No.13, September 2009

RIHE International Seminar Reports

THE CHANGING ACADEMIC PROFESSION OVER 1992-2007: INTERNATIONAL, COMPARATIVE, AND QUANTITATIVE PERSPECTIVES

Report of the International Conference on the Changing Academic Profession Project, 2009

Organized by: Research Institute for Higher Education, Hiroshima University and
Research Institute for Higher Education, Hijiyama University

Research Institute for Higher Education
HIROSHIMA UNIVERSITY

RIHE International Seminar Reports
No.13, September 2009

Report of the International Conference on the Changing Academic Profession Project, 2009

THE CHANGING ACADEMIC PROFESSION OVER 1992-2007: INTERNATIONAL, COMPARATIVE, AND QUANTITATIVE PERSPECTIVES

Research Institute for Higher Education

HIROSHIMA UNIVERSITY

The Changing Academic Profession over 1992-2007: International, Comparative, and Quantitative Perspectives

Edited and Published by

Research Institute for Higher Education

Hiroshima University

2-2, Kagamiyama 1-chome

Higashi-Hiroshima, 739-8512 Japan

TEL: +81-82-424-6240, FAX: +81-82-422-7104

http://en.rihe.hiroshima-u.ac.jp/

Printed by:

Takatoo Print Media Co.Ltd.

3-2-30, Senda-machi, Naka-ku, Hiroshima City

730-0052, Japan

TEL: +81-82-244-1110, FAX: +81-82-244-1199

September 2009

ISBN978-4-902808-53-7

FOREWORD

The role of universities and other higher education institutions has become far larger in the recent knowledge-based economies and more people, including those of us who are working for university running or for policy making, have become interested in universities themselves. An understanding of the nature and changes of the academic profession has become crucial for us to understand current university reform movement around the world, in addition to a deep understanding of the system, finance, teaching and research, all of which are important for this purpose. For this reason, the Research Institute for Higher Education in Hiroshima University started a program of research on the Changing Academic Profession (CAP) in 2005. This research is funded by the Ministry of Education and Science as a grant-in-aid for scientific research headed by Professor Akira Arimoto, Director of the Research Institute for Higher Education, Hijiyama University and Professor-Emeritus of Hiroshima University. Before the conference in 2009, we had already held three international conferences on this topic.

The fourth conference was held in Hiroshima in January 2009. This conference was organized by the Research Institute for Higher Education, Hiroshima University, Japan in cooperation with Hijiyama University, Japan. The title of the conference was "The Changing Academic Profession over 1992-2007: International, Comparative, and Quantitative Perspectives". We invited speakers and participants from various countries which had all conducted surveys in both 1992 and 2007-08 to come to Hiroshima. The major purpose of the conference was to examine the nature and extent of the changes experienced by the academic profession over the period 1992-2007 through the national surveys in individual countries. The conference addressed issues concerning the following three specific themes.

1. Internationalization of the profession: the major findings about international experience, international education and research activities undertaken by the profession, the impact of internationalization on the profession, and views about internationalization by the profession.
2. Education and research activities of the profession: education and research conditions, workload, views on the nature and the extent of the changes in education and research activities experienced by the academic profession.
3. Personal characteristics or careers of the profession: biography, prior

career, employment and work situation, mobility, and workload *etc*.

The conference, as you may find in this publication, was not meant to be simply for the presentation of data, but instead to provide a setting for more thoughtful, focused reactions to the presentations of each speaker. We are hoping that, based on the past several international conferences and workshops on similar themes concerning the CAP, the outcome will be a better and more sophisticated understanding of the main comparative trends in the CAP and of the specific situation of the CAP in each country.

July 2009

Shinichi Yamamoto
Director and Professor,
Research Institute for Higher Education,
Hiroshima University

CONTENTS

Acknowledgement

We would like to acknowledge the invaluable contribution of Professor Keith J. Morgan, visiting professor at RIHE, Hiroshima University, who edited all the manuscripts in this report.

Shinichi Yamamoto
Director & Professor,
Research Institute for Higher Education,
Hiroshima University

Akira Arimoto
Director & Professor,
Research Institute for Higher Education,
Hijiyama University

Keynote Speeches

Changing Academic Profession in the World from 1992 to 2007

Akira Arimoto*

Introduction

The CAP (Changing Academic Profession) Project is an international research project consisting of more or less than twenty countries throughout the world. Related to this project, the Japan Project started its activity four years ago, conducting last year an international conference with its focus on the topic "Changing Academic Profession in International Comparative and Quantitative Perspectives." The proceedings of that conference were published in 2008 by the RIHE, Hiroshima University in a report titled "The Changing Academic Profession in International, Comparative and Quantitative Perspectives" (RIHE, 2008).

This year, the Japan Project deals with the topic of "The Changing Academic Profession over 1992-2007: International, Comparative, and Quantitative Perspectives," by inviting eight countries including Japan. These countries, participated in this conference, and met the condition that they conducted two questionnaire surveys in 1992 and 2007.

My keynote address this time is intended to focus on the "Changing Academic Profession in the World from 1992 to 2007"; last year it sought to emphasize the "International Implications of the Changing Academic Profession in Japan" (Arimoto, 2008a). Based on the purpose of the conference, as indicated in the title, my aim is to explore how the academic profession in the world has or has not changed between 1992 and 2007. Therefore, this report will argue the following three issues.

* Director and Professor, Research Institute for Higher Education, Hijiyama University, e-mail: arimoto@hijiyama-u.ac.jp

First, it deals with four aspects of the academic profession's perspective:

- the research framework and methodology,
- the function of knowledge,
- the environmental changes of the academic profession, and
- the term and object of research.

A new academic professional vision as well as a university vision should be proclaimed today when society is shifting from its old structure to a new one. In pursuit of the university's vision as well as the academic profession's vision, the knowledge function, which forms the basis of their activities, plays a significant role. Especially, the functions of research and teaching are important in order to enhance academic productivity, which itself consists of research productivity and teaching productivity. The process of the academic profession is substantially involved in creative academic work and academic productivity (Shinbori, 1973; Arimoto, 2005a, 2005b, 2006).

Second, it deals with the changing academic profession in the world. Considering the prototype of the academic profession, the contemporary universities in the world are changing by processes of succession, modification and innovation. This fact will be illustrated in the present report so as to identify the past and present realities. As its premise, this report aims to testify to the reality of the situation of fourteen countries (U.S., U.K., Germany, Netherlands, Russia, Sweden, Mexico, Brazil, Chile, Australia, Japan, Korea, Israel, and includes one area, Hong Kong) based on the results of the Carnegie survey in 1992 (Altbach, 1996; Arimoto & Ehara, eds., 1996).

Third, it deals with an international comparison of the academic profession from a Japanese perspective, reflecting the considerable changes that the academic profession has experienced in the past fifteen years. The report attempts to introduce a series of outcomes gained from the Japan Project questionnaire survey in 2007, which used the same questionnaire to academics in the same institutions as were targeted in the Carnegie survey of 1992. Accordingly, the report is based on the content of the 2007 survey that was analyzed in "The Changing Academic Profession in Japan" (in Japanese) published in 2008 (Arimoto, ed., 2008).

In this context, it should be noted that this report is not based on the 2007 CAP survey, which is dealt with later in the three reports from Japan. Nevertheless, almost the same things are identified in the comparison of the two sets of data from the 1992 Carnegie survey and the 2007 CAP survey and from those of the 1992 Carnegie survey and the 2007 Japan Project survey. The results obtained from the Japan Project survey and the Japanese CAP survey,

both in 2007, appear to be fairly closely similar, although the questionnaires used in the two surveys are not entirely identical.

The changes in Japan shown by the results from the Japan Project survey refer specifically to the Japanese academic profession and do not necessarily reflect the situation in other countries. However, the changing trends of the Japanese academic profession are thought to have similarities to those in its counterparts in other countries as many similarities are observable throughout the world arising from factors such as the emergence of globalization, knowledge society orientation, and marketization that impose similar pressures on the academic profession.

As Maurice Kogan and Ulrich Teichler discussed systematically in their recent volume, there are some key challenges to the academic profession worldwide: the increasing expectation of relevance; internationalization as a challenge to the academic profession; the changing role of graduate/doctoral education, training and work; management and its interface with the academic profession (Kogan & Teichler, eds., 2007). In addition, William Locke and Ulrich Teichler have recently discussed intensively the problem of the changing conditions for academic work and careers (Locke & Teichler, eds., 2007).

These problems are important issues to be discussed by researchers in the academic profession together with some problems we are going to discuss in this meeting. A comparison of the Japanese academic profession between the past and present times establishes, as it were, a vertical axis, which is an inevitable preposition for a horizontal axis defining a comparison of the academic professions of Japan and other countries.

The viewpoint of academic profession research

Research framework and methods

As shown in Figure 1, society is changing from *Society 1* to *Society 2* and also higher education is changing from *higher education 1* to *higher education 2*. Higher education (*i.e*. university 1 & 2) is a social structure including knowledge, which internally consists of factors such as system, organization, and group, and externally keeps an intimate relation with the society through the social condition and function. The social condition is the means by which a knowledge economy connected with globalization and marketization, or the social changes from a post-industrial society, an information society, and a knowledge-based society affect higher education (including its systems, organizations, and groups). The social function is the means by which higher education affects the social

development by academic productivity (including research and teaching productivity). Knowledge causes a re-construction of knowledge by its own logic due to scientific development, bringing about direct and indirect effects upon academic productivity.

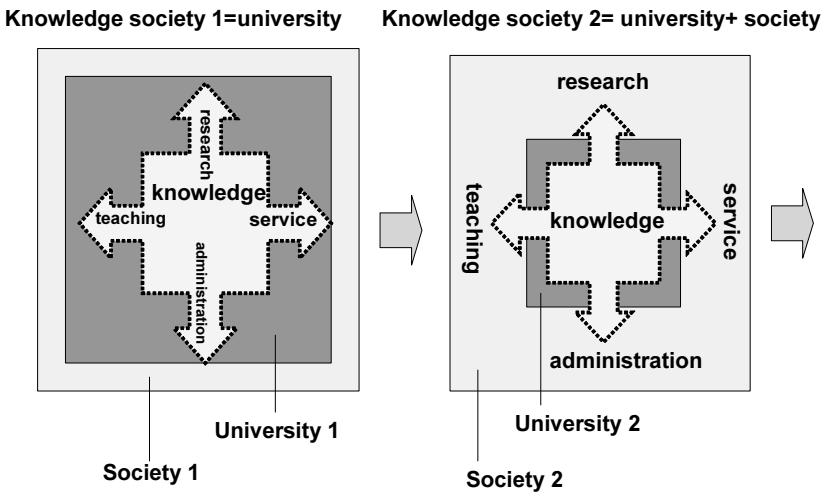


Figure 1. Development from knowledge society 1 to knowledge society 2

The transformation from *Society 1* to *Society 2* coincides with the transformation from the 20th century to the 21st century, which implies the advent of the emerging knowledge society by way of the post-industrial society. In other words, it needs a transformation from higher education (university) with a non-creative and import type of knowledge to that with a creative and export type of knowledge. Traditional Japanese society is a *Society 1* connected to a *higher education 1*; in the future, transformation to a *Society 2* will be accelerated in correspondence to a worldwide trend of social changes such as a knowledge economy related to the trend of globalization, marketization, and a knowledge society orientation.

At the same time, the world of higher education also needs to transform from *a non-creative knowledge type* to *a creative knowledge type*, in other words from *the knowledge import type* to *the knowledge export type* (Figure 2). Accordingly, in looking at the transformation of society as well as of higher education, it is necessary to ascertain the social structure and function of *higher education 2* accompanying the knowledge creative and export type.

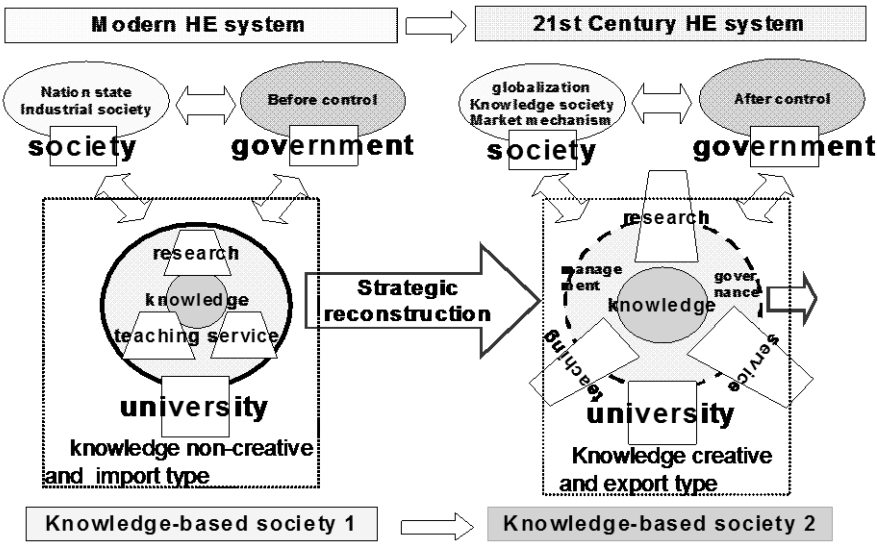


Figure 2. Knowledge, society, and university

The knowledge function

The knowledge function increases in a knowledge society. Knowledge has various faces enabling various kinds of definitions. As Maurice Kogan observed, there is quite a large distance between hard knowledge and soft knowledge (Kogan, 2007, pp.38-40). On the hard knowledge side, where a concept of internal approach prevails, CUDOS works as an ethos of science for the certified knowledge that Robert Merton discussed (Merton, 1973). In this territory of knowledge theory, Biglan's knowledge theory, with a combination of pure, applied, life, and non-life, applies (Biglan, 1973). On the other hand, on the side of soft knowledge, the social relation of knowledge is thought to be stronger than in the case of internal knowledge; Thomas Kuhn's paradigm theory and Mulkey's scientific community theory apply here (Kuhn, 1970; Mulkey, 1977).

The knowledge function consists of factors such as discovery, dissemination, application, and control, and among these functions research and teaching are significant as the two vehicles in universities and colleges (Clark, 1983; Arimoto, ed., 1996; Arimoto, 2006). It is important in *Society 2* as well as *higher education 2* to pay attention to the function of academic discipline as advanced knowledge so as to increase a large stock of creation and export knowledge. It means certainly that the importance of academic productivity and of research productivity and teaching productivity, as its two vehicles, become increasingly important. These kinds of creative activities in the realms of research and

teaching are considered to be valuable behaviors by extending the frontier of research and teaching in connection to knowledge. They belong not only to general academic work but also to the specific academic work of cultivating a frontier of scholarship. Research and teaching activities have a normative control of discipline and also a social mechanism that Tony Becher observed from a study of the lives of academics and researchers, whom he compared with tribes (Becher, 1989; Becher & Trowler, 2001).

As Figure 3 shows, in the process of scientific socialization, academics, who specialize in specific academic disciplines, encounter a social control of scientific ethos and norms which is related to their specialized disciplines. They gradually form their own social identities in the environments intrinsic to their disciplines and which accompany the manifest and latent functions and, in addition, the formal and tacit knowledge. By these means they are influenced in such processes as: selection of themes; attainment of research technology; doctoral supervision; various kinds of material resources including scholarships and supports; human resources including researchers inside and outside academia; research environments including culture, climate, and the research style of natural and social sciences, and of humanities (Parry, 2007, pp.39-52).

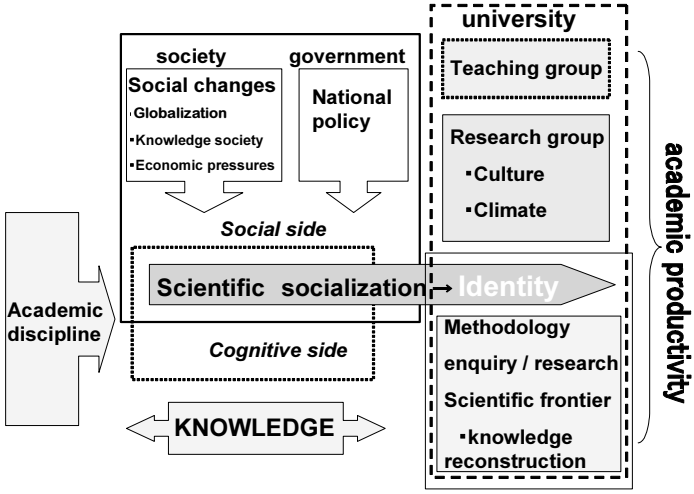


Figure 3. Knowledge functions

Tony Becher also identified factors working in the process. These cover the wider social change including internationalization, economic pressures, legislation and national policy; the intermediate context including managerialism, business values, client attitudes; the cognitive change including information technology, specialism and sub-specialism, new knowledge and techniques

(Becher, 1989, pp.61-88).

As Becher and Parry pointed out, there are cognitive and social sides to the academic discipline (Becher & Parry, 2007, pp.9-144). In the case of the former, every discipline has its own methodology of enquiry, research methodology, and scientific frontier. In the latter case, every discipline has its own research group, culture, and climate; and in this context, the activities of enhancement for academic productivity are conducted both manifestly and latently.

Production of knowledge shifts from the traditional type on the basis of discipline to a post-traditional type involving a social utility so that, as Michael Gibbons and others pointed out, it corresponded to a shift from *Mode 1* to *Mode 2* (Gibbons, Limoges, Nowotny, Schwartzman, Scott & Trow, 1994). The scientific community including the graduate schools, as the location of the frontier of knowledge, pursues knowledge reconstruction ceaselessly, bringing about in reality a scrap-and-build of disciplines. The phenomenon of knowledge reconstruction is nothing but a dislocation in the frontier of knowledge development. In other words, it is in the Centers of Excellence (COE), or bases of creativity, in which creativity is most highly exercised.

The environment of the academic profession

As shown in Figure 4, all environmental changes around academia, such as the social changes, the government policies, and the reconstructions of knowledge, cause academic reforms and reform of the academic profession (arrows a, c, e, and g in the figure) (Arimoto, 2008b, p.20). The recent fifteen-year term is an epoch making one in which great social changes worldwide and the consequent academic reforms occurred without pause. The focus on social changes suggests a shift from an information oriented society to a knowledge-based society together with a society oriented to globalization, marketization, and lifelong learning. In addition, the national government's somewhat 'less-control' policy for the academic establishment, which was introduced in 1991, has been accelerated greatly in accordance with an increasing marketization. At the same time, academics have shown a more or less effective response to the social changes rather than accepting their effects passively (arrows b, d, f, and h in Figure 4).

Through these processes of import and export mechanisms, academics have attempted to build a new academic profession, pursuing academia's role, forming their own identities, and constructing ideals and missions for the academic profession. As a result, academics are facing various changes in relation to the environmental changes.

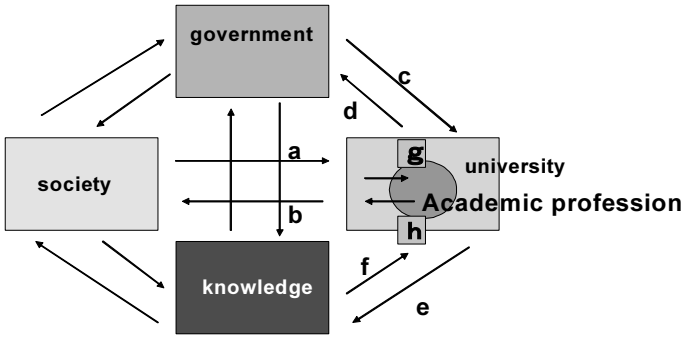


Figure 4. Environmental change of the academic profession

The term and object of research

① Term: comparison of the outcomes of the Carnegie Survey in 1992 with those from the Japan Project survey conducted in 2007 (Figure 5). The term covered by the report is fifteen years, short in the eight hundred years of higher education history but important years with a counterpoint of the past and future (*ibid*, p.18). During this period in Japan, epoch making proposals, such as the University Council (UC) reports in 1991 and 1998, and the Central Council of Education (CCE) report in 2005, were issued at seven year intervals and which are considered to have affected the consciousnesses and behaviors of academics (UC, 1998; CCE, 2005).

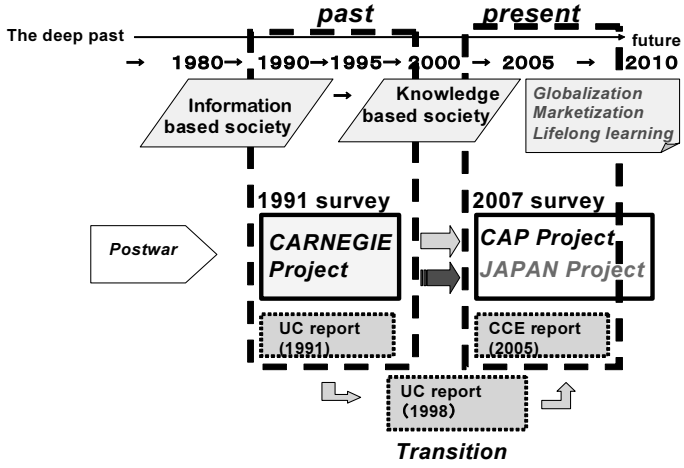


Figure 5. Past and present

② Object of research: the questionnaires cover a wide range of subjects: academic careers; research and teaching; internationalization; university and society. However, this international meeting is to concentrate on three of the topics: academic careers, research and teaching, and internationalization.

The changing academic profession in the world from its prototype

The origin of universities around the world is derived and developed from the medieval university: those that started later usually adopted the original models and patterns that the foregoing universities had already developed. The following discussion addresses some of the problems related to such prototypes, since this meeting deals directly and indirectly with some of the problems in connection to academic careers, teaching and research, internationalization, and administration and management.

Academic careers in terms of sex, age, mobility, and form of employment

Various kinds of realities are engraved on the academic career: sex, age; academic discipline; positions and status; sector; section (faculty, department, chair); hierarchy (ranking); mobility; scientific socialization.

① Sex: female academics belonged for a long time to a minority group in the academic world dominated by male academics. They have gradually increased their numbers and proportions in modern universities. The ratio of female academics is gradually increasing all over the world, while in Japan, as we see later, it is increasing very slowly.

② Age: teachers are usually older than students in academia. Their age extends over the range of around 30 to 70 years old (or more). In the case of Japan, the average age of academics was 48 years in 2003. Aging of the profession was promoted in Japan where the lifelong employment system had been defended constantly and strongly. Now, the unemployment of post-doctorals has become one of the social issues to the extent that their recruitment to academic posts is a problem to be resolved immediately.

③ Academic discipline: in the pre-modern university era, there were only four Faculties: Law, Medicine, Divinity, and Liberal Arts. In contrast, many academic developments and hence chairs, departments, and Faculties have been established in the modern university owing to the institutionalization and differentiation of disciplines. Culture and behavior are inclined to differ from each other in the old disciplines and the emerging disciplines.

④ Academic positions and status: a clear differentiation between academic positions in academia, indicates the social stratification that is clearly established among academic staff. In this structure the post of full professor belongs to the highest level of the ladder, followed by the posts of associate professor, lecturer, and assistant professor. The process of academics' upward mobility on the ladder is substantially related to

academic scientific socialization.

⑤ Sector: the national, public, and private sectors have their own cultures for academics, even though these sectors belong to the same general category of academia.

⑥ Section: the different sections such as chair, department, and institute are the basic units of academic organization to which academics belong in order to conduct academic work including research, teaching, and service. Among these, the chair was originally invented in the pre-modern universities; and later the modern universities invented other units, though the chair was introduced into a modern university in Japan. These sections reflect the different characteristics of the disciplines that academics specialize in. As described above, the differences of discipline produce differences of academic culture, climate, character, behavior pattern, and consciousness.

⑦ Hierarchy: there is a hierarchy among universities and colleges as we assess them by the indicators of their history, tradition, quality, and academic productivity. Ranking also works at the level of academics as well as that of universities and colleges (THES-QS, 2008; Ben-David 1977; Arimoto, ed., 1996).

⑧ Mobility: mobility was usual in the pre-modern universities un-supported by national government, whereas it is unlikely to be usual in the modern universities, with national government support attempting to develop national interests. Mobility is higher in the universities and colleges in Europe and the U.S., but is lower in their counterparts in Japan.

In 1992, the proportions of academics who had worked in more than three higher education institutions were: the Netherlands 36%; Australia 32%; Brazil 31%; U.K. 27%; Israel 26%; Hong Kong 25%; U.S. 23%; Sweden 21%; Germany 20%; Chile 20%; Mexico 12%; Japan 11%; Russia 9%; Korea 5% (Arimoto, ed., 1996, p.35).

One of the reasons for low mobility in Japan is perhaps the high inbreeding ratio. Table 1 shows a trend of inbreeding in the research universities from 1954 to 2003 (Yamanoi, ed., 2007). The prestigious universities such as Tokyo, Kyoto, Waseda and Keio recorded inbreeding ratios of more than 70%; Keio's ratio is still high in 2003 (63.8%) though it has decreased. The same phenomenon may be recognized in universities and colleges in Asian countries including China and Korea. The reasons for this lie in some traditional attitudes such as *Han-batsu* (a han-based clan), *Kenjin-batsu* (a prefecture-based clan), *Zai-batsu* (a great industrial family), *Gaku-batsu* (an academic clique),

Iemoto (a Japanese family system). There is a theory that the principle of kin-tract works in Japan (Hsu, 1963). Moreover, the permanent employment system has been established in Japan for a long time.

Table 1. Trend of inbreeding in research universities in Japan (%)

universities	1954	1963	1974	1984	1999	2003
Tokyo	98.0	96.7	94.3	89.5	83.6	78.0
Kyoto	86.6	87.5	86.8	84.1	80.1	72.3
Waseda	83.1	79.2	82.3	82.9	72.3	71.1
Keio	75.3	69.7	81.2	78.8	70.1	63.8
Hokkaido	55.1	63.7	64.9	62.4	59.1	51.0
Tohoku	52.4	56.9	55.6	59.0	62.5	55.6
Nagoya	21.6	22.0	29.7	44.6	53.8	44.4
Osaka	42.0	42.9	57.2	60.2	61.4	59.6
Kyushu	52.8	60.4	64.1	65.6	62.9	55.8
Tsukuba	46.6	46.5	54.8	29.5	40.2	40.7
TIT	30.7	42.3	48.3	52.9	58.9	56.1
Hitotsubashi	58.0	58.8	47.4	50.3	43.4	32.1
Hiroshima	36.8	40.7	37.9	43.1	39.4	38.9

Source: Yamanoi, 2007, p.246.

⑨ Scientific and academic socialization: students participate in scientific and academic socialization in the various kinds of structure, culture, and climate so that they finally build their own identities with the disciplines sufficient to become members of the academic profession. Because academics are involved in the different cultures and climates intrinsic to their own academic disciplines, they differ from other academics specialized in other disciplines. Burton Clark pointed out the academic world as a "small world but different world" (Clark, 1987).

Teaching and research with a focus on teaching orientation, research orientation, and integration of teaching and research

In universities and colleges, faculty members pursue academic work on the basis of knowledge. They conduct activities such as research, teaching, service, and administration and management in response to the knowledge functions such as discovery, dissemination, application, and control. The academics conduct these activities so that they can contribute to the development of disciplines, which in turn contribute to the development of the universities and colleges and in addition to the development of society.

- Among teaching and research, the former had monopolized the main part of academic work in the university for several centuries from the birth of the medieval university to the rise of the modern university. Academics then

participated in teaching as teachers and educationists. The ideal feature of an academic was to be a 'good teacher' as shown in the expressions 'pastoral care of undergraduates', and also 'learned teacher' and 'scholar and teacher'. As teachers they were expected to take care of students as in '*loco parentis*' and to sustain an 'osmosis process' (Halsey & Trow, 1971; Ross, 1976; Arimoto, 1981, p.58).

- On the other hand, in the modern university, which internally institutionalized the sciences, academics were expected to take part in research as scientists and researchers. The different kinds of disciplines that were established in modern academia by the scientific revolution needed specialists who conducted teaching in response to the needs of the specific disciplines. At this time, an academic career emerged for the first time in the history of higher education from the institutionalization of the system for training students in the graduate school (Brubacher & Rudy, 1968, p.183; Light, 1974). As a result the academic profession undertook to conduct both research and teaching together.
- Accordingly, academia attempted to integrate teaching, institutionalized in the medieval university, and research, institutionalized in the modern university. Wilhelm von Humboldt proposed an integration of teaching and research as a vision useful for the modern university (Clark, ed., 1993; Clark, 1995). Is this ideal actually realized or not (*cf*. Ushiogi, 2008)?

Internationalization from universal, national, international, and global perspectives

- The academic world in the medieval era was a universal orientation as shown in the fact that students gathered to Bologna and Paris from all over the world, albeit one restricted to the Christian sphere of influence. Graduates from the universities were offered the *venia legendi* (permission to read or to teach), or the *ius ubique docendi* (right of teaching), a credential permitting the holder to teach a particular subject at universities anywhere in the world (Rashdall, 1936, pp.8-15; Yokoo, 1999, p.46).

  In contrast, this universality decreased in modern society as national universities were established in many countries in accordance with the rise of modern nations seeking to use these new universities for their own economic prosperity (Kerr, 1994, p.26). Even at this stage, however, the universities tended to pursue universal characteristics of internationalization in accord with a norm of a universalist orientation rather than one of particularism.

- From the latter part of the 20th century, the connection of knowledge-based society and marketization appeared throughout the world owing to the fact that a globalization of the knowledge economy strengthened its trend of penetration into the realms of education and culture. Even in academia, where academic work is undertaken on the basis of knowledge as stuff, the values of rationalization and efficiency of research, teaching, service, and administration are increasingly evident. Accordingly, academia has changed drastically from a community of knowledge to an enterprise of knowledge.

Administration and management

- In the medieval university, its academic and business sides developed together so as to retain a community of knowledge on the basis of an academic guild.
- However, the modern university, where the academic organization changed from a uni-versity to a multi-versity, lost the power of cohesion as a community. Simultaneously, the business side of organization increased its size so that the non-academic staff increased their own organizational territory and culture together with the relevant bureaucracy (Clark, 1983).
- At the same time, a bottom-up type of administration, characteristic of the chair and department developed at the time of guild, shifted to a top-down type of administration that strengthened the power of the steering committee and the president and accompanied the shift from a community of knowledge to an enterprise of knowledge.
- If we borrow Burton Clark' s model, the organization of the European and the Japanese types of universities, in which both the nation state and the professors have strong powers, have shifted to an organization in which the presidents and vice-presidents have strong powers (Clark, 1983). The U.K. type in which the professors and deans always had strong powers has been transformed to a new type in which they have to accept national control. The U.S. type, differed in that both the national government and the professors had weaker powers compared to the university which sought to locate itself at some intermediate level between the top and bottom of the national academic system. At the university there, the steering committee as well as the president has stronger powers than the professors.

  The U.S. type president, whom the steering committee selected from the top, had strong powers compared to the European type rector, whom professors elected from the bottom. Today, it is said that the rector has

become a president under the changed environment in which the academic organization is shifting from the bottom-up to a top-down type. In general, the fact that universities in the world are considered to have weaker powers implies a forfeiture of the powers of academic freedom and faculty autonomy located at the bottom.

The actualities of the academic profession in 1992

The international survey on the academic profession in 1992 in the fourteen countries (including one area) considered a wide range of issues (Table 2).

Table 2. The actualities of the academic profession in 1992

Academic career	① Sex ② Age ③ Average number of institutions academics belonged in their career ④ Permanent employment ⑤ Personal Strain
Scholarship (research and teaching)	① Teaching orientation ② Loyalty to discipline ③ Publication of more than one paper ④ Successful research is important ⑤ No tenure without publication ⑥ Activities evaluated regularly
Internationalization	① Foreign student enrolled ② Curriculum should be more international ③ Academics traveled abroad to study ④ Experience of a faculty member in another country ⑤ Publication in language other than mother tongue

Academic career

An overall view of the international trend of academic career is revealed in Figure 6, in which Japanese academics occupy high proportions in responses including 'permanent employment', 'personal strain', and 'age'; and low ones in regard to 'sex' and 'mobility'.

① Sex: the average proportion of female academics among all academics was as low as 24%, reaching its highest values, of over 30%, in Latin American countries with 27% in the U.S., and the smallest proportion of 8% in Japan (Arimoto & Ehara, ed., 1996, p.33).

② Age: the average age was 45.5 years (male 46 years old and female 43 years old). Among the countries, Mexico showed the youngest age (39 years old), three countries, Israel, Russia, and Japan, shared the oldest age (51years old) (*ibid*, p.33).

③ Mobility: the average number of institutions to which academics belonged in their careers were 1.8 for males and 1.7 for females. One third of academics belonged to more than three institutions in countries such as Hong Kong, Australia, Brazil, Israel, and the U.S., while three-fifths belonged to only one institution in Japan (*ibid*, p.33). As previously described, the fact of smaller mobility in Japan probably reflects custom, protected by the lifelong employment system in which academics were apt to stay in one institution until their retirement age of around 65 (this varies, depending on institutions, being 60, 63, 65, 70 years old).

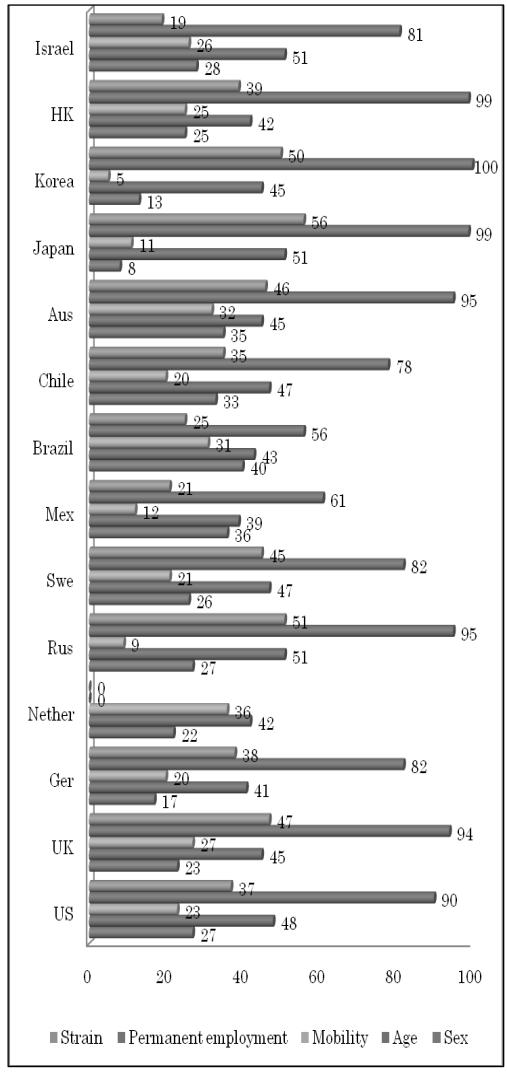


Figure 6. Academic careers (%)

④ Mode of employment: almost all (87%) of academics were employed permanently in academic institutions from their recruitment to retirement. The proportion was as high as 99% in Japan and all of the younger generation in their 20s and 30s were usually employed permanently (though a contract system was introduced in 1996). On the other hand, in Latin American countries, temporary employment is popular as was shown in the highest temporary employment rate of 44% in Brazil (*ibid*, p.33).

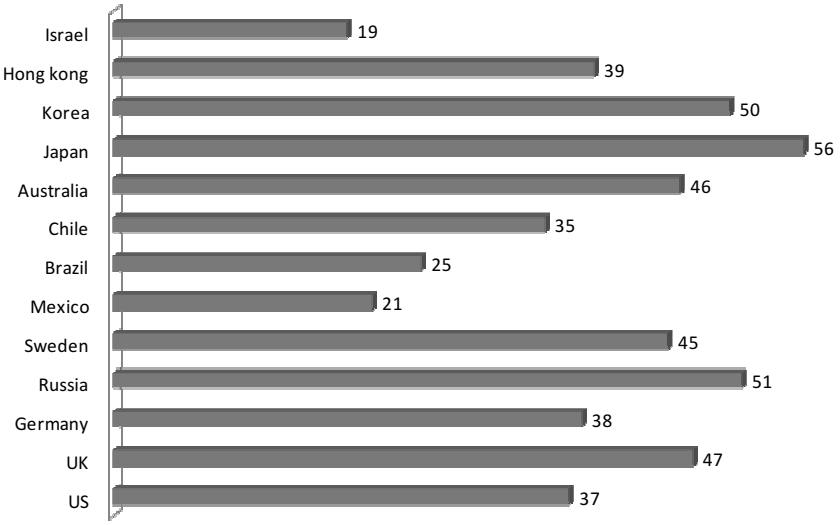


Figure 7. Comparison of personal strain by country (%)

⑤ Personal strain: the proportions of responses of academics worldwide to the question "My job is a source of considerable personal strain." demonstrated overall a fairly even distribution between agreement (40%), neutrality (22%) and disagreement (38%). But between countries there were marked differences (Figure 7) (Ogata, 1996, p.236). The group showing the highest agreement with the statement consists of the countries Japan 56%; Russia 51%; South Korea 50%; while the group showing least agreement consists of Israel 19%; Mexico 21%; Brazil 25%. There were differences of 37 percentage points between Japan and Israel. Why do they have such great differences? In order to examine aspects of the psychological stress, four groups were identified as follows: Group A (Japan, Russia, South Korea); B (U.K., Australia, Sweden); C (Hong Kong, Germany, U.S., Chile); D (Brazil, Mexico, Israel). As a result, some findings emerge (*ibid*, pp.236-237).

- Salary: the group A, indicating high stress, tended to possess high proportions showing poor monetary support for teaching and research activities including 'Paid sabbatical leave' and 'Travel funds for academics' (*ibid*, p.239).
- Teaching and research environment: the high stressed group A indicated low scores for relationships between faculty and administration and little approval of the institutional sense of community. Generally speaking, many academics belonging to this

group were apt to have complaints on human relations and few of them responded positively to the 'Clarity of the institutional mission'. Their assessment of the institutional 'intellectual atmosphere' was also low (*ibid,* pp.240-241).

- Teaching and research orientation: the groups with higher stress showed stronger research orientation, devoting many hours to research and teaching during both term and non-term periods. In contrast, the groups indicating less stress also spent fewer hours on research and teaching (*ibid,* pp.243-244).
- Ascription: comparison of the four groups in terms of sex, age, position, and discipline, showed that the group with lower stress contained great differences between male and female academics with the stress being higher for the female than the male academics. No clear differences were recognizable in the other ascriptions (*ibid,* pp.245-246).

Scholarship: the place where academics' interests lie

An overall view of international trends on scholarship (the place where academics' interests are located) is shown in Table 3. Japanese academics showed high scores in the items of 'productivity' and 'discipline orientation', and low ones in the items 'teaching orientation', 'evaluation by students', 'evaluated', and 'tenure'.

Table 3. Scholarship: the place where academics' interests lie (%)

	US	UK	Ger	Net	Rus	Swe	Mex	Braz	Chi	Aus	Jap	Kor	HK	Isra
Teaching	49	44	34	25	68	33	65	62	67	48	28	44	46	39
Discipline	75	64	62	---	66	55	71	95	87	---	69	80	68	75
Department	55	40	15	---	57	46	60	78	66	48	39	65	46	55
Institute	32	18	8	---	45	19	56	76	65	---	31	37	28	42
Productivity	(7) 7.5	(8) 7.8	(4) 6.6	(13) 8.6	(2) 5.7	(3) 6.3	(12) 7.9	(9) 7.8	(5) 6.9	(10) 7.9	(1) 5.6	(11) 7.9	(14) 9.5	(6) 7.4
Tenure	88		78							64	48		60	81
Evaluated	86	79	25		35				71		44			
Evaluation by students	72	44	7			47				41	9	5		

Research orientation and teaching orientation ("Regarding your own preferences, do your interests lie primarily in teaching or in research?"): the average proportion of those indicating a teaching orientation was 44%. Three types are distinguishable among countries: a German type (research orientation type) consists of five countries: the Netherlands, Japan, Sweden, Germany, and

Israel; a Latin type (teaching orientation type) consists of four countries: Russia, Chile, Mexico, and Brazil; and an Anglo-Saxon type (research and teaching orientation type) consists of four countries: U.K., U.S., Australia, and Hong Kong (Arimoto & Ehara, ed., 1996, pp.150-154).

Figure 8 shows the orientation to research and teaching by selected countries on the basis of the above analysis.

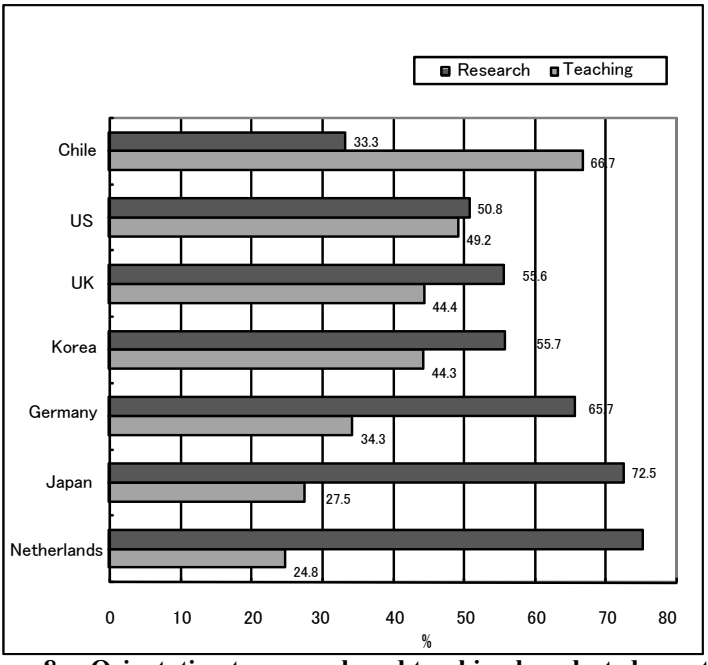


Figure 8. Orientation to research and teaching by selected countries (1992)

Table 4. Scholarship: teaching orientation

Type	Countries	Teaching orientation (%)	
Latin	Russia	68	66
	Chile	67	
	Mexico	65	
	Brazil	62	
Anglo-Saxon	US	49	46
	Australia	48	
	Hong Kong	46	
	Korea	44	
	UK	44	
German	Israel	39	32
	Germany	34	
	Sweden	33	
	Japan	28	
	Netherlands	25	
Average		44	

As Table 4 shows, the average proportions conforming to a teaching orientation differ among the three types as follows: 66% in Latin; 46% in Anglo-Saxon[1]; 32% in German.

① Loyalty to "my academic discipline," "my department in this institution," and "this institution": to the question "Please indicate the degree to which each of (these) affiliations is important to you." the proportion of "very important" responses followed the sequence: the discipline 71%, the department 47%, and the institution 32% (Daizen, 1996, p.53). It is interesting to note that the discrepancy between loyalty to the discipline and to the institution was high in countries such as Germany (62%-8%=54 percentage points), the U.K. (64%-18%=46 percentage points), and the U.S. (75%-32%=44 percentage points), all countries which were, or are at the world's center of academic excellence. Japan (69%-31%=38 percentage points) does not show such a large discrepancy.

② Publication of papers: the response to "How many of the following scholarly contributions have you completed in the past three years?" showed that on average many academics (91%) had published more than one paper in that period. In Japan the response (96%) was higher than the average (*ibid*, p.54). The aggregated totals of papers published across all disciplinary areas are as follows: (1) Japan 5.6; (2) Russia 5.7; (3) Sweden 6.3; (4) Germany 6.6; (5) Chile 6.9; (6) Israel 7.4; (7) U.S. 7.5; (8)U.K. 7.8; (9) Brazil 7.8; (10) Australia 7.9; (11) Korea 9.5; (12) Mexico 7.9; (13) Netherlands 8.6;(14) Hong Kong 9.5 (*ibid*, p.55).

③ Importance of research achievement: more than three-quarters of academics responded "yes" to the question "A strong record of successful research activity is important in faculty evaluation at this institution" (*ibid,* p.55). In Japan 80% of respondents agreed. Generally speaking, all countries categorized in the group of research orientation share a strong agreement with the statement.

④ Tenure: the average response to the question "In my department it is difficult for a person to achieve tenure if he or she does not publish." was fairly positive (63%) (*ibid,* p.56). High positive responses were seen in several countries including the U.S. (88%), Israel (81%), Germany (78%) and Australia (64%) with somewhat lower proportions in some other countries including Hong Kong (60%) and Japan (48%). The mechanism of "Publish or perish" was working in some countries including the U.S.,

[1] plus Korea.

and in this sense publication has not been demanded strictly in Japan where the tenure system has substantially worked for about 30-40 years from the time of recruitment in the first academic position to the time of retirement.

⑤ Evaluation of activities: a substantial majority agreed (62%) that academic activities were appraised or evaluated regularly. Responses from countries such as the U.S. (86%), the U.K. (79%) and Chile (71%) showed a higher proportion than the average; conversely, others, such as Germany (25%), Russia (35%), Japan (44%) showed a lower than average proportions (*ibid,* p.57).

For the specific periodic evaluation of teaching, research and service activities, the average positive responses showed high scores, in order, in teaching (48%), research (45%) and service (22%). At the individual country level, evaluation in the U.S. (79%) and the U.K. (71%) was high in teaching; and in the U.S. (69%) and the U.K. (70%), high in research; and in addition in the U.S. (54%) high in service. While the U.S. and the U.K. were high in these aspects of evaluation, on the other hand, Germany (9%) and Japan (18%) showed very low proportions indicating a periodic evaluation of teaching.

As for periodic evaluation of teaching activity by students, the proportion responding "yes" was more than 40% in countries such as the U.S. (72%), Sweden (47%), the U.K. (44%), and Australia (41%), and less than 10% in countries such as Japan (9%), Germany (7%), and South Korea (5%). In Japan, the proportion was low in 1992, but subsequently it has increased following introduction of the faculty development (FD) system in 1998 and 2004, and of the accreditation system in 2007.

Internationalization

As Table 5 shows, Japanese academics were not strongly positive in affirming items related to internationalization, although their conformity to items such as "Have you written an article or book in a language other than your mother tongue" and "Our students have studied abroad" was fairly high among academics in the countries participating in the survey.

① Sending and acceptance of international students: positive responses ("frequently" plus "occasionally") to the statements "Foreign students have been enrolled" and "Our students have studied abroad", were seen in the U.S. (enrolled, 97%; studied abroad, 76%), Japan (86%; 81%), and Sweden (78%; 69%), but scored less than 50% in Mexico, Brazil, and Hong Kong (Yamanoi, 1996, p.93). An extremely low level was indicated in South

Korea (5%; 12%), showing apparently delayed internationalization. There were large differences in internationalization between individual countries.

Table 5. Internationalization (%)

	US	UK	Ger	Net	Rus	Swe	Mex	Bra	Chil	Aus	Jap	Kor	HK	Isra
Enrolled Abroad	97 76					78 69					86 81			
curriculum	41	---	57	---	59	59	75	61	79	47	67	76	66	29
Traveled abroad	43	53	65	70	36	75	43	37	61	62	56	62	72	94
Faculty member	13	16	25	34	9	22	12	6	22	15	7	7	30	65
Article or book	1	1	8	15	2	14	1	2	5	1	10	4	10	

② Internationalization of the curriculum: many positive responses to the statement that "The curriculum at this institution should be more international in focus." were supplied from Chile, South Korea, and Mexico with proportions greater than 70%; and in Japan, Hong Kong, and Brazil they accounted for more than 60%. Negative responses, with proportions less than 50% were provided by Australia, and the U.S. (*ibid*, p.94). In some countries, such as Chile, South Korea, Mexico, Hong Kong, and Brazil, where the responses indicate that fewer foreign students had been accepted, there was seen to be a need for internationalization of the curriculum. Japan showed the enrollment of many foreign students and also showed a high proportion (67%) supporting internationalization of the curriculum. This figure seems to confirm the fact that academics were considering a delayed development of internationalization. This trend is also recognized in the current survey in 2007 in which Japanese academics seem to be more contented with the improved internationalization fifteen years later (Huang, 2008, p. 306).

③ Experience of learning and research overseas: a majority of academics (57%) had traveled abroad to study or to do research in the past three years (Yamanoi, 1996, p.27). Individual countries in which a majority has worked overseas include Israel, (with over 90%); Sweden, Hong Kong and the Netherlands (all with over 70%); Germany, Australia, South Korea, and Chile (all with over 60%); and Japan and the U.K. (with over 50%). Mexico, the U.S., Brazil, and Russia all indicate less than 50%.

In terms of internationalization, these countries can be categorized into three groups: countries advanced in internationalization with a proportion of

more than 70%; emerging countries with a proportion of more than 50% but less than 70%; and developing countries with a proportion of less than 50%. According to these categories, it is interesting that of three countries that at some time have become or been world centers of academic excellence, one, Germany, is located in the second group and the U.K. and the U.S. in the third group where the majority have not had experience overseas.

④ Experience as a member of faculty at an institution in another country: overall, those who had such experience constitute 17%, of respondents (*ibid*, p.97). Academics in Israel showed the highest proportion (60%), followed by the Netherlands, Hong Kong, Germany, Chile, and Sweden with more than 20%; the U.K., Australia, the U.S., and Mexico had more than 10%, Russia, South Korea, Japan, and Brazil the least, with less than 10%.

⑤ Publication activity: the average response ratio to the question "Have you written an article or book in a language other than your mother tongue" in the past ten years was as high as 6.1 times (*ibid,* p.99).

Those in countries such as Israel, the Netherlands, Sweden, Japan, and Hong Kong belonged to an upper group with more than 10% of respondents having done so. Countries such as South Korea, Brazil, Russia, Mexico, Australia, the U.S., and the U.K. constitute a lower group with less than 5% (*ibid,* p.101). It is noteworthy that three countries, Australia, the U.S. and the U.K., where English is the mother tongue, record almost the lowest proportions: probably they find no need to use a language other than their own. Elsewhere, respondents in countries categorized in the research orientation group were likely to indicate higher proportions.

As for Japan, the average was 10%; and in more detail there were significant differences among disciplines: humanities 2%; social sciences 3%; sciences 16%; engineering 13%; health 15%; arts 2%. Similar trends were observable internationally: humanities 3%; social sciences 3%; sciences 10%; engineering 7%; health 8%; arts 1% with an overall average response across all disciplines of 6%. This suggests that universalism is working in areas such as the sciences, engineering, and health more than in those such as humanities, social sciences, and arts.

What kinds of changes does the current international CAP survey reveal? To learn the outcomes will be interesting. Each individual system has its own characteristics on the basis of its own tradition, history, culture, so that it tends to seek a vision of the academic profession that maintains the characteristics intrinsic to the system itself. On the other hand, the academic profession is

seeking a new vision tending to converge in a common direction worldwide under the effects of environmental changes including globalization, knowledge-society-orientation, and marketization.

How to see these two trends is necessary in basic research on the academic profession worldwide today. The academic profession is expected to contribute to scholarship as well as to academia not only in an individual country and society but also in international society. Pursuit of a vision of the academic profession sustainable in the 21st century is possible as well as inevitable on the basis of such basic research.

Table 6. Trends of change in the AP in Japan in 1992 and 2007

		1992 world	1992 Japan		2007 Japan
Academic career	①Sex	24% (female)	8% (female)	−	12%
	②Age	45.5 ys. old	51.4 ys. old	+	52.2(50.4)
	③Average number of institutions academics belonged in their career (mobility)	Aspects	Items	− −	1.6
	④Permanent employment	87%	99%	+	
	⑤Personal Strain	40%	56%	+	50%
Scholarship	①Teaching orientation	44%	25% (47%)	− (+)	31% (42%)
	②Loyalty to discipline	71%	69%	*	68%(67%)
	③Publication of more than one paper	91%	96%	+	
	④Successful research is important	79%	80%	*	
	⑤ No tenure without publication	63%	48%	−	
	⑥Activities evaluated regularly	62%	44%	−	75%
Internationalization	①Foreign students enrolled	US 97%	87%	−	90%
	②Curriculum should be more international	40%	67%	+	52%
	③Academics traveled abroad to study	57%	56%	*	
	④Experience of a faculty member in another country	17%	7%	−	
	⑤publication in language other than mother tongue	6.1 times	10.3 times	+	

An international comparison of the academic profession: from a Japanese perspective

As described previously, the Japan Project seeks to resolve the academic profession's realities in the past fifteen years on the basis of the two surveys in 1992 and 2007 (Arimoto, ed., 2008). Accordingly, the aim of this report is to identify the changes that have occurred in the fifteen years in terms of factors such as: response to environmental changes; response to academic organizational changes; the state of academic productivity; and export of information to society.

The most important problem in this survey is an examination of the academic profession's realities. What kind of real and unreal images does the academic profession possess in the midst of the changing academic profession?

Definition of the academic profession as a profession may enable us to distinguish between it and other occupations by endorsing the significant factors as follows: a long educational career; profound scholarship; academic freedom; professional ethic; social prestige; and academic productivity. Some of the following real and unreal images are gained as a result of examination of these factors.

A long educational career

- Those who are involved in academic work on the basis of knowledge have developed career paths corresponding to a mastery of academic disciplines. Academic degrees have differentiated into three main levels: bachelors' degrees (BA, BSc), masters' degrees (MA, MSc); doctoral degrees (PhD *etc*.).
- The higher degree system has followed two routes in Japan, that of a dissertation and that of course work. The latter was not institutionalized well for many years after importing it from the U.S., especially in the areas of humanities and social sciences in which doctoral degree holders were much fewer than those in the areas of natural sciences and technology. However, the Central Council of Education recommended in 2005 that the degree system should be integrated into a course work type in the future so that this type has been increased rapidly since then (CCE, 2005)
- Recognition of the problem of gender bias has allowed recruitment of female academics to increase gradually mainly to middle and lower positions on the academic ladder. Academics holding a PhD degree were 60% of male and 25% of female faculty in 1992: but these proportions had changed to 75% and 50% respectively in 2007, that is, increases of fifteen and twenty-five percentage points respectively. The increasing scale of female academic appointments is apparent (Kimoto, 2008, p.127).
- The tradition of lengthy preparation before entering an academic career is increasingly challenged by a new trend of recruiting by non-academic paths from occupations outside academia. As El-Khawas showed, the new reality is an emerging structure of diverse academic roles and career paths worldwide. These roles consist of five categories: university professors, part-time academic staff, academic services staff, research professors, and research scientists (El-Khawas, 2008, pp.34-39). Four of these categories,

other than university professors who hold tenured or tenure-track positions, are in part-time positions and are increasing today.

Scholarship

- Scholarship is a concept with a special relationship to academia's ideal. Nevertheless, scholarship in Japanese academia has sunk into a state of anomie to the extent that the reconstruction of it is inevitable as soon as possible.
- The so called "research paradigm" has become prevalent in Japan just as in other countries, especially in systems identified as research oriented. The fact that scholarship is almost equivalent to research has been established in academic work, while too little attention has been paid to research and teaching as two vehicles.
- In contrast, a concept of scholarship emphasizing teaching has been introduced into Japan to a considerable degree since Earnest Boyer published *Scholarship Reconsidered* (Boyer, 1990).

  Scholarship's reconstruction was not improved swiftly until 1998 when teaching was established as a semi-obligation by the institutionalization of FD into academia (UC, 1998). In 2007, attention to teaching became a legal obligation and since then third party accreditation agencies have been expected to assess the improvement of teaching in individual institutions every seven years. In this context, academics have to shift their emphasis from a research to a teaching orientation. In 1992, the proportion of academics indicating a teaching orientation was 28%, compared with a research orientation of 73%. By 2007, the proportions had become 32% and 68%, a shift of five percentage points (Fukudome, 2008, p.265). As such, the response has not improved as much as might have been expected, even though the institutional requirement has increased. Nevertheless, the fact that national policy has not defined explicitly a concept of integration among research, teaching, and learning has brought about confusion in both philosophy and reality.
- Academics, who had a strong conformity to a research orientation fifteen years ago, have revealed ambivalent attitudes in terms of their current conformity to research and teaching. In the present situation, the discrepancy, between an enforced conformity to teaching at institutional level and a strong orientation to research at the level of individual consciousness, has necessarily deepened the state of anomie previously mentioned.

Academic freedom

- Academic freedom has contracted due to the transformation from a knowledge community to a knowledge enterprise that has proceeded largely in the past fifteen years. This fact has brought about a differentiated society among academics by severe competition for resources in terms of academic funding and research budget allocation (Asonuma, 2008). It is interesting that those who are able to get sufficient research funding do not necessarily show a good return for it. One of the reasons is that an involvement in free and challenging research is difficult for many academics to undertake due to the risk of failure (Urata, 2008, p.179).

  In addition, in a system of increasing evaluation, many academics regard their own lives as being under difficult conditions that place further restraints on undertaking research activity based on the exercise of free and flexible ideas (Murasawa, 2008, p.292).

- A top-down type of academic governance replacing the bottom-up type has become evident following the start of the national university corporations in 2004. This pattern differs markedly from that of the traditional university view, the essence of which was that both academic freedom and academic autonomy were positioned well. As a result, faculty members, especially those of the national university corporations, increasingly complain about decreasing academic and research freedom.

  National universities, especially non-research universities, have suffered erosion of their academic freedom because of decreases in their research budgets in line with government policy of "selection and concentration" of resources. Introduction of the corporate system in the national universities in 2004 transformed latent differences into manifest differences among the institutions by a changed allocation of resources in accordance with a market mechanism (I. Amano, 2008). One result is the different reactions to the national government by academic staff in the national research and non-research universities. In 1992, agreement with the statement that "The effectiveness of higher education is being threatened by growing bureaucracies." was expressed by 63% of respondents in the national research universities and 62% in the national non-research universities: there were no differences between two groups. However, in 2007, those in the research universities showed reduced agreement at 55%, while in the non-research universities agreement had increased to 67%. The result means that these two groups now have quite different reactions to government policy (Fujimura, 2008, pp.163-164).

If we make an international comparison with respect to the threat from bureaucracy, in 1992 responses in the U.S. showed agreement as high as 67% with the statement and similarly the U.K. showed 76% agreement, while Japan showed 57%. It is said that in the past fifteen years, Japan has reached the same level of bureaucratization. It is also said that the phenomenon of "differentiated universities" has developed both manifestly and latently in the national universities.

- In addition with the introduction of the national university corporations, a great deal of the deterioration of research time has a profound relationship with decreased academic freedom. This is evident from analyses of faculty members' working conditions, daily lives, and personal strain (*cf.* Nanbu, 2008; Hasegawa, 2008; Nishimoto, 2008; Yamasaki, 2008).

Whenever academics enjoy abundant academic freedom, they are confronted with the perpetual problem that the academic organization should conform to the logic of universalism rather than particularism. One of its barometers is a trend of mobility enshrined in the academic career. The 1992 survey identified the mobility of Japanese academics as feeble by international standards, especially as much of the limited mobility is enforced. For example, as is shown in Table 1, the most influential universities in Japan such as Tokyo, Kyoto, Waseda, and Keio had inbreeding ratios of more than 60% in 2003, restricting their recruitment of academics graduated from other universities (Yamanoi, ed., 2007).

It is manifest that there are many differences between these institutions and their American counterparts including Harvard and Yale where markedly lower inbreeding ratios, of less than 30%, were achieved almost one century ago (Pierson, 1952; Arimoto, 1981). Unless this situation changes, Japanese institutions will become anachronic in the age of knowledge orientation and globalization.

Professional ethics

- The ethics of the academic profession have the essence that academics make ethical judgments by their own insight. This identifies a true profession because professional prestige is not realized without maintaining self-discipline. Professional ethics are still in good health in the sense that the faculty meeting usually practices punishment and expulsion of academics who violate the ethical norms and codes.
- On the other hand, however, the problems of dishonest science and deviant

behavior have exposed numerous unethical actions, such as the misappropriation of research money, plagiarism and forgery, and the manipulation of data. However, in addition to these, moral hazards, including sexual, academic and power harassments, have been frequently dealt with by the mass communication media rather than the profession (Arimoto, 2008c, p.342).

Social prestige

- Evidence that the social power and prestige of the academic profession is tending to decline is illustrated by a number of facts: the massification of higher education; the degeneration of the university into the high school; the decline of the power in the administration and management by "a hard method of administration and management" with "corporation" and "enterprise" (Trow, 1994, pp.11-18) which was already recognized by academics in Europe and the U.S. in the 1992 survey (Fujimura, 2008, p.147); the loss of academic freedom; the deterioration of working conditions in the organization of universities in terms of "relationships with colleagues" (27%→23%), "the opportunity to pursue your own ideas" (70%→67%), and "the way this institution is managed" (30%→21%) (Nanbu, 2008, pp.191-192); the decrease of government funding for the system to the point that no increase is expected for the next five years (T. Amano, 2008, p.223); the depressed budget and resources allocation (Asonuma, 2008; Urata, 2008); the proportion of psychologically stressed respondents remaining at an internationally high level, although it has decreased slightly (56%→50%) (Nishimoto, 2008, pp.236-237). The quantitative increase and massification of the academic staff from 11,000 in 1950 to 167,000 in 2007, an increase of 15 times, is necessarily bringing a weakening of professional ethics (Arimoto, 2008b, pp.16-17).
- The title of "professor emeritus" has been degraded in an era in which it is being mass produced by deregulation of its qualification control and simultaneously by the emergence of disgraced professors to the extent that it becomes familiar in scandals appearing in mass communication media such as television, radio and newspapers. In this context, it is understandable that the academic profession has lost respected social authority and prestige to a considerable degree.
- A comparison of the social status of some professions, such as lawyers, senior officers, doctors, company presidents, and professors, was made about forty years ago when the social prestige of professor was fairly high

(Shinbori & Arimoto, 1969). Comparing the facts related to the status and prestige between then and now, we can recognize the diminution that has occurred for the professoriate. It cannot be denied that the academic profession's professional appeal has declined.

- According to the present survey, however, academics still have very strong attachments to the academic profession through their responses to the statement: "This is an especially creative and productive time in my field." The proportion who agree, 57% in 2007, is still high, though it decreased slightly from 63% in 1992 (Nanbu, 2008, pp.192-194). The proportion agreeing with the statement that "If I had it to do over again, I would not become an academic" decreased to 11% from 16% in 1992. This result implies that a positive attitude in the academic profession has increased in the past fifteen years. It is possible that the responding faculty members at the time of their recruitment have accepted the good image conveyed by their professors because the traditional culture and climate of academic tribes had been well maintained. Today, they consciously retain this good image, while yet recognizing that status and prestige are declining institutionally. If so, this may suggest an increasing difficulty in attracting some of the best and brightest brains in the next generation to the profession.

Academic productivity

The cultivation of high quality academic productivity is a key concept to establish a true profession. In other words, the pursuit of academic work such as research, teaching and service, especially research and teaching, so as to yield high academic productivity is thought to be central to the academic profession.

- The Japanese academic profession was considered to have low teaching productivity owing to its less positive attitude to teaching; conversely, it was considered to have high research productivity owing to its positive commitment to research. As has been pointed out, a symptom of improvement in these attitudes and commitments can be recognized in the current survey and in this sense the effects of university reforms during the past fifteen years become evident. Nevertheless, whether real high academic productivity can be achieved needs further verification.
- It is true to say that academic productivity has improved over the fifteen years, if we compare quantities of publications: "Articles published in an academic book or journal" (7.72→9.15); "Research reports or monographs written for funded projects" (1.26→1.65); "Papers presented at a scholarly

conference"(7.43 → 9.06) (Daizen, 2008, p.247). They have increased significantly. But it is necessary also to analyze the factors that determine the numbers of publications. Factors such as "Total amount of received research funding", "During past three years, how many disciplinary/scientific conferences did you attend?", "Regarding your own preferences, do your interests lie primarily in teaching or in research?" have a close relationship to productivity (*ibid*, pp.259-260).

- The fact that productivity is quantitatively higher than, or almost equivalent to that in the previous years was made in spite of a deterioration of the time spent on research (Hasegawa, 2008, pp.205-208). However, the quality of research seems to be problematic because of a declining indication of research intensity and quality due to deterioration in research time and enforcement of the teaching orientation by law. Moreover, quality assurance of teaching also seems to be problematic because teaching time increased too much and too rapidly for quality to be controlled (*ibid*, p.205).
- High research productivity is expected to contribute to scientific development by exploiting the invention and discovery of knowledge, while high teaching productivity is expected to form excellence in students' scholastic achievements and abilities at the time of their graduation. Theoretically, high academic productivity is cultivated by integration and cooperation of research and teaching. In reality, the breakdown of scholarship's ideal has become overt so that any previously existing integration of research and teaching has been lost rapidly.
- The "Subject Benchmark Statements on Degrees" issued by the Quality Assurance Agency for Higher Education (QAA) in the U.K. offers an internationally leading case for an ideal standard in terms of quality assurance from the integration of research and teaching. The establishment of such a standard is demanded in Japan and it is currently under development (Arimoto, ed., 2007). The trends indicated by the Japan Council of Science deserve our attention since the Council has just started to give attention to improving this situation.

From the discussion of these six factors we can understand that the real situation of academics today is neither successful in constructing an ideal state for the academic profession nor for pursuing a sense of duty proper to the profession. Within the past fifteen years, academics, who were already far from any ideal of the academic profession, have fallen into a state of anomie and lack any sense of which direction to go. Far from promoting academic productivity

their inactivity invites their emasculation and decline.

Concluding remarks

(1) This report has sought to provide a perspective of the academic profession in Japan by focusing on four problems: the research framework and methodology; the function of knowledge; the environmental change of the academic profession; the term and object of research. The knowledge function plays an important role in the pursuit of the vision of the university and the academic profession. The research and teaching function are especially important in order to enhance academic productivity, which consists of research and teaching productivity and for which the academic profession is expected to be responsible.

(2) The Japanese academic profession has changed to a considerable degree in the past fifteen years. The facts related to this are perhaps special to Japan and do not necessarily reveal the situation in other countries. A comparison of the past and present facts occurring in Japan provides a vertical axis which can be combined with a horizontal axis formed by a comparison of the academic professions in Japan and other countries to identify the extent of change.

(3) The academic profession has changed, more or less, from the historic prototype and continues to change by modification and innovation. Researchers in higher education intend to make clear the realities underlying the past, present, and future stages of the changes. This paper has attempted to establish the realities of the changes in the academic profession in the fourteen countries (including one area) in the Carnegie survey held in 1992.

(4) The Japanese academic profession has, in many respects, changed to a considerable degree in the past fifteen years. Among them, three topics, academic careers, education and research, and internationalization are to be treated intensively in this meeting. Related to these topics, some of the traits are shown in the following descriptions.

① There is both a trend toward lengthy preparation before entering an academic career as seen in the phenomenon of increasing proportions of PhD holders, and a new trend of recruitment to an increasing non-academic path group from various occupations outside academia.

② Academics, who fifteen years ago had a strong conformity to research, have revealed an ambivalent attitude in terms of conformity to both

research and teaching. There is an increasing situation in which conformity to teaching is strongly encouraged by national law at the institutional level, while conformity to research is still strong in the consciousness of academics.

③ Academic freedom has shrunk due to the transformation from a knowledge community to a knowledge enterprise which has proceeded largely in the past fifteen years. This has created a the differentiated society in academia by the increasingly severe competition among academics for resources as testified by the constraints on academic funding and research budget allocations. Many academics see themselves as living is under difficult conditions that place restraints on their ability to undertake research activities that exercise unconstrained ideas.

④ The survey conducted in 1992 recognized the feeble mobility of Japanese academics. In particular, there was little self-chosen mobility, although there was a large proportion of compulsory and closed mobility. One of reasons for this situation is thought to be the prevailing inbreeding evident in influential universities and a consequently closed recruitment for national and international academics.

Such basic changes (or non-changes) as occurred in Japan in the past fifteen years provide a basis for comparison with the situation in other countries.

(5) There are some expectations for this international meeting.

The international meeting is providing at least two approaches to attain a fruitful and meaningful outcome.

First, it offers the opportunity to discuss many problems but with a focus on three topics: academic careers, education and research, and internationalization.

Second, it has a format of three keynote speeches, eight country reports, and the relevant discussions.

The keynote speeches are expected to discuss comprehensive and basic problems, while the country reports are expected to analyze the past and present situations related to the situation in individual countries so as to clarify the problems proper to these countries. The relevant discussions are expected to delve deeper into the contents of the presentations in order to generate a frank exchange of views between the participants.

On the basis of the discussion of these basic problems, the seminar has the following problems to be clarified.

① Participating countries will clarify the changes that have occurred in the

fifteen years as indicated by the results of the two surveys.

② The meeting is to discuss intensively the three identified topics on the basis of the situations in individual countries. With this approach, and by making an international and historical comparison, there will be an opportunity to make clear both the similarities and dissimilarities of the academic professions in the participating countries.

③ Related to ②, it will become possible and important to seek to clarify contemporary problems by utilizing vertical and horizontal axes. Historical changes of the academic profession worldwide can be examined on the basis of an enquiry of historical changes of the academic profession in individual countries. At the same time, it is important to clarify the common problems that the academic profession now faces throughout the world so as to develop research in the academic profession.

④ Publication of a report presenting the proceedings of the meeting is expected to appear as a publication succeeding that of the previous CAP meeting conducted last year in Hiroshima.

References

Altbach, P.G. (1996). *The International Academic Profession: Portraits of Fourteen Countries*. Princeton: Carnegie Foundation for the Advancement of Teaching.

Amano, I. (2008). *Whereabouts of Corporation of National University: Between Independence and Difference* (in Japanese). Tokyo: Toshindo Publishing Co.

Amano, T. (2008). Salary and Income (in Japanese). *The Changing Academic Profession in Japan (CAPJ)* (pp.222-234). Tokyo: Tamagawa University Press.

Arimoto, A. (1981). *Sociology of Academics* (in Japanese). Tokyo: Gakubunsha Publishing Co.

Arimoto, A. (1987). *Sociology of Science in Robert K. Merton: Formation and Development of its Paradigm* (in Japanese). Tokyo: Fukumura Publishing Co.

Arimoto, A. (2005a). *Academic Profession and FD: U.S. and Japan* (in Japanese). Tokyo: Toshindo Publishing Co.

Arimoto, A. (2005b). National Research Policy and Higher Education. *Journal of Educational Planning and Administration*, 175-198.

Arimoto, A. (2006). National Research Policy and Higher Education in Japan. In L. Meek, & C. Suwanwela (eds.), *Higher Education, Research and Knowledge in the Asia and Pacific Region* (pp.153-173). New York: Palgrave Mcmillan.

Arimoto, A. (2007). Remarks on the Relationship between Knowledge Functions and the Role

of the University. In S. Sorlin & H. Vessuri (eds.), *Knowledge Society vs. Knowledge Economy: Knowledge, Power, and Politics* (pp.175-197). New York: Palgrave Macmillan.

Arimoto, A. (2008a). International Implications of the Changing Academic Profession in Japan. In RIHE (ed.), *The Changing Academic Profession in International, Comparative and Quantitative Perspectives* (RIHE International Seminar Report 12) (pp.1-31). Hiroshima: RIHE, Hiroshima University.

Arimoto, A. (2008b). The Academic Profession in Japan: past and present (in Japanese). *CAPJ* (pp.13-40). Tokyo: Tamagawa University Press.

Arimoto, A. (2008c). Perspective of the Academic Profession (in Japanese). *CAPJ* (pp.325-351). Tokyo: Tamagawa University Press.

Arimoto, A. (ed.) (1996). *Study on the Centers of Learning* (in Japanese). Tokyo: Toshindo Publishing Co.

Arimoto, A. (ed.) (2007). *Benchmark Statement on Degrees: Subject Benchmark Statement by the QAA (Quality Assurance Agency for Higher Education in the U.K.)* (in Japanese). Hiroshima: RIHE, Hiroshima University.

Arimoto, A. (ed.) (2008). *The Changing Academic Profession in Japan (CAPJ)* (in Japanese). Tokyo: Tamagawa University Press.

Arimoto, A., & Ehara, T. (eds.) (1996). *International Comparison of the Academic Profession (ICAP)* (in Japanese). Tokyo: Tamagawa University Press.

Asonuma, A. (2008). University Funding (in Japanese). *CAPJ* (pp.81-110). Tokyo: Tamagawa University Press.

Becher, T. (1989). *Academic Tribes and Territories: Intellectual enquiry and the cultures of the disciplines*. Milton Keynes: Open University Press.

Becher, T., & Parry, S. (2007). The Endurance of the disciplines. In I. Bleiklie & M. Henkel (eds.), *Governing Knowledge: A Study of Continuity and Change in Higher Education —A Fertscrift in Honour of Maurice Kogan* (pp.133-144). Dordrecht: Springer.

Becher, T., & Trowler, P. R. (2001) *Academic Tribes and Territories: Intellectual enquiry and the cultures of the disciplines.* Second Edition, Buckingham: The Society for Research into Higher Education & Open University Press.

Ben-David, J. (1977). *Centers of Learning*. New York: McGraw-Hill.

Biglan, A. (1973). The Characteristics of subject matter in different scientific areas. *Journal of Applied Psychology*, *57*, 204-213.

Boyer, E.L. (1990). *Scholarship Reconsidered: Priorities of the Professoriate*. Princeton: Carnegie Foundation of the Advancement of Teaching.

Brubacher, J., & Rudy, W. (1968). *Higher Education in Transition*. New York: Harper and Row.

CCE (Central Council of Education) (2005). *Future Vision of Higher Education in Japan* (in Japanese). Tokyo: Central Council of Education.

Clark, B.R. (1983). *Higher Education Systems: Academic Organization in Cross-National Perspective*. Berkley: University of California Press.

Clark, B.R. (1987). *The Academic Life: Small Worlds, Different Worlds*. Princeton: The Carnegie Foundation for the Advancement of Teaching.

Clark, B.R. (ed.) (1993). *The Research Foundations of Graduate Education: Germany, Britain, France, United States, and Japan*. Berkeley: University of California Press.

Clark, B.R. (1995). *Places of Inquiry: Research and Advanced Education in the Modern University*. Berkeley: University of California Press.

Daizen, T. (1996). Professional activity (in Japanese). *ICAP* (pp.51-61). Tokyo: Tamagawa University Press.

Daizen, T. (2008). Research Productivity (in Japanese). *CAPJ* (pp.245-262). Tokyo: Tamagawa University Press.

El-Khawas, E. (2008). Emerging Academic Identities: A New Research and Policy Agenda. In A. Amaral, I. Bleiklie & C. Musselin (eds.), *From Governance to Identity: A Festschrift for Mary Henkel* (pp.31-44). Springer.

Fujimura, M. (2008). Administration and Management (in Japanese). *CAPJ* (pp.145-167). Tokyo: Tamagawa University Press.

Fukudome, H. (2008). Conflicts of research and teaching (in Japanese). *CAPJ* (pp.263-279). Tokyo: Tamagawa University Press.

Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P. Z., & Trow, M. (1994). *The New Production of Knowledge: the dynamics of science and research in contemporary societies*. London: Thousand Oaks; and New Delhi: Sage.

Halsey, A.H., & Trow, M. (1971). *The British Academics*. Boston: Harvard University Press.

Hasegawa, Y. (2008). Time schedule for living (in Japanese). *CAPJ* (pp.198-221). Tokyo: Tamagawa University Press.

Hsu, F.L.K. (1963). *Clan, Caste, and Club*. Princeton: D.Van Nostrand Co., Inc.

Huang, F. (2008). Internationalization (in Japanese). *CAPJ* (pp.297-311). Tokyo: Tamagawa University Press.

Kimoto, N. (2008). Gender bias: what of the female academics changed? (in Japanese). *CAPJ* (pp.123-142). Tokyo: Tamagawa University Press.

Kerr, C. (1994). *Higher Education Cannot Escape History: Issue for the Twenty-first Century* [Translated by Kazuyuki, Kitamura, 1998]. New York: State University of New York Press.

Kogan, M. (2007). Modes of Knowledge and Patterns of Power. In S. Sorlin & H. Vessuri (eds.), *Knowledge Society vs. Knowledge Economy: Knowledge, Power, and Politics* (pp.35-51). New York: Palgrave Macmillan.

Kogan, M., & Teichler, U. (eds.) (2007). Key Challenges to the Academic Profession, UNESCO Forum on Higher Education, Research and Knowledge. *Werkstattberichte*, *65*,

175-190.

Kuhn, T.S. (1970). *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press. (First Published in 1962)

Light, D.W., Jr. (1974). The Structure the Academic Professions. *Sociology of Education*, 47(1), 2-28.

Locke, W., & Teichler, U. (2007). The Changing Conditions for Academic Work and Careers in Select Countries. *Werkstattberichte*, *66*, 195-210.

Times Higher Education Supplement/ QS (THES-QS) (2008). Quacquarelli Symonds. Retrieved from www.topuniversities.com.

Merton, R.K. (1973). The Normative Structure of Science. In R.K. Merton & N. Storer (ed.), *The Sociology of Science: Theoretical and Empirical Investigations*. Chicago: The University of Chicago Press.

Mulkey, M.J. (1977). Sociology of the Scientific Research Community. In Spiegel-Rosing, Ina, & Price, Derek de Solla (eds.) *Science, Technology and Society: A Cross-Disciplinary Perspective.* London and Ververly Hills: Sage Publications.

Murasawa, M. (2008). Evaluation (in Japanese). *CAPJ* (pp.280-294). Tokyo: Tamagawa University Press.

Nanbu, H. (2008). Conditions of Work (in Japanese). *CAPJ* (pp.183-197). Tokyo: Tamagawa University Press.

Nishimoto, H. (2008). Stress (in Japanese). *CAPJ* (pp. 235-242). Tokyo: Tamagawa University Press.

Ogata, N. (1996). Restraints and their backgrounds in relation to work (in Japanese). *ICAP* (pp.235-250).

Parry, S. (2007) *Disciplines and Doctorates.* Dordrecht: Springer.

Pierson, G.W. (1952). *Yale College: An Educational History 1871-1921.* New Haven: Yale University Press.

Rashdall, H. (1936). *The Universities of Europe in the Middle Ages Volume 1*. Oxford: Oxford University Press.

RIHE (2008). The Changing Academic Profession in International, Comparative and Quantitative Perspectives. (Report of the International Conference on the Changing Academic Profession Project, 2008).

Ross, M.G. (1976). *The University: The Anatomy of Academe*. New York: McGraw-Hill.

Shinbori, M. (1973). Research of Academic Productivity (in Japanese). *Daigaku Ronshu*, *1*, 11-19.

Shinbori, M., & Arimoto, A. (1969). An International Comparison of Academic Career. *Sociological Review*, *73*(3), 2-21.

Trow, M., (1994). Manegerialism and the Academic Profession: the case of England. *Higher Education Policy*, *7*(2), 11-18.

UC (University Council) (1998). *21st University Vision and Direction for Reforms* (in Japanese). Tokyo: University Council.

Ushiogi, M. (2008). *Is The End of Humboldt's Ideal?: New Dimension of Modern University* (in Japanese). Tokyo: Toshindo Publishing Co.

Urata, H. (2008). Allocation of Research Budget (in Japanese). *CAPJ* (pp.168-182). Tokyo: Tamagawa University Press.

Yamanoi, A. (1996). International Aspect (in Japanese). *ICAP* (pp.91-102). Tokyo: Tamagawa University Press.

Yamanoi, A. (2008). Fluidity (in Japanese). *CAPJ* (pp.62-80). Tokyo: Tamagawa University Press.

Yamanoi, A. (ed.) (2007). *Academic Market Place in Japan* (in Japanese). Tokyo: Tamagawa University Press.

Yamasaki, H. (2008). Higher Education and Society (in Japanese). *CAPJ* (pp.312-324). Tokyo: Tamagawa University Press.

Yokoo, T. (1999). *Birth of University and Transformation: European University History* (in Japanese). Tokyo: Toshindo Publishing Co.

Teaching *versus* Research in the Contemporary Academy

William K. Cummings *

Introduction

Teaching and research constitute the core work of academics, and most academics devote some of their time to both of these activities (Arimoto, 2005). Historically universities modeled after the German university (as in Japan and Israel) placed a greater emphasis on basic research, those modeled after the U.S. land-grant model stressed applied research, and those modeled after the English university (*e.g.* throughout the former British empire) placed more emphasis on teaching (Ben-David, 1977). In recent times, new forces or drivers have influenced these differential emphases leading some to assert a convergence in academic practice. The forces are diverse: the partial retreat in public funding of higher education exerts pressure on HEIs and academics, to find alternate funding through commercialized research and contracted training; technological advances have influenced the delivery of teaching; the adolescent population has declined, creating pressure to improve teaching in order to attract students; those entering the profession are more likely to have received advanced training in research, so the competition for securing research funds is increasing; and the academy has become more international in composition (Cummings, 2006). These recent trends vary by country with some countries, especially in the developing world and in Asia experiencing counter-trends (Cummings, 2008). The aim here is to survey recent trends in the work of the academy – what do professors like to do in terms of teaching and research, what do they do, and what is making some components of their academic work easier, other

* Professor of International Education, Graduate School of Education and Human Development, The George Washington University, USA, e-mail: wkcum@usa.net

components tougher?

Methods

In this study, we will primarily consider differences by nation (ideally we would also like to look at differences by institutional type, field, international status, but the data files are not yet available). We will look at 2007 patterns across all the countries that have made their data available. For the sub-set who participated in the 1992 survey, for certain variables we will also compare 1992 findings with those for 2007.

What is scholarship?

Ernest Boyer (1990), who was the initiator of the 1992 International Survey of the Academic Profession suggested that academics engage in four modes of scholarship, with their emphasis varying according to institutional mission and personal preference; these four modes were the scholarships of discovery, of integration, of application, and of dissemination. In the CAP survey academics in all 15 reporting countries were asked if they believed all four of these modes constituted scholarship. As illustrated in Table 1, their answers were decisively affirmative.[1] Indeed, while the academy is often depicted as an ivory tower focused almost exclusively on basic research, academics in most of the CAP countries indicated their belief that applied and synthetic scholarship was as important as the creation of new knowledge.

Also in most of the reporting countries academics indicated their belief that teaching and research are compatible or mutually reinforcing activities. The one glaring exception was the Japanese professors who were least likely to agree (last row of Table 1).

What did my training prepare me for?

While the academic job involves both teaching and research, doctoral training focuses almost exclusively on research. In most countries only a very small number received any training on instruction (the U.S. is a modest exception), and in many systems over the course of doctoral work the current academics had experienced little or no course work (which might have

[1] Table 1-13 are grouped together following the references at the end of this article (pp.45-55).

stimulated some reflection on what works in university teaching) (Table 2).

Of course, in most systems there is some openness to recruiting individuals with real world experience, and it can be argued that this experience outside of academia is accompanied by a more practical approach in the classroom. China is notable for its openness to recruiting individuals from outside of academia, and Italy is possibly most insular in this regard (see Table 9).

There is though some effort to provide advice on instruction, once academics are recruited? And most academics are receptive to such advice (Table 3).

The personal 'ideal' balance

In terms of individual preferences between teaching and research, overall it can be said that most systems achieve a balance with about as many academics leaning toward research as toward teaching (Table 4).

But the emphasis varies by country with research given priority in several of the countries influenced by the German model. While a teaching emphasis was once evident in Anglophone countries, recent university reforms stressing research productivity in the UK and Hong Kong have led to a new emphasis on research in these countries. Also notable is the strong surge in research emphasis in Korea (2007 compared to 1992). While several countries exhibit an increased stress on research, no country for which there is data for both 1992 and 2007 indicates a notable increase in the stress on teaching.

How time is allocated

An obvious distinction can be made between what professors want to do and what they actually do. While research may be a priority for many academics, they work in institutions which are primarily organized for the delivery of teaching, and these organizational demands inevitably influence time budgets.

The time professors devote to their work averages, in most countries, around 50 hours, which is somewhat above the average amount of time *per* week for work of the respective labor forces (Table 5). Relative to 1992, the average number of hours academics devote to their work is slightly up.

While the personal preference of many academics may be for research, teaching takes up the most hours in a typical week in all systems. In the U.S. and Japan, the average number of teaching hours is up, and the average number of hours for research is slightly down. Of course, these average numbers do not take account of variations within the respective systems – *e.g.* research

universities *versus* the rest.

It is notable that the number of hours devoted to service, relatively prominent in 1992, is down – seemingly squeezed out by the pressure on professors to respond to more pressing demands (Cummings, 1997).

What is my teaching?

Overall professors appear open to new approaches to their teaching (Table 6). One example is the large proportion who say they rely on ICT innovations in their classroom approach. This tendency is most evident in North America and also is widespread in Asia, but it is least common in continental Europe. Also professors seem concerned to listen to criticism, and thereby to improve their teaching (see Table 10a).

What is my research?

Research is a prominent activity for many professors (Bain & Cummings, 2000). Concerning the type of research CAP academics are personally engaged in, more indicate an involvement in applied than in basic research (Table 7). Only a minority engage in commercially relevant research (in a relatively few fields primarily in the life sciences). Academics in China and Malaysia are the most likely to engage in commercial research, probably because their state systems do not have a long tradition of supporting academic research so commercial research is, for many, the only option.

Actually in most countries a far greater proportion of academics report they are engaged in what they describe as socially relevant than commercially relevant research.

Academics state they are as often engaged in multidisciplinary as disciplinary research and in most countries they report frequent engagement in research that is international in scope (the U.S. is a notable exception).

In all national settings professors feel an increased pressure to bring in external funding (Table 8). In most cases they do not feel this has led to excessive pressure to pursue commercially relevant research. But they do feel there is a danger that an excessive emphasis on the quantity of research may lead to a decline in quality.

What is emphasized in promotion and tenure decisions?

In most cases, research is thought to be somewhat more important than

teaching in the evaluation of academics. However, in those systems that are currently prioritizing research productivity, such as Korea, research is strongly emphasized. Service is a lesser priority.

Given the relative importance attached to teaching performance, it is interesting that, in the evaluation of teaching, students have a prominent role (Table 10a). In contrast, concerning the evaluation of research it is peers, department heads, and external reviewers who have prominent roles whereas the view of students is not perceived as being important (Table 10b).

Perception of university support for teaching/research

While university management pushes for both teaching and research, professors feel the administration does a better job in supporting teaching than in supporting research (Table 11).

Availability of facilities

Concerning the quality of facilities for accomplishing academic work, professors in most countries say they are pretty good — though professors in the more developed countries see little change relative to 1992, whereas a much greater improvement is seen to be in the developing countries and in Korea (Table 12). In fact, professors in Hong Kong give the highest rating to the quality of their facilities. Thus there appears to be a leveling in the quality of academic facilities around the world. In general, the facilities for teaching seem to be better than those for research.

Perception of academic freedom

The CAP survey asked only one question focused directly on the core value of academic freedom. Overall professors indicate that their institutions are providing reasonable protection for academic freedom (Table13). But a substantial minority either are nor sure or disagree. Combining the answer to this direct question with a number of other questions on such matters as the prevalence of commercial research and the prevalence of restrictions on publishing, it might better be said that professors today are not sufficiently satisfied with the level of protection of academic freedom in the contemporary academy.

Conclusion

Institutional models still affect the beliefs of today's academics, but the impact of the historical models is less evident in respect to actual behavior. This survey finds some convergence in the commitment to teaching. And similarly there appears to be convergence with regard to service, in the sense that this activity appears to be losing support.

However, concerning research, there is an emerging pattern of divergence. Some systems prioritize research highly, and back this up with public support and organizational policies that involve incentives for research; but other systems are not adjusting policies or providing related incentives. Of course, there is differentiation within systems so these tendencies may be in place in the upper strata of research universities, but obscured when statistics for the system as a whole are considered. Thus a more refined analysis of the convergence-divergence debate will need to consider the differentiated tendencies within systems. Finally our survey indicates a worry, albeit muted, that in the ebb and flow of recent change, academic freedom may be somewhat eroding.

References

Arimoto, A. (2005). Globalization, academic productivity, and higher education reforms. *RIHE International Publication Series: Globalization and Higher Education*, *9*, 1-22.

Ben-David, J. (1977). *Centers of Learning*. New York: Wiley.

Boyer, E. (1990). *Scholarship Reconsidered*. Princeton, N.J.: The Carnegie Foundation for the Advancement of Teaching.

Cummings, W.K. (1997). The service university movement in the US**:** searching for momentum. *Higher Education*, *35*(1), 69-90.

Cummings, W.K. (2006). Globalization and knowledge production: An Asian tilt? *Higher Education Forum*, *3*, 1-25.

Cummings, W.K. (2009). Is the academic center shifting to Asia? In G. Postiglione, W. K. Cummings & D. Chapman (eds.), *Border Crossing in East Asian Higher Education.* Springer & HKU CERC (in press).

Olga, B., & Cummings, W.K. (2001). Academe's glass ceiling: Societal, professional-organizational, and institutional barriers to the career advancement of academic women. *Comparative Education Review, 44*(4), 493-514.

Table 1. Please indicate your views on the following statements (Question B5)
(proportion who "strongly agree" or "agree") (%)

	IT	DE	FI	NO	UK	US	CAN	JP	KR	HK	CH	MY	AU	BRZ	MX	AR
Scholarship is best defined as the preparation and presentation of findings on original research	73	73	57	87	63	69	74	77	77	81	54	71	67	38	59	53
Scholarship includes the application of academic knowledge in real-life settings	60	68	84	66	71	81	70	75	20	79	82	80	74	84	87	78
Scholarship includes the preparation of reports that synthesize the major trends and findings of my field	46	67	62	62	68	70	83	81	90	73	76	72	67	63	66	61
Teaching and research are hardly compatible with each other	14	29	38	11	29	13	20	51	11	26	42	30	28	7	11	6
% who strongly **agree** that teaching and research are compatible					17	34	35	9	20	23	12	23		66	61	67

Notes: In this and the other tables, the following abbreviations are used to identify the origins of the data: IT, Italy; DE, Germany; FI, Finland; NO, Norway; UK, United Kingdom; US, United States; CAN, Canada; JP, Japan; KR, Korea; HK, Hong Kong; CH, PR China; MY, Malaysia; AU, Australia; BRZ, Brazil; MX, Mexico; AR, Argentina.

Table 2. How would you characterize the training you received in your doctoral degree? (Question A3) (proportion who "strongly agree" or "agree" with the statements) (%)

	IT	DE	FI	NO	UK	US	CAN	JP	KR	HK	CH	MY	AU	BRZ	MX	AR	Total
You were required to take a prescribed set of courses	51	15	64	70	19	83		36	81	54	73	34	16		68	70	47
You were required to write a thesis or dissertation	96	100	93	95	97	97		83	95	97	79	95	98		98	99	93
You received intensive faculty guidance for your research	82	29	35	30	23	70		60	63	50	71	41	28		87	61	47
You chose your own research topic	61	58	68	62	64	85		60	81	84	53	68	75		88	58	65
You received a scholarship or fellowship	81	21	58	73	68	71		49	64	57	31	73	67		38	66	55
You received an employment contract during your studies (for teaching or research)	18	63	47	64	33	57		5	51	38	39	34	39		35	53	42
You received training in instructional skills or learned about teaching methods	25	8	12	8	14	34		15	26	19	22	15	14		36	21	17
You were involved in research projects with faculty or senior researchers	67	41	54	44	36	49		21	59	42	58	44	40		71	86	46
You served on an institutional or departmental (unit) committee	11	18	19	24	12	31		3	5	13	8	32	18		28	38	17

Table 3. Please indicate your views on the following statements related to teaching (Question C4). (proportion who "strongly agree" or "agree") (%)

	IT	DE	FI	NO	UK	US	CAN	JP	KR	HK	CH	MY	AU	BRZ	MX	AR
You are encouraged to improve your instructional skills in response to teaching evaluations	59	36	13	47	55	55		70	65	52	62	64	63		55	34
At your institution there are adequate training courses for enhancing teaching quality	3	29	39	36	60	39		20	39	40	29	49	53		50	30
Practically oriented knowledge and skills are emphasized in your teaching	52	78	52	52	68	72		50	76	68	77	68	75		88	82
Your research activities reinforce your teaching	83	75	70	84	79	68		79	85	73	73	66	75		83	84
Your service activities reinforce your teaching	45	38	39	65	38	50		46	57	44	55	36	50		74	59

Table 4. Academic preferences. Do your interests lie *primarily* in teaching or in research? (Question B2) (%)

2007	IT	DE	FI	NO	UK	US	CAN	JP	KR	HK	CH	MY	AU	BRZ	MX	AR
Primarily in teaching	2	10	14	1	10	24	8	6	3	9	11	8	7	8	20	7
In both, but leaning towards teaching	21	18	21	10	27	34	27	23	29	28	42	44	23	42	37	37
In both, but leaning towards research	65	40	38	42	37	34	51	57	61	52	42	43	40	42	33	50
Primarily in research	12	32	27	46	26	9	14	14	7	11	5	4	29	7	5	8
1992	IT	DE	FI	NO	UK	US	CAN	JP	KR	HK	CH	MY	AU	BRZ	MX	AR
Primarily in teaching		8			12	27		4	5	11			13	20	14	
In both, but leaning towards teaching		27			32	36		24	40	35			35	42	45	
In both, but leaning towards research		47			40	30		55	50	46			43	36	37	
Primarily in research		19			15	7		17	6	8			9	3	4	

Table 5. How many hours do you spend in a typical week on each of the following professional work activities? (Question B1) (hours/week)

(%)

2007	IT	DE	FI	NO	UK	US	CAN	JP	KR	HK	CH	MY	AU	BRZ	MX
Teaching (preparation of instructional materials and lesson plans, classroom instruction, advising students, reading and evaluating student work)	18.8	12.3	17.2	12.7	15	21.6	20.6	21.8	21.4	19.9	20.1	20	17.6	18.9	21.5
Research (reading literature, writing, conducting experiments, fieldwork)	17.4	15.8	16	19.2	10	12.2	16	17.62	18.2	16	16.4	10	13.9	9.7	7.6
Service (services to clients and/or patients, unpaid consulting, public or voluntary services)	2.5	5.3	2.2	2.6	4	4.2	5.3	4.58	4.9	4	4.8	2	2.4	2.5	0.9
Administration (committees, department meetings, paperwork)	4.3	4.4	4.8	6.7	5	7.4	8.5	7.85	5.2	8.5	8.3	10	8.8	4.8	7.9
Other academic activities (professional activities not clearly attributable to any of the categories above)	2.4	3.2	2.3	3.1	5	3.3	4.8	3.33	4.3	3.6	3.6	2	2.3	2.6	5.6
Total	45.4	41	42.5	44.3	39	48.7	55.2	55.18	54	52	53.2	44	45	38.5	43.5

1992	IT	DE	FI	NO	UK	US	CAN	JP	KR	HK	CH	MY	AU	BRZ	MX
Teaching (preparation of instructional materials and lesson plans, classroom instruction, advising students, reading and evaluating student work)		16.4			21.3	18.7		19.7	23.1	19				21.9	16.9
Research (reading literature, writing, conducting experiments, fieldwork)		19.2			13	16.5		21.3	17.1	13.6				12.6	11.2
Service (services to clients and/or patients, unpaid consulting, public or voluntary services)		6.1			4.7	7.4		4.1	3.8	5.3				8.3	8
Administration (committees, department meetings, paperwork)		9.6			9.9	6.8		6.5	4.6	8.6				5.3	6.0
Other academic activities (professional activities not clearly attributable to any of the categories above)		2.4			3.6	3.4		3.8	3.0	3.8				2.6	4.1
Total		53.7			52.5	52.8		55.4	51.6	50.3				50.7	46.2

Table 6. During the current (or previous) academic year, which of the following teaching activities have you been involved with? (Question C2) (proportion indicating "strongly agree" or "agree") (%)

	IT	DE	FI	NO	UK	US	CAN	JP	KR	HK	CH	MY	AU	BRZ	MX	AR
Individualized instruction	95	36	81	87	84	81		79	58	79	71	70	81		78	42
Learning in projects/project groups	33	37	47	50	60	56		25	48	60	26	77	51		58	36
Practice instruction/ laboratory work	51	42	64	38	41	41		62	51	38	53	64	42		63	49
ICT-based learning/computer-assisted learning	17	13	40	19	42	28		32	11	30	31	49	43		67	39
Distance education	9	3	33	7	22	29		5	13	9	5	15	36		15	16
Development of course material	86	32	76	45	88	88		29	64	78	27	72	88		76	70
Curriculum/program development	34	36	67	58	76	76		27	50	66	42	68	75		66	48
Electronic communications (e-mail) with students	88	48	87	84	95	94		56	68	90	51	80	92		79	75

Table 7. How would you characterize the emphasis of your primary research this (or the previous) academic year? (Question D2) (proportion indicating "very much" or "much") (%)

	IT	DE	FI	NO	UK	US	CAN	JP	KR	HK	CH	MY	AU	BRZ	MX	AR
Basic/theoretical	58	57	58	54	56	49		66	62	58	78	65	52		55	49
Applied/practically-oriented	60	69	65	70	66	68		69	74	72	85	73	77		69	62
Commercially-oriented/ intended for technology transfer	16	22	19	21	16	15		22	19	11	50	38	19		18	17
Socially-oriented/ intended for the betterment of society	33	35	34	34	66	75		31	36	50	63	58	61		55	47
International in scope or orientation	75	60	60	70	65	40		47	33	65	67	50	68		44	45
Based in one discipline	33	35	39	56	40	31		60	46	34	27	41	19		55	45
Multi-/interdisciplinary	66	63	58	57	63	67		53	53	67	80	62	73		63	63

Table 8. Research. Do you agree with the following statements? (Question D6)
(proportion indicating "strongly agree" or "agree") (%)

	IT	DE	FI	NO	UK	US	CAN	JP	KR	HK	CH	MY	AU	BRZ	MX	AR
Restrictions on the publication of results from my publicly-funded research have increased since my first appointment	16	32	13	18	11	7	11	32	45	19	27	12	15	17	27	20
Restrictions on the publication of results from my privately-funded research have increased since my first appointment	12	29	17	21	9	6	12	20	29	11	23	9	16	16	25	15
External sponsors or clients have no influence over my research activities	52	50	47	56	35	37	55	31	36	55	34	34	45	36	36	56
The pressure to raise external research funds has increased since my first appointment	78	87	78	80	78	53	74	80	58	78	57	48	86	58	56	42
Interdisciplinary research is emphasized at my institution	36	62	65	58	67	51	59	41	35	62	54	68	65	48	53	42
Your institution emphasizes commercially-oriented or applied research	37	38	40	50	54	31	40	29	30	35	41	63	63	25	26	21
Your research is conducted in full-compliance with ethical guidelines	91	86	88	95	85	82	95	86	82	90	82	80	94	95	85	88
Research funding should be concentrated(targeted) on the most productive researchers	68	47	28	35	23	23	21	25	39	35	46	55	29	32	55	31
High expectations to increase research productivity are a threat to the quality of research	53	49	73	66	75	52	71	60	63	71	58	46	73	52	50	51
High expectations of useful results and application are a threat to the quality of research	49	52	48	55	55	41	60	54	52	60	51	40	58	44	40	43

Table 9. To what extent does your institution emphasize the following practices? (Question E6)
(proportion indicating "very much" or "much") (%)

	IT	DE	FI	NO	UK	US	CAN	JP	KR	HK	CH	MY	AU	BRZ	MX	AR
Considering the research quality when making personnel decisions	23	56	41	43	63	39	49	60	33	69	56	40	50	29	34	23
Considering the teaching quality when making personnel decisions	11	26	29	22	30	47	32	39	24	43	49	45	28	38	34	30
Considering the practical relevance/applicability of the work of colleagues when making personnel decisions	10	27	31	30	29	24	18	26	15	25	53	37	24	29	28	28
Recruiting faculty who have work experience outside of academia	7	37	24	19	23	23	16	22	19	21	47	39	27	30	25	24
Encouraging academics to adopt service activities/entrepreneurial activities outside the institution	15	60	20	15	31	33	21	27	29	23	31	36	36	20	29	14
Encouraging individuals, businesses, foundations etc. to contribute more to higher education	23	49	19	23	38	57	43	18	29	46	54	42	50	35	35	19

Table 10a. Evaluation. By whom is your teaching regularly evaluated? (Question E3)
(proportion who "strongly agree" or "agree" with each of the statements) (%)

	IT	DE	FI	NO	UK	US	CAN	JP	KR	HK	CH	MY	AU	BRZ	MX	AR
Your peers in your department or unit	20	15	34	22	65	54		21	24	38	53	30	33		45	46
The head of your department or unit	33	18	55	25	52	79		31	25	71	62	66	67		62	45
Members of other departments or units at this institution	4	3	5	5	13	18		5	7	10	21	14	11		26	15
Senior administrative staff at this institution	3	11	11	16	11	36		35	31	31	37	17	17		25	30
Your students	87	80	84	85	93	90		48	81	93	67	83	85		81	62
External reviewers	9	6	12	10	33	8		10	4	24	21	20	6		25	20
Yourself (formal self-assessment)	25	35	0	27	53	61		40	22	46	37	49	52		52	41
No one at or outside my institution	6	8	3	8	2	1		8	3	0	6	3	4		1	8

Table 10b. Evaluation. By whom is your research regularly evaluated? (Question E3)
(proportion who "strongly agree" or "agree" with each of the statements) (%)

	IT	DE	FI	NO	UK	US	CAN	JP	KR	HK	CH	MY	AU	BRZ	MX	AR
Your peers in your department or unit	38	33	49	53	42	40		18	28	36	25	30	35		34	24
The head of your department or unit	30	17	66	44	64	60		31	19	79	52	62	70		42	21
Members of other departments or units at this institution	8	10	23	12	21	18		4	16	21	17	28	16		33	28
Senior administrative staff at this institution	3	23	17	13	23	30		39	41	40	38	25	22		21	28
Your students	2	2	3	3	3	3		2	3	3	11	6	4		4	3
External reviewers	44	50	53	41	62	35		15	36	59	25	35	55		47	72
Yourself (formal self-assessment)	24	35	0	23	51	49		43	27	47	37	46	43		40	26
No one at or outside my institution	18	13	7	12	6	14		10	10	1	8	5	4		4	4

Table 11. Administrative support from the institution for teaching and research (Question E4)
(proportion who "strongly agree" or "agree" with the following statements) (%)

	IT	DE	FI	NO	UK	US	CAN	JP	KR	HK	CH	MY	AU	BRZ	MX	AR
There is a supportive attitude of administrative staff towards teaching activities	19	25	25	41	42	50	48	57	28	42	37	34	39	42	42	37
There is a supportive attitude of administrative staff towards research activities	18	33	24	47	29	46	48	35	46	39	48	36	37	30	35	26

Table 12. How would you evaluate each of the following facilities, resources, or personnel you need to support your work at your institution? (Question B3) (proportion who indicate "excellent" or "very good") (%)

2007	IT	DE	FI	NO	UK	US	CAN	JP	KR	HK	CH	MY	AU	BRZ	MX	AR
Classrooms	38	51	71	56	32	53	52	33	48	68	62	43	47	57	47	27
Technology for teaching	37	56	72	60	39	61	63	53	44	82	54	45	52	46	43	25
Laboratories	29	64	53	49	39	25	33	9	2	50	39	35	41	46	37	20
Research equipment and instruments	31	62	52	54	34	25	36	9	24	52	33	24	42	36	30	18
Computer facilities	45	72	71	77	43	60	57	37	40	76	46	55	62	52	47	30
Library facilities and services	54	56	75	74	55	57	66	39	43	82	47	50	75	51	46	38
Your office space	46	68	67	71	42	58	62	35	48	59	37	48	62	40	44	16
Secretarial support	35	50	53	30	28	41	44	16	19	47	28	22	27	47	35	23
Telecommunications (Internet, networks, and telephones)	65	84	80	84	42	73	72	53	73	80	43	55	67	56	47	31
Teaching support staff	16	26	43	17	35	27	32	9	14	36	40	27	28	37	25	22
Research support staff	17	38	33	19	34	17	28	9	11	29	30	19	26	24	18	21
Research funding	8	34	20	24	17	16	23	18	14	30	18	24	23	18	14	10
Average of first 8 in 2007	39	60	64	59	39	48	52	29	33	64	43	40	51	47	41	25
Average of first 8 in 1992		47			33	54		18	11				37	27	35	

1992	DE	UK	US	CAN	JP	KR	HK	CH	MY	AU	BRZ	MX
Classrooms	43	31	55		15	19	51			31	39	47
Technology for teaching	42	32	49		14	9	60			35	21	32
Laboratories	48	32	54		12	9	42			33	22	32
Research equipment and instruments	46	22	53		14	7	38			28	15	22
Computer facilities	60	43	68		25	13	69			53	25	43
Library facilities and services	53	39	62		31	7	49			40	34	39
Your office space	37	34	45		17	21	50			40	29	34
Secretarial support	44	33	44		12	6	40			36	35	33
Average of first 8	47	33	54		18	11	50			37	27	35

Table 13. Academic freedom. (Question E5)
(proportion who "strongly agree" or "agree" with the statement) (%)

2007	IT	DE	FI	NO	UK	US	CAN	JP	KR	HK	CH	MY	AU	BRZ	MX	AR
The administration supports academic freedom	48	40	22		33	59	61	56	50	54	53	41	38	48	76	61

1992	DE	UK	US	JP	KR	HK	AU	BRZ	MX
The administration supports academic freedom	15	45	65	71	34	49	43	54	45

Biographies, Careers and Work of Academics

Ulrich Teichler*

1. Introduction

1.1 The aim of this study

The aim of this study is to analyse changes in recent years in the biographies, careers and work of academics in economically selected countries. Emphasis will be placed on describing common elements and differences by country and by career status. The study will address only academics employed at institutions of higher education who are responsible, more or less equally, for both teaching and research. The analysis draws from the two major comparative questionnaire surveys undertaken so far, the "Carnegie study" undertaken in 1992, and the "Changing Academic Profession" (CAP) study undertaken in 2007.

Before the major findings are presented and interpreted, the rationales, the choices and the limitations of this study should be explained briefly.

1.2 Employment and work: the thematic area of analysis

The academic profession tends to be portrayed as one of people strongly driven by intrinsic motives and concentrating primarily on the subject matter of their work, *i.e*. the substance of teaching and research. Many of them seem to be willing to devote much time and to forego some of the conveniences of life outside academia in favour of interesting and demanding academic work. Not infrequently, they are described as isolated from the world of work and absent-minded. These observations might lead us to conclude that we do not need to pay attention so much to the details of their biographies, careers, employment and work conditions, work habits and so forth in explaining the role they actually play with regard to teaching and research.

* Professor, International Centre for Higher Education Research Kassel (INCHER-Kassel), University of Kassel, Germany, e-mail: teichler@incher.uni-kassel.de

The popular discussions about the academic profession, in contrast, make us believe that details of their biography, employment and work are of the utmost importance for the proper functioning of academic work. We hear not only stories about ascetic hard-working academics, but also of those who spend more than half of the year gliding across oceans on their yachts. Some experts claim that the academic productivity of young researchers is undermined by job insecurity, while others consider their unstable employment situation is a productive incentive mechanism. Often, facilities are viewed as crucial for the quality of teaching and learning as well as for research. Last but not least the academics themselves seem to be more prone than in the majority of professions to pay attention to rites and symbols (*e.g*. titles) and to embark on heated debates on minute distinctions as far as employment and working conditions are concerned (*cf*. various articles in Enders, ed., 2001; Enders & de Weert, eds., 2004).

Therefore, this article will describe various issues of the biography, the career, the employment and work of members of the academic profession. This may help to illustrate the individual situation of 'workers' in the academic system. It is not intended here, at this early stage of work in the framework of the CAP project (see the first results in Research Institute for Higher Education (RIHE), ed., 2008), to analyse the extent to which the individual characteristics and the career, employment and work process actually influence the processes and results of teaching and research; these questions will be left open for further analysis.

1.3 Analysing changes in the academic profession

The international comparative study "The Changing Academic Profession" (CAP) is not only interested merely in undertaking a snapshot of the situation of the academic profession in the year the survey was undertaken (2007), but also in changes over time. Changes can be established, in principle, through four means.

- First, the data for the concurrent situation, *i.e.* 2007, could be interpreted by the members of the research team in historical perspective. Thus, the authors' general knowledge of changes over time would be the basis.
- Second, comparisons of the responses by age groups of respondents could be undertaken. If, for example, the views of academics in their thirties about the quality of higher education management were more negative than those of academics in their sixties, we could conclude that academics' attitudes toward higher education management become

more negative. This interpretation, however, is only appropriate, if we have reasons to assume that the attitude towards management in higher education does not change substantially over the years of service in higher education or with the career position one holds in the academic profession.

- Third, change over time could be measured through retrospective questions, such as "What changes did you observe over the last five years with respect to …?" In fact, a few questions of that type were posed in the 2007 questionnaire. This interpretation is appropriate, if we assume that retrospective views are not strongly affected by biases, *e.g.* by the stereotypical belief that the world or one's life had been better in general in the past, or worse in general in the past than it is now.
- Fourth, changes can be established through a time-series analysis, *i.e.* through a comparison with findings of surveys undertaken earlier. In fact, the CAP research team had been inspired by the existence of the first major comparative study on the academic profession, the Carnegie study undertaken in 1992 (see Boyer, Altbach & Whitelaw, 1994; Altbach, 1996); some questions posed in the 2007 survey were identical and some were similar to those posed in 1992.

It is this time-series analysis that will be the major approach in analysing changes of the biographies and careers in the academic profession in the subsequent text. Therefore, responses to identical and similar questions posed in 1992 and 2007 will be the focus of analysis.

We have to bear in mind, though, that change over time cannot be measured easily through a time-series approach. On the one hand, some issues relevant in the past are no longer seen as important in the course of change and, therefore, are not addressed in a subsequent survey. On the other hand, some newly emerging issues are likely not to have been addressed at all or addressed in a different way in the past. Therefore, the volume of themes possibly analysed through a time-series approach might turn out to be small. In fact, the research team conducting the study, "The Changing Academic Profession", came to the conclusion that so many issues deserve attention newly or differently from the previous study that the proportion of questions posed identically or similarly in 2007 to the questions posed in 1992 turned out to be small. This state of affairs caused the Japanese research team to conduct a second study of the academic profession in 2007 in which the questionnaire of 1992 Carnegie study was employed, so obtaining a better means than teams in other countries to measure

change over time (see Arimoto, 2008).

It should be added that the study, "The Changing Academic Profession", started off with the assumption that the conditions for academic work have changed substantially in recent years. The researchers involved came to the conclusion that three major contextual changes of this kind have to be taken into consideration in order to understand the perceptions, views and actions of the academic profession:

- an increasing expectation that teaching and research ought to be visibly relevant;
- an increasing managerial power within higher education institutions; and
- a growing internationalisation of higher education and its wider context (see Brennan, 2006; Kogan & Teichler, eds., 2007).

These contextual changes could come into play in the survey of the academic profession in three different ways.

- First, these changes could merely be considered in interpreting findings. For example, in noting that academics write more publications in recent years we might argue that increasing managerial power might be a factor to explain this growth.
- Second, the academics might be asked to state how they perceive their relevant context. For example, they might be asked whether both in 1992 and 2007 the power of the leaders at their university was high.
- Third, the academics might have been asked at both points of time whether their attitudes and activities are clearly in tune with the changing context: for example, what role international activities played in their academic life.

The research team, obviously, opted for all three approaches in their analysis. The subsequent text, however, is an early and tentative contribution to this analysis. It puts prime emphasis on actual changes in their views and activities, as far as their biographies and careers are concerned, while the major three contextual changes addressed in the research project are addressed only occasionally. For example, the finding presented subsequently of a substantial change in the gender composition of the academic profession cannot be attributed to any of the three major contextual factors discussed above.

1.4 Junior and senior academics in research-oriented universities

Academic careers are characterized in many countries by a long period of concurrent learning and productive work. Often, but not in all countries, this is combined with clear status distinctions between junior staff and fully established

senior staff, with a high selectivity of the academic career, and with a long period of job insecurity (see various articles in Enders & de Weert, eds., 2004; Teichler, ed., 2006). In many countries, academics are only accepted and stable members of the academic profession when they have reached a position termed associate professor in the US or a similar status in other countries.

No matter, whether the delineation between junior and senior positions is relatively soft or relatively dichotomous, a distinction between junior and senior makes sense in analysing the responses to the questionnaire survey of the academic profession for two reasons.

- As a rule, the work assignments for junior staff differ systematically from those for senior staff, reflecting the double function of learning and productive work of the former during their 'formative years' (Teichler, ed., 2006); and also in their access to resources, their power in the institutions and many other matters related to their status within the profession affect their employment and work situation strongly.
- There are enormous differences between countries as regards the start of employment at universities, *e.g.* predominantly before the doctorate or predominantly after the doctorate, and in the ratio of employment of young researchers *per* senior position eventually to be filled. As a consequence, in some countries, the majority of academic staff are senior academics and in other countries less than a quarter. If one looks only at the total figures of academic respondents, country differences might be spurious because they may arise from only the differing size and composition of junior positions.

In most countries of the world, some institutions of higher education expect their senior academic staff to be more or less equally active in research and teaching; these institutions, as a rule, are also primarily the ones that train the next generation of scholars, *e.g.* through doctoral training or through accommodating larger numbers of junior staff. There are other institutions where the prime function of the senior academic staff is to teach, while research activities might be exceptional, less theoretically based or as a rule with less time devoted to them.

In various European countries, for example, only those institutions are called "universities" that have the right to award doctoral degrees and that expect their senior staff to be more or less equally active in research and teaching. In some countries, such universities are characterized as "research universities" or as "doctoral granting universities". In order to avoid country-specific terminologies, here we call these institutions research-oriented universities (see

the discussions of varying models of diversity in higher education in Teichler, 2007b).

This study concentrates only on the senior and junior staff of research-oriented universities. Senior staff and junior staff from other institutions of higher education surveyed in the CAP study and the Carnegie study are excluded here, because the public debates in the countries included in this study about careers in higher education and about the strengths and weaknesses of a nexus between teaching and research activities all have prototypically the research-oriented universities in mind.

1.5 The varying situation in economically advanced countries

Neither of the comparative studies on the academic profession addressed here has been limited to specific regions of the world, nor to certain levels of economic advancement and possibly related resources for high-quality higher education, and nor to certain levels of expansion of student enrolment. Rather, roughly half of the countries included might be characterized as 'economically advanced countries', and others as economically 'emerging' or 'middle-income countries', while 'low-income' countries or typical 'developing' countries were not included.

The subsequent analysis addresses only five economically advanced countries. The choice of these countries is operationally determined. At the time the analysis was conducted (in December 2008), only for these five countries were data sets available from both 1992 and 2007 that could be differentiated by type of higher education institutions ('research-oriented' *vs.* others) and by status of the respondents ('junior staff' *vs*. 'senior staff').

The focus on five economically advanced countries ensures a certain degree of common conditions: relatively favourable conditions for research, a relatively high proportion of research-oriented academics, and a relatively high entry level of academic credentials and prior experience to senior positions; in contrast, research at universities in economically less favoured countries often is an 'endangered species' (see Vessuri & Teichler, eds., 2008).

A comparison by country, however, reveals an enormous variety even among economically advanced countries. Though academic knowledge transcends borders, and academics are among the most international professions often with 'cosmopolitan' values, the institutional fabric of higher education systems, the rules for study programmes, the governance of higher education institutions, funding of higher education and, last but not least, the institutional frameworks for academic careers and for the employment and work

characteristics are strongly shaped nationally; this holds true even if many of the supervisory and funding responsibilities rest on smaller geographical entities (*e.g.* the states in the US or the *Länder* in Germany).

Therefore, the observation differences by country stood in the foreground of the Carnegie study (see Altbach, 1996; Enders & Teichler, 1995; Teichler, 1996). Also, the researchers involved in the project, the "Changing Academic Profession", were active in the early phase of the project in analysing the different country settings before the actual data analysis started (see RIHE, ed., 2006; Locke & Teichler, eds., 2007). Various detailed accounts of the academic professions of the five countries which are addressed here are available:

- Australia (Meek, 2006; Harman & Meek, 2007);
- Germany (Teichler & Bracht, 2006; Teichler, 2007a);
- Japan (Huang, 2006; Arimoto, 2007);
- the United Kingdom (Naidoo & Brennan, 2006; Brennan, Locke & Naidoo, 2007);
- the United States of America (Finkelstein & Frances, 2006; Finkelstein, 2007; see also the elaborate analysis in Schuster & Finkelstein, 2006).

The subsequent analysis will not be in a position to explain the differences by country through frequent reference to this background material. Rather, it will highlight the extent of similarity and difference by country and status group as well as the visible change over time.

1.6 Some methodological observations

Both, the Carnegie study in 1992 and the CAP study in 2007 aimed to survey a representative sample of employed academic staff in the countries surveyed. As addresses, as a rule, could be obtained from the individual higher education institutions, the sample was stratified by higher education institutions. The details as regards individual countries are described in Altbach (1996) and RIHE (ed., 2008).

The subsequent analyses address almost all the questions posed as regards biography and career, employment and work that were identical or sufficiently similar in 1992 and 2007 in order to measure the change over time.

2. Biography and career

2.1 On the way towards gender parity?

The most striking change within the 15 years is the increase of women

within the academic profession. On average over the five countries analysed, the proportion of women among senior academics tripled from 1992 to 2007. Even though the proportion of women tended to decline from one career step to the next, the substantial increase of women among junior academics suggests that the trend towards increasing the share of women among the professoriate will continue in the future.

Table 1. Proportoion of women among academics in research-oriented universities **(%)**

		AU	DE	JP	UK	US
Professors	1992	10	6	1	6	17
	2007	33	19	8	26	36
Junior Staff	1992	39	22	7	29	42
	2007	56	36	13	53	52

As Table 1 shows, however, we do not note a trend of catching up on the part of the countries with traditionally low shares of women. On the contrary, the percentage of increase of women among the total number of academic staff was lowest for junior and senior staff in Japan where the share had been lowest in the past. And the increase was second lowest in Germany, the country with the second lowest share of women among academics in the past.

A doctoral degree has been the normal entry qualification for a career at a research university for a long time in two of the five countries. In Germany (95%) and the US (94%), almost all professors at research-oriented universities were doctoral degree holders in 1992, and we note only small changes by 2007 (98% in Germany and 91% in the US). Actually, in Germany academics were expected to have passed the *Habilitation*, a kind of second-level doctoral degree, in order to become eligible for appointment as a professor.

During the period analysed, the doctoral degree became increasingly a 'must' in Australia (from 85% to 92%) and the United Kingdom (from 74% to 90%). In Japan, in contrast, the percentage of doctoral degree holders among professors at research universities decreased during the period from 85% to 78%. Japan, thus, seems to be the exception in the trend towards a doctoral degree as an entry qualification.

2.2 Trend towards increased institutional mobility of academics?

Employment over the whole academic career within a single university – often called negatively 'inbreeding' – though some professors are proud that they have been employed all the time in a prestigious university such as Oxford

University or Tokyo University – has been most frequent among the 1992 senior academic respondents in Japan (56%), somewhat frequent in the US (41%) and the United Kingdom (33%). In all these three countries, the extent of inbreeding declined during the period observed, as Table 2 shows.

Substantially fewer of the 1992 professorial respondents had remained at the same university over their whole careers in Germany (20%) and Australia (21%). However, these proportions did not change substantially by 2007. Thus, we note a converging trend.

Table 2. Employed only at a single higher education institution during their career – senior staff at research-oriented universities (%)

	AU	DE	JP	UK	US
1992	21	22	56	33	41
2007	25	20	43	13	26

Sources: Carnegie Q5; CAP A5.

In all five countries, the professors at research-oriented universities surveyed in 1992 and 2007 had been employed at their current institution of higher education for more than half of their overall period of employment. However, working for some period of one's professional life in other institutions – other higher education institutions, research institutions or other organisations – increased somewhat from the 1992 cohorts of respondents to the 2007 respondents in three countries, as Table 3 shows: in Australia, Japan and the United Kingdom. In Germany, the data are incomplete and, thus, do not allow the identification of any possible change over time. In the US, in contrast to the first three countries, previous employment in another institution did not change substantially during the period observed.

Table 3. Average years of employment since graduation* – senior staff at research-oriented universities

	AU		DE		JP		UK		US	
	1992	2007	1992	2007	1992	2007	1992	2007	1992	2007
At this university	17	14	16	(20)+	19	15	16	14	17	17
At other HEIs	6	6	7	+	4	5	6	11	4	6
Outside HE	7	7	4	3	2	3	4	2	5	4
Total	30	27	27	23	25	23	27	27	27	27

*The data presented in the CAP survey are inconsistent in some cases.
+ Total years at all higher education institutions.

3. The employment and work situation

3.1 Trend towards decreasing regular/stable employment?

In many economically advanced countries, substantial proportions of academics are employed part-time for some period of their junior careers, and employment on short-term contracts is far more frequent. Some observers claim that these features of 'precarious' and 'uncertain' employment for junior staff tend to be on the increase on the way towards a market-driven and 'managerial university'. Table 4, however, suggests that there were enormous differences in 1992 by country, that there have been increases in some countries and decreases in other countries by 2007, and that there is no convergent trend across countries.

- Part-time employment of junior staff remained highest in Germany, but hardly changed over time (from 25% to 27%); among others, this reflects the fact that the majority of doctoral candidates in Germany are employed during that period, however mostly on part-time basis. It more than tripled in Australia (from 5% to 17%) and doubled in the UK (from 6% to 12%), while it decreased in the US (from 23% to 10%). In Japan, it remained marginal (from 2% to 3%).
- Short-term employment of junior academic staff decreased in Germany somewhat (from 79% to 69%), but remained at a high level; again, one has to bear in mind that many young scholars are already employed while working on their doctoral theses (see Teichler & Bracht, 2006). It had been second highest in the US, but by 2007 had increased to the highest level (from 63% to 71%). It increased most strikingly in Japan (from 4% to 23%) and substantially as well in Australia (from 36% to 48%). In the UK, it decreased to the lowest level (from 28% to 12%).

Table 4. Part-time and short-term employment – junior and senior staff at research-oriented universities (%)

		AU		DE		JP		UK		US	
		Jun	Sen	Jun	Sen	Jun	Sen	Jun	Sen	Jun	Sen
Part-time	1992	5	2	25	2	2	0	6	6	23	3
	2007	17	9	27	1	3	0	12	2	10	3
Short-term	1992	36	6	79	2	4	1	28	9	63	5
	2007	48	25	69	4	23	8	12	0	71	7

Sources: Carnegie Q11; CAP A7 and A11.

One could ask, however, whether the results of the surveys provide a valid picture. In Germany, for example, most of the academics, paid only for small tasks and short periods, get a regular contract and, thus contribute to the overall image of a high proportion of part-time and short-term employment. In some other countries, many of the young academics in a similar situation are paid informally, through honoraria, or as ancillary workers and thus do not appear to be in precarious and uncertain employment.

Part-time employment of senior academics was rare both in 1992 and 2007. Short-term employment of senior academics was slightly more frequent in 1992 and increased as an average of the five countries somewhat until 2007. This, notwithstanding the clear distinction in those respects between junior and senior staff, did not soften substantially.

- Part-time employment of senior academic staff at research universities remained marginal except in Australia (increase from 2% to 9%).
- Short-term employment of academic senior staff at research universities quadrupled in Australia (from 6% to 25%) and also increased substantially in Japan (from 1% to 8%). It increased marginally in Germany and the US, while it disappeared in the UK (from 9% to 0%).

Altogether, we note some increase of short-term and part-time employment, but there is not any consistent trend across status groups and countries.

3.2 Increase of other sources of income

Data on the proportion of sources of income other than the salary or any supplements paid by their employers are only available both for 1992 and 2007 for four countries, as is shown in Table 5.

Table 5. Other sources of income – junior and senior staff at research-oriented universities (%)

	AU		DE		JP		UK		US	
	Jun	Sen	Jun	Sen	Jun	Sen	Jun	Sen	Jun	Sen
1992	.	.	5	9	14	9	6	10	19	12
2007	7	8	10	12	18	7	10	12	32	24

Sources: Carnegie Q19; CAP A12.

Seniors have higher additional income than juniors in Germany and the UK. The reverse holds true in Japan and the US. From 1992 to 2007, we note an increase of additional income except for senior academic staff in Japan.

The highest additional income reported by US senior and junior staff reflects the fact that many academics in the US do not receive a salary all the

year around, but only for 9 of the usual 12 months paid to employees. Other factors must be in play, though, to account for the substantial increase of additional income for US academics from 1992 to 2007.

3.3 Stable working conditions?

In both surveys, academics were asked to assess the quality of facilities and resources for teaching and research. They were asked to do so with respect to classrooms, technology for teaching, laboratories, research equipment/instruments, computer facilities, library holdings, and secretarial support. The stability or change over time cannot be measured minutely, because a 4-point scale was provided in 1992 and a 5-point scale in 1997. Altogether, however, we note a somewhat above average rating between "excellent" and "poor" whereby the ratings do not differ strikingly between the various areas. Moreover, we observe:

- no major differences between the assessments of junior and senior staff in all 5 countries across all items;
- a substantial decline from 1992 to 2007 only in secretarial support in three countries: Australia, the UK and the US; and finally
- a more positive assessment of all items in Japan in 2007 than in 1992 (from 3.2 on a 4-point scale to 3.0 on a 5-point scale), though the ratings in Japan remain less positive than those of almost all other items of all other countries.

The ratings by junior staff, almost as positive as those by senior staff, come as a surprise, because it is widely believed that senior staff have the stronger power of ensuring 'bigger pieces of the cake'. What does the contrasting finding mean: do junior staff have lower expectations, or more or less equal access to these facilities and resources?

As regards resources for academic work, the respondents in 2007 were also asked whether conditions have improved or deteriorated during the course of their careers. This retrospective view conveys a different picture. The majority of professors at research-oriented universities in four of the five countries surveyed in 2007 believe that the working conditions at higher education institutions have deteriorated since they started their academic careers: UK (76%), DE (70%), AU (69%) and JP (66%). Only in the US, have fewer professors perceived a deterioration (27%) rather than an improvement (40%) (see question B7).

Whereas the retrospective approach suggests a deterioration of the situation, the time series approach conveys stability over time. Asked about the quality of

facilities and resources according to seven items, the professors at research-oriented universities responding in 1992 rated them 2.7 on average on a four-point scale from 1, "excellent" to 4, "poor". The corresponding average in 2007 rated them 2.8 on a five-point scale from 1, "excellent" to 5, "very poor". Obviously, the assessment of both generations is similar.

It seems appropriate to conclude that findings based on time-series analysis are more valid than those on retrospective analysis. The latter seems to be affected by a general mood that things have gone worse for the academic profession.

4. Time budget and priorities

4.1 Weekly working hours: increasing variety across countries

In both surveys, respondents were asked to estimate the overall number of weekly working hours as well as the hours spent on various functions both for a typical week when classes are in session and for a typical week when classes are not in session. In the subsequent analysis, the weekly working hours and the proportion of time spent on various functions are estimated for the whole year.

Table 6. Average weekly working hours* – junior and senior staff at research-oriented universities

	AU		DE		JP		UK		US	
	Jun	Sen	Jun	Sen	Jun	Sen	Jun	Sen	Jun	Sen
1992	47	51	46	51	48	51	46	51	45	50
2007	44	50	41	54	51	50	45	51	44	48

Sources: Carnegie Q18; CAP B1.

* Calculated as 60% for the weeks when classes are in session and 40% for the weeks when classes are not in session.

Both, in 1992 and 2007, professors at research-oriented universities worked, according to their own observation, about 51 hours *per* week over the five countries considered. This is about 130% of the usual full-time working time in those countries, but it is by no means unusual for a profession with high motivation, flexible schedules, room for disposition and a high sense of responsibility. It is interesting to note that the time devoted to work did not increase in the wake of increasing managerial power and increasing efforts to raise the quality and efficiency of higher education through incentives and sanctions.

The weekly working hours of junior academic staff at research-oriented universities seem to be five hours less on average than that of seniors, and again no significant change can be observed from 1992 to 2007 as an average of the

five countries. Less than half of this difference can be explained by the fact that junior staff are more often employed part-time. Junior academic staff are slightly less inclined to work beyond the usual full-time working time – it may be due to a less independent and prestigious position or due to other interests and due to the typical age of junior staff.

There have been changes, though, in different directions by countries. German senior staff at research-oriented universities report more working hours in 2007 than in 1992 – actually in 2007 the highest of all the five countries. Among juniors, the working hours of Japanese junior staff seem to have increased, while fewer working hours are reported by German and Australian junior staff. Altogether, the country differences increased from 1992 to 2007 both for senior staff (range from 50-51 hours to 48-54 hours) and for junior staff (from 45-48 hours to 41-51 hours).

4.2 Work time spent on teaching and research – divergent trends

The relative time spent on teaching increased for junior staff at research-oriented universities of the five countries from an average about 27% in 1992 to about 30% in 2007. It only decreased for junior staff in Australia where it had been highest in 1992. The relative time spent on teaching remained constant for senior staff at research universities as an average of the five countries. However, changes occurred in different directions. In Germany, where senior staff had devoted the highest proportion of their time to teaching, and in Australia, the relative time spent on teaching declined. In contrast, the time spent on teaching by senior staff of research-oriented universities in Japan had been the lowest in 1992, as Table 7 indicates; it increased so much within 15 years that Japanese university professors at research universities spent relatively more time on teaching in 2007 than their colleagues in the other four countries.

Table 7. Average proportion of work time spent on teaching and research* – junior and senior staff at research-oriented universities (%)

		AU		DE		JP		UK		US	
		Jun	Sen	Jun	Sen	Jun	Sen	Jun	Sen	Jun	Sen
Teaching	1992	36	25	20	33	20	22	28	24	32	27
	2007	31	21	23	28	29	33	33	22	36	28
Research	1992	38	32	54	39	53	51	45	37	41	43
	2007	40	41	49	39	39	42	37	43	36	37

Sources: Carnegie Q18; CAP B1.

* Calculated as 60% for the weeks when classes are in session and 40% for the weeks when classes are not in session.

The relative time spent on research increased for senior staff at research-oriented universities from about 38% in 1992 to about 40% as an average of the five countries. Actually, it decreased strongly in Japan, where it had been highest in 1992, and it increased in Australia and in the United Kingdom – in the two countries, where it had been lowest in 1992. It remained constant in Germany where it had been and remains about average. Most surprising is the finding that in 2007 professors at research-universities in the US spent a clearly lower proportion of their time on research than in 1992, and that the proportion in 2007 is the lowest among the five countries.

In 1992, junior staff at research-oriented universities spent a higher proportion of their time on research than senior staff as an average of the five countries. This proportion of 46% of the work time on average in 1992, however, declined to 40% in 2007, *i.e.* exactly the same proportion as that among senior staff.

Actually, both German junior staff, in clear contrast to their seniors, and Japanese junior staff, similarly to their seniors, spent in 1992 more than half of their working time on research, and more than two and a half times that spent on teaching. Junior staff in the other three countries spent less than half of their time on research in 1992, but also more than on teaching; and the relative time spent on research has been higher than that spent by senior academics in Australia and the United Kingdom. Only in the US in 1992 have junior academic staff not spent a higher proportion of their time on research than senior staff.

In 2007, the relative time spent by junior staff on research is clearly lower than in 1992 in all countries except Australia. Altogether, the differences in the time spent by junior staff on research decreased between the countries; also, as might be inferred from the information presented above, the relative time spent on research by junior staff became, in the majority of countries, closer to that of senior staff. However, German junior staff continue to be somewhat more strongly active in research than senior academics at research-oriented universities. In the United Kingdom, in contrast, junior academic staff moved from relatively more involvement in research in 1992 to spending less time on research than senior academic staff in 2007.

4.3 Trends towards more articles and papers

From 1992 to 2007, the number of articles published in journals and books and the number of papers presented at conferences increased, as Table 8 shows, and increased substantially in three of the four countries for which information is

available. The most visible increases are those of German junior and senior staff at research-oriented universities. Comparison of the two surveys also shows an increase in the average numbers of books and other publications. Only in the US is the growth trend less consistent. It remains more or less unchanged that senior academics write on average twice as many articles and conference papers as junior academics.

Table 8. Number of articles published in journals and books and papers presented at conferences within three years – junior and senior staff at research-oriented universities

		AU		DE		JP		UK		US	
		Jun	Sen	Jun	Sen	Jun	Sen	Jun	Sen	Jun	Sen
Articles	1992	4	10	4	9	10	14	5	8	3	7
	2007	6	14	6	16	*	*	6	12	3	6
Papers	1992	4	7	3	5	10	12	3	6	3	5
	2007	5	9	6	10	*	*	5	11	5	7

Sources: Carnegie Q18; CAP B1.

5. Assessment of the professional situation

5.1 Growing professional strain?

In 2007, half of both the senior and junior academic staff at research-oriented universities as an average of the five countries responded affirmatively to the statement "my job is a source of considerable personal strain". These statements had been made 4% less frequently by junior staff and 5% less frequently by senior staff 15 years earlier. As Table 9 shows, however, differences by country are substantial.

Table 9. Proportions of junior and senior staff at research-oriented universities stating "My job is a source of considerable personal strain" (%)

	AU		DE		JP		UK		US	
	Jun	Sen	Jun	Sen	Jun	Sen	Jun	Sen	Jun	Sen
1992	45	37	37	41	62	65	45	46	42	35
2007	51	50	39	49	60	57	59	58	38	36

Sources: Carnegie Q28; CAP B5.

Japanese scholars, both senior and junior, reported most often in 1992 that they considered their job as a source of personal strain; in Japan there was some reduction by 2007. In contrast, statements of strain have been made close to the average of the five countries by scholars from the United Kingdom; in 2007, they often perceived a more substantial strain than 1992 – actually, in 2007 as often as

their colleagues from Japan. In Australia the proportion of those juniors and seniors perceiving their job as a strain increased from clearly below the average in 1992 to about the average in 2007. The same holds true for senior academics of German universities. Only in the US have both senior and junior academics, as well as junior academics in Germany, reported least frequently a professional strain in 1992 and do so again in 2007 with little change over time.

5.2 Decreasing commitment to the discipline, department and university?

The 1992 survey showed that academics in all the countries felt a strong commitment to their academic discipline. As regards their department and their university, their sense of commitment was clearly lower, though remaining positive on average in four countries. Germany was the exception in 1992 where the question on commitment to the department and to the university did not receive a positive response on average.

It is difficult to compare the responses to the 1992 and to the 2007 questionnaires because a four-point rating scale was employed in 1992 in contrast to a five-point scale in 2007. We argue though that the commitment to the department and university increased on the part of German academics whereas it remained more or less the same in the other countries or even declined – the latter certainly in the United Kingdom. As a consequence, the differences by country are smaller in 2007 than they had been in 1992, as Table 10 shows. In 2007, though, the commitment to the department, as well as to the university, continues to be somewhat lower in Germany and has become somewhat lower in the United Kingdom than in the other three countries addressed here.

Table 10. Commitment to their discipline, department and university of junior and senior staff at research-oriented universities (arithmetic mean*)

		AU		DE		JP		UK		US	
		Jun	Sen	Jun	Sen	Jun	Sen	Jun	Sen	Jun	Sen
Academic discipline	1992	1.5	1.3	1.6	1.3	1.4	1.2	1.4	1.4	1.3	1.3
	2007	1.6	1.5	1.6	1.4	1.6	1.6	1.8	1.7	1.3	1.4
Department	1992	1.8	1.5	2.5	2.6	.	.	1.9	1.6	1.7	1.6
	2007	2.3	2.1	2.6	2.6	2.3	2.2	2.5	2.5	1.9	2.0
Higher education institution	1992	2.2	1.7	3.0	2.6	2.0	1.9	2.3	2.1	2.1	1.9
	2007	2.5	2.4	2.8	2.6	2.5	2.3	2.9	2.7	2.4	2.4

Sources: Carnegie Q17; CAP B4.

* 1992 survey: Scale from 1 = "Very important" to 4 = "Not at all important";
2007 survey: Scale from 1 = "Very important" to 5 = "Not at all important".

5.3 Increasing job satisfaction

In 1992, senior academics rated their overall professional satisfaction on average as 2.4 on a scale from 1, "very satisfied" to 5 "very dissatisfied". The majority continues to be satisfied, but on average the ratings have been by no means enthusiastic. In 2007, the average score was 2.3, *i.e.* so marginally higher that no clear significant improvement can be observed. Among senior academics, the differences by country are small both in 1992 and 2007, as Table 11 shows.

Table 11. Overall job satisfaction – junior and senior staff at research-oriented universities (arithmetic mean*)

	AU		DE		JP		UK		US	
	Jun	Sen	Jun	Sen	Jun	Sen	Jun	Sen	Jun	Sen
1992	2.8	2.3	3.1	2.4	2.5	2.4	2.8	2.5	2.7	2.3
2007	2.6	2.2	2.5	2.2	2.6	2.3	2.7	2.4	2.3	2.3

Sources: Carnegie Q27; CAP B6.
* On a scale from 1 "Very satisfied", to 5 "Very dissatisfied".

Junior staff were less satisfied than senior staff in 1992. The average score was 2.8, *i.e.* close to the middle of the scale and meaning neither satisfied nor dissatisfied. There were substantial variations by country, though, in the overall satisfaction of junior academic staff in 1992 in contrast to the ratings of senior staff. German junior academics were clearly less satisfied on average, and Japanese junior staff clearly more satisfied than the average of senior academics. From 1992 to 2007, however, German junior staff moved towards a clearly more positive rating and US junior staff towards a somewhat more positive rating, whereas in other countries changes were at most small. As a consequence, the professional satisfaction of junior academics is, on average, only moderately lower than that of seniors. German junior staff are no longer less satisfied than junior staff in most other countries observed; only the US junior staff rate their satisfaction in 2007 slightly more positive than junior academics in the other countries addressed and at a level, on average, equal to that of senior academics in their country.

6. Concluding observations

The findings reported suggest that the substantial changes from 1992 to 2007 of the biographies and careers as well as of the employment and work situation of academics that has been taking place consistently across all the five

economically advanced countries addressed are exceptions. We only note a substantial and consistent increase in the proportion of women. But even there, the magnitude of increase varies so much that no convergent trend can be observed.

There are, however, certain trends visible in the majority of cases. Doctoral degrees have become more frequently the prerequisite to senior academic appointment. In the majority of countries addressed there is more institutional mobility, more part-time and short-term employment, an increase of other sources of income, as well as an increase in the number of papers and publications. We also observe in the majority of countries more professional strain as well as less commitment to one's department and one's university. But, as already pointed out, these are no consistent trends across all five countries addressed.

On average, the rating of the quality of facilities did not change over time. Also, the weekly time spent for professional assignments has remained more or less stable on average. Thereby, differences by country have remained more or less stable with regard to the former, but increased with regard to the latter.

We might assume that the trend towards a 'managerial university' and, related to that, towards a more elaborate system of incentives could lead, according to the advocates of that change, both to a higher level of professional activity and productivity and to more conducive values: a stronger commitment to the university and a higher job satisfaction. We note, however, that the increase of papers and publications is the only finding affirmative to that set of assumptions. In contrast, the time spent on work beyond normal assignments of employees has not grown further. Commitment to the department and to the university has somewhat decreased. The job is more often seen as a strain. Overall satisfaction of senior academic staff did not grow.

It is interesting to note that the situation and the views of senior academic staff and junior academics tend to converge in various respects. The proportions of time spent on teaching and research became more similar in various countries. The overall ratings of professional strain and of job satisfaction became more similar as well. This trend varies by country: it is most pronounced in Germany. Yet, substantial differences remain in some respects, *e.g.* the likelihood of being employed part-time and short-term.

The findings suggest that differences by country remain substantial. We note some common changes in Australia and the UK: more mobility, more time spent on research, more professional strain, and less commitment to the department and the university. The most striking finding for Germany is the

growing convergence of the activities and views between junior und senior staff; moreover, German academics moved from hardly any commitment to their department and university towards the average of the five countries in this respect. In Japan, we note a move away from the relatively extreme settings in 1992: from an exceptionally clear dominance of research in the time budget towards a substantially increased weight of teaching, from an extremely negative rating of facilities towards the average, from a high stability of employment towards some degree of part-time and short-term employment, and from an exceptionally frequent notion of the job as a strain towards an only somewhat more frequent notion than the average. Finally, we note least change from 1992 to 2007 in the responses by the US academics.

One might have expected a picture of settings and trends which looks more coherent and regular than the actual findings. The complex findings, however, underscore that one cannot trust the conventional wisdom, publicly claimed situations and trends, but rather one needs in-depth empirical analysis.

References

Altbach, P.G. (1996). *The International Academic Profession: Portraits of Fourteen Countries*. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.

Arimoto, A. (2007). Japan: Origins, History and Transition to a Universal Higher Education System. In W. Locke & U. Teichler (eds.), *The Changing Conditions for Academic Work and Careers in Selected Countries* (pp.113-126). Kassel: International Centre for Higher Education Research Kassel, University of Kassel (INCHER-Kassel).

Arimoto, A. (ed.) (2008). *Henbô suru nihon no daigaku kyôjushoku* [The Changing Academic Profession in Japan]. Tokyo: Tamagawa University Press.

Boyer, E.L., Altbach, P.G., & Whitelaw, M.J. (1994). *The Academic Profession: An International Perspective*. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.

Brennan, J. (2006). The Changing Academic Profession: The Driving Forces. In Research Institute for Higher Education (RIHE), Hiroshima University (ed.), *Reports of Changing Academic Profession Project Workshop on Quality, Relevance, and Governance in the Changing Academia: International Perspectives* (pp.37-44). Hiroshima: RIHE, Hiroshima University.

Brennan, J., Locke, W., & Naidoo, R. (2007). United Kingdom: An increasingly Differentiated Profession. In W. Locke & U. Teichler (eds.), *The Changing Conditions for Academic Work and Careers in Selected Countries* (pp.163-176). Kassel: INCHER-Kassel.

Enders, J. (ed.) (2001). *Academic Staff in Europe: Changing Contexts and Conditions*. London: Greenwood.

Enders, J., & de Weert, E. (eds.) (2004). *The International Attractiveness of the Academic Workplace in Europe*. Frankfurt/Main: Gewerkschaft Erziehung und Wissenschaft.

Enders, J., & Teichler, U. (1995). *Der Hochschullehrerberuf im internationalen Vergleich* [The Academic Profession in International Comparison]. Bonn: Bundesministerium für Bildung, Wissenschaft, Forschung und Technologie.

Finkelstein, M. (2007). The "New Look" of Academic Careers in the United States. In M. Kogan & U. Teichler (eds.), *Key Challenges to the Academic Profession* (pp.145-158). Paris/Kassel: UNESCO Forum on Higher Education, Research and Knowledge and INCHER-Kassel.

Finkelstein, M., & Frances, C. (2006). The American Academic Profession: Context and Characteristics. In RIHE (ed.), *Reports of Changing Academic Profession Project Workshop on Quality, Relevance, and Governance in the Changing Academia: International Perspectives* (pp.231-254). Hiroshima: RIHE, Hiroshima University.

Harman, G. & Meek, L. (2007). Australia: Adjustment to the New Management and Entrepreneurial Environment. In W. Locke & U. Teichler (eds.), *The Changing Conditions for Academic Work and Careers in Selected Countries* (pp.127-146). Kassel: INCHER-Kassel.

Huang, F. (2006). The Academic Profession in Japan: Major Characteristics and New Changes. In RIHE (ed.), *Reports of Changing Academic Profession Project Workshop on Quality, Relevance, and Governance in the Changing Academia: International Perspectives* (pp.195-208). Hiroshima: RIHE, Hiroshima University.

Kogan, M., & Teichler, U. (eds.) (2007). *Key Challenges to the Academic Profession*. Paris and Kassel: UNESCO Forum on Higher Education, Research and Knowledge and INCHER-Kassel.

Locke, W., & Teichler, U. (eds.) (2007). *The Changing Conditions for Academic Work and Careers in Selected Countries*. Kassel: INCHER-Kassel.

Meek, L. (2006). History and Development of Australian Higher Education: An Overview. In RIHE (ed.), *Reports of Changing Academic Profession Project Workshop on Quality, Relevance, and Governance in the Changing Academia: International Perspectives* (pp.63-77). Hiroshima: RIHE, Hiroshima University.

Naidoo, R., & Brennan, J. (2006). The Higher Education System in the United Kingdom. In RIHE (ed.), *Reports of Changing Academic Profession Project Workshop on Quality, Relevance, and Governance in the Changing Academia: International Perspectives* (pp.45-61). Hiroshima: RIHE, Hiroshima University.

RIHE (ed.) (2006). *Reports of Changing Academic Profession Project Workshop on Quality, Relevance, and Governance in the Changing Academia: International Perspectives* (COE Publication Series 20). Hiroshima: RIHE, Hiroshima University.

RIHE (ed.) (2008). *The Changing Academic Profession in International Comparative and Quantitative Perspectives* (RIHE International Seminar Reports, No. 12). Hiroshima: RIHE, Hiroshima University.

Schuster, J., & Finkelstein, M. (2006). *The Restructuring of Academic Work and Careers: The American Faculty*. Baltimore: John Hopkins University Press.

Teichler, U. (1996). The Conditions of the Academic Profession. An International Comparative Analysis of the Academic Profession in Western Europe, Japan and the USA. In P.A.M. Maassen & F.A. Van Vught (eds.), *Inside Academia: New Challenges for the Academic Profession* (pp.15-65). Utrecht: Uitgeverij De Tijdstrom.

Teichler, U. (ed.) (2006). *The Formative Years of Scholars*. London: Portland Press.

Teichler, U. (2007a). Germany and Beyond: New Dynamics for the Academic Profession. In W. Locke & U. Teichler (eds.), *The Changing Conditions for Academic Work and Careers in Selected Countries* (pp.15-38). Kassel: INCHER-Kassel.

Teichler, U. (2007b). *Higher Education Systems: Conceptual Frameworks, Comparative Perspectives, Empirical Findings*. Rotterdam and Taipei: Sense Publishers.

Teichler, U. (2008). Academic Staff in Germany: *per aspera ad astra*? In RIHE (ed.), *The Changing Academic Profession in International Comparative and Quantitative Perspectives* (RIHE International Seminar Reports, No. 12) (pp.131-152). Hiroshima: RIHE, Hiroshima University.

Teichler, U., & Bracht, O. (2006). The Academic Profession in Germany. In RIHE (ed.), *Reports of Changing Academic Profession Project Workshop on Quality, Relevance, and Governance in the Changing Academia: International Perspectives* (pp.129-150). Hiroshima: RIHE, Hiroshima University.

Vessuri, H., & Teichler, U. (eds.) (2008). *Universities as Centres of Research and Knowledge Creation: an Endangered Species?* Rotterdam/Taipei: Sense Publishers.

Country Reports on Internationalization

International Dimensions of the Australian Academic Profession

Leo Goedegebuure[*], Hamish Coates[**], Jeannet van der Lee[***] and Lynn Meek[****]

Introduction

This paper provides insight into the international dimensions of the Australian academic profession. Australia has one of the most internationalised higher education student populations in the world, which leads us naturally to inquire into the international characteristics of its academic staff. It is important to consider, for instance, whether the academic workforce has internationalised in the same way as the student body, and how academic staff are responding educationally to various opportunities and challenges arising from internationalisation.

Yet to date relatively little is known about this aspect of higher education in Australia. In future analyses, historians are likely to see 'internationalisation', broadly conceived, as one of the greatest change forces in contemporary Australian higher education. It is vital, therefore, that further analysis is undertaken, both to descriptively document current practice and to provide an evidence base for guiding change in policy and practice.

Our main source of evidence for the current analysis is the Australian Changing Academic Profession (CAP) 2007 data (Coates, Goedegebuure, van

[*] Associate Professor and Academic Programs Director, LH Martin Institute, University of Melbourne, Australia, e-mail: leo.g@unimelb.edu.au

[**] Principal Research Fellow, Australian Council for Educational Research, Australia, e-mail: coatesh@acer.edu.au

[***] Research Project Officer, Centre for Higher Education Management and Policy, University of New England, Australia, e-mail: jvander@une.edu.au

[****] Director and Professor, LH Martin Institute, University of Melbourne, Australia, e-mail: vmeek@unimelb.edu.au

der Lee & Meek, 2008). Relevant additional information is used to better contextualise this data. It should be emphasised that the current analysis is necessarily preliminary as the national and international data-set is still being verified. Accordingly, no overall international comparisons are made as we await the availability of the full international CAP data-set.

The discussion is straightforward. We start by providing an overview of the international composition of the Australian academic workforce. Following this, we focus on research and research-related activities. We finish our discussion by elaborating on the nature of internationalisation in the Australian classroom, *i.e.* how teaching has been influenced by the increased internationalisation over the last 15 years.

In presenting our analysis, we offer more in depth analyses by breaking results down by institutional grouping, discipline, rank and age. Where possible, we attempt a longitudinal analysis through incorporating the outcomes of the earlier Carnegie study (Sheehan, Welch & Lacy, 1996). However, given the relative lack of attention to the international dimension in this prior work, a telling insight in itself, this attempt has proved to be fairly unsuccessful.

Australian academic staff: an international mix

The first matter to address when examining the international dimensions of the Australian academic profession is to consider how international the workforce really is. The 1993 Carnegie study (Sheehan *et al*., 1996) showed that at that time Australia was one of the more internationalised higher education systems. It used the place of origin of the respondents highest earned degree as a proxy measure of internationalisation, which showed that some 20% of Australian academics had earned their highest degree in another country, with the United States (44%) and the United Kingdom (26%) being the main providers. This finding corresponds to earlier results which indicated that in 1986, 25% of Australian academic staff had been recruited from overseas.

The 2007 survey included a number of variables that can be used as proxies for the international composition of the academic profession: country of birth, country of first degree, country of second degree and country of doctoral degree, and current citizenship. None of these are exact indicators, of course. In an immigrant country like Australia, being born overseas can mean that the respondents parents came to Australia and that the respondent grew up in the country and is as much Australian as someone who was born in Australia. It can also mean the respondent came to Australia to take up an academic position.

Similar arguments apply to the country of degree. However, triangulation of the data allows for a fairly reliable picture of the international composition of the academic profession.

When we look at citizenship at birth, 38% of CAP 2007 respondents were born outside Australia, with a large proportion of these being born either in the United Kingdom (13.5%), the United States (3.5%), New Zealand (3.5%), China (2%) and South Africa (1.5%) (see Figure 1).

Figure 1. Citizenship at birth

At the time of their first degree, 69% of the respondents were Australians, while currently 88% of the respondents indicate Australian citizenship. As to their first degree, 73% of academics obtained this in Australia. For their second degree, 70% indicated that this was from Australia, while 73% hold an Australian doctorate. By far the most common foreign countries for overseas degrees are the United Kingdom (9% first degree, 9% second degree and 10% doctorate) and the United States (4% first degree, 7% second degree and 6% doctorate).

These results indicate that the Australian academic profession has remained quite international in its composition over the last 15 years. Contrary to the 1993 data, the dominance of the United States as a contributing foreign country has diminished, but the expected replacement of the US and the UK as the 'delivering countries' for academic staff by Asian countries (Sheehan *et al.*, 1996) has not come about.

The 1993 study argues that "[T]he extent of internationalisation in Australian academe has been sustained, in part, by the relative attractiveness of Australian academic salaries and conditions" (Sheehan *et al.*, 1996, p.106). The report questions the sustainability of this: "The relative decline of Australian

academic salaries over the last 15 years or so, however, together with perceived deterioration in working conditions, suggests Australia may now be a rather less attractive venue for academic staff" (Sheehan *et al.*, 1996, p.106). Results from the 2007 study do not support this suggestion. As reported earlier (Coates *et al*., 2008), while Australian academics continue to believe that their working conditions have deteriorated, this appears not to have affected its international attractiveness if we look at the international composition of the profession.

Although we have yet to analyse the international CAP data-set in terms of salary levels, other research would suggest that Australian academics still do quite well in terms of remuneration. A study undertaken by the Association of Commonwealth Universities shows Australian academics leading comparator countries Canada, the UK and New Zealand and indicates a strong increase in salary levels when comparing 2006-2007 to 2004-2005 (Kubler & Lennon, 2007) (see Table 1).

Table 1. Academic salaries 2006-07 compared to 2004-05

	Australia		Canada		UK		NZ	
	$	%	$	%	$	%	$	%
Lecturer	66,196	17	59,037	19	46,921	-6	43,983	14
Senior Lecturer	79,696	17			59,118	-4	57,632	14
Associate professor	93,564	16	74,410	3	71,147		69,929	15
Professor	114,555	17	74,513	9	77,756	16	74,996	14

A recent study commissioned by the New Zealand Vice-Chancellors Committee (2008) paints a similar picture. Table 2 shows adjusted (purchasing power parity weighted) results for five countries. Note that the Australian sample is for Group of Eight (Go8) institutions[1] only, and that the US estimates are a conservative perspective – they are for 9-10 month contracts and the top private universities are not included. In this study the increase in UK salaries is much more pronounced. With the exception of professorial salaries, Australia appears on a par with the US.

[1] The Group of Eight comprises the eight leading research universities in Australia. Other groupings of Australian universities are identified as Innovative Research Universities (IRU) and the Australian Technology Network of universities (ATN) (see *e.g.* Table 4).

Table 2. Academic salaries 2008 (PPP) compared to 2005

	Australia		Canada		UK		USA		NZ	
	$	%	$	%	$	%	$	%	$	%
Lecturer	59,000	14	65,500	9	50,500	25	70,700	16	44,900	17
Senior lecturer	71,200	13			60,400	23			58,600	14
Associate professor	83,700	14	80,500	8	74,200	29	83,000	17	71,600	18
Professor	102,300	14	100,100	8	82,200	26	113,900	18	77,700	18

However, as is indicated in Table 3, care needs to be taken with the representation of US salaries in the New Zealand study. Data provided by the American Association of University Professors (AAUP, 2008) show that substantive differences exist between pubic and private universities and also indicate that overall US academic salaries are higher than those in Australia. This of course is particularly true if one takes into account that on average the US salaries are based on a 9-10 month contract period.

Table 3. US salary and compensation levels for doctoral granting institutions ($)

	Salary		Compensation	
	Public	Private	Public	Private
Professor	109,569	144,256	137,104	180,458
Associate professor	77,033	92,148	98,965	118,610
Assistant professor	65,416	78,840	84,204	100,810
Lecturer	49,079	59,153	63,867	78,105

Despite the favourable salary comparison, the Australian academic profession faces some serious challenges over the next decade. Over the next five years, 24% of senior academics (associate professors and professors) will retire and another 23% will follow in the next five year period. Theoretically, this means that close to 5,000 people could leave the system and would require replacement under *ceteris paribus* conditions. As this phenomenon is not specific to Australia but applies to all developed countries with a strong baby-boom generation in higher education, it can be expected that the international 'war for talent' will increase in intensity. Salaries will play a role in this, but other academic climate factors, such as research facilities and

stimulating colleagues will be as important. In this respect it is interesting to note that, as we have reported earlier (Coates *et al.*, 2008), Australian academics express a clear preference for research over teaching, although they report to be quite busy with teaching. There certainly appears to be a mismatch between aspirations and realities. It therefore should not come as a very great surprise that approximately 23% of the survey respondents had considered a major job change to an academic position in another country in the past five years. Interestingly, only about 11% took action.

Departure intentions vary by discipline, with those in teacher training and education science (31%) being about twice as inclined to think about leaving the Australian higher education system as their colleagues in business and administration, economics and law (17%), humanities and arts (17%) and engineering, manufacturing and construction, and architecture (18%) (see Figure 2).

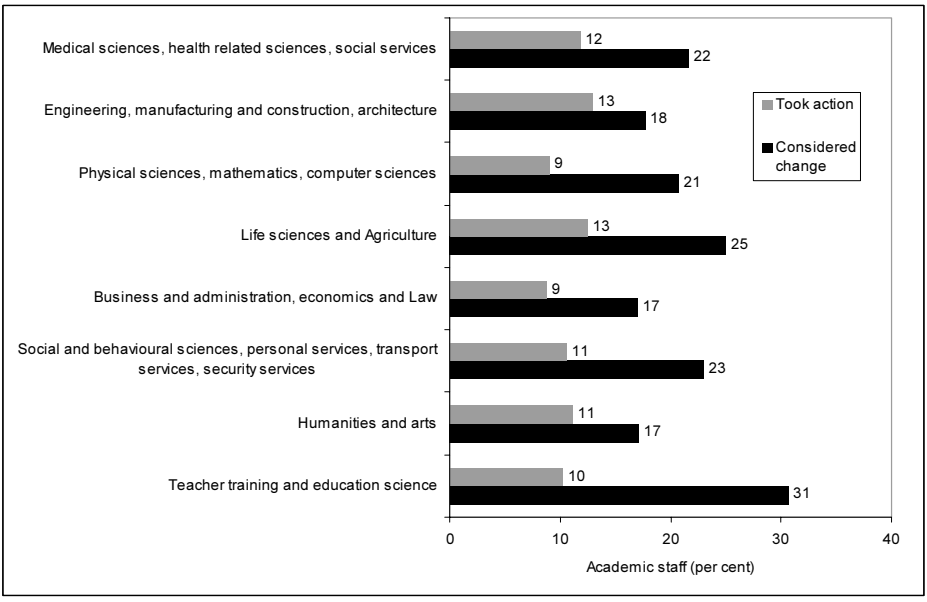


Figure 2. Change to work in another country in last five years by discipline

Furthermore, those from the disciplines engineering, manufacturing and construction, architecture (13%) and life sciences and agriculture (13%) appear to be somewhat more decisive than their colleagues in business and administration, economics and law in taking action on this front.

There is little variation by type of institution, with about 26% of Go8 academics considering an academic position in another country, compared to

20% of ATN academics. Further, little variation is apparent if we break the data down by academic rank. The largest proportion of respondents that has considered taking a position in another country is almost 31% for professors and the lowest is about 25% for lecturers. As one would expect those academics aged under 35 years are more likely (20%) to consider taking a job overseas than their older colleagues, while they are also more likely to follow through with concrete action. Given our earlier comments about the international war for talent and the exodus of senior Australian academics expected over the next decade, these findings point to a potential problem that national and institutional policy-makers need to address.

International dimensions of Australian academic research

The original 1993 Carnegie study is remarkably vague when it comes to the question of the international orientation of Australia academics. Quotations such as: "Australian academics ought to be more internationally focused. Some disciplines are very provincial in their outlooks" (Sheehan *et al.*, 1996, p.105) and "Australia seems small and remote from the international academic scene. For people who travel, their academic careers and their students (therefore the country) benefit. For others, they remain narrow and self-interested. It is a matter not simply of money, but of vision, planning, confidence and lots of support from the university administration" (Sheehan *et al.*, 1996, p.109) are found in the chapter on internationalisation, but there is no hard data to support (or refute) these respondents comments.

The 2007 CAP results allow for a more substantive picture as to the international orientation of Australian academics. It would appear from the responses that contrary to the suggestive quotations from the 1993 survey, Australian academics do have a pretty strong international outlook.

The CAP results suggest that much of the primary research undertaken in 2006 or 2007 was international in scope or orientation, with approximately 70% of respondents either agreeing or strongly agreeing with this description. The response categories on the survey form for this question were scored 1, for "strongly agree", to 5, for "strongly disagree". Table 4 shows that the mean response does not change significantly with disciplinary grouping. There is a slight decreasing trend with institutional grouping from Go8, Other, IRU and ATN. A more pronounced trend is evident as one moves through the academic ranks. A similar trend does not appear to exist in relationship to age.

Table 4. International orientation of research

		Mean	SD
Total		2.23	1.26
Discipline	Teacher training and education science	2.21	1.16
	Humanities and arts	2.26	1.34
	Social and behavioural sciences, personal, transport and security services	2.06	1.18
	Business and administration, economics and law	2.33	1.22
	Life sciences and Agriculture	2.22	1.24
	Physical sciences, mathematics, computer sciences	2.09	1.16
	Engineering, manufacturing and construction, architecture	2.33	1.49
University group	Go8	2.05	1.17
	ATN	2.29	1.31
	IRU	2.37	1.25
	Other	2.43	1.34
Academic rank	Assistant lecturer	2.54	1.35
	Lecturer	2.35	1.33
	Senior lecturer	2.26	1.27
	Associate professor	1.96	1.02
	Professor	1.69	0.94
Age group	<=35	2.39	1.29
	36-45	2.17	1.25
	46-55	2.21	1.28
	56-65	2.28	1.31
	65+	1.86	1.17

The international orientation of Australian academics' research also translates to some extent into concrete activities. About 65% of respondents indicated some level of co-authoring with colleagues in other countries, with the mean being about 20% of their work. Some 82% of respondents indicated having published in a foreign country over the past 3 years, with the average being around 45% of their work. This is no surprise as most of the major publishing houses are located in either the US or Europe. Not surprisingly either, only around 10% of respondents indicated that they had published some of their work in a foreign language. This finding supports the reality that, at least as far as research is concerned, English is the *lingua franca*. Despite a fairly strong international orientation in research, only a limited amount of research

funding is being obtained from international organizations (between 10-15%).

Approximately 45% of survey respondents during the 2007 academic year had attended an overseas conference. There is little variation across the defined disciplinary groupings, with academics in the life sciences and agriculture attending overseas conferences a little more regularly than their colleagues in business and administration, economics and law. More academics employed at a Go8 institution attended international conferences that their counterparts at ATN, IRU or Other universities (50%, 41%, 36% and 39% respectively).

Perhaps most striking, yet not surprisingly, as one moves up through the academic ranks, attendance at international conferences becomes more common (see Figure 3). While 28% of assistant lecturers indicate attending international conferences, this figure increases to 52% for senior lecturers and culminates at almost 80% for professors.

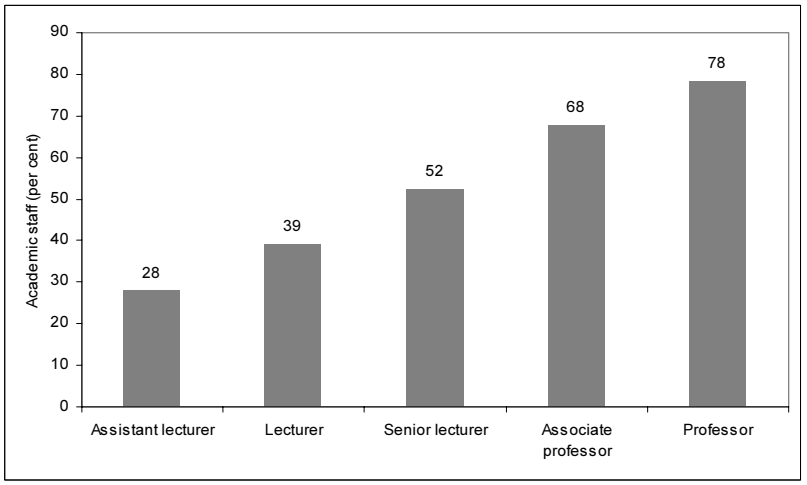


Figure 3. Attendance at an international conference in the past year

Approximately 60% of all respondents indicated that they do collaborate with international colleagues. There is little substantial difference between disciplines, except for engineering, manufacturing and construction, architecture with about 70% of respondents collaborating with international colleagues and for business and administration, economics and law with about 50%.

Respondents from Go8 institutions topped the list in terms of collaboration with international colleagues (71%), followed by those from IRU with 60%, 'other' universities with 53%, and ATN with 51%. As one moves through the academic ranks, it appears that international collaboration becomes more common. Around half of the associate lecturers (46%) and lecturers (52%)

indicate that they collaborate with international colleagues. This increases to 61% at the senior lecturer level and 74% at the associate professor level. The vast majority of Australian professors indicates international collaboration (88%). Although there is some relationship with age, this is less pronounced.

Internationalisation of teaching and learning

Over the last 25 years, international education has become big business in Australia. In fact, education currently is the country's largest service export, having overtaken leisure travel services in 2008. It also is the third largest export after coal and iron ore, totalling $A12.5 billion (AEI, 2008). Although growth in the export of vocational training services is growing, higher education is responsible for the lion's share of this. International students have been a considerable source of revenue for Australian universities. Since 1997 there has been an increase in the proportion of international students from 9.6% to 25.5% (Bradley, Noonan, Nugent & Scales, 2008a, p.25). This has transformed Australian campuses and classrooms, and the situation in 2007 is vastly different from that at the time of the Carnegie study in 1992.

It is obvious that teaching activities have a strong international focus, whether it be in the course content or in the composition of classes. For example, in response to the statement "In your courses you emphasize international perspectives or content" only 11% of respondents either disagreed or strongly disagreed, with the mean response being 2.14. Furthermore, approximately 70% of respondents either agree or strongly agree that the number of international students has increased since they started teaching (mean = 2.00), which given our previous discussion indeed is the answer one would expect. However, respondents disagreed with the statement that "Currently, most of your graduate students are international", with more than 55% of respondents either disagreeing or strongly disagreeing with this statement (mean = 3.51).

It is instructive to break down the responses to these three statements by different groupings to discern more detailed variations. We have done this using our standard breakdown by disciplinary grouping, institutional type, academic rank and age. The results are presented in the following four tables.

Table 5 shows little apparent variation by disciplinary grouping on any of these three statements. Staff teaching business administration and law do appear to place slightly lower emphasis on international perspectives, while engineering staff report having more international graduate students.

Table 5. Internationalisation of teaching by disciplinary grouping

	In your courses you emphasise international perspectives or content		Since you started teaching, the number of international students has increased		Currently, most of your graduate students are international	
	Mean	SD	Mean	SD	Mean	SD
Teacher training and education science	2.15	1.05	2.11	1.32	3.43	1.32
Humanities and arts	2.20	1.07	1.89	1.43	3.44	1.43
Social and behavioural sciences, personal services, transport services, security services	2.06	0.96	1.92	1.39	3.62	1.39
Business and administration, economics and law	2.30	1.12	1.90	1.46	3.48	1.46
Life sciences and Agriculture	1.93	1.08	2.13	1.40	3.55	1.40
Physical sciences, mathematics, computer sciences	2.15	0.91	2.00	1.50	3.76	1.50
Engineering, manufacturing and construction, architecture	1.91	1.12	2.09	1.40	3.20	1.45
Total	2.14	1.05	2.00	1.17	3.51	1.42

Note: Responses to the three statements were on a 5-point scale from 1, for "strongly agree" to 5, to "strongly disagree".

Some variation does exist by institutional type, as illustrated in Table 6. Respondents located within the Other category of institutions agreed more strongly with the statement that "Since you started teaching, the number of international students has increased". Furthermore, respondents from IRU institutions more strongly disagreed with the statement that "Currently, most of your graduate students are international" (mean = 3.90), while the results show that those academics at Go8 institutions appear to have somewhat higher numbers of international graduate students (mean = 3.41), although they still tend to disagree with the statement.

As academic rank increases so does the emphasis on international perspectives or content in courses, as does agreement with the statement "Since you started teaching, the number of international students has increased". However, there is little variation between academic ranks on the statement "Currently, most of your graduate students are international", with the mean response being in disagreement with this statement (mean = 3.51) (see Table 7).

Table 6. Internationalisation of teaching by university group

	In your courses you emphasise international perspectives or content		Since you started teaching, the number of international students has increased		Currently, most of your graduate students are international	
	Mean	SD	Mean	SD	Mean	SD
Go8	2.22	1.13	1.83	1.015	3.41	1.39
ATN	2.08	0.90	1.98	1.22	3.43	1.48
IRU	2.15	1.25	1.69	0.95	3.90	1.41
Other	2.10	1.01	2.23	1.28	3.63	1.41
Total	2.14	1.05	2.00	1.17	3.51	1.42

Table 7. Internationalisation of teaching by academic rank

	In your courses you emphasise international perspectives or content		Since you started teaching, the number of international students has increased		Currently, most of your graduate students are international	
	Mean	SD	Mean	SD	Mean	SD
Assistant lecturer	2.40	1.70	2.32	1.13	3.23	1.44
Lecturer	2.22	1.03	2.11	1.24	3.49	1.46
Senior lecturer	2.17	1.06	1.96	1.11	3.62	1.34
Associate professor	1.92	0.98	1.94	1.19	3.59	1.41
Professor	1.92	1.08	1.92	1.08	3.53	1.49
Total	2.14	1.05	2.00	1.17	3.51	1.42

As with academic rank, age also provides some diversity in response to the questions. A review of key results suggests that when asked their level of agreement with the statement "In your courses you emphasise international perspectives or content", we see that those aged between 46 and 65 tended to agree with this statement most strongly.

Further, if we look at the percentage of responses in each answer category we find that as age increases the agreement with the statement "Since you started teaching, the number of international students has increased" also increases.

There appears to be little discernable variation by age to the statement "Currently, most of our graduate students are international", as shown in Table 8, though, when it comes to increases in number of international students, the 65+ age group appears to be an exception: an explanation for this is not obvious.

Table 8. Internationalisation of teaching by age group

	In your courses you emphasise international perspectives or content		Since you started teaching, the number of international students has increased		Currently, most of your graduate students are international	
	Mean	SD	Mean	SD	Mean	SD
35 or younger	2.49	1.08	2.55	1.22	3.44	1.43
36 to 45	2.17	1.04	2.14	1.10	3.52	1.39
46 to 55	2.06	0.96	1.95	1.18	3.50	1.43
56 to 65	2.05	1.06	1.77	1.11	3.58	1.41
More than 65	2.27	1.42	2.27	1.42	3.60	1.71
Total	2.14	1.05	2.00	1.17	3.51	1.42

As one would expect within the Australian context, only about 3% of courses are taught in a language other than English. Although we have no substantive data to support our interpretation, logic would suggest that this 3% is language courses.

Although most international students enrolled in Australian study programmes are doing so in universities in the country, there also is a sizeable industry in teaching students offshore. This takes the form either of Australian universities setting up campuses in other countries or of providing Australian programmes in partnership with local institutions in overseas countries. In the latter case, students enrol in an Australian degree program and normally would be taught in a combination of intensive residential and distance education modes, with academic support provided through the local partner institution.

According to the CAP survey results, during 2006 or 2007 approximately 20% of academics were involved in teaching off-shore. When this is broken down by disciplinary grouping it can be seen that teacher training and education science tends to be most involved in teaching offshore, with about 27% of respondents. Other disciplinary groupings that rate highly are life sciences and agriculture and the medical sciences, health related sciences, and social services. It is important to emphasise that the CAP 2007 population does not include off-shore staff. Hence the provision by staff in the offshore campuses of Australian universities, with its great emphasis on business studies, is not reflected in these figures.

If we break down the results by institutional grouping then we find that academics located at Other and ATN institutions appear to teach more courses abroad than their colleagues at either IRU or Go8 institutions. This result is confirmed by comparison with the actual percentage of international students

(see Table 9) taught offshore by the various institutional groupings (DEEWR, 2007). These show that ATN universities teach about 40% and the Other universities teach about 33%, which once again reconfirms the representativeness of our sample.

When we break down the results to the academic ranks that are teaching courses abroad, we find that almost twice as many professors are teaching courses abroad than assistant lecturers. In line with this, we also find that those aged 46 and above are undertaking a greater proportion of this type of teaching activity.

Table 9. Onshore and offshore students taught in 2007

	Onshore		Offshore	
	n	%	n	%
Go8	59,313	33	9,086	13
ATN	32,681	18	28,927	42
IRU	21,755	12	8,437	12
Other	68,455	38	22,295	32

Conclusion

As noted, these current results are intermediary, with more thorough and detailed analysis awaiting release of the validated international and hence national data. Nonetheless, the results do provide insight into the internationalisation of the Australian academic workforce.

It is too early to isolate and emphasise selected conclusions, but the results show in relation to the composition of the workforce that:

- the Australian academic profession has remained quite international in its composition over the last 15 years;
- the dominance of the United States as a contributing foreign country has diminished, but the expected replacement of the U.S. and the UK as the 'delivering countries' for academic staff by Asian countries has not come about;
- given increasing retirements in the next decade, importing academics is likely to play an important role in sustaining the Australian academic workforce; and
- Australia exports a small number of academic staff to other countries, with somewhere between a fifth and a quarter considering taking up an overseas academic post.

As an advanced knowledge economy, the size of Australia's academic industry means that internationalisation plays an important role in research. In particular, the results outlined in this initial analysis suggest that:

- much of the primary research undertaken in 2006 or 2007 was international in scope or orientation, especially in the social and physical sciences, at research-intensive institutions, and with higher ranked and older staff;
- around 60% of Australian academics collaborate with international colleagues on the production and publication of their academic contributions, with notable variations in this figure across disciplinary groups; and
- around half of all responding academics had attended an international conference in the last year, a figure which varied across institutional groups and rose to around 80% for professors.

Australia has a highly internationalised student population, and the results reported suggest that this is partly reflected in the international orientation of the teaching staff. The paper records that:

- teaching activities have a strong international focus, whether it be in the course content or in the composition of classes;
- academics reported more emphasis on internationalisation in undergraduate rather than graduate education, particularly at the often larger research intensive institutions;
- as with research, there appears to be an increasing emphasis on the internationalisation of teaching with increases in academic rank; and
- Australian academic staff, particularly at the less research intensive institutions, appear to be responsible for a relatively large amount of offshore teaching.

We emphasis again that caution should be applied to drawing conclusions from these early indicative results. Final data is not available and detailed analysis has yet to be undertaken in terms of any policy or research consequences. Even so, it is instructive to chart the potentiality in the 2007 CAP data and to project a few ideas on how such analysis may unfold.

Clearly, the information provided by academic staff in 2007 has the potential to provide evidence-based insight into the international composition of Australia's academic workforce. As sketched in this paper, this helps to understand how the workforce is aligned with other aspects of the system, such as the student population, and more broadly how the academic workforce is aligned with other professional industries. Understanding the trade in

'academic talent' has important implications for the nature and growth of Australia's knowledge economy.

Of course, much of the trade in academic knowledge takes place *via* the exchange of ideas rather than people. This paper has demonstrated the potential of the 2007 CAP data in helping understand this complex industry in which internationalisation plays an increasingly important role. What are the main ways in which Australian academic staff engage with research colleagues in other countries? What institution- and system-level policies and practices could be developed or reinforced to support researchers in enhancing their productivity and impact? As the international CAP data becomes available, it will play a vital role in helping researchers and policy analysts shed insight on such matters.

It was suggested at the outset that in the last decade internationalisation has been one of the major change forces in Australian university education. A wide range of business and support systems have been put in place to underpin and sustain growth in this area. The 2007 CAP data balance information on commercial and student affairs with the perspectives of teaching academics. Understanding how academic staff are responding to an increasingly international diverse student body, and how they are infusing international perspectives in ways that benefit domestic students, will help to further enrich and add value to educational provision.

These brief ideas are offered by way of suggestive conclusions. Analysis of the international data and discussion with international colleagues will help understanding of and shape their relevance on a truly international scale.

References

American Association of University Professors (AAUP) (2008). *AAUP Faculty Salary Survey*. Retrieved 1 July from: http://chronicle.com/stats/aaup.

Australian Education International (AEI) (2008). *Research Snapshot: Export income to Australia from education services in 2007-08*. Canberra: Department of Education, Employment and Workplace Relations (DEEWR).

Bradley, D., Noonan, P., Nugent, H., & Scales, B. (2008a). *Review of Australian Higher Education: Discussion paper*. Canberra: DEEWR.

Bradley, D., Noonan, P., Nugent, H., & Scales, B. (2008b). *Review of Australian Higher Education: Final report*. Canberra: DEEWR.

Coates, H., Goedegebuure, L., van der Lee, J., & Meek, L. (2008). The Australian academic profession: A first overview. In Research Institute for Higher Education (RIHE),

Hiroshima University (ed.), *The Changing Academic Profession in International Comparative and Quantitative Perspectives* (RIHE International Seminar Report 12). Hiroshima: RIHE, Hiroshima University.

Department of Education, Employment and Workplace Relations (DEEWR) (2007). *Students 2007: Selected higher education statistics*. Retrieved 1 July 2008 from: http://www.dest.gov.au/sectors/higher_education/publications_resources/profiles/Students_2007_full_year_.htm

Krause, K-L., Coates, H., & James, R. (2005). Monitoring the internationalisation of higher education: Are there useful quantitative performance indicators? In M. Tight (ed.), *International Perspectives in Higher Education Research*. London: Elsevier.

Kubler, J., & Lennon, M.C. (2007). *2006-07 Academic Staff Salary Survey*. London: Association of Commonwealth Universities.

New Zealand Vice-Chancellors Committee (NZVCC) (2008). *University Staff Academic Salaries and Remuneration: A comparison of New Zealand and selected international (Australia, Canada, England, USA) data*. Wellington: NZVCC.

Sheehan, B., Welch, A, & Lacy, F. (1996). *The Academic Profession in Australia*. Canberra: DEEWR.

The Internationalization of Japan's Academic Profession 1992-2007: facts and views

Futao Huang*

Introduction

There is no denying that internationalization of the academic profession is an integral part of internationalization of higher education at both national and institutional levels. With such activities as mobility of students and cross-border institutions and educational programs, it can largely reflect how significantly individual higher education systems or institutions of higher education are internationalized by identifying the various international activities undertaken by academics and their perceptions of such activities. Japan provides no exception. For example, as early as the Meiji period, the government invited Western academics to work in Japan's university institutions and regarded this as one of the most effective means to introduce Western academic norms and conventions concerning the academic profession. Since the 1990s, with various impacts from globalization, massification, and marketization, tremendous changes have taken place in Japan's higher education, including Japan's academic profession. Though many studies have been made of the changing academic profession in Japan over the last decades (Arimoto & Ehara, eds., 1996; Ebuchi, 1997; Kurimoto, 1997; Yamanoi, 2005; Huang, 2006a, 2006b, 2006c, 2007a, 2007b, 2008, 2009), little research has focused on recent changes in the internationalization of Japan's academic profession over the period 1992-2007 from international, comparative and quantitative perspectives. Based on major findings from two international surveys and one national survey, which were implemented in 1992 and 2007, this article will concentrate on

* Professor, RIHE, Hiroshima University, e-mail: futao@hiroshima-u.ac.jp

identifying changes in the internationalization of the Japanese academic profession over the period 1992 to 2007.

The first international survey was the International Survey on the Academic Profession by the Carnegie Foundation for the Advancement of Education in 1991. The second international survey is the international survey on the Changing Academic Profession (CAP) which was conducted in 2006-2007. Though many common questions were shared by these two surveys, very few similar items concerning internationalization can be found in the two questionnaires. In order to find out what exact and actual changes had occurred in Japan's academic profession over the period 1992 to 2007, prior to the 2007 CAP survey, the Japan research team implemented a second national survey in 2007, adopting almost the same questionnaire as that of the 1992 international survey. In terms of population, sample and data analysis in the 1992 national survey, according to institutional types and scale, 4,853 faculty members of Japan's four-year universities were chosen. The Japanese version of the questionnaire received answers from 1,872 respondents (38.6% feedback rate). In the 2007 survey with the same questionnaire, the number of universities was reduced to 18 institutions. Among these, faculty members of only 4 of the same research universities as those used in the first survey were included and 14 newly-selected non-research universities, with almost the same characteristics as those included previously were included in the survey. The questionnaire was mailed to 6,200 faculty members working in these 18 four-year universities and valid responses were received from 1,408 of them (22.7% feedback rate) in due time. However, it should be noted that only data showing significant differences are touched on in this article.

This article is mainly concerned with changes in internationalization of the academic profession in Japan from 1992 to 2007. The article focuses on an analysis of major findings from the 1992 Carnegie survey and the 2007 Japanese team survey based on the earlier survey. The article begins by discussing the context and rationales related to internationalization of the academic profession in Japan. It then addresses changes in the internationalization of Japan's academic profession with a focus on changes over time from 1992 to 2007 and among four types of institutions for which meaningful data are available. The article concludes by identifying the characteristics and issues of internationalization for Japan's academic profession and by suggesting some implications for higher education policies and institutional reform.

Background and context

Japanese higher education consists of three types of institution: universities, junior colleges (*Tanki Daigaku* in Japanese) and colleges of technology; and is provided through three sectors: private, local public and national institutions.[1] There are two distinguishing characteristics of the Japanese higher education system. First, the private sector constitutes a large proportion of institutions, students and faculty members. As of 2007, the proportion of students in private universities and junior colleges amounted respectively to 73.2% and 94.1 % of the totals; and the numbers of private institutions at university and junior college levels comprise 76.7 % and 91.7% of the totals respectively (MEXT, 2008, pp.85-87). With regard to the numbers of faculty members, as of 2007, those in private universities and junior colleges constituted 56% and 91% respectively of the totals (MEXT, 2008, pp.96-97). Second, higher education institutions conform to a hierarchical structure. This is evident not only in the wide gap in various aspects between the national and private sectors, but is also reflected in universities and junior colleges at different levels even in the same sector. In contrast to the private sector, the vast majority of national universities remains more prestigious and is the centre of most graduate work at the doctoral level. The national universities usually receive more funding from government and generate more research grants, as well as producing far more PhDs than most of the private institutions. Except for a very few older private universities, such as Waseda and Keio Universities, which are considered among the top universities in Japan, most private institutions are teaching-centered and market-oriented, providing less favorable environments and conditions for educational and research activities than those in the national sector. But even among the national institutions there is, in practical terms, a split into two big types: research-intensive universities and non-research universities. The former typically include those old "Imperial Universities" that were established before the Second World War and some new universities that were established or integrated into university-level institutions based on old small colleges shortly after the War; the latter usually include small and education-based universities, mostly located in non-metropolitan areas.

Since the early 1990s, together with other factors, two big changes in Japanese higher education have significantly affected Japan's academic profession. One is curriculum reform and the other is the incorporation of the

[1] Local public universities were not included in the Carnegie, CAP or Japanese 2007 surveys.

national universities (Huang, 2006c).

Curriculum reform, which was initiated in 1991, has resulted in the requirement that all faculty members contribute to general educational programs; and all institutions are asked to conduct self-monitoring and self-evaluation to make their teaching and research activities more accountable and to assure their educational quality. In a major sense, all faculty members are asked to be more involved in teaching activities. Incorporation of the national universities is the other driving force that has directly influenced changes in the academic profession in Japan. One of the biggest changes is that faculty in all national universities are no longer public servants. Regarding changes in the pattern of internal governance in the national university corporations, more powers have been placed on governing bodies at the institutional level with a reduction in the autonomous rights residing in faculty meetings. With reduced autonomy of the faculty, the power of the bureaucracy within each university has expanded far more than that of the academic staff.

Admittedly, since the 1990s, many achievements have been accomplished in the internationalization of the academic profession in Japan, including an expansion in the number of full-time foreign faculty members, a growth in the number of Japanese faculty members with overseas doctorates, an increase in the number of articles by Japanese faculty in international journals, and greater mobility of Japanese faculty and incoming foreign faculty. However, the internationalization of Japan's academic profession is also facing many issues. For example, in comparison with the private sector, neither the national nor the public sector has achieved any remarkable expansion of employment of foreign faculty nor have these sectors exported cross-border programs and institutions. Moreover, there has been no striking rise in the number of non-Japanese presidents or vice-presidents in either national or public universities.

Results from changes over the period 1992 to 2007

Personal inventory

Table 1 shows changes in the proportions of Japanese faculty members who obtained their highest degrees in different countries over the period 1992 to 2007. The data indicate that there has been a slight decrease in the percentage of Japanese faculty members with their highest degrees obtained from Japanese universities, with a corresponding increase in the proportion of overseas highest degree holders among Japanese faculty members. This evidence confirms a slight increase in the number of internationalized highest degree holders among

the academic profession in Japan. The data reveal that compared with 1992, by 2007 the proportion of faculty who had received their highest degrees from Germany, France and other countries has increased. However, although the percentage of faculty with their highest degree from the US has dropped from 4.7% in 1992 to 3.8% in 2007, the proportion of Japanese faculty members with their highest degrees awarded by US universities still constitutes the biggest share of the number awarded overseas in 2007.

Table 1. Percentage of Japanese faculty members with highest degrees by country of award

Year / Country	1992	2007	**
Japan	94.5%	93.9%	
US	4.7%	3.8%	
Germany	0.2%	0.6%	
UK	0.3%	0.2%	
France	0.2%	0.7%	
Others	0.2%	0.7%	
Count (n)	1821 100.0%	1097 100.0%	

Note: In this and subsequent tables, the following symbolism is used: *** p<0.001; ** p<0.01: * p<0.05.

Table 2. Faculty membership and participation in professional organizations

Year / Items	To how many international/scientific societies do you belong?		During the past three years, how many disciplinary/scientific conferences did you attend outside?	
	Mean	SD	Mean	SD***
1992	0.87	1.23	1.47	3.4
2007	1.05	1.132	2.53	3.315

Data analyses indicate that by 2007 faculty in Japan belonged to more international/scientific societies and attended more disciplinary/scientific conferences abroad (Table 2). Significant differences are found in the data concerning changes in the national sector (Table 3). From 1992 to 2007 the average number of attendances by members of faculty in both national research

and national non-research universities at international conferences had increased respectively from 2.48 to 4.69 and 1.11 to 2.17, however, the figures for the private sector show no significant change. It can be assumed that faculty members in the national sector, especially in the national research institutions, have been more involved in participation in international conferences. This is probably due to the facts that faculty members from the national institutions are more research-oriented and that they can also generate more research grants.

Table 3. During the past three years, how many disciplinary/scientific conferences did you, as a member of faculty, attend overseas?

Year / Sector	1992	2007	
National Research Univ.	2.48	4.69	***
Private Research Univ.	3.41	3.16	n.s.
National Non-Research Univ.	1.11	2.17	**
Private Non-Research Univ.	1.11	1.63	n.s.
All Universities	1.47	2.53	

Research

Even with the exception of the national research universities, significant differences are found among the other three types of institutions in the importance attached to international connections. As Table 4 shows, effective differences exist between the national sector and the private sector. In contrast to a slight drop in the proportion of faculty members in the private sector who agree that "A scholar's international connections are important in faculty evaluation at this institution", more faculty members in the national non-research universities agree with the statement, its proportion having grown from 58.9% in 1992 to 66.6% in 2007. It indicates that even faculty members who worked in the non-research national universities tended to place an increased emphasis on building up international connections from 1992 to 2007. However, it should be noted that though there has been a decline in the percentage of faculty members in both private research and private non-research universities agreeing with the statement, a conclusion cannot be simply reached that a scholar's international connections are not important in faculty evaluation in the private sector, because data analyses show that more than half of the faculty members in the private sector chose to agree with the statement: in the private research universities especially, more than 70% of faculty members agree with the statement. Interestingly, no correlation is found for the effects of field of study

or academic rank on these responses for the period 1992 to 2007.

Table 4. "A scholar's international connections are important in faculty evaluation at my institution", by sector

Year	Response	Sector			
		National Research Univ.	Private Research Univ.	National Non-Research Univ.	Private Non-Research Univ.
1992	Agree	79.2%	73.2%	58.9%	61.5%
	Neutral	13.8%	21.1%	27.3%	29.3%
	Disagree	4.6%	5.6%	13.9%	9.3%
2007	Agree	90.0%	72.3%	66.6%	55.5%
	Neutral	5.4%	21.5%	24.7%	31.4%
	Disagree	4.6%	6.2%	8.8%	13.1%
		n.s.	**	*	**

International dimensions of academic life

Effective responses are found from faculty when asked "How many times in the past three years have you published articles or books in another country?" and have "…written an article or book in a language other than your mother tongue?" Table 5 indicates that faculty who participated in the 2007 survey not only had published more articles or books abroad than their colleagues in 1992, rising from an average of 1.68 times to 2.28 times, but also had written more articles or books in a foreign language, with the average rising from 3.89 times to 5.93 times.

Table 5. "How many times in the past three years have you published overseas or in a foreign language?"

Questions	Year	Mean	SD	
Published articles or books in another country?	1992	1.68	4.50	**
	2007	2.28	6.45	
Written an article or book in a language other than your mother tongue?	1992	3.89	6.97	***
	2007	5.93	9.61	

Table 6 shows that the national sector is found to be significantly and positively related in its responses to the question "How many times in the past three years have you written an article or book in a language other than your mother tongue?" but no significant differences are found among faculty in the private sector. Data analyses indicate that in 2007 faculty from the national sector had written more articles or books in a foreign language than those in 1992,

though faculty from the national research universities had written much more than those from the national non-research universities. It seems that faculty from the former had contributed substantially to the increase in average numbers of writing articles or books in a foreign language by faculty in Japan over the last 15 years.

Table 6. "How many times have you written an article or book in a language other than your mother tongue (past three years)?"

University Sector	1992	2007	
National Research	8.97	12.09	***
Private Research	5.33	6.56	n.s.
National Non-Research	3.31	5.48	**
Private Non-Research	1.69	2.6	n.s.
All Universities	3.88	5.93	

Table 7 indicates that faculty participating in the 2007 survey had worked collaboratively with an academic abroad for 2.7 months on average, whereas faculty responding to the 1992 survey had done so for 1.49 months on average. Further analyses by sector reveal that faculty from the national research universities had considerably increased their time in working collaboratively with academics abroad from 2.92 months in 1992 to 6.50 months in 2007 on average. No significant correlation is found for faculty from the other types of universities in this regard.

Table 7. "For how many months have you worked collaboratively with an academic from another country on a research project in past three years?"

Sector \ Year	1992	2007	
National Research Univ.	2.92	6.5	**
Private Research Univ.	2.16	1.3	n.s.
National Non-Research Univ.	1.46	1.84	n.s.
Private Non-Research Univ.	0.78	1.81	n.s.
All Universities	1.49	2.7	***

In the three items of international activities considered in Table 8 significant differences are found over the period 1992 to 2007 for all of them. As Table 8 indicates, there has been a rise in the proportion of faculty who agree that in their institutions "International conferences and seminars have been held" (from 23.1% to 31.0%), "Foreign students have been enrolled" (from 58.4% to 62.8%), and "Our students have studied abroad" frequently (from 53.2% to 55.1%) from 1992 to 2007. Apparently, more efforts have been made in individual

universities to facilitate international academic activities, especially in organizing international meetings and enhancing mobility of students over the last 15 years. However, while it is worth noting that more than half of universities have been frequently involved in activities in enrolling foreign students or sending their students abroad from 1992 to 2007, and that there has been an increase in the proportion of faculty who chose "Frequently" for these two items, yet nearly 40% of faculty chose "Occasionally" in respect of international conferences, and particularly that there has been also a growth in the proportion of faculty who chose "Never" in regard to student activities.

Table 8. "During the past three years at your institution, how frequently have the following occurred?"

	Year	Frequently	Occasionally	Rarely	Never	Total Responses		
Foreign academics have taught courses	1992	43.2%	34.0%	11.4%	11.3%	1600	100.0%	n.s.
	2007	43.2%	32.9%	13.8%	10.1%	955	100.0%	
International conferences and seminars have been held	1992	23.1%	39.5%	21.3%	16.1%	1560	100.0%	***
	2007	31.0%	40.9%	17.6%	10.5%	939	100.0%	
Foreign students have been enrolled	1992	58.4%	28.1%	10.5%	3.1%	1729	100.0%	**
	2007	62.8%	26.8%	6.8%	3.6%	1024	100.0%	
Our students have studied abroad	1992	53.2%	28.2%	13.9%	4.7%	1665	100.0%	*
	2007	55.1%	29.0%	9.9%	6.0%	1000	100.0%	

Table 9 shows that significant changes have occurred in both private research universities and national non-research universities in the enrollment of foreign students. Data analyses indicate that there has been a sharp drop in the proportion of faculty from private research universities who chose "Frequently" as an answer to the question "During the past three years at this institution, how frequently have foreign students have been enrolled?" (from 73.9% to 39.6%), and there has been a corresponding slight rise in the proportion of faculty from these institutions who chose "Never" as their answer (from 4.3% to 5.7%). This indicates that although the revenue of the vast majority of private sector universities in Japan is basically dependent on tuition and fees, including tuition and fees charged to foreign students, it seems that in some private research universities no increased efforts have been made to enroll foreign students over the period 1992 to 2007. It might be assumed first that by 1992 these universities had already enrolled a large number of, or enough foreign students,

and therefore that it was not necessary for them to recruit more foreign students; and second that the majority of faculty from the private research universities consider themselves to be researchers, just as do academics from the national research universities, and as such they have a higher tendency to be involved more with research activities rather than in making further endeavors to attract foreign students to their courses. In contrast, it is a surprise to find that there has been a remarkable growth in the proportion of faculty from national non-research universities who chose the response of "Frequently" to the question (from 58.6% in 1992 to 72.2% in 2007). Evidently, those national non-research universities have made enormous efforts in enrolling foreign students. This might be partly because there has been a decrease in the population of 18-year olds in Japan, which may affect the numbers of new entries to local universities, including the regional non-research national universities. The national non-research universities consequently have to compete for foreign students; and also they have realized the importance of enrolling foreign students as one of the means of implementing their internationalization strategies.

Table 9. "During the past three years, how frequently have foreign students have been enrolled at your institution?"

University Sector	Year	Frequently	Occasionally	Rarely	Never	
National Research	1992	77.4%	17.4%	2.8%	2.4%	n.s.
	2007	76.2%	21.6%	1.1%	1.1%	
Private Research	1992	73.9%	21.7%	0.0%	4.3%	***
	2007	39.6%	37.7%	17.0%	5.7%	
National Non-Research	1992	58.6%	32.9%	6.1%	2.4%	***
	2007	72.2%	21.8%	3.2%	2.8%	
Private Non-Research	1992	49.4%	29.8%	17.1%	3.6%	n.s.
	2007	48.0%	33.7%	12.6%	5.7%	

In indicating their views on international exchange activities, significant differences are found over the period 1992 to 2007 in each of the four items detailed in Table 10. The responses indicate that in all four items there has been a decrease in the proportion of faculty who agree that: "Connections with scholars in other countries are very important to my professional work" (from 62.7% to 53.3%); "In order to keep up with developments in my discipline, a scholar must read books and journals published abroad" (from 76.2% to70.5%); "Universities and colleges should do more to promote students and faculty mobility from one country to another" (from 58.5% to 43.3%); and "The

Table 10. Views on international exchange activities by year

	Year	Agree	2	Neutral	4	Disagree	Total Responses		
Connections with scholars in other countries are very important to my professional work	1992	62.7%	25.2%	10.5%	0.9%	0.8%	1808	100.0%	***
	2007	53.3%	28.8%	15.0%	1.9%	1.0%	1067	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%	1804	100.0%	**
	2007	70.5%	21.4%	6.3%	1.1%	0.7%	1068	100.0%	
Universities and colleges should do more to promote students and faculty mobility from one country to another	1992	58.5%	29.2%	11.6%	0.5%	0.2%	1806	100.0%	***
	2007	43.3%	34.7%	20.3%	1.2%	0.5%	1063	100.0%	
The curriculum at this institution should be more international in focus	1992	35.6%	30.9%	31.1%	1.6%	0.8%	1765	100.0%	***
	2007	25.3%	26.9%	41.1%	3.9%	2.8%	1060	100.0%	

Note: Responses were on a 5-point scale from 1 = Agree to 5 = Disagree.

curriculum at this institution should be more international in focus" (from 35.6% to 25.3%) from 1992 to 2007. Especially, not only has the proportion of faculty agreeing with "The curriculum at this institution should be more international in focus" fallen, but also neither has the proportion of faculty who chose to agree with the statement surpassed 40% of the total during either of the two surveys. Various assumptions can be made concerning the data. For example, the responses may be because faculty thought their institutions had made splendid achievements in these aspects, therefore no more efforts should be made; or because the large majority of them did not have a full understanding of the meaning or importance of a further internationalization of the curriculum in their institutions; or possibly because they doubted the necessity of facilitating it in their institutions as they felt that they had profited little or not at all from it. However, it is worth noting that while there has been a slight rise in the proportion of faculty who disagree with the statements, with the exception of the need to publish abroad, for all four of the statements those disagreeing constitute

a very small percentage (less than 3%) of the total. Moreover, more than half of faculty agree with the first and second statements.

Table 11. Views on "The curriculum at your institution should be more international in its focus" by Sector

University Sector	Year	Agree	2	3	4	Disagree	Total Responses	
National Research	1992	40.7%	31.1%	25.5%	1.2%	1.6%	100.0%	n.s
	2007	33.5%	26.6%	35.1%	2.7%	2.1%	100.0%	
National Non-Research	1992	34.9%	31.0%	31.6%	1.9%	0.6%	100.0%	***
	2007	22.4%	26.7%	42.5%	5.0%	3.4%	100.0%	
Private Research	1992	42.3%	22.5%	33.8%	0.0%	1.4%	100.0%	*
	2007	23.1%	23.1%	40.4%	7.7%	5.8%	100.0%	
Private Non-Research	1992	33.5%	31.5%	32.7%	1.6%	0.6%	100.0%	
	2007	24.9%	27.9%	42.4%	2.7%	2.1%	100.0%	***

Note: Responses were on a 5-point scale from 1 = Agree to 5 = Disagree].

Responses in respect of the international character of the curriculum are given in Table 11. They indicate that, except for the national research universities, significant differences are found in the other three types of institutions. Data analyses illustrate that, even if the proportion of faculty who choose "2" (agree somewhat) and "Disagree" make up less than 15% of the total in 2007, there has been an increase in the proportion of faculty who hold negative views on any further effort being made to stimulate the internationalization of the curriculum in their institutions. This is especially evident in private research universities. The proportion of faculty from this sector who agree with the statement has decreased from 42.3% in 1992 to 23.1% in 2007, with a corresponding increase in the proportion of faculty who choose to disagree with the statement (from 1.4% in 1992 to 5.8% in 2007).

Conclusion and implications

There are several major findings from the analysis of statements and questions concerning the internationalization of the academic profession in Japan. First, over the period 1992 to 2007, much progress has been made in the international dimension of academic life and work at an individual level and in the internationalization of teaching and research activities at an institutional level. An increased number of faculty members has been awarded their highest degree abroad. Faculty members have been more involved with international academic activities through participating in international societies, attending international

conferences, and working collaboratively with an academic abroad. By 2007 they had published more articles or books abroad, and had written more articles or books in a foreign language than their colleagues in 1992. It is worth noting that more effort had been made in the majority of institutions to carry out international academic activities, especially in organizing international meetings, enrolling foreign students, and sending local students abroad. Second, faculty members from the national institutions - and in particular those from the national research universities - had played a vital role in stimulating the internationalization of the academic profession in Japan, especially in research activities. Faculty members from the national research universities had participated more in international conferences, had published more articles and books abroad, written articles and books in a foreign language, and worked collaboratively with an academic abroad. More importantly, in comparison with the private sector, faculty members from the national non-research universities had enrolled international students more frequently. More surprisingly, in comparison with those from the private sector, by 2007 there had been an increase in the number of faculty members from national non-research universities who recognize that "A scholar's international connections are important in faculty evaluation at this institution". Third, while the internationalization of the academic profession in Japan has advanced greatly, especially in research activities, compared with 1992, in 2007 fewer faculty members have maintained a positive or supportive attitude towards further efforts being made to facilitate internationalization of academic life at an individual level and internationalization of Japanese higher education in specific areas at an institutional level. Especially there has been a clear drop in the number of faculty members, notably from the private research universities, who agreed that the curriculum at their institutions should be more international in focus.

The results of this study have some implications for higher education policies and institutional reforms. One of the most important implications is a need for further stimulation of mass internationalization. As mentioned earlier, though different sectors and different types of institutions have played different roles in Japan's higher education system, due to various reasons such as their history, institutional missions, financial constraints, and social expectations, it is unnecessary and impossible for all faculty members to achieve the same high level of internationalization in their academic life, teaching and research activities. However, with increased impact from globalization and internationalization, it is generally acknowledged that integrating international dimensions and perspectives into faculty members' academic life, educational

and research activities has an increasingly decisive and positive impact in assuring and improving the quality of educational and research activities, producing higher-level graduates and building up centres of learning worldwide. Therefore, the policy of internationalization should not be constrained only to a very few limited leading research universities or be restricted to a few selected key national institutions with the intent of training an elite. It is important for government to formulate well-defined policy for mass internationalization of the academic profession across all types of institution. Colleges and universities need to encourage and assist faculty to integrate international perspectives and dimensions in their teaching and research.

References

Arimoto, A., & Ehara, T. (eds.) (1996). *Daigaku kyojushoku no kokusai hikaku* [Academic profession in the comparative perspectives]. Tokyo: Tamagawa University Press (in Japanese).

Ebuchi, K. (1997). *Daigaku kokusaika no kenkyu* [Research in internationalization of university]. Tokyo: Tamagawa University Press (in Japanese).

Huang, F. (2006a). Internationalization of university curriculum in Japan: Major policies and practice since the 1980s. *Journal of Studies in International Education*, *10*(2), 102-118.

Huang, F. (2006b). Internationalization of curricula in higher education institutions in comparative perspectives: Case studies of China, Japan and the Netherlands. *Higher Education*, *51*, 521-539.

Huang, F. (2006c). The academic profession in Japan: Major characteristics and new changes. In Research Institute for Higher Education (RIHE) (ed.), *Reports of changing academic profession project workshop on quality, relevance, and governance in the changing academia: International perspectives. COE Publication Series*, *20* (pp.195-208). RIHE, Hiroshima University.

Huang, F. (2007a). Internationalization of higher education in the era of globalization: What have been its implications in China and Japan? *Higher Education Management and Policy*, *19*(1), 47-61.

Huang, F. (2007b). Challenges of internationalization of higher education and changes in the academic profession: A perspective from Japan. In M. Kogan & U. Teichler (eds.), *Key challenges to the academic profession*, *UNESCO forum on higher education research and knowledge* (pp.81-98). Paris and Kassel: International Centre for Higher Education Research Kassel.

Huang, F. (2008). Kokusaika. In A. Arimoto (ed.), *Henbo suru nihon no daigaku kyoujyusyoku*

[The changing academic profession in Japan] (pp.279-311). Tokyo: Tamagawa Press (in Japanese).

Huang, F. (2009). The internationalization of the academic profession in Japan: A quantitative perspective. *Journal of Studies in International Education*, *13*(2), 143-158.

Kurimoto, K. (1997). Internationalization of the national university sector in Japan. In J. Knight & de Wit, H. (eds.), *Internationalisation of higher education in Asia Pacific countries* (pp.100-101). Amsterdam: EAIE.

MEXT (2008). *Japan statistical abstract*. Tokyo: National Printing Bureau (in Japanese).

Yamanoi, A. (2005). *Ninhon no daigaku kyoujyu shijyo* [The academic marketplace in Japan]. Tokyo: Tamagawa University Press (in Japanese).

The Internationalization of the American Faculty: where are we, what drives or deters us?

Martin J. Finkelstein[*], Elaine Walker[**], and Rong Chen[***]

Introduction

In 1992, the original survey of international faculty by the Carnegie Foundation for the Advancement of Teaching hit at least one discordant note in describing a strong – even a comparatively pre-eminent – corps of half a million scholars that made up the American faculty: whatever their scientific and scholarly accomplishments, as reflected in a disproportionate share of international prizes such as the Nobel, American professors tended to be relatively insular and provincial in their orientation, turning inward in a kind of self-reflexive, if not narcissistic, gaze rather than outward to the larger world. Indeed, Altbach and Lewis (1996) reported that only about one in three American faculty had taken at least one trip abroad for study or research – securing for the U.S. a position in last place among the fourteen countries studied, just behind Russia and Brazil, but 30-40% behind half the countries.[1] Moreover, the United States also came in last in the proportion of faculty reporting that "connections with scholars in other countries are very important to my professional work" (about half compared to more than four-fifths in all other countries except the UK) (Altbach & Lewis, 1996). While this may reflect to some extent the large

[*] Professor, College of Education and Human Services, Seton Hall University, USA, e-mail: finkelma@shu.edu

[**] Associate Professor, Department of Education Leadership, Management & Policy, Seton Hall University, USA, e-mail: walkerel@shu.edu

[***] Assistant Professor, College of Education and Human Services, Seton Hall University, USA, e-mail: chenrong@shu.edu

[1] The thirteen countries included Australia, Brazil, Chile, England (UK), Germany, Hong Kong, Israel, Japan, Korea, Mexico, Russia and Sweden in addition to the U.S.

segment of the American professorate working outside the research university sector *vis-à-vis* other nations, this inward orientation more likely parallels, and indeed reflects, a sense of the U.S. as the 'center' of the scientific – and economic universe.

Since 1992, of course, the world has changed, with the emergence of free trade, the internet, and the increasingly globalized, knowledge-based, corporate economy (Slaughter & Rhoads, 2004). Science and technology are now globalized to a greater extent than ever and, as William Cummings (2008) has shown, the center of gravity for scientific research and development is demonstrably shifting away from the U.S. toward Asia, and to a lesser extent, Europe and Australia. In the context of these developments what would once have been considered a mildly disturbing, but relatively harmless, self-indulgence would now be considered a potentially serious disability – one with potentially far-reaching consequences for the future of America's role in scientific research and development. To what extent has the American academic community adapted to the emerging shift in the center of gravity of the world economy and the global scientific enterprise, the emergence of a 'post-American' world (Zakaria, 2008)? To what extent are American academics more integrated now into the international scientific order in their research and scholarship? In their teaching and, *ipso facto*, their socialization of the next generation of American academics and professionals? What distinguishes the 'internationalists' among the American faculty from their more insular peers? And to the extent that internationalization in research and teaching is increasingly recognized by American college presidents and the federal government as a key to the future for American economic competitiveness and constructive foreign relations, how, from a national and institutional policy perspective, can an increasing focus on internationalization be nurtured and advanced in the U.S.?

The first seeds of answers to questions like these are contained in a new international survey, the Changing Academic Profession, undertaken in 2007 as a fifteen-year follow-up to the original 1992 Carnegie Foundation International Faculty Survey. Several senior colleagues who participated in the 1992-93 survey, including Ulrich Teichler at Kassel University, Juergen Enders at the University of Twente, Akira Arimoto originally at Hiroshima University and now at Hijiyama University, and William Cummings of George Washington University, organized a group of 19 countries committed to carrying out a follow-up 2007 survey, entitled "The Changing Academic Profession" [CAP]. A ten member executive committee (representing researchers in Japan, China,

Mexico, India, Germany, United Kingdom, and the U.S.) met three times between 2005-07 in order to design a common sampling protocol across countries as well as a common survey instrument – to ensure genuine comparability of the findings across countries. The sampling protocol is complicated by the fact that in some countries, such as Japan, there is an easily accessible government listing of all full-time faculty in universities from which a random sample can be readily drawn. In others, such as the U.S., there is no such list and we need to engage in a two-stage process of sampling institutions and then, within institutions, sample faculty so as to ensure that important subgroups, *e.g*. minority scientists, are adequately represented. The protocol does however set standards across countries for minimizing sampling error and assuring over-sampling of critical subgroups.

The CAP survey instrument focused on three overarching themes – relevance, internationalization and managerialism – identified in a jointly authored Concept Paper that provides the overall intellectual framework for the research.[2] Relevance, broadly conceived, refers to increasing pressures globally for higher education to visibly support economic competitiveness as well as social progress. Internationalization refers to the increasing permeability of national boundaries in faculty research and teaching and the increasing mobility of students and faculty across borders. Managerialism refers to changes in governance that have increased the role of administrators and government entities at the expense of faculty. Most generally, the instrument sought to chart changes in the pressures experienced by faculty and the responses to those pressures reflected in their work behavior and career trajectories. The instrument was organized to permit the analysis of trends over time in three ways: (1) there are several items that replicate those in the 1992-93 survey allowing for straightforward historical comparisons between the two surveys[3]; (2) there are a few items that ask respondents to assess current conditions as compared to those when they began their careers, *i.e.* indicators of perceived change; and (3) a comparison of the responses of faculty in different academic generations, *i.e.* those whose entries into academic careers occurred at different points of historical time.

---

[2] The concept paper, entitled "The Shifting Boundaries of the Academic Profession" (July, 2005) is available by request from wkcum@gwu.edu.

[3] Unfortunately, the three items related to internationalization of teaching and research that are replicated in the 2007 have serious 'missing data' problems in the 1992 U.S. survey.

Population and sampling

The highly decentralized American system includes some 655,000 faculty on full-time appointment at nearly 4,000 corporately independent institutions, which vary in their size and degree level (from large universities offering doctoral level education to small colleges focusing on baccalaureate level education), on the one hand, and in their control (whether governed and funded by public entities or private entities such as churches), on the other. Having stratified the institutional universe according to these two characteristics – size/degree level and control – a total of 80 institutions across these four strata[4] were selected and their faculty lists secured on-line. Having determined the proportion of full-time faculty in the population in each of the four institutional strata so defined, a random sample of faculty was selected within each institutional stratum so as to approximate in our sample to the proportions in the academic population. This approach yielded a total sample of 5,772 faculty at 80 four-year colleges and universities across the United States.

Data collection

The U.S. team contracted the Research Services Division of SPSS Corporation (the Statistical Package for the Social Sciences) to program and host the on-line American English version of the CAP survey. All sections and items required for the international data-set were included, although the order of the six sections of the survey was modified to avoid asking uninspiring career resume and demographic questions at the beginning. In addition, in collaboration with Canada and Mexico, several 'North American' questions were added including race/ethnicity, geographic region of North America, and details of research collaborations specific to the three countries. The on-line survey was 'programmed' to require that respondents answer questions on a given screen before proceeding to the next screen. Moreover, the programming also specified acceptable ranges of values for responses (you could not report your first academic appointment as 1970 and your baccalaureate degree receipt in 2007). This approach served to infuriate a few respondents (and depress the response rate, perhaps), but, more importantly, to reduce missing data and data

[4] We had originally planned to select 100 institutions to include 20 research institutes. Insofar as the research institute sample was abandoned, we were then left with a total institutional sample of 80 colleges and universities.

incongruities (problems in the 1992 U.S. survey). The survey link with an individually coded identifier was e-mailed to all 5,772 faculty on October 3, 2007. A total of five reminders was sent out electronically between October 15 and December 7, 2007. In March, 2008, a paper version of the survey was mailed to approximately 1,000 of the non-respondents in an effort to capture additional responses from those who were unwilling to respond to an on-line survey.

Theoretical framework

This paper focuses on two broad aspects of American faculty internationalization: (1) the extent to which faculty have internationalized the content of their academic work as reflected in (a) the extent to which they integrate international perspectives into their course content, and (b) the extent to which their research is international in scope or focus; and (2) the extent to which faculty have internationalized the scholarly networks within which they work as reflected in (a) collaboration on research projects with international colleagues, (b) co-authorship of scholarly publication with foreign colleagues, and (c) publication in foreign countries. These aspects were chosen both because they constitute the basic dimensions of faculty work and because they permitted broad comparability with the earlier Carnegie international faculty survey.

The design of this study was shaped, most generally, by the available literature on the determinants of academic work and careers in the United States.[5] Burton Clark first postulated the critical roles of institutional type and academic field as forming the two major axes that differentiate the American academic profession. Faculty at research universities perform different and more complex roles than faculty at other four-year institutions or at two-year colleges. Moreover, the shaping force of institutional type is mediated by the shaping influence of academic field: faculty in the natural sciences engage in fundamentally different kinds of work activities and share different norms for teaching and research activity than faculty in the humanities and social sciences. This disciplinary socialization typically occurs well before one takes up a first

[5] See, for example, Logan Wilson, *American Academics: Then and Now* (1979); Burton Clark, *Academic Life: Small Worlds, Little Worlds* (1986); Martin Finkelstein, *The American Academic Profession* (1984); Robert Blackburn and Janet Lawrence, *Faculty Work* (1995); James Fairweather, *Faculty Work and the Public Trust* (1996); Jack Schuster and Martin Finkelstein, *The American Faculty* (2006).

faculty appointment, during the graduate school period – and even during the undergraduate period. Thus, academic field represents the culmination of a socialization process begun much earlier. Within the shaping contexts of institutional type and academic field, the literature on the American academic profession also suggests that, at the individual level, faculty professional orientations to tasks like teaching and research, individual political and social values tend to further differentiate the nature and focus of academic work and careers.[6] More recently, the infusion of women into the American academic profession as well as modest increases in foreign-born and minority faculty have underscored the power of demographic differences as arbiters of the selection of faculty to academic fields and institutional types – adding demographic factors as filters into individual niches in the academic firmament – as well as conveyors of their own distinction and shaping socialization onto the individual academic role and career.[7]

Based on this reading of the literature, this study conceptualized a four stage model for understanding the nature and extent of individual faculty internationalization in their teaching and research. The model proceeded from basic demographic 'givens' (including gender, race, age) through educational socialization experiences (place of birth and early education, place of doctoral education, choice of academic discipline, experience abroad), which we know to shape ultimate disciplinary and institutional affiliation, to institutional pressures at current employers (institutional type, especially research university *vs.* other academic settings; increased presence of international students; administrative *vs*. faculty driven leadership of internationalization initiatives at the institutional level), and the specific nature of the current work role – relative orientation to teaching *vs.* research, level of teaching assignment (undergraduate *vs*. graduate), level of research involvement, primary focus of research (basic *vs.* applied *vs.* commercial) – as determinants of faculty internationalization. The basic model is depicted in Figure 1.

Independent or predictor variables

Within the bounds of the core CAP survey instrument, we initially selected a set of independent variables that operationalized each of the four stages or dimensions of the model predicting faculty internationalization in their teaching

[6] Finkelstein (1984) and Finkelstein (2008).
[7] Schuster & Finkelstein (2006). Gappa, Austin & Trice (2007).

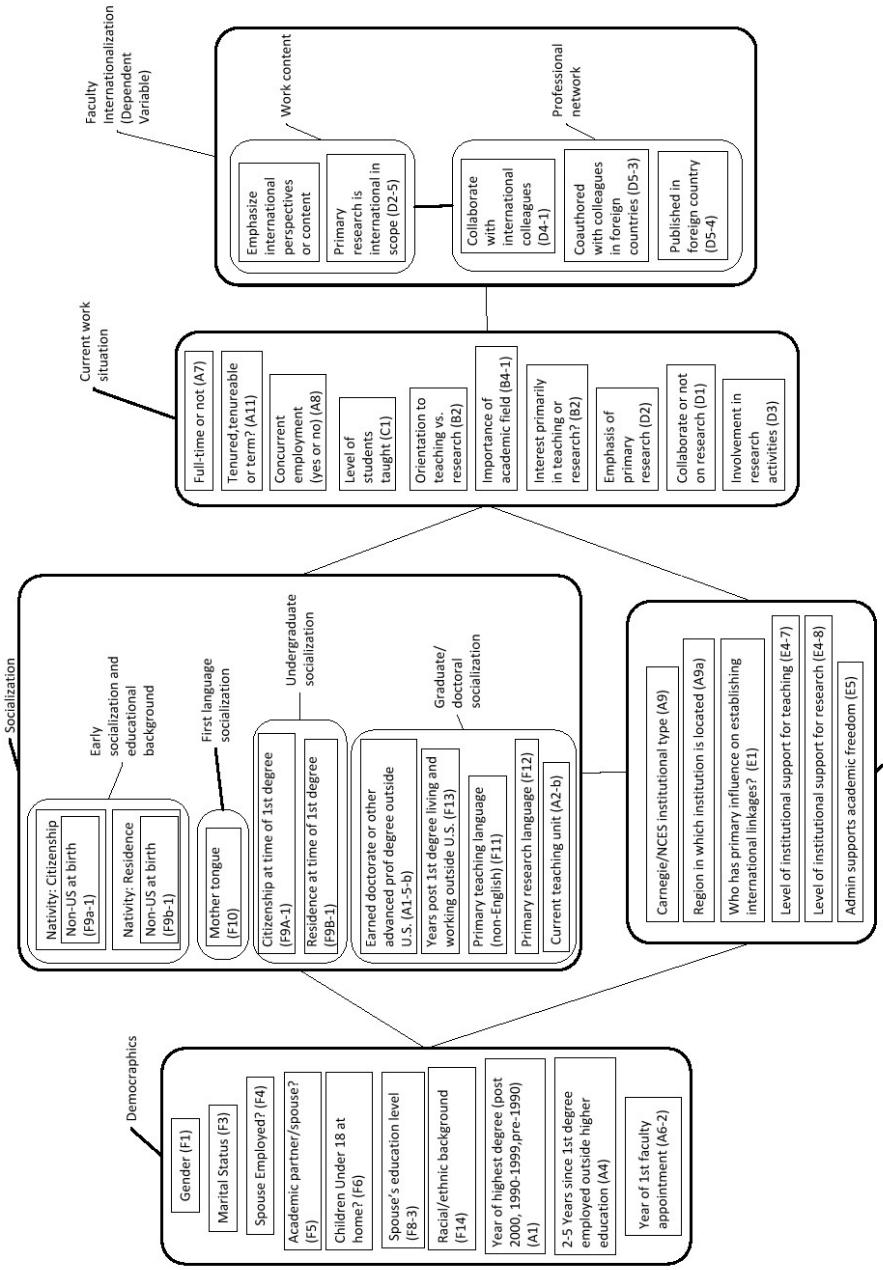


Figure 1. Faculty internationalization US CAP study, 2007

and research. The independent variables included were as shown in Table 1.

Table 1. Independent variables

Demographics	F1	Gender	
	F3	Marital/family status (married or not)	
	F4	Spouse employed?	
	F5	Academic partner/spouse?	
	F6	Children <18 at home?	
	F8-3	Spouse's education level	
	F14	Racial/ethnic background	
	A1	Year of highest degree (post 2000, 1990-1999, pre-1990)	
	A6-2	Year of first faculty appointment	
	A4	2-5 Years since 1st degree employed outside higher education	
Early Socialization and Educational Background	F9a-1	F9a.1 Non-U.S at birth	Nativity: Citizenship
	F9b-1	Non-U.S. at birth	Nativity: Residence
	F10	Mother tongue: English *vs*. other	First language socialization
	F9b-1	Citizenship at time of 1st degree (U.S. *vs*. foreign)	Undergraduate Socialization
	F9b-2	Residence at time of 1st degree (U.S. *vs.* foreign)	
	A1-5b	Earned doctorate or other advanced professional degree outside U.S.	Graduate/Doctoral (Post 1st degree) Socialization
	F13	Years post 1st degree living and working outside U.S.	
	F11	Primary teaching language (non-English)	
	F12	Primary research language	
	A2-b	Current teaching unit	
Institutional Pressure	A9	Carnegie/NCES institutional type	
	A9a	Region in which institution is located	
	E1	Who has primary influence on 'Establishing international linkages'? (Individual faculty *vs.* admin)	
	E4-7	Level of institutional support for teaching	
	E4-8	Level of institutional support for research	
	E5	Admin supports academic freedom	
Current work situation	A7	Full-time or not	
	A11	Tenured, tenureable or term?	
	A8	Concurrent employment (yes or no)	

	C1	Level of students taught
	B2	Orientation to teaching *vs.* research
	B4-1	Importance of academic field
	B2	Interest primarily in teaching or research?
	D2	Emphasis of primary research (basic *vs*. applied? disciplinary or multi? Commercial *vs.* social)
	D1	Collaborate or not on research (a general factor)
	D3	Involvement in research activities

Data analysis

The data analysis proceeded in two basic stages: a descriptive stage in which we sought to compare faculty internationalization in work content and professional networks in 1992 to that in 2007 as well as to describe the basic frequencies for the 2007 data; and a multivariate analysis stage in which we sought to identify and test the predictors of American faculty internationalization in 2007. The independent and dependent variables – with the exception of years since the first faculty appointment – were dichotomized through a re-coding procedure. The specifications of that recoding are included in an Appendix.

The descriptive stage began with the running of basic frequencies and cross-tabulations on the independent and dependent variables. In the multivariate inferential stage, a matrix of point biserial correlations was also computed producing Spearman Rho's, which were tested for statistical significance. In doing so, the authors sought to identify the most powerful potential predictors of the dependent variables as well as to identify potential situations of multicollinearilty among the predictors. The investigators selected the maximum number of predictors based on whether statistical significance with the dependent variables emerged in the cross-tabulations and correlation matrices. These predictors were then entered into a four-stage logistic regression model. Based on an examination of the initial results of these regression analyses, including the resultant number of cases for each dependent variable (in comparison to the number of predictors) and the multicollinearity statistics, we revised and re-ran the logistic regression models for each dependent variable in an effort to eliminate any multicollinearity problems and achieve optimal parsimony in the predictors.

Results

Sample

Of the e-mailed invitations to the U.S. faculty sample of 5,772, 707 'bounced' back largely as a function of being SPAMMED by the internal university e-mail systems. Of the 5,065 that actually made their way into faculty 'inboxes', completed responses were received from 1,048 respondents for a response rate of 20.7%. Up to an additional 50 respondents answered more than 80% of the survey and were included where appropriate in this analysis. The March, 2008 paper follow-up yielded a very small increment of 36 additional respondents, bringing the total number of respondents to 1,084 for an overall response rate of 21.4%.

While such a response rate would typically be viewed as quite low for a paper survey, the literature suggests that response rates for on-line surveys in the Unites States tend to be considerably lower than for paper surveys – in the range of 10-30%. Moreover, as a result of increased annoyance with SPAM and increased concerns about privacy and identity theft on the Internet, these on-line response rates have been declining over time. Our rate falls squarely within the acceptable range for on-line surveys.

Table 2. Faculty sample and respondents by institutional type

Institution Type	N			Sample		Respondents	
	Total	Public	Private	N	%	Total	%
Research Universities	29	21	8	2718	47.1%	499	46.0%
Other four-year	51	26	25	3054	52.9%	585	54.0%
Doctor granting	11	6	5	1014	17.6%	349	32.2%
Master offering	28	17	11	1440	24.9%	260	24.0%
Baccalaureate	12	3	9	600	10.4%	38	3.5%
All	80	47	33	5772	100.0%	1084	100.0%

Table 2 provides a comparison of our respondents to the entire sample. It suggests that our respondents mirror the basic distribution of the sample between research universities and other four-year institutions. Among other four-year institutions, however, faculty at doctoral granting universities tend to be over-represented among respondents (32.2% *vs.* 17.6% in the sample) and faculty at baccalaureate colleges tend to be under-represented among respondents (3.5%

vs. 10.4 % in the faculty sample). Faculty at public institutions are slightly over-represented among respondents (67.1%) compared to the sample (62.4%) and faculty in the private sector slightly under-represented among respondents (32.9%) compared to the faculty sample (37.6%). Based on these findings, and a desire for simplicity, the data file was weighted to ensure that respondents represented the distribution of the faculty sample across institutional types.

Phase I. Descriptive analysis results

To what extent has American faculty increased its internationalization in work content and professional networks over the past fifteen years? A direct comparison of the 1992 and 2007 survey responses is complicated by two factors. First, there is the lack of basic comparability of the items. While the 2007 survey inquired about the "teaching of courses abroad" (which might be exclusively for students from, and sponsored by, one's home institution), the 1992 survey inquired about "organizing a class for students from another country," or "serving as a faculty member at an institution in another country". While the 2007 survey inquired most generally about the "number of years spent abroad after receipt of the baccalaureate degree" (whether working on academic or non-academic remunerative activities, traveling for pleasure, or studying), the 1992 survey inquired about "spending a sabbatical abroad," and "traveling abroad to study or do research". Only three items from the two surveys are directly comparable: the first, focused on "collaborative research efforts with academics from another country"; the second, focused on whether respondents had "published books or articles in another country"; and the third, on whether respondents had "published an article or book in a language other than your mother tongue". These are all research – related items and are not applicable to the one-third of our 2007 respondents who did not report any involvement in research. Moreover, a comparison of the 1992 and 2007 surveys on even these three items is problematic given the extent of the missing data reported for all the international activity items in the 1992 survey. More than half of all respondents in 1992 did not answer these questions. If, as it seems likely to the authors, the vast majority of non-respondents would have entered "none" or "zero," then percentages based on such distorted frequencies are surely over-estimates – probably gross over-estimates – rendering direct comparisons of dubious credibility.

The authors pursued an alternative strategy – albeit an imperfect one – to directly comparing percentages on the three identical items related to in faculty internationalization in both the 1992 and the 2007 surveys. Table 3 shows a

breakdown of basic faculty internationalization in teaching and research in 2007 by academic generation or career stage. When we speak of academic generation or career stage, we are simply distinguishing here between the recent cohort of faculty hired since 2000[8] (whom we shall refer to as new entrants) and those more seasoned faculty who entered the profession before 2000 (whom we shall refer to as senior faculty). Most of the latter would likely have received tenure (or have moved on). Our assumption is that if there are dramatic changes in the extent of faculty internationalization, they would most likely be reflected among the more recent cohorts of new hires – just as these new cohorts reflect quite dramatically a greater feminization, a greater search for work-family life balance, and a keen appreciation of the research pressures under which the system increasingly operates. While we concede (and our subsequently reported findings corroborate) that more experienced faculty may develop new interests in internationalizational activities later in their careers, suggesting that a career developmental component may complicate any cross-sectional new/senior faculty comparisons in 2007, we would remind the reader that change in the academic profession has historically been associated with generational change rather than the reform of (or developmental change over time in) the extant *corpus* of the faculty.

When we focus particularly on their international experience (these are, after all the faculty, who will staff American universities in the age of globalization), the data in Table 3 paint, on the face of it, a troubling picture.

Table 3. Internationalization by academic generation, 2007

	Work content				
C4/5	In your courses you emphasize international perspectives or content	New Entrants	%	Senior Faculty	%
	Strongly agree	76	25%	205	23%
	Agree	85	28%	262	30%
	Neutral	78	26%	246	28%
	Disagree	48	16%	107	12%
	Strongly disagree	18	6%	60	7%
		305	100%	880	100%

[8] Seven years is the typical 'probationary' period for a newly-hired full-time faculty member in the American system at which point a decision 'to tenure or not' (*i.e.* award a permanent appointment) is made. This is how American universities typically distinguish between 'junior' (*i.e.* probationary) and senior faculty.

	Your primary research is international in scope or orientation	New Entrants	%	Senior Faculty	%
D2/5	Very much	42	20%	147	21%
	Somewhat	41	19%	161	23%
	Neutral	48	23%	131	18%
	Negative	42	20%	94	13%
	Not at all	40	19%	180	25%
	Total	213	100%	713	100%

	Professional networks				
D1	Collaborate on research with international colleagues?				
D1/4	Yes	61	25%	256	36%
	No	179	75%	449	64%
	N	240	100%	705	100%

	Among your publications, what percentage was	N	Mean	Std	N	Mean	Std
D5	Published in foreign language?	211	2.94	13.795	652	2.62	11.858
	Co-authored with foreign colleagues?	203	5	14.661	642	6.05	16.431
	Published in foreign country?	206	8.08	20.633	637	7.96	19.327

Note: Designations on the left-hand side of the Table identify questions in the CAP survey.

The new entrants are as likely as their senior colleagues to report publishing in a foreign country (about 8%). More ominously, they are less likely to report that their research is international in scope or orientation (39% *vs*. 44% among senior faculty), and less likely to report collaboration on research with international colleagues (25% *vs.* 36% among senior faculty).

While it is not clear to what extent the relatively short duration of their careers to date is artificially truncating their collegial relationships and what may be fledgling developmental interests in the international arena, nonetheless there does not appear to be any clear new departure here with respect to international linkages. It should be noted that new entrants do demonstrate clear departures from their more senior colleagues in other, visible respects, including their gender distribution, the types of appointments they hold (more likely fixed contract rather than tenure-eligible); so that with some allowance for their relative inexperience, the lack of significant cross-sectional differences in internationalization of teaching and research between new and senior faculty in the U.S. can reasonably be interpreted as a finding of a "no significant differences" trend.

Table 4. Faculty internationalization by country, 2007

	Work Content		Professional Network		
	In your course you emphasize international perspectives or content	Your primary research is international in scope or orientation	Do you collaborate with international colleagues in research?	Publication coauthored with colleagues located in other (foreign) countries	Publication published in a foreign country
Item & scale	C4-5/T-48/1-5 scale arithmetic mean	D2-5/T-52/1-5 scale arithmetic mean	D1-4/T-51 percent	D5-3/T-57 percent in all publications	D5-4/T-57 percent in all publications
Argentina	2.3	2.8	47	8.7	29.6
Australia	2.1	2.2	59	12.7	31
Brazil	2.5	3.5	30	5.4	17.4
Canada	2.3	2.6	64	12.7	31.9
China	2.1	2.1	13	1.1	11.6
Finland	2.5	2.5	70	15.5	46.1
Germany	2.2	2.5	58	20.6	43.3
Hong Kong, China	2.1	2.3	60	15.7	69.9
Italy	2.3	2	59	14.7	46.3
Japan	2.5	2.8	24	7.6	19.6
Korea	2.1	3.1	29	6.2	25.6
Malaysia	2.3	2.6	32	7.6	21.2
Mexico	1.9	3	35	9.6	31.2
Norway	2.2	2.2	67	19.9	52.2
Portugal	1.8	1.9	32	46.5	20.2
United Kingdom	2.2	2.3	61	12.2	21.8
United States	2.5	3.1	33	5	7

Source: Kassel University (2008).

We cannot leave this descriptive portrait without underlining the comparative position of the American faculty on a variety of indicators of internationalization of teaching and research *vis-à-vis* the sixteen other countries for which data are currently available from the 2007 CAP survey. Table 4 shows U.S. faculty to be last on "the percentage of articles published in a foreign country" (7%), among the bottom 3-4 countries in percentage of teaching courses abroad (17%), percentage of publications co-authored with foreign colleagues (5%), mean agreement that "my research is primarily international in scope" (3.1/5.0 with "1" as strongly agree) and among the bottom half of countries in the percentage reporting collaboration with international colleagues in research (33%) and mean agreement that international perspectives are emphasized in

their courses (2.5/5.0 with "1" as "strongly agree" and "3" as neutral;). Moreover, when we return to the tables developed by Altbach and Lewis (1996) comparing American faculty with those in 13 other countries in 1992, we find, once again, that the comparative position of the U.S. has not changed much. In 1992, American faculty (along with Russian, Brazilian and Mexican faculty) were half as likely as European, Asian (Japanese, Hong Kong, Korean, Australian) and Israeli faculty to report one or more months spent abroad in study or research and only two-thirds as likely as faculty in all 13 other countries to report that "connections with scholars in other countries were very important to their professional work" (only the UK was close). Once again, the case for minimal change seems to be reasonably supported.

Phase II. Logistic regression analysis

While, then, the American academic profession appears to be maintaining its comparative insularity from the world, the 2007 CAP survey in the U.S. found a significant segment of faculty who reported that they had integrated international perspectives into the content of their courses (some 53%) and about one-third of those who are active in research (two-thirds of all respondents are 'active') reported that they collaborated and/or co-published with foreign colleagues. Is there something distinctive about these emerging subgroups of internationalists among the American faculty? In addressing this question, we examined two categories of variables: (1) the extent to which international perspectives shaped the content of faculty teaching or their research; and (2) the extent to which national boundaries restricted faculty professional networks or were relatively permeable (*i.e.* the extent to which they collaborated with foreign colleagues in research).

Dependent variable: international perspectives are integrated into my courses

Table 5 below reports the results of the logistic regression analysis for the dependent variable "In your courses, you emphasize international perspectives or content". Although the two predictors in the demographic model (model 1) attain statistical significance, both lose their significant predictive power when entered into subsequent regression equations where other independent variables are controlled. In the base model, the odds ratio suggested that females were more likely to focus their teaching on international issues; and that individual faculty who had no children present at home were more likely to incorporate international issues into their teaching than those with children present. However, given the fact that the effects of both demographic variables dissipate

when other predictors are held constant in all subsequent models, not much can be made of these significant effects in terms of the postulated conceptual model.

The socialization variables of years spent abroad are significant factors that help explain why some faculty incorporate international issues in their teaching, while others do not. Specifically, those faculty who have spent one to two years abroad, *post*-baccalaureate, are almost twice as likely as those with no time abroad to incorporate international issues into their teaching (exp (B) =1.934). More strikingly, those with three or more years abroad are 2.6 times more likely to include international themes in the content of their courses (see the results for the second model reported in Table 5). These two socialization variables remain significant in their effects even after we control for institutional pressures and current work role (refer to the fourth model in Table 5). Faculty who are engaged in teaching subjects outside the STEM[9] fields (*i.e.* the humanities and social sciences) are more apt to address global issues in their classes than those in the STEM fields (this independent variable is significant in models 2, 3 and 4 respectively). Two of the current work role variables related to faculty research interests were found to have significant bearing on this outcome variable. These are: (i) the primary research focus is on commercial issues; and (ii) the major thrust of research is directed to the betterment of society. In both instances, the odds ratios are in favor of those individuals who cite these areas as the primary focus of their research. The institutional pressure variable – an increase in the presence of international students – was not a significant predictor for this dependent variable; nor was the independent variable of faculty being the primary driver of internationalization efforts on campus.

Table 5. Logistic regression results for dependent variable: 'courses emphasize international perspectives or content' (N=854)

Logistic Models	exp (B)	Standard Error
Model 1 (Demographic Variables)		
Male	**.696***	.183
Have Children at Home	**.637***	.177
Constant	6.131	.163
Model 2 (Early Socialization and Educational Background Variables)		
Male	.793	.194
Have Children at Home	.714	.184

[9] STEM is the acronym for 'science, technology, engineering and mathematics' employed by the National Science Foundation in the U.S.

U.S. citizen at birth	1.016	.302
Degree obtained in the U.S.	1.445	.519
Years abroad post baccalaureate (1-2 years)	**1.934****	.280
Years abroad post baccalaureate (3+ years)	**2.609****	.324
Discipline: STEM	**.307****	.202
Constant	4.012	.558
Model 3 (Demographics, early socialization and institutional pressure variables)		
Male	.787	.195
Have Children at Home	.737	.186
U.S. citizen at birth	.965	.306
Degree obtained in the U.S.	1.517	.521
Years abroad post baccalaureate (1-2 years)	**1.956***	.281
Years abroad post baccalaureate (3+ years)	**2.513****	.327
Discipline: STEM	**.297***	.204
International student increase	1.323	.205
Faculty drive campus international initiatives	1.373	.200
Constant	2.975	.579
Model 4 (Demographics, early socialization, institutional pressure and current work role variables)		
Male	.711	.202
Have Children at Home	.711	.192
U.S. citizen at birth	.996	.318
Degree obtained in the U.S.	1.160	.543
Years abroad post baccalaureate (1-2 years)	**2.144****	.291
Years abroad post baccalaureate (3+ years)	**2.517****	.339
Discipline: STEM	**.299****	.224
International student increase	1.392	.212
Faculty drive campus international initiatives	1.242	.208
Tenure status: tenured or tenure-eligible	.959	.274
Primarily teach undergraduates	1.397	.196
Primary research is “commercial”/ for technology transfer	**2.278****	.247
Primary research is “socially-oriented” for the betterment of society	**2.116***	.207
Primary Research is multi-disciplinary	1.255	.238
Collaborate with others in research	.733	.256
Constant	1.870	.698

Notes: (i) Chi Square Values for models: model 1, 10.621, p<= .005; model 2, 58.691, p< .001; model 3, 63.238, p< .001; model 4, 98.169, p< .001.

(ii) ** predictor is statistically significant at the .001 probability level; * predictor is significant at the .05 probability levels. Similar indicators are employed in the subsequent statistical tables.

Dependent variable: primary research emphasis this year is international in scope

The results of the logistic regression analysis for the dependent variable, “The emphasis of your primary research this year is international in scope” are presented in Table 6. A cursory review of Table 6 reveals that all four

regression models are statistically significant. However, the only significant demographic predictor (gender or being male) loses its power in subsequent models once controls for the socialization, institutional and work role variables are introduced. Beginning with model 2, the *socialization* variables represented by the number of years spent abroad *post*-baccalaureate emerge as significantly predictive of the probability that a faculty member's primary research focus is international in its scope. The odds ratio suggests that those faculty members who have spent some time abroad are 3- to 5-times more likely to have a research agenda which is international in orientation than those who have not spent time abroad. The years spent abroad variables are significant in every model in which their impact is estimated. Not only are they consistently significant, but they have the strongest influence of all the predictors considered in the analyses. In terms of the institutional context factors, institutional type emerges as a mildly significant predictor with non-research university faculty slightly more likely to report an international focus in their primary research. The extent to which faculty are the main drivers of internationalization efforts on their campuses is also modestly significant in the third model, but disappears when the work role variables are introduced in the fourth model. The final model reveals that in addition to the years spent abroad predictors, years since first appointment (a proxy for career age or stage), institutional type, primary research is basic, primary research is social and level of involvement in research all significantly increase the odds of whether or not an individual faculty member is likely to have a research focus that is international in scope.

With respect to the years since first appointment variable, the size of exp (B) implies that for each year since the first appointment, the odds that an individual will pursue an international research agenda increase by 1.031. The results in Table 6 also suggest that individuals working in comprehensive non-doctoral granting universities are more likely to indicate that their research is international in scope as opposed to those in research and doctoral granting institutions. Other interesting findings based on the fourth model are as follows: (i) individual faculty who are engaged in 'basic research' are four times more likely to be pursuing research that is international in scope; (ii) faculty whose research is directed at 'bettering society' are more apt to have a research agenda that encompasses international issues; and (iii) being highly involved in research is likely to increase the odds of having an international research focus by 2.609.

Table 6. Logistic regression results for dependent variable: 'primary research international in scope' (N= 332)

Logistic Models	exp (B)	Standard Error
Model 1 (Demographic variables)		
Male	**1.802***	.235
Constant	.965	.189
Model 2 (Early socialization and background variables)		
Male	1.461	.253
U.S. citizen at birth	1.127	.389
Years abroad post baccalaureate (1-2 years)	**5.031****	.398
Years abroad post baccalaureate (3+ years)	**3.166****	.379
Discipline: STEM	**2.785****	.275
Constant	.629	.416
Model 3 (Demographic, early socialization and institutional pressure variables)		
Male	1.476	.255
U.S. citizen at birth	1.090	.391
Years abroad post baccalaureate (1-2 years)	**4.1937***	.402
Years abroad post baccalaureate (3+ years)	**3.108***	.385
Discipline: STEM	1.248	.283
Institutional Type: Research University	.952	.271
Faculty drive campus international initiatives	**1.798***	.251
Administration supports research	.865	.287
Constant	.608	.485
Model 4 (Demographic, early socialization institutional pressure and current work role variables)		
Male	1.293	.283
U.S. citizen at birth	1.304	.442
Years abroad post baccalaureate (1-2 years)	**4.558****	.437
Years abroad post baccalaureate (3+ years)	**4.118****	.432
Discipline: STEM	1.146	.316
Institutional Type: Research University	**.473***	.342
Faculty drive campus International initiatives	1.419	.284
Administration supports of research	.839	.315
Years since first faculty appointment	**1.031***	.012
Tenure status: tenured or tenure eligible	1.447	.411
Primarily teach undergraduates	.882	.295
Orientation primarily to teaching	1.044	.303
Primary research is "basic"	**4.016****	.318

Primary research is "applied/practically-oriented"	1.147	.373
Primary research is "commercially-oriented/ for technology transfer"	1.603	.328
Primary research is "socially-oriented for the betterment of society"	**1.989***	.329
Primary research is based in one discipline	1.126	.299
Primary Research is multi-disciplinary	1.259	.490
High involvement in research	**2.609****	.293
Constant	.035	.897

Note: Chi Square Values for model s: model 1, 6,290 p<= .012; model 2, 34.649, p< .001; model 3, 40.446, p< .001; model 4, 90.263, p< .001.

In sum, as with the infusion of international content in one's teaching, the integration of international perspectives in one's research is most strongly predicted by the common socialization variables – years spent abroad *post*-baccalaureate degree – and relatively impervious to basic demographic influences, including gender and nativity. While both are subject to the relatively mild effects of institutional pressures, it appears to be in opposite directions: research university faculty are more likely to infuse international perspectives into their teaching, while less likely than non-research university faculty to report their research as international in scope. In terms of work role, those highly involved in research and whose research focus is 'basic' are more likely to report their research as international in scope while those whose research focus is commercially and socially orientated are more likely to report the infusion of international perspectives into their teaching. Finally, faculty in the later stages of their careers are slightly more likely to report an international focus to their research than new faculty.

Dependent variable: collaborate with international colleagues in research

Reported in Table 7 are the logistic regression results for the dependent variable "collaborate with international colleagues in research." All the models with the exception of the first model were found to be statistically significant – suggesting that the models are indeed constructive in helping us to predict the likelihood of U.S. faculty collaborating with their colleagues abroad in their research. Across all three models (models 2, 3 and 4), the early socialization and educational background variables – in particular, the number of years spent abroad *post*-baccalaureate – continue to emerge as strong predictors of faculty collaboration with international scholars in the area of research. The odds ratio reported in Table 7 (exp (B)) suggests that those U.S. faculty who reported spending between 1-2 years abroad after receipt of their undergraduate degree

were four-times more likely than those who had not spent any time abroad to collaborate with foreign colleagues in research. Among institutional context factors, the degree to which campus internationalization efforts are driven by faculty (rather than administrators) was significantly associated with the likelihood of faculty collaborating with foreign colleagues. This variable is significant in the two models in which it is tested even after we control for the early socialization/educational background and current work role variables. The odds ratio (exp (B)) for this predictor is 3.959 and 3.008 for models 3 and 4 respectively. These results indicate that those faculty working in higher education institutions in which the primary leadership in establishing international linkages resides in the faculty are three-times more likely than those faculty in institutions where internationalization initiatives are administratively driven to collaborate with international colleagues in research. The emergence of this 'faculty leadership' predictor is a key distinguishing feature.

Table 7. Logistic regression results for dependent variable: 'collaborate with international colleagues in research' (N= 325)

Logistic Models	exp (B)	Standard Error
Model 1 (Demographic variables)		
Male	1.442	.252
Constant	.415	.209
Model 2 (Early socialization and educational background variables)		
Male	.963	.277
U.S. citizen at birth	1.169	.389
Years abroad post baccalaureate (1-2 years)	4.010***	.340
Years abroad post baccalaureate (3+ years)	2.702**	.364
Discipline: STEM	2.785**	.275
Constant	.223	.435
Model 3 (Demographics, early socialization and institutional pressure variables)		
Male	.992	.292
U.S. citizen at birth	.939	.403
Years abroad post baccalaureate (1-2 years)	4.187**	.359
Years abroad post baccalaureate (3+ years)	2.412*	.383
Discipline: STEM	2.432**	.297
Institutional Type: Research University	2.412**	.331
Faculty drive campus international initiatives	3.959**	.267
Administration supports research	1.331	.761
Constant	.073	.565

Model 4 (Demographics, early socialization, institutional pressure and current work role variables)		
Male	.880	.326
U.S. citizen at birth	1.395	.466
Years abroad post baccalaureate (1-2 years)	**3.980****	.407
Years abroad post baccalaureate (3+ years)	**2.641***	.429
Discipline: STEM	**2.054***	.348
Institutional Type: Research University	1.101	.403
Faculty drive campus international initiatives	**3.008****	.303
Administration supports research	1.084	.358
Years since first faculty appointment	1.016	.013
Tenure status: tenured or tenure-eligible	2.710	.553
Primarily teach undergraduates	.780	.328
Orientation primarily to teaching	.544	.351
Primary research is “basic”	**3.565****	.406
Primary research is “applied/practical”	.660	.425
Primary research is “commercial”/ for technology transfer	**2.421***	.356
Primary research is “socially-oriented” for the betterment of society	**.399***	.356
Primary research is based in one discipline	.960	.328
Primary Research is multi-disciplinary	1.911	.475
High involvement in research	**3.490***	.349
Constant	.010	1.110

Note: Chi Square Values for models: model 1, 2.145 p<= .143; model 2, 37.481, p< .001; model 3, 65.523, p< .001; model 4, 118.534, p< .001.

Among the current work role variables that are examined in model 4, four were found to have a significant influence on collaboration with international colleagues in research. These were: (i) primary research is ‘basic’ in orientation (exp (B) =3.565); (ii) primary research is commercially oriented (exp (B) = 2.421); (iii) primary research is socially oriented (exp (B) =.399) and high involvement in research (exp (B) =3.490). In all but “the primary research is socially oriented”, the odds of collaboration with international colleagues in research increases if faculty indicate that their primary research is basic, applied or commercially-oriented. For example, those who indicate that their research focus concentrates on commercial issues are twice as likely to have collaborative arrangements with international colleagues as those whose research is non-commercial in thrust. On the other hand, the odds decrease for those faculty who state that their primary research seeks to better society: these are less likely to report collaborating with international colleagues than their counterparts – suggesting that research oriented to social problems may more likely be circumscribed by national borders than other types of research.

Dependent variable: co-author with foreign colleagues

Co-authoring with foreign colleagues was the third outcome measure that was used to test the tenability of the conceptual model. The findings for this dimension of faculty internationalizing behavior are presented in Table 8. With the exception of the background model, all the models that were examined through the hierarchical logistic regression equations were found to have significant predictive power in explaining whether individual U.S. faculty co-authored publications with foreign colleagues or not. Unlike the previous findings reported in Tables 5-7, however, the pattern of results here shows some intriguing differences in formative influence on internationalization. Co-authorship with foreign colleagues, for example, is the only dependent variable for which birth citizenship, when all other independent variables are held constant, is significant. In all three models in which its effects are examined, being born outside the U.S. favorably predicts the odds of co-authoring with peers from abroad.

The findings for the socialization variables of years spent abroad are also interesting. While they remain significant predictors, only those faculty who spent one to two years outside the country *post*-baccalaureate were likely to have co-authored with a foreign colleague as compared with their U.S. peers who had spent no time abroad. More extensive stays outside the country, as reflected in the second independent variable of three years or more, did not significantly predict the likelihood of co-publishing with a non-U.S. colleague (see models 2 through 4 in Table 8).

The degree to which U.S. universities' internationalization efforts are led by their respective faculties was found to increase the odds of U.S. professors co-publishing with their counterparts elsewhere in the world (exp (B)=2.255). This was one of two dimensions of U.S. faculty internationalization in which this predictor was found to make a difference; the second dimension of internationalization was "collaborate with international colleagues". This relationship holds even after controlling for the work role variables. Faculty whose primary research interest focuses on social issues are less inclined to have co-authored with foreign colleagues than those without such an interest (exp (B) =.423). Faculty who report high research involvement overall are decidedly more likely to have co-authored publications with a foreign colleague than those less involved in research (exp (B) =5.346).

Table 8. Logistic regression results for dependent variable: 'co-author with foreign colleagues' (N=319)

Logistic Models	exp (B)	Standard Error
Model 1 (Demographic variables)		
Male	1.503	.281
Constant	.273	.238
Model 2 (Demographic, early socialization variables)		
Male	1.095	.307
U.S. citizen at birth	**.387***	.390
Years abroad post baccalaureate (1-2 years)	**3.095****	.348
Years abroad post baccalaureate (3+ years)	1.822	.383
Discipline: STEM	**2.039***	.292
Constant	.420	.438
Model 3 (Demographic, early socialization and institutional pressure variables)		
Male	1.199	.319
U.S. citizen at birth	**.321****	.402
Years abroad post baccalaureate (1-2 years)	**3.031****	.358
Years abroad post baccalaureate (3+ years)	1.545	.392
Discipline: STEM	1.679	.309
Institutional Type: Research University	**2.145***	.368
Faculty drive campus international initiatives	**2.238****	.280
Administration supports research	1.066	.333
Constant	.191	.564
Model 4 (Demographic, early socialization institutional pressure and current work role variables)		
Male	1 190	.348
U.S .citizen at birth	**.346***	.450
Years abroad post baccalaureate (1-2 years)	**3.179****	.411
Years abroad post baccalaureate (3+ years)	1.389	.426
Discipline: STEM	1.443	.358
Institutional Type: Research University	.972	.446
Faculty drives campus international initiatives	**2.255****	.310
Administration supports of research	.850	.361
Years since first faculty appointment	1.001	.014
Tenure status: tenured or tenure eligible	2.108	.577
Primarily teach undergraduates	.846	.340
Orientation primarily to teaching	.542	.377

Primary research is "basic"	1.403	.409
Primary research is "applied/practically-oriented"	.492	.439
Primary research is "commercially-oriented/ for technology transfer"	1.583	.376
Primary research is "socially-oriented for the betterment of society"	**.423***	.378
Primary research is based in one discipline	.633	.356
Primary Research is multi-disciplinary	.978	.490
High involvement in research	**5.346****	.402
Constant	.241	1.100

Note: Chi Square Values for models: model 1, 2 .165, p<= .141; model 2, 32.508, p< .001; model 3, 45.333, p< .001; model 4, 87.748, p<=000.

Table 9. Logistic regression results for dependent variable: 'published in foreign countries' (N=321)

Logistic Models	exp (B)	Standard Error
Model 1 (Demographic variables)		
Male	.846	.248
Constant	.564	.200
Model 2 (Demographic and early socialization variables)		
Male	.652	.277
U.S. citizen at birth	.959	.383
Years abroad post baccalaureate (1-2 years)	**3.435****	.330
Years abroad post baccalaureate (3+ years)	**4.657****	.361
Discipline: STEM	1.015	.289
Constant	.402	.420
Model 3 (Demographic, early socialization and institutional pressure variables)		
Male	.684	.281
U.S. citizen at birth	.859	.390
Years abroad post baccalaureate (1-2 years)	**3.424****	.335
Years abroad post baccalaureate (3+ years)	**4.355****	.365
Discipline: STEM	.862	.302
Institutional Type: Research University	1.707	.308
Faculty drive campus international initiatives	1.383	.260
Administration supports research	1.284	.305
Constant	.223	.510
Model 4 (Demographic, early socialization institutional pressure and current work role variables)		
Male	.597	.313
U.S. citizen at birth	.769	.441

Years abroad post baccalaureate (1-2 years)	**3.440****	.380
Years abroad post baccalaureate (3+ years)	**4.056****	.404
Discipline: STEM	.740	.384
Institutional Type: Research University	1.086	.383
Faculty drive campus international initiatives	1.426	.293
Administration supports of research	1.210	.332
Years since first faculty appointment	1.018	.012
Tenure status: tenured or tenure eligible	2.292	.552
Primarily teach undergraduates	1.079	.317
Orientation primarily to teaching	.928	.329
Primary research is "basic"	1.674	.358
Primary research is "applied/practically-oriented"	**.390***	.401
Primary research is "commercially-oriented/ for technology transfer"	.849	.352
Primary research is "socially-oriented for the betterment of society"	**.436***	.347
Primary research is based in one discipline	.662	.323
Primary Research is multi-disciplinary	**2.691***	.429
High involvement in research	**3.743****	.342
Constant	.079	1.031

Note: Chi Square Values for models: model 1, 450, p<= .502; model 2, 32.220, p< .001; model 3, 45.333, p< .001; model 4, 38.014, p< .001.

Dependent variable: publish in foreign countries

Table 9 reports the results of the logistic regression analysis for the dependent variable "Did you publish anything in a foreign country". An examination of the findings in the Table reveals that while the second, third and fourth regression models are all significant; it is the socialization predictors and specifically the number of years spent abroad *post*-baccalaureate that are significant in explaining international publication in the second and third models; and along with research focus and the intensity of involvement in research in the fourth model. The inference that can be drawn with respect to the years abroad variable is the same that has been made in our earlier analyses, namely, that those individuals who have spent time abroad are more likely to have published in a foreign country than those who have not. One predictor that was not found in previous analyses to have been significant, but was significant for this dimension of faculty internationalization is 'primary research is multi-disciplinary'. The likelihood of having published in a foreign country increases by a factor of 2.691 for individuals with a research focus that encompasses more than one disciplinary area.

Discussion and conclusion

The above analyses suggest that while the American faculty remains among the most insular in the world, there is a significant – and modestly growing – segment of the academic profession in the U.S. that is integrating international perspectives into its teaching and research work and reaching out to international networks of colleagues worldwide in their research and publication. The bulk of this paper has sought to identify and illuminate the determinants of such incipient internationalization. Table 10 below summarizes the predictors that attained statistical significance in our analyses of five dimensions of U.S. faculty internationalization. A few overarching generalizations seem to be warranted.

Table 10. Summary: significant predictors (in final regression model) of dimensions of U.S. faculty internationalization, 2007

Predictors	Dimensions of U.S. Faculty Internationalization				
	Courses emphasize international content	Research is international in scope	Collaborate with international colleagues	Co-Author with international colleagues	Publish in foreign countries
(i) U.S. citizen at birth				X	
(ii) Years abroad post baccalaureate (1-2 years)	X	X	X	X	X
(iii) Years abroad post baccalaureate (3+ years)	X	X	X		X
(iv) Discipline: STEM	X		X		
(v) Institutional Type: Research University	Not estimated	X			
(vi) Faculty drive campus international initiatives			X	X	
(vii) Years since first faculty appointment	Not estimated	X			
(viii) Primary research is "basic"	Not estimated	X	X		
(ix) Primary research is "applied/practically oriented"	Not estimated				X
(x) Primary research is "commercially-oriented"	X		X		
(xi) Primary research is "socially oriented" to betterment of society	X	X	X	X	X
(xii) Primary research is multi-disciplinary					X
(xiii) High involvement in research	Not estimated	X	X	X	X

Note: "X" indicates statistical significance at .05 level.

First, socialization factors, especially adult years spent abroad, emerged as the most pervasive and powerful predictors of U.S. faculty internationalization across all five dimensions. A second key socialization factor, academic discipline, emerged as both a less pervasive and less powerful predictor. Faculty in the STEM fields were more likely to bring international content/perspectives to bear in their research and to collaborate/co-publish with international colleagues, while those in the humanities and social sciences were more likely to integrate international perspectives into their course content and teaching.

Institutional pressures were only modestly predictive. The effects of institutional type were neither pervasive nor powerful when current work role and faculty research involvement and interests were controlled. Indeed, current faculty work roles emerged as second only to socialization variables in their power and pervasiveness as significant predictors of the five dimensions of faculty internationalization. Interestingly, the most telling institutional influence on faculty internationalization that emerged from our analyses was the leadership role played by faculty in campus internationalization initiatives. Faculty, as opposed to administratively driven initiatives, appear to achieve greater concrete effects on faculty behavior.

The significance of demographic factors, including gender and nativity, disappeared (with one exception) when controlling for socialization, institutional pressures and current work roles (although career age was significantly associated with a broadening of faculty perspectives as reflected in the content dimensions of faculty internationalization. Among current work role factors, both high involvement in research and a focus on basic research were the most powerful predictors of U.S. faculty internationalization – although a focus on socially oriented research was the most pervasive predictor.

As with most research results, these answer a few questions, but raise or beg many more. In terms of those answered are some strategies related to increasing the international involvements of the American faculty. It is clear that the surest road to internationalizing U.S. faculty is to make sure that they receive some international experience. That suggests that merely hiring foreign-born faculty is not likely to suffice. While the precise nature of that international experience is not clear, what is clear is that it needs to be sustained (*i.e.,* more than a few weeks in duration), that it is quite distinctive in its effects from those of birth or early residence in a foreign country, and that institutions need to build upon that experience to engage their faculty in charting the trajectory of internationalization. Our findings suggest, moreover, that that

trajectory may be shaped by individual faculty interests and orientations, notably their level of research interest/involvement and the focus of those interests (*e.g.* basic, commercial, social, multidisciplinary). One size will not likely fit all.

Our findings, of course, provide no indication of whether, or the extent to which, the factors that shape the American faculty's internationalization of their teaching and research resemble, or differ from, those that shape the internalization of faculties in other developed or developing nations. To what extent, and in what ways, do faculty in other developed and emerging economies resemble the American faculty in the determinants of internationalization of teaching and research – notwithstanding clear differences in magnitude of such activity? Addressing questions such as these will no doubt contribute further to illuminating the insular condition of the American faculty.

References

Altbach, P.G. (1996). *The International Academic Profession: Portraits of Fourteen Countries.* Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.

Altbach, P.G. & Lewis, L. (1996). The Academic Profession in International Perspective. In P.G. Altbach (ed.), *The International Academic Profession: Portraits of Fourteen Countries.* Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.

Blackburn, R.T., & Lawrence, L. (1995). *Faculty at Work: Motivation, Expectation, and Satisfaction.* Baltimore: Johns Hopkins University Press.

Clark, B.L. (1987). *Academic Life: Small Worlds, Different Worlds.* Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.

Cummings, W.K. (2008). The Context for the Changing Academic Profession: a survey of international indicators. In Research Institute for Higher Education (RIHE) (ed.), *The Changing Academic Profession in International Comparative and Quantitative Perspectives.* Hiroshima: RIHE, Hiroshima University.

Fairweather, J. (1996). *Faculty Work and the Public Trust.* Lexngton, MA: D C Heath.

Finkelstein, M.J. (1984). *The American Academic Profession: A Synthesis of Social Scientific Inquiry Since World War II.* Columbus, OH: Ohio State University Press.

Finkelstein, M.J. (2008). Recruiting and Retaining the Next Generation of American Faculty. In D.E. Heller & M.B. d'Ambrosio (eds.), *Generational Shockwaves and the Implications for Higher Education*. Northampton, MA: Edward Elgar.

Finkelstein, M.J., Seal, R., & Schuster, J. (1998). *The New Academic Generation: A Profession in Transformation.* Baltimore: Johns Hopkins University Press.

Gappa, J., Austin, A., & Trice, A. (2007). *Re-thinking Faculty Work: Higher Education's*

Strategic imperative. San Francisco: Jossey-Bass.

Slaughter, S., & Rhoades, G. (2004). *Academic Capitlism and the New Economy: Markets, State and Higher Education.* Baltimore: Johns Hopkins University Press.

Schuster, J.H., & Finkelstein, M.J. (2006). *The American faculty: The restructuring of academic work and careers.* Baltimore: Johns Hopkins University Press.

Wilson, L. (1979). *American Academics: Then and Now.* New York: Oxford University Press.

Zakaria, F. (2008). *The Post-American World.* New York, Basic Books.

Appendix. Coding summary of variables in the study

Variable Name	Original name(s) in CAP	Description
In your courses, you emphasize international perspectives	C4_05_QC4	1="yes (1,2); 0="no"(3,4,5)
Collaborate with international colleagues	D1_1_02_QD1_1	1="yes"; 0="no"
Your primary research is international in scope	D2_05_QD2	1="yes"(1,2) ; 0="no"(3,4,5)
Coauthor with foreign colleagues	D5_03_QD5	1="yes"(>0) ; 0="no"
Publish in foreign countries	D5_04_QD5	1="yes"(>0); 0="no"
Male	F1	1= "male"; 0= "female"
Have children at home	F6	1="yes"; 0="no"
U.S. birth citizenship	GRQF9_1_01_QF9_1	1="yes"; 0="no"
Highest degree obtained in the U.S.	A1_01_A1_2; A1_02_A1_2; A1_03_A1_2; A1_04_A1_2; A1_05_A1_2; A1_06_A1_2 (1)	1="yes, highest degree is from U.S."; 0="no"
Years abroad post baccalaureate (1-2 years)	F13_02_QF13	1="yes"; 0="no"
Years abroad post baccalaureate (3+years)	F13_02_QF13	1="yes"; 0="no"
Discipline: STEM	A2_02_QA2_1	1="yes"; 0="no"
International student increase	C4_09_QC4	1="yes"(1,2); 0="no"(3,4,5)
Institutional type: research or doctoral-granting	A9	1="yes, research or doctoral-granting" 0="no, comprehensive or baccalaureate"
Faculty drive campus international initiatives	E1_11_QE1	1="yes"; 0="no"
Administration supports of research	E4_08_QE4	1="yes"; 0="no"
Years since first faculty appointment	A6_01_QA6	From "1" to "50s"
Tenure status: tenured or tenure eligible	A11	1="yes, either tenured or tenure-eligible" 0="no, other"

Primarily teach undergraduates	C1_01_QC1_1	1="yes, 2/3 or more of my instruction time is spent on undergraduate students" 0="no, less than 2/3 of my instruction time"
Orientation primarily to teaching	B2	1="yes, either tenured or tenure-eligible" 0="no, other"
Primary research is "basic"	D2_01_QD2	1="yes"; 0="no"
Primary research is "applied/practical"	D2_02_QD2	1="yes"; 0="no"
Primary research is "commerce or technology"	D2_03_QD2	1="yes"; 0="no"
Primary research is "socially-oriented" for the betterment of society	D2_04_QD2	1="yes"; 0="no"
Primary research is based in one discipline	D2_06_QD2	1="yes"; 0="no"
Primary research is multi-disciplinary	D2_07_QD2	1="yes"; 0="no"
High involvement in research	D4_01_QD4; D4_02_QD4; D4_03_QD4; D4_04_QD4; D4_05_QD4; D4_06_QD4; D4_07_QD4; D4_08_QD4; D4_09_QD4; D4_10_QD4; D4_11_QD4	1="yes"; 0="no"
Collaborate with others in research	D1_02_QD1	1="yes"; 0="no"

Country Reports on Education and Research Activities

The Academic Profession in a Diverse Institutional Environment: converging or diverging values and beliefs?

Simon Schwartzman [*] and Elizabeth Balbachevsky[**]

Introduction: the expansion of higher education

This article is based on the data from two surveys of the academic profession in Brazil, one carried out in 1992, as part of the Carnegie Foundation comparative survey, and the other in 2007, within the CAP project.

Between 1992 and 2007, Brazilian higher education expanded very rapidly. The number of students tripled, the number of academics more than doubled, and the number of those with masters' or doctoral degrees increased fourfold. During these years, the population increased by 22.4%, reaching about 185 million in 2006, while GNP *per capita* increased by 77%. The high pace of growth in higher education, particularly at the graduate level, was an attempt to compensate for the very low enrolment rates, which went from 7.7% to 22.6% in the period, still very low by international or even regional standards.[1] One main barrier to the growth of higher education in Brazil is still the small number of qualified students coming out of secondary schools.

Most of the growth in higher education took place through the expansion of the private sector. In 1990, 62% of the students were enrolled in private

[*] Researcher, Institute for Studies on Labor and Society, Rio de Janeiro, Brazil, e-mail simon@schwartzman.org

[**] Associate Professor, Department of Political Science, University of São Paulo (USP); Fellow, Research Center on Public Policies – NUPPs-USP, Brazil, e-mail: balbasky@usp.br

[1] The gross rate compares the total number of students in higher education with the total number in the 18-24 age cohort. The net rate, that is the proportion of 18-24 year old students in the 18-24 age cohort, was 4.5% in 1992 and 12.5% in 2006. It is noteworthy that although student numbers have tripled since 1992, the proportion over 24 years old has remained well over 40%.

institutions; in 2006, this percentage had increased to about 77%. The standard description of the differences between the public and private institutions used to be as follows: public higher education in Brazil was free from tuition charges, most courses were provided during the day, and faculty members were civil servants with full-time contracts; to be admitted, students had to pass very competitive entrance examinations. Private institutions, on the other hand, charged for tuition, most of the instruction was given in the evenings, and admission was easy; most of the faculty worked part-time, and had no career plans or job security. Because of these differences, young students from higher economic and education backgrounds tended to enter public institutions, while older people, who need to work and whose education background limited their ability to compete, would enter the private sector. Tuition fees in the private sector could not be very high, as the students were relatively poor; the academic requirements could not be very demanding, as the best students preferred the public institutions; and, consequently, the quality of the education in private institutions was low.

Table 1. Higher education in Brazil, 1991-2006

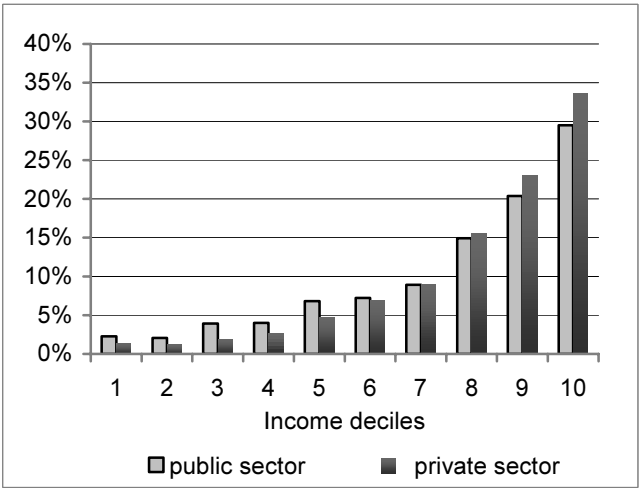
	1991	2006	growth
Number of institutions (1990-2006) (1)	918	2,270	147.3%
Number of private institutions (1)	696	2,022	190.5%
Total undergraduate enrollment (1)	1,565,056	4,676,646	198.8%
Total of graduate enrollment (1992-2006) (1)	55,338	132,882	140.1%
Number of faculty staff (1)	133,135	316,582	137.8%
Number of full-time faculty (1)	57.728	113.848	97.2%
Faculty with a master's degree (1)		115,113	
Faculty with a doctoral degree (1)		70,716	
Faculty with a master's or doctoral degree (1)	46,758	185,829	297.4%
Population (millions) (2)	149.9	183.5	22.4%
Gross enrollment rate in higher education	7.7%	22.6%	
GNP (US $) *per capita* PPP (3)	5,482.1	9,695.2	76.9%

Sources: (1) Brazil, Ministry of Education;
(2) Brazilian Institute for Geography and Statistics (IBGE);
(3) GNP: International Monetary Fund, *2008 World Economic Outlook.*

Both the public and the private sectors, however, are far from homogeneous, and these descriptions, which were never fully accurate, have been changing dramatically in recent years. Admission to public universities can indeed be very competitive in fields like medicine, engineering or law, but it is much easier in fields like education, history, geography or social service. Most teaching in federal universities is provided during the day, but most public state universities

also teach in the evening, and there has been a growing pressure from the federal government on its institutions to increase enrolment and open evening courses.

One consequence of these changes has been some degree of social democratization of access in the public sector, and the emergence of a new, elite segment of private higher education. Compared with a few years ago, public institutions today have more students from lower social backgrounds, while some students from the richest and best educated families may prefer to enter a prestigious private institution rather than a public one. Data for 2006 show that, in public institutions, 2% of the students come from the lowest fifth of the country's income distribution, and 52.2% from the highest fifth; the figures for the private sector are 1.2% and 63.9%, respectively. Thus, a new segment of prestigious, elite private institutions has emerged, particularly in the fields of economics and management.



Source: *National Household Sample Survey*, Brazilian Institute for Geography and Statistics (PNAD-IBGE), 2006.

Figure 1. Students in higher education by income and sector (%)

The creation of an academic profession

How to get qualified academic staff to keep up with this expansion? In the late sixties and early seventies, the Brazilian economy was growing very rapidly, the government's tax basis was also expanding, and the federal government took two initiatives that would change the landscape of higher education and allow Brazil to follow a path that was very different from that of other countries in the region. The first was to create a civil service career for higher education

academics working in federal universities; the second was to adopt the American model of graduate education.

To better understand the impact of these policies, it is important to remember that higher education in Brazil, public and private, has always been geared to teaching for the professions, with the academic staff recruited from among practicing lawyers, medical doctors, engineers and other professionals who taught part-time and earned most of their income from their professional work. Research existed only in some government institutes and a few schools of medicine and agriculture, and, until the 1940s, no institution in the country granted doctoral degrees. Until World War II, only two universities existed in the country, the University of São Paulo, established in 1934 by the state government, and the University of Brazil (now the Federal University of Rio de Janeiro), created in 1940. In the 1950s, the national government created a network of federal universities, bringing together professional schools – some federal, some state, some local or private – that extended throughout the country.

The adoption of the American model of graduate education, superimposed on the professional schools, was the product of initiatives from two different sectors, each with their own values and goals. One was the emerging science and technology sector, gathered originally around the National Research Council and later receiving support from authorities in the Ministry of Economic Planning. For this sector, the goal was to provide Brazil with a critical mass of scientists and engineers who could bring to the country the promises of modern technology, from nuclear energy to advanced weapons, computers and high yielding crops. To do this, it was necessary to provide fellowships for students to go abroad, to create graduate education programs that could recruit the best students and prepare them for advanced work, and to establish competitive research support programs. As much as possible, the new graduate and research programs had to remain free from interference and the bureaucracy of the traditional teaching institutions; for these reasons, support was directed mostly to individuals or newly created autonomous programs within the more traditional institutions.

The other sector was the Ministry of Education, in which an agency for high-level manpower training, CAPES[2], took responsibility for improving the quality of the higher education teaching staff in the country, a very different and much larger task than training a small elite of high quality researchers. While the Ministry of Education created elaborate legislation regulating the

[2] An acronym for the Coordination Agency for High Level Personnel Qualification.

establishment and functioning of degree programs in universities, CAPES took the task of establishing a peer-review system to assess the quality of the existing and newly created graduate programs, based on their academic publications and number of degrees granted. Together, CAPES and the National Research Council (and, in the state of São Paulo, the State Foundation for Science Development, FAPESP) provided fellowships for all students who were admitted to the best-rated graduate programs, and also provided several hundred fellowships every year for doctoral studies abroad, and fuelled research money to their departments.

Still, the pace at which this new generation of graduates could be created was much smaller than what was needed by the rapidly expanded higher education sector. To fill the places in the federal universities, the government decided, in the 1970s, to hire a large number of "temporary staff" who were able later to become permanent and secure in civil-service jobs. To be promoted, they needed to have at least a masters' degree, and a generous program was created to allow them to leave their posts for a few years, keeping their salaries plus a fellowship while completing their degree in some university in the country or abroad. This also stimulated the creation of many graduate programs, mostly at the masters' level, not always of the best quality, to meet this demand. Many years later, the number of faculty members with graduate degrees has grown considerably in public institutions, but still, in the federal system in 2006, only 50% of the faculty had a doctoral degree. The proportion is much higher in the state universities in São Paulo but lower in other state systems.

The requirement that university staff should have graduate degrees was also extended to the private sector. Private, teaching institutions that do not have university status are supervised by the federal government, with the authority to allow them to function and to decide how many students they can enroll, among other attributions. To gain independence from the government, private institutions need to become universities, and for that one requirement is that they need have at least some graduate education programs and a proportion of their faculty with full-time contracts and advanced degrees. This requirement runs against their bare-bones economic rationale, based on low tuition and part-time teaching staff. They responded by trying to fulfill these requirements at the lowest possible cost, opening masters' programs in soft fields, and hiring the smallest possible body of full-time, academically trained staff. This was the situation in 1992, and had not changed much in 2007.

Table 2. Employment status and academic qualifications, 2006

	Total	Full-time	Part-time	No contract	Doctoral degree	Masters' degree
Federal	58,078	83.6%	12.9%	3.5%	47.3%	26.9%
State	41,007	73.2%	19.7%	7.1%	40.7%	27.9%
Municipal	7,914	19.0%	17.6%	63.5%	15.3%	39.5%
Private	118,739	13.7%	20.1%	66.2%	9.4%	38.9%
Philanthropic	91,144	19.2%	26.4%	54.4%	16.4%	4'.4%

Source: Ministry of Education, *Higher education Census*, 2006.

In this paper, we argue that the two agendas for the creation of an academic profession in Brazil – that of the R&D establishment, and that of the education authorities, in spite of their similarities of purpose, in fact diverged, and created a situation in which one hindered the other. For most academics, the requirements that they should have a doctoral degree and be scientifically productive is perceived as an external constraint, which they try to accommodate, but which is actually unrelated to their daily activities and teaching requirements. In addition, for the private sector, it means a financial burden that only large institutions can afford, an expense perceived as unrelated to their objectives and to those of their students. For the R&D establishment, it has created a large constituency of research departments and groups of very different standards of quality and relevance, which forces the R&D agencies to spread their resources thinly, and tends to lower the assessment criteria for research support.

In the ideal, "Humboldtian" university, the academics are researchers, work full-time in their institutions, and consider teaching as something which follows from research, rather than as their main priority. In practice, this close association between teaching and research is more likely to occur in graduate education than at undergraduate level, where the distance between the teaching programs and the research agendas of academics is usually wide. This tension exists in all countries, as research tends to be concentrated in a small number of highly qualified institutions, while higher education expands to include an ever larger proportion of the population.

In Brazil, the distance between the research ideal and the reality is so obvious that, both in 1992 and 2007, we decided to stratify the sample of academics in our surveys according to the characteristics of their institutions, in terms of their proximity to the Humboldtian model. In the 2007 survey, the sample was stratified according to whether the institution was public or private, and on whether it was closer to a research institution in the public sector (defined by the number of academics with doctoral degrees) or an elite institution in the

private sector (also based on the number of doctors and full-time contracts). We also included a number of research institutes outside the universities that provided graduate education. The 1992 survey also took these distinctions into account, and, for comparative purposes, it is possible to stratify the 1992 sample by the same criteria, except for the research institutes, which were not included in that survey. In both surveys, the more academic and elite institutions were over-represented.

Professional identities: teaching or research?

Both in 1992 and 2007, we asked academics whether their priority was teaching, research, or both. In the Humboldtian model, they should give priority to research, and place teaching in second place. In fact, there was a significant increase in the priority given to research between those years, but there are many that still give priority to teaching over research, or to the exclusion of research, as the table and figures below indicate.

The decrease of academics declaring priority to teaching only is evidence that the notion that academics should do research has become dominant. In part, this is related to the sheer growth of the proportion of academics with doctoral degrees; but the priority given to research by persons without a doctoral degree also increased in all kinds of institutions, suggesting that the Humboldtian model became accepted as the way things should be, while teaching as a priority lost its legitimacy. However, in 2007 there were still a significant number of academics in private and public institutions who gave no priority to research.

Table 3. Priority to teaching or research, 1992-2007

	Year	Given to teaching	Emphasis on teaching	Emphasis on research	Given to research
Research universities	1992	10.6%	36.6%	47.2%	5.6%
	2007	2.6%	35.6%	55.2%	6.7%
Other public universities	1992	21.4%	39.8%	37.1%	1.7%
	2007	6.1%	42.2%	45.2%	6.5%
Private elite universities	1992	15.7%	38.2%	40.4%	5.6%
	2007	9.9%	40.4%	44.4%	5.3%
Other private institutions	1992	24.4%	45.7%	28.7%	1.2%
	2007	12.3%	49.3%	34.5%	3.9%
Research institutes	2007	0.0%	10.2%	46.9%	42.9%

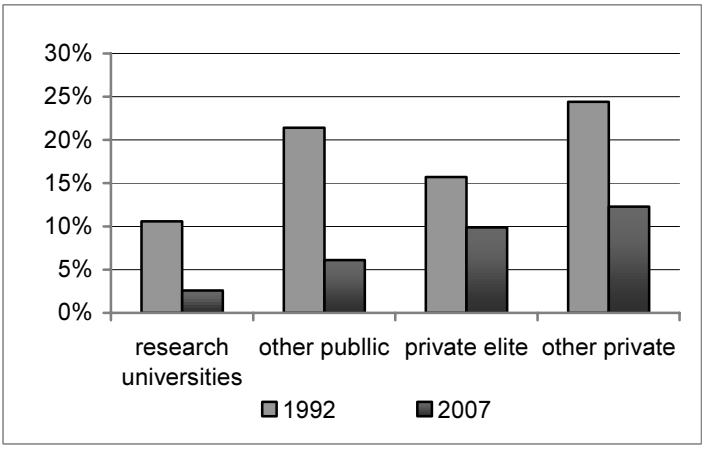


Figure 2. Priority given by respondents to teaching only, 1992-2007

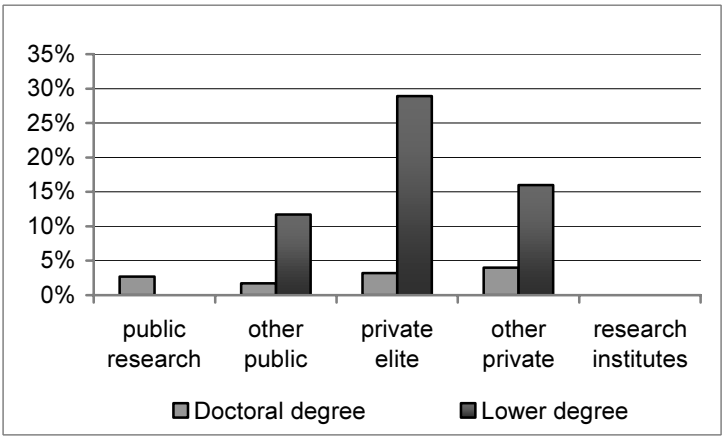


Figure 3. Priority given by respondents to teaching only, by academic degree, 2007

To declare that one's priority is research does not say much about how this research is being done, or how intense is one's research work. A basic condition for an academic to do research is to be able to work full-time in his field, and not to have a too heavy teaching load. In Brazil, full-time employment was introduced in public universities to respond to the demands of academics for higher payment, and justified in terms of the need to allow them to do research, which sometimes they do, but sometimes do very little or none. We can see that, in 2007, full-time contracts, which was the rule in public institutions in our sample, reached 50% for academics in private elite institutions, and went down from 34% to 22% in the private, non-elite sector. In the private sector, part-time employment is the rule, except for a small group of academics

who get full-time jobs to meet the formal requirement from the education authorities. Another important difference between the public and private sector is that, while in the public sector all academics have job security, in the private sector they can be dismissed at will.

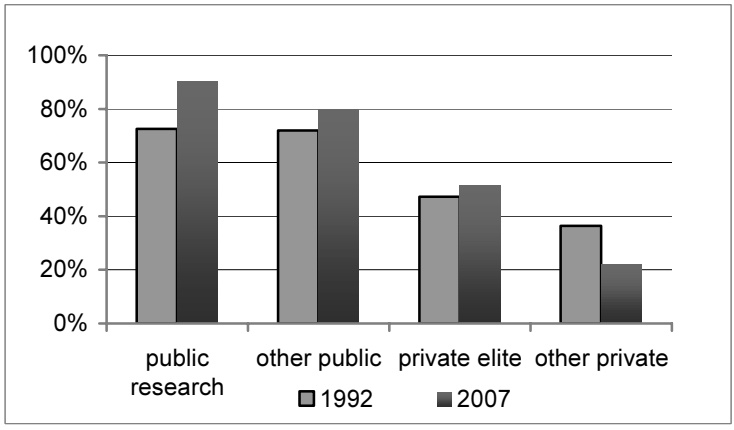


Figure 4. Proportion of academics with full-time contracts

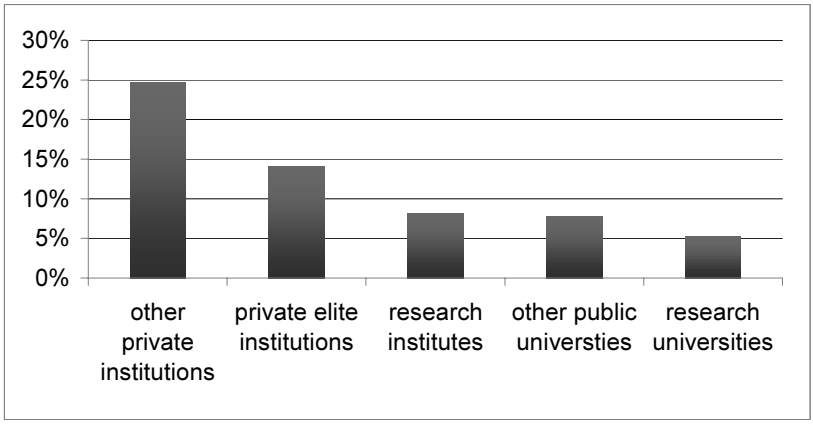


Figure 5. Proportion of academics with another main academic affiliation

A full-time contract, moreover, does not mean that the academics could not have another activity, sometimes legally, sometimes just tolerated by the employing institution. In the 2007 survey, 45.7% of the sample had a secondary job or activity, and sometimes more than one. For academics in the private, non-elite universities, one-quarter of them declared that this was not their main academic institution. The proportion in other sectors was smaller, but still significant.

Table 4. Outside jobs or activities

	Research univ.	Other public univ.	Private elite univ.	Other private inst.	Research institutes
Has another work or job	18.3%	30.7%	50.6%	66.5%	24.5%
Kind of job:					
Other academic institution	6.6%	14.5%	24.0%	39.2%	16.3%
Company	2.5%	6.4%	7.0%	18.9%	2.0%
NGO	4.6%	5.1%	6.4%	7.8%	2.0%
Self-employed	6.6%	11.8%	21.6%	19.8%	2.0%

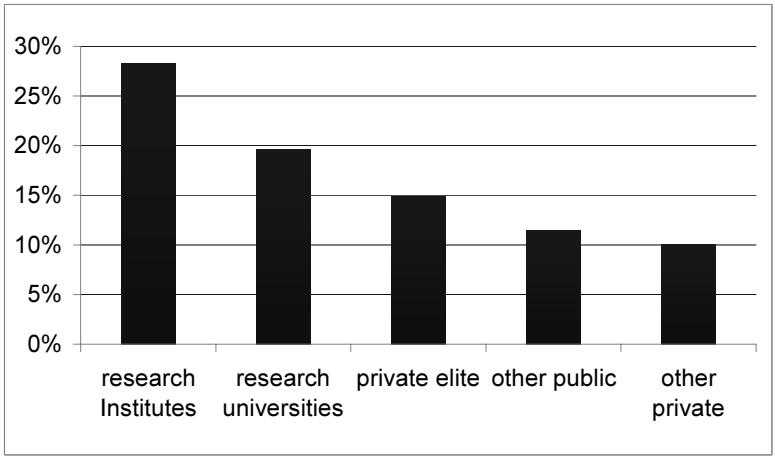


Figure 6. Proportion of academics with doctoral degrees obtained abroad (2007)

Moreover, a "doctoral degree" can mean different things. One important difference is whether it was obtained in Brazil or abroad. Brazil has a significant number of high quality doctoral programs, but it is possible to assume that a degree obtained in a good university abroad would provide a better qualification, on average, than a degree obtained in Brazil. In 1992, 35% of the academics with doctoral degrees had obtained them abroad; in 2007, only 15% did. There were important differences among institutions in terms of where their doctors got their degrees, with more persons with foreign degrees in research-intensive institutions than elsewhere.

Finally, different institutions specialize in different fields of knowledge. In the public universities, the health sciences have the largest number of academics; in the private sector, most of the academics are in the social sciences and professions; in the research institutes, the hard sciences prevail.

Table 5. Field of highest degree by type of institution

	Research univ.	Other public univ.	Private elite univ.	Other private inst.	Research institutes
Education	4.9%	12.6%	3.8%	13.5%	
Arts, humanities	6.0%	9.0%	5.6%	6.5%	2.1%
Social science	8.2%	8.3%	18.8%	13.3%	10.4%
Business and economics	3.3%	7.9%	25.0%	13.1%	2.1%
Law	2.2%	1.4%	7.5%	8.6%	
Life science	6.0%	9.0%	3.1%	2.9%	10.4%
Physics, mathematics	15.2%	7.6%	11.9%	3.8%	43.8%
Engineering	14.7%	10.8%	11.3%	6.3%	14.6%
Agriculture	3.3%	4.3%		1.4%	
Health sciences	27.2%	18.0%	4.4%	17.3%	2.1%
Other	9.2%	11.2%	8.8%	13.3%	14.6%

In short, while the number of academics with doctoral degrees increased, and in spite of the fact that the notion that research should be the priority became widespread, Brazilian higher education is still far from reaching the Humboldtian ideal of research-intensive universities and research-based academic careers. The differences between different types of institutions do not seem to be narrowing. In all institutions, academics with doctoral degrees are distinctly older than their non-doctoral colleagues, and, given the relatively high age of the latter, is not likely that they will eventually reach the academic levels of their elders. The youngest group of academics is those without doctoral degrees in the rapidly expanding private sector, which is clearly not giving priority to the academic credentials of their teaching staff.

Table 6. Mean age, by academic degree and institution

	Doctoral degree	No doctoral degree	Total
Research universities	48.0	45.3	47.9
Other public universities	47.0	41.4	44.9
Private elite universities	47.5	46.8	47.3
Other private institutions	43.9	41.2	42.0
Research institutes	46.4	54.5	46.7
Total	46.6	41.9	44.6

The real life of academics, 2007

Academic life in Brazil is not perceived as a particularly demanding occupation. Of the respondents in 2007, 65% declared that they were very satisfied or satisfied with their work: from 60% in the public, non-research universities up to 81.2% in the research institutes. When asked about changes in the working conditions for teaching and research, there is a lower consensus: about a third believes that the conditions have improved, another third that they have not changed, and another third that they are worse now. There are important differences according to the type of institution. On a scale from 1 to 5, academics in research institutes tend to believe that the conditions for research have remained stable in recent years (2.5 on average), while all others believe that the conditions have deteriorated (3 points and above). All believe that the conditions for teaching have deteriorated still further, with a slightly better assessment for the private elite institutions and the research institutes, which only teach selected graduate students.

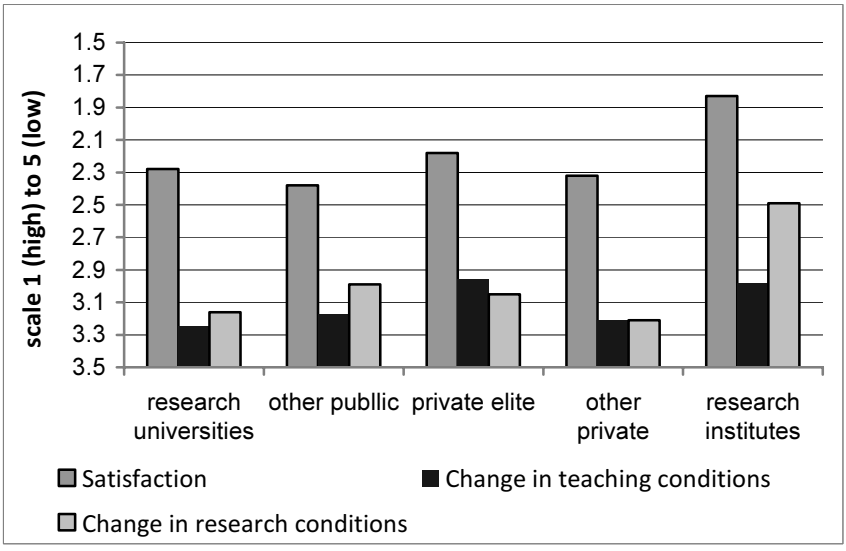


Figure 7. Assessment of working conditions

What do the academics do, in practice? In the 2007 survey, we asked how many hours the academics spent every week in different activities – teaching, research, extension work, administration and other activities. For many, these activities could not be easily separated, and the sum of the time allocated to these different activities very often went beyond the 40 hours which would be the

standard 8 hours, five days work load. Most of the time was spent on teaching, and only in the research institutes did a majority of the staff work more than 20 hours a week on research. The academic degree was much less important, in explaining the dedication to research, than institutional location. In the private, non-elite institutions, 21.6% of those with a doctoral research degree did no research at all, while another 51.4% spent less than 10 hours a week on it.

Table 7. Proportions of respondents spending more than 20 hours *per* week on each academic activity

	Research univ.	Other public univ.	Private elite univ.	Other private inst.	Research institutes
Teaching	28.5%	43.9%	43.8%	49.6%	52.3%
Research	13.5%	18.5%	15.4%	7.1%	81.0%
Extension	6.4%	9.3%	9.1%	7.6%	41.7%
Administration	7.0%	12.3%	11.3%	8.0%	44.4%
Other activities	4.3%	9.6%	5.4%	6.5%	41.7%

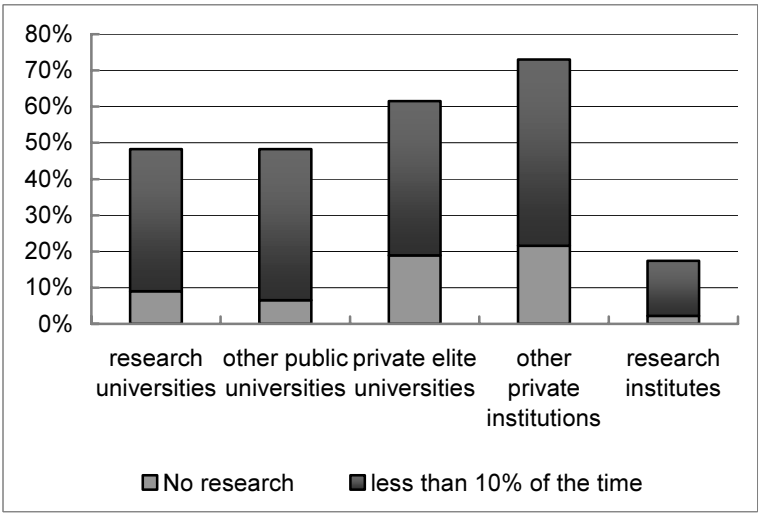


Figure 8. Proportion of respondents with doctoral degrees doing little research, by type of institution

Scientific productivity

The efforts to increase the number of holders of doctoral degrees in research-oriented graduate programs led to a steady increase in the number of

papers published by Brazilians in the international literature.[3] The international presence of Brazilian science is still very small – about 1.8% of the world total – but is by far the largest in the region, amounting to 51% of the Latin American total in 2007.

However, this production is concentrated in a few institutions. In our sample, half of the published articles in the last 3 years came from just 11 institutions. Besides, there is very little in terms of patents. On average, the academic productivity of holders of doctoral degrees in research institutes is higher in all items, and they also show more published articles than the conference papers, which prevail in other institutions.

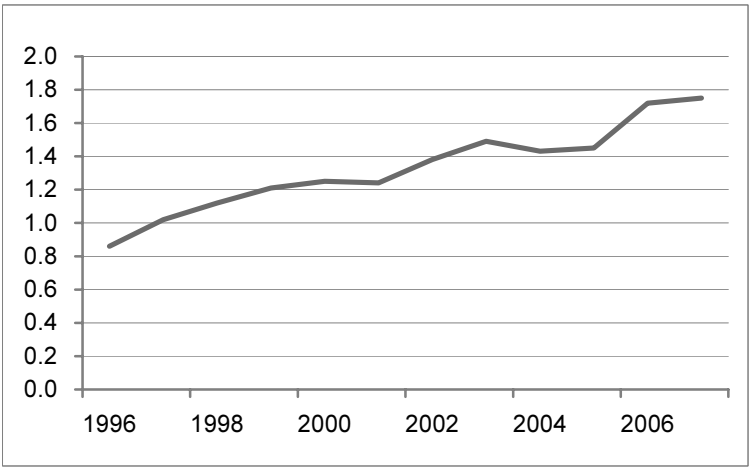


Figure 9. Brazil, production of academic papers as a proportion of the world total, 1996-2007 (%)

Academics in the research institutes not only publish more, but most of their published articles are peer-reviewed and international in character - published abroad, in a language other than Portuguese, and in partnership with researchers from other countries. In this, as in other dimensions, the academics in the research institutes come much closer to the ideal type of an academic professional than those in other institutions.

[3] Data from The SCImago Journal & Country Rank, http://www.scimagojr.com/index.php, based on the Scopus data base (Elsevier).

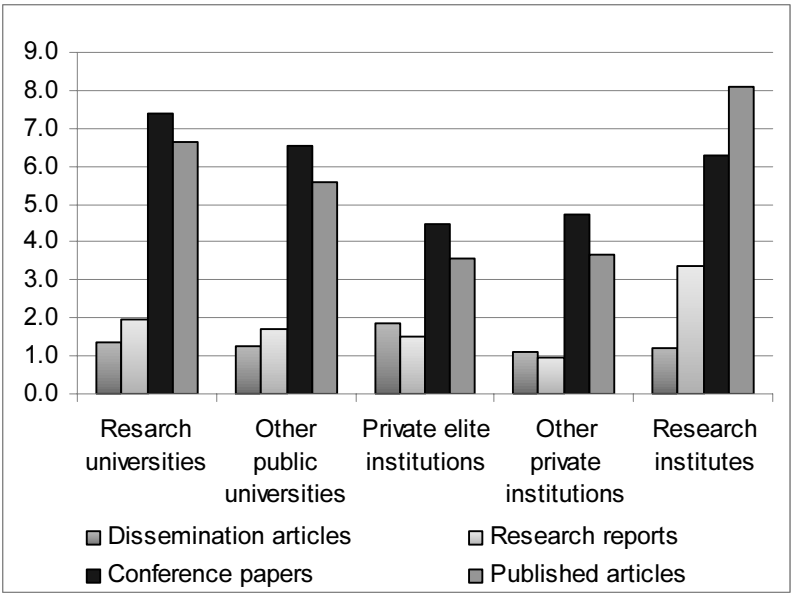


Figure 10. Numbers of academic publications in the last three years (doctoral degree holders)

Table 8. Characteristics of published articles

	Research univ.	Other public univ.	Private elite univ.	Other private inst.	Research institutes
Published in a language other than Portuguese	42.9%	57.4%	38.4%	27.3%	72.4%
In co-authorship with a Brazilian colleague	65.4%	35.1%	57.8%	54.2%	60.2%
In co-authorship with a colleague abroad	16.6%	7.5%	11.3%	6.1%	35.3%
Published abroad	36.2%	26.3%	31.0%	18.5%	66.4%
On-line	33.4%	30.9%	33.3%	27.9%	46.6%
In a peer-reviewed journal	71.7%	35.7%	53.6%	13.5%	90.9%

Institutional and external constraints on research

Most of the research in the country is supported by national research agencies. Academics without a doctoral degree, mostly in private institutions, have to rely more on resources provided by their own institutions, which are

fewer, and with lower requirements in terms of academic quality. Brazilian science is mostly supported by national resources, but academics with higher credentials are more able to get resources from abroad.

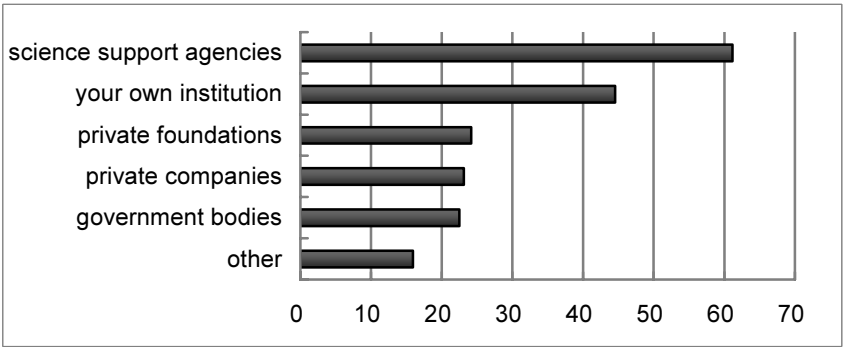


Figure 11. Sources of support for research

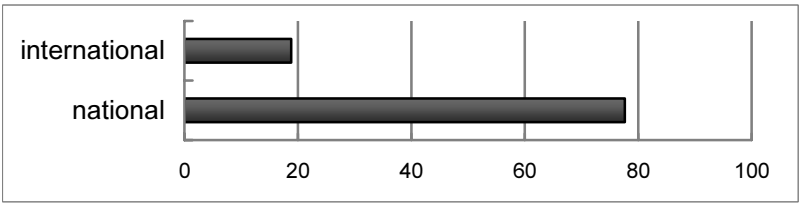


Figure 12. Sources of support for research

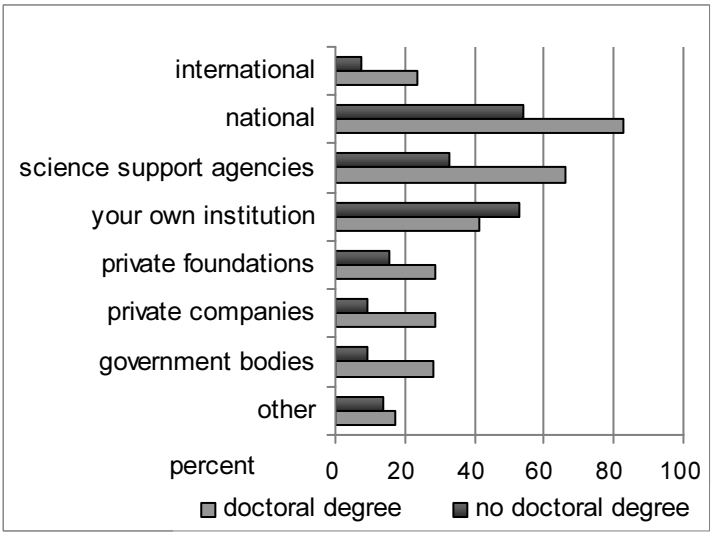


Figure 13. Research support by academic degree

The institutional context affects also the different priorities of the researchers. Compared with the other institutions, research in the institutes is more theoretical and more international in scope and orientation; in private institutions, it tends to be more applied and practical, and also more socially oriented, reflecting the fact that most researchers in these institutions are in the social sciences.

Table 9. Emphasis of main research project

	Research univ.	Other public univ.	Private elite univ.	Other private inst.	Research institutes	Significance (Anova)
Social, to improve society	2.82	2.46	2.76	2.26	3.44	0.000
International in scope and orientation	3.26	3.61	3.04	3.99	2.66	0.000
Applied, practical	2.19	2.07	2.11	1.95	2.72	0.001
Basic, theoretical	2.49	2.41	2.57	2.47	1.74	0.002
Disciplinary	3.69	3.85	3.65	4.02	3.64	0.093
Multi-disciplinary	2.04	1.95	1.82	1.81	2.09	0.147
Commercial, technological transfer	4.15	3.98	4.01	3.92	4.42	0.188

Note: 1="strong emphasis"; 5= "no emphasis".

The main external constraints the academics perceive on their research work is the increased pressure to get external funding for their work, and they feel that these pressures, both for high scientific productivity and practical results, are a threat to the academic quality of their work. Clearly, those in research institutes feel these pressures more than those in universities. Otherwise, the only main difference among institutions is the priority private institutions place on applied and commercial research, and the restrictions they place on the publication of results from privately supported research.

Another perspective on the external constraints can be obtained by looking at who assesses the work done by the academics. Most of the assessment refers to teaching, and is done both by institutional authorities and students. At the other extreme, services are not assessed systematically by anybody. Regarding research, in most cases, and particularly in public research universities, assessment is collegial. In private institutions, as well as in the research institutes, institutional authorities – heads of departments, officers – have a much stronger say. In private, non-elite institutions, there is little assessment by

external reviewers, and almost half of the respondents say that assessments, if any, are done by themselves.

Table 10. External constraints on research

	Research univ.	Other public univ.	Private elite univ.	Other private inst.	Research institutes	Total	Sig.
Increased pressures to get external funding	2.3	2.3	2.2	3.0	2.2	2.5	0.00
High expectation of scientific productivity is a threat to research quality	2.3	2.7	2.5	2.7	2.4	2.6	0.12
Emphasis on interdisciplinary research	2.8	2.7	2.5	2.7	2.4	2.7	0.01
High expectations of productivity	2.7	2.8	2.8	2.8	2.4	2.8	0.23
Research support should focus on the more productive researchers	3.2	3.1	2.8	3.0	2.9	3.0	0.05
Clients do not influence	3.0	3.2	3.0	3.2	2.9	3.1	0.41
Emphasis on applied research	3.4	3.5	3.1	3.3	3.6	3.4	0.04
Increased restrictions on publishing commercial research	4.0	3.9	4.0	3.7	4.2	3.9	0.01
Increased restriction on publishing public research	3.9	4.2	4.8	3.7	4.2	4.1	0.34

Note: 1= “fully agree”; 5= “fully disagree”.

Table 11. Who assesses your work, by academic activity

	Research	Teaching	Services
Peers in the institution	43.5%	46.5%	34.1%
Head of department	36.8%	64.7%	42.8%
Members of other departments	30.0%	18.3%	20.5%
Officer of institution	27.3%	26.9%	37.5%
Students	11.3%	81.6%	23.2%
External reviewers	43.7%	11.7%	13.8%
Yourself (formally)	37.6%	47.8%	36.5%
Nobody	9.2%	5.2%	16.2%
Total (100%)	924	1,158	790

Table 12. Who assesses your research, by type of institution

	Research univ.	Other public univ.	Private elite univ.	Other private inst.	Research institutes
Peers in the institution	63.5%	52.6%	42.3%	24.6%	43.8%
Head of department	27.0%	31.1%	45.5%	40.9%	56.3%
Members of other departments	36.5%	35.9%	31.7%	20.4%	31.3%
Officer of institution	19.0%	21.5%	31.7%	34.8%	29.2%
Students	7.4%	10.8%	9.8%	16.0%	2.1%
External reviewers	55.6%	53.0%	51.2%	25.6%	47.9%
Yourself (formally)	32.3%	36.7%	51.2%	25.6%	47.9%
Nobody	7.9%	6.0%	4.1%	15.3%	4.2%
Total (100%)	189	251	123	313	48

Conclusions: converging beliefs, diverging practices

This overview of the way the Brazilian academics relate to research show that the efforts, started in the 1970s, to turn the academics in Brazil into academic researchers, has succeeded in part in terms of beliefs, but does not seem to be converging in practice. Today, more than in the past, academics believe that they should have a doctoral degree and get involved in research, and the incentives created by the national authorities tend towards that direction. However, in practice, only a minority of researchers in research institutes and in research-intensive public universities can meet these values and incentives. For the others, the alternative is either to give up, and place more emphasis on teaching, or to make some gestures signaling their adherence to the research ideals – attending conferences, writing research reports, and trying to publish an article every year or so. The need to comply with the research ideal, and the inability to do so, is a fertile ground for accommodation and cynicism, which can affect the quality of the missions that higher education institutions are supposed to perform – teaching, research, and services.

This is clearly not a good situation, and the solution to the problem does not seem to consist in pouring more resources and effort in order to turn each of the academics working in Brazilian higher education into a researcher. The best policy would be to concentrate the research effort in places and institutions where good quality and relevant research can really take place, and to provide

renewed status, prestige and support for the functions of general education and teaching for the professions, which were, and remain, the main objectives of higher education.

Acknowledgement

The authors would like to acknowledge the financial support given by FAPESP, Fundação de Amparo à Pesquisa do Estado de São Paulo (2006/03329-0).

Education and Research Activities of the Academic Profession in Japan

Hideto Fukudome* and Tsukasa Daizen**

Introduction

After the 1990s, much legislation has been enacted in Japan in terms of higher education reform. The main issues have dealt with the social and economic problems that are common throughout the world, such as the construction of a knowledge-based society and globalization of the economy, but they also dealt with domestic problems such as the collapse of the bubble economy, decrease of the population of eighteen-year olds, and construction of a society of gender equality (Central Council for Education, 2005).

Since the 1990s Japanese higher education has changed drastically under these conditions. The emphasis of change has fallen particularly on enhancement of the quality of undergraduate education. Since the early 1990s Japanese higher education has expanded (Table 1). The population of eighteen-year olds has been decreasing sharply, but a higher proportion of eighteen-year olds has entered universities, an increase from 26.4% to 47.2%. Corresponding to this expansion of students, teaching at undergraduate level has been the most critical issue since the 1990s.

National advisory councils to the Minister of Education have published some key reports for higher education policy. The University Council's *College Education* in 1991 proposed deregulation of the university curriculum as one of its key proposals. This provided, in effect, the beginning of the reform of undergraduate education. In 1998, the University Council published another

* Associate Professor, RIHE, Hiroshima University, e-mail: fukudome@hiroshima-u.ac.jp
** Professor, RIHE, Hiroshima University, e-mail: tdaizen@hiroshima-u.ac.jp

key report: *A Vision of Universities in the 21st Century and Reform Measures: to be Distinctive Universities in a Competitive Environment*. This report emphasized the need for change in various aspects of university education. In 2005, the Central Council for Education published *The Future of Higher Education in Japan*: the issue here was more focused on enhancement of the quality of university education.

Table 1. Expansion of Japanese higher education between 1992 and 2007

(thousands)

Year	Population of 18-year olds	Number of Newly Enrolled Students in Colleges	College entrances 18-year olds	Number of Undergraduate Students
1992	2,050	541	26.40%	2,184
2007	1,299	613	47.20%	2,566

Note: Numbers of students in Junior Colleges and Colleges of Technology are not included.

However, even if teaching is thought to be the key for Japanese higher education reform, enhancement of many other aspects of university activities is also a critical issue. In this regard, the quality of the academic work of faculty members was seen as the key to effecting major changes in universities' activities. The Japanese academic profession is expected to play various roles in providing the core functions in universities. Particularly in recent years, through university evaluation, faculty evaluation, and faculty development (FD) activities, faculty members have been required to advance their various capacities. However, at the same time, faculty members have become increasingly occupied with non-academic work, such as administration and services. It becomes more and more difficult for them to focus their minds on academic duties, teaching and research, and this appears to present a serious dilemma for the academic profession.

The first half of this paper is devoted to a comparison of the results of the Carnegie survey in 1992 and the Changing Academic Profession (CAP) survey in 2007. We will consider what kinds of changes have occurred in the work and the minds of the academic profession in this situation. Our main focus is on the relationship between teaching and research as constituting the major work of academic profession.

In academic circles, research has, for the most part, been identified as the prime academic pursuit for faculty. It is then useful to know the extent to which faculty is involved in research and to what extent faculty makes scholarly contribution through research. These are the main issues addressed in the second half of this paper.

1. Teaching and research nexus

Context

Ideally, teaching and research in universities should be integrated, and this is the core ideology for the academism of university faculty. Ernest Boyer (1990) conceptualized an integration of teaching and research, and advocated four categories of scholarship as key factors for the academic profession: the scholarships of discovery, integration, application, and teaching. In our rapidly changing environment, ideas of core values for academic professions such as Boyer's are really essential and stimulating. However, when we direct our attention to the daily work of faculty, teaching and research demonstrate great conflicts. It is necessary for faculty to devote much time and energy to every activity if each of them is to be effective. Teaching and research both require capacities and resources. Joseph Ben-David, discussing research and training for research, writes:

> 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).

Burton Clark (1995) investigated the conditions for integration of research, teaching and study, and found, as part of these conditions, a differentiation of the research university sector and the tier for graduate education in each institution. What these discussions indicate is that though the integration of research and teaching is essential for universities, it is a complicated issue and we need specific conditions to attain that integration.

To consider this complicated relationship between teaching and research, in this paper we will analyze preferences, activities, and the processes of training of the Japanese academic professions.

Carnegie survey, 1992

In the Carnegie survey in 1992, the result that had the greatest impact in Japan was that the Japanese academic profession had a very strong orientation towards research compared to teaching. The responses showed that 72.5% preferred research. The orientation toward teaching, 27.5%, was the second

lowest in the 14 countries and areas which participated in the survey (Table 2). This result has seemed to become one of the background characteristics that have prompted Japanese higher education policy to emphasize teaching since the 1990s.

Table 2. Proportions of teaching-oriented faculty (Carnegie survey 1992) (%)

Percent with a Teaching Orientation	
Russia	67.6
Chile	66.0
Mexico	64.9
Brazil	61.9
USA	40.2
Australia	48.2
Hong Kong	45.9
Korea	44.4
UK	44.3
Israel	38.8
Germany	34.3
Sweden	33.1
Japan	27.5
Netherlands	24.8
TOTAL AVERAGE	44.0

Source: Ehara, 1996, p.153.

After the deregulation of the curriculum by the university enactment act in 1991, higher education policy has shifted drastically to push universities to undertake 'educational reforms', which emphasize teaching at undergraduate level. With this trend, the CAP data on the Japanese academic profession's preferences and activities in 2007 is informative.

Activities of the Japanese academic profession

The CAP questionnaire asked each respondent the time in typical week spent on professional activities: teaching, research, service, administration, and other academic activities.[1] In total, the average weekly time spent on each activity had become longer in 2007 than in 1992 except for research (Table 3). The average time spent on research had decreased sharply from 21.6 hours to 17.6 hours. On other activities times have extended, and particularly so for

[1] The questionnaire asked the time spent both during the period of classes in session and vacations. In our analysis, we only use the data on the period when classes are in session.

teaching and administration, each by about 2 hours. Evidently the academic profession in Japan has been experiencing a dilemma, not only between the time available for teaching and research, but also between that for academic work and non-academic work.

Table 3. Average times spent *per* week on professional activities (periods when classes are in session) (hours)

	Teaching	Research	Service	Administration	Other	TOTAL
1992	19.7	21.6	3.4	5.9	2.8	53.5
2007	21.8	17.6	4.6	7.8	3.3	55.1

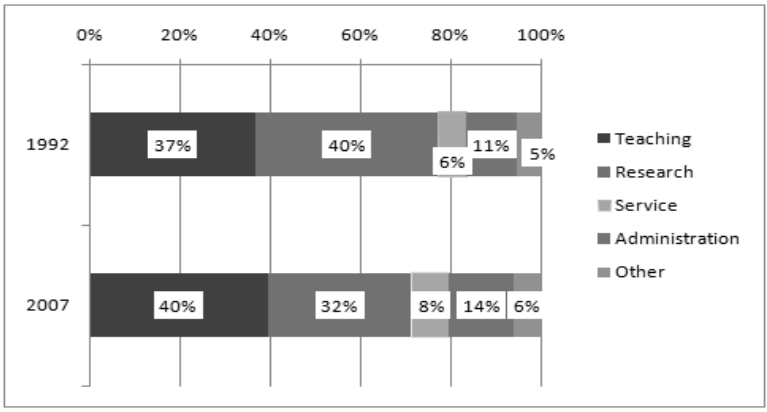


Figure 1. Proportion of time spent *per* week on professional activities (periods when classes are in session)

This changing climate has yielded somewhat different results for research universities and non-research universities. In both types, the average time spent on research shows a similar reduction of about 4 hours; in both, teaching time has been extended, but more in the research than the non-research universities; conversely, time spent on administration and services has increased more in the non-research than the research universities.

Table 4. Average times spent *per* week on professional activities (periods when classes are in session), by university type (hours)

		Teaching	Research	Service	Administration	Other	TOTAL
Research Universities	1992	14.6	24.5	3.6	7.3	3.8	53.7
	2007	17.7	20.9	4.0	7.7	4.1	54.5
Non-research Universities	1992	21.3	20.7	3.3	5.5	2.5	53.4
	2007	23.0	16.6	4.7	7.9	3.1	55.4

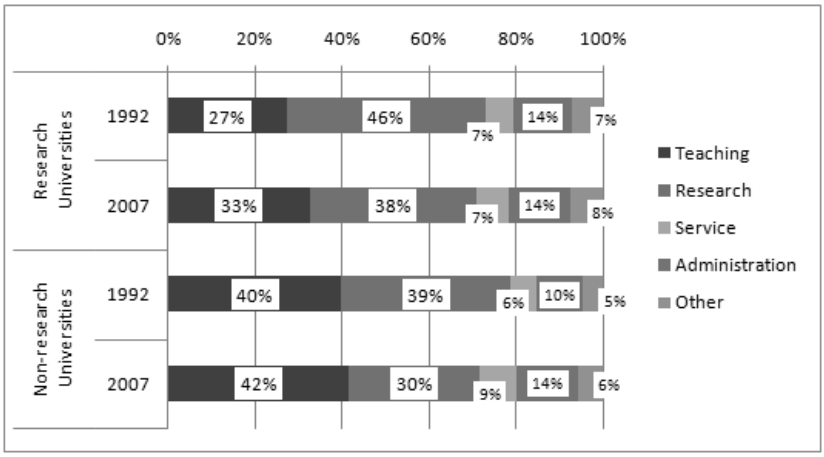


Figure 2. Proportions of time spent *per* week on professional activities (periods when classes are in session) by university type

Preferences of the academic profession

In the changed climate, what has happened to faculty's expressed preferences for research and teaching? In the CAP survey in 2007, 28.3% responded that they preferred teaching to research (Figure 3). There is no significant change in their preferences between 1992 and 2007.

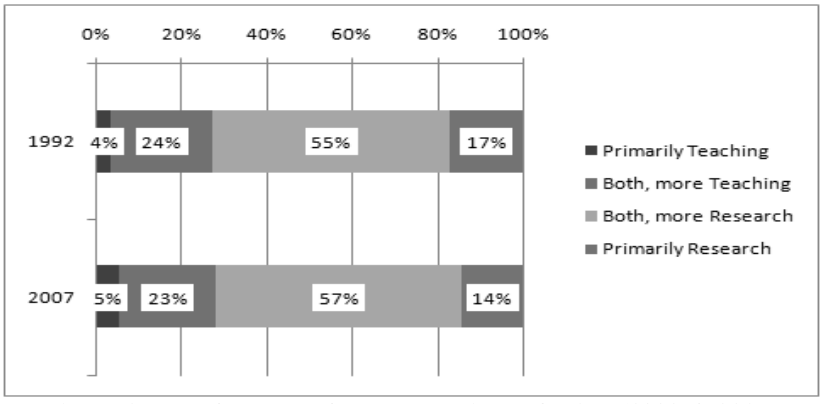


Figure 3. Preferences of the academic profession (1992 & 2007)

When we compare faculty's preferences by types of universities (research universities and non-research universities), we find a clear gap between them (Figure 4). In the 2007 CAP survey, for the research universities, while there is a slight shift of their preferences to teaching, the proportion of respondents with a strong research orientation has decreased by more than 10 percentage points. On the other hand, in the non-research universities, there are no significant

changes in their preferences. Based upon these data, it appears that higher education policy, which has emphasized the enhancement of educational activity, has had major influence on those who previously had expressed a relatively high research orientation.

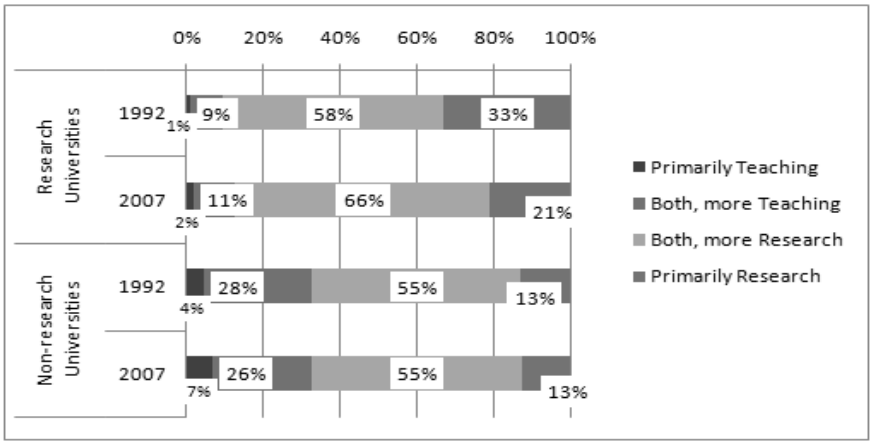


Figure 4. Preferences of the academic professions (1992 & 2007) by university type

The high research orientation of the Japanese academic profession does not inherently deserve criticism. The academic profession is a 'profession' because it has a particular set of knowledge, skills and attitudes. Its various professional activities are based upon these highly specialized capacities. And these capacities and academic features are acquired through research activities. Within the Japanese higher education system, after faculty have been appointed to academic positions in universities, and even after much of their time is spent teaching, they are expected to take at least some part in research activities.

However, when we consider the relationship between research and teaching from the conflict point of view, individual faculty members may well face greater conflict in recent years than in the early 1990s. The appropriate solution is not simply to invert their orientation but rather to devise means to make teaching more significant for faculty members.

Process of training the academic profession

Investigating the reasons why the Japanese academic profession has 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, amongst others.

One of the reasons may be related to the training processes of the academic profession. How does the Japanese academic profession evaluate the graduate education that it experienced as graduate students? The main role of graduate education in Japan is, of course, to give research training to future members of the academic profession. However, in recent years, higher education policy has identified training for teaching at graduate schools as of increased importance. The Central Council for Education's report, *Graduate Education for a New Era* (2005) recommended that graduate education should provide four types of training: for researchers with creative research skills; for professionals with advanced skills and abilities; for university faculty with definite teaching and research skills; and for talented people with advanced and academic skills to actively participate in knowledge-based society. How to integrate the first and third functions is a critical issue for graduate education for the future of the academic professions.

Table 5. Faculty evaluations of graduate education when they were students

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

Note: Proportion answering "very good" or "good".

The questionnaire asked two questions on graduate education: provision of education as a researcher in your own discipline, and education for university teaching.[2] Comparison of the results for 1992 and 2007 showed that both questions got more positive responses in 2007 (Table 5). Graduate education for university teaching got about ten percentage points more positive responses (55.1% to 65.4%), and education as researchers got much higher approval (62.9% to 77.5%) in 2007. These data offer very good signs for the quality of graduate education in Japan.

It is of interest to analyze the relationship of these two responses. How many people who indicate a positive response to the training for researchers respond positively also to the training for university teachers? Comparison of

[2] These questions were not part of the CAP survey but of the Japan project domestic survey with which we can compare results directly with those of the Carnegie 1992 survey. The questions asked respondents to evaluate the education of their 'final degrees', and so excluded the data from those with only bachelors' degrees.

the results between 1992 and 2007 shows no significant change (Table 6). (Nor is there any significant change is in those who responded negatively to both questions.)

Table 6. Cross reference of research training and training for college teaching

(%)			Training for college teaching	
			Good	Not Good
Training for research in disciplines	1992	Good	77.0	23.0
		Not Good	18.3	81.7
		Total	100.0	100.0
	2007	Good	79.3	20.7
		Not Good	17.0	83.0
		Total	100.0	100.0

These results can be interpreted in two ways. When looking at the results positively, we can say that both functions are attained well in an integrated way. But if the general consensus is accepted that graduate education is almost entirely a process for research training, then the situation is that provision for teacher training overlaps and constitutes only a small part of the provision for research training. In other words, training for university teachers is not seen an independent function. On this basis, a preferable interpretation of the provision of training for teachers can be understood as an 'adjunct' to research training. At present, training for university teachers in each institution's graduate program is at an initial stage, and is not yet a complementary activity. Fujimura (2006) compared the results of the 1992 Carnegie survey for Japan and with those for the U.S., and found that in the U.S. the responses were less consistent than in Japan. He concluded that this is because in the U.S., graduate training for university teachers is considered to be largely independent of research training.

If teaching is to become a more definite and more important role for the Japanese academic profession some kind of training for university teachers should be brought into the training processes of the academic profession. As is shown above, in recent years research training at graduate schools is highly evaluated by faculty; now in addition, we need to think how training as university teachers can be introduced effectively and compatibly with research training.

2. The change of research activities

The principal purpose of this part is to show the changes in the quantity of

research activities of the Japanese academic profession from 1992 to 2007,[3] and, by using the results from both studies, to clarify the determinants of the quantities of research outputs (especially, the numbers of articles published in an academic book or journal). In this process, we seek to clarify whether there are differences in the quantity and the determinants of the research activities according to academic discipline.[4]

The change of the quantity of research results

How much do Japanese faculty members contribute through their research?

On average, in 2007, a Japanese faculty member writes 1.9 academic books, edits 0.7 books, publishes 9.7 papers in academic journals, publishes 1.6 monographs, and presents papers 6.7 times at academic conferences (Table 7).

The average numbers of academic books, edited books, papers published in academic journals and research reports or monographs are greater in 2007 than in 1992. But, the average numbers of papers presented have decreased from 1992 to 2007.

Table 7. Change in the numbers of average research outputs according to the research performance form

	CAP Survey (2007)	Carnegie Survey (1992)	
Scholarly books you authored or co-authored	1.91	1.14	***
Scholarly books you edited or co-edited	0.65	0.43	**
Articles published in an academic book or journal	9.66	8.29	**
Research report/monograph written for a funded project	1.56	1.36	n.s.
Paper presented at a scholarly conference	6.65	8.14	**
Professional article written for a newspaper or magazine	1.33	1.89	**
Patent secured on a process or invention	0.53	0.17	***
Computer program written for public use	0.16	0.13	n.s.
Artistic work performed or exhibited	1.23	0.67	*
Video or film produced	0.12	0.17	n.s.

In this and subsequent tables: *** p<0.001; ** p<0.01; * p<0.05

[3] In the following discussion, the results are from the CAP survey 2007 and the Carnegie survey 1992. For details of these surveys see Daizen & Yamanoi (2008).

[4] Daizen & Yamanoi (2008) showed features of the Japanese academic profession's research activities from 1992 to 2007 according to the type of university.

Research performance by discipline

There is a meaningful difference in the average number of research outputs identified in the research performance form classified according to academic discipline (Table 8).

Table 8. Change of the average number of research outputs according to the research performance form classified according to academic discipline, 1992 & 2007

1992	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health and medicine	
Scholarly books authored or co-authored	0.67	1.10	0.84	0.72	1.41	2.72	***
Scholarly books edited or co-edited	0.35	0.45	0.40	0.34	0.33	0.75	n.s.
Articles published in an academic book or journal	3.69	5.85	8.09	7.64	9.19	16.07	***
Research report/monograph written for a funded project	0.29	1.15	1.36	1.46	1.84	2.33	***
Paper presented at a scholarly conference	1.10	3.20	8.31	9.94	8.72	15.92	***
Professional article written for a newspaper or magazine	1.94	2.51	1.14	1.36	2.01	3.40	***
Patent secured on a process or invention	0.00	0.04	0.14	0.35	0.15	0.24	***
Computer program written for public use	0.01	0.08	0.23	0.16	0.00	0.16	n.s.
Artistic work performed or exhibited	0.63	1.61	0.26	0.32	0.42	1.32	**
Video or film produced	0.09	0.08	0.08	0.13	0.04	0.58	***

2007	Humanities	Social sciences	Natural Sciences	Engineering	Agriculture	Health and medicine	
Scholarly books authored or co-authored	1.71	1.96	1.16	0.94	1.83	3.57	***
Scholarly books edited or co-edited	0.79	0.73	0.24	0.41	0.50	1.20	***
Articles published in an academic book or journal	3.19	4.72	10.31	10.29	9.35	14.70	***
Research report/monograph written for a funded project	0.96	0.94	1.47	1.68	1.97	1.83	*
Paper presented at a scholarly conference	1.49	2.63	5.31	11.38	4.89	7.52	***
Professional article written for a newspaper or magazine	1.53	1.69	0.77	0.88	1.78	1.76	**
Patent secured on a process or invention	0.00	0.02	0.49	0.84	0.79	0.49	***
Computer program written for public use	0.02	0.03	0.44	0.15	0.01	0.07	n.s.
Artistic work performed or exhibited	0.84	0.85	0.20	0.57	1.81	2.81	**
Video or film produced	0.12	0.11	0.12	0.06	0.04	0.20	n.s.

For example, faculty in the health & medical sciences published more books and papers in academic journals than those in other specialized fields; similarly faculty in engineering presented more papers at meetings and obtained more patents than those in other fields.

Distribution of the number of papers

According to the distribution of the numbers of papers in academic books or journals (Table 9), 42.2 % of health & medical sciences faculty published less than half of the average number and, conversely, 15.2 % published more than twice the average (above 29.4).

Table 9. Distribution of the number of articles (health & medical sciences), 2007

number of articles	frequency	relative frequency (%)	cumulative relative frequency (%)	number of articles	frequency	relative frequency (%)	cumulative relative frequency (%)
0	6	2.6	2.6	24	3	1.3	81.3
1	11	4.8	7.4	25	5	2.2	83.5
2	15	6.5	13.9	26	2	0.9	84.3
3	15	6.5	20.4	27	1	0.4	84.8
4	12	5.2	25.7	30	13	5.7	90.4
5	23	10	35.7	32	1	0.4	90.9
6	11	4.8	40.4	33	1	0.4	91.3
7	4	1.7	42.2	37	1	0.4	91.7
8	11	4.8	47	38	1	0.4	92.2
9	1	0.4	47.4	40	3	1.3	93.5
10	30	13	60.4	41	1	0.4	93.9
11	1	0.4	60.9	43	1	0.4	94.3
12	4	1.7	62.6	45	1	0.4	94.8
13	1	0.4	63	46	1	0.4	95.2
15	11	4.8	67.8	50	4	1.7	97
17	2	0.9	68.7	60	1	0.4	97.4
18	3	1.3	70	62	1	0.4	97.8
19	2	0.9	70.9	70	1	0.4	98.3
20	14	6.1	77	80	1	0.4	98.7
21	1	0.4	77.4	83	1	0.4	99.1
22	3	1.3	78.7	90	1	0.4	99.6
23	3	1.3	80	97	1	0.4	100
				Total	230	100	

In this way, a large or small number of papers in academic books or journals could be confirmed for each academic discipline. How can these differences in publication be related to differences between the disciplines?

3. Data and conceptual model of the determinants of research activities

It is members of faculty and their associates, such as colleagues and

graduate students who perform research projects. Therefore, the results of a research project are dependent on the personal ability and effort of these people (Daizen, 2008). However, the success of their work is influenced by their attributes and the environment of their research activity. This is documented by extensive studies of research productivity (Bellas & Toutkoushian, 1999; Bland, Center, Finstad, Risbey & Staples, 2006; Bonzi & Day, 1991; Daizen, 1996a, 1996b, 2008; Kotrlik, Bartlett, Higgins & Williams, 2002; Stack, 2004).

A model to examine the factors influencing research productivity is presented schematically in Figure 2.1 and is discussed below.

In developing and application of the model, the initial step is to clarify how the research environment, constituted as indicated in Figure 5, changed from 1992 to 2007.[5]

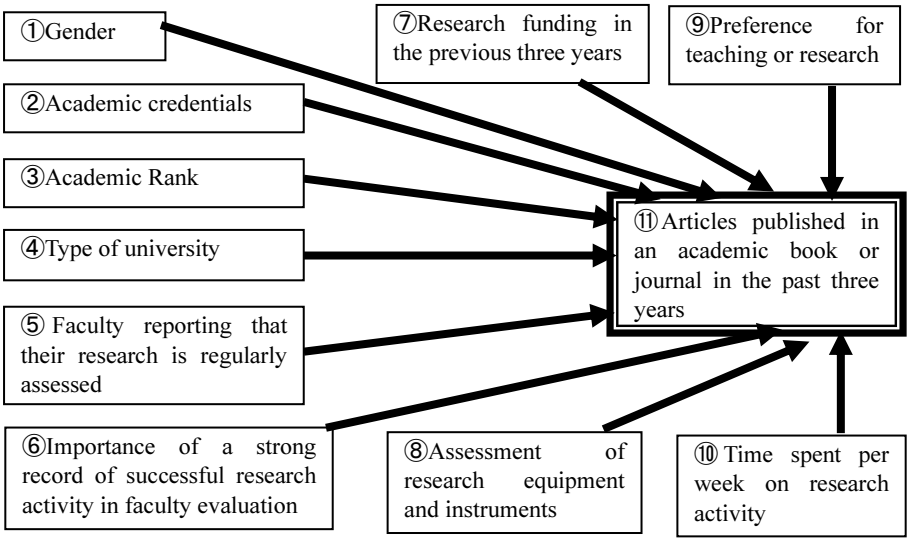


Figure 5. Conceptual model of determinants for research productivity

Gender

The extent to which higher education in Japan was still a male-dominated profession in the last decade of the twentieth century can be seen in Table 10. As of 2007, 84.2% of all faculty was male: of the respondents in the recent CAP survey, 9.0% were female.[6] There are fewer female faculty in the upper ranks

[5] The variables used in this paper are as shown in the Appendix, Table A.

[6] It seems that the big difference in the CAP sample arose because junior researchers were not included in the CAP survey. That is, on average, the grades of women academic staff are lower than those of men.

and in research universities across all institutions (Table 11). In Japan, representation of women has changed very slowly since 1955 when they constituted only 5.0%.

Table 10. Gender distribution of university faculty (%)

	CAP Survey (2007)	Carnegie Survey (1992)	Total Academic Population (2007)	(1992)
Male	91.0%	92.1%	84.2%	92.3%
Female	9.00%	7.90%	15.8%	7.7%

Source: MEXT, 2008.

Table 11. Gender distribution of university faculty by academic rank (%)

	SEX			
	Female	Male	Total	
2007				
Professor	7.0%	93.0%	100.0%	***
Others	11.4%	88.6%	100.0%	
1992				
Professor	5.8%	94.2%	100.0%	**
Others	10.2%	89.8%	100.0%	

Table 12. Gender distribution of university faculty by type of university (%)

	SEX			
	Female	Male	Total	
2007				
National Research	6.2%	93.8%	100.0%	***
National Non-research	9.3%	90.7%	100.0%	
Private Research	6.2%	93.8%	100.0%	
Private Non-research	10.2%	89.8%	100.0%	
1992				
National Research	1.5%	98.5%	100.0%	***
National Non-research	4.1%	95.9%	100.0%	
Private Research	2.6%	97.4%	100.0%	
Private Non-research	12.9%	87.1%	100.0%	

The proportion of women faculty in all types of university has increased in the past 15 years, except for private non-research universities (Table 12).

When we compare the proportions of women faculty according to academic discipline, it is lowest in agriculture (3.9%), and highest in humanities (21.9%) (Table 13). The largest increases in the proportion of woman faculty over the past 15 years have taken place in humanities and social sciences.

Table 13. Gender distribution of university faculty by discipline

	CAP Survey (2007)	Carnegie Study (1992)			CAP Survey (2007)	Carnegie Study (1992)	
Humanities				**Engineering**			
Male	78.1%	91.5%	***		98.9%	99.2%	n.s.
Female	21.90%	8.50%			1.10%	0.80%	
Social Sciences				**Agriculture**			
Male	87.6%	95.9%	**		95.1%	96.4%	n.s.
Female	12.40%	4.10%			3.90%	3.60%	
Natural Sciences				**Medical Sciences**			
Male	94.3%	97.3%	n.s.		91.3%	93.4%	n.s.
Female	5.70%	2.70%			8.70%	6.60%	

In Japan, the proportion of faculty with doctorates increased substantially over the years: from 10% in 1967, to 40% in 1983, and to 78% in 2007.

A doctoral degree is now a prerequisite for employment of faculty in most four-year universities and colleges. Correspondingly, the proportion of those with a bachelor's degree as their highest earned degree has tended to zero. By the time of the CAP survey, most faculty (96%) had received their highest degrees from a Japanese institution – 2% received degrees in the U.S., and the rest in other countries.

Table 14. Academic credentials of university faculty

	CAP Survey (2007)	Carnegie Survey (1992)	
doctorates	78.5%	57.8%	***
others	21.5%	42.2%	

Table 15. Academic credentials of university faculty according to academic discipline

	CAP Survey (2007)	Carnegie Survey (1992)			CAP Survey (2007)	Carnegie Survey (1992)	
Humanities				**Engineering**			
doctorates	33.6%	11.4%	***		96.3%	79.1%	***
others	66.4%	88.6%			3.7%	20.9%	
Social Sciences				**Agriculture**			
doctorates	48.0%	37.1%	*		94.6%	90.2%	n.s.
others	52.0%	62.9%			5.4%	9.8%	
Natural Sciences				**Medical Sciences**			
doctorates	95.1%	83.0%	***		92.6%	93.2%	n.s.
others	4.9%	17.0%			7.4%	6.8%	

Furthermore, while 78.5% of faculty now hold a PhD, there is wide variation among disciplines (Tables 14, 15). A strikingly substantial number of respondents with PhD degrees is found in the natural sciences, in comparison

with the humanities and social sciences. One reason is that there are more doctoral programs available in the natural sciences than in the humanities and social sciences. Thus, the supply of faculty with PhD degrees is higher in those fields where doctoral programs are more common.

Academic rank

Full-time faculty in Japanese institutions of higher education hold one of four academic ranks: *jokyo* (assistant), *kousi* (assistant professor or lecturer), *jyunkyouju* (associate professor), and *kyouju* (full professor).

From 1970 the proportion of full professors increased from 31.4% to 40.7% in 2007. Excluding assistants, who were not included in the CAP survey, the proportion of full professors in Japan increased from 46.1% in 1970 to 53.2%. The composition of the samples in both the CAP and Carnegie surveys have remained effectively unchanged in terms of the ratios of full professors over the period 1992 to 2007 (Table 16).

Table 16. Distribution of academic rank among university faculty

	CAP Survey (2007)	Carnegie Survey (1992)
Professor	55.1%	55.5%
Others	44.9%	44.5%

Table 17. Distribution of academic rank among university faculty according to academic discipline

	CAP Survey (2007)	Carnegie Survey (1992)			CAP Survey (2007)	Carnegie Survey (1992)	
Humanities				**Engineering**			
Professor	63.8%	57.4%	n.s.		63.0%	57.1%	*
Others	36.2%	42.6%			37.0%	42.9%	
Social Sciences				**Agriculture**			
Professor	58.8%	67.4%	n.s.		57.3%	55.4%	n.s.
Others	41.2%	32.6%			42.7%	44.6%	
Natural Sciences				**Medical Sciences**			
Professor	49.5%	55.9%	n.s.		41.2%	41.1%	**
Others	50.5%	44.1%			58.8%	58.9%	

Type of university

Recipients of the questionnaire were chosen by a two-stage sampling procedure. Initially, universities were sampled, and then faculty within those institutions were sampled. Prior to sampling, higher education institutions were divided into research universities (*kenkyu-daigaku*) and non-research universities.

The criteria used to identify research universities were taken from the typology developed by Ikuo Amano (1984). In this paper, the university to which faculty belong was classified as one of four types: national research, private research, national non-research, and private non-research.

In 2007, 17.1% of the respondents belonged to a national research university, unchanged statistically from the proportion in 1992 (Table 18). Again, the distribution of academic disciplines among the types of university also show little or no statistically significant changes between 1992 and 2007 with the exception of medicine where the proportion in the national research universities had doubled (Table 19).

Table 18. Distribution of type of university

	CAP Survey (2007)	Carnegie Study (1992)	
National research university	17.1%	21.0%	*
Others	82.9%	79.0%	

Table 19. Distribution of academic disciplines by type of university (%)

	CAP Survey (2007)	Carnegie Survey (1992)			CAP Survey (2007)	Carnegie Survey (1992)	
Humanities				**Engineering**			
National Research	15.1%	10.1%	n.s.		16.6%	24.9%	*
Others	84.9%	89.9%			83.4%	75.1%	
Social Sciences				**Agriculture**			
National Research	11.1%	12.2%	n.s.		19.8%	28.9%	n.s.
Others	88.9%	87.8%			80.2%	71.1%	
Natural Sciences				**Medical Sciences**			
National Research	28.3%	25.9%	n.s.		11.7%	22.0%	**
Others	71.7%	74.1%			88.3%	78.0%	

Faculty reporting that their research is regularly assessed

Formal schemes of academic staff appraisal have been introduced fairly recently into universities. In 2007, 71.8% of faculty reported that their research activities were evaluated, almost double the proportion in 1992 (Table 20). A similar tendency is shown for all academic disciplines (Table 21).

Table 20. Faculty reporting that their research activities are regularly assessed

	CAP Survey (2007)	Carnegie Survey (1992)	
Yes	71.8%	39.4%	***
No	28.2%	60.6%	

Table 21. Faculty reporting that their research activities are regularly assessed according to academic discipline

	CAP Survey (2007)	Carnegie Survey (1992)			CAP Survey (2007)	Carnegie Survey (1992)	
	Humanities			Engineering			
Yes	35.8%	36.5%	***		65.8%	36.5%	***
No	34.2%	63.5%			34.2%	63.5%	
	Social Sciences			Agriculture			
Yes	31.4%	40.6%	***		61.4%	40.6%	***
No	38.6%	59.4%			38.6%	59.4%	
	Natural Sciences			Medical Sciences			
Yes	36.5%	30.6%	***		66.5%	30.6%	***
No	33.5%	69.4%			33.5%	69.4%	

Importance of a strong record of successful research activity in faculty evaluation

Largely unchanged are the proportions of faculty reporting in 2007 that a strong record of successful research activity is important in faculty evaluation (Table 22); nor, with the exception of engineering, were there any significant differences between 2007 and 1992 according to academic discipline (Table 23).

Table 22. Importance of a strong record of successful research activity in faculty evaluation

	CAP Survey (2007)	Carnegie Survey (1992)	
Strong Agree	30.1%	30.8%	n.s.
Others	69.9%	69.2%	

Table 23. Importance of a strong record of successful research activity in faculty according to academic discipline

	CAP Survey (2007)	Carnegie Survey (1992)			CAP Survey (2007)	Carnegie Survey (1992)	
	Humanities			Engineering			
Strong Agree	22.9%	21.5%	n.s.		24.7%	31.0%	*
Others	77.1%	78.5%			75.3%	68.2%	
	Social Sciences			Agriculture			
Strong Agree	17.3%	22.2%	n.s.		29.2%	28.2%	n.s.
Others	82.2%	77.8%			70.8%	71.8%	
	Natural Sciences			Medical Sciences			
Strong Agree	42.3%	34.5%	n.s.		37.4%	39.7%	n.s.
Others	57.7%	65.5%			62.6%	60.3%	

Research funding in the previous three years

Research grants and funding resources are allocated to faculty from government agencies and to individual institutions. The national universities derive a large part of their institutional funds from government sources.

Responses to the CAP survey indicate that almost all faculty, 95%, have received grants for individual or collaborative research projects in the previous three years, a substantial increase since 1992. About 40% of the respondents have had grants totalling less than $25,000, while about 39% have received $50,000 or more in 2007 (Table 24). Faculty received more grants in 2007 than in 1992, a tendency that was shared across all academic disciplines (Table 25).

Table 24. Research funding in the previous three years

	CAP Survey (2007)	Carnegie Survey (1992)	
Nothing	5.00%	24.80%	***
Less than $ 25,000	37.00%	41.60%	
$ 25,000 to $ 49,999	18.80%	12.80%	
$ 50,000 to $ $249,999	30.30%	17.70%	
$250,000 or more	8.90%	3.20%	

However, the extent of research support varies widely with academic discipline. A high proportion of the large research grants and funding, of $250,000 or more, goes to faculty in the natural sciences (including engineering, agriculture and health and medical science) (Table 25). The distribution of funding among disciplines receiving research moneys is as follows: 1.4% in the humanities, 1.4% in the social sciences, 16.0% in engineering, 25.8% in the natural sciences, 28.3% in agriculture, 27.1% in medicine and dentistry.

Table 25. Research funding in the previous three years according to academic discipline

	CAP Survey (2007)	Carnegie Survey (1992)			CAP Survey (2007)	Carnegie Survey (1992)	
Humanities				**Engineering**			
Nothing	10.1%	50.9%	***		4.0%	22.6%	***
Less than $ 25,000	67.8%	44.2%			24.1%	33.4%	
$ 25,000 to $ 49,999	16.1%	1.8%			23.7%	14.7%	
$ 50,000 to $ $249,999	5.4%	2.7%			40.1%	25.8%	
$250,000 or more	0.7%	0.4%			8.0%	3.5%	
Social Sciences				**Agriculture**			
Nothing	5.4%	26.8%	***		1.6%	17.6%	***
Less than $ 25,000	68.2%	49.7%			24.2%	35.1%	
$ 25,000 to $ 49,999	13.5%	14.8%			18.0%	25.7%	
$ 50,000 to $ $249,999	12.2%	8.1%			42.2%	18.9%	
$250,000 or more	0.7%	0.7%			14.1%	2.7%	
Natural Sciences				**Medical Sciences**			
Nothing	1.4%	16.7%	***		7.6%	15.1%	***
Less than $ 25,000	29.7%	49.7%			27.1%	36.8%	
$ 25,000 to $ 49,999	18.7%	12.5%			18.7%	15.6%	
$ 50,000 to $ $249,999	37.3%	16.7%			33.1%	27.4%	
$250,000 or more	12.9%	4.5%			13.5%	5.2%	

Assessment of research equipment and instruments

In 2007, the proportion of faculty who reported that the research equipment

is excellent was 69.4%, a substantial increase from 1992 (Table 26). Significant increases are indicated across all academic disciplines (Table 27) but significant differences emerge in terms of the levels of satisfaction. Facilities provided in the humanities and social sciences are regarded as far more satisfactory than those in the natural sciences (including engineering, agriculture and health and medical sciences).

Table 26. Assessment of research equipment

	CAP Survey (2007)	Carnegie Survey (1992)	
Excellent	69.4%	49.3%	***
Others	30.6%	50.7%	

Table 27. Assessment of research equipment by discipline (%)

	CAP Survey (2007)	Carnegie Study (1992)			CAP Survey (2007)	Carnegie Study (1992)	
Humanities				**Engineering**			
Excellent	83.9%	59.6%	***		67.0%	41.9%	***
Others	16.1%	40.4%			33.0%	58.1%	
Social Sciences				**Agriculture**			
Excellent	75.2%	59.8%	**		56.5%	35.8%	**
Others	24.8%	40.2%			43.5%	64.2%	
Natural Sciences				**Medical Sciences**			
Excellent	73.5%	44.6%	***		63.6%	55.6%	n.s.
Others	26.5%	55.4%			36.4%	44.4%	

Preference for teaching or research

As was shown earlier (see pages 170, 171, Figures 3, 4) Japanese faculty place great emphasis on research, essentially unchanged since 1992 and shared by all academic disciplines (Table 28).

Table 28. Preference for teaching or research by academic discipline (%)

	CAP Survey (2007)	Carnegie Survey (1992)			CAP Survey (2007)	Carnegie Survey (1992)	
Humanities				**Engineering**			
Leaning toward research	67.4%	68.2%	n.s.		72.3%	70.3%	n.s.
Leaning toward teaching	32.6%	31.8%			27.7%	29.7%	
Social Sciences				**Agriculture**			
Leaning toward research	74.8%	70.9%	n.s.		78.3%	75.4%	n.s.
Leaning toward teaching	25.2%	29.1%			21.7%	24.6%	
Natural Sciences				**Medical Sciences**			
Leaning toward research	80.5%	82.5%	n.s.		76.9%	72.5%	*
Leaning toward teaching	19.5%	17.5%			23.1%	27.5%	

Even so, the time devoted to research has decreased (see pages 169, 170, Tables 3, 4, Figures 1, 2), a change evident across all disciplines (Table 29).

Table 29. Time spent per week on research activities (hours)

	CAP Survey (2007)	Carnegie Survey (1992)	
Total	17.6	22.5	***
Humanities	15.6	21.4	***
Social Sciences	15.3	21.8	***
Natural Sciences	20.4	24.3	**
Engineering	16.1	20.3	***
Agriculture	18.7	23.2	*
Medical Sciences	19.1	24.6	***

4. Determinants of the number of articles published in academic books or journals

To explore which of the explanatory variables identified in Figure 5 contribute significantly to regulation of the numbers of published research papers, a multi-regression analysis was employed. The results for the data from 1992 are displayed in Table 30 and for 2007 in Table 31.

Table 30. Determinants of research productivity (1992)

	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health and medicine	Total
①Gender	0.145	0.124	−0.004	0.043	−0.030	0.040	0.013
②Academic credentials	0.235 **	0.161	0.128 *	0.056	0.085	0.119	0.155 ***
③Academic Rank	0.014	−0.059	0.076	0.147 **	0.096	0.205 **	0.050
④Type of university	0.116	0.084	0.199 ***	0.306 ***	0.439 ***	−0.026	0.102 ***
⑤Faculty reporting that their research is regularly assessed	−0.085	0.016	−0.077	−0.105 *	−0.039	0.092	-0.036
⑥Importance of a strong record of successful research activity in faculty evaluation	0.017	−0.154	0.072	0.142 **	0.031	0.009	0.052
⑦Research funding in the previous three years	0.240 **	0.284 **	0.368 ***	0.208 ***	0.072	0.321 ***	0.342 ***
⑧Assessment of research equipment and instruments	−0.086	0.006	0.023	−0.023	0.256 *	0.052	0.045
⑨Preference for teaching or research	0.132	0.133	0.027	0.187 ***	0.040	0.050	0.055
⑩Time spent per week on research activity	0.150	0.111	0.065	0.079	0.159	−0.033	0.045
R^2	0.115	0.081	0.279	0.359	0.264	0.187	0.221

Table 31. Determinants of research productivity (2007)

	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health and medicine	Total
①Gender	0.045	0.043	0.010	-0.017	0.084	0.116	0.043
②Academic credentials	0.182	0.022	0.071	0.042	0.038	0.010	0.067 *
③Academic Rank	0.051	0.136	0.070	0.102	-0.052	-0.092	0.006
④Type of university	-0.032	0.023	0.057	0.297 ***	0.264 *	-0.005	0.061
⑤Faculty reporting that their research is regularly assessed	-0.006	-0.125	0.030	0.085	0.046	-0.016	0.015
⑥Importance of a strong record of successful research activity in faculty evaluation	-0.038	-0.151	-0.083	0.103	0.025	-0.020	0.038
⑦Research funding in the previous three years	0.176	0.280 **	0.401 ***	0.321 ***	0.304 **	0.387 ***	0.416 ***
⑧Assessment of research equipment and instruments	0.024	0.093	-0.044	-0.036	0.180	0.107	0.033
⑨Preference for teaching or research	0.205	-0.086	0.091	0.060	0.080	0.082	0.046
⑩Time spent per week on research activity	0.327 **	0.046	0.051	0.108	0.111	-0.024	0.058
R^2	0.107	0.078	0.161	0.264	0.231	0.149	0.196

Although the model is clearly incomplete (R^2 0.2), the data for the total samples from 1992 (Table 30, right-hand column) show that factors with statistical significance are provided by research expenses, the type of university, and the level of academic qualification.

When the analysis is performed separately with the 1992 data for individual academic disciplines, in addition to the first two of these factors, academic rank, research record and a preference for research activities in engineering and academic rank in health and medical sciences were significant determinants.

The results from analysis of the 2007 CAP sample data are in Table 31. The results from the total data for 2007 show that only research funding offers a statistically significant factor. Application of the analysis to individual academic disciplines indicates that research funding and time spent on research in the humanities, and research funding and type of university for engineering are significant factors.

Comparison of the values of the significant partial regression coefficients of the 1992 and 2007 data, the coefficient for research funding over the previous three years has increased from 1992 to 2007 but those for the level of academic credentials and type of university have decreased. For the individual academic disciplines, the values of the coefficients for academic rank and the importance of a strong record of successful research activity have also decreased. For the

humanities, although research funding was significant in 1992, it ceases to be so in 2007; in contrast, although time spent *per* week on research activity was not significant in 1992, it has become so by 2007.

Perhaps not surprisingly, the results show that the influence of research funding on the number of research papers published has become stronger over the 15-year period from 1992 to 2007; and that at the same time the influence of factors such as academic rank and type of university have diminished.

5. Findings and considerations

Findings

There were two purposes for this paper that were stated at the outset. The first was to consider the changes that have occurred in the academic profession in Japan as indicated by comparison of the results of the Carnegie and CAP surveys, with a particular focus on the relationship between teaching and research. The second was to examine the involvement of and the extent of the scholarly contributions made by faculty through research.

The following six points became clear as a result of the analyses.

(1) In total, the average time spent on professional activities, teaching, services, administration, and other academic activities, became longer in 2007 than in 1992; the exception is the time devoted to research. The average time spent on research sharply decreased. Time for other activities got much longer, and particularly so for teaching and administration. The academic profession in Japan has been experiencing a dilemma, not only between education and research, but also between academic work and non-academic work.

(2) There is no significant change in the preferences of the Japanese academic profession between 1992 and 2007. But, when we compare faculty preferences by types of universities (research universities and non-research universities), we can discover clear differences. In research universities, there is a slight shift of preferences to teaching: in particular the proportion of those who have a strong orientation toward research has declined. On the other hand, in the non-research universities, there is no evident change in preferences. We can say that a higher education policy which has emphasized enhancement of educational activities has had a major influence on an academic profession which had previously shown a relatively high research orientation.

(3) Provision in graduate schools is more highly esteemed in 2007 than it was in 1992 both as training for researchers and for university teachers, even though research training is much more emphasized, and training for teachers is still marginal. Graduate training is important to nurture research skills based on each discipline, but at the same time some way to motivate young researchers towards teaching should be introduced.

(4) On average, in 2007 and over a period of 3 years, a member of Japanese faculty writes 1.9 academic books, edits 0.7 books, publishes 9.7 papers in academic journals, publishes 1.6 monographs, and presents papers 6.7 times at academic conferences. The average numbers of academic books written and edited, papers published in academic journals and research reports or monographs are more in 2007 than in 1992, but, the average numbers of papers presented at meetings has decreased from 1992 to 2007.

(5) The main changes in the characteristics of faculty, its attributes, awareness, activity and research environment are summarized in the following six points.

①The proportion of woman faculty in the humanities and social sciences has significantly increased in the past 15 years.

②The proportion of faculty who hold a PhD was higher in 2007 than in 1992. This tendency was shared by all academic disciplines. A strikingly substantial number of respondents with PhD degrees is found in the natural sciences, in comparison with the numbers in the humanities and social sciences.

③The proportion of faculty who reported that their research activities were evaluated was higher in 2007 than in 1992. This tendency was evident in all academic disciplines.

④Faculty received more grants for research in 2007 than in 1992, a trend that is shown across all academic disciplines.

⑤The proportion of faculty in 2007 who reported that research equipment is excellent was significantly higher than in 1992.

⑥The time spent on research has decreased in the past 15 years, especially in the social sciences.

(6) Of the identified factors that determine the output of research papers, the increases in research funding has the largest effect. This tendency was similar for all academic disciplines and the scale of this effect has increased over the 15-years from 1992 to 2007. In contrast, the influence on the number of research papers of factors such as academic

rank and type of university has declined.

Considerations

Since the 1990's, in order to cope with many of the problems discussed in this article, various reforms have been carried out from a position in which re-activation of both the educational and research activities in high education is seen as critical.

Of course teaching and research have an inherently close relationship but at the same time, and particularly at the practical level of individual faculty, these two aspects of academic work frequently experience conflicts of time and energy. If we accept this complex relationship of academic work, the way to interpret our survey data is far from simple.

Our final consideration may sound ambiguous but, despite the need to increase the emphasis to be placed on teaching, simply to increase the proportion of teaching-oriented faculty does not satisfy the need. It should be accepted, as a positive attribute, that many faculty members in Japanese universities retain their research orientation. Even faculty members in teaching oriented institutions should be enabled to engage in research in order to maintain their academic identities. The problem is at a more substantial level: whether our higher education policy and higher education system can build essential linkages between research and teaching, and whether faculty can develop a true sense of values toward both activities.

It is still difficult to find such linkages in the results of our survey, but it is certain that this issue is critical also for higher education research.

References

Amano, I. (1984). Method for the types of universities and colleges in T. Keii (ed.), *Study of university evaluation* (pp.57-69). Tokyo: Tokyo Daigaku Shuppankai (in Japanese).

Arimoto, A. (1998). Daigaku kyoin no Kenkyu – Daigakukyojyu no Shimei to Shijyo [Research on the Academic Profession – Mission and Marketplace of the Academic Profession]. *Kotou kyouiku kenkyu*, *1*, 141-162.

Arimoto, A. & Ehara, T. (eds.) (1996). *Daigaku kyoujusyoku no kokusai hikaku* [Academic Profession in the Comparative Perspectives]. Tokyo: Tamagawa University Press (in Japanese).

Bellas, M.L. & Toutkoushian, R.K. (1999) Faculty Time Allocations and Research Productivity: Gender, Race, and Family Effects. *The Review of Higher Education, 22*(4),

367-390.

Ben-David, J. (1977). *Centers of Learning: Britain, France, Germany, United States*. Carnegie Foundation for the Advancement of Teaching.

Bland, C.J., Center, B.A., Finstad, D.A., Risbey, K.R., & Staples, J. (2006). The Impact of Appointment Type on the Productivity and Commitment of Full-Time Faculty in Research and Doctoral Institutions. *The Journal of Higher Education*, *77*(1), 89-123.

Bonzi, S., & Day, D.L. (1991). Faculty Productivity as a Function of Cohort Group, Discipline, and Academic Age. *Proceedings of the ASIS Annual Meeting*, *28*, 267-275.

Boyer, E.L. (1990). *Scholarship Reconsidered: Priorities of the Professoriate*. Carnegie Foundation for the Advancement of Teaching.

Central Council for Education (2005). *A future image of higher education in Japan.* Higher Education Bureau, Higher education general planning and policy division. (http://211.120.54.153/b_menu/shingi/chukyo/chukyo0/toushin/05013101.htm)

Clark, B.R. (1995). *Places of Inquiry: Research and Advanced Education in Modern Universities*. University of California Press.

Daizen, T. (1996a). A Comparative Study on the Determinants of Academic Achievements between USA and Japan-on the field of physics. *Human Sciences*, 207-237.

Daizen, T. (1996b). The International Comparison of Research Productivity. In A. Arimoto & T. Ehara, (eds.), *The International Comparison of the Academic Profession* (pp.166-183). Tokyo: Tamagawa University Press.

Daizen, T. (2008). Research Productivity. In A. Arimoto (ed.), *The Changing Academic Profession in Japan* (pp.245-262). Tokyo: Tamagawa University Press.

Daizen, T., & Yamanoi, A. (2008). The Changing Academic Profession in an Era of University Reform in Japan. In *The Changing Academic Profession in International Comparative and Quantitative Perspectives* (RIHE International Seminar Reports) *12*, 293-325.

Ehara, T. (1996). Dilemma between Teaching and Research. In A. Arimoto & T. Ehara (eds.), *International Comparison of Academic Professions* (pp.147-165). Tamagawa University Press (in Japanese).

Fujimura, M., (2006). A Study of Relevance between Teaching and Research: Integration, Conflict and Sanction in Higher Education. *Research in Higher Education*, *37*, 213-230 (in Japanese).

Kotrlik, J.W., Bartlett, J.E., Higgins, C.C., & Williams, H.A. (2002). Factors Associated with Research Productivity of Agricultural Education Faculty. *Journal of Agricultural Education*, *43*(3), 1-10.

Ministry of Education, Culture, Sports, Sciences and Technology (MEXT) (1950-2007). *School basic survey*. Tokyo : Printing Bureau, Ministry of Finance.

MEXT (2006). *FY2005 white paper on education, culture, sports, science and technology.* Tokyo : Printing Bureau, Ministry of Finance.

Ministry of Education, Science, Sports and Culture (MESSC) (2000). *Japanese Government Policies in Education, Science, Sports and Culture 1999* (p.14-16). Tokyo: Printing Bureau, Ministry of Finance.

Stack, S. (2004). Gender, Children and Research Productivity. *Research in Higher Education*, *45*(8), 891-920.

Yamanoi, A. (ed.) (2007). *Nippon no Daigaku Kyojyu Shijyo* [Academic Marketplace in Japan]. Tokyo: Tamagawa University Press.

Appendix

Table A. Explanatory Variables

①Gender	Male=1, Female=0
②Academic credentials	Doctor=1, Others=0
③Academic rank	Professor=1, Others=0
④Type of university	National Research University=1, Others=0
⑤Faculty reporting that their research is regularly assessed	Yse=1, No=0
⑥Importance of a strong record of successful research activity in faculty evaluation	Strong agree=1, Others=0
⑦Research funding in the previous three years	0=1, Less than $25,000=2, $25,000 to $49,999=3, $50,000 to 249,999=4, $250,000 or More=5
⑧Assessment of research equipment and instruments	Excellent=1, Others=0
⑨Preference for teaching or research	Leaning toward research=1, Leaning toward teaching=0
⑩Time spent per week on research activity	the actual number
⑪Articles published in an academic book or journal during previous three years	the actual number
⑫Age	the actual number

The correlation coefficients for each of the explanatory variables are shown in Table B.

A correlation coefficient, among the explanatory variables, which included

⑫ age, is shown in Table B. Because of strong co-linearity between the variables ⑫ and ③, variable ⑫ was not included in the causal model (Figure 1).

Table B. Correlation coefficients for the explanatory variables

	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
①Gender	1.000 . 1168										
②Academic credentials	0.143*** 0.000 1133	1.000 . 1143									
③Academic Rank	0.055 0.061 1166	-0.048 0.104 1142	1.000 . 1179								
④Type of university	0.059* 0.045 1168	0.125 0.000 1143	-0.017 0.568 1179	1.000 . 1181							
⑤Faculty reporting that their research is regularly assessed	-0.002 0.955 1168	0.066 0.025 1143	-0.023 0.429 1179	-0.035 0.227 1181	1.000 . 1181						
⑥Importance of a strong record of successful research activity in faculty evaluation	-0.067* 0.025 1129	0.096 0.001 1105	0.031 0.296 1136	0.235*** 0.000 1138	0.030 0.319 1138	1.000 . 1138					
⑦Research funding in the previous three years	0.157*** 0.000 1146	0.310 0.000 1123	0.085** 0.004 1157	0.29*** 0.000 1159	0.092** 0.002 1159	0.213*** 0.000 1117	1.000 . 1159				
⑧Assessment of research equipment and instruments	0.054 0.067 1146	-0.055 0.068 1123	0.014 0.641 1154	0.134*** 0.000 1156	-0.039 0.180 1156	0.053 0.077 1120	0.079 0.008 1136	1.000 . 1156			
⑨Preference for teaching or research	0.026 0.375 1154	0.199 0.000 1128	-0.07* 0.017 1162	0.192*** 0.000 1164	-0.052 0.075 1164	0.139*** 0.000 1129	0.263 0.000 1143	0.052 0.077 1143	1.000 . 1164		
⑩Time spent per week on research activity	0.077* 0.018 944	0.136 0.000 924	-0.061 0.062 947	0.148*** 0.000 948	0.008 0.797 948	0.152*** 0.000 928	0.260 0.000 935	0.130 0.000 935	0.289*** 0.000 942	1.000 . 948	
⑪Articles published in an academic book or journal during previous three years	0.116*** 0.000 1018	0.190 0.000 997	0.062* 0.048 1025	0.179*** 0.000 1025	0.043 0.174 1025	0.143*** 0.000 1021	0.418 0.000 1008	0.048 0.129 1011	0.16*** 0.000 1017	0.168*** 0.000 845	1.000 . 1025
⑫Age	0.066* 0.026 1143	-0.096*** 0.001 1111	0.639*** 0.000 1141	-0.116*** 0.000 1143	-0.003 0.923 1143	-0.031 0.302 1108	-0.009 0.771 1123	-0.035 0.247 1122	-0.180 0.000 1129	-0.042 0.205 925	0.046 0.150 1003

Note: As for the value in the table, the upper section is the correlation coefficient correlation, the middle section is the level of significance level and the bottom section is the number of cases.

The Academic Profession in Mexico: changes, continuities and challenges derived from a comparison of two national surveys 15 years apart[1]

Jesús F. Galaz-Fontes, Manuel Gil-Antón, Laura E. Padilla-González, Juan J. Sevilla-García, José L. Arcos-Vega, and Jorge G. Martínez-Stack*

Introduction

In the context of a more salient and visible role of higher education in today's world, the academic profession has been itself in a process of change. Seen traditionally as centrally devoted to the generation and transmission of knowledge, a statement that in itself brings to mind goals beyond the material and immediate, higher education is nowadays seen increasingly as responsible for training professionals and generating and applying knowledge already transformed into technology. With such changes in societal expectations for higher education, it is indeed natural for its academics, in one way or another, to change as well. The international project "The Changing Academic Profession"

[1] The work reported here was made possible by funds provided by the Secretariat of Public Education through its Program to Support University Development, 2006-2008. We also thank the members of the Network of Researchers on Academics, whom made the faculty survey possible.

* Jesús F. Galaz-Fontes: Professor, Faculty of Human Sciences and Institute of Engineering, Autonomous University of Baja California, México, e-mail: galazfontes@gmail.com
Manuel Gil-Antón: Professor, Department of Sociology, Iztapalapa Campus, Metropolitan Autonomous University, México, e-mail: maga@correo.azc.uam.mx
Laura E. Padilla-González: Professor, Department of Education, Autonomous University of Aguascalientes, México, e-mail: lepadill@correo.uaa.mx
Juan J. Sevilla-García: Researcher, Institute of Engineering, Autonomous University of Baja California, México, e-mail: jcjast@gmail.com
José L. Arcos-Vega: Researcher, Institute of Engineering, Autonomous University of Baja California, México, e-mail: arcos@uabc.mx
Jorge G. Martínez-Stack: Professor, General Direction of International Evaluation, Seminar on Higher Education, National Autonomous University of México, México, e-mail: jorgestack@gmail.com

is but a recognition of such a state of affairs and, as part of it, Mexican academics were surveyed during the 2007-2008 academic year.

The central purpose of this report is to assess changes that may have occurred in the Mexican academic profession between 1992 and 2007 when the International Survey of the Academic Profession (ISAP92) and the Changing Academic Profession Survey (CAPS07) were carried out. But before proceeding it is necessary to qualify in various ways the following comparative work.

In the first place, it should be stressed that the comparative analysis is based almost entirely on the information generated by the ISAP92 and the CAPS07 surveys. Although similar, the surveys differ in a number of ways that need to be considered when drawing conclusions. The instruments used differed in extent and, more specifically, in item wording and, in some cases, response scales. Given that the instruments were designed with different concerns in mind, its content also differed. Notwithstanding this situation, the two instruments contain a sufficient number of equivalent or similar items to allow a meaningful comparison. It should be acknowledged, however, that not all the comparable items were included in this report, as that would have demanded a much larger space.

Second, the ISAP92 and the CAPS07 also differed in the procedure by which the respective samples were generated. The general correspondence in the results obtained in key variables by these surveys and other national studies done around 1992 (Gil-Antón *et al*., 1994) or later (Grediaga-Kuri, Rodríguez-Jiménez & Padilla-González, 2004), as well as the consideration of official data (*e.g.*, Rubio-Oca, ed., 2006) provides us with a reasonable confidence that a comparison based upon the ISAP92 and the CAPS07 is legitimate.

Third, one should remember that between 1992 and 2007 Mexican higher education itself changed in major ways, both in quantitative and qualitative matters: more and different higher education institutions were created, more and more diverse students were enrolled and, more closely to the purpose of this report, the faculty body grew significantly (Rubio-Oca, ed., 2006). While in 1994 there were approximately 156,500 faculty members working in all Mexican higher education institutions (HEI), of which around 47,000 (30%) had a full-time (FT) appointment (SEP & ANUIES, 1997), by 2005 there were approximately 255,274 academics, of which 75,863 (29.7%) were FT. Such

figures represent a 63.1% increment in all faculty and, in FT positions, an increase of 61.4% between 1994 and 2005.[3] So, while in our 1992 figures a 1% change might represent around 470 FT academics, in 2007 that same 1% most probably represents around 789 FT academics (there are now 67.9% more academics than in 1994). In comparing percentages between two points in time this is something that should not be overlooked.

Fourth, although the results and analysis to follow still need to be considered preliminary, their status is more definitive than the ones presented in a previous report almost a year ago (Galaz-Fontes *et al*., 2008). While at that time, results were based on 826 returned questionnaires from FT and half-time faculty, the present report can now be based, with respect to the CAPS07 survey, upon 1,775 questionnaires answered by FT faculty only. Data from the ISAP92, on the other hand, were filtered in order to use only information from FT faculty. Such filtering allowed the identification of 609 questionnaires of FT faculty, out of 1,022 respondents. The goal in using only FT faculty was to maximize the comparability of the information gathered in the two surveys involved.

Considering all of the above, in this report information regarding four themes will be presented: personal characteristics, professional trajectory, academic work and, finally, faculty internationalization. Given the space available, not all items that are potentially comparable were included in this report. Finally, a small set of closing remarks is made.

Personal characteristics and professional trajectory

Table 1 presents, overall, three personal characteristics of Mexican faculty: gender, age and highest degree. In relation to gender, Table 1 shows that between 1992 and 2007 there was an increment in the participation of females in the academe from 30.9% to 35.7%. The process is a continuation of a trend described by Gil-Antón *et al*. (1994) as taking place since the 1970s.

Also at an overall level, Table 1 shows that academics have grown older. The average age of faculty members has increased from 40.1 years, to 49.9 years. Analysis of the year in which faculty entered the profession suggests that almost two-thirds of the faculty has remained in higher education since 1992, but it also speaks of a replacement process in which some faculty have left the academic

[3] These comparisons constitute a conservative estimate of the change in faculty positions between 1992 and 2007. The figures for such years were not readily available in disaggregated form for all degree levels, and for this the years 1994 and 2005 were used.

profession, and others have come into the profession for the first time. Unfortunately, there is no evidence to consider the replacement process, including the retirement aspect, as one that has been planned and is attractive to faculty.

Table 1. Gender, age, and highest degree of Mexican full-time faculty in 1992 (N_T = 609) and 2007 (N_T = 1775)

		1992			2007		
		n		%	n		%
Gender	Female	187		30.9	625		35.7
	Male	418		69.1	1126		64.3
	Total	605		100.0	1751		100.0
		n	mean	s	n	mean	s
Age	Total	599	40.1	7.9	1740	49.9	9.4
		n		%	n		%
Highest degree	Licensure (up to)	305		50.4	439		24.8
	Masters'	228		37.7	738		41.7
	Doctorate	72		11.9	592		33.5
	Total	605		100.0	1769		100.0

Finally, Table 1 shows a quite impressive change in the distribution of highest degrees held by academics. The larger change can be observed at the doctoral level, where the proportion of academics increased from 11.9% to 33.5%. By considering graduate studies at the masters' and doctoral levels together, it turns out that between 1992 and 2007 the aggregate figures have moved from 49.6% to 85.2%. This increment is most surely associated with various public policies that have demanded and rewarded higher degrees as requirements both to enter the profession and to progress up the academic ladder once in it. While in some disciplines, most notably the natural and exact sciences, this situation has coincided with an internal process of growth and consolidation, this is not the case for disciplines such as health and administrative sciences, as will be shown later in the paper.

Table 2 presents data on the educational background of academics' parents, as well as similar information for the partnerships in which faculty currently participate. The data on the educational attainment of parents in 1992 and 2007 show little change, particularly when considering the two highest levels (25.7% *versus* 25.4%). It would appear, then, that similar academics participated in both surveys. However, if one considers the educational attainment of the partners of members of faculty, then 97.3% reported the highest educational levels. So, the social mobility of faculty discussed in earlier reports, has now to

be complemented with the fact that faculty are creating families with a very high cultural capital; in almost all of these families one of its members has had contact with higher education. Sociologically this is a most interesting phenomenon.

Table 2. Educational attainment of parents and of the partners of Mexican full-time faculty in 1992 (N_T = 547) and 2007 (N_T = 1775)

		1992		2007	
		n	%	n	%
Educational attainment of parents	Both low	213	40.3	634	38.1
	Medium - low	61	11.5	248	14.9
	Both medium	87	16.5	288	17.3
	High - low	32	6.0	73	4.3
	High - medium	99	18.8	251	15.1
	Both high	37	6.9	171	10.3
	Total	529	100.0	1665	100.0
				n	%
Educational attainment of faculty's partners	Both low	No data available		0	0.0
	Medium - low			0	0.0
	Both medium			1	0.1
	High - low			36	2.6
	High - medium			321	23.7
	Both high			997	73.6
	Total			1354	100.0

Notes: 1. Data for 1992 are taken from the 1992 Traits of Diversity study (Gil-Antón *et al*., 1994).
2. Low attainment = no schooling up to elementary school;
Medium attainment = secondary, high and normal school, technician;
High attainment = higher education, including graduate level.

Table 3 provides data about where, in terms of institutions and disciplines, Mexican faculty worked in 1992 and in 2007. In both cases there is relocation. In terms of types of institutions, the proportions of faculty located in federal and state public institutions diminished by more than 10 percentage points, from 34.9% to 22.7%, in the case of federal institutions, and less in the case of state institutions. Public technological and private institutions have increased their share up to around 15%, while research centers appear, due to the way in which sampling was done in 1992, for the first time with 6.3%. This distribution change can be interpreted as a reflection of institutional diversification and, at the same time, the decentralization that mirrors in general terms a new distribution of both institutions and student enrollment (Rubio-Oca, ed., 2006). In relation to discipline there is general stability, except for a small decline in faculty in the social sciences (21.2% to 17.9%), and an also small increment in the faculty in health sciences (9.1% to 13.4%).

Table 3. Distribution of Mexican full-time faculty by type of institution and by discipline of highest degree in 1992 (N_T = 609) and 2007 (N_T = 1775)

		1992		2007	
		n	%	n	%
Type of institution	Public research centers	n.a.	n.a.	112	6.3
	Federal public institutions	212	34.9	403	22.7
	State public institutions	284	46.8	739	41.6
	Public technological institutions	64	10.5	280	15.8
	Private institutions	47	7.8	241	13.6
	Total	607	100.0	1775	100.0
		n	%	n	%
Discipline of highest degree	Natural and exact sciences	115	19.1	305	17.8
	Health sciences	55	9.1	230	13.4
	Agricultural sciences	12	2.0	70	4.1
	Engineering and technology	135	22.4	401	23.4
	Social sciences	128	21.2	308	17.9
	Administrative sciences	53	8.8	167	9.7
	Education	65	10.8	156	9.1
	Humanities and arts	40	6.6	79	4.6
	Total	603	100.0	1716	100.0

Table 4. Gender by highest degree of Mexican full-time faculty in 1992 (N_T = 609) and 2007 (N_T = 1775)

		1992		2007	
		n	%	n	%
Females	Licensure (up to)	91	49.2	138	22.1
	Masters'	74	40.0	305	49.0
	Doctorate	20	10.8	180	28.9
	Total	185	100.0	623	100.0
		n	%	n	%
Males	Licensure (up to)	212	51.0	293	26.1
	Masters'	153	36.8	428	38.1
	Doctorate	51	12.2	402	35.8
	Total	416	100.0	1123	100.0
		n	%	n	%
Females within highest degree	Licensure (up to)	303	30.0	431	32.0
	Masters'	227	32.6	733	41.6
	Doctorate	71	28.2	582	30.9
	Total	601	30.8	1746	35.7

Table 4 presents data about the relationship between gender and highest degree amongst Mexican faculty. While in 1992 the distribution of degrees was similar for both women and men, with the licensure being the predominant degree in both cases, by 2007 a higher proportion of men than women reported a

doctorate (35.8% *versus* 28.9%). At the same time, women are more likely to report a master's degree than men (49.0% *versus* 38.1%). Both of these developments are also reflected in the increasing representation of women at the masters' level, as they represented 32.6% of all those holding a masters' degree in 1992, and 41.6% by 2007. What are the reasons for the fact that female faculty have not kept pace with male academics? This is a topic to follow up considering factors related to graduate programs characteristics, as well as to the general cultural dimensions of Mexican society.

Table 5 indicates how the composition of faculty by gender has changed by type of institution between 1992 and 2007. With the diversification of HEI there has also been an opening of more positions, which in turn has brought more opportunities for female faculty. While in 1992 16.7% of all female faculty worked in public technological and private institutions, in 2007 this figure has increased to 30.3%. This change is more clearly observed in public technological institutions, where female academics have increased their representation by 12.9 percentage points, from 22.2% to 35.1%. Why it is that the biggest increment in female participation has occurred in these institutions is something to explore in future studies.

Table 5. Gender by type of institution of Mexican full-time faculty in 1992 (N_T = 609) and 2007 (N_T = 1775)

		1992		2007	
		n	%	n	%
Females	Public research centers	n.a	n.a	35	5.5
	Federal public institutions	73	39.5	153	24.5
	State public institutions	81	43.8	248	39.7
	Public technological institutions	14	7.5	98	15.7
	Private institutions	17	9.2	91	14.6
	Total	185	100.0	625	100.0
Males	Public research centers	n.a.	n.a.	76	6.7
	Federal public institutions	138	33.0	243	21.6
	State public institutions	201	48.1	483	42.9
	Public technological institutions	49	11.7	181	16.1
	Private institutions	30	7.2	143	12.7
	Total	418	100.0	1126	100.0
Females within type of institution	Public research centers	n.a.	n.a.	111	31.5
	Federal public institutions	211	34.6	396	38.6
	State public institutions	282	28.7	731	33.9
	Public technological institutions	63	22.2	279	35.1
	Private institutions	47	36.2	234	38.9
	Total	603	30.7	1751	35.7

Table 6 presents gender data in relation to disciplines between 1992 and 2007. It can be observed that the proportions of women in natural and exact sciences diminished (20.0% to 15.1%), while in engineering and technology they increased (8.6% to 13.2%). The proportion of men, on the other hand, increased in health sciences (5.8% to 11.0%) and decreased in social sciences (21.5% to 15.8%). Although these changes do not represent dramatic differences, they probably reflect a tendency that needs to be attended to. In relative terms, female faculty increased their representation substantially in engineering and technology (from 11.9% to 20.5%), in social sciences (from 29.9% to 43.0%) and, most importantly, in administrative sciences (from 26.4% to 43.1%).

Table 6. Gender by discipline of Mexican full-time faculty in 1992 (N_T = 609) and 2007 (N_T = 1775)

		1992		2007	
		n	%	n	%
Females	Natural and exact sciences	37	20.0	91	15.1
	Health sciences	31	16.8	108	17.9
	Agricultural sciences	1	0.5	7	1.2
	Engineering and technology	16	8.6	80	13.2
	Social sciences	38	20.5	130	21.5
	Administrative sciences	14	7.6	72	11.9
	Education	29	15.7	76	12.6
	Humanities and arts	19	10.3	40	6.6
	Total	185	100.0	604	100.0
Males	Natural and exact sciences	75	18.1	214	19.7
	Health sciences	24	5.8	120	11.0
	Agricultural sciences	11	2.7	61	5.6
	Engineering and technology	119	28.7	311	28.6
	Social sciences	89	21.5	172	15.8
	Administrative sciences	39	9.4	95	8.7
	Education	36	8.7	78	7.2
	Humanities and arts	21	5.1	37	3.4
	Total	414	100.0	1088	100.0
Females within discipline	Natural and exact sciences	112	33.0	305	29.8
	Health sciences	55	56.4	228	47.4
	Agricultural sciences	12	8.3	68	10.3
	Engineering and technology	135	11.9	391	20.5
	Social sciences	127	29.9	302	43.0
	Administrative sciences	53	26.4	167	43.1
	Education	65	44.6	154	49.4
	Humanities and arts	40	47.5	77	51.9
	Total	599	30.9	1692	35.7

Table 7. Age by gender, highest degree, type of institution and discipline of Mexican full-time faculty in 1992 (N_T = 609) and 2007 (N_T = 1775)

		1992			2007		
		n	mean	s	n	mean	s
Gender	Female	185	39.6	8.4	619	48.0	9.0
	Male	411	40.4	7.6	1120	50.9	9.4
	Total	596	40.1	7.9	1739	49.9	9.4
Highest degree	Licensure (up to)	302	39.4	7.9	430	50.0	10.9
	Masters'	223	39.8	7.4	728	49.6	8.7
	Doctorate	71	44.6	7.7	575	50.2	9.1
	Total	596	40.1	7.9	1733	49.9	9.4
Type of institution	Public research centers	n.a	n.a.	n.a.	109	48.9	9.9
	Federal public institutions	208	41.9	8.0	394	52.4	9.7
	State public institutions	282	38.9	7.9	724	49.3	9.2
	Public technological institutions	61	40.6	5.5	279	50.4	7.9
	Private institutions	46	39.3	7.9	234	47.2	10.0
	Total	597	40.1	7.9	1740	49.9	9.4
Discipline	Natural and exact sciences	114	40.4	8.5	302	50.6	9.3
	Health sciences	55	41.1	7.5	227	51.2	9.4
	Agricultural sciences	12	36.1	5.6	68	51.9	9.0
	Engineering and technology	133	39.5	7.8	388	48.6	9.2
	Social sciences	124	40.5	8.3	300	49.2	10.0
	Administrative sciences	52	39.3	6.3	166	50.5	7.4
	Education	64	40.4	7.3	154	48.8	9.6
	Humanities and arts	39	41.3	8.6	77	48.0	10.3
	Total	593	40.1	7.9	1682	49.7	9.4

More detailed data for Mexican faculty by age, both for 1992 and for 2007, appear in Table 7. Between 1992 and 2007 the overall mean age of Mexican faculty increased by approximately 9 years: males aged somewhat more then females (10.5 *versus* 8.4 years more on average), and faculty with a doctorate less than those with a master's or a licensure (5.6 *versus* 9.8 and 10.6 years more on average). This last comparison might speak of younger academics coming into the profession already holding doctorates. Also, faculty in private institutions are aged less than faculty in other types of institutions (7.9 years on average), while faculty in agricultural sciences are aged more than their colleagues in other disciplines (15.8 years on average). On the other hand, while in general for 2007 there are no differences greater than five years between the compared subgroups, there are some differences between the mean ages of female and male academics (48.0 *versus* 50.9 years), between faculty working in private and in public federal institutions (47.2 *versus* 52.4 years), and between those working in the humanities and arts and those working in agricultural sciences (48.0 *versus* 51.9 years). A more detailed analysis is needed in terms of age at entrance into the academic profession, where there is evidence that this

Table 8. Highest degree by type of institution and discipline, of Mexican full-time faculty in 1992 (N_T = 609) and 2007 (N_T = 1775) (percentages)

		1992				2007			
		n	Licensure	Masters'	Doctorate	N	Licensure	Masters'	Doctorate
Highest degree within type of institution	Public research centers	n.a.	n.a.	n.a.	n.a.	111	1.8	1.8	96.4
	Federal public institutions	212	31.6	41.5	26.9	402	24.4	31.1	44.5
	State public institutions	281	60.1	36.3	3.6	736	18.6	51.1	30.3
	Public technological institutions	64	68.8	29.7	1.6	280	45.7	45.0	9.3
	Private institutions	46	52.2	39.1	8.7	240	30.8	45.4	23.8
	Total	603	50.4	37.6	11.9	1769	24.8	41.7	33.5
		Licensure (n=304)	Masters' (n=227)	Doctorate (n=72)		Licensure (n=439)	Masters' (n=738)	Doctorate (n=592)	
Highest degree by type of institution	Public research centers	n.a.	n.a.	n.a.		0.5	0.3	18.1	
	Federal public institutions	22.0	38.7	79.1		22.3	16.9	30.2	
	State public institutions	55.6	44.9	13.9		31.2	50.9	37.7	
	Public technological institutions	14.5	8.5	1.4		29.2	17.1	4.4	
	Private institutions	7.9	7.9	5.6		16.8	14.8	9.6	
	Total	100.0	100.0	100.0		100.0	100.0	100.0	

		n	Licensure	Masters'	Doctorate	N	Licensure	Masters'	Doctorate
Highest degree within discipline	Natural and exact sciences	115	33.0	43.5	23.5	306	12.7	24.8	62.4
	Health sciences	54	51.9	29.6	18.5	229	29.3	45.4	25.3
	Agricultural sciences	12	16.7	83.3	0.0	70	17.1	48.6	34.3
	Engineering and technology	135	61.5	34.1	4.4	398	34.4	38.2	27.4
	Social sciences	127	51.2	35.4	13.4	308	19.8	37.7	42.5
	Administrative sciences	53	64.2	32.1	3.8	167	27.5	62.9	9.6
	Education	65	50.8	41.5	7.7	155	20.0	59.4	20.6
	Humanities and arts	38	44.7	42.1	13.2	78	26.9	42.3	30.8
	Total	599	50.1	37.9	12.0	1711	24.2	41.6	34.2

		Licensure (n=300)	Masters' (n=227)	Doctorate (n=72)	Licensure (n=414)	Masters' (n=712)	Doctorate (n=585)
Highest degree by discipline	Natural and exact sciences	12.7	22.0	37.5	9.4	10.7	32.7
	Health sciences	9.3	7.0	13.9	16.2	14.6	9.9
	Agricultural sciences	0.6	4.4	0.0	2.9	4.8	4.1
	Engineering and technology	27.7	20.4	8.3	33.1	21.3	18.6
	Social sciences	21.7	19.8	23.6	14.7	16.3	22.4
	Administrative sciences	11.3	7.5	2.8	11.1	14.7	2.7
	Education	11.0	11.9	7.0	7.5	13.0	5.5
	Humanities and arts	5.7	7.0	6.9	5.1	4.6	4.1
	Total	100.0	100.0	100.0	100.0	100.0	100.0

indicates larger differences (Gil-Antón *et al*., 1994; Galaz-Fontes *et al*., 2008). Also needed is a comparative study of junior *versus* senior faculty, much along the lines worked out by Finkelstein, Seal and Schuster (1998).

Table 8 presents data on the highest degree by type of institution and discipline. In general, there are radical changes between 1992 and 2007. While in federal public institutions the increment in doctorates is strong (26.9% *versus* 44.5%), the increment in state public institutions is impressive (3.6% *versus* 30.3%). It is important to note that the federal policies of the Program for the Improvement of the Professoriate (PROMEP) have targeted these institutions (Urbano-Vidales, Aguilar-Sahagún & Rubio-Oca, 2006) and the results speak for themselves. It is a matter for future studies to identify how much of this increment is related to new and to in-service faculty, and what the implications are for each type of faculty. An interesting point to analyze is the strength of the formative processes by which faculty in state public institutions have obtained their degrees, given the relatively short time in which these changes have taken place. In relation to discipline, it can be observed that larger changes in doctoral degrees from 1992 to 2007 have occurred in the natural and exact sciences (23.5% *versus* 62.4%), agricultural sciences (zero *versus* 34.3%), social sciences (13.4% *versus* 42.5%), and engineering and technology (4.4% *versus* 27.4%). Given the professional orientation of Mexican higher education, an analysis of the relevance of the doctorate in highly professional fields is required.

Information about the professional trajectory of Mexican faculty is included in Table 9. While changes in work experience in a variety of HEI are small in general, more academics appear to have worked in four or more institutions in 2007 as compared to 1992 (18.3% *versus* 4.2%). While in 1992 surveyed faculty reported a mean of 12.5 years of work in HEI, in 2007 the corresponding figure was 14.6 years; although this number might underestimate the average, as the wording in the 2007 questionnaire asked for years of having worked as FT faculty, while the wording in the 1992 questionnaire did not make such a qualification. In a similar trend, years of seniority at the HEI in which the academic was surveyed increased from a mean of 11.5 years in 1992, to 18.9 years in 2007 and depicts low mobility in the faculty body in general. Finally, there is a large increase in the proportion of faculty that reports having no work experience outside higher education, from 20.9% in 1992, to 49.3% in 2007. This provides evidence that a work space for academics has been more intensively built during the last fifteen years, and such space has allowed faculty members to devote themselves solely to their work, as other professionals do.

Table 9. Work experience of Mexican full-time faculty in 1992 (N_T = 609) and 2007 (N_T = 1775)

		1992		2007	
		Number of HEI worked in with a regular academic contract		Number of HEI in which you have worked since your first degree	
		n	%	n	%
Number of higher education institutions worked in	1	347	58.6	977	57.9
	2	165	27.9	278	16.5
	3	55	9.3	123	7.3
	>=4	25	4.2	308	18.3
	Total	592	100.0	1686	100.0

	Number of years worked in HEI			Number of years worked in HEI in FT status since first degree		
	n	mean	s	n	mean	s
Years worked in higher education	603	12.5	6.7	1752	14.6	10.6

	Number of years worked at this institution			Approximate number of years worked at this institution		
	n	mean	s	n	mean	s
Years worked at this institution	606	11.5	7.7	1503	18.9	10.0

	Percentage of faculty reporting no work experience outside HEI		Percentage of faculty reporting no work experience outside HEI	
	n	%	n	%
Work experience outside higher education	545	20.9	1752	49.3

Academic work

In relation to academic work, Table 10 describes the way in which Mexican faculty distribute their time among various activities. As can be observed, academics reported more work hours *per* week on average in 2007 than in 1992 (means of 45.9 hours *versus* 38.8 hours), with the largest time being devoted to teaching in both 1992 and 2007 (means of 18.0 hours *versus* 21.5 hours), followed by research, which has somewhat diminished from 1992 to 2007 (means of 10.7 hours *versus* 10.1 hours). An interesting development is that the average time devoted to administrative tasks increased from 1992 to 2007 (means of 5.0 hours *versus* 8.6 hours).

Data show quite clearly that the activities performed by faculty are associated with the type of institution. While in 1992 state public and public technological institutions were very heavily involved in teaching, with their

faculty devoting an average of more than 20 hours *per* week to it, in 2007 all types of institutions, except for public research centers, had their faculty reporting a mean of at least 19 hours *per* week for teaching. Given the national goal of increasing student enrollment and with little growth in financial resources, it would appear that academics already hired are solving the issue of increasing teaching demands. With respect to research, on the other hand, there is more differentiation. In 2007 faculty at public research centers, as would be expected, reported the highest mean of hours devoted to research (24.7 hours), followed by faculty in public federal and state institutions (means of 14.1 hours and 9.4 hours), and then by private institutions (6.1 hours). It is interesting to observe that academics in public technological institutions reported the smallest amount of time devoted to research activities (4.1 hours per week). In 1992 the pattern was very similar, although in private institutions there was more research reported in 1992 than in 2007 (means of 10.4 hours *versus* 6.1 hours *per* week), something which most probably reflects the growth of the private sector in training at the professional level. Finally, while in 1992 it was mainly faculty in private institutions who devoted more hours than the overall average to administration (7.3 hours *versus* 5.0 hours), in 2007 faculty in all types of institutions increased, in a relatively important amount, the number of hours *per* week devoted to administrative tasks (see Table 10), perhaps reflecting new and more complex administrative procedures.

Table 11 presents data related to various aspects of Mexican faculty's research activity. In general, the data show that the proportion of academics that indicate activity in research has increased among Mexican academics between 1992 and 2007 (61.4% *versus* 69.1%). At a more specific level, it can be observed that research has become a part of academic work for the majority of faculty in state public institutions by 2007 (50.8% in 1992 *versus* 74.4% in 2007), while in federal public institutions more than 80% of its faculty reported doing research since 1992. It is interesting to observe a slight decrement in research activity in these institutions from 1992 to 2007 (85.1% to 81.7%, respectively). As expected, research is highest in public research centers (100%). Associated with the research activity, there was also an increment in faculty who reported having published at least one paper in 2007 as compared to 1992 (80.2% *versus* 65.4%). Again, the highest increment is shown by faculty working in state public institutions (83.9% *versus* 61.3%). Finally, there is a slight variation overall in relation to faculty obtaining funds for research between 1992 and 2007 (45.6% *versus* 51.5%). In terms of types of institution, the change is larger in federal public institutions (46.8% *versus* 59.4%). In 2007 faculty in public

research centers reported the largest figure in this respect (77.3%), as perhaps might be expected.

Table 10. Hours *per* week worked in different activities by Mexican full-time faculty in 1992 (N_T = 609) and 2007 (N_T = 1775)

		1992 (n = 585)		2007 (n = 1600)	
		mean	s	mean	s
Activity	Teaching	18.0	11.2	21.5	10.9
	Research	10.7	10.6	10.1	10.3
	Service	2.4	5.8	1.6	4.0
	Administration	5.0	7.6	8.6	10.0
	Other activities	2.7	4.5	4.2	5.9
	Total number of hours per week	38.8	18.7	45.9	10.5
		mean	s	mean	s
Teaching by type of institution	Public research centers	n.a.	n.a.	11.1	9.1
	Federal public institutions	14.3	8.1	19.3	10.4
	State public institutions	20.4	12.0	21.0	9.7
	Public technological institutions	20.5	12.6	26.7	10.4
	Private institutions	16.1	11.2	25.1	11.9
	Total	18.0	11.2	21.5	10.9
		mean	s	mean	s
Research by type of institution	Public research centers	n.a.	n.a.	24.7	13.4
	Federal public institutions	14.7	12.1	14.1	10.8
	State public institutions	9.0	9.1	9.4	9.1
	Public technological institutions	4.8	6.0	4.1	6.0
	Private institutions	10.4	10.2	6.1	6.2
	Total	10.7	10.6	10.1	10.3
		mean	s	mean	s
Administration by type of institution	Public research centers	n.a.	n.a.	7.3	10.7
	Federal public institutions	4.4	6.4	7.2	8.8
	State public institutions	5.0	8.1	8.9	10.3
	Public technological institutions	5.1	9.0	8.3	9.8
	Private institutions	7.3	7.1	10.6	10.7
	Total	5.0	7.6	8.6	10.0

Notes: 1. Teaching involves preparation of instructional materials and lesson plans, classroom instruction, advising students, reading and evaluating student work.
2. Research involves reading literature, writing, conducting experiments, fieldwork.
3. Service involves services to clients and/or patients, unpaid consulting, public or voluntary services.
4. Administration involves committees, department meetings, and paperwork.
5. Other activities involve professional activities not clearly attributable to any of the categories above.

Table 11. Research activity, publication and research fund raising of Mexican faculty in 1992 (N_T = 609) and 2007 (N_T = 1775)

		1992		2007	
		n	%	n	%
Faculty research activity	Yes	342	61.4	1196	69.1
	No	215	38.6	536	30.9
	Total	557	100.0	1732	100.0
		n	%	n	%
Faculty research activity within type of institution	Public research centers	n.a.	n.a.	112	100.0
	Federal public institutions	201	85.1	398	81.7
	State public institutions	256	50.8	720	74.4
	Public technological institutions	53	24.5	268	36.6
	Private institutions	45	57.8	234	53.4
	Total	555	61.3	1731	69.1
		n	%	n	%
Faculty with at least one publication	Yes	398	65.4	1310	80.2
	No	211	34.6	323	19.8
	Total	609	100.0	1633	100.0
		n	%	n	%
Faculty with at least one publication within type of institution	Public research centers	n.a.	n.a.	112	99.1
	Federal public institutions	212	82.1	393	88.8
	State public institutions	284	61.3	685	83.9
	Public technological institutions	64	25.0	230	49.6
	Private institutions	47	68.1	214	75.2
	Total	607	65.2	1634	80.2
		n	%	n	%
Fund raising by faculty doing research	Yes	154	45.6	603	51.5
	No	184	54.4	568	48.5
	Total	338	100.0	1171	100.0
		n	%	n	%
Fund raising by faculty doing research within type of institution	Public research centers	n.a.	n.a.	110	77.3
	Federal public institutions	171	46.8	323	59.4
	State public institutions	126	47.6	524	48.1
	Public technological institutions	13	30.8	95	32.6
	Private institutions	26	34.6	118	35.6
	Total	336	45.5	1170	51.5

It appears, then, that the roles of faculty are changing, as can be inferred from the way they reported their time allocation regarding different activities. In particular, faculty are investing more time in teaching and administrative tasks and, in parallel, are slightly diminishing the time devoted to research. To a certain extent, there is a convergence in time allocation between faculty in

federal and state public institutions, while academics in public technological institutions are more devoted to teaching than research. Faculty in private institutions, on the other hand, do as much teaching as faculty in public technological institutions, but do more research, and devote the highest hours *per* week to administrative tasks. In addition to changes in time allocation, the data presented in Table 11 show that productivity has also increased, at least in terms of the very general measures used here. A more detailed analysis is possible and should be carried out to answer more specific questions regarding this dimension.

Internationalization of Mexican faculty

This study also explores the extent to which Mexican academics have become internationalized during the period 1992-2007. Several items from the ISAP92 and the CAPS07 are relevant in this regard. Table 12 shows that there is little variation in the nationality at birth for Mexican faculty; more than 95% reported being Mexican at birth. There is, however, a significant increase in the proportion of academics that received their highest degree abroad: from 13.9% in 1992 to 21.8% in 2007. Overall, nowadays, Mexican faculty that do research collaborate much more with foreign colleagues (16.1% in 1992 *versus* 35.7% in 2007) and, at the same time, receive somewhat more funds from international resources in 2007 as compared to 1992 (18.1% *versus* 13.6%). In relation to publications there are considerable increments. While in 1992 15.1% of the surveyed faculty reported having at least one publication in another country, in 2007 the proportion had increased to 40.8%. In the same way, there has been an increment in publications in another language: from 14.8% in 1992 to 37.7% in 2007. Finally, faculty reported a relatively considerable increase in serving as faculty members abroad on the one hand (2.8% in 1992), and on teaching a course abroad (6.9% in 2007).

The data just presented speak of Mexican academics being in the process of becoming more international during the period 1992-2007. As in the case of highest degrees, there have been specific public policies targeted at attaining such goals. It remains to assess the extent to which, by being involved in the respective activities, academic work has become more relevant in the sense of increasing its contribution to the economic and social development of the country.

Table 12. Level of internationalization of Mexican full-time faculty in 1992 (N_T = 609) and 2007 (N_T = 1775)

		1992		2007	
		N*	%	n	%
Nationality at birth	Mexico	526	96.2	1651	95.0
	Other country	21	3.8	86	5.0
	Total	547	100.0	1737	100.0
Country of highest degree	Mexico	520	86.1	1369	78.2
	Other country	84	13.9	381	21.8
	Total	604	100.0	1750	100.0

	Faculty doing research who collaborated with colleagues from another country in last three years (n = 342)		Faculty doing research who collaborated with international colleagues in current/previous year (n = 1193)	
	n Yes	%	n Yes	%
Research collaboration with foreign colleagues	55	16.1	425	35.7

	Faculty who raised funds and were supported by international organizations (n = 154)[4]		Faculty who raised funds and were supported by international organizations (n = 519)[4]	
	n Yes	%	n Yes	%
Receiving funds from international sources	21	13.6	94	18.1%

	Published in another country in last three years (n = 398)		Published in another country in last three years (n = 1310)	
	n Yes	%	n Yes	%
Publications in another country by faculty having at least one publication	60	15.1	535	40.8

	Published in another language in last three years (n = 398)		Published in a language different than that use in their institution in last three years (n = 1310)	
	n Yes	%	n Yes	%
Publications in another language by faculty having at least one publication	59	14.8	480	37.7

	Served as faculty member abroad in last three years (n = 609)		Thought a course abroad in current or previous year (n = 1633)	
	n Yes	%	n Yes	%
Functioning as faculty abroad	17	2.8	112	6.9

Note: * Data for 1992 are taken from the 1992 Traits of Diversity study (Gil-Antón *et al*., 1994).

Concluding remarks

The Changing Academic Profession project began with the assumption that there is an academic profession to start with. That might be the case for countries with well established higher education systems. However, in the case of Mexico it should be acknowledged that the change processes in which faculty have been involved during the 1992-2007 period have also been, to a large extent, a process by which the Mexican academic profession has been built in the first place. This configuration and re-configuration of the academic profession make the situation somewhat more complex and can explain how so much change can have taken place, although at times departing from very low levels of occurrence of specific events (highest degree is an example of this).

So, how has the Mexican academic profession evolved since 1992? Based upon the previous data, the following conclusions appear reasonable.

- Mexican academics are today, as they were in 1992, pioneers in higher education with respect to the educational attainment of their parents. They are however building relationships with their partners with large cultural capital. It remains to be seen what role the academic generation coming from these families will play.
- Mexican academics have grown older. It is natural, but information from this same survey and other sources point out that there is no replacement strategy at the institutional or federal policy levels. A first major challenge in terms of retirement and replacement will be experienced within the next 5 to 10 years.
- The Mexican academic profession continues a process in which a larger proportion is women. There are still aspects in which women are not equitably represented (not reaching the same representation at the doctoral degree level, for example), but at this moment it appears that the tendency is there. It will be important to monitor how feminization advances, confronts challenges and, maybe, reaches limits unforeseen at this moment.
- The Mexican academic profession is becoming more professional in terms of training (highest degree), by having a work space in which it is possible for an increasing number of academics not to work outside higher education, a larger involvement in research – which constitutes a core component of the academic role, and finally, with an increasing participation in international networks – which opens the possibility for

academics to become members of the larger academic community that extends beyond national borders.

In general, many of the changes that have been described in this paper can be seen as positive. However, given the higher expectations for higher education to be relevant to society, it is still a pending task for Mexican academics to demonstrate that by having higher degrees, having better working conditions and becoming more international, allows them to do a better and more locally relevant work, a job that contributes more meaningfully to the public good of the country.

References

Finkelstein, M.J., Seal, R.K., & Schuster, J.H. (1998). *The new academic generation: A profession in transformation*. Baltimore, MD: The John Hopkins University Press.

Galaz-Fontes, J.F. (2008). *The changing academic profession in Mexico. Participation in the panel "The Changing Profession: First Report of the Results from the International Survey in 21 Countries."* 52nd Annual Conference of the Comparative & International Education Society, "Gaining Educational Equity Around the World." New York, NY.

Galaz-Fontes, J.F., *et al*. (2008). Mexican academics at the turn of the Twenty-First Century: who are they and how do they perceive their work, institutions and public policies (a preliminary analysis). *RIHE International Seminar Reports*, *12*, 345-361.

Gil-Antón, M., *et al.* (1994). *Los rasgos de la diversidad: Un estudio sobre los académicos mexicanos*. México: Universidad Autónoma Metropolitana, Azcapotzalco.

Grediaga-Kuri, R., Rodríguez-Jiménez, J.R., y Padilla-González, L.E. (2004). *Políticas públicas y cambios en la profesión académica en México en la última década*. México: Asociación Nacional de Universidades e Instituciones de Educación Superior.

Rubio-Oca, J. (ed.) (2006). *La política educativa y la educación superior en México. 1995-2006: Un balance*. México: Secretaría de Educación Pública y Fondo de Cultura Económica.

Secretaría de Educación Pública, y Asociación Nacional de Universidades e Institutos de Educación Superior (1997, Enero-Marzo). Programa de Mejoramiento del Profesorado de las Instituciones de Educación Superior. *Revista de la Educación Superior*, Vol. XXVI (1), No. 101, 99-173.

Urbano-Vidales, G., Aguilar-Sahagún, G., y Rubio-Oca, J. (2006). *Programa de Mejoramiento del Profesorado: Un primer análisis de su operación e impactos en el proceso de fortalecimiento de las universidades públicas*. México: Secretaría de Educación Pública.

Teaching and Research across Academic Disciplines: faculty's preference, activity, and performance

Jung Cheol Shin*

1. Introduction

In the mid-1990s, higher education experienced enormous changes in institutional management as represented by "performance-based accountability." In the U.S., performance based accountability takes the form of performance-based budgeting, performance-based funding, or performance reporting. In the UK, the New Public Management represents the changes. These trends have spread rapidly and now most countries have a form of accountability or have instituted management reforms. These reforms emphasize institutional performance and thus eventually faculty performance. Policymakers expect that performance-based accountability and managerial reforms will change higher education institutions and their faculty who are less responsive to social demands. However, when performance-based reforms are applied to higher education, policymakers and institutional leaders often fail to consider disciplinary differences in their policy implementation (*e.g.*, faculty tenure decisions).

So far, policymakers and institutional leaders have not paid much attention to disciplinary differences. In academia, however, members of the academic profession frequently experience difficulty in communicating with colleagues in other disciplines. This difficulty can be caused by differences between disciplines in perceptional, cultural, epistemological, and methodological approaches as well as in the academic subject itself (*e.g.*, Biglan, 1973a; Leslie,

* Assistant Professor, Department of Education, Seoul National University, Korea, e-mail: Jcs6205@snu.ac.kr

2002; Braxton & Berger, 1999; Brew, 1999; Muis, Bendixen, & Haerle, 2006). The differences are wider between social sciences and engineering compared to those between engineering and natural sciences. Sometimes, the differences become a source of conflict between disciplines on academic matters, faculty evaluation, and campus management. For example, social science Faculties tend to provide elective courses whereas engineering Faculties prefer to designate core courses; engineering faculty prefer to be evaluated by article publication while humanities faculty want to be evaluated by book publication. This disciplinary difference in academic research has not been discussed much either.

According to scholars who study disciplinary differences and its effects on faculty and students (*e.g.*, Biglan, 1973b; Braxton & Hargens, 1996), disciplinary differences are identified in a wide range of higher education topics. Across disciplines, for instance, faculty differ in their preference within their main functions – teaching, research, and service – and spend their time in different ways in the three functions. In addition, their performance in the three functions is different across disciplines. For example, faculty in 'hard' sciences such as physics and biology tend to publish their research in journals, while those in 'soft' science such as education tend to publish their research as technical reports (Baird, 1986; Biglan, 1973b; Hearn & Anderson, 2002). Disciplinary differences are reported in faculty's life patterns too (*e.g.*, Bayer & Dutton, 1977). Further, disciplinary differences are identified even among undergraduate students. For example, Paulsen and Wells (1998) applied disciplinary differences in their study to examine college student's epistemological beliefs in a U.S. public institution.

Policymakers and campus administrators are encouraged to take differences between disciplines into account in their policymaking and institutional administration. To date, however, higher education scholars have not provided policymakers and institutional administrators with sufficient information about the disciplinary differences. As a result, academic decision making is based on institution-wide standards and thus might not thoroughly consider disciplinary differences in decision making. In addition, most research studies have used data from a specific institution or a group of institutions making it difficult to generalize to different types of institutions. Even, the pioneering study by Biglan (1973a) analyzed only two institutions: one research university (University of Illinois Urbana-Champaign) and one liberal arts college. There is clearly a need for further research on the differences between disciplines across institutions.

This study will discuss and analyze disciplinary differences in faculty's preferences among the three main functions, their activities, and their performance. Special focus will be given to institutional missions because this is a critical factor in faculty's preference, activities, and their performance (Fairweather, 2005).

2. Theoretical background

As the theoretical basis of this study, I will summarize and discuss disciplinary differences of faculty activities and their performance. In addition, the literature on institutional mission and faculty life-stage will be introduced to analyze how disciplinary differences interact with institutional mission and faculty's life-stages.

Typology of academic disciplines

A well known study on disciplinary differences in higher education was conducted by Biglan (1973a) who classified academic disciplines based on empirical evidence. Biglan classified academic disciplines as (a) hard or soft according to the existence of a single paradigm, (b) pure or applied according to whether or not they were concerned with application, and (c) life-system or non-life-system according to faculty's concern with life-systems. Of these three dimensions, "hard-soft" and "pure-applied" have been used in many academic researches (*e.g.*, Paulsen & Wells, 1998; Braxton & Hargens, 1996; Lee, 2004). By combining the two dimensions, academic disciplines are classified into one of four types: "hard-pure," "hard-applied," "soft-pure," and "soft-applied." In the hard-applied category are engineering-related disciplines; soft-pure disciplines include arts and humanities, and some social sciences (*e.g.*, sociology, psychology); hard-pure disciplines include sub-disciplines of natural sciences; and soft-applied include social sciences that emphasize practical application such as accounting, finance, economics, and education.

Using the four dimensions, Biglan (1973b) conducted a study on faculty's perceptions and their activities (*e.g.*, teaching, research, and service). In his study, Biglan found that hard disciplines demonstrate greater consensus about content and method than the soft disciplines and hence research works can be efficiently broken into sub-tasks and so collaboration with colleagues is the norm in hard disciplines. In addition, because communication among scholars in hard disciplines is more abbreviated, they tend to disseminate their research outputs through academic journals. The applied disciplines emphasize contribution to

society, and faculty spend proportionately more time on service; their outputs are published as technical reports rather than journal articles so as to provide details of their research findings and practical implications.

Since Biglan's typology was proposed in 1973, scholars have used the typology to study faculty behavior (*e.g.*, faculty turn-over, collaboration with colleagues), faculty activity (teaching, research, and services), faculty performance, and cultural differences. These studies provide more in-depth information on faculty studies than the earlier research, because the typology of academic discipline has enabled them to consider discipline-specific information. Earlier research had considered all the disciplines to be the same or similar; however, in reality, disciplines are diverse in epistemology, in training their students and scholars, in communication between faculty, and in academic culture (Braxton & Hargens, 1996; Lee, 2004). Consequently, studies that do not consider disciplinary differences may produce misleading results and inconsistent findings, depending on the distribution of disciplines in the sample.

Table 1. Typology of academic disciplines

Dimension	Hard	Soft
Pure	Life Science (420), Physical Science (440), Mathematics & Statistics (460)	Humanities (220), Social & Behavioral Science (310)
Applied	Computing (480), Engineering (520), Manufacturing & Processing (540), Architecture & Building (580), Agricultural, Fishery & Forest (620), Veterinary (640), health (720), Environmental Protection (850)	Teacher Training (141), Education Science (142), Arts (210), Journalism & Information (320), Business & Administration (340), Law (380), Social Service (760), Personal Service (810), Transport Service (840), Security Service (860)

Note: Discipline classification is available from *OECD Stat Extracts* (downloaded on Jan. 7, 2009).

Table 1 provides the typology of academic disciplines that this study is based on. There are more than 100 academic disciplines in many of the major PhD granting institutions. National quality assurance systems and data collection systems have also developed typologies of academic disciplines. For instance, the Quality Assurance Agency (QAA) of the UK developed benchmarks for about 100 discipline areas in the UK higher education system. The National Science Foundation (NSF) of the U.S. collects data for PhD graduates based on their academic disciplines. In addition, international

organizations developed categories for academic disciplines for international data collection purposes. The quality assurance and data collections contribute to categorize academic disciplines. The disciplines might include sub-disciplines within a large discipline depending on the ranges of discipline category. For instance, there are 23 major areas in higher education in the classification by the OECD and the UNESCO. Although there are more discipline areas in reality, the other areas can be classified in each of these discipline areas according to their proximity to one of disciplines in Table 1 in which are classified the 23 disciplines according to Biglan's typology of hard-soft and pure-applied dimensions. Although the typology is simple, it represents the academic characteristics of each discipline in which we are interested in this study.

Classification of mission

In this study, we pay special attention to the institutional missions as well as the disciplinary differences because we believe that institutional mission has great impact on faculty's perceptions, their workloads, and their performances. In many academic studies, as well as policy studies, institutional mission has been applied in diverse contexts (*e.g*., faculty salary, student enrollment, cultural differences). The Carnegie Foundation developed a mission classification scheme in the early 1970s and has subsequently revised and extended its classification. According to its 2005 classification, there are 20 categories. However, in general, many academic scholars are interested in two extreme missions: research-oriented and teaching-oriented missions. The mission focus has been reflected in the governance of higher education systems. For instance, the Californian higher education system has been divided into the University of California System which focuses on research, the California State University System which focuses on job training, and the California Community College System. Although administrative or legal classification was abandoned in the UK and Australia, scholars still apply or develop typology to evaluate institutional performance or analyze institutional differences (*e.g.,* Ramsden, 1999; Patrick & Stanley, 1995).

We applied the institutional mission classification of higher education proposed by Shin (2009a). Shin classified Korean higher education institutions according to institutional performance rather than pre-determined benchmarks. According to this classification, Korea has seven research "1" universities, fourteen research active universities, and twenty-six doctoral universities, with the remaining universities classified as comprehensive universities. Although the classification provides detailed information on institutional characteristics

and their mission focus, they are combined for simplicity. This results in the following classifications: 'research university' (7 universities), 'PhD granting university' (14 research active universities, 26 doctoral universities), and 'comprehensive university' (all other 4-year universities in Korea). In interpreting the mission differences between institutions, 'research university' might show quite different characteristics from those of 'comprehensive universities', while 'PhD granting universities' show characteristics of both research and comprehensive universities.

Through a comparison with U.S. peers, Shin (2009a) showed that the typology is compatible with that of the Carnegie classification. In addition, in his follow-up study on research performance among Korean universities, Shin (2009b) applied the classification in evaluating the growth of research publications among Korean universities from 1995 to 2005. In the study, Shin identified clear distinctions in the growth of research performance between research universities and other types of universities.

Life stages of the academic profession

Higher education researchers (*e.g.,* Baldwin & Blackburn, 1981; Baldwin *et al*., 2005; Bayer & Dutton, 1977) pay attention to the life-cycle of the academic profession because faculty show quite different patterns in their campus life including their preferences for teaching and research, their activities, and their performance. These studies showed that different generations demonstrate different perceptions on academic scholarship, their activities, and their performance. Baldwin and Blackburn (1981) focused on how faculty characteristics have been shifting across their academic life-stages and then grouped faculty characteristics as stable, revolving, or fluctuating. In their recent study on faculty life-stages, Baldwin *et al.* (2005) identified that senior faculty spend more time on teaching, while junior faculty concentrate on research; and that faculty are more productive at the mid-career stages in their research performance than at earlier stages.

However, the relationships between faculty life-stages and their activities and performance are not linear. In their discussions on faculty performance and life-stages, Blackburn and Lawrence (1986) concluded that faculty teaching is quite stable across life-stages. In contrast, faculty's research performance across life-stages is controversial. For instance, Clark and Lewis (eds., 1985), Gander (1999), and Long (1978) identified that senior faculty perform better than junior faculty because senior faculty are generally better connected and have more experience in securing outside funding than younger faculty. Mitigating

this effect, however, tenure status may serve to undercut the motivation of senior faculty to conduct research, since their status in their department is stable (Tien & Blackburn, 1996). The controversial relationships between life-stages and research performance can be explained by fluctuations of research performance by life-stages. For example, Bayer and Dutton (1977) identified that faculty research performance has two peaks across their life-stages thus the relationships between faculty life-stages and research performance are curvilinear.

3. Population and sample

The population in this study was 52,763 full-time faculty who are affiliated with bachelor degree-granting institutions in Korea. Their main functions are teaching and research. There are few faculty whose main job is research, but most of them are not full-time "regular" faculty. The faculty information was obtained from the researcher database of the Korean Research Foundation (KRF). Using the database, we applied a random sampling method to identify the sample. We collected data through an on-line survey, which was sent to each faculty member's e-mail address (available from the KRF).

We selected a sample of 4,814 in expectation of a response rate of 20%. However, only 2,544 faculty accessed the on-line survey; and of those, only 416 responded. A second, larger sample of 9,139 faculty was selected of which 4,283 accessed the on-line survey and 484 responded. Overall 6,827 faculty accessed the survey and 900 completed it for a return rate of 13.2%. Details of population and sample are summarized in Table 2.

Table 2. Sample and survey administration

Administration	Sample	e-mail accessed	Returned
1st (Feb.- March, 2008)	4,814	2,544 (52.85%)	416 (16.35%)
2nd (April, 2008)	9,139	4,283 (46.87%)	484 (11.30%)
Total	13,953	6,827 (48.93%)	900 (13.18%)

Regarding the low return rate, we cross-checked whether our random sample adequately represents the population by gender, institutional sectors, and faculty ranks. From the cross-check, we confirmed that the sample and survey response well-represent the population. Table 3 shows the population, sample and response by academic disciplines. Among the 11 disciplinary areas shown in Table 3, engineering, humanities and arts, and medicine areas are under-represented in the survey return. This might be explained by their

regularly expressed struggle with time constraints and also their lower interest in academic works. The low return rate for the medicine areas might be explained partly by the survey items on faculty activity related questions; faculty in the medicine areas complained that the survey item does not represent their disciplinary characteristics as their workload is quite different from that of other disciplines. Although we encouraged them to respond to the survey, only a small proportion of faculty answered the questions. In contrast, faculty in education and social science are over-represented in the response. Their high return rate indicates that they are interested in faculty life. Also, faculty in education might have chosen to answer because of their personal relationships with survey administrators. This may demonstrate a kind of collegiality among faculty in education and social science.

Table 3. Population and sample by disciplines

Discipline	Respondents (%)	Population (%)
Teacher training and education science	113 (12.6%)	2,046 (3.9%)
Humanities and arts	152 (16.9%)	11,989 (22.7%)
Social and behavioral sciences	118 (13.1%)	4,226 (8.0%)
Business and administration, economics	60 (6.7%)	3,943 (7.5%)
Law	30 (3.3%)	1,233 (2.3%)
Life sciences	85 (9.4%)	4,113 (7.8%)
Physical sciences, mathematics, computer sciences	73 (8.1%)	1,935 (3.7%)
Engineering, manufacturing and construction, architecture	147 (16.3%)	11,913 (22.6%)
Agriculture	26 (2.9%)	1,704 (3.2%)
Medical sciences, health related sciences, social services	78 (8.7%)	9,042 (17.1%)
Personal services, transport services, security services	2 (0.2%)	10 (0.0%)
Not applicable	16 (1.8%)	609 (1.2%)
Total	900 (100.0%)	52,763 (100.0%)

4. Findings and discussions

Preference between teaching and research

In their preference for teaching or research, faculty lean more towards research (60.4%) than teaching (28.4%) although the majority prefer both (88.8%) (Table 4). This preference is observed in their responses about comparative weekly workloads between teaching and research. The majority of them emphasize research more highly than teaching. This may be a result of the performance-based accountability emphasis dating back to the mid-1990s. In performance-based accountability, faculty members are evaluated by their

research performance rather than by teaching. This is also seen in the level of administrative support. For example, more administrative support is provided to research (46%) than teaching (28%). In relation to personnel decisions, higher education institutions have also favored research (33%) more than teaching performance (24%). These changes have enormous impacts on faculty workloads and their preference for teaching or research. This has been accelerated by governmental funding methods which emphasize institutional research performance. In 2004, for instance, 75% of governmental subsidies to higher education institutions were based on institutional performance.

Table 4. Faculty's preference between teaching and research (%)

Preference between Teaching & Research	Research		PhD Granting		Comprehensive		Total
	Hard	Soft	Hard	Soft	Hard	Soft	
Teaching	1.2	0.0	2.1	5.1	4.4	4.9	3.4
Both, but Teaching	15.3	23.4	22.8	34.8	23.7	36.3	28.4
Both, but Research	72.9	64.9	64.2	56.2	66.7	51.8	60.4
Research	10.6	11.7	10.4	3.4	5.3	6.9	7.4
n	85	77	193	178	114	245	900

Note: Proportion of faculty agreeing with each survey item.

Regarding the relations between teaching and research, two competing perspectives have supporters on each side. The first approach focuses on quantitative data, preferring to measure research productivity by research publications and teaching quality by students' course assessment. The majority of researchers report that there is a weak or no relationship between teaching and research (*e.g.,* Feldman, 1987; Marsh & Hattie, 2002; Ramsden, 1999). The alternative approach has been to conduct an in-depth qualitative study of the relations between teaching and research. Contrary to the quantitative studies, many qualitative studies found that research has a positive correlation with teaching (*e.g.*, Durning & Jenkins, 2005; Griffiths, 2004; Robertson, 2007). The findings of the qualitative studies are consistent with faculty's general belief that teaching and research are closely related (Table 5).

As Table 5 shows, faculty perceive teaching to be compatible with research (3.74). The perception is clearer at research universities, where faculty spend more time on research than teaching, than at comprehensive universities. In addition, soft disciplines show a higher percentage of disagreement on this across the three types of mission. However, many of them believe that research activity is useful ("reinforcement" in the survey item) in their teaching. It is possible that those who perceive a conflict between teaching and research

consider the conflict of time. If faculty spend more time on research, they might reduce their time on teaching and perceive teaching in a negative light to research. Regarding the contribution of service activity (2.49), which is near the mean in the 1 to 5 scale, many faculty believe that service activity may or may not contribute to their teaching.

Table 5. Relationship between teaching, research, and service

Teaching & Research	Research		PhD Granting		Comprehensive		Total
	Hard	Soft	Hard	Soft	Hard	Soft	
Teaching and Research not compatible (B5)	3.73	4.04	3.74	3.82	3.59	3.65	3.74
Research reinforces teaching (C4)	1.95	1.73	1.90	1.79	1.91	1.88	1.86
Service reinforces teaching (C4)	2.85	2.60	2.61	2.39	2.45	2.35	2.49
n	85	77	193	178	114	245	900

Notes (i) Questions in the CAP survey are identified in parentheses.
(ii) Scale of answers 1 = "strongly agree" to 5 = "strongly disagree".

We also wish to examine academic scholarship when considering the relationship between teaching and research. Boyer (1990) proposed four dimensions – discovery, integration, application, and teaching. He argued that the four dimensions should be considered together as academic scholarship and stressed the balance between these four. Boyer's argument has attracted attention from academics, policymakers, and university administrators and has led to changes in higher education and/or campus-wide policy. The survey had four related items. As Table 6 shows, faculty strongly agreed that integration constitutes academic scholarship (1.79), followed by application (1.92), discovery (1.97), and social service (2.06). However, the view of academic scholarship differs according to missions and disciplines. For instance, faculty in research universities tend to emphasize discovery while in applied disciplines they tend to weigh application more than discovery.

Table 6. Emphasis on academic scholarship across disciplines

Boyer's Academic Scholarship	Research		PhD Granting		Comprehensive		Total
	Pure	Applied	Pure	Applied	Pure	Applied	
Discovery	1.62	2.03	1.87	2.04	1.76	2.15	1.97
Application	2.22	1.79	2.13	1.81	2.02	1.86	1.92
Integration	1.80	1.75	1.80	1.79	1.75	1.82	1.79
Social service	2.35	2.04	2.16	1.96	2.22	1.97	2.06
n	60	102	135	236	124	235	900

Note: Scale of answer 1 = strongly agree to 5 = strongly disagree.

Teaching and research activity

Faculty spend 53.29 hours *per* week on average engaged in academic activity during the semester (see Table 7). In general, they spend more time on teaching (21.08 hrs) than research (18.24 hrs), administration (6.02 hrs), or service (4.69 hrs). Faculty at a research university spend more time on research than teaching while at a comprehensive university they spend more time on teaching. Faculty's time allocation differs also by discipline. Hard disciplines spend more time on research. In soft disciplines, faculty spend more time on teaching than those in hard disciplines spend on research. This finding is consistent with the literature (*e.g.*, Biglan, 1973b) which has reported that hard disciplines put more emphasis on research than teaching.

Table 7. Time allocation of faculty activity (hours *per* week)

Time allocation (in session)	Research		PhD Granting		Comprehensive		Total
	Hard	Soft	Hard	Soft	Hard	Soft	
Teaching	16.31	19.56	19.34	22.51	23.49	22.40	21.08
Research	22.67	19.84	19.78	17.30	16.71	16.31	18.24
Service	4.60	5.36	4.75	4.53	4.90	4.47	4.69
Administration	6.17	6.61	6.07	5.94	6.26	5.62	6.02
Other academic works	4.13	4.12	3.09	3.59	3.00	3.00	3.36
Total	53.88	55.49	53.03	53.87	54.36	51.80	53.39
n	84	76	190	176	112	240	880

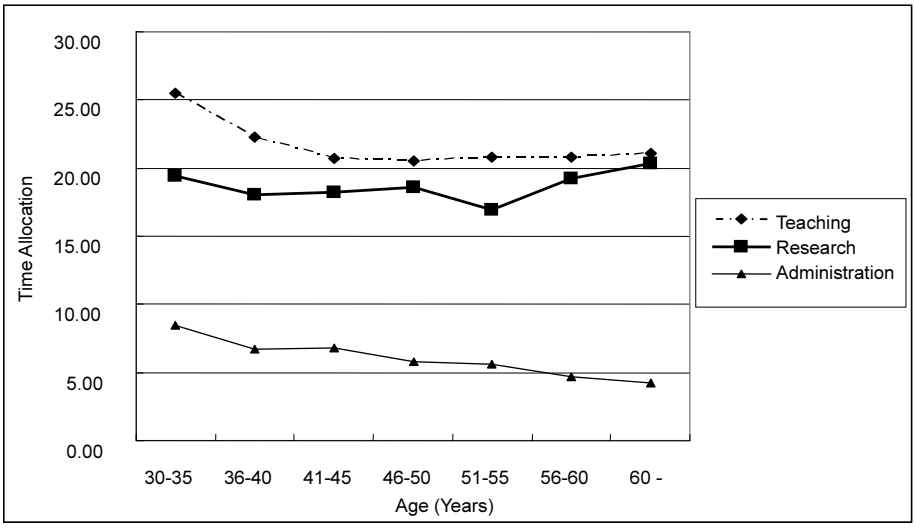


Figure 1. Faculty time allocation by age

As Figure 1 shows, faculty's time allocation also differs according to age. For example, faculty spend more time on teaching and administrative services early in their career, but reduce the time on teaching and administration in later years. Likewise, they increase the time spent on research as they age. This pattern is quite different from that in the U.S. where senior faculty teach more courses and do more administrative work when they are tenured. In the U.S., Baldwin *et al.* (2005) identified that mid-career faculty had higher administrative workloads than junior or senior faculty. From the academics' viewpoint, faculty workloads of Korean faculty might be beneficial for senior faculty but may harm junior faculty's academic development because they are always focused on course development and publications regardless of their affiliated institutional types. In Korea, this research shows that junior faculty have excessively heavy workloads – teaching, doing administrative service, and publishing.

In their teaching activity, almost all faculty (97.9%) use lecturing as the main instructional method, followed by individualized instruction (58.1%), and project-based learning (47.6%) (Table 8). However, only 10.7% use information and communication technology (ICT) in their classes. This low rate of technology use is disappointing for administrators because many institutions invest a great amount to facilitate ICT. There are also differences in the use of instructional methods between disciplines. Faculty in hard disciplines prefer to use project-based learning while in soft disciplines they prefer individualized instruction and ICT. This difference reflects the difference between disciplines because hard disciplines share a similar paradigm and thus are able to use project-based instruction. However, in soft disciplines, student learning is individualized because there is no single paradigm in the soft sciences and thus most of the learning is individualized. In this respect, ICT is very helpful because it facilitates individualized learning.

Table 8. Instructional methods across disciplines (%)

Instructional Method	Research		PhD Granting		Comprehensive		Total
	Hard	Soft	Hard	Soft	Hard	Soft	
Lecturing	95.3	100.0	97.4	98.3	98.2	98.0	97.9
Individualized instruction	60.0	66.2	51.3	59.7	59.6	59.6	58.1
Project-based learning	62.4	42.9	50.3	39.8	54.4	44.5	47.6
ICT-based learning	1.2	10.4	5.2	9.9	7.9	20.0	10.7
n	85	77	193	178	119	245	900.00

Note: Proportion identifying use of teaching method (C2).

In their research activity, faculty collaborate in conducting research projects (72.8%), but very few faculty (28.7%) are involved in international collaboration (Table 9). Among the three mission types, faculty in research universities are very active in collaborating with their colleagues domestically and/or internationally. Faculty in research universities may have more contacts with their colleagues domestically and internationally because research universities are very involved in networking. In addition, hard disciplines show clear differences in collaboration across the three mission types when compared with soft disciplines. Because hard disciplines have a similar paradigm in subject knowledge and research methods, there is mutual benefit in collaboration. In Biglan's study (1973b), he found that scholars in hard disciplines publish with many authors while scholars in soft disciplines tend to publish with one or very few co-authors. The same differences by discipline were also identified in this survey.

Table 9. Faculty collaboration in conducting research (%)

Research Collaboration	Research		PhD Granting		Comprehensive		Total
	Hard	Soft	Hard	Soft	Hard	Soft	
Independent	25.9	36.4	24.9	42.7	29.8	42.9	35.0
Collaborative research	92.9	71.4	87.0	61.8	71.9	62.4	72.8
Collaboration_is domestic	82.4	57.1	69.9	52.8	66.7	58.4	63.1
Collaboration_is international	54.1	33.8	38.3	20.2	28.9	15.9	28.7
n	83	75	185	172	111	243	862

Note: Proportion of faculty engaging in this activity.

In general, faculty emphasize applied and practical research (2.11) followed by basic and theoretical research (2.30) (Table 10). However, relatively few of them prefer to do commercially oriented (3.69), or socially oriented (3.16) research. There is a clear disciplinary distinction between pure and applied disciplines in basic and applied research. As Table 10 shows, pure disciplines prefer to do basic and theoretical research across the mission types while applied disciplines prefer applied research. The differences may be based on fundamental differences in academic orientation between the two types of disciplines. It is interesting to note that commercially oriented and socially oriented researches are not popular though applied research is popular in applied disciplines. This implies that the social impacts of applied research might not be high even though faculty conduct research in applied disciplines.

Table 10. Faculty research orientation across disciplines

Research Orientation	Research		PhD Granting		Comprehensive		Total
	Pure	Applied	Pure	Applied	Pure	Applied	
Basic/theoretical	1.75	2.42	1.94	2.48	2.02	2.53	2.30
Applied/practical	2.75	1.73	2.56	1.93	2.42	1.93	2.11
Commercially-oriented	3.98	3.46	3.98	3.45	4.17	3.58	3.69
Socially-oriented	3.78	3.29	3.39	3.10	3.16	2.93	3.17
n	60	102	132	230	121	232	877

Note: Faculty responses to characterization of their research as shown in column 1, scale of answer 1 = strongly agree to 5 = strongly disagree (D2).

Faculty disseminate their research mainly through journal articles (10.6 articles during the three years from 2005 to 2007) (Table 11). However, the method of dissemination is quite different across disciplines. In hard disciplines, the tendency is to publish journal articles in international journals. In soft sciences, there is a preference for publishing books as well as journal articles. The clear distinction between hard and soft disciplines is seen in the different mission types. In research universities, as shown in Table 11, faculty in hard disciplines publish many articles in international journals as well as domestic journals while faculty in soft disciplines publish fewer articles by comparison. Because faculty in hard disciplines have a greater consensus about content knowledge and method, it may be easier to collaborate with colleagues and thus achieve a higher acceptance rate.

Table 11. Research publications across disciplines

Publication Types	Research		PhD Granting		Comprehensive		Total
	Hard	Soft	Hard	Soft	Hard	Soft	
Books	0.8	2.5	1.5	2.0	1.1	1.7	1.6
Articles_total	19.1	9.3	14.9	7.2	10.3	7.2	10.6
(Articles_international journals)	13.2	1.3	7.7	0.3	4.2	0.3	3.7
Research Reports	4.1	2.3	3.1	1.9	2.6	2.2	2.6
Newspaper articles	0.5	1.8	1.3	1.4	0.4	0.9	1.1
n	85	77	193	178	114	245	900

Note: Numbers of publications from 2005 to 2007.

As well as the disciplinary differences in faculty performance, there may be individual factors that are interrelated with institutional mission and disciplinary factors. For instance, faculty in hard disciplines tend to start their careers at an earlier age than faculty in the soft disciplines. In addition, research performance may differ depending on age or the length of career. In hard

disciplines, faculty tend to be actively engaged in research earlier in their careers than faculty in soft disciplines. Figure 2 shows an interesting pattern of research publication. Faculty in hard sciences show a first peak in research output in mid-career and a second peak appears later in their careers at an age between 56 and 60 years. This highlights the cycle of faculty life: faculty are very active in research during their mid-careers in order to obtain tenured status; they then enjoy job security after having obtained tenure; then, finally they begin to restart their research in the 56-60 year age range before they reach retirement age (in Korea, faculty retire at 65 in most institutions).

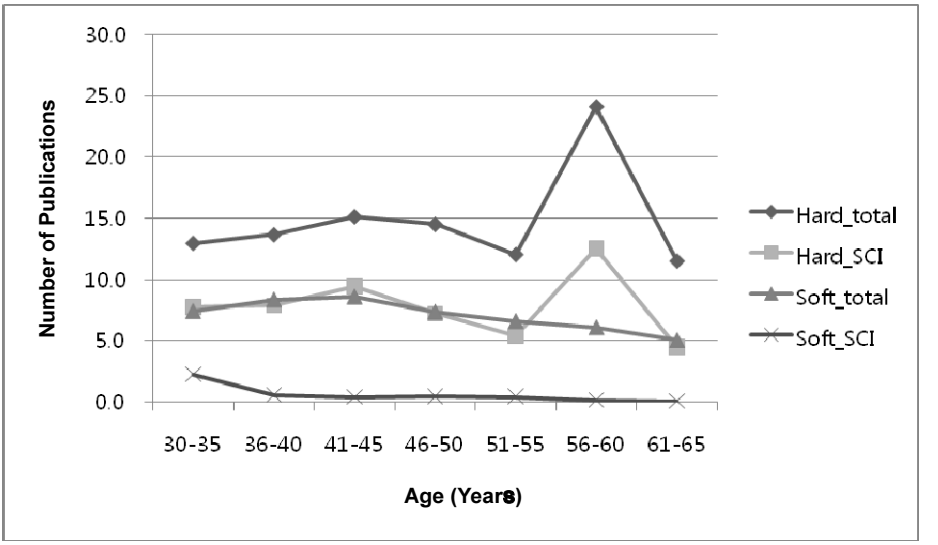


Figure 2. Article publication by age

Compared to the hard sciences, faculty in soft sciences do not show the second peak. This is quite different from the general perception that faculty in soft sciences publish more in their later career stages. We might interpret the results in terms of the quality of publications, which implies that the quality of research in their later career may be much higher than the research they conducted earlier in their careers. In their early years, faculty tend to focus on the quantity of publications rather than the quality in order to obtain tenure.

An interesting aspect of research performance is book publication. As Figure 3 shows, faculty in hard sciences as well as in soft sciences publish a growing number of books as they advance in their careers. This may be because faculty are able to integrate subject knowledge more broadly within their discipline area or with knowledge of other disciplines. The rapid increase in

books published at retirement age should be contrasted with the decrease in article publication at the same time. These interesting patterns in faculty's research should be explored by follow-up studies. There may be some psychological and socio-contextual backgrounds to the publication patterns that may not be fully explained by our survey data.

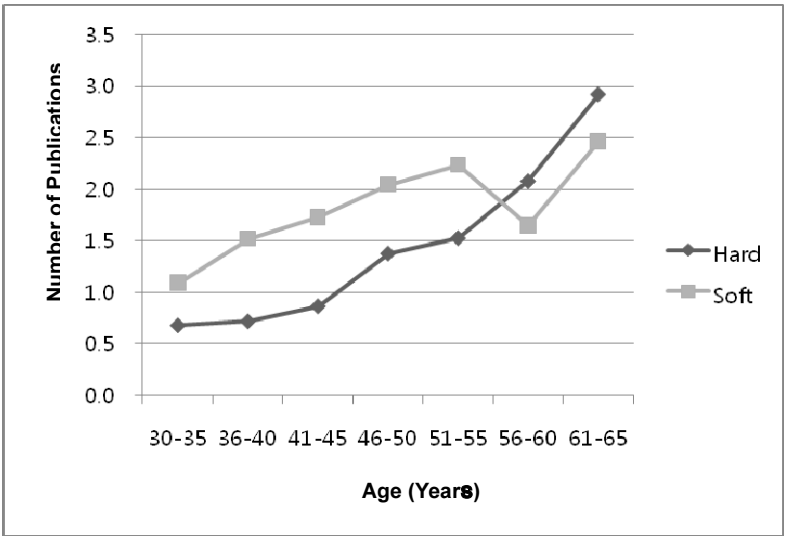


Figure 3. Book publication by age

5. Concluding remarks

This paper shows how disciplinary differences are important in understanding faculty activity and performance. This finding has implications for policymakers and campus leaders, who tend to establish a single standard for all disciplines and implement the criteria regardless of disciplinary differences. These practices are broadly applied in modern higher education management. For instance, many Korean universities require a given number of journal publications in order to be hired, tenured, and promoted. However, the criteria may undermine institutional diversity and mission focus. It is therefore critical to develop diverse criteria for different disciplines. It may be a hard task because faculty tend to hide under the name of "disciplinary differences" when external agencies and/or campus administrators with a different disciplinary background initiate innovations. In terms of policy, the key is to find a balance between disciplinary differences and managerial reforms.

References

Baird, L.L. (1986). What characterizes a productive research department? *Research in Higher Education, 25*(3), 211-225.

Baldwin, R.G., & Blackburn, R.T. (1981). The academic career as a developmental process: Implications for higher education. *Journal of Higher Education, 52*(6), 598-614.

Baldwin, R.G., Lunceford, C.J., & Vanderlinden, K.E. (2005). Faculty in the middle years: Illuminating an overlooked phase of academic life. *Review of Higher Education, 29*(1), 97-118.

Bayer, A.E., & Dutton, J.E. (1977). Career age and research-professional activities of academic scientists: Test of alternative nonlinear models and some implications for higher education faculty policies. *Journal of Higher Education, 48*, 259-282.

Biglan, A. (1973a). The characteristics of subject matter in different academic areas. *Journal of Applied Psychology, 57*(3), 195-203.

Biglan, A. (1973b). Relationships between subject matter characteristics and the structure and output of university departments. *Journal of Applied Psychology*, *57*(3), 204-213.

Blackburn, R.T., & Lawrence, J.H. (1986). Aging and the quality of faculty job performance. *Review of Educational Research, 23*(3), 265-290.

Boyer, E.L. (1990). *Scholarship Reconsidered: Priorities of the Professoriate*. San Francisco: Jossey-Bass.

Braxton, J.M., & Berger, J.B. (1999). How disciplinary consensus affects faculty. In R. J. Menges (ed.), *Faculty in New Jobs: A Guide to Settling in, Becoming Established, and Building Institutional Support* (pp. 243-267). San Francisco: Jassey-Bass.

Braxton, J.M., & Hargens, L.L. (1996). Variation among academic disciplines: Analytical frameworks and research. In J.C. Smart (ed.), *Higher Education: Handbook of theory and research* (Vol. 11, pp.1-146). New York: Agaton Press.

Brew, A. (1999). Research and teaching: Changing relationships in a changing context. *Studies in Higher Education, 24*, 291-301.

Clark, S.M., & Lewis, D.R. (eds.) (1985). *Faculty vitality and institutional productivity: Critical perspectives for higher education*. New York: Teachers College Press.

Durning, B., & Jenkins, A. (2005). Teaching/research relations in departments: the perspectives of built environment academics. *Studies in Higher Education, 30*(4), 407-426.

Fairweather, J.S. (2005). Beyond the rhetoric: Trends in the relative value of teaching and research in faculty salaries. *Journal of Higher Education, 76*(4), 401-422.

Feldman, K.A. (1987). Research productivity and scholarly accomplishment of college teachers as related to their instructional effectiveness: A review and exploration. *Research in Higher Education, 26*(3), 227-298.

Gander, J.P. (1999). Faculty gender effects on academic research and teaching. *Research in Higher Education,* 40(2), 171-184.

Griffiths, R. (2004). Knowledge production and the research-teaching nexus: the case of the built environment disciplines. *Studies in Higher Education, 29*(6), 709-726.

Hearn, J.C., & Anderson, M.S. (2002). Conflict in academic departments: An analysis of disputes over faculty promotion and tenure. *Research in Higher Education, 43*(5), 503-529.

Lee. J.J. (2004). Comparing Institutional Relationships with Academic Departments: A Study of Five Academic Fields. *Research in Higher Education, 45*(6), 603-624.

Leslie, D.W. (2002). Resolving the dispute: Teaching is academic's core value. *Journal of Higher Education, 73*, 49-73.

Long, J.S. (1978). Productivity and academic positions in the scientific career. *American Sociological Review,* 43: 889-908.

Marsh, H.W., & Hattie, J. (2002). The relation between research productivity and teaching effectiveness: Complementary, antagonistic, or independent constructs? *Journal of Higher Education, 73*(5), 603-641.

Muis, K.R., Bendixen, L.D., & Haerle, F.C. (2006). Domain-generality and domain-specificity in personal epistemology research: Philosophical and empirical reflections in the development of a theoretical framework. *Educational Psychology Review, 18*, 3-54.

Patrick, W.J., & Stanley, E.C. (1995). Teaching and research quality indicators and the shaping of higher education. *Research in Higher Education, 39*(1), 19-41.

Paulsen, M.B., & Wells, C.T. (1998). Domain differences in the epistemological beliefs of college students. *Research in Higher Education, 39*(4), 365-384.

Ramsden, P. (1999). Predicting institutional research performance from published indicators: A test of a classification of Australian university types. *Higher Education, 37*, 341-358.

Robertson, J. (2007). Beyond the 'research/teaching nexus': exploring the complexity of academic experience. *Studies in Higher Education*, *32*(5), 541-556.

Shin, J.C. (2009a). Classifying higher education institutions in Korea: a performance-based approach. *Higher Education, 57*(2), 247-266.

Shin, J.C. (2009b). Building world-class research university: The Brain Korea 21 project. Published online at *Higher Education,* DOI: 10.1007/s10734-009-9219-8.

Tien, F.F., & Blackburn, R.T. (1996). Faculty rank system, research motivation, and faculty research productivity. *Journal of Higher Education, 67*(1), 2-22.

Teaching and Research in English Higher Education: new divisions of labour and changing perspectives on core academic roles

William Locke* and Alice Bennion**

1. Introduction

The UK higher education (HE) system has undergone dramatic changes between the surveys of academics in England in 1992 (supported by the Carnegie Foundation for the Advancement of Teaching) and those throughout the United Kingdom (UK) for the Changing Academic Profession (CAP) study in 2007. The formal binary divide between universities and the larger non-university institutions (polytechnics) was abolished in 1992, and further eroded in England in 2004, with the loosening of the criteria for award of the title, so that new 'universities' no longer require research degree awarding powers. There has been a huge (86%)[1] expansion in the number of students entering higher education, especially of those studying part-time and at postgraduate level, and as international students. A significant emphasis has been placed on widening participation to those parts of the population that have tended not to consider HE study, but to limited apparent effect (NAO, 2008). In parallel, but at a slower rate due to the relative decline in public funding of HE in the UK, the number of academic staff has grown from approximately 100,000 (Fulton, 1996) to nearly 170,000 (HESA, 2008a).

* Assistant Director, The Centre for Higher Education Research and Information (CHERI), The Open University, United Kingdom, e-mail: W.D.Locke@open.ac.uk
** Research Assistant, The Centre for Higher Education Research and Information (CHERI), The Open University, United Kingdom, e-mail: ab23332@openmail.open.ac.uk

[1] 1991/92: 1,267,900 (Connor *et al*, 1996 using previously unpublished Government data; 2006/07: 2,362,815 (HESA, 2008b).

Since 1992, the external evaluation of the core activities of teaching and research has intensified and been co-opted for government purposes in the steering of HE institutions (HEIs) towards diversity of purpose while maintaining quality standards. A 'third stream' of funding has been established in order to encourage HEIs in their efforts to reach out to businesses and the community and disseminate the knowledge they generate more widely than *via* the students they graduate. Finally, since 1997, devolution of power to the four constituent nations of the UK – Scotland, Wales and Northern Ireland, as well as England – has progressed at a different pace in each, leading to (and, in some respects, strengthening) some significant differences in educational policies and practices.

So, it is timely to compare the findings from the surveys in 1992 and 2007 on the nature of academic roles in the UK and the ways they are changing, and on how academics view the profession after a period of turbulence. This paper focuses on the findings from an analysis of the responses to an online survey of nearly 1,700 academics from a wide range of HEIs throughout the UK which was carried out by the Centre for Higher Education Research and Information (CHERI) at The Open University. The responses have been weighted to produce a representative sample of 800 from HEIs across the UK. The paper includes comparisons with data from the 1992 paper-based survey of 1,400 academics in England as part of the first International Survey of the Academic Profession (Fulton, 1996). Therefore, this paper concentrates on the responses to the 2007 survey from those employed in HEIs in England.

The CAP questionnaire repeated 13 items from the earlier survey. The comparison allows us to explore the changes in English HE as they are reflected in responses on: the amount of time the respondents spent on different activities; academics' primary interests in teaching and research; their affiliations to their subject, department and institution; their satisfaction with their jobs and views on the attractiveness of the profession; their opinions on teaching; their views on research, their scholarly contributions and sources of research funding; and the evaluation of teaching, research and service activities. For the purposes of this paper, we have analysed the data according to a range of factors (gender, age, time in the profession, grade, academic discipline and type of institution) and focused on the results where there is a significant correlation. First, however, we identify some of the key characteristics of the UK academic profession in relation to teaching and research.

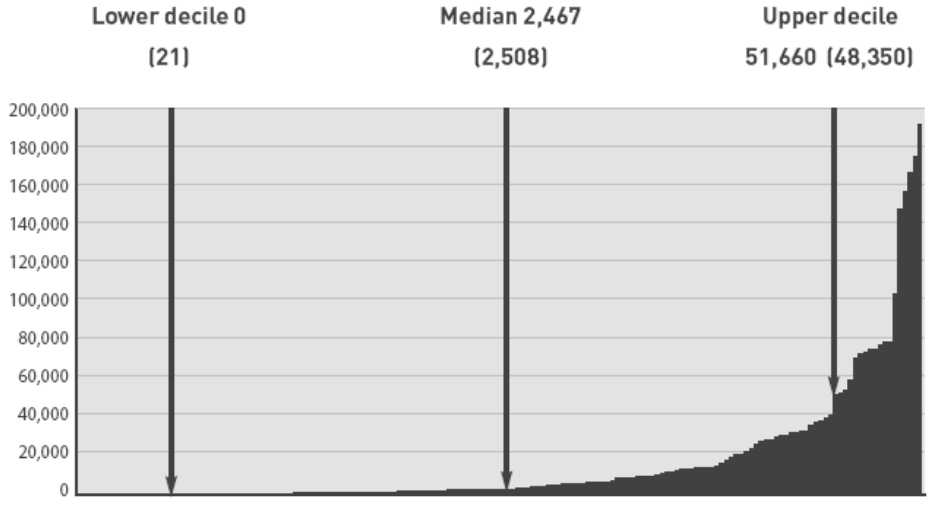
2. The UK academic profession and teaching and research: key characteristics

Universities are organisationally autonomous from the national governments of England, Scotland, Wales and Northern Ireland – the four constituent nations of the UK. They are free to employ and dismiss academic staff, set salaries, decide on academic structure and course content, spend their budgets to achieve their objectives and own and dispose of their buildings and equipment. Within certain parameters, they can decide the size of student enrolment and borrow money. In England, from 2006, HEIs were able to decide the level of tuition fees for full-time undergraduate home and European Union (EU) students up to a maximum 'cap'. Tuition fees for part-time, postgraduate and international (non-EU) students are not regulated. However, despite this relative autonomy and falling levels of public expenditure *per* student, the governments of the UK still exercise a considerable degree of influence over HEIs, through the allocation of funding and the conditions attached to this, and the regulation and evaluation of their activities. A series of intermediary bodies, such as Funding Councils, Research Councils, the Quality Assurance Agency, the Office of the Independent Adjudicator and the Office for Fair Access – as well as the relevant government department or ministry – attempts to steer institutions in the direction of the administration's policies, although these policies are not always consistent with each other and can suddenly take different courses (Locke, 2008a). Of course, some aspects of HE are clearly the subject of legislation and, for our purposes, the abolition of tenure in universities[2] in 1988 is a clear example of government influence.

HEIs in the UK are highly differentiated by institutional origin, status, mission, historical wealth, resources, research activity and income, educational provision and student characteristics. This differentiation influences how changes impact on individual HEIs and how much autonomy they can exercise in addressing government policy, the various markets they operate in and other drivers such as demography, technology and environmental change. For heuristic purposes, we have distinguished five types of HEI: research intensive (Russell Group) universities, other *pre*-1992 universities, *post*-1992 universities,

[2] Academics working in polytechnics did not have tenure. However, there is some debate about whether tenure remained in practice, given universities' reluctance to make compulsory redundancies (Fulton & Holland, 2001).

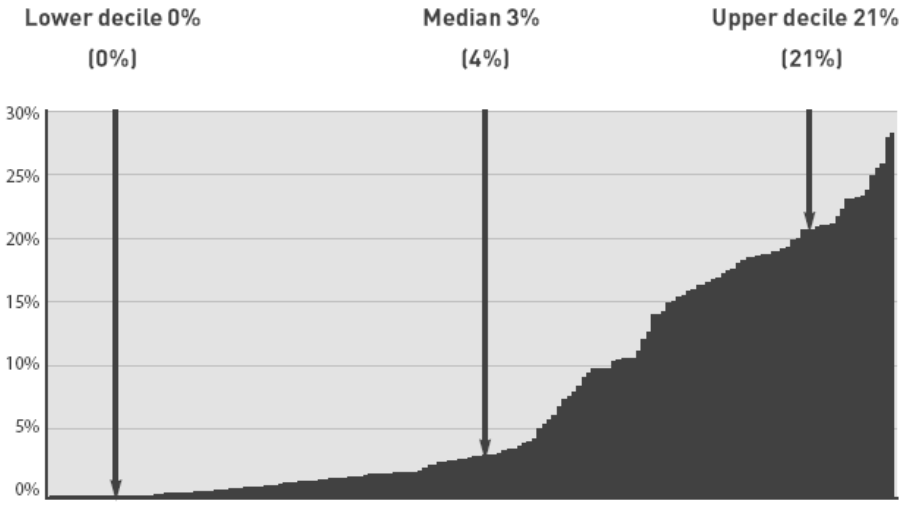
post-2004 universities and HE colleges.[3] Analysis of the survey data reveals differences that are strongly consistent with this categorisation: HEI-type is more significantly correlated with differences in responses to the questionnaire than any other factor, including gender, age, subject, grade, and mode of employment. University success and prestige are still largely associated with research – even for those *post*-1992 universities who have sought to prove their new credentials (Locke, 2004). However, the vertical differentiation of institutions has endured. For example, Figure 1 shows the distribution of the public funding of research, demonstrating its concentration in a small number of higher education institutions, each one represented by a bar. Figure 2 shows the relationship between public research income and all income generated by each institution. There is a steep gradient above the upper decile. The extent of concentration of research funding is demonstrated by the fact that the overall ratio of public research income to overall income is 13%: the median institution receives just 3% of its income from public research funds – and this has decreased from 4% in 2005/06 (Universities UK, 2008).



(from Universities UK, 2008, p44)

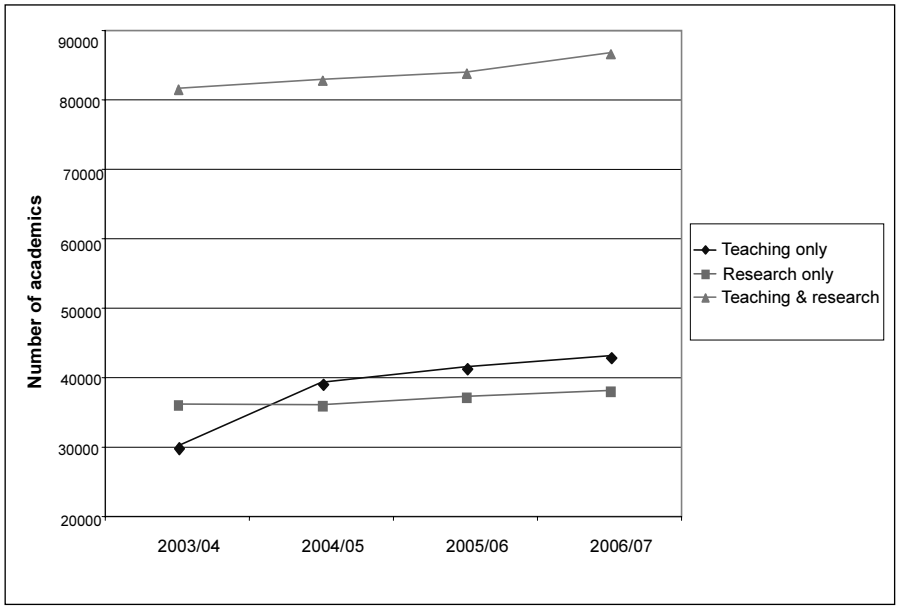
Figure 1. Public funding of research (£000) in the UK, by Institution, 2006/07

[3] However, we remain open to identifying different patterns of institution through further analysis of the CAP UK data.



(from Universities UK, 2008, p.45)

Figure 2. Public funding of research in the UK as a percentage of all income, by institution, 2006/07



(data extracted from HESA, 2008a)

Figure 3. Types of academic contract in UK HEIs: trends 2003-2007

This concentration of research funding has led to an increasing number of individuals, academic departments and even universities effectively becoming teaching-only or, at least, 'research inactive'. At the same time, the number of

research-only academics has increased, though at a slower pace, and the vast majority of these are on fixed-term contracts associated with specific research projects. Figure 3 illustrates that those academics on contracts that require them to teach *and* research represent little more than half of the total population. Table 1 summarises the main characteristics of UK academics.

Table 1. Profile of academic staff in the UK, 2006/07

	Full-time	Part-time	Total
All academic staff	113,685	56,310	169,995
By gender			
Female	58%	42%	42%
Male	73%	28%	58%
By grade			
Professors	90%	10%	10%
Senior lecturers & researchers	86%	14%	20%
Researchers	60%	40%	31%
Lecturers	84%	16%	22%
Other grades	25%	75%	18%
By age			
30 & under years			15%
31-40 years			28%
41-50 years			28%
51+ years			29%
Terms of employment			
Permanent	72%	28%	62%
Fixed- term	44%	56%	38%

(data extracted from HESA, 2008a)

3. Findings from the 1992 and 2007 surveys

Academic work: the balance of activities and interests

Between 1992 and 2007, responses to the two surveys suggest that the median number of hours academics spend teaching has decreased, as has the time spent on administrative work (Table 2). This may be the result of more accurate recording as much as an actual decrease in time spent on these activities. Increasingly, academics in England are being required to complete time allocation schedules in an attempt to provide their institutions with more information about the costs of different activities. This has meant that individuals are far more aware of how they spend, and account for, their time. Also, activities which may have been incorporated in a broad notion of 'teaching' in 1992 may now be disaggregated and included in the categories of 'service' or 'other academic activities' which have seen a rise in the 2007 survey. Time

spent on 'research' has also increased since 1992 which reflects the growing pressure on academics to produce high quality research outputs suitable for submission to the periodic UK Research Assessment Exercise. It also follows an increase in the number of research-only staff employed since 1992 and a growing emphasis on research for career progression in, and between, institutions.

Table 2. Median hours per week on teaching, research, service, administration and other academic activities, in session and not in session, 1992/2007

	1992		2007	
	In Session	Not in Session	In Session	Not in Session
Teaching	20	5	15	6
Research	10	20	10	25
Service	2	2	4	4
Administration	8	5	5	5
Other	2	3	4	5

Given the increase in the number of hours spent on research, it is unsurprising that the proportion of academics claiming a primary interest in research has increased (Table 3), while those stating a primary interest in teaching or in both teaching and research has decreased in the 2007 survey.

Table 3. Primary interest (%), 1992/2007

	1992	2007
Primarily in teaching	12	11
In both, but leaning towards teaching	32	28
In both, but leaning towards research	40	37
Primarily in Research	15	24

Table 4. Primary interest (%), by age, 2007

	30 & Under (32)[4]	**31-40** (155)	**41-50** (167)	**51+** (198)	**Total** (552)
Primarily in teaching	6	7	7	18	11
In both, but leaning towards teaching	16	10	47	32	38
In both, but leaning towards research	16	50	29	37	37
Primarily in Research	63	34	17	13	24

[4] The figures in this row (and in subsequent tables) represent a proportion of the responses from the UK weighted 800 (but England only), and not the actual numbers of individual responses to the questions.

The high proportion (63%) of those under 30 years old interested primarily in research reflects the predominance of contract researchers in the early stages of an academic career in the UK. A large majority (71%) of respondents in the category '30 years and under' and on fixed term contracts stated they were primarily interested in research. There were no academics on fixed-term contracts in the age category '30 years and under' who stated they were primarily interested in teaching. This reflects the structure of the academic profession and the common pathways to career progression. Again, this is reflected in the high proportion (50%) of 31-40 year old academics who regard their primary interest to be in both but leaning towards research. By mid-career, respondents are more evenly spread across the four options.

Table 5. Primary interest (%), by institution type, 2007

	Research Intensive Univ. (193)	**Other *Pre*-1992 Univ.** (249)	***Post*-1992 Univ.** (99)	***Post*-2004 Univ.** (19)	**HE Colleges** (7)	**All** (569)
Primarily in teaching	3	11	16	60	14	11
In both, but leaning towards teaching	23	31	34	16	43	38
In both, but leaning towards research	36	38	40	21	43	37
Primarily in Research	39	20	10	5	0	24

Of academics from research intensive universities, 39% are primarily interested only in research whilst only 3% are primarily interested only in teaching. Institutions that have more recently become universities have a lower percentage of academics stating their primary interest in research. Although only small numbers of academics from HE colleges answered this question, it is still surprising to see so few stating teaching as their primary interest. It would be interesting to investigate the thinking that lies behind these responses so that we can develop a clearer understanding of what academics within these different institutions regard as research and teaching, how they conceive these activities and the relations between them.

There are also differences between academic disciplines. Of academics currently employed in the field of education, 21%, and of academics working in design, creative and performing arts 22%, state a primary interest in teaching, whilst only 7% and 8% respectively are primarily concerned with research. Only 8% of academics currently working in engineering and technology departments state a primary interest in teaching compared with 44% who regard

research as their primary interest. This is quite different from the picture portrayed in the 1992 survey when 18% of academics stated a primary interest in teaching and 8% a primary interest in research. The majority of academics (74%) working in this discipline in 1992 suggested an interest in both areas of academic work.

Affiliation

Table 6 presents the results given to survey questions on affiliation. Interestingly, in both 1992 and 2007, academics appear far more affiliated to their academic discipline and department than to their institution. The findings presented in Table 6 somewhat contradict previous research that suggests a decline in academics' commitment to their institution (*e.g.* Bryson, 2004). Although the figures for 1992 and 2007 are not directly comparable due to slight differences in the scales used in the UK CAP questionnaire, there has clearly been no decline in the proportion of academics who are affiliated to their academic discipline, department or institution. If the 2007 responses for "Essential" and "Very Important" are combined and compared with those for "Very Important" in 1992, the proportion has increased since the first survey by 18%. In support of this finding, the figures for "Not at all Important" and the next response in each questionnaire ("Not Too Important" in 1992 and "Useful but not that Important" in 2007) have dropped by 11% in the CAP survey. So, all three institutional levels now appear to be more significant in the working lives of academics.

Table 6. Affiliation (%), 1992/2007

	1992				2007		
	Academic Discipline	Depart-ment	Insti-tution		Academic Discipline	Depart-ment	Insti-tution
				Essential	41	17	10
Very Important	64	40	18	Very Important	41	40	26
Fairly Important	29	44	46	Quite Important	12	26	39
Not Too Important	6	13	28	Useful but not that Important	6	11	19
Not at All Important	1	4	8	Not at all Important	1	6	6

Table 7. Affiliation by institution type (%), 2007

		Research Intensive Univ. (189)	**Other *Pre*-1992 Univ.** (254)	***Post*-1992 Univ.** (99)	***Post*-2004 Univ.** (26)	**HE Colleges** (10)	**All**
Academic Discipline	Essential/ Very Important	84	81	85	47	88	82
	Quite Important	7	12	11	27	0	12
	Not too/Not at all important	6	6	4	27	11	7
Department	Essential/ Very Important	55	56	59	58	60	57
	Quite Important	25	27	29	15	10	26
	Not too/Not at all important	20	17	11	27	30	17
Institution	Essential/ Very Important	42	37	27	27	50	36
	Quite Important	41	38	39	38	20	39
	Not too/Not at all important	18	26	33	35	30	25

Academics from research intensive (42%) and other *pre*-1992 (37%) universities appear to show more affiliation to their institution than those working in *post*-1992 (27%) or *post*-2004 universities (27%) (Table 7). Academics working in *post*-2004 universities appear far less affiliated to their institution than those in other types of HEI. These findings may reflect the internalisation of market-based valuations of HEIs, as expressed by the media in university rankings or 'league tables' (Locke *et al*, 2008).

Interestingly, younger, less experienced academics feel far less affiliated to their departments (41%). This may be because the majority (69%) are on fixed term contracts (and many of these research-only) and are less likely to be engaged in departmental decision-making (Bryson, 2004). Of these, only 28% claim that their department is essential or very important. Almost half (48%)

believe it is useful but not that important or not important at all.

A high proportion of academics working in the field of design, creative and performing arts feel little or no affiliation to their institutions (38%) or department (36%). However, 79% felt an affiliation to their discipline, with 50% describing their academic discipline as essential. In the field of architecture and planning, 80% of academics felt little or no affiliation to their institution, yet 95% felt an affiliation to their department and academic discipline. Though 86% of academics working in engineering and technology departments state some affiliation towards their institution, only 21% of academics working in biological, mathematical and physical sciences describe their institution as essential.

The satisfaction debate

There is a large body of recent research which focuses on the declining morale and satisfaction of academics with the profession (*e.g.* Rose, 2000). However there is also disagreement about the extent to which this affects the entire professional population and the implications this has for the academic workforce. Commentators in the UK contend that there are variations between different groups of staff, such as research-only and teaching staff (Bryson, 2004), *pre*-1992 and *post*-1992 university staff (Casey, 1997), and junior and senior staff (Martin, 1999). The data presented here help to refine our understanding, illustrating a complex and diverse picture of satisfaction throughout the profession. The CAP findings (Table 8), like others (Bryson, 2004), do not suggest a rapid decline in satisfaction amongst the academic profession. Although overall satisfaction has fallen slightly (2%), dissatisfaction has also fallen, by 13%.

Table 8. Overall satisfaction (%), 1992/2007

1992		**2007**	
1. Very Satisfied	8	Very High	8
2	41	High	39
Neutral	24	Medium	39
4	21	Low	8
5. Very Dissatisfied	7	Very Low	7

However, the proportion (49%) of academics in England claiming they are satisfied with their job is still much lower than those in other counties in the 2007 CAP study (*e.g.* Canada (73%), Japan (69%), US (64%)), and there are other indicators of a decline in morale within the profession from the UK CAP survey.

Support for statements such as those in Table 9 illustrate a decline in academics' perceptions of the profession, including 37% of respondents who agreed that they had considered working outside of HE altogether.

Table 9. Views on the profession, proportion answering "strongly agree" or "agree" (%), 1992/2007

	1992	2007
This is a poor time for any young person to begin an academic career in my field	42	49
If I had it to do over again, I would not become an academic	20	27
My job is a source of considerable strain	47	52

As suggested earlier, satisfaction varies among academics, especially according to gender (Table 10). Male respondents appear slightly more dissatisfied with the job, and 41% of men had considered working outside higher education compared with 34% of women.

Table 10. Views on the profession by gender, proportion answering "strongly agree" or "agree" (%), 2007

	Male	Female	All
This is a poor time for any young person to begin an academic career in my field	58	45	49
If I had it to do over again, I would not become an academic	36	22	27
My job is a source of considerable strain	55	51	52

On other variances within the data, 61% of academics over the age of 51 years agreed that their job was a source of considerable strain compared with an average among all respondents of 53%. Researchers (36%) were the least likely to agree with this statement, followed by professors (48%) who ranked just below the average of 53%. Senior lecturers, senior researchers and readers were most likely to agree (62%). Despite job uncertainty, researchers on fixed-term contracts experience far more autonomy in the planning and execution of their work, and this aligns with other evidence (Bryson, 2004). Unsurprisingly, only 22% of those who had only been in the profession since 2000 agreed that if they had their time over again they would not become academics compared with an average of 27%. Only 41% of academics who had entered the profession since 2000 agreed that it was a poor time for any young person to begin an academic career in their field. However, 62% of academics who had entered the profession in the 1980s, and 58% who had entered the profession before 1980,

agreed with this statement.

In line with previous findings (Casey, 1997; Locke, 2008b), institutional type has some bearing on how academics responded to questions relating to satisfaction. Academics working in *post*-2004 universities appear more dissatisfied currently than others.

Table 11. Views on the profession, by institution type, proportion answering "strongly agree" or "agree" (%), 2007

	Research Intensive Univ. (192)	**Other *Pre*-1992 Univ.** (252)	***Post*-1992 Univ.** (97)	***Post*-2004 Univ.** (19)	**HE Colleges** (10)	**All** (572)
This is a poor time for any young person to begin an academic career in my field	51	44	55	56	63	49
If I had it to do over again, I would not become an academic	32	19	34	47	22	27
My job is a source of considerable strain	45	54	59	64	80	52

Finally, there appear to be differences between the academic disciplines. Only 23% of academics working in design, creative and performing arts appear to be satisfied with their current job, whilst 35% describe their satisfaction as low or very low. Interestingly, 75% of academics working in this field agreed or strongly agreed that their job was a source of considerable strain. Although academics working in the field of fine art appeared more dissatisfied than their academic counterparts in 1992, it was those working in the field of computer science who appeared most dissatisfied, with 17% stating they were very dissatisfied with their job situation. In comparison 62% of academics working in the field of psychology in 1992 stated they were very satisfied or satisfied with their job situation. Over half of academics working in engineering and technology units (53%), and administrative, business and social studies (52%) in 2007 rate their overall job satisfaction as high or very high, whilst only 2% of academics working in the field of education rated their overall satisfaction as low.

Teaching

Table 2 illustrated a drop, since 1992, in the number of hours academics spend on teaching. A more detailed examination of their teaching activities reveals some interesting differences in the experiences of academics working in different types of institution. Figure 4 gives an indication of the average class size at various levels of provision and in different types of HEI. Unsurprisingly, the largest classes are at undergraduate level with a median score of 50 students *per* course. Research intensive universities appear to have the smallest class sizes across the board, while *post*-1992 universities have higher class sizes at the undergraduate and postgraduate level. This appears to confirm recent findings based on a survey of first and second year undergraduate students (HEPI, 2006).

Academics were asked whether they agreed with a number of statements referring to their teaching activities. More than three-quarters of respondents agreed or strongly agreed with the statement that "Your research activities reinforce your teaching", with only 8% disagreeing or strongly disagreeing. Even larger majorities agreed or strongly agreed that "You inform students of the implications of cheating or plagiarism in your courses", "Grades in your courses strictly reflect levels of student achievement" and "You incorporate discussions of values and ethics into your course content". Once again the responses to certain questions differed significantly between institution-types, with the greatest variations included in Figure 5. Respondents from the newer universities were more likely to agree that "Practically oriented knowledge and skills are emphasised in your teaching" and that "Your service activities reinforce your teaching". Those in research intensive and other *pre*-1992 universities were more likely to emphasise international perspectives or content in their courses and have a majority of international graduate students.

Similarly, a higher proportion of academics working in the more applied academic disciplines such as engineering and technology (71%), medicine, dentistry and health (83%) and design, creative and performing arts (88%) agreed with the statement "Practically oriented knowledge and skills are emphasised in your teaching". Some 55% of academics working in engineering and technology departments and 45% of those working in the area of administration, business and social studies agreed that "Currently, most of your graduate students are international", whilst only 10% of academics working in medicine, dentistry and health, 11% of those working in the field of education and 15% of those working in humanities and language based studies agreed with this statement.

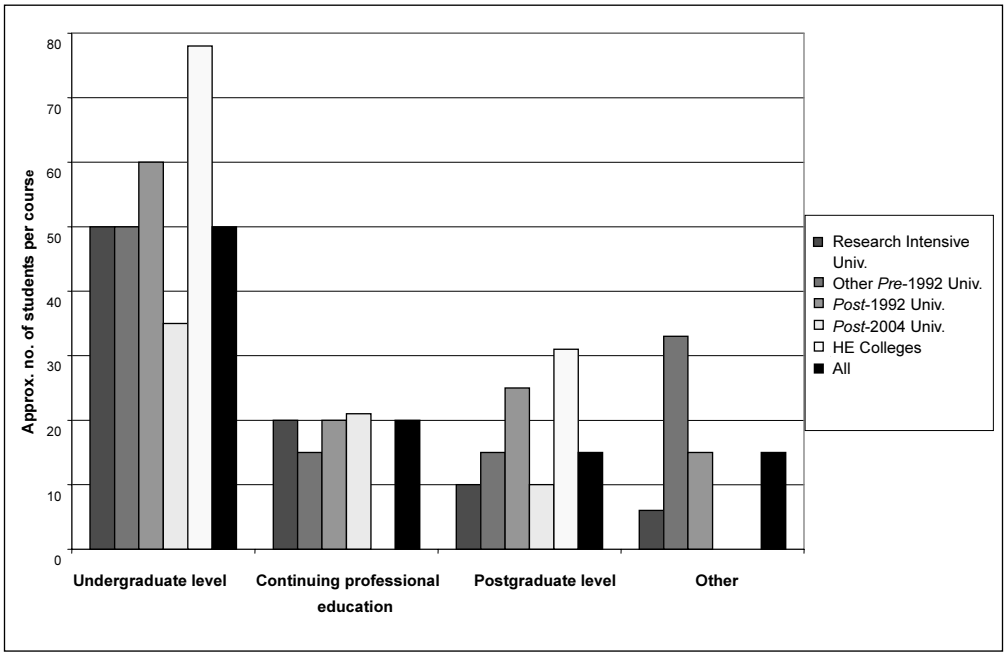


Figure 4. Approximate average number of students *per* course, by institution type, 2007

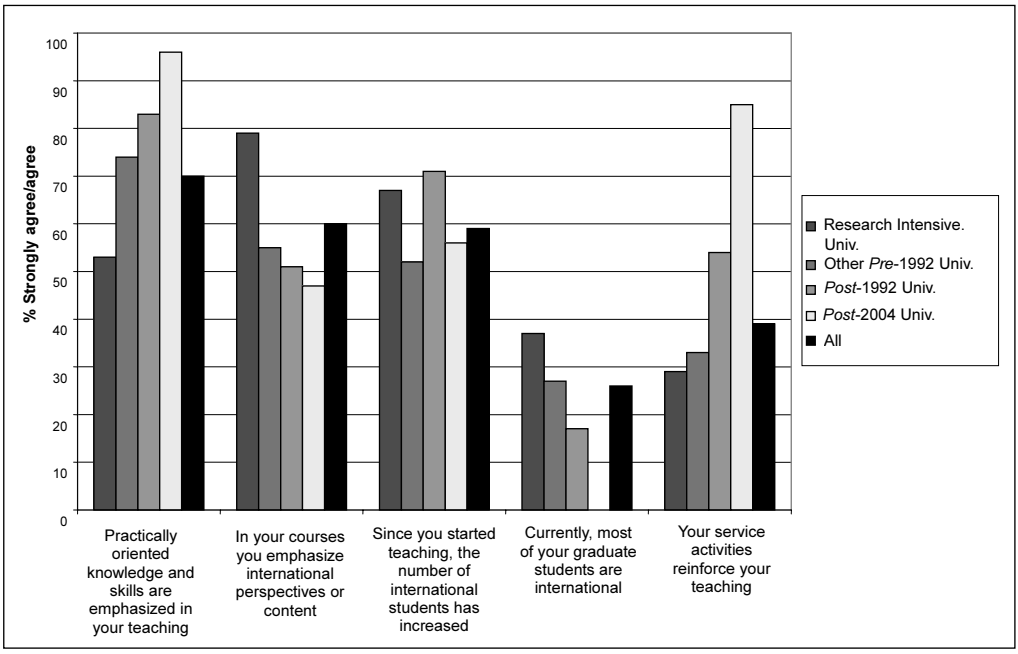


Figure 5. Views on teaching, by institution type, 2007

Research

Figure 6 indicates the types of research that academics in England are currently undertaking. More respondents reported undertaking: applied or practically-oriented research than basic or theoretical research; multi- or inter-disciplinary research than investigations based in one discipline; and socially-oriented research intended for the betterment of society than commercially-oriented research intended for technology transfer. These emphases may reflect the priorities of funders, academic publishers, institutional managers and others who can influence the type of research that is supported. For example, the UK research councils expect the research they fund to have "a societal and economic impact", and require researchers to demonstrate an awareness of the wider environment and context in which the research takes place and to engage actively with the public at both the local and national levels about the research and its broader implications (RCUK, 2008).

Once again there are differences between those working in different types of institution. A higher percentage of academics in *post*-1992 (60%) and *post*-2004 (55%) universities stated that very much or a fair amount of their primary research was socially-orientated or intended for the betterment of society. At research intensive universities, 62% of academics and 67% of academics in other *pre*-1992 universities stated that very much or a fair amount of their primary research was international in scope, compared with only 40% of those in *post*-1992 universities and 22% of those in *post*-2004 universities. This may reflect the greater likelihood of academics in the older universities aiming for the higher grades in the Research Assessment Exercise (RAE) that reward research that is internationally excellent or even 'world-leading'.

There are again differences between the academic disciplines. In humanities and language-based studies, 70% of academics working stated that very much or a fair amount of their primary research was international in scope. Unsurprisingly 63% of academics working in the field of medicine, dentistry and health stated that very much or a fair amount of their primary research was socially-orientated for the betterment of society compared with only 19% of those working in engineering and technology units and 22% of those working in biological, mathematics and physical sciences who agreed with this statement.

Research output has been heavily influenced by the RAE, and to a lesser extent the Research Councils, which privilege "medium and large scale original quantitative research that will yield short-term results publishable in high-status journals rather than smaller scale applied and discursive research, some of which is communicated to end-users in ways that students might also benefit from

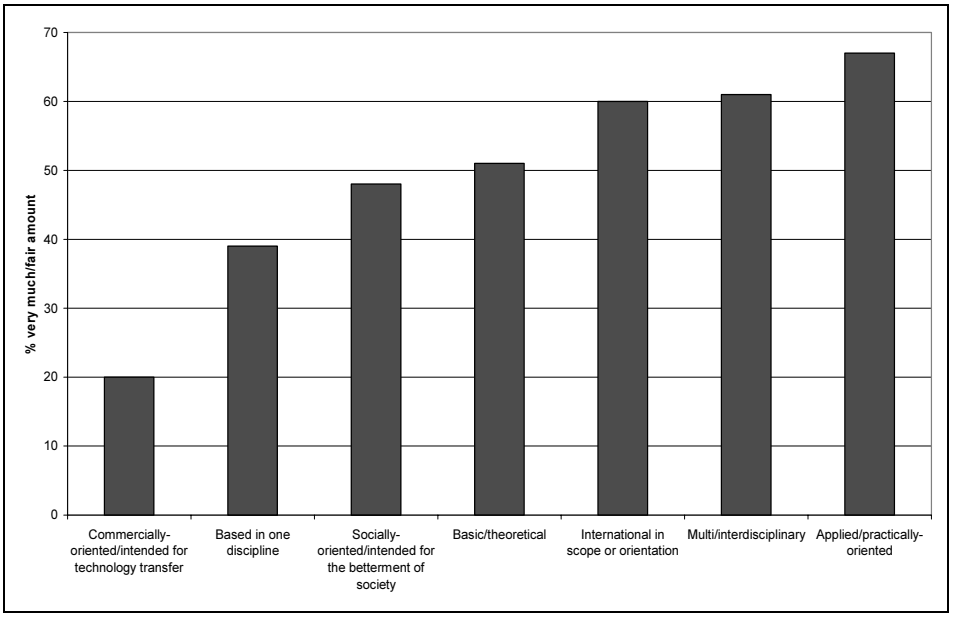


Figure 6. Emphasis of primary research, 2007

Table 12. Scholarly contributions, 1992/2007

	1992		2007	
	Mean	**Median**	**Mean**	**Median**
Authored or co-authored books	0.9	0	1.3	1
Edited or co-edited books	0.7	0	1.4	1
Articles published in an academic book or journal	5.4	3	5.8	4
Research reports/monographs for a funded project	2.4	1	3.4	2
Papers presented at a scholarly conference	4.0	2	5.2	4
Professional articles written for a newspaper or magazine	2.4	1	2.2	1
Patents secured on a process or invention	0.1	0	2.0	2
Computer programs written for public use	0.4	0	2.4	1
Artistic works performed or exhibited	0.3	0	4.3	2
Videos or films produced	0.4	0	2.3	1

it" (Locke, 2004, p.103). Table 12 outlines the scholarly contributions made by academics in the three years previous to the survey being conducted in 2007. It compares these with the contributions made by academics in the three years previous to the 1992 survey being conducted. In all types of contribution, apart from professional articles written for a newspaper or magazine, output has increased.

Interestingly, while the numbers of papers presented at scholarly conferences has increased significantly, the number of articles published in

academic books or journals has not, perhaps reflecting the increased competition in academic publishing. The increased productivity in patents, computer programs, artistic works and videos or films, also reflects the greater commercialisation and commodification of research. Table 13 outlines the views of academics on a number of statements relating to their research.

Table 13. Views on research (%), 2007

	Strongly Agree/Agree	Neutral	Disagree/ Strongly Disagree
Restrictions on the publication of results from my publicly-funded research have increased since my first appointment.	12	61	28
Restrictions on the publication of results from my privately-funded research have increased since my first appointment.	10	71	20
External sponsors or clients have no influence over my research activities.	36	30	34
The pressure to raise external research funds has increased since my first appointment.	76	21	3
Interdisciplinary research is emphasized at my institution.	65	26	9
My institution emphasizes commercially-orientated or applied research.	55	35	11
My research is conducted in full-compliance with ethical guidelines.	84	15	1
Research funding should be concentrated (targeted) on the most productive researchers.	22	29	49
High expectations to increase research productivity are a threat to the quality of research.	72	20	8
High expectations of useful results and application are a threat to the quality of research.	55	29	16

A large majority (76%) of academics agreed that the pressure to raise external funds had increased since their first appointment. A majority was also concerned that high expectations to increase research productivity – and of useful results and application – are a threat to the quality of research.

Figure 7 gives an overview of the median percentage of funding for academics' research. It illustrates the advantage of the older universities, and the research intensive universities in particular, in attracting funding from public research funding agencies and private not-for-profit foundations and agencies.

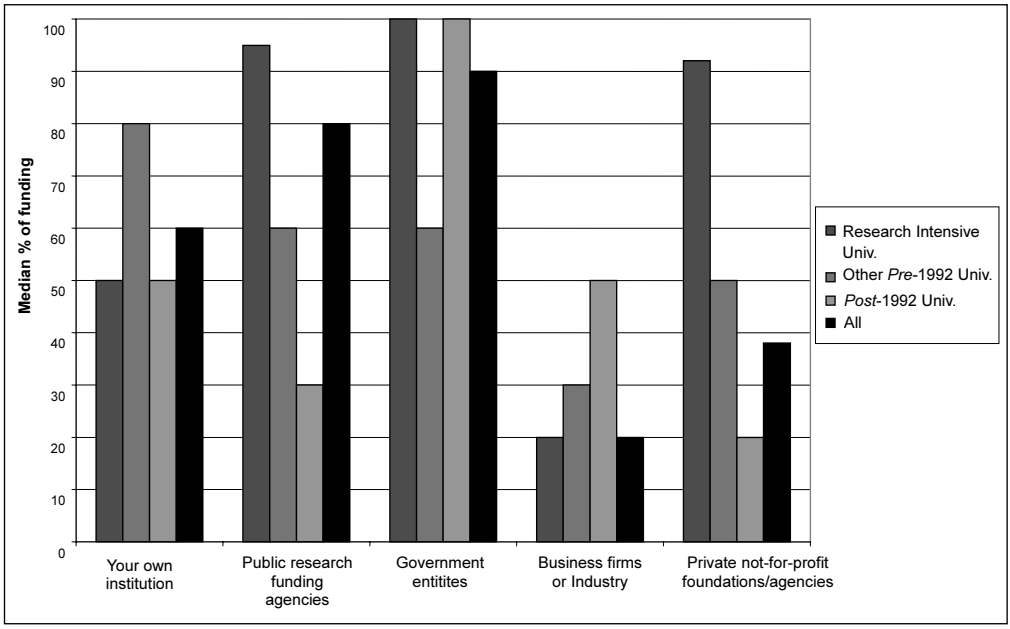


Figure 7. Percentage of funding for research from different sources (median), by institution type, 2007

Evaluation

Finally, it is not surprising that respondents in 2007 were more likely than their 1992 counterparts to report that their teaching and research are evaluated regularly by both peers in their department and external reviewers. This reflects the growth in quality assessment of all academic activities. In 2007, external review played a greater part in research than teaching, although the difference may not have been so pronounced earlier in this fifteen year period when the assessment of teaching included classroom observation. A clear majority now reports that students regularly evaluate their teaching, and this is likely to be a response to feedback in annual course monitoring processes and a reaction to the first two rounds of the annual National Student Survey in 2005 and 2006.

Table 14. Evaluation of teaching, research and service, 1992/2007

	Your Teaching		Your Research		Your Service
	1992	2007	1992	2007	2007
Your peers in your department or unit	11	46	8	31	19
The head of your department	44	37	41	39	35
Senior administrative staff	4	5	9	11	12
Your students	45	59	3	2	12
External reviewers	14	21	15	36	6
Yourself		37		33	20
No one		1		5	6

4. Discussion

The findings from the 1992 and 2007 surveys clearly reflect the increasing emphasis on research in the UK after the abolition of the binary divide gave the new universities the opportunity (in theory, at least) to secure public funding for this activity. As public expenditure *per* student on teaching declined, research (and particularly the RAE) represented one of the few means for HEIs to increase income, even at less than the full costs of the activity generated. Growing evaluation of the outputs helped to increase productivity but also raised expectations to a point where a majority of respondents feels that quality is at risk. The assessment procedures and mechanisms for allocating research money were also designed to increase selectivity in research funding between institutions. Within institutions, this has often been translated into selectivity between departments and between individuals within departments. So much so, that institutional managers had to make tactical decisions about the proportion of academics to submit to the periodic assessment exercise and, ultimately, about which individuals (and departments) could remain 'research-active' and which should focus mainly on teaching and income-generating alternatives to research.

The period between the two surveys is characterised by the final separation of research and teaching, as a result of policy and operational decisions to distinguish the way these activities are funded, managed, assessed and rewarded (Locke, 2004). This process had started with the introduction of the RAE in 1986 and, by 2007, resulted in the substantial increase in the number of teaching-only posts and (largely fixed-term) research-only contracts in HEIs, such that together these now account for nearly half of all academics in the UK. The 2004 HE Act also led to the conversion of 14 or so HE colleges and institutes into teaching-only universities, without research degree awarding powers. The separation of the core academic activities in which, increasingly, only some institutions can attract sufficient sums of money for research, then necessitated the creation of a 'third stream' of funding to support collaboration between universities and business and industry that might become a 'second core mission' – after teaching – for some institutions seeking "to play to their strengths". Although designed to encourage diversity, these policy initiatives – and, equally, HEIs' responses to them – have had the effect of fragmenting academic activities and introducing new divisions of labour and changing perspectives on core academic roles which appear to be experienced differently by academics according to their age, gender, grade and career stage.

The CAP findings further indicate the key influence that institutional role

and type has in this process. Although academics in 2007 still claim greater affiliation with their academic discipline and department than with their institution, the responses suggest a stronger role for both departments and institutions in their working life. The need to manage the processes of fragmentation, external evaluation and internal quality assurance, financial constraints and opportunities, new and growing relations with business *etc*., has required a growth in institutional operations and the associated administrative and management personnel, such that academics now represent less than half of the 'workforce' in UK HEIs. Again, there are variations in the way these changes are experienced and operationalised within different types of institutions, depending on how well they are positioned to withstand the external pressures and constraints and take advantages of the opportunities opening up to them in an increasingly competitive and marketised HE environment.

References

Bryson, C. (2004). What about the workers? The expansion of higher education and the transformation of academic work. *Industrial Relations Journal*, *35*(1), 38-57.

Casey, B. (1997). *Academic Staff in Higher Education: Their Experiences and Expectations*, Report 3 of National Committee of Inquiry into Higher Education (the Dearing Report) *Higher Education and the Learning Society*, London: The Stationery Office, https://bei.leeds.ac.uk/Partners/NCIHE//report3.htm

Connor, H., Pearson, R., Court, G., & Jagger, N. (1996). *University Challenge: Student Choices in the 21st Century, A Report to the CVCP*, Report 306, Brighton: Institute for Employment Studies.

Fulton, O. (1996). The Academic Profession in England on the Eve of Structural Reform. In P.G. Altbach, & L.S. Lewis (eds.), *The International Academic Profession: Portraits of Fourteen Countries, Special Report* (pp. 391-437). San Francisco: Jossey-Bass.

Fulton, O., & Holland, C. (2001). Profession or Proletariat: Academic Staff in the United Kingdom After Two Decades of Change. In J. Enders (ed.), *Academic Staff in Europe: Changing Contexts and Conditions* (pp. 301-321). Westport, Conn.: Greenwood Press.

HEPI (2006). *The academic experience of students in English universities*. A report by Bahram Bekhradnia, Carolyn Whitnall and Tom Sastry, Oxford: Higher Education Policy Institute.

HESA (2008a). *Resources of Higher Education Institutions 2006/07.* Cheltenham: Higher Education Statistics Agency.

HESA (2008b). *Students in Higher Education Institutions 2006/07.* Cheltenham: Higher Education Statistics Agency.

Locke, W. (2004). Integrating Research and Teaching Strategies: Implications for Institutional Management and Leadership in the United Kingdom. *Higher Education Management and Policy*, *16*(1), 101-120.

Locke, W. (2008a). Higher education policy in England: missed opportunities, unintended consequences and unfinished business. *Journal of Access Policy and Practice*, *5*(2), 181-208.

Locke, W. (2008b). The Academic Profession in England: Still stratified after all these years? *The Changing Academic Profession in International Comparative and Quantitative Perspectives* (RIHE International Seminar Reports), *12*, 89-115.

Locke, W., Verbik, L., Richardson, J.T.E., & King, R. (2008). *Counting what is measured or measuring what counts? League tables and their impact on higher education institutions in England*. Circular 2008/14, Bristol: Higher Education Funding Council for England, http://www.hece.ac.uk/pubs/hefce/2008/08_14.

Martin, E. (1999). *Changing Academic Work: Developing the Learning University*. Buckingham, Society for Research into Higher Education/Open University Press.

NAO (2008). *Widening Participation in Higher Education*. National Audit Office, Report by the Comptroller and Auditor General to the House of Commons, HC 725 Session 2007-2008, 25 June, London: The Stationery Office.

RCUK (2008). *Expectations for Societal and Economic Impact*. Swindon: Research Councils of the United Kingdom.

Rose, M. (2000). *Future Tense: Are growing occupations more stressed-out and depressive?* Future of Work Series, Working Paper 3, Leeds: University of Leeds.

Universities UK (2008). *Patterns of Higher Education Institutions in the UK: Eighth Report*. A report by Professor Brian Ramsden on behalf of the Longer Term Strategy Group of Universities UK, London: Universities UK.

Country Reports on Careers

The Changing Employment and Work Situation of the Academic Profession in Germany

Anna Katharina Jacob[*] and Ulrich Teichler[**]

1. Introduction

In the early 1990s, a comparative survey on the academic profession was undertaken for the first time. The Carnegie survey brought about various highly interesting results as regards the German academic profession in a comparative perspective (*cf.* Enders & Teichler, 1995a, 1995b, 1996). The results of that study were discussed in the German press with greater interest than most major analyses of German higher education at that time.

Obviously, issues of the employment and work of the academic profession addressed in that survey raised more public attention than other issues. Some of the findings confirmed conventional wisdom, others certainly were surprising, but altogether the results confirmed the basis of public debates in Germany that changes were due in the employment and work situation of the academic profession and eventually in the respective views and activities of the academics themselves.

Therefore, findings of the comparative study "The Changing Academic Profession" (CAP) can be discussed in this context. The CAP survey provides the opportunity to examine whether the conditions, perceptions, views and activities of German academics have remained constant or have changed in the thematic areas mentioned above. Moreover, comparison between the two

[*] Research associate, the International Centre for Higher Education Research Kassel, University of Kassel (INCHER-Kassel) and the Department of Economics, Chair of Human Resource Management, University of Duisburg-Essen, Germany, e-mail: Katharina.Jacob@uni-due.de

[**] Professor, INCHER-Kassel and the Department for Social Sciences, University of Kassel, Germany, e-mail: Teichler@incher.uni-kassel.de

surveys allows us to analyze whether changes in the views and activities of the German academic are in tune with major higher education reforms in Germany since the 1990s aimed at affecting the academic profession.

2. Background: the academic system in Germany

The following provides a short summary of the typical structures of the system of higher education in Germany and the political and legal framework affecting it (*cf.* Kreckel, 2008). Higher education in Germany shows a binary division with traditional universities and "universities for applied sciences" (*Fachhochschulen*, *FHs*). The latter institutions do not award doctoral degrees and are not in charge of training of the future generation of scholars; professors at these institutions have to teach twice as many hours as university professors and are not obliged to do research; both teaching and research at these institutions is expected to have an applied emphasis. Some specialized higher education institutions, notably for fine and performing arts as well as a few teacher training colleges are not substantially different from universities as far as their legal status is concerned. In 2007, we note 105 universities, 74 other institutions with comparable institutional status, 166 universities of applied sciences and 29 *Fachhochschulen* for public administration, whereby about 70% of the almost two million students are enrolled in the university sector. It should be noted that publicly supported research does not take place only in higher education institutions. Additionally, 78 Max Planck Institutes, 84 institutes of the Leibniz *Gemeinschaft*, 15 of the Helmholtz *Gemeinschaft,* and 58 of the Fraunhofer *Gesellschaft* deal with a variety of different research functions and areas, and in which the resources for research are seen to be clearly more favorable than at universities.

At German universities, a clear line is drawn between professors who are life-time employed full-time civil servants as a rule and have a strong say about academic matters on the one hand, and the junior and middle-rank academic staff. Even the official occupational category, *Hochschullehrer* (higher education teacher), applies only to the professors but not to other academic staff. More than half of persons working on their doctoral dissertations are already employed at a university, mostly on half-time fixed-term contracts. Also, more than 60% of academic staff at doctoral level are employed on short-term contracts with a period of employment lasting for up to five years or even less if the position is funded by an external research grant. Academic staff are expected to qualify for a *Habilitation*, a second level doctorate, as a regular entry requirement to a

professorial position. Mobility between institutions of higher education is not only encouraged, but enforced by regulations like the German *Hausberufungsverbot* that excludes the possibility of moving up to a professorship from a middle-rank position or even from an associate to a full professorship within the same institution. The situation of junior- and middle-rank academic staff is characterized by a high degree of uncertainty, as more than five times as many people are employed in these categories as there are university professors (*cf.* Statistisches Bundesamt, 2008) and less than 10% of those opting for academic work eventually get into permanent senior positions (*cf.* Janson, Schomburg & Teichler, 2007).

3. The results of the Carnegie survey

The research function of university professors. When the first international comparative study on the academic profession took place in the early 1990s, concern was not only widespread in Germany but also in other European countries that they might fall behind the U.S. and possibly also Japan as far as resources and conditions for research and the actual quality of research were concerned. At German universities, complaints had been frequent that the resources for research, as well as the time available for research, had eroded as a consequence of a more impressive increase of student numbers than of universities' resources; furthermore, many professors argued that the participatory models of decision-making in higher education absorbed too much time and required too many wise decisions for the enhancement of academic quality. The Carnegie survey, in contrast, showed that German university professors had been able to spend as much time on research as on teaching and that they had not spent more time on administrative and service matters than their colleagues in other economically advanced countries. Also, German professors rated the conditions for their teaching and research, on average, similarly to those of academics in other economically advanced countries.

The teaching function of university professors. It was generally assumed that German university professors were so devoted to research that teaching tended to be neglected. The Carnegie survey, in contrast, showed that German professors had not differed from British professors – who were generally viewed as regarding their teaching function more favorably – in the proportion of their time spent on teaching and related activities and their general appreciation of the link between teaching and research.

Overall satisfaction of university professors. Altogether, university

professors in Germany were quite satisfied with their jobs. Their responses provided "less of a sense of crisis in the academic profession than the public debate would suggest" (Enders & Teichler 1996, p. 491). One should add that German professors differed strikingly from professors in almost all the other countries addressed in having a low sense of affiliation to their individual university: they were more likely to consider themselves as professors or scholars in the field "X" who happened to have their working place in university "A" than to consider a specific university as being part of their identity.

Academic staff. In contrast, the other academic staff at German universities differed more strikingly from the professors in their country and from academic staff in other countries in terms of a lower overall satisfaction. As they did not rate the work conditions less favorably, and as they could concentrate to a higher extent on research because the teaching assignments for academic staff in junior- and middle-ranks at German universities are relatively small, the authors of the German Carnegie study concluded that the clear status gap between senior academics and other academic staff was a major cause for the dissatisfaction on the part of the latter.

Professors at other institutions of higher education. The Carnegie study made clear that the teaching load for professors at institutions of higher education with a limited research function was exceptionally high in Germany. Although the German *Fachhochschulen* are often praised in Germany as taking care of the teaching function in a better way than universities, the survey showed that professors at these institutions spent less time on teaching and other teaching-related activities as preparation, guidance, examinations *etc.* than university professors, thus calling the positive teaching image into question.

4. Changes occurring between the surveys

From the early 1990s onwards, major efforts have been made to reform higher education. Even if we have to take into consideration that reform plans might have been watered down in the implementation process and that the expected impact might only be visible after a long time span or might never materialize, it is worth naming the most salient reforms in order to examine whether the respective impact is visible in the findings of the CAP survey of 2007.

First, the professors were more strongly exposed to supervisory mechanisms to legitimize their work, as well as to incentives and sanctions. The participatory powers of junior staff, other staff and students became weaker, but

university presidents/rectors as well as deans of Faculties became more powerful actors. Various systems of evaluation spread. While basic research funding through the university budget became smaller over time, opportunities for raising research funds grew. Whereas in the past, university professors only could negotiate a higher salary and better resources for research on the occasion of their first appointment and of subsequent external offers of a professorship, a new salary system was introduced, which provides the opportunity of salary increase every five years based on performance assessment.

Various efforts were made to enhance the conditions for junior academics (*cf*. Bundesministerium für Bildung und Forschung, 2008; Burkhardt, 2008): the establishment of various doctoral programmes alongside the traditional individual supervision, the introduction of various career paths for intermediate level staff, for example that of 'junior professor', and the facilitation of possibilities to raise research funds independently from a professor, as well as various programmes to support women in early stages of their careers. Views vary on whether a new regulation, according to which persons can be employed in the German higher education system for at most 12 years on fixed-term contracts, actually increases or lowers the attractiveness of academic careers.

Finally, the gradual introduction of a system of stages of study programmes of degrees since 1998 increased the overlap of teaching functions between the universities and *Fachhochschulen*. The latter do not only offer bachelor programmes, but also master programmes, and both types of institutions are free to offer academically-oriented and application-oriented master programmes. It is too early to assess whether this stabilizes the binary structures or will lead to a blurring and eventually a disappearance of the divide between the two types of institutions.

5. The target group and the respondents of the German CAP survey

This article reports the major findings of a representative survey of the academic profession at German institutions of higher education. The survey was undertaken from January to July 2007 within the framework of the comparative study, the "Changing Academic Profession".

The questionnaire was sent to more than 5,000 regularly employed, academically trained persons active in departments in charge of teaching and/or research at a select number of Germany higher education and research institutions. Altogether, 1,668 persons responded. The response rate was

about 30%. Among the respondents, 324 were professors (senior ranks) at universities, 695 other academic staff at universities, 215 academics (90% of them professors) at *Fachhochschulen,* 134 seniors at public research institutes, and 300 other academic staff at public research institutes.

One has to bear in mind that the sampling procedure deliberately called for an over-representation of professors and seniors, women in senior positions and staff in relatively small fields. This procedure was chosen in order to secure a sufficient absolute number *per* staff category, gender and field of study. In the current data analysis, a weighting of the responses which might counterbalance these selection priorities, was not implemented.

The 2007 survey was financially supported by the Federal Ministry of Education and Research. Marek Fuchs and Barbara B. Kehm were involved in setting up the project. Oliver Bracht and Florian Löwenstein did most of the necessary work for undertaking the survey and analyzing the data, for which Harald Schomburg served as the methodological advisor.

6. The employment situation of the academic profession in Germany

6.1 Socio-biographic characteristics

Age. In 2007, the mean age of the university professors surveyed was 53 years*, i.e.* one year younger than in the 1992 Carnegie study. The academics at *Fachhochschulen* have an average age of 52 years, which means an increase of two years since 1992. The most striking finding is the increase in average age of the non-professorial academic staff at universities from 35 years in 1992 to 40 years in 2007. Obviously, the aim of the legislation of the early years of the 21st century of limiting fixed contracts to a maximum overall period of 12 years and thereby bringing academics to responsible positions at a younger age than in the past, has not been realized; rather more people are employed in their late 30s and early 40s in intermediate positions, often with the help of external research grants.

Gender. The proportion of women among university professors was only 6% in 1992 – one of the lowest proportions among the countries participating in the Carnegie study. Their share tripled thereafter, to 19% in 2007; yet there are fewer on the higher (15%) than the lower rank (26%) of university professors. The share of women among academics at *FHs* increased during that period from 9% to 19% and among other academic staff at universities from 22% to 36%; again women are more strongly represented at lower career levels (without a

doctoral degree: 41%) than at higher ones (with a doctoral degree: 33%).

More than 80% of the academics surveyed are married or live in a permanent partnership (slightly more than 1992) – more so among professors than other academics at universities. Female professors at universities or *FHs* are much more likely to be single with no children than their male colleagues. These findings confirm the general view that it is easier to combine family and academic profession for male persons with a higher income and a partner without professional engagement – typical findings in German society as a whole and not just for academics.

6.2 Employment conditions

Income. The salary structure at German public institutions of higher education, which comprise about 97% of the system, is homogeneous across disciplines. However, professors and to some extent other academic staff vary by discipline moderately in opportunities for supplementary income from their higher education institution and substantially as regards side income (*cf.* Teichler, 2008). For other academic staff in universities, the difference between staff in full-time from those in part-time positions plays a further, important role.

The average annual salary (including supplements) of university professors in Germany in 2007 was about €72,000 (€79,000 for the higher-ranking and €61,000 for the lower-ranking professors). Academics at *Fachhochschulen* earn slightly more than €57,000. Academic staff at universities with a doctoral degree earn €40,000 on average (including part-timers) and €48,000 for full-time work; and those without a doctoral degree actually earn €30,000, and €37,000 for full-time work.

Employment situation. Except for a few (between 2% and 6% each according to category), professors in Germany are permanently (most as civil servants) and full-time employed. In contrast, fixed-term employment is dominant for other academic staff, and part-time employment is by no means infrequent (*cf.* Bracht & Teichler, 2006, p.145). In contrast to conventional wisdom, comparison between the two surveys suggests that permanent employment of other academic staff has increased over the years (from 21% to 30%). Only a few academic staff without a doctoral degree are in a permanent position (3%), but of the academic staff with a doctorate, 39% are. As already noted, academic staff have got older on average; also the years of academic work prior to the survey have risen from a mean of 7 years in 1992 to 10 years in 2007. This obviously is not primarily due to longer fixed-term employment, but rather to an increase in the number of people moving towards permanent middle-level

positions.

6.3 Elements of the career system

Highest level of qualification. Formal regulations as regards entry qualification did not change during the period observed; actually, however, we note an increase of the level of prior qualifications. This can be demonstrated most clearly through data for the senior academics. The doctoral degree has been a prerequisite for the university professor position for decades, except for a few positions in fine arts. Actually, the share of university professors with doctoral degree was 98% both in 1992 and 2007; however, the proportion of those with a *Habilitation* has grown from 73% in 1992 to 81% in 2007.

The entry qualification for a professor position at *Fachhochschulen* is a doctoral degree and five years of subsequent employment – predominantly in the professional area related to the field of study to be taught. Actually, the share of doctoral award holders increased during the period observed from about three-fifths to about four-fifths. Concurrently, even the proportion of those with a *Habilitation* has risen from 5% to 14%.

Institutional mobility. As already pointed out, institutional mobility at the moment of the first appointment to a university professorship is mandatory in Germany. Moreover, there is no internal promotion from a lower-ranking to a higher-ranking university professor position. A comparison between 1992 and 2007 shows that inter-institutional mobility of academics in Germany has increased beyond the mandatory mobility at the first appointment to a professor position. Though the average age increased slightly, as stated above, the period of employment at the same institution up to the time when the surveys were conducted has decreased from 17 years to 9 years for university professors and from 12 to 10 years for *FH* professors. Also, the constant number of 5 years of employment at the same university or *FH* institution for other academic staff suggests a relative increase of institutional mobility because the academic staff surveyed in 2007 have clearly had a longer overall time of employment since graduation.

7. The work situation of the academic profession in Germany

7.1 Work hours

In both surveys respondents were asked to estimate their average weekly work hours. They were asked to provide estimates both for the periods when classes are in session and when classes are not in session; this distinction has

been made in order to avoid respondents only referring to weeks when classes are in session and thus underestimating those periods when more time is available for research.

According to the self-rating of respondents in 2007 shown in Table 1, university professors spend about one-third more time on their job than the usual working hours for employees. Other academic staff spend on average about the usual hours on the job; as a considerable proportion of them are employed part-time, the data also suggest some work voluntarily beyond official assignments. In contrast, academics at *Fachhochschulen* report that they do not work longer on average than normal employees' work time.

Table 1. Weekly working hours spent by the academic profession in Germany 2007

	Academic staff at universities		Professors at universities		Academics at *FHs*	
Weekly working hours spent on	When classes are in session	When classes are *not* in session	When classes are in session	When classes are *not* in session	When classes are in session	When classes are *not* in session
Teaching	11.3	5.1	19.3	7.5	25.1	9.7
Research	17.5	22.4	17.3	24.0	8.1	13.2
Service	7.2	7.0	6.0	5.6	2.9	4.0
Other activity	2.4	2.3	4.7	5.0	2.2	2.7
Administration	2.6	2.6	8.8	5.7	5.4	4.4
Total	41.0	39.4	56.1	47.8	43.7	34.0

A comparison between the 1992 and the 2007 (see Tables 2 and 3) surveys shows that the average weekly hours did not change substantially. However, German university professors nowadays allocate relatively less time for teaching than 15 years earlier, while other academic staff have moved towards spending less time on research. While other academic staff at universities spent only about half of the proportion of their overall working time on teaching and related activities as university professors in 1992, this proportion has risen to about three-quarters in 2007. The polarization of functions between senior and junior staff visible in 1992 gave way to more moderate differences in 2007.

Tables 2 and 3 also show that academics at *FHs* have moved towards spending more time on research. While they spent about one-fifth of their working time on research in 1992, this became more than one-quarter in 2007.

Comparing the findings of 2007 to those of 1992, the most striking change concerns the decrease of the share of time spent on teaching tasks by university

professors and their colleagues at *FHs*. Only the other academic staff at universities experienced higher shares of teaching tasks.

It is worth noting the proportion of time devoted to other tasks than those of teaching and research increased over time. Actually, there was an increase of about 5% of time devoted to other activities both by university professors and other academic staff at universities and by academics at *FHs*. The increase was most substantial in the category "other academic activities" which comprises notably evaluation-related activities.

Table 2. Proportion of work time spent by the academic profession in Germany on different activities when classes are in session, 2007 and 1992* (%)

	Academic staff at universities		Professors at universities		Academics at *FHs*	
	2007	1992	2007	1992	2007	1992
Teaching	28	26	34	43	57	69
Research	43	49	31	29	19	12
Service	18	14	11	8	7	6
Other activity	6	2	8	5	5	2
Administration	6	9	16	16	12	12

* Differences from totals of 100% are due to rounding errors.

Table 3. Proportion of work time spent by the academic profession in Germany on different activities when classes are *not* in session, 2007 and 1992* (%)

	Academic staff at universities		Professors at universities		Academics at *FHs*	
	2007	1992	2007	1992	2007	1992
Teaching	13	12	16	20	29	44
Research	57	61	50	53	39	33
Service	18	15	12	9	12	11
Other activity	7	3	10	7	8	4
Administration	6	8	12	12	13	9

* Differences from totals of 100% are due to rounding errors.

7.2 Preference for teaching or research

As in the 1992 study, academics were asked in 2007 whether their interest lies in teaching or research. As Table 4 shows, the majority of university professors have expressed in both surveys an interest both in teaching and research although they lean more strongly towards research; the second most frequent option they have named is an interest both in teaching and research although in this they lean more strongly towards teaching; interest primarily in research and primarily in teaching are both less frequent. However, the data show also that a leaning towards research increased somewhat from 1992 to

2007.

In 1992, other academic staff at universities had emphasized research more strongly than university professors. In 2007, other academic staff express slightly more often than in 1992 a preference towards teaching, but altogether remain somewhat more research-oriented than university professors. The changes of orientation from 1992 to 2007 were similar to the changes of the actual work time. University professors' orientation and behavior reflect an increasing emphasis on research in higher education policies and debates in Germany, *e.g.* increasing differential resource allocation to universities according to research performance and other measures to strengthen competition for research excellence, while other academic staff's orientation and behavior respond to policies of preparing junior staff more comprehensively for the job roles of senior academics.

In tune with the dominant teaching function of *Fachhochschulen*, academics at these institutions express a stronger emphasis on teaching. However, more than one-fifth of them have expressed a greater interest in research in both surveys. It is surprising to note that the major change occurring from 1992 to 2007 was an increase of those who clearly emphasize teaching while the proportion of those oriented to both teaching and research but with a stronger leaning towards teaching has declined. In reflecting the public debate, one could have expected a slight increase in the research preferences.

Table 4. German academics' interests primarily in teaching or research 2007 and 1992* (%)

	Academic staff at universities		Professors at universities		Academics at *FHs*	
	2007	1992	2007	1992	2007	1992
Primarily in teaching	9	6	2	5	42	29
In both, but leaning towards teaching	22	22	20	30	35	49
In both, but leaning towards research	42	46	66	58	21	22
Primarily in research	27	26	12	7	2	0

* Differences from totals of 100% are due to rounding errors.

7.3 Publications

Publications of various types are generally viewed as the most visible results of research. According to the cultures of the individual academic disciplines, substantial differences may be noted between type, number, and

medium of publication. The findings of the 1992 survey about publications of German scholars were in tune with the findings from other countries: senior academics published more than junior academics, and academics at research-oriented institutions more than those at institutions leaning towards teaching. The most striking change of responses in 1992 and 2007 was the increase of the number of publications German scholars produce. University professors in Germany more or less doubled the number of articles, research reports and conference papers; now, they write more publications and papers on average than university professors of the other countries participating in the comparative study. A doubling of publications holds true as well for academics at *Fachhochschulen*, though with lower numbers at both points in time. Also, academic staff at universities increased the number of their publications and papers by more than half. However, the numbers of books authored and edited remain the same for all these three groups of scholars in Germany, as Table 5 shows.

The impressive increase of publications can be viewed as a success of policies in Germany to strengthen evaluation and of incentives in order to increase the quality and efficiency of research. However, criticism is voiced, as well in Germany as in other countries, that some increase of publication is due to a growing smartness to make oneself visible rather than an actual increase in the quality of research.

Table 5. Scholarly contributions completed in the past three years by the academic profession in Germany 2007 and 1992 (arithmetic mean)

	Academic staff at universities		Professors at universities		Academics at *FHs*	
	2007	1992	2007	1992	2007	1992
Articles published in an academic book or Journal	5.5	3.6	16.0	9.2	4.1	2.3
Papers presented at a scholarly conference	5.3	3.0	10.6	5.2	2.6	1.1
Research report/monograph written for a funded project	1.6	0.9	3.4	1.8	1.5	1.1
Professional articles written for a newspaper or magazine	1.2	0.8	3.2	1.1	1.8	0.9
Scholarly books you authored or co-authored	0.3	0.3	0.7	0.8	0.4	0.4
Scholarly books you edited or co-edited	0.2	0.1	1.3	0.9	0.3	0.2

7.4 Personal influence at and attitudes towards their institution of higher education

Academics were asked both in the 1992 and 2007 surveys: "How influential are you, personally, in helping to shape key academic policies?" on a scale of possible answers from 1, "very influential" to 4, "not at all influential" with respect to the department or institute as the smallest unit, the Faculty (or *Fachbereich*) as the intermediate one, and the institutional level of the university itself. Table 6 shows, as one might expect, that academics' influence is highest on the smallest, and lowest on the largest, possible institutional unit. Also, it does not come as a surprise that senior academics at universities and *Fachhochschulen* consider themselves more or equally influential at their institutions, while other academic staff obviously are far less influential and more or less consider themselves lacking any influence at the institutional level.

Altogether, a comparison of the findings from 1992 and 2007 suggests that academics believe they have increased their influence at their institution over time. This is a surprising finding and in contrast to the conventional wisdom that the growing power of management at institutions of higher education, as well as the stronger role of evaluation activities, incentives and sanctions, might have weakened the position of the academic staff.

Table 6. Rating personal influence at their institution by the academic profession in Germany 2007

	Academics at universities			Academics at *Fachhochschulen*
At the level of the…	Professors at higher rank (C4/W3)	Professors at lower rank (C3/W2)	Academic staff	
Department or similar unit	1.4	1.7	2.5	1.8
Faculty, school or similar unit	2.1	2.6	3.4	2.2
Institution	2.9	3.3	3.7	3.1

Note: Arithmetic mean on a scale from 1= "very influential" to 4= "not influential at all".

In both surveys, the academics were asked to indicate how important affiliations to their academic field, to their department, and to their institution of higher education as whole were for themselves. In all countries, academics consider affiliation to their field as highly important. The German respondents stood out in 1992, however, in reporting only a lukewarm affiliation to their department and to their institution of higher education. The 2007 data show

that this affiliation increased moderately and is not exceptionally low anymore in international comparison. Actually in 2007, university professors rate affiliation to their department 2.6 on average on a scale from 1, "very important" to 5, "not at all important"; and their affiliation to their institution of higher education also as 2.6. The respective means are, for other academic staff at universities, 2.6 and 2.8 and for academics at *FHs,* 2.3 and 2.6. Over the years, the strong emphasis on institutional strategies in German higher education seems to have led to a decrease of the external orientation of academics (*cf.* also Grözinger, 2008).

7.5 Assessment of working conditions

Academics were asked both in 1992 and 2007 to rate the facilities and resources needed to support their academic work on a scale from 1, "excellent" to 5, "poor". Seven areas were addressed in both surveys: classrooms, technology for teaching, laboratories, research equipment and instruments, computer facilities, library facilities, and secretarial support.

It is interesting to note that university professors and academic staff assess the resources and facilities for their academic work identically on average at both points in time; this suggests that other academic staff do not feel substantially constrained in access to the available resources. Actually, the ratings of both groups increased on average marginally from 2.7 in 1992 to 2.6 in 2007.

The ratings by academics at *FHs* were lower in 1992 (3.0 on average) but improved to the same level as the ratings by academics in universities in 2007 (2.6). These findings challenge the widespread notion that work conditions for academics have deteriorated in recent years. Yet, that the average ratings are not much higher than the centre of the scale also shows that an improvement of the resources and facilities is called for by many academics.

8. Overall assessments

Two findings show how the academics surveyed assess their overall professional situation. They present an ambivalent message about the notions of the academic profession.

About 40% of the academics at universities considered their job as "a source of considerable personal strain" in 1992 (41% of professors and 40% of other academic staff). This proportion has increased to almost half in 2007 (49% of professors and 47% of other academic staff). In contrast, fewer academics in *Fachhochschulen* responded affirmatively in 1992 (36%), and their average

ratings were more or less identical in 2007 (35%).

Asked about their overall job satisfaction in 1992, the university professors in Germany rated it 2.4 on average on a scale from 1, "very high" to 5, "very low". The average ratings improved to 2.2 in 2007 and are now among the most positive ones in the comparative study. The ratings of academics at *FHs* had been somewhat less positive in 1992 (2.6) but now also improved over time to 2.3 in 2007.

The overall job satisfaction of other academic staff at universities in Germany (3.1) was substantially lower, on average, in 1992 than that of university professors in Germany; indeed, it had been the lowest among other academic staff at universities in all the economically advanced countries included in the survey in 1992. But by 2007 it has improved more than anywhere else to 2.5. It has remained somewhat lower than the job satisfaction of university professors in Germany, but the gap has become substantially smaller.

9. Conclusion

In several respects, the employment and work situation of the academic profession in Germany has remained more or less unchanged over the 15 years from the first (1992) to the second (2007) comparative study of the academic profession. The age composition of professors at universities and other institutions of higher education did not change substantially; the salary differences between the various status and institutional groups have remained more or less the same. Most professors in Germany, in ranks similar to full and associate professors in the U.S., at both types of higher education institution, have remained permanently and full-time employed. The ratings of facilities and resources for academic work have remained more or less stable over time except for the *Fachhochschulen* where some improvement is observed. University professors continue to devote about 30% more working hours than is usually required for full-time employees; also other academic staff spend more hours on their job than they are paid for, whereas academics at *FHs* identify average working hours in line with the usually required work time for full-time staff.

But the changes seem to outweigh continuity. The proportion of women increased substantially. A higher proportion of non-professorial academic staff at universities in 2007 is relatively old and overlaps more strongly with the typical age brackets of university professors. The credentials increase – notably the proportion of academics at *FHs* bearing a doctoral degree or even a

Habilitation and the proportion of university professors with a *Habilitation*. Academics change their institution of higher education more often than in the past.

The number of articles published, research reports submitted to sponsors and papers presented at conferences increased dramatically. This is certainly in tune with recent policies in Germany of emphasizing evaluation and competition for improved quality of research more strongly than of teaching. Both the orientation and the proportion of working time among university professors lean somewhat more towards research in 2007 than they did in 1992. In contrast, other staff at universities, traditionally more involved in research than professors, lean somewhat more towards, and spend somewhat more time on, teaching in 2007 than in 1992, thus preparing themselves more comprehensively for the job roles of senior academics.

The increasing strategic role of the individual higher education institution in Germany and the stronger strategic power of the management at the individual institution seem to be reflected in an increase of the proportion of academics feeling affiliation to their department and their institution as a whole. It is surprising to note that German academics in 2007 believe they have a stronger influence in their department and institution than their predecessors did in 1992.

Finally, the overall assessment of employment and the work situation has headed in not fully consistent directions. On the one hand, an increasing proportion of professors and other academic staff at universities consider their jobs increasingly as a cause of personal strain (This does not hold true for academics at *FHs*). On the other hand, academics in 2007 are more highly satisfied with their overall employment and work situation than their predecessors in 1992. Notably, the non-professorial staff at universities have made a leap forwards towards higher overall job satisfaction.

References

Bracht, O., & Teichler, U. (2006). The Academic Profession in Germany. In Research Institute for Higher Education (RIHE) (ed.), *Reports of Changing Academic Profession Project Workshop on Quality, Relevance, and Governance in the Changing Academia: International Perspectives* (pp.129-150). Hiroshima: RIHE, Hiroshima University.

Bundesministerium für Bildung und Forschung (BMBF) (2008). *Bundesbericht zur Förderung des Wissenschaftlichen Nachwuchses (BuWiN).* Berlin: Bundestag.

Burkhardt, A. (2008). *Wagnis Wissenschaft: Akademische Karrierewege und das Fördersystem*

in Deutschland. Leipzig: Akademische Verlagsanstalt.

Enders, J., & Teichler, U. (1995a). *Berufsbild der Lehrenden und Forschenden an Hochschulen*. Bonn: Bundesministerium für Bildung, Wissenschaft, Forschung und Technologie.

Enders, J., & Teichler, U. (1995b). *Der Hochschullehrerberuf im internationalen Vergleich*. Bonn: Bundesministerium für Bildung, Wissenschaft, Forschung und Technologie.

Enders, J., & Teichler, U. (1996). The Academic Profession in Germany. In P.G. Altach (ed.), *The International Academic Profession: Portraits of 14 Countries* (pp.439-492). Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.

Grözinger, G. (2008). Wie mobil sind Professoren? Erste Erkenntnisse zu Zweiten Rufen in Deutschland. *die hochschule*, *1*, 59-73.

Janson, K., Schomburg, H., & Teichler, U. (2007). *Wege zur Professur: Qualifizierung und Beschäftigung an Hochschulen in Deutschland und den USA*. Münster: Waxmann.

Kreckel, R. (ed.) (2008). *Zwischen Promotion und Professur: Das wissenschaftliche Personal in Deutschland im Vergleich mit Frankreich, Großbritannien, USA, Schweden, den Niederlanden, Österreich und der Schweiz.* Leipzig: Akademische Verlagsanstalt.

Statistisches Bundesamt (2008). *Bildung und Kultur: Personal an Hochschulen 2007*. Wiesbaden (Fachserie 11 Reihe 4.4).

Teichler, U. (2008). Academic Staff in Germany: *per aspera ad astra*? In RIHE (ed.), *The Changing Academic Profession in International Comparative and Quantitative Perspectives* (pp.131-152). Hiroshima: RIHE, Hiroshima University.

The Changing Academic Profession in Japan

Yusuke Hasegawa* and Naoyuki Ogata**

Changes in circumstances surrounding the academic profession

The academic workplace in Japan has been changing rapidly and this phenomenon is worldwide (Altbach & Chait, 2001). This section outlines changes in circumstances surrounding the academic profession in the 15 years from 1992 to 2007 based on the national level statistics and presents an analytical framework for discussion to be made in the following sections.

Changes in the size of the university system

Table 1. Changes in the size of the university system

	18-year-old population		Number of undergraduate students		Number of full-time faculty	
1992	2,050,902	*100*	2,127,713	*100*	130,854	*100*
1995	1,774,535	*87*	2,330,831	*110*	139,487	*107*
1998	1,623,009	*79*	2,428,269	*114*	146,153	*112*
2001	1,512,840	*74*	2,487,133	*117*	151,593	*116*
2004	1,411,420	*69*	2,505,923	*118*	159,724	*122*
2007	1,299,762	*63*	2,514,228	*118*	167,971	*128*

Source: *Statistics of Japanese Higher Education.*
Note: Numbers in italics are proportions (%), relative to 1992.

Table 1 shows changes in the size of university population and the number of faculty in the 15 years from 1992 to 2007. During this time, the 18-year-old

*Assistant Professor, Research Institute for Higher Education, Hijiyama University, e-mail: yhase@hijiyama-u.ac.jp
** Associate Professor, RIHE, Hiroshima University, e-mail: nogata@hiroshima-u.ac.jp

population decreased dramatically from 2.1 million in 1992 to 1.3 million in 2007, which amounts to only 60% of the level of 1992. However, in this period, the number of undergraduate students increased from 2.1 million to 2.5 million due to a surge in university participation rate from 26% to 47%. Accordingly, the number of faculty increased as well by 28% from 130,000 to 170,000. This means that the job market for academic profession expanded substantially in these 15 years.

Careers for doctoral graduates

The realities of the job market of the academic profession cannot be grasped only by looking at the quantitative aspect of the demand side, because the supply side may also have changed. Table 2 shows the trend of careers for doctoral graduates, the traditional route of entry to the academic profession. The most evident trend is that the total size of doctoral courses has expanded dramatically over the 15 year period. The number of students studying at doctoral level was only 32,000 in 1992 but increased by 2.3 times to 75,000 in 2007. In parallel, the number of those who became members of faculty immediately after completing doctoral courses also increased from 1,500 to 2,200. But the size of this increase is limited and small in comparison to the increase in total number of those who have been employed as faculty. Indeed, the ratio of faculty among those who started working just after finishing doctoral courses has dropped from 35% to 22%.

Table 2. Careers for doctoral graduates

	Direct entry to faculty on completion of doctoral course					Total number of new faculty employed
	Number of students in doctoral courses		Number of those who become faculty		Ratio of faculty among those who start working (%)	Employment rate (%)	
1992	32,154	*100*	1,499	*100*	34.7	66.6	6,638
1995	43,774	*136*	1,684	*112*	33.6	62.6	8,922
1998	55,646	*173*	1,852	*124*	27.7	60.9	9,333
2001	65,525	*204*	1,815	*121*	24.3	56.6	10,289
2004	73,446	*228*	2,114	*141*	24.7	56.4	10,535
2007	74,811	*233*	2,191	*146*	22.2	58.8	11,528

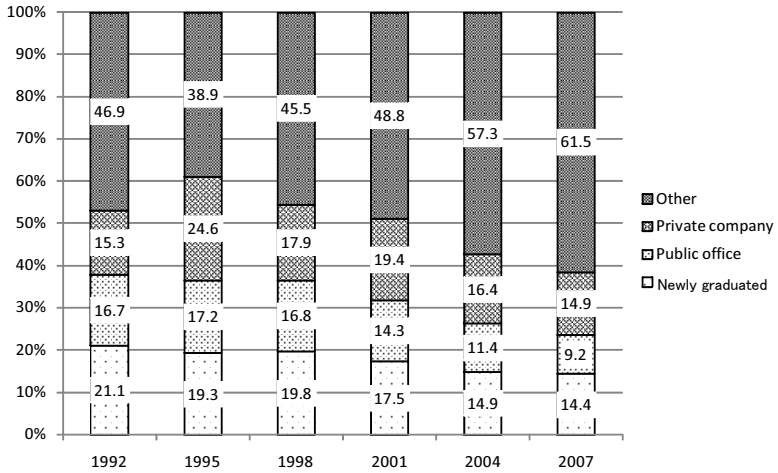
Sources: *School Basic Survey* and *School Teachers Survey.*
Note: Numbers in italics are proportions (%), relative to 1992.

Moreover, this decrease is not caused by the expansion of career routes in other than the academic profession. The rate of employment for those who have just completed doctoral courses was already low at 67% in 1992 and it has subsequently fallen further, so that for those who have just finished doctoral courses finding a job in the academic profession has become even more difficult

and entry to the academic profession has become more competitive.

Diversified career pathways and late participation in academic profession

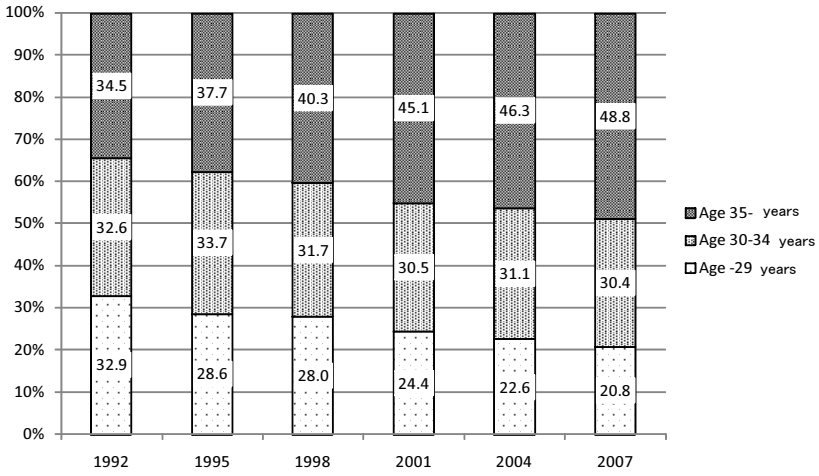
As is evident in Table 2, not all of the newly employed faculty are those who have just completed doctoral courses. Figure 1 shows where newly employed faculty were previously employed. Already in 1992, the ratio of recruitment of those who had just completed doctoral courses to all of newly employed faculty was only 21% and quite substantial numbers were recruited from public offices, private companies and other places. The ratio for new doctoral graduates declined in the 15 years to stand at 14% in 2007. It is necessary to note that the absolute numbers employed have increased, but this emphasizes how much more difficult to be employed just after finishing doctoral courses it has become.



Source: *School Teachers Survey.*

Figure 1. Sources of newly recruited faculty

It is also important to note that the ratios of those who are employed by universities after having worked in public offices or private companies have not themselves increased. What has really changed is recruitment of those categorized as "others", which is predominantly composed of postdoctoral fellows. The number of those receiving scholarships as postdoctoral fellows topped 10,000 in 1999 and has stayed at around the same level since then. This means that it is difficult for new graduates to find employment as faculty, as the number of postdoctoral fellows available for employment as faculty has increased, and this has given further downward pressure on employment of new doctoral graduates. As a result of the decrease in employment of new doctoral



Source: School Teachers Survey.

Figure 2. Age distribution of those employed as faculty

graduates as faculty, the age distribution of faculty has changed (Figure 2).

Among those employed as faculty, the proportion of those under 30 has declined from 33% in 1992 to 21% in 2007, while for those 35-years-old or older it has increased from 35% to 49%.

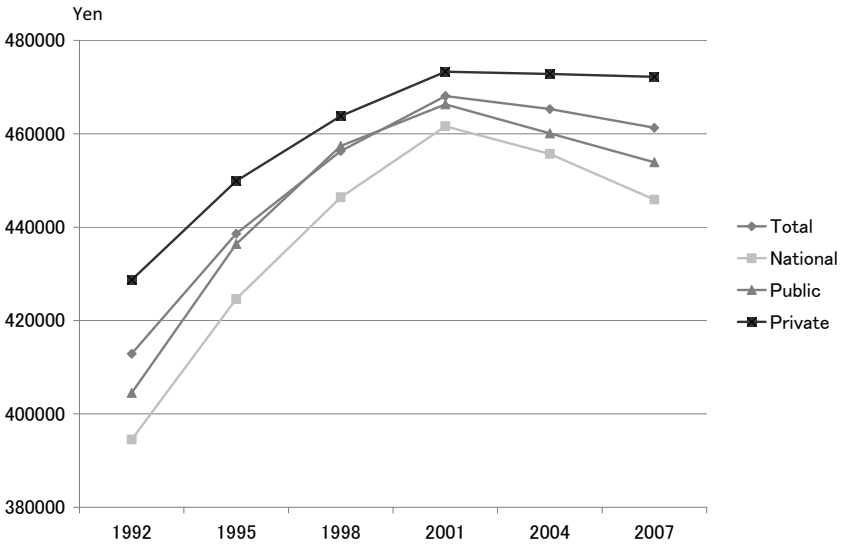
Work conditions

As the information gathered from the national level statistics on work conditions for the academic profession is limited, we can present data only on the teaching load and remuneration. It is possible though to analyze the characteristics from the open recruitment information based on the research personnel database of the Japan Science and Technology Agency (Japan Research Career Information Network), although this can be only used for reference due to the information's temporariness and some duplication.

Teaching load *per* week at undergraduate level was 6.6 hours on average in 1992 and decreased to 6.2 hours by 1998, then turned upward to increase to 7.3 hours in 2007, up 0.7 hour from the level of 1992. In this period, students became more diversified due to the surge in university participation rate and educational reform was actively pursued. Although it is difficult to know from the statistics what kind of changes happened in time allocation for other activities in their life, one could conclude that work conditions for faculty deteriorated in the 10 years from 1998, on the supposition that the increased teaching load been at the expense of other activities such as research.

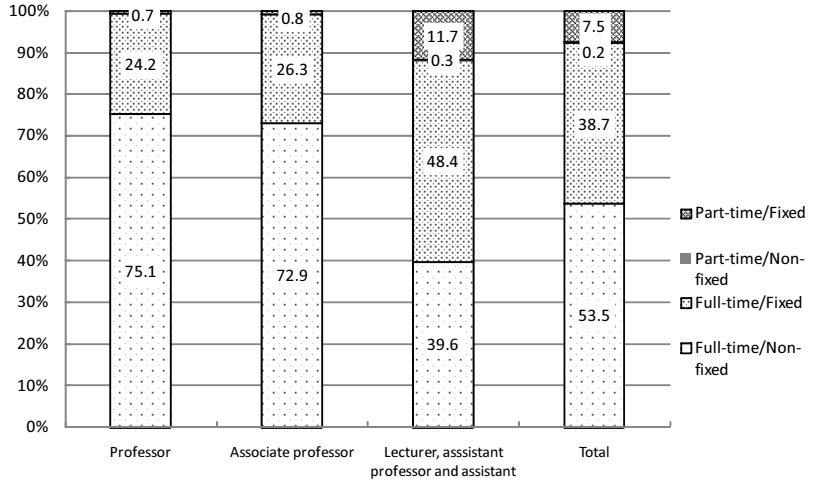
Remuneration deteriorated as well. Figure 3 shows the average monthly

wage by institution sector. The average wage for faculty increased from 413,000 yen in 1992 to 468,000 yen in 2001. But it decreased after peaking in 2001 and declined in 2007 to 461,000 yen. The average wage at private universities is the highest, followed by public and national universities, all of which decreased after 2001.



Source: *School Teachers Survey.*

Figure 3. Average monthly wage



Source: *Japan Research Career Information Network.*

Figure 4. Type of employment and term

Figure 4 shows data from the open recruitment information on faculty, categorized by type of employment (full-time or part-time) and term of employment (non-fixed term or fixed-term) as of October 2008. In the case of professors and associate professors, most of positions are offered with full-time contracts and 75% of them are non-fixed term. In the cases of lecturers, assistant professors, and assistants, more than 10% of positions are offered as part-time; and even in case of full-time contracts, there are more fixed-term than non-fixed term positions. Although these data are only for one specific point of time, it could be concluded that not a small number of faculty are employed on limited term contracts, regardless of their positions.

Analytical issues

Through the analysis so far, we have noted some points of consideration for analyzing the changing careers in the academic profession. First, there is the issue of entry to academic employment, that is to say, "type of employment". This refers to the entry route to academic employment, differences in full-time and part-time contracts, and types of employment such as limited term or non-limited term. These might be causing differences in the consciousness and actions of faculty. On the other hand, an increase in teaching load and decrease in remuneration might be common problems for all the academic profession, but it is also possible that the disparity of work conditions is widening among faculty. Therefore, it is necessary to analyze how work conditions define their consciousness and actions. In addition to examining the aspect of factors defining consciousness and actions of faculty, we will further consider the influence on consciousness and actions themselves of factors such as degree of satisfaction in the work place, sense of belonging to the organization or to the discipline, and opinions on the possibility of moving or turnover.

The changes of academic careers seen in the survey of the academic profession

This section outlines changes in the academic career in the 15 years from 1992 to 2007, by analyzing data from the surveys on faculty in Japan. For 1992, we use the data of the "Carnegie International Survey of the Academic Profession" (1,889 respondents) and for 2007, we analyze the data from the "International Survey of the Academic Profession (AP survey in 2007)" (1,100 respondents). The AP survey in 2007 differs from the CAP survey: it was

conducted independently in Japan, and was conducted at the same universities as in 1992 and by using almost the same questions.

Work conditions, employment situation, and number of job switches

As was already clear from the national level statistics, the teaching load for Japanese faculty has increased, and working hours for faculty have certainly changed. Table 3 shows the distribution of teaching and research across the total working hours according to four categories of faculty[1].

The results showed, first, during the 15 years, the proportion of those belonging to the "Teaching type" (*i.e.* those who devote more hours to teaching) increased. It means that the proportion of teaching in the academic work load has extended due to the increase in teaching load. Conversely,, the proportion of faculty belonging to the "Research type" (*i.e.* devoting more time to research) has decreased, with two possible reasons: (a) an increase in time used for teaching; (b) as it is clear from the increase of faculty belonging to the category "Other type" (the proportion who do not devote much time either or teaching or research), the time to be used for other activities than teaching and research, for example for service and administration, is increasing. Teaching and research remain the core activities in academic work, but a shift from research to teaching, or expansion into other academic activities has been witnessed during the 15 years.

Table 3. The changes in four types of academic work

		Teaching and research type	Teaching type	Research type	Other type	Total	
Total	1992	19.2%	29.3%	39.0%	12.5%	100.0%	***
	2007	10.9%	40.7%	26.8%	21.6%	100.0%	
National Research	1992	7.2%	14.8%	58.8%	19.2%	100.0%	**
	2007	8.3%	12.2%	46.1%	33.3%	100.0%	
National non-Research	1992	20.5%	18.1%	47.8%	13.6%	100.0%	***
	2007	11.8%	33.9%	29.9%	24.4%	100.0%	
Private Research	1992	21.9%	17.2%	48.4%	12.5%	100.0%	*
	2007	15.2%	43.5%	26.1%	15.2%	100.0%	
Private non-Research	1992	22.9%	43.3%	24.7%	9.1%	100.0%	***
	2007	10.7%	65.0%	12.0%	12.3%	100.0%	

Note: *** $p<0.001$; ** $p<0.01$; * $p<0.05$. This symbolism is used also in other tables.

[1] The specific method of classification is as follows. First, the total of all academic work time was obtained. The proportion of time devoted to research and education (teaching) was then obtained. The median values for education and research respectively (based on data of all the respondents both in 1992 and 2007) was derived for each of the 4 categories.

A similar tendency, with one exception, is observed when we classify universities into the four categories: national research, national non-research, private research, private non-research.[2] The exception is national research universities where the ratio of the teaching and research type and the teaching type has not changed so much.

Table 4 shows the changes in employment status between fixed-term and non-fixed-term. The proportion of fixed-term employment increased from 2.4% in 1992 to 12.0% in 2007. This tendency is especially true in the national universities. Employment on fixed-term appointments means an increase in the number of faculty with unstable employment conditions, and hence is expected to promote mobility for faculty.

We calculated the number of higher education institutions at which faculty have been employed so far. The average was 1.54 in 1992 and 1.60 in 2007 with no statistically significant difference. But when classified by age, a different result was found (Table 5). First, there was no change for the group of 39-year old or younger: this was not surprising, because these people have not had time for change since staring their employment in higher education, and for which the entry age is becoming higher. However, for the 40-49-year old group, the average number of higher education institutions has increased by 2007. It cannot be concluded for sure, but it seems possible that increase in fixed-term contracts for lecturers or lower positions is having an influence.

Table 4. Types of appointment

		non-fixed-term	fixed-term	Total	
Total	1992	97.6%	2.4%	100.0%	***
	2007	88.0%	12.0%	100.0%	
National Research	1992	99.7%	0.3%	100.0%	***
	2007	83.9%	16.1%	100.0%	
National non-Research	1992	98.7%	1.3%	100.0%	***
	2007	86.6%	13.4%	100.0%	
Private Research	1992	98.6%	1.4%	100.0%	*
	2007	90.6%	9.4%	100.0%	
Private non-Research	1992	96.1%	3.9%	100.0%	***
	2007	91.3%	8.7%	100.0%	

[2] Refer to Daizen & Yamanoi (2008) for the method used to classify universities.

Table 5. Average number of higher education institutions where faculty has been employed

		39 years old or younger	40-49 years old	50-59 years old	60+ years old
Total	1992	1.49 n.s.	1.44 **	1.52 n.s.	1.74 *
	2007	1.51	1.61	1.63	1.59
National Research	1992	1.90 n.s.	1.63 n.s.	1.67 *	1.69 n.s.
	2007	1.25	1.60	2.06	1.88
National non-Research	1992	1.51 n.s.	1.49 n.s.	1.61 n.s.	1.72 n.s.
	2007	1.49	1.68	1.46	1.56
Private Research	1992	1.42 n.s.	1.32 n.s.	1.38 n.s.	1.44 n.s.
	2007	2.00	1.63	1.69	1.60
Private non-Research	1992	1.32 n.s.	1.34 n.s.	1.39 *	1.79 *
	2007	1.58	1.49	1.57	1.54

When analyzed by type of institution, the average number of higher education institutions has increased by 2007 for the group aged 50-59 years in cases of national research and private non-research universities

.

Sense of belonging, degree of work satisfaction and possibility of leaving the profession

Changes in work conditions have the possibility of changing faculty's sense of belonging. Changes in number of job switches can be considered as reflecting changes in their sense of belonging. Table 6 shows the answers to other questions that relate to the sense of belonging regarding academic discipline, institution, and department.

For the academic discipline/field, there is no change between 1992 and 2007. Nearly 70% answered that it is "very important" both in 1992 and 2007, showing a strong sense of belonging. If it can be considered that the sense of belonging to an academic discipline/field is closely related to members of faculty's own research, one can say that many faculty retain their interests in their research, although their work hours for research have decreased.

On the other hand, the sense of belonging to their institution either as university or as department – which in neither case was high before – has declined further over the 15 years. For example, those who answered that their institution was "very important" declined by nearly 10 percentage points from 31.2% in 1992 to 22.9% in 2007. Research activities are often conducted

Table 6. Sense of belonging

			Very important 1	2	3	Not at all important 4	
My academic discipline /field	Total	1992	68.9%	27.7%	3.1%	0.4%	n.s.
		2007	67.4%	29.0%	3.4%	0.2%	
	Private Research	1992	78.7%	20.0%	1.3%	0.0%	*
		2007	56.6%	35.8%	5.7%	1.9%	
My institution	Total	1992	31.2%	48.4%	18.6%	1.8%	***
		2007	22.9%	51.7%	23.3%	2.1%	
	Private non-Research	1992	34.2%	49.8%	15.1%	0.9%	**
		2007	26.9%	49.4%	22.5%	1.3%	
My department	Total	1992	29.8%	49.6%	18.7%	1.9%	**
		2007	23.7%	51.9%	22.4%	1.9%	
	Private Research	1992	39.7%	45.2%	13.7%	1.4%	*
		2007	17.6%	51.0%	27.5%	3.9%	

Note: The results of the analysis by type of university presents only those showing significant difference ($p<0.05$).

beyond the borders of institutions. However, teaching activities are conducted within their institutions. Therefore, the sense of belonging with regard to institution or department may well be more strongly related to teaching than to research. The fact that the sense of belonging to their institutions has not been heightened, while hours spent for teaching have increased, might accordingly reflect Japanese faculty's awareness that their work conditions have deteriorated.

When we analyze by type of university, the sense of belonging to an academic discipline/field and to my department has declined most notably in terms of "Very important" in private research universities.

Table 7. Degree of satisfaction towards their work as a whole

		Very high 1	2	3	4	Very low 5	
Total	1992	7.5%	46.0%	32.2%	11.5%	2.8%	n.s.
	2007	5.2%	46.6%	32.2%	13.1%	2.8%	
National Research	1992	7.4%	58.3%	20.2%	10.1%	3.9%	**
	2007	8.4%	46.8%	33.2%	10.0%	1.6%	
National non-Research	1992	6.7%	40.5%	33.6%	15.5%	3.7%	n.s.
	2007	3.3%	44.5%	34.4%	13.2%	4.6%	
Private Research	1992	11.1%	55.6%	25.0%	8.3%	0.0%	n.s.
	2007	3.8%	50.0%	23.1%	19.2%	3.8%	
Private non-Research	1992	7.6%	43.9%	36.5%	9.8%	2.1%	*
	2007	6.2%	47.9%	30.7%	13.9%	1.3%	

Since work conditions have deteriorated and their sense of belonging to their institutions has weakened, it could be expected that the degree of satisfaction towards university work as a whole has declined. However, one can find no big difference during the 15 years (Table 7). While in 1992, a tendency of satisfaction could be seen, with 7.5% answering "Very high" and 46.0% "High" (2), the results were almost the same in 2007.

Nevertheless, the fact that no decline is witnessed in the degree of satisfaction does not necessarily mean that faculty is working with a positive feeling towards present conditions. Furthermore when analyzed by type of university and paying attention to the aggregate of the proportions of "Very high" and "High", the degree of satisfaction has decreased in the national research universities.[3]

Faculty were asked about the possibility of moving to other institutions, even though they are unable to specify what kind of institution they might move to. The results are shown in Table 8. In 1992, those who answered that "the possibility of moving to other institutions is low" accounted for 45.0%: it had declined to 36.6% in 2007. Those who answered "the possibility is high", 19.7% in 1992, had risen to 23.2% in 2007.

When analyzing the results by age, only those in the over-40-year old age groups showed changes over the 15 years. Faculty in their 40s and 50s should be considered as those able to undertake leading roles especially in universities' academic work, but the proportion of those who answered "the possibility of moving is low" declined by some 10 percentage points. This kind of change in the feelings of this group of faculty should not be ignored when considering management of each institution.

Table 8. Possibility of leaving current university within 5 years

		high 1	2	3	4	low 5	
Total	1992	19.7%	6.4%	22.8%	6.1%	45.0%	***
	2007	23.2%	7.7%	25.3%	7.2%	36.6%	
40-49 years old	1992	7.5%	8.1%	31.1%	8.4%	44.9%	**
	2007	12.9%	12.2%	31.0%	10.2%	33.7%	
50-59 years old	1992	6.7%	5.6%	19.6%	5.9%	62.2%	**
	2007	6.8%	4.8%	27.3%	8.5%	52.7%	

[3] In Table 7, we could interpret that the proportion of satisfaction (total of 1(very much) and 2) had decreased at private research universities. However the significance of this difference was not confirmed.

Factors to determine possibility of moving: analysis of CAP data

The analysis in the preceding sections has shown that working conditions have deteriorated and the sense of belonging to the institutions has weakened during the past 15 years. It was also found that the possibility of moving to other work places has increased among faculty in their 40s and 50s. The possibility of leaving current positions should be determined by conditions surrounding employment. The Japanese version of the CAP survey posed specific questions on the possibility of faculty of moving to other work places. With this data we can consider factors that determine this possibility.

Framework for analysis

First, as probable destinations of job switch, we presupposed two possibilities: moving to other higher education institutions in Japan (working for higher education or research institutions in Japan) and moving into other labor markets (*i.e.,* working in other places than higher education and research institutions). As factors to determine the possibility of moving, we presuppose faculty's attribution, careers before the current position, current employment status, work hours, sense of belonging, and degree of work satisfaction may be relevant. In addition, we will analyze how these variables, faculty's attribution and others, determine their degree of work satisfaction (Figure 5).

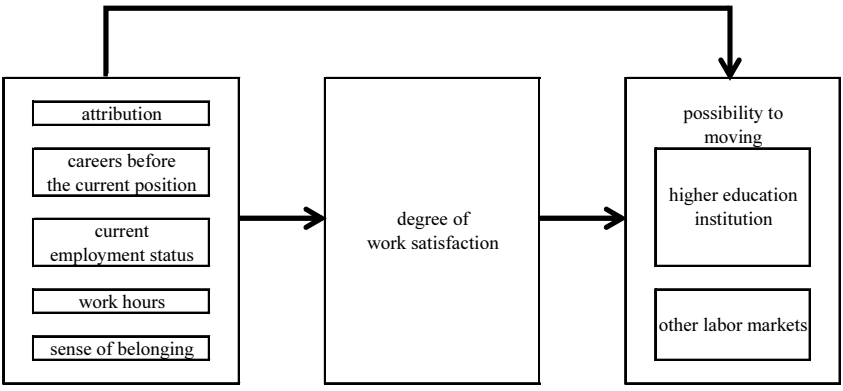


Figure 5. Framework for analysis

For the factors that determine the degree of work satisfaction, a multiple regression analysis was conducted. For the factors that determine the possibility of moving, a logistic regression analysis was conducted. The variables actually used are shown in Table 9.

Before presenting the results of the analysis, it is useful to examine how many members of faculty have ever considered changing workplace in the last 5 years. Faculty who have considered moving to other higher education institutions in Japan amount to about a half (50.7%), while almost a quarter (23.5%) have thought of moving to other labor markets. As in a knowledge-based society, other labor markets are becoming similar to universities, an augmented possibility of moving into other labor markets should not necessarily be considered negatively: it can also be evidence of increasing ambiguity of the border between the academic profession and other professions.

Table 9. Variables used for analysis

dependent variables

category	subcategory	variable	explanation of variable
degree of work satisfaction			Very high=5 ～ Very low=1
Possibility of moving	higher education institution	To an academic position in another higher education/research institute within the country	considered=1, not considered=0
	the other labor market	To work outside higher education/research institutes	

independent variables

category	subcategory	name of variable	explanation of variable
attribution	sex	male dummy	male=1, female=0
	years	years	number of years
	type of universtiy	National Research dummy	The belonging university is National Research =1, others=0
		National non-Research dummy	The belonging university is National non-Research =1, others=0
		Private non-Research dummy	The belonging university is Private non-Research=1, others=0
	academic rank	professor dummy	professor=1, others=0
	degree	doctoral dummy	doctoral degree=1, others=0
	academic discipline	humanities and social dummy	the academic discipline or field is humanities and social=1, others=0
		science and engineering dummy	the academic discipline or field is science and engineering=1, others=0
		medical science dummy	the academic discipline or field is medical science=1, others=0
careers before the current position	experience of having worked in the other higher education institutions	experience of having worked in the other higher education institutions dummy	number of experience of having worked in the other higher education institutionss two or more =1, one=0
	experience of having worked in the other labor market	experience of having worked in the other labor market dummy	faculty who has experience of having worked in the other labor=1, others=0
current employment status	fixed-term employment	fixed-term employment dummy	fixed-term employment=1, others=0
	tenure track	tenure track dummy	tenure track =1, others=0
	current working in the other labor market	current working in the other labor market dummy	In additional to your current employer, I also work at organizations outside of academe or self-employed=1, others=0
work hours	academic work type	teaching & research type dummy	teaching & research type=1, others=0
		teaching type dummy	teaching type=1, others=0
		research type dummy	research type=1, others=0
sense of belonging	my academic discipline/field	my academic discipline/field	Very important=5 ～ Not at all important=1
	my institution	my institution	
	my department	my department	
degree of work satisfaction (It is used only about analysis on factors to determine possibility of moving.)			Very high=5 ～ Very low=1

Factors to determine degree of satisfaction

Table 10 shows the results of analysis of factors to determine the degree of work satisfaction. The factors used to determine the degree of work satisfaction are careers before the current position, present employment status, sense of belonging, and work hours.

There are two especially notable points. First is the variable related to the sense of belonging. Those who have a strong sense of belonging to universities are more satisfied with their work. However, since the sense of belonging to universities shows a tendency to decline in the last 15 years, the degree of work satisfaction for faculty might possibly be declining as well.

Table 10. Factors to determine degree of work satisfaction

	B	sig.	β
constant	1.668	***	
male dummy	0.182		0.053
years	0.009		0.092
national research university dummy	-0.187		-0.076
national non-research university dummy	-0.515	**	-0.271
private non-research university dummy	-0.308	*	-0.163
professor dummy	0.171		0.092
doctoral dummy	0.148		0.064
humanities and social sciences dummy	-0.040		-0.018
science and engineering dummy	-0.197		-0.107
medical science dummy	-0.192		-0.077
experience of having worked in other higher education institutions dummy	0.060		0.032
experience of having worked in other labor market dummy	0.413	**	0.113
fixed-term employment dummy	0.103		0.030
tenure track dummy	0.187	*	0.078
current working in other labor market dummy	0.275	*	0.081
teaching & research type dummy	-0.272	*	-0.109
teaching type dummy	0.129		0.070
research type dummy	0.346	***	0.187
my academic discipline/field	0.095		0.066
my institution	0.135	*	0.124
my department	0.061		0.057
F value	6.400	***	
adj R^2	0.138		

Second is the variable related to careers before the current position and current employment status. Those who have experience, current or past, of working in other labor markets tend to have a higher degree of work satisfaction. If it can be supposed that degree of work satisfaction depends on comparison with past experiences, it is possible that those who have been working only at

universities are feeling increasing dissatisfaction due to worsening work environments. On the other hand, it is possible that those who have experience of working in other labor markets are feeling more satisfied because they think universities are comparatively more attractive workplaces than others they have experienced and they feel they can find expanded domains in universities to utilize their ability.

Factors to determine the possibility of moving

Table 11 shows the results of analysis on factors to determine possibility of moving. With regard to moving to higher education institutions in Japan, there are two points to note. First is the significance of the variable regarding careers before the current position. Those who have had experience of changing jobs before have a higher possibility of moving in the future. This probably means that, once having experienced changing jobs, they feel they can move to the next workplace more smoothly. Since some people choose not to move because of a good work environment at present, the obvious conclusion is not necessarily

Table 11. Factors to determine possibility of moving

	B	sig.	Exp (B)	B	sig.	Exp (B)
constant	4.344	***	77.019	2.536		12.628
male dummy	0.151		1.162	0.209		1.233
years	-0.069	***	0.934	-0.028		0.972
national research university dummy	0.703		2.019	0.514		1.673
national non-research university dummy	0.767		2.152	0.503		1.654
private non-research university dummy	0.587		1.798	0.657		1.928
professor dummy	-0.247		0.781	-0.642	*	0.526
doctoral dummy	0.114		1.120	0.434		1.544
humanities and social sciences dummy	0.110		1.117	-0.692		0.501
science and engineering dummy	-0.050		0.952	-0.314		0.730
medical science dummy	-0.028		0.973	0.313		1.367
experience of having worked in other higher education institutions dummy	0.404	*	1.498	-0.006		0.994
experience of having worked in other labor market dummy	0.113		1.120	0.655		1.924
fixed-term employment dummy	-0.119		0.888	-0.552		0.576
tenure track dummy	0.315		1.370	-0.369		0.691
current working in other labor market dummy	0.129		1.137	0.897	*	2.452
teaching & research type dummy	-0.170		0.844	-0.096		0.909
teaching type dummy	-0.210		0.810	-0.057		0.944
research type dummy	0.137		1.147	-0.392		0.676
my academic discipline/field	0.266		1.305	-0.125		0.882
my institution	-0.425	**	0.654	-0.280		0.756
my department	-0.206		0.814	0.207		1.230
degree of work satisfaction	-0.180		0.835	-0.368	**	0.692
-2Log Likelihood	817.71			613.262		
Nagelkerke R^2	0.242			0.229		

appropriate, but if it is supposed that work environments can be improved by moving to a new work place, it is possible that there could be a polarization of perceptions of work environments between those who move and those who do not.

Second is the sense of belonging. A sense of belonging to a university restrains the possibility of moving. As we have already explained, faculty's sense of belonging to their universities has shown a tendency to decline, therefore it is possible that dissatisfaction with the current university generates an increase in the proportion of faculty who are considering changing workplaces. If we define moving in a search for better environment as "positive moving", and moving in order to escape from poor surroundings as "negative moving", we could suppose that moving prompted by dissatisfaction towards the current university as a driving force could possibly lead to stagnation of higher education, rather than activation.

Next, as for moving to another labor market, similarly to moving to higher education institutions in Japan, the degree of work satisfaction can be a significant factor in determining the possibility of moving. Apart from this point, it is very different from the factors to determine the possibility of moving to higher education institutions in Japan. The influence from a sense of belonging offers no statistically meaningful reason.

On the other hand, if we were able to compare current employment types, those who work in the other labor markets also might show a higher possibility of moving. Those who are able to develop their careers outside higher education institutions have better access to information from other labor markets and a higher affinity to such labor markets. However, working in the position of a professor can restrain the possibility of moving to other labor markets. Those who have risen to the high rank of professor have a stronger tendency to continue to pursue their careers in the academic profession.

Conclusion

A decrease in the 18-year-old population brought a "period of winter-like hardship" to universities. Although the total number of faculty has not declined in the last 15 years, it could possibly shrink in the future. Against the backdrop of expanding doctoral courses, it has become very competitive for new graduates from doctoral courses to find jobs in the academic profession. In addition, employment has become more unstable and work conditions have deteriorated by introduction of an employment system with fixed-term appointments, an

increasing teaching load and decreasing remuneration.

Reflecting these circumstances, faculty's sense of belonging to their institutions is becoming weaker. Half of faculty has thought of moving to other higher education institutions in Japan, although this is just on a possibility basis. Moreover, nearly a quarter of faculty is considering moving to occupations other than the academic profession. It is possible to interpret this phenomenon positively to conclude that faculty can also find areas to utilize their ability outside universities, but it can also be understood as brain drain from universities for the negative reason of dissatisfaction towards their current workplace.

It has been pointed out many times that faculty in Japan change their workplace very little and that it is necessary to improve their mobility. However, if the increasing possibility of changing workplaces is rather caused by such negative factors as a deteriorating work environment surrounding careers, it cannot possibly lead to activating the production and transmission of knowledge, but could result in promoting brain drain to employment outside universities.

References

Altbach, P.G., & Chait, R. (2001). Introduction. *Higher Education, 41*(1), 1-2.

Daizen, T., & Yamanoi, A. (2008). The Changing Academic Profession in an Era of University Reform in Japan. In Research Institute for Higher Education (RIHE), Hiroshima University (ed.), *The Changing Academic Profession in International Comparative and Quantitative Perspective* (RIHE International Seminar Reports 12) (pp.293-325). Hiroshima: RIHE, Hiroshima University.

RIHE (ed.) (2005). *A Study of the Academic Marketplace in Japan: Past, present and future (COE Publication Series No.15)*. Hiroshima: RIHE, Hiroshima University.

Conclusion

What Changes happened to the Academic Profession over 1992-2007?

Futao Huang*

The Research Institutes for Higher Education (RIHE) of Hiroshima University and of Hijiyama University in Hiroshima jointly organized this international conference on the Changing Academic Profession (CAP) over 1992-2007 in International, Comparative and Quantitative Perspectives as part of the Changing Academic Profession Project from January 28-29, 2009. This conference is the fourth concerning the CAP project that has been held in Hiroshima. The first conference, entitled Relevance and Academic Quality in the Enhancement of Higher Education, was held in February, 2006. Nine country reports and one report from Hong Kong were presented at the conference. They mainly dealt with the contexts, driving forces, major aspects and specific characteristics relating to the changing academic profession in North America, Europe and some Asian countries. The second conference was held in October, 2006, with the title Constructing University Visions and the Mission of the Academic Profession in Asian Countries: a Comparative Perspective. Speakers from China, India, Indonesia, Malaysia, Mongolia, Japan, South Korea, Thailand, and the Philippines presented reports on issues arising from reconstruction of university visions and the mission of the academic profession. The third conference, entitled the Changing Academic Profession in International, Comparative and Quantitative Perspectives took place in February, 2008. At the meeting, 19 speakers from 14 countries and Hong Kong made presentations. In these presentations an emphasis was placed on the findings from a preliminary analysis of the responses to the national surveys which had been carried out in the individual countries and regions in the year 2007. Whereas in this, the fourth conference, in 2009, invited speakers have come from Australia, Brazil,

* Professor, RIHE, Hiroshima University, e-mail: futao@hiroshima-u.ac.jp

Germany, Japan, Mexico, South Korea, UK, and USA. These eight countries participated in both the 1992 Carnegie international survey and the 2007 CAP survey. Apart from speakers and participants from these eight countries, nearly another 100 participants, including faculty and staff from the RIHE and other universities and institutions, have attended the conference.

Differing from the previous conferences, the major purpose of the 2009 conference has been more concerned with examining the nature and extent of the changes experienced by the academic profession over the period 1992-2007 through the national surveys in individual countries. The following three themes were particularly addressed through comparison of the responses in 2007-08 with those in 1992.

1. Personal characteristics and careers of the academic profession: for example, biography, prior career, employment and work situation, mobility, and work load.
2. Education and research activities of the profession: for example, education and research conditions, workload, views on the nature and the extent of the changes in education and research activities experienced by the academic profession.
3. Internationalization of the profession: though as yet there may be little information in this regard, it was hoped that major findings about international experience, international education and research activities undertaken by the profession, the impact of internationalization on the profession, and views about internationalization by the profession could be shared and discussed.

During the one-and-half-day conference, three keynote speeches were given with different focuses corresponding to the proposed three themes, followed by ten country reports relating to the three themes in the three sessions. On the final afternoon, a meeting was also organized to discuss the issue of publishing the outcome as a report on the conference by RIHE and future collaborative work among the participating countries.

From an international, comparative and quantitative perspective, the distinguishing outcomes have been identified as follows.

First, a truly international, comparative, and quantitative study was made of the changes in the AP over 1992-2007 at different levels and, to a large degree, with different focuses. For example, in the three keynote speeches, Professor Arimoto from Japan dealt mainly with an overview of the CAP over the period of 1992-2007 at an international level. Professor Cummings from the U.S. focused his address on recent shifts concerning the balance between teaching and

research among individual countries in a comparative perspective. Professor Teichler from Germany also provided an international and comparative study but of the biographies and careers of the academic profession with a special focus on the differences between its structure in different countries. In addition, the vast majority of participating countries also gave accounts of their countries relating to the three themes of the changing academic profession over the period 1992-2007 based on the findings from their national surveys both at a national level and an institutional level. In a major sense, the three themes concerning the changing academic profession were touched on from international, national, institutional and sub-group levels.

Second, with many similarities existing in the participating countries, several strikingly different patterns for the CAP in specific aspects were identified and discussed. To give a few examples of the changing academic professions in Japan and the UK alone, at least two clear changing patterns were identified in relation to the balance between teaching and research. In Japan, strongly facilitated by government, there has been an increasing emphasis on teaching activities since the early 1990s though the strong tradition of emphasizing research among Japanese faculty persists. In contrast, in the UK, an increased emphasis on research activities has been specifically identified by academics, though they have tended to show an equal preference for both. Moreover, accompanying the massification of undergraduate students in Japan, there has been corresponding growth in numbers of Japan's faculty, whereas in the UK data analyses indicate that there has been a relative drop in the number of academics over the past fifteen years.

Third, some models for analyzing the changing academic profession were provided. The conceptual framework on internationalization of the academic profession was illustrated by Professor Finkelstein from the USA, the typology of academic disciplines by Dr Shin from South Korea, and a statistical framework on careers in the academic profession was used by Dr Ogata and Dr Hasegawa from Japan. All can be considered as new research models that could be adopted in exploring the changing academic profession in other countries.

Fourth, some common changes and challenges were clarified. Among participating countries they include:

- a growing percentage of higher degrees, especially doctorates awarded abroad;
- an increasingly competitive labor market for the academic profession, and especially for new entrants;

- increased working hours and workload across the academic profession, in both mature and emerging countries due to more diversified activities;
- increased numbers of articles and books published by the academic profession; but
- an increasingly aging academic profession (especially in Australia, Japan);
- a danger of erosion of academic freedom; and
- seemingly fragmented academic activities and new divisions of labor within the academic profession.

As was evident at the 2008 conference, many countries are still in the early stages of analyzing their CAP survey data. The main findings that were presented by the speakers from a number of countries are relatively simple and their country reports remain preliminary. Apparently, substantial issues still need to be dealt with by future research. Much study has been made of the changing academic profession at national level and some achievements are beginning to be clarified at international and institutional levels; however, little is still known of what changes over the period of 1992-2007 have taken place, to what extent these changes have occurred at regional level and to what extent they affect the various sub-groups by academic rank, by age, by gender, by discipline, by degree, and so on. Moreover, more sophisticated, qualitative and quantitative analyses and interpretations of the following issues are desired.

- Defining some key terms and facts such as research, internationalization, job satisfaction, stress.
- Universal factors or pressures affecting the common changes in the CAP in the participating countries.
- The role of government policy on stimulating healthy changes in the academic profession.
- Cooperative work on what role the academic profession should play in this changing world.
- What implications our academic outcomes can have on political and legal decisions, which might, in turn, result in positive effects on the academic profession in individual countries.

Both the thoughtful and focused presentations by all the speakers and in the discussions by the invited speakers and participants from the floor have provided us with a more sophisticated analysis of and understanding of both the overview of the CAP internationally and the specific situation of the CAP in individual countries. As mentioned in the last report on the third conference, most importantly, the main value of this conference at Hiroshima has been to provide

stimulation as different groups start to consider collaborative analytic projects. This will provide a useful base for discussions on the subsequent research. In a major sense, the meeting was timely, stimulating and yielded fruitful outcomes.

Appendices

Appendix 1: Conference Program

The Changing Academic Profession Over 1992-2007: International, Comparative, and Quantitative Perspectives

Date: January 13-14, 2009
Venue: Hiroshima Garden Palace

Tuesday, January 13

8:30 - Registration

***** Opening Ceremony *****

9:00 - 9:15 **Opening Remarks**
Toshimasa Asahara, President, Hiroshima University, Japan
Susumu Takahashi, President, Hijiyama University, Japan
Shinichi Yamamoto, Director & Professor, Research Institute for Higher Education, Hiroshima University, Japan
Akira Arimoto, Director & Professor, Research Institute for Higher Education, Hijiyama University, Japan

9:15 - 9:25 **Orientation**
Futao Huang, Professor, Research Institute for Higher Education, Hiroshima University, Japan

***** Session 1: Keynote Speeches *****

Chairs:
Takekazu Ehara, Professor, Institute for Teaching and Learning, Ritsumeikan University, Japan
Manuel Gil-Antón, Professor, Department of Sociology, Iztapalapa Campus, Autonomous Metropolitan University, Mexico

9:25 - 9:55 **Keynote Speech 1**
"Changing Academic Profession in the World from 1992 to 2007"
Akira Arimoto, Director & Professor, Research Institute for Higher Education, Hijiyama University, Japan

9:55 - 10:25 **Keynote Speech 2**
"Balancing Teaching and Research: recent shifts?"
William K. Cummings, Professor of International Education, Graduate School of Education and Human Development, The George Washington University, USA

10.25 - 10:55 **Keynote Speech 3**
"Biographies and Careers of Academics"
Ulrich Teichler, Professor & former Director, International Centre

for Higher Education Research Kassel (INCHER-Kassel), University of Kassel, Germany

10:55 - 11:05 Q & A

11:05 - 11:20 Coffee Break

***** Session 2: Country Reports on Internationalization *****

11:20 - 11:50 **Presentation 1: Australia**

"The Internationalisation of the Australian Academic Profession"

Hamish Coates, Principal Research Fellow, Australian Council for Educational Research, Australia

Leo Goedgebuure, Associate Professor, Centre for Higher Education Policy and Management (CHEMP), University of New England, Australia

11:50 - 12:20 **Presentation 2: Japan**

"The Internationalization of Japan's Academic Profession 1992-2007: facts and views"

Futao Huang, Professor, Research Institute for Higher Education, Hiroshima University, Japan

12:20 - 12:50 **Presentation 3: USA**

"The American Academic Profession Then and Now: Dimensions of Change and Continuity, 1992-2007"

Martin Finkelstein, Professor of Education, College of Education and Human Services, Seton Hall University, USA

Elaine M. Walker, Associate Professor of Education, Department of Education Leadership, Management & Policy, Seton Hall University, USA

12:50 - 13:00 Discussion

13:00 - 14:00 Lunch

***** Session 3: Country Reports on Education and Research Activities *****

Chairs:

Reiko Yamada, Professor, Graduate School of Social Studies, Doshisha University, Japan

Leo Goedgebuure, Associate Professor, Centre for Higher Education Policy and Management (CHEMP), University of New England, Australia

14:00 - 14:30 **Presentation 4: Brazil**

"The Academic Profession in a Diverse Institutional Environment: converging or diverging values and beliefs? The Brazilian experience in the last decade"

Elizabeth Balbachevsky, Associate Professor, Department of Political Science, University of São Paulo, Brazil

14:30 - 15:00	**Presentation 5: Japan** "Education and Research Activities of Academic Professions in Japan" Tsukasa Daizen, Professor, Research Institute for Higher Education, Hiroshima University, Japan Hideto Fukudome, Associate Professor, Research Institute for Higher Education, Hiroshima University, Japan
15:00 - 15:30	**Presentation 6: Mexico** "The Academic Profession in Mexico: changes, continuities and challenges derived from a comparison of two national surveys 15 years apart" Jesús F. Galaz-Fontes, Professor, Faculty of Human Sciences, Autonomous University of Baja California, Mexico Manuel Gil-Antón, Professor, Department of Sociology, Iztapalapa Campus, Autonomous Metropolitan University, Mexico Laura E. Padilla-Gonzalez, Professor, Department of Education, Autonomous University of Aguascalientes, Mexico Juan J. Sevilla-Garcia, Professor, Institute of Engineering, Autonomous University of Baja California, Mexico José L. Arcos-Vega, Professor, Coordination of Planning and Institutional Development, Autonomous University of Baja California, Mexico Jorge G. Martinez-Stack, Professor, General Direction of International Evaluation, Seminar on Higher Education, National Autonomous University of, Mexico, Mexico
15:30 - 15:45	Coffee Break
15:45 - 16:15	**Presentation 7: Korea** "Teaching and Research across Academic Disciplines: faculty's preference, activity and performance" Jung Cheol Shin, Assistant Professor, Department of Education, Seoul National University, South Korea
16:15 - 16:45	**Presentation 8: UK** "Teaching and Research in UK Higher Education: new divisions of labour and changing perspectives on core academic roles" William Locke, Principle Policy Analyst & Assistant Director, Centre for Higher Education Research and Information (CHERI), The Open University, UK
16:45 - 17:30	Discussion
18:00 - 20:00	Reception at Hiroshima Garden Palace MC: Jun Oba, Associate Professor, Research Institute for Higher Education, Hiroshima University, Japan

Wednesday, January 14

8:30 - Registration

***** Session 4: Country Reports on Career *****

Chairs:
Atsunori Yamanoi, Dean & Professor, Faculty of Childhood Education, Kurashiki Sakuyo University, Japan
William Locke, Principle Policy Analyst & Assistant Director, CHERI, The Open University, UK

9:00 - 9:30 **Presentation 9: Germany**
"Employment, Work, Career: the changing situation of the academic profession"
Katharina Jacob, Researcher, INCHER-Kassel, University of Kassel, Germany
Ulrich Teichler, Professor & former Director, INCHER-Kassel, University of Kassel, Germany

9:30 - 10:00 **Presentation 10: Japan**
"The Changing Academic Profession in Japan"
Naoyuki Ogata, Associate Professor, Research Institute for Higher Education, Hiroshima University, Japan
Yusuke Hasegawa, Assistant Professor, Research Institute for Higher Education, Hijiyama University, Japan

10:00 - 10:45 Discussion

10:45 - 11:00 Coffee Break

11:00 - 11:15 **Concluding Remarks**
Futao Huang, Professor, Research Institute for Higher Education, Hiroshima University, Japan

11:15 - 11:30 **Closing Speeches**
Akira Arimoto, Director & Professor, Research Institute for Higher Education, Hijiyama University, Japan
Shinichi Yamamoto, Director & Professor, Research Institute for Higher Education, Hiroshima University, Japan

Appendix 2: List of Participants*

OVERSEAS PARTICIPANTS

Invited Experts

Australia

Hamish Coates	Principal Research Fellow, Australian Council for Educational Research
Leo Goedgebuure	Associate Professor, Centre for Higher Education Policy and Management (CHEMP), University of New England

Brazil

Elizabeth Balbachevsky	Associate Professor, Department of Political Science, University of São Paulo

Germany

Ulrich Teichler	Professor & former Director, INCHER-Kassel, University of Kassel
Katharina Jacob	Researcher INCHER-Kassel, University of Kassel

Mexico

Manuel Gil-Antón	Professor Department of Sociology, Iztapalapa Campus, Metropolitan Autonomous University
José L. Arcos-Vega	Professor, Coordination of Planning and Institutional Development, Autonomous University of Baja California

South Korea

Jung Cheol Shin	Assistant Professor, Department of Education, Seoul National University

UK

William Locke	Principle Policy Analyst and Assistant Director, CHERI, the Open University
Keith Morgan	Visiting Professor, RIHE, Hiroshima University, Emeritus Professor, Lancaster University, University of Newcastle

USA

William K. Cummings	Professor of International Education, Graduate School of Education and Human Development, The George Washington University
Martin Finkelstein	Professor, College of Education and Human Services, Seton Hall University Seton Hall University

---

* As of January, 2009

Participants

Germany

Florian Loewenstein	INCHER-Kassel, University of Kassel

Mexico

Jorge G. Martinez-Stack	Professor, National Autonomous University of México
Victor M. Alcantar	Professor, Autonomous University of Baja California

USA

Elaine M.Walker	Associate Professor of Education Department of Education Leadership, Management & Policy, Seton Hall University

and another 9 overseas participants

JAPANESE PARTICIPANTS

Presidents

Toshimasa Asahara	President, Hiroshima University
Susumu Takahashi	President, Hijiyama University

Invited Experts

Akira Arimoto	Director and Professor, Hijiyama University
Takekazu Ehara	Professor, Ritsumeikan University
Yusuke Hasegawa	Assistant Professor Hijiyama University
Reiko Yamada	Professor, Doshisha University
Atsunori Yamanoi	Dean and Professor, Kurashiki Sakuyo University

Research Institute for Higher Education（RIHE）

Shinichi Yamamoto	Director and Professor
Ikuo Kitagaki	Professor
Tsukasa Daizen	Professor
Futao Huang	Professor
Naoyuki Ogata	Associate Professor
Jun Oba	Associate Professor
Masataka Murasawa	Associate Professor
Kazunori Shima	Associate Professor
Hideto Fukudome	Associate Professor
Satoshi Watanabe	Associate Professor
Yumiko Hada	Associate Professor
Liu Niancai	Visiting Professor

and another 46 Japanese Participants

R.I.H.E. PUBLICATION IN ENGLISH

RIHE International Publication Series

No. 1: Kaneko, M. (1987). *Enrollment Expansion in Postwar Japan*.
No. 2: Guocai, Z. (1989). *Higher Education Research in China: An Annotated Bibliography*.
No. 3: Abe, Y. (1989). *Non-University Sector Higher Education in Japan*.
No. 4: Kaneko, M. (1989). *Financing Higher Education in Japan: Trends and Issues*.
No. 5: Kaneko, M. (1992). *Higher Education and Employment in Japan: Trends and Issues*.
No. 6: Morgan, J. Keith (1999). *Universities and the Community: Use of Time in Universities in Japan*.
No. 7: Arimoto, A. (ed.) (2001). *University Reforms and Academic Governance: Reports of the 2000 Three-Nation Workshop on Academic Governance*.
No. 8: Arimoto, A. (ed.) (2002). *University Reforms and Academic Governance Reconsidered: Report of the Six-Nation Higher Education Research Project*.
No. 9: Arimoto, A., Huang, F., and Yokoyama, K. (eds.) (2005). *Globalization and Higher Education.*
No.10: Huang, F. (ed.) (2006). *Transnational Higher education in Asia and the Pacific Region.*

Higher Education Forum

Higher Education Forum Vol. 1 (2003).
Higher Education Forum Vol. 2 (2005).
Higher Education Forum Vol. 3 (2006).
Higher Education Forum Vol. 4 (2007).
Higher Education Forum Vol. 5 (2008).
Higher Education Forum Vol. 6 (2009).

Higher Education Research in Japan

Higher Education Research in Japan Vol. 1 (2003).
Higher Education Research in Japan Vol. 2 (2005).
Higher Education Research in Japan Vol. 3 (2006).
Higher Education Research in Japan Vol. 4 (2007).
Higher Education Research in Japan Vol. 5 (2008).

COE Publication Series

No. 6: *Construction and Quality Assurance of 21st Century Higher Education* (Reports of the 2003 COE International Symposium) (2003).

No. 7: *Mergers and Cooperation among Higher Education Institutions: Australia, Japan and Europe* (Reports of the 2003 COE International Seminar on Mergers and Cooperation) (2004).

No. 11: *Organization Reforms and University Governance: Autonomy and Accountability* (Reports of COE International Seminar) (2004).

No. 12: *Enhancing Quality and Building the 21st Century Higher Education System* (Reports of COE International Seminar/Eight-Nation Conference) (2004).

No. 20: *Quality, Relevance, and Governance in the Changing Academia: International Perspectives* (Reports of Changing Academic Profession Project Workshop) (2006).

No. 21: *A Cross-National Analysis of Undergraduate Curriculum Models: Focusing on Research-Intensive Universities* (2006).

No. 22: *Gender Inequity in Academic Profession and Higher Education Access: Japan, the United Kingdom, and the United States* (2006).

No. 23: *Constructing University Visions and the Mission of Academic Profession in Asian Countries: A Comparative Perspective* (Reports of COE International Seminar) (2007).

No. 29: *Changing Governance in Higher Education: Incorporation, marketisation, and other reforms – A Comparative study –* (2007).

RIHE International Seminar Reports

No. 1: *Perspectives for the Future System of Higher Education* (Report of the Hiroshima International Seminar on Higher Education) (1977).

No. 2: *Higher Education for the 1980s: Challenges and Responses* (Report of the Second Hiroshima International Seminar on Higher Education) (1980).

No. 3: *Innovations in Higher Education: Exchange of Experiences and Ideas in International Perspective* (Reports of the Hiroshima/OECD Meeting of Experts on Higher Education and the Seminar on Innovations in Higher Education) (1981).

No. 4: *Comparative Approach to Higher Education: Curriculum, Teaching and Innovations in an Age of Financial Difficulties* (Reports of the Hiroshima/OECD Meetings of Experts) (1983).

No. 5: *The Changing Functions of Higher Education: Implications for Innovation* (Reports from the 1984 OECD/JAPAN Seminar on Higher Education), (1985).

No. 6: *Higher Education Expansion in Asia* (Reports from the 1985 International Seminar on Asian Higher Education) (1985).

No. 7: *Public and Private in Asian Higher Education Systems: Issues and Prospects* (Reports from the Third International Seminar on Higher Education in Asia) (1987).

No. 8: *The Role of Government in Asian Higher Education Systems: Issues and Prospects* (Report from the Fourth International Seminar on Higher Education in Asia) (1988).

No. 9: *Foreign Students and Internationalizaion of Higher Education* (Proceedings of OECD/JAPAN Seminar on Higher Education and the Flow of Foreign Students) (1989).

No. 10: *Academic Reforms in the World: Situation and Perspective in the Massification Stage of Higher Education* (Reports of the 1997 Six-Nation Higher Education Project Seminar) (1997).

No. 11: *Higher Education Reform for Quality Higher Education Management in the 21st Century: Economic, Technological, Social and Political Forces Affecting Higher Education* (Proceedings of the 1999 Six-Nation Presidents' Summit in Hiroshima) (2000).

No. 12: *The Changing Academic Profession in International Comparative and Quantitative Perspectives* (Report of the International Conference on the Changing Academic Profession Project, 2008) (2008).

RIHE International Seminar Reports
No.13, September 2009
ISBN978-4-902808-53-7