of global competitiveness. The change is more noticeable in Korea where performance-based incentive systems have been initiated by the government (Shin and Jang 2013).

The social hierarchy between students and professors, as well as between professors, is related to the high rate of academic inbreeding in both countries.

Junior professors are often in the same university where formerly they were students of the senior professors. The inbreeding rate is highest in the more highly ranked universities in both countries. This is related to the social hierarchy between universities in Japan and Korea where students are admitted to top-ranking universities according to their academic achievements. The top-ranked universities, viz., Tokyo University in Japan and Seoul National University in Korea, tend not to hire graduates from other (inferior) universities as professors, although this is changing thanks to national policy initiatives in both countries. This close relationship between senior and junior professors leads a university to be more conservative when confronted with external changes.

Finally in this section, I should mention a strong research orientation in both Japan and Korea. In both societies, scholarship is defined as the discovery of knowledge with a strong preference for research. The German ideal of a research-driven teaching model is shared in both academic societies. The CAP data also showed that both Japanese and Korean academics have a strong preference for research, and this did not change between the 1992 Carnegie survey and 2007 CAP survey in both countries. This strong preference for research is seen in their high research output, although their way of doing research differs as discussed in the following section.

17.3 The Different Species

Despite many similarities, there are differences between Korean and Japanese academics. This section focuses on how they differ in terms of their research activities, their international collaboration, and their training of graduate students.

17.3.1 Established Research Hub

Japanese academic society has already established its own research hub, so that it can survive with little input from western academia (e.g., Cummings 1994). Especially in the field of social sciences, Japanese academics have developed their own theory and methodology as well as their own academic market for research, with the establishment of well-developed advanced degree training programs for future generations. Although there might be some controversies on the low rate of foreign degree holders among Japanese academics, most of their social scientists have been trained in a Japanese university, suggesting that Japan has built its training systems for the next generation of academics and aligned its research to the needs of their society.

The research of Japanese academics is generally not internationally circulated because it is published in Japanese and their research methodology may be less academically communicable to western academics. On the other hand, many Korean academics earned their advanced degree from a foreign university, and their academic

research has been influenced by the West. Korean research is communicated with western academics, especially US academics, because it is often published in English and the data and methodology are similar to those of US academics. This may explain why Korean academics are more visible in international academic conferences in the social sciences than Japanese academics. However, their research is relatively less applicable to Korea because the western theories may not fit Korean society.

I should also mention that Japanese universities are actively attracting international students and training them. This will enable Japanese universities to become the regional research hub, although they rarely teach in English. By attracting international students, they are able to build regional academic networks with other countries in Asia. On the other hand, foreign academics who gain their advanced degree in Japan do not enjoy wide international networking with western academics because of the language barrier. This is a big challenge for Japanese academic society, which has built its own research hub distinctive from English-speaking countries. Japanese colleagues note that even German universities teach courses for foreign students in English and in Europe the only exception to the dominance of English is in France where the French universities still teach foreign students in their own language (French). I believe that this issue of language will become a major challenge for Japanese higher education if it is to survive in the changing academic environment.

17.3.2 Strong Commitment to Research

My observation is that Japanese academics have the highest commitment to research in the world. Their preference for research is much stronger even than that of their German colleagues, who also have a strong belief in research-driven teaching. German academics, especially in the former East German territories, have a strong commitment to teaching and their western partners have also been slowly adopting the Anglo-American conception of classroom teaching since Germany participated in the Bologna Process in 2000. I have observed the same teaching commitment from small and private Japanese universities, while the national universities, especially the former imperial universities, still rely heavily on a research-driven teaching ideal.

I have also recognized that professors have widened their commitment to teaching, especially to undergraduates, since the late 1990s when Japanese universities adopted the US system of coursework. Many universities have adopted faculty career development programs that focus on enhancing their teaching competency. One group of higher education academics is deeply involved in programs to develop faculty, is working closely with university administrators, and is affiliated with the center for higher education. The academics actively organize seminars and conferences to develop faculty career development programs among Japanese universities.

In the case of Korean academics, classroom teaching as well as research is a core duty. Virtually every professor in the tenure track does research as well as teaching. Historically, most Korean universities have been developed as social institutions of teaching. Research has been considered the duty of individual academics while

teaching is a core duty required by their university and national law. This is stipulated by the Higher Education Act which requires professors to teach 9 h per week. Beginning in the 1980s, national policy began to emphasize university research and the government began to increase research funding for university professors. As a result, the research has been financially supported by public funding and research performance became a core criterion for faculty evaluation. Korean academics therefore have two demanding commitments: one for teaching and the other for research.

The differences between the two countries are also supported in the classification of teaching and research systems across the 19 CAP participating systems. In the international comparative study conducted by Shin and Cummings (2014), the Korean system was classified as a teaching and research balanced system while the Japanese system was classified as a research focused system. In the long run, the differences between the two systems may become minimal because policy initiatives are slowly moving Japanese universities toward a teaching focus.

17.3.3 Research Topics for Academic Career

Japanese academics develop their own research topics during their graduate studies and tend to stay with the same or similar topics even after they complete their doctoral degrees. Their research goes deeply into a topic and continues throughout their academic career, making them "specialists" in the topic. This is a major characteristic of Japanese academics, whereas those in other countries tend to change their research topics depending on research funds and/or social demands. This division of labor between academics in terms of their research topics is feasible in Japanese academia while it is not easy in other smaller-scale academic societies.

Whenever I meet Japanese academics, I recognize that they have focused their research regionally, as well as having their specific research topics. I am surprised when I recognize that Japanese academics know much more than I about specific issues in Korean education. I would say that Japanese academics are "geologically broader in their research scope" and "narrow in their research topics." I think that this research preference is related to national policy (e.g., funding policy) as well as academic tradition. Without doubt, I believe that many Japanese academics will achieve remarkable research outputs in the long run because of these research styles. This explains why Japanese scientists receive many Nobel Prizes. Academic recognition on a global scale is only available to those academics who concentrate on specific research topics.

Compared with Japanese academics, Korean academics tend to change their research topics according to funding availability and social demands. This is also related to the smaller scale of academic society in Korea and the smaller numbers of academics conducting research. This trend is not changing, because academic culture is not changing and because research funding policy is on an annual basis and therefore requires academics to keep searching for new topics. If academics apply to a national research foundation to fund research similar to what they completed in previous years, their success rate will be low.

17.3.4 Strong Ties with Western Academics

I recognized that Japanese academics are well networked with highly regarded western academics, even though most earned their advanced degree from a Japanese university. This is interesting because one would assume there would be language barriers for Japanese academics to overcome in communicating with western academics. I was interested to know how Japanese academics build their networks with western academics. While I was staying in Japan, I saw how often western academics are invited to Japanese universities to deliver a lecture or make a presentation. In addition, I learned that many Japanese academics stay in a western university during their sabbatical leave. Through these efforts, Japanese academics and their universities have developed close ties with western academics and their universities. In addition, I also found that many Japanese universities contain well-equipped libraries with collections (books, reports, journals, and raw materials) to support their researchers. These collections include western publications as well as domestic ones and this enables Japanese academics to keep in touch with western research trends.

Compared with Japanese academics, Korean academics are doing much less networking with western academics even though many of them earned their advanced degree from a foreign university. This is quite interesting because Korean academics are under less pressure in communicating with western academics. However, as described earlier, Korean academics tend to move their research from one topic to another, which makes it difficult for them to maintain networks with western academics, who tend to develop their academic career in a specific research area. The most highly regarded academics tend to be those who develop their research interests in a specific research topic and make a name for themselves in the area.

As well as their strong ties with western academics, Japanese academics network closely with Asian academics through conferences, exchange of students, mutual visits, etc. Japanese academics have good relationships with their colleagues in China, Korea, and Taiwan. As well as the North-east Asian countries, Japanese academics also have close relationships with colleagues in South-east Asian countries. These networks are developed and maintained through the research funding given by the Ministry of Education (e.g., Yonezawa 2013). I am not certain whether the international networking is a natural consequence of the Japanese academics' research tradition or is driven by funding policy, but certainly both factors have promoted it.

17.3.5 Supportive Administrators

I am often surprised at the level of administrative support in Japanese universities when Japanese academics host international events. Whenever I attend such a conference, I interact with administrative staff for many things—paper submission, financial supports, reports, etc. The administrative staff work with well-developed work manuals and have no problem communicating with foreign academics.

Perhaps I have a favorable perception of the administrative support in Japanese universities because I have visited such well-established research centers as the Research Institute for Higher Education (RIHE) at Hiroshima University.

Unlike Japanese academics, I often have to do my administrative work myself because I do not have any administrative staff to help me in my international networking. Even domestic events are handled on my own. There are some perceptual gaps between Japanese academics and Korean academics on the administrative process. In the Korean university context, administrative staff are rarely involved in academic events and are not happy when they are asked to be. It may be that the staff size is too small compared with Japanese universities. However, it is not just about the issue of size: the administrative staff in Korean universities define their jobs as office administration only; while academics prefer to work with their graduate students, and are reluctant to work with their administrative staff.

Often graduate students in Korean universities are the ones responsible for the administration in a department. For example, my department can hire three regular administrative staff, but it hires only graduate students for this purpose. Students view the administrative position as an opportunity to obtain a scholarship and are less interested in their role as an administrator. The different ways university administration is handled by Korean and Japanese universities accounts for some of the differences in the quality of administration between the two countries.

17.3.6 Different Ways of Training for Graduate Students

Japanese academics do not seem to work closely with their graduate students compared with US and Korean academics. This may be related to different perceptions about PhD training and coursework. Most Japanese students seem to work hard on their own, not working closely with their professors. Japanese graduate students conduct their own research, present it in a seminar organized and facilitated by their supervisor, and discuss other students' research in the seminar. However, I rarely observe them conducting their research with their professors. Although a growing number of Japanese universities are beginning to emphasize coursework, the seminar style remains popular among Japanese academics.

US universities provide well-developed PhD coursework. PhD students are required to pass examinations step by step and work with their professors on research projects. These training patterns assure that graduate students are highly qualified in a specific field. Compared with the US, Japanese academics tend not to emphasize coursework, nor do they work on projects with their graduate students. Of course, this differs across disciplines: for example, Japanese professors in natural sciences, engineering, and medical sciences do work closely with their students on research projects. This collaborative approach between professors and students is similar in the social sciences in many US universities too.

Compared with the Japanese academics, the way that Korean academics teach their graduate students is similar to the US style. The Korean academics work with

their graduate students to conduct their research projects funded from external agencies, including national research foundations. In addition, a growing number of academics work closely with their graduate students to publish journal articles together. This is because many universities require research publications before they will hire a new faculty member. To respond to these changing environments, many Korean professors now actively help their graduate students to publish in journals, particularly international journals, because such publication is highly regarded in the faculty hiring process.

17.4 Conclusion

Academic communities are rapidly changing in accordance with the changing academic environments. The social demands of global competition require research-productive academics. At the same time, we expect good teachers who can teach academically under-prepared students, especially undergraduate students in the post-massified university (e.g., Shin and Teichler 2014). How to meet the different demands is a serious challenge for contemporary higher education. Korean academics seem to have shifted more rapidly toward a teaching-focused approach than Japanese academics. However, in terms of research, Korean academics are still lagging behind their Japanese colleagues. Japanese academics have well-established research hubs, develop their own research topics, and network widely both regionally and globally.

My observations and interpretation are based on my own experiences and may be biased by the academic fields I have experienced. My communications are with colleagues mainly in the field of education studies. Comparative studies on the academic life in the two countries will help us understand each other. Without mutual understanding on the similarities and differences, it is not easy to find ground for mutual collaboration. At this stage, a recommended research focus might be how their academic perceptions, activities, and cultures are similar and/or different. The follow-up qualitative studies will complement the CAP data.

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Epilogue: Perspective of the Academic Profession

Akira Arimoto

E.1 Introduction

This final chapter considers the future problems and perspectives which the Japanese academic profession is facing. Specifically, it deals with the functions and pathology, and the perspectives, of the academic profession. Finally, some conclusions are drawn.

E.2 Functions and Pathology of the Academic Profession

In the previous chapters, based on the surveys of 1992 and 2007, the functions and pathology of the academic profession over the 15-year period have been illustrated from a bird's-eye view, with some aspects examined in detail from an "insect's-eye" view. The resulting picture of the academic profession has been considered from the perspective of faculty consciousness regarding each aspect, such as correspondence to environmental changes, university organization, academic productivity, and transmission of services to wider society. The relationship of these factors to the academic profession has been examined in terms of both function and dysfunction. Which changes in the academic profession are important to the functions of faculty and which are less so? As previously noted, the academic profession is defined by academics' long-term history of study, knowledge, academic freedom, professional ethics, social authority, and high academic productivity. These components together

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make the academic profession different from other professions. The following are some of the findings drawn from the chapters of the book.

(1) During their long history of study, faculty who devote themselves to academic work based on knowledge have developed an appropriate career path in order to specialize in academic disciplines. The progression through levels of academic degrees, such as bachelor, master, and PhD, has been promoted, and the number of higher degree holders has increased. Although Japan has maintained two lines of PhD—dissertation doctor and course doctor—so far, the number of the former is likely to increase rapidly since the Report of the Central Council for Education in 2005 suggested unifying PhD into this line.

This study has shown that the number of higher-educated female faculty has increased. While there is still a problem of gender bias, nevertheless, more female faculty are starting to be promoted to higher positions. More faculty are joining universities from workplaces other than universities; and the numbers of faculty belonging to non-career paths have increased.

(2) Academics hold strong principles about what should be done at universities, but the changes require reconstruction of these principles, and this has led to feelings of isolation and anxiety for many faculty. Scholarship has been traditionally composed of research, teaching, and services, and the research paradigm has been dominant since the modern universities were established. On the other hand, the international emphasis of scholarship has shifted more towards teaching since Ernest Boyer suggested "Scholarship Reconsidered: Priorities of the Professoriate" in 1990. Although Japan has lagged behind in this approach, teaching has been positioned in the center of institutionalization of Faculty Development (FD) since 1998. Furthermore, faculty's abilities in teaching have been emphasized by standards of university establishment since 2001. Accordingly, faculty consciousness regarding its role has undoubtedly changed in recent years. Despite this, it would not be an exaggeration to say that government policies have not clearly recognized the integration of research, teaching, and learning and this has given rise to confusion between the principle and the practice. In other words, Japanese faculty used to be research-oriented 15 years ago, and now they are rather ambivalent about doing both research and teaching. Leaving this situation as it is will perpetuate the confusion.

(3) Academic freedom has become narrowed because of a shift from knowledge community to knowledge enterprise over the 15-year period. Both analyses of university funding and research funding allocation mentioned in Chap. 4 pointed out that these brought increasing competition for funds and gaps of opportunity between faculty in the academic world. Most faculties found that they could not work on research activities freely. While academic freedom and university autonomy were rooted in the traditional foundations of universities, university autonomy since national universities were incorporated has replaced a bottom-up style with a top-down style. Accordingly, academic freedom, research freedom, and science freedom have regressed, and this situation has prompted complaints from the faculties, especially those of national universities. The degradation of research time, which is

strongly connected with academic freedom, was discussed in Chap. 8 "Conditions of Employment," and Chap. 9 "Working time and personal strain."

(4) University organization bodies would need to have more freedom in order for faculty to enjoy more degrees of freedom. There is a continual issue to overcome particularism for universalism. The mobility discussed in Chap. 3 would be its barometer. On a global scale as well as national scale, the mobility of faculty is weak in Japan. Pure mobility is especially weak, but also compulsory mobility as well as the closed nature of academia are strongly rooted. Influential universities have widespread academic nepotism and inbreeding, and their openness both to Japanese and non-Japanese academics has remained low. The self-sufficiency ratio is more than 60 % at the University of Tokyo, Kyoto University, Waseda University, and Osaka University as of 2003 (Yamanoi 2007).

It is obvious that there is a world of difference between Japanese universities and Harvard University or Yale University in the US, which achieved a ratio of one-third out-breeding as early as a century ago. In comparison with universities in Europe and the US, which have strong tendency to overcome particularism for universalism, Japanese universities will be anachronisms in the coming era of knowledge-based society and globalization with borderless knowledge (Gornitzka and Langfeldt 2008).

(5) The nature of professional ethics should exist in faculty's logical decision-making based on their own views, and this is what is meant by a profession. Self-control is necessary for a profession. Today, handling of violators of ethical standards has been institutionalized by the faculty council and board of administration, and it could be said that professional ethics is alive and well. However, there are issues of injustice in science, deviant behavior, moral hazards such as sexual harassment, academic harassment, and power harassment, and violations of ethical provision such as misuse of research funds, plagiarism, and forgery frequently reported by mass media.

The university's social authority and its prestige have been degraded by massification of higher education, schooled universities, decline of administration and management, loss of academic freedom, bad conditions of employment, decreased salaries, impoverishment of financial resources and allocation of resources, increased stress, and decline in professional ethics, among other factors. The increase in numbers of faculty and massification brings not only degraded prestige but also a decline in professional ethics. While there has been an increase in emeritus professors due to the relaxation of its qualifications, also the incidences of disgraceful professors making headlines have increased. Consequently, it can be understood that the university's social authority and its prestige have been rapidly lost. While the professional ethics of university faculty was quite high compared with other professionals such as bureaucrats, medical doctors, and presidents of companies about 40 years ago, professional ethics as a whole has been degraded and it is undeniable that the professional appeal of faculty has been weakened today (Shinbori and Arimoto 1969). Although this study has shown that emotional attachment for faculty has remained high, it also shows deep concern about the difficulties of attracting and employing excellent human resources for universities in the future.

(6) A supply of higher-quality academic productivity would be a pivotal concept which might point to the future of the profession. This would enable accomplishment of academic works, such as research, teaching, and services, and would be a lifeline to produce higher academic productivity especially on research and teaching. Even though Japanese faculty have achieved high research conformity and research productivity, they have been considered to produce low teaching productivity because of their low teaching conformity. As mentioned above, the surveys described in this study found some signs of improvements in faculty consciousness as well as actions, and this is considered to be a result of a series of university reforms. However, more examination would be necessary to confirm whether higher-quality academic productivity was truly produced. As discussed in Chap. 10, the fact that faculty produced almost the same research productivity as before in spite of lack of research time might indicate that there was an increase in their research density but a deterioration in its quality. On the other hand, this study makes clear that there is a problem in quality assurance of teaching time which has increased the burden on faculty. A strong expectation of higher research productivity is that it should make discoveries in the front line of knowledge and contribute to its development. Meanwhile, higher teaching productivity should affect teaching as well as student learning and bring students up to excellent bachelor level by their graduation. Although a balance of research productivity and teaching productivity should create higher academic productivity, it became obvious that this has not happened, as mentioned above. "The Degree of Benchmark Statement" of the UK set out ideal standards, and Japan has been asked to achieve such standards (Arimoto 2007). The Science Council of Japan recently started to test establishing ideal standards of academic degrees, and this trend should be followed.

As discussed in (1) to (6) above, it can be concluded that faculty today have failed to construct an ideal profession and discharge their responsibilities. Furthermore, they have lost their sense of direction because of falling into a state of anxiety instead of establishing the principles of their profession during the 15-year period. At this rate, the direction in which faculty is moving is likely to lead to a loss of substance and the decline of quality but not improvements in academic productivity.

E.3 Perspectives of the Academic Profession: Faculty's Qualities and Abilities as Profession

As discussed above, the academic profession today is considered to have failed to establish the principles of their profession. They have not yet established a vision for the twenty-first century, they have lost attainment targets, and have shown increasing conflicts. Compared to 1992, by 2007 there had been decreases in academic freedom, professional ethics, and social authority, and the gaps between research universities and non-research universities and those between faculty of "successful universities" and that of "unsuccessful universities" became widened.

There were increases in the numbers of faculty, female faculty, and PhD honors. These situations resulted in a lack of reconsidering knowledge and a decline in the academic profession. In the face of these changes, the identity of the profession became unstable and faculty became more anxious about the future of their profession.

In order to defuse the situation and open up a horizon for the academic profession, it is necessary to recognize that the current situation is the outcome of multiple factors. The changes in the 15-year period are related complexly to each other, and the factors are diverse and complicated. What is needed now is to focus on fundamental issues and look for an opening. Some suggestions are as follows.

First of all, a shift of university funding is necessary. The widening gaps in society are deeply linked to the economy, university polarization has been promoted by the progress of the knowledge-based society and allocation of competitive funds, and the Matthew effect has become dominant ("the strong get stronger and the weak get weaker"). Even though it is a hard reality that Japan has been suffering from deficit finance and a search for educational expenditure, it is essential for the education of the nation to raise the basic operating expenditures. It is necessary to redress the over-emphasis on rationality and efficiency and enhance basic operating expenditures without placing disproportionate emphasis on competitive funds.

Second, it is necessary to reform the faculty consciousness. While faculty still have strong emotional attachment for academic disciplines and are highly proud of the academic profession, they are likely to start losing their loyalties towards the universities themselves as well as their emotional attachment to communities. As the academic profession is a profession that belongs to universities, faculty starting to lose their loyalties to universities as their workplace is a strong danger signal. Reasons for loss of loyalty mainly stem from changes in organizations which emphasize their management rather than education, the emergence of bureaucracy, and development of substitutional control. There is a substantial need for work on reforms because workplace problems occur frequently within institutions. Without such reforms, the distress of the academic profession and its decline will gather momentum.

Third, it is essential to review the views of students as well as the concept of lifelong learning as a part of reform of consciousness. Since faculty consciousness could not easily respond to massification and subsequent universalization, the distance between the two has increased. Faculty still opposes increases in the university enrollment rate. However, we are now in the era of universal education where student diversification transcends faculty's capacities. It is impossible to deal with this situation by means of a conservative view on student enrollment, which could be a residuum of the elitist view of university. This would also apply to the view of lifelong learning. Therefore, it is necessary to transform the consciousness of the academic profession for the twenty-first century.

Fourth, as mentioned above, it is essential to clearly set up integration of scholarship and build determined consensus among faculties. Since the shift of student view would work with consciousness toward research, teaching, and learning, the view of scholarship and that of FD would be shifted as a corollary. This problem

lays down issues both for government policies and university and faculty. While the government policies of FD are placing a disproportionate emphasis on teaching, it has become clear that faculty who are generally research-oriented have suffered from deterioration in research time and increased stress, and have experienced complaints, conflicts, and distress. It is necessary to establish an integration of research, teaching, and learning at government policy level and also improve conditions for faculty in order to participate willingly in teaching and research activities. This study found that working on administration and management has remarkably eaten into faculty's research time. This could be considered an indication of the fact that progress on staff professionalization has not yet been made. Staff development (SD) sections face some issues to: (1) arrange role-sharing from the view of the profession; (2) strengthen expertise as university staff; and (3) establish a system for faculty so that they can dedicate their time to teaching and research. On the other hand, it is necessary for universities and their staff to take the initiative in constructing the view of scholarship which integrates research, teaching, and learning from the standpoint of expertise.

As indicated in Table E.1, reviewing the history of universities in the light of knowledge functions, medieval universities were based entirely on communication and apprehension. Modern universities added discovery, application, and control to these functions. Consequently, teaching used to be specialized according to faculty's talents and abilities among former universities. Research, services, and administration and management came to be additionally required among later universities; and especially an emphasis on research was significantly increased. Wilhelm von Humboldt, who conceived the University of Berlin as the first modern university, suggested the need to achieve compatibility between research and teaching. His view of research included not only faculty but also students working on research (Ushiogi 2008).

However, facing the fact that specialization of research and teaching has been developed institutionally at academia as well as consciously at academics since then, it could be concluded that reforms today would need to review specialization and seek for assimilation and correspond organically with research and teaching but not segmentalize the roles of researcher and educator. In this meaning, integration of research and teaching as a principle of modern universities has never ended, but it would be necessary to revive it. Through this, it should be possible to overcome the decline of universities and staff and reconstruct not only faculty but also universities.

Fifth, it is crucial to qualitatively improve academic productivity, as has been pointed out often in earlier chapters. The main problem is loss of the principle of the academic profession, together with isolation and anxiety of faculty, and so the subject of reform of academic productivity should be a reconstruction of the principle. The mission that universities have is to contribute to social development by developing knowledge, and the actors are faculty, staff, students, and administrators. Faculty in particular has an important role to play in research, teaching, learning support, services, and administration and management. It is necessary to improve conditions for faculty so that they can concentrate on their learning and

Table E.1 Qualities and abilities required of academics as the academic profession

Item	Medieval University	Modern University	Future University
Institutionalization of teaching, research, and learning	Institutionalization of teaching	Institutionalization of research	Institutionalization of learning?
Functions of knowledge		Dissemination, understanding, discovery, application, control	
Discipline	Arts, law, medicine, divinity	Integrated sciences, literature, education, law, economics, sciences, engineering, biology and production, medicine, pharmacology, etc.	Diversification
			Reconstruction of knowledge
Quality and ability of student	learning	Learning, study	
Quality and ability of academics	teaching	Teaching, research, service, administration and management	FD (teaching and research)
			SD
Professionalization	×	Establishment of profession (teaching and research)	Professionalization
			Non-professionalization
Role of academics	Teacher	Teacher, researcher (scientist, scholar)	Integration
			differentiation
Scholarship (reality)	Teaching	Research > teaching > learning	Research > teaching > learning
			Learning > teaching > research
Scholarship (ideal)	Integration of teaching and learning	Integration of teaching and research	Integration of research, teaching, and learning

research and not have their research time eaten away by working on administration and management. Therefore, SD is the key concept, as mentioned above. At the same time, excellent human resources would raise the quality of academic work and enable the securing of superior faculty. It may be no exaggeration to say that this could influence the survival of universities, and even the survival of society.

E.4 Concluding Remarks

As discussed above, it became clear from the 1992 and 2007 studies that the academic profession was forced to change in many ways over the 15-year period, and along the way faced a mountain of various issues. Considering the future prospects of the profession, the issues could be resolved as follows.

(1) The academic profession's reactions to these changes remains inadequate, even though their knowledge base has changed extrinsically as well as intrinsically. As for external changes, globalization, marketization, and the knowledge-based economy have been in progress and it has become imperative to develop culture, climates, and constitution which are more appropriate to the knowledge community than knowledge cooperation, accompanied by a move to construct a vision of the academic profession for "Knowledge-based Society II" more than "Knowledge-based Society I." On the other hand, it is required to improve academic productivity which is appropriate to reconstruction of knowledge for internal changes.

(2) Reflecting on the 15-year period, which encompassed rapid social changes and university reforms, we see that the academic profession has undergone some changes in long-term schooling history, knowledge, academic freedom, professional ethics, social authority, and high academic productivity. Given that during this period the university's social authority and prestige were on the decrease, it can be stated that the university has not yet recovered its dignity by establishing an academic profession which is appropriate to the new era. The main reason for this is that a series of higher education policies reviewed the old university vision, but the national government and the MEXT neither defined any national strategies nor suggested directions for universities to move in. Furthermore, the academic profession has been unable to create a new vision independently, subjectively, and autonomously.

(3) Actually, the higher education policies by the national government changed the type of university governance from control into supervisor and also relied heavily on market mechanisms. Although they increased expectations for faculty's autonomy and independence, they also brought social and psychological anxiety for faculty because they abandoned their responsibilities for the university's basic infrastructure which would assure the expectations.

First of all, the strong-centrism by "selection and concentration" became dominant, and the "Matthew effect," in which the strong become stronger and the weak become weaker, increased. Financially, the policies of "the weakest always goes to the wall" and the gap-widening society which stems from such policies emerged. As for the

case to become internationally competitive, Japanese universities will be no match for other developed countries unless the Japanese government raises public expenditure from its present level of 0.5 % up to around 1.0 % of GDP, as is the case in those countries. Although it is necessary to enhance the general level of universities through increased public expenditure, the current reality is that the thoroughness of budget cuts together with allocation of competitive funds benefits only mammoth universities and research universities and drags down the weaker universities. Instead, in order to enhance university levels, the allocation of competitive funds needs to be implemented differently, such as for Center of Excellence (COE), Global COE, Support Program for Distinctive University Education (GP), Support Program for Contemporary Educational Needs, and Program for Promoting High-Quality University Education.

As this study clearly proved, the gap-widening of universities not only hit faculty consciousness which brought environment deterioration, but also caused their alienation, dissatisfaction, loss of willingness, and stress, and encouraged their feelings of disappointment as well as detachment toward the university organization bodies. Today, Japan has entered the universal era in which most people go to college, and it is a fact that it is small private universities and not mammoth universities which have to accept students with low academic abilities. Such a trend will eventually result in a decline in national talents as well as their academic abilities. In other words, the government policies are "the ruin of the country" in the long term. In order to improve the quality of human resources, it is imperative to activate such small private universities by improving their environments as well as economical infrastructure. Although it is unnecessary to add, these policies should be applied not only to universities but also to other schools in Japan, which have among the lowest educational expenditure of developed countries. Unless Japan realizes that educational investment is the basis of national development, the country will decline in the not-so-distant future.

Second, as mentioned before, it should be noted that the gaps among universities have caused in faculty a sense of alienation and loss of willingness over the 15-year period. While the era has seen a relaxation of regulations and implementation of market mechanisms, bureaucracy and interference through deputing responsibilities to university management, rather than control by government, have been encouraged. It seems that such changes have devastated especially faculty of national universities. This has resulted in faculty rapidly losing autonomy and independence and brought about a sense of alienation and complaint about the situation. It is fundamental that autonomy and independence should flow from faculty themselves in order for them to come into their own as a profession. Fortunately, faculty seems to have been able to keep their emotional attachment to the academic profession through their academic disciplines and academic enthusiasm, too. For example, as this study shows, they seem to have kept their willingness to work on solving many serious problems such as environmental problems, dissemination of fundamental education, disarmament, food supply in the world, issues of race, human rights, ethnicity and religion, HIV and other health matters, increases in population, and the world economy. Their work on these issues is highly expected from society and

is also emphasized by government. However, their sense of alienation and loss of willingness is increased by continuing environment deterioration such as decrease in time spent for services, increased time spent on administration and management, chronic fatigue by evaluation, deterioration in research time, stress, low loyalties for universities, and university selection.

(4) Since reconstruction of the proclaimed principle of profession is unspecific, teaching has lost substance, and the issues of diverse student talents and their academic abilities have not been addressed sufficiently. As long as Japanese government policies aim for massification of higher education, it is to be expected that the situation for higher education will continue to get worse. The only way to improve such a situation would be a trinity of quality assurance at university's input, throughput and output, or entrance, inside and exit. As for undergraduate courses, the Japanese government suggested some policies on transition between upper secondary schools and universities, first-year experience, career education, specialized fundamental education, general education, and skills of undergraduates. However, none of them have been successful so far. At least, faculty felt that student talents and academic abilities deteriorated over the 15-year period. Now university education is set within lifelong learning, but constructions for coordination between upper secondary schools and universities as well as universities and society have not been achieved yet. Furthermore, there is still a lack of consistency in undergraduate courses, master courses, and graduate courses from the perspective of teaching and research. Normally, general education would be encouraged in undergraduate courses and specialized education would be conducted on its foundation in graduate courses. By doing so, differentiation and assimilation of education should be achieved organically. Actually, however, neither such government policies nor practices have been introduced yet and consequently skills of undergraduates, masters, and doctors have lost substance and cohesion. In order to resolve these issues, it is essential for universities and faculty to make clear the principle of coordination between research, teaching, and learning.

(5) There is a decline in academic productivity, which is the basis of the academic profession. Neither research productivity nor teaching productivity, which are two wheels of academic productivity, have brought enough results. As a result of the progression of university reforms, faculty increased their interests in teaching to some extent; this is strongly related to the fact that "requirements" for teaching were encouraged by the institutionalization of FD, the most revolutionary incident in the last 130 years of Japanese university history. As mentioned above, however, educational quality is negatively affected by budget cuts and a reduction of time spent by faculty in quality assurance of teaching. Equally, it is undeniable that research productivity has been negatively affected by an increase in time spent on administration and management and services, especially due to teaching-oriented government policies. Even though such teaching-oriented activities could lead to improved traditional research-oriented studies, they would not lead to both wheels of academic productivity being improved if they reduced research productivity. Therefore, it is necessary to have a middle- or long-term future perspective based on the wisdom built by 800 years of university history. Such a perspective would be deeply

concerned by the situation that the foundation as well as the quality standard which supports academic productivity of Japanese faculty weakened and declined, and international research abilities decreased, over the 15-year period. For example, perusing "The Degree of Benchmark Statement" of the UK, it seems unlikely that they set each standard achieved by teaching based on research. In short, the current situation in Japan has gone against the move in the UK, which focused on integration of research and teaching.

As long as the one of the biggest issues for universities in the twenty-first century and constructing the academic profession is reconstructing the proclaimed principle of the academic profession, especially scholarship, it is necessary to establish the principle focusing on the integration not only of research and teaching but also including learning. However, to the contrary, the trend during the 15-year period found by this study has followed the path of segmentation and fragmentation rather than reconstruction. In short, it is necessary to face the current situation that has made academic productivity as the nature of the academic profession decline and lose substance, and to identify the proclaimed principle of the profession. Furthermore, it is also necessary to reform the present situation by conducting the reconstruction with the involvement of government policies, the systems, and university organization bodies.

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