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THE CHANGING ACADEMIC PROFESSION IN ASIA: TEACHING, RESEARCH, GOVERNANCE AND MANAGEMENT

Report of the International Conference on the Changing Academic Profession Project, 2013

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

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The Changing Academic Profession in Asia:
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Hiroshima University
2-2, Kagamiyama 1-chome
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FOREWORD

Since 2006, Research Institute for Higher Education at Hiroshima University in collaboration with Hijiyama and Kurashiki Sakuyo Universities organized six international conferences in Hiroshima focused on the changing academic profession from the international, comparative and quantitative perspectives. By 2000, four of these conferences had been mainly concerned with the Changing Academic Profession (CAP) project in which 19 countries and regions participated. These conferences have produced fruitful research outcomes and a number of publications have been published in various languages based on them.

Since 2010, former President Akira Arimoto from Kurashiki Sakuyo University, the academic leader of the Japan's CAP project team, has obtained an A-level follow-up research project which is funded by Japan's Ministry of Education for the next four years. The research project is of relevance to the earlier CAP project, but it focuses on the CAP in selected Asian countries. As is well known, the Asian countries, especially in East Asia are religiously, linguistically and economically heterogeneous. But, in less than two decades, the Asian region has had the fastest growing higher education sector in the world because its neo-liberal forms of modernizing governments see knowledge and skills as a key to the future.

Over the past two years, we hosted two international conferences in Hiroshima, focusing on issues concerning contexts, realities, and trends of the changing academic profession in Asian countries and developed a common questionnaire which is used by participating country teams in their national surveys.

As a part of our research activities, the third international conference on the changing academic profession in Asia was held January 24-25, 2013 in Hiroshima, Japan. The conference was organized in cooperation with Research Institute for Higher Education at Kurashiki Sakuyo University. Its title was "The Changing Academic Profession in Asia: Teaching, Research, Governance and Management". Speakers and participants were invited to attend from China, Cambodia, Indonesia, Japan, Malaysia, Taiwan, the United States and Vietnam.

The purpose of the conference was to share major findings from each national survey, based on the generic questionnaire. In particular, the following

major issues were addressed:

- What distinctive characteristics of academics' teaching and research or governance and management activities can be identified in each participating team? What similarities and differences could be found in the participating country teams in this regard? And from these results, does a "typical model" of the Asian academic profession emerge, in terms of teaching and research, or governance and management?
- What implications can our academic outcomes have on political and legal decisions which might lead to positive and healthy impacts on the academic profession in individual countries?
- How can we achieve collaborative research among the Asian research teams?

The conference, as one will find in this publication, was very fruitful and informative. We believe it makes a significant contribution to the study of the changing academic profession in the Asian region and will stimulate discussion about the many issues raised by the contributing authors. Finally we gratefully thank all the contributors for their work.

September 2013

Masashi Fujimura
Director and Professor,
Research Institute for Higher Education,
Hiroshima University

CONTENTS

Acknowledgement

We would like to acknowledge the invaluable contribution of Professor Charles R. Barton, University of South Carolina Beaufort, USA, who edited all the manuscripts in this report.

Masashi Fujimura
Director & Professor,
Research Institute for Higher Education,
Hiroshima University

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

Keynote Speeches

The Academic Profession in International and Comparative Perspectives: trends in Asia and the world

Akira Arimoto*

Introduction

Over time the academy as well as the academic profession changes over adapts to changing conditions. The academic profession fundamentally changes its characteristics whenever academia changes in response to social changes, since the former conducts its research, teaching, and service in relation to the demands of the latter. The university's shift from the medieval to the modern and the future (post-modern), first wave, to second wave and third wave, respectively, is responsive to successive social changes from an agricultural through an industrial to a knowledge society. At the same time, this kind of shift responded to knowledge changes from the pre-scientific revolution to post scientific revolution.

The university transitions from a first to second and third wave corresponding with the pre-modern to the modern, and, finally to the future, respectively. The prototype of the pre-modern university was created around the 12th century by the medieval university and lasted for about six centuries until the end of the pre-modern era, focusing its function on academics' teaching, while that of the modern university was created in the 19th century, focusing its function on academic research in addition to teaching. While this university prototype lasted for the majority of the university's history by corresponding to the first and second waves with a focus on teaching and research, the future

* Director & Professor, Research Institute for Higher Education, Kurashiki Sakuyo University, Japan, e-mail: akira.arimoto@ksu.ac.jp

university is emerging coinciding to the third wave with a focus on student learning (or study).

Framework of research

The framework displayed in Figure 1 explains the concept of a changing university sector over the time span of past-present-future from pre-modern to modern and, finally, to the future university. Corresponding to this transition, the academic profession has also changed its characteristic function from teaching in the pre-modern university to research in addition to teaching in the modern university and, finally, to the type of academic profession focused concurrently on research, teaching and student learning (study) (R-T-S nexus).

At the time of the second wave, the academic was expected to assume the identity of teacher committed to instruction and then that of researcher specializing in his/her own specific discipline in addition to that of teacher committed to instruction. At the advent of the third wave, the academic was expected to forge a multiple identity set of researcher and teacher.

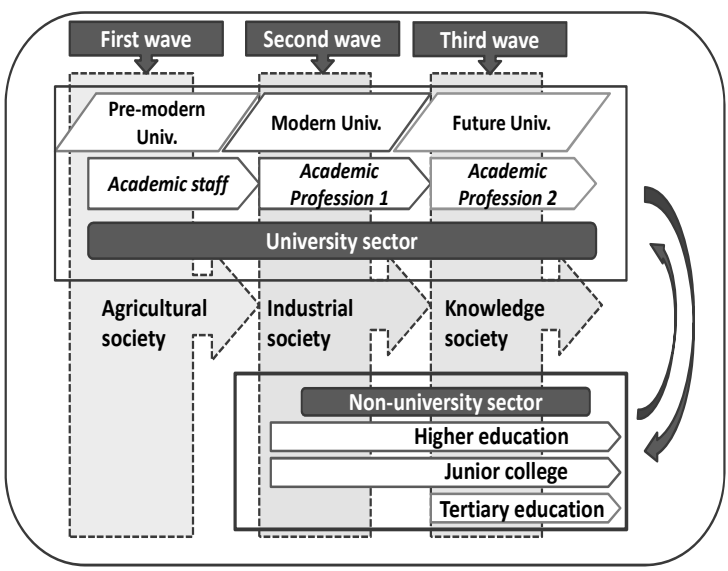

Figure 1. Transform of university and academic profession

It is said that this framework is generally applicable to academics in the university sector. Although the university sector was institutionalized as a social institution for the first time during the first wave age in the West,

especially in Europe, the non-university sector (other higher education insitutions), which was usually labelled higher education and short-cycle higher education like junior colleges, was institutionalized for the first time in the second wave age in the West, especially in the United States.

Historically, the university sector is considered to be an institution with a dual research and teaching orientation through graduate school after the institutionalization of the modern university in the 19th century, while the non-university sector consisting of other tertiary education institution is considered to be the institution with a teaching and student learning (or study) orientation. After the modern university was institutionalized by stressing the research function, academic staff having an identity as teacher in the pre-modern university were forced to change to the "academic profession 1" – having an identity as researcher in addition to teacher. However, in the emerging third wave, the "academic profession 1" is expected to shift to the "academic profession 2" who must pay more attention to students as learners, particularly at the undergraduate level of the university.

In this context, the university in its role of research or teaching in the third wave age is viewed as competing with the non-university sector, especially tertiary education which is increasingly responsible for universal stage of higher education, in terms of teaching and student learning (study) for the increasingly massified and diversified student body.

Based on this framework, this paper discusses "The Academic Profession in International and Comparative Perspectives: Trends in Asia and the World", with a focus on the R-T-S nexus in the third wave. In the analysis of these developments, the author attempts to draw upon previous studies including the Carnegie 1992 survey and the CAP 2007-08 survey (Altbach, Ed., 1996; Arimoto & Ehara, Eds., 1996; Arimoto, Ed., 2008, 2011; Kogan & Teichler, Ed., 2007; RIHE, 2008, 2009).

The teaching and research nexus in the knowledge society

Transformation from knowledge society 1 to knowledge society 2

As depicted in Figure 2, the university's functions of discovery, dissemination, service, and administration, shifted from an information-based to a knowledge society. At this stage, information as well as knowledge was still working independently within the university but separated from society outside university. In this sense, the university was "a knowledge society 1", while the

latter (university+society) is "a knowledge society 2" (Arimoto, 2007; 2009a, p.4). Continuity of the two societies (knowledge society 1 and knowledge society 2) is clearly shown by the compatible existence in recent years of all the functions of research (discovery of knowledge), teaching (dissemination of knowledge), and student learning (understanding of knowledge) in the two societies. In the knowledge society 1, there is a solid border between the university and society at large so that "CUDOS" consisting of Communality, Universalism, Disinterestedness, and Organizational Skepticism (Merton & Storer, Eds., 1973; Arimoto, 1987; Musselin, 2010, pp.95-96) was working as an ethos of academic science only inside the university, while in the knowledge society 2, such an ethos of academic science hardly exists.

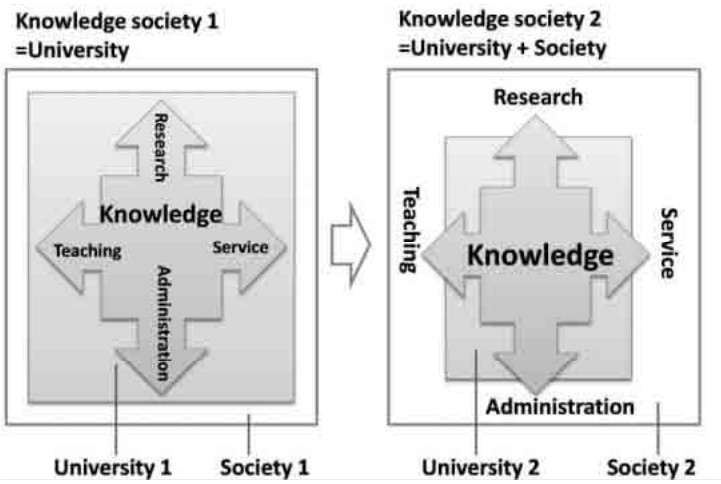

Figure 2. Development from knowledge society 1 to knowledge society 2

As far as knowledge is concerned, at this stage, two types of knowledge have been assimilated in both societies of University 1 and University 2 to the extent that a similar kind of knowledge is usefully working at both of them. In this context, it is interesting that the nature of knowledge is transformed as shown by the fact that Gibbons and others have discussed how knowledge itself has been transformed from Mode 1, or pure knowledge, which was useful only to the university, to Mode 2, or applied and development knowledge, which is useful also to society as well as to the university (Gibbons, *et al*., 1994). These two-types of knowledge, Gibbons and others argued, are related to all the knowledge functions consisting of research, teaching, learning and service, even though they are deeply related to the research function. In the emerging knowledge society (= knowledge society 2), it is accurate to say that the

university and society at large could not survive without these knowledge functions, especially research, teaching and student learning because of their increasing social significance.

Academic discipline, academic productivity and the R-T-S nexus

The relationship between knowledge and academic work is tightly coupled in the context where the university as an organization is involved in academic work with various kinds of activities such as research, teaching, service, and management and administration on the basis of "knowledge as stuff" (Clark, 1983). In general, knowledge consists of *general* knowledge and *advanced* knowledge which is referred to as an academic discipline. In the modern university, academic staff who usually specialize in their specific disciplines in order to pursue research, teaching and service, develop these activities (Becher & Parry, 2007; Parry, 2007). Academics' conformity to the academic disciplines in which they specialize is fairly high as shown in the results of the Changing Academic Profession (CAP) survey that compares the extent to which each of the following affiliations is "very important": academic discipline (60.4%); department (34.2%); institution (33.1%).

The university is an institution dealing with "knowledge as stuff" on which all activities are based and conducts academic work integrating the functions of knowledge. Accordingly, it is undeniable that academics are basically given the role of pursuing this kind of academic work in the modern university.

Among these kinds of academic work, research has developed rapidly after the introduction of the graduate school in the late 19th century and, as a result, research universities with graduate schools have developed to the point that they encouraged a strong research orientation among academics who were solely involved in teaching for many years in the pre-modern university. Related to the rise of a research orientation, the study of "academic productivity", a concept derived from that of "scientific productivity" originally used by Robert K. Merton as a technical term in his sociology of science inevitably arises, because the main role of the academic research enterprise in the academic community is to increase academic productivity, while the main role of the research enterprise in the scientific community is to increase scientific productivity (Merton & Storer, Eds., 1973; Shinbori, 1973; Arimoto, 1981, 1987, 2007, 2009b). The concept of academic productivity is increasingly adaptable to various phenomena such as Center of Learning (COL), Center of Excellence (COE), and University ranking (Arimoto, Ed., 1996; Ben-David, 1977; MEXT-NISTEP,

2007; Shin, Toutkoushian & Teichler, Eds., 2011; van Vught & Ziegele, Eds., 2012). This fact testifies to the weight that research has been assigned in academic work in the modern university.

Competition for high research productivity naturally implies high academic productivity including both research and teaching productivity, because research and teaching are thought to be two vehicles indispensable to academic work. It is noteworthy that this logic is adaptable not only to a research university but also to a non-research university to a considerable degree. As a result, a R-T-S nexus is necessary in the higher education in the 21st century including both the research university and non-university sector and also quality assurance of its attainment is necessary (Clark, 1997; Nicholls, 2005; Arimoto, 2006).

Transformation from Teaching-Learning (T-L) to Teaching-Study (T-S)

An academic is thought to be a researcher and teacher at the same time in the modern university. After research was accepted into the university, providing students with expertise which was discovered by research activities became an essential part of the teaching and learning process. University teachers basically instruct students in the classroom on the basis of the research conducted in the laboratory, the library and the office, teaching through research as was the original meaning of the Humboldtian model of integration between research and teaching (Ushiogi, 2008). "At the higher level, the teacher does not exist for the sake of the student: both teacher and student have their justification in the common pursuit of knowledge" (von Humboldt, 1910 [1970], p.249).

The university teacher described above is different from the pre-19th century classroom where the academics' work lay in requiring students to show ability in recitation of a textbook, not of teaching the findings of research activities (Ushiogi, 1986, 2008). Academic staffs were not used to conduct research until that time, which may parallel today's teachers in the elementary and secondary schools who are not ordinarily required to conduct research. Strictly speaking, students have to study instead of learning when they are taught by teacher's instructing through research, though they learn by themselves when they are not taught by such teacher's instruction. In this context, teaching-study (T-S nexus) is realized instead of teaching-learning (T-L nexus) in the modern university. In this new process, students are expected to study with creative thinking rather than to learn what teachers instruct without it.

The great effect of the medieval and pre-modern universities with their

teaching orientation was recognized well in the time when the modern university was established; hence the need to reform the old tradition. Actually, later in the 19th century, American universities clung to the traditional type of teaching orientation. For example, Harvard University did not introduce research into teaching consistently until the introduction of the elective system in the late 19th century, although it succeeded in the tradition of teaching orientation derived from the medieval university. "The forty-year campaign for the elective system waged between 1869 and 1909 by Charles William Eliot, President of Harvard University, is legendary. Through Eliot's efforts, Harvard abolished all course requirements except English composition by 1897" (Harper & Jackson, Eds., p.111).

Until that time, the academic staff who usually taught many subjects were not true researchers specialized in a specific discipline but rather directors of teaching in the classroom, – managing students' recitation of the designated textbook. As Roger Geiger describes the 19th century college in the United States, they were "institutions that conveyed only textbook knowledge to mostly adolescent boys", (Geiger, Ed., 2000, p.1). Academics were not expected to research a specific discipline and also to teach students on the basis of their major specialty in the discipline. However, a research orientation was encouraged more and more after 1876 when Johns Hopkins University was institutionalized as a "home of science" together with the establishment of a graduate school for the first time in the history of the world's higher education.

The research paradigm has substantially prevailed in modern universities since they were institutionalized in Germany for the first time in the 19th century, even though the teaching and research nexus was proposed by the Humboldtian ideal in early 20th century (von Humboldt, 1910).

Logic of R-T-S Nexus

In the third wave age, students' importance increases gradually because of quantitative growth thanks to the appearance of the universal stage of higher education development, and in due course, it is undeniable that the function of student learning (or study) increases its weight in both the university and the total society. Considering that teaching prevailed in the university before the modern time while research prevailed after the modern time, learning is expected to prevail in the third wave age.

In the 21st century when the emphasis on learning is expected to increase, the integration of research and teaching seems to have become fairly difficult to

realize perhaps because of the strong pressure of the research paradigm prevalent in the university, – and the integration of research, teaching, and learning may be even more difficult to realize. That this is true is attested to by the fact that some scholars have already discussed the problem of reconsidering scholarship as well as the R-T-S nexus (von Humboldt, 1910; Clark, 1997; Boyer; 1990, Nicholls, 2005).

Given this situation, if one thinks about how a fruitful outcome of the teaching and learning process can be obtained, it seems to be necessary to seek a harmonious relationship of the teacher's intention for instructing and the student's intention for learning. In other words, the most effective output will be realized by integrating the intention of instructing through research on the side of the teacher with the expectation of study through research on the side of the student.

Four categories can conceptually be created from a combination of teachers' and students' intentions and expectations: Type A (teacher+, student+); Type B (teacher+, student-); Type C (teacher-, student+); Type D (teacher-, student-).

Type A is thought to be decreasing today in universities and colleges to a considerable degree, though it theoretically represents the standard traditional type of teaching and learning process. On the other hand, Types B, C, and D, though they are deviant types, seem to be increasingly acceptable today in many universities and colleges. Even so, Type D exists only conceptually and remains unavailable in practice. Among these four types, two types of A and B which have teacher's positive intention (+) are inside academia, while two types of C and D which have teacher's negative intention (-) are outside of academia – because academia must continue to be the institution with a teacher's positive intention for instructing.

Type B in particular is likely to become more popular among all types at a time when the emerging universal stage of higher education has inevitably created a situation of super-diversification of students with less enthusiasm and ability for study and learning. This is evident in the fact that a series of new approaches to these students, such as remedial education, first-year education and career education, are thought to be appropriate pedagogical approaches to their needs so as lead them to active learning orientation. If we are to send these students to a knowledge society, or even an inquiring society, before and after their graduation from universities and colleges, it is clear that the R-T-S nexus becomes more and more important so as to enhance these students' academic achievements by transforming their intentions from negative to positive.

Reinforcement of research orientation in fifteen years

1992 survey

The Carnegie International Survey on the Academic Profession was conducted in 1992 by 14 participating countries[1] (Altbach, Ed., 1996).

Based on the Carnegie survey, an analysis of academics' orientation to research and teaching identified three types: a research orientation; a research and teaching orientation; and a teaching orientation (Arimoto & Ehara, Eds., 1996). The first type, designated a German model, stresses research more than teaching, and is found in countries such as the Netherlands, Japan, Germany, Sweden, and Korea. The second type, designated an Anglo-Saxon model, stresses research and teaching evenly, and occurred in countries such as the United Kingdom, the United States, Australia, and Hong Kong. The third type, designated a Latin American model, stresses teaching more than research, and is found in countries such as Argentina, Chile, and Brazil.

The Anglo-Saxon model seems to approach the Humboldtian ideal most closely in the sense that it seems to conform to the pattern of integrated research and teaching. On the other hand, the German model, with its strong emphasis on research, places too much emphasis on academic staff as researchers and too little on students as learners. In contrast, the Latin American model puts more weight on teaching and the students and less on research and the academic staff.

2007 survey

The CAP survey was conducted in 2007-2008 with the participation of 19 countries[2] (Arimoto, Ed., 2008).

Figure 3, which is based on academics' responses to Question B2 "Regarding your own preferences, do your interests lie primarily in teaching or in research?", shows teaching and research orientation by country in the state of order from high percentage to low percentage in nineteen countries. Research

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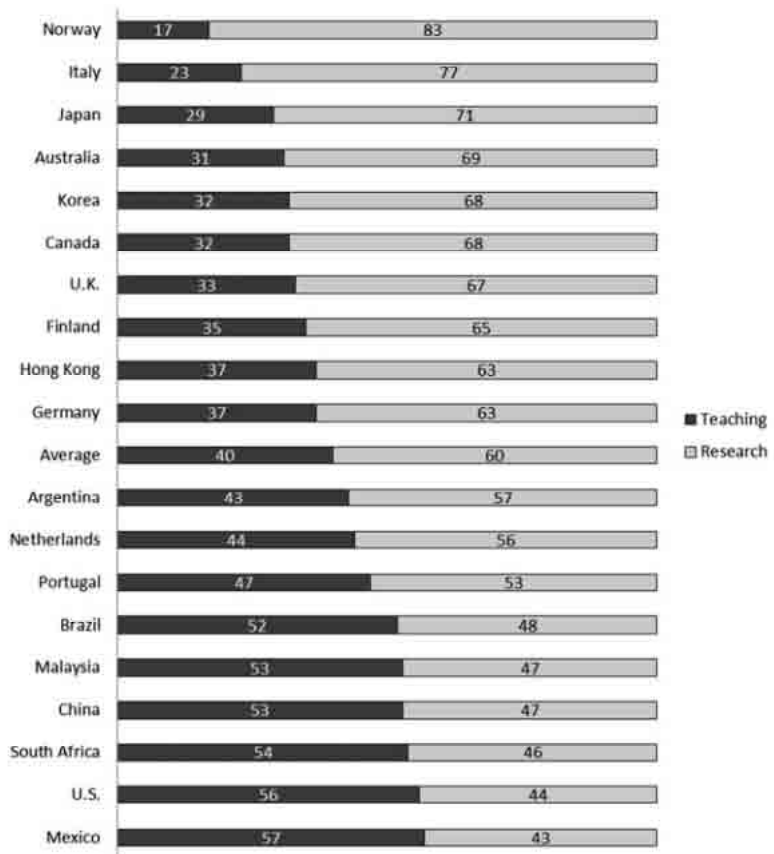
[1] In reality, 13 countries, Australia, Brazil, Chile, Germany, Israel, Japan, Korea (Republic of Korea), the Netherlands, Mexico, Russia, Sweden, the United Kingdom, the United States, and one region, Hong Kong. From Asia, Japan, Korea and Hong Kong participated in the survey.

[2] In reality, 18 countries, Argentina, Australia, Brazil, Canada, China, Finland, Germany, Italy, Japan, Korea, Malaysia, Mexico, the Netherlands, Norway, Portugal, South Africa, the United Kingdom, and the United States, and one region, Hong Kong. From Asia, China, Japan, Korea, Malaysia, and Hong Kong participated to the survey.

orientation is highest in Norway (83%), followed by Italy, Japan, Australia, and Korea, while teaching orientation is highest in Mexico (57%), followed by the United States, South Africa, China and Malaysia. These are the top five countries in research orientation and teaching orientation respectively. In Asia differentiation of two groups is observable: a research group consisting of Japan and Korea, and a teaching group consisting of China and Malaysia. The total average percentage in all countries for research orientation is 60 percent and that for teaching orientation is 40 percent and so research orientation is higher than teaching orientation by 20 percent in all countries.



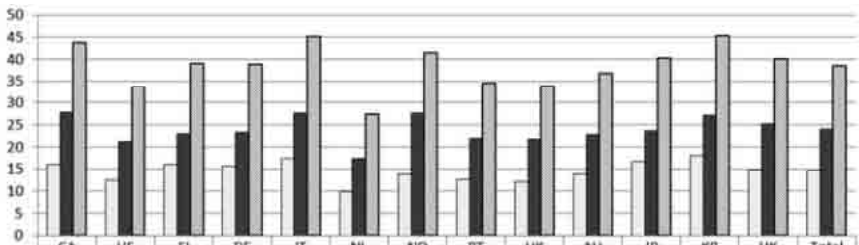
Question B2: Regarding your own preferences, do your interests lie primarily in teaching or in research?

Figure 3. Teaching and research orientation by country (%)

If one compares this result with that of seven countries such as Brazil, Hong Kong, Japan, Korea, Mexico, the United Kingdom and the United States in the Carnegie survey, which can provide data useful for a comparison of trends

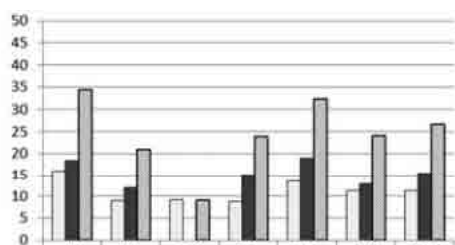
between the two surveys, the former (research) is 51 percent and the latter (teaching) is 50 percent (Arimoto, 2011, p.8).

Accordingly, the academic profession in all participating countries reinforced its research orientation by 9 percent average increase from 51 to 60 percent in the fifteen years since 1992. As far as seven countries are concerned, the average increase percentage is 7 percent from 51 to 58 percent. As far as 19 countries are concerned, the number of countries above average percentage for research orientation are ten countries including Canada, the United Kingdom, Finland, Hong Kong and Germany in addition to the top five countries mentioned above. The number of countries above average percentage for teaching orientation are nine countries including Brazil, Portugal, the Netherlands and Argentina in addition to the top five countries mentioned above.



	CA	US	FI	DE	IT	NL	NO	PT	UK	AU	JP	KR	HK	Total
Research in session	15.9	12.4	16	15.6	17.4	9.9	13.8	12.6	12.1	13.9	16.7	18.1	14.8	14.6
Research not in session	27.8	21.2	23	23.3	27.7	17.4	27.6	21.9	21.7	22.8	23.6	27.2	25.2	23.9
Total	43.7	33.6	39	38.9	45.1	27.3	41.4	34.5	33.8	36.7	40.3	45.3	40	38.5

Figure 4-1. Hours spent on research when classes are in session and not in session (arithmetic mean): advanced countries



	AR	BR	MX	ZA	CH	MY	Total
Research in session	15.9	9	9.1	8.8	13.5	11.3	11.3
Research not in session	18.4	11.9		15.1	18.9	12.8	15.4
Total	34.3	20.9	9.1	23.9	32.4	24.1	26.7

Figure 4-2. Hours spent on research when classes are in session and not in session (arithmetic mean): developing countries

Note: CA: Canada, US: United States, FI: Finland, DE: Germany, IT: Italy, NL: Netherlands, NO: Norway, PT: Portugal, UK: United Kingdom, AU: Australia, JP: Japan, KR: Korea, HK: Hong Kong, AR: Argentina, BR: Brazil, MX: Mexico, ZA: South Africa, CH: China, MY: Malaysia

As Figures 4-1 & 4-2 show, total research time per week in session and not in session in advanced countries is 38.5 hours, while it is 26.7 hours in developing countries. They are higher in advanced countries, especially time spent not in session. Total research time is higher in Italy, Canada, Korea, Norway, and Japan, while it is lower in Brazil, South Africa, and Malaysia.

Intensified research orientation

According to CAP survey results, three types were transformed mainly to the research orientation including the fact that numbers of countries with the Anglo Saxon type decreased while those with the German type increased (Figure 3).

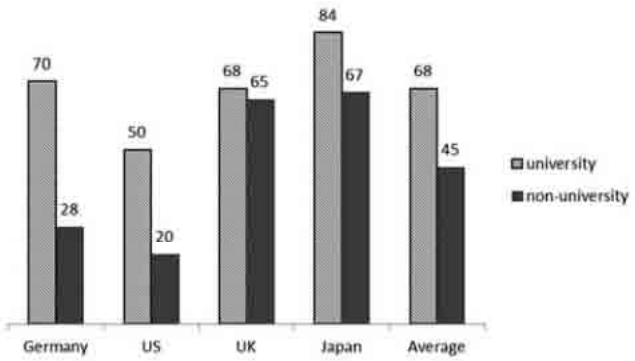
Summarizing these findings, one can recognize that the academic profession worldwide has reinforced its research orientation during the fifteen years since 1992. At the CAP Conference in 2009, William Cummings pointed out that "While several countries exhibit an increased stress on research, no country for which there is data for both 1992 and 2009 indicates a notable increase in the stress on teaching." (Cummings, 2009, p.41) This fact means that the manifest increasing development of differentiation between research and teaching is now directly opposed to attainment of a Humboldtian ideal of integrated research and teaching.

The international trend of intensifying research orientation has been discussed thus far based on a comparative survey. Are there any differences among countries in terms of research orientation? It has previously been noted that advanced countries have been more involved in research orientation than emerging ones. Three types of countries can tentatively be categorized: core (Germany, the United States, the United Kingdom, Japan), semi-core (Canada, Australia, Korea, Italy, Norway, the Netherlands, Finland, Portugal, and Hong Kong), and periphery (China, Mexico, Brazil, Argentina, Malaysia, and South Africa).

Figures 5-1, 5-2 & 5-3 show percentage of research orientation by university and non-university: core countries (68%, 45%), semi-core countries (72%, 51%), and periphery countries (51%, 40%). University is higher than non-university in terms of research orientation in all countries.

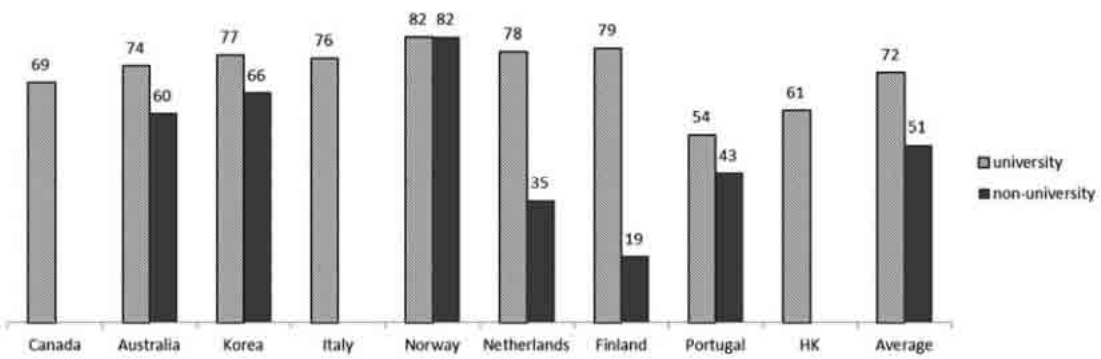
What differences are can be seen among core, semi-core, and periphery countries? Figures 6-1, 6-2 & 6-3 show that in average, core countries have not changed (from 62% to 61%), while semi-core countries increased a little bit from 60 to 65 percent. Periphery countries increased most from 37 to 46 percent.

In the core countries, it is interesting that the United States decreased, while the United Kingdom increased. Precisely speaking, Germany (from 66% to 63%) and Japan (from 73% to 71%) decreased slightly. In the semi-core countries and periphery countries, all countries except the Netherlands increased. As a result, it can be said that almost all countries except the U.S. and the Netherlands increased research orientation in the past fifteen years.



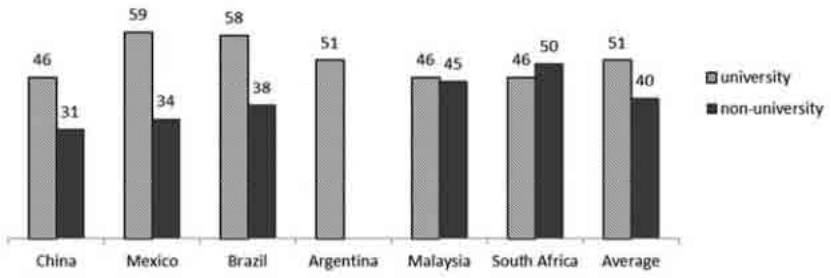
Question B2: Regarding your own preferences, do your interests lie primarily in teaching or in research?

Figure 5-1. Research orientation by university and non-university: core-countries (%)



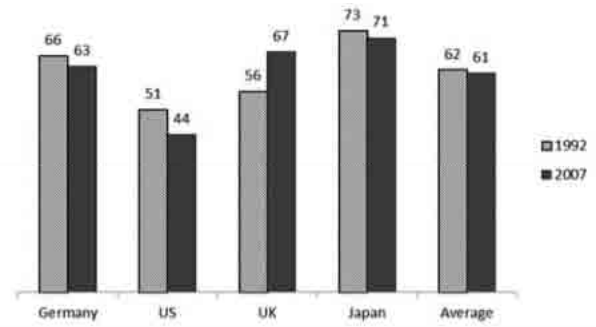
Question B2: Regarding your own preferences, do your interests lie primarily in teaching or in research?

Figure 5-2. Research orientation by university and non-university: semi-core-countries (%)



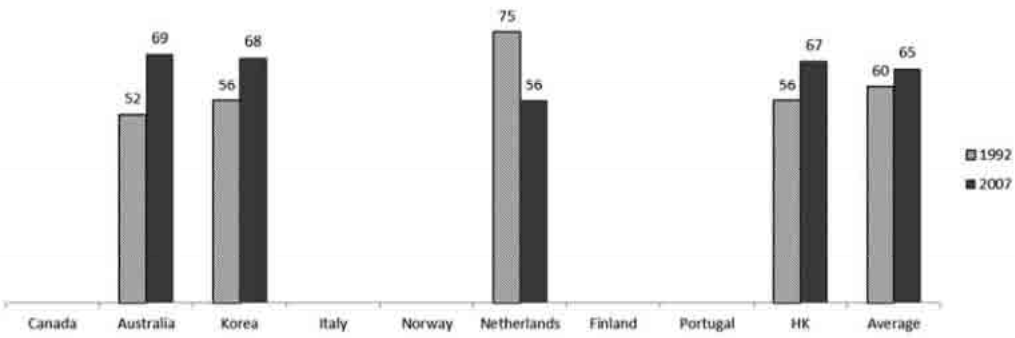
Question B2: Regarding your own preferences, do your interests lie primarily in teaching or in research?

Figure 5-3. Research orientation by university and non-university: periphery countries (%)



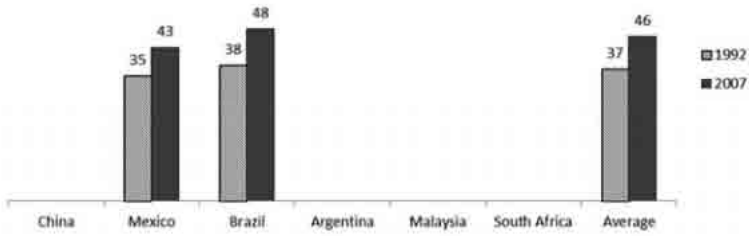
Question B2: Regarding your own preferences, do your interests lie primarily in teaching or in research?

Figure 6-1. Research orientation by country in 1992 and 2007: core countries (%)



Question B2: Regarding your own preferences, do your interests lie primarily in teaching or in research?

Figure 6-2. Research orientation by country in 1992 and 2007: semi-core countries (%)



Question B2: Regarding your own preferences, do your interests lie primarily in teaching or in research?

Figure 6-3. Research orientation by country in 1992 and 2007: periphery countries (%)

Perspective for academics as well as students in the 21st century

Uncertain as well as unpredictable future

In the 21st century, growing trends such as the knowledge society, globalization, and marketization will be strengthened more and more so that people will be increasingly confronted with an uncertain as well as unpredictable future by amalgamation of these trends. At the same time, the universalization stage coming after massification stage of higher education development will necessarily bring about super-diversification of students against homogeneous students in the elite stage and diversified students in the massification stage. Probably, the individual student has to face unpredictable hard times throughout his/her lifelong career, which is different from what other individual students have had to face because each student must determine his/her own life-course. Under this circumstance, the life-course of the individual student is expected to form creatively throughout life not only from entrance to the university to graduation but also from graduation to the death.

As was discussed previously, the teaching and research nexus has been facing increasing difficulty of realization owing to the effects of the dominant research paradigm for many years and since development within the university of a graduate school as a core place for research orientation. However, considering that among many social institutions only the university has the function of research and teaching together as its two indispensable vehicles, the achievement of integration of these two functions presents an inevitable problem to be solved as soon as possible.

First, in a knowledge society, research-based teaching is necessary more or less at all levels of education from primary education to tertiary education.

Furthermore, for a system of lifelong learning from birth to death, research-based teaching is necessary in order to develop human education for independent and autonomous thinking. Especially this is true in universities and colleges where integrated research and teaching is considered to be most important among all levels of educational institutions.

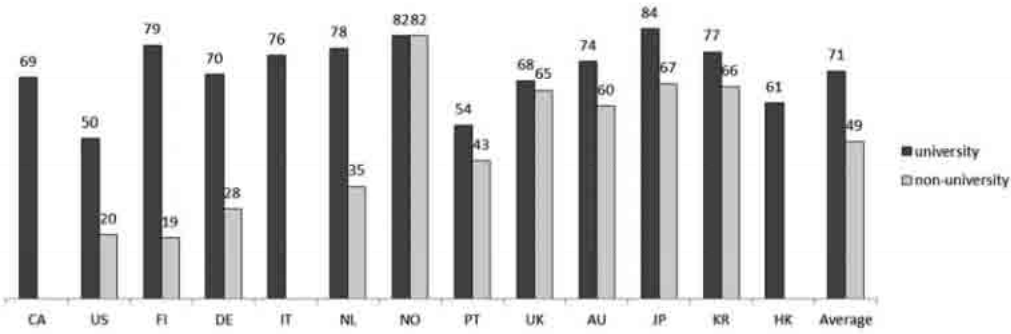
Second, as part of their evolving professionalism, academics are expected to pursue teaching through research rather than merely by instruction. Students as learners have high possibilities of achievement from study as well as from learning when they are taught in universities and colleges by academic staffs with research ability rather than those who lack it (Zuckerman, 1977).

Third, however, as discussed previously, the greater importance of learning (or study) in addition to that of teaching is increased to a great extent in accordance with the needs of the universal stage of higher education development. Accordingly, it appears inescapable that achieving an R-T-S nexus will be extremely difficult in an environment that has yet to accept an R-T nexus. Academics like Japanese academics, who are strongly involved in research orientation, have to resolve this difficult problem at all costs.

Is there different culture between university and non-university?

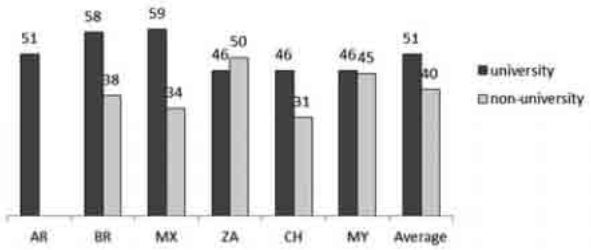
Figures 7-1 & 7-2 compare the research orientation between the university and the non-university (other higher education), finding that the research orientation is higher in university than in non-university in both advanced (71%, 49%) and emerging countries (51%, 40%). The research orientation is stronger in advanced than in emerging countries (71%, 51%; 49%, 40%). The research orientation in university is also stronger in advanced countries. The research orientation is higher than the average (71%) in some countries: Japan, Norway, Finland, the Netherlands, Korea, Italy, and Australia. In some countries, the research orientation is especially stronger in university than in non-university at the differentiation of more than 30%: Finland, the Netherlands, Germany, and the United States.

Figures 8-1 & 8-2 reveal there is a closer relationship between scholarship and original research in university than in non-university (other higher education institutions) in advanced countries (73%, 63%), though there is even relationship in emerging countries (58%, 58%).



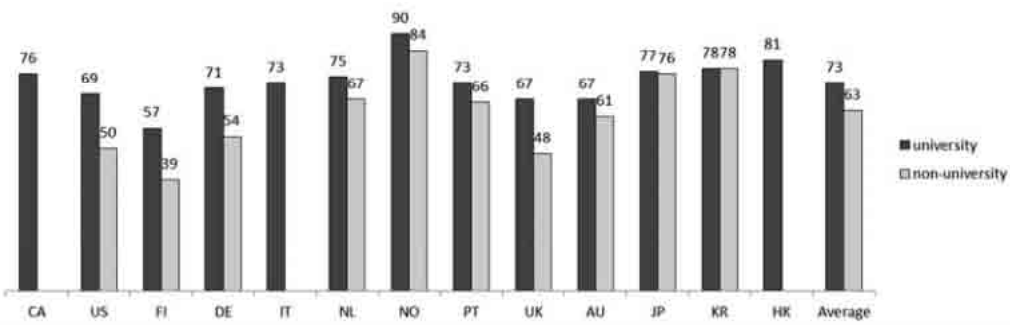
Question B2: Regarding your own preferences, do your interests lie primarily in teaching or in research?

Figure 7-1. Research orientation by university and non-university (%): advanced countries



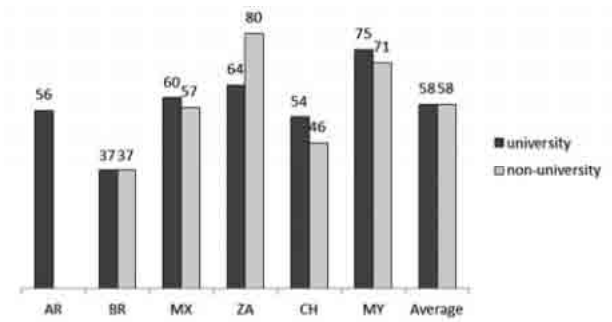
Question B2: Regarding your own preferences, do your interests lie primarily in teaching or in research?

Figure 7-2. Research orientation by university and non-university (%): developing countries



Question B5: Please indicate your views on the following (Scale of answer 1=Strongly agree, to 5=Strongly disagree)

Figure 8-1. Relationship between scholarship and original research by university and non-university (%): advanced countries



Question B5: Please indicate your views on the following (Scale of answer 1=Strongly agree, to 5=Strongly disagree)

Figure 8-2. Relationship between scholarship and original research by university and non-university (%): developing countries

In non-university, the research orientation is smaller in both advanced and emerging countries (63%, 58%), even though the former is slightly higher than the latter. As the result, we can underline the fact that university is considered to reflect the characteristics of research university possessing high research orientation because university has been usually given research university function since modern university was institutionalized.

Based on this trend, the university sector having a research university function has strengthened the research orientation thus far and it is assumed to strengthen it in future when universities will be expected more and more to become competitive institutions in the world ranking competition (*Cf.* Shin, Toutkoushian, & Teichler, Eds., 2011). On the other hand, the non-university sector (other higher education institutions) will emphasize the teaching function rather than research function by introducing the tertiary education function (Arimoto, 2012). Accordingly, the university is now at a turning point, seeking a more research orientation like the function of graduate course and a teaching orientation like the function of undergraduate course in the midst of constructing an R-T-S nexus as an ideal in the third wave age of higher education.

Concluding remarks

First, whether the university strengthens its role of a research orientation or a teaching orientation in the third wave age when the non-university sector, especially tertiary education which is increasingly responsible for universal stage of higher education, is thought to be competing with the university in terms of teaching to increasingly massified and diversified students.

Second, both teaching through research and learning (or study) through

research are necessary, even though academics undertake teaching to conform to the curriculum and students also undertake learning (study) to conform to the teachers and the curriculum.

Considering these factors, integration of research and teaching, and, even more, integration of research, teaching and learning (study) (R-T-S nexus) is necessary. In reality, however, such integration is rarely achieved due to the increasing tendency for differentiation between research and teaching.

Third, concerning the conflict between differentiation and integration of teaching and research, the Carnegie survey identified conformity to three types: a research orientation; a research and teaching orientation; and a teaching orientation. By the time of the CAP survey, after a fifteen-year interval, the distribution between these types had changed to a considerable degree. Academics' conformity to a teaching orientation and to a research and teaching orientation had decreased, while conformity to a research orientation had increased.

Fourth, as discussed in this paper, considering the present situation, in which creating even an R-T nexus is difficult due to academics' heavy involvement in research orientation, will necessarily impose greater difficulty so as to realize an R-T-S nexus.

Fifth, in this context, the academic profession worldwide is confronted with the challenge of finding the means to achieve an ideal to be realized in the third wave age of higher education development. On the other hand, the university is now confronting a turning point of seeking a more research orientation like the function of graduate courses and also for teaching orientation like the function of undergraduate courses in the midst of constructing an R-T-S nexus.

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What Happened to Universal Education? – in the West and in Asia –

William K. Cummings* and Katrina Santner**

Introduction

Higher education once viewed as an elite privilege has become more widely experienced. The early leader it its expansion was the United States where by the late 1970s about 80 percent of the high school graduates class were entering some form of tertiary institution, the Gross Enrollment Ratio (GER) was over 50 percent, and approximately 40 percent of the college age cohort "attained" a degree. Canada and a few European countries were slightly behind the United States in terms of these indicators of tertiary educational participation.

In Asia, Japan was the leader with about 45 percent of the late 1970's high school cohort entering a tertiary institution, and nearly all who entered completed their degree program.

Reflecting on the elitist character of tertiary education systems, Martin Trow (2005) predicted that most systems were destined to follow the United States lead of expansion or massification, and he suggested that might entail:

- New students less prepared
- New students in search of practical education
- Students unwilling to pay full fare
- Shift from universities to teach only institutions
- So growth of junior colleges, distance education, *etc*.

* Professor of International Education, The Graduate School of Education and Human Development and The Elliott School of International Affairs, The George Washington University, USA, e-mail: wkcum@gwu.edu
** Master's Student, The George Washington University, USA, e-mail: ksantner@gwu.edu

And for the United States and Japan he predicted continuing expansion towards advanced massification or even universal higher education.

This study will review what has happened since then, why, and what are the implications for the academy and for youth? Special attention will be devoted to the Asian experience.

But what has happened?

At the time of Trow's projection, the Tertiary Gross Enrollment Ratio (TGER) was the preferred indicator of educational development (and it still is the indicator with the widest coverage). In terms of the TGER, both the United States and Japan exhibit further massification between 1980 and 2005 (Table 1) – though both are outpaced by South Korea and Finland. And several other systems follow closely (Sweden, New Zealand, Norway).

But some analysts prefer to focus on the proportion of the age group that actually complete an academic program – as contrasted to the proportion who simply enroll. In East Asia, most who start a program complete it. In contrast, in the United States and many European countries only a fraction who enter a tertiary program complete it in a timely manner; indeed, a sizeable minority who begin a tertiary program never complete it. Reflecting this preference, tertiary educational participation can be measured by the percent of an age cohort "attaining" tertiary education (that is, actually completing a certificate or degree program). Then the 55-64 age cohort in 2010 is roughly equivalent to the Tertiary Gross Enrollment in 1980 (TGER80) group and the 25-34 age cohort is equivalent to the Tertiary Gross Enrollment in 2005 (TGER05) group.

For many countries the TGER80 is similar to the 55-64 higher educational attainment indicator (*e.g.* for Japan 31 % and 29 %, for South Korea 13 % and 13 %, for Finland 32 % and 30 % respectively). The United States represent a different pattern with a TGER80 of 53 percent compared to a 55-64 educational attainment of 41 percent; Canada, France, and Sweden share in this pattern.

Focusing on the trend of educational attainment over time, most countries report a steady increase. The United States is a notable exception with no increase in the percent attaining a credential of educational attainment over the past 30+ years – that is with a steady 40 to 43 percent level across the progressive age cohorts. The expansion in enrollment (or participation) is not accompanied by an expansion in attainment. Put differently, the system has become significantly less efficient over time. Israel is another country with this trend.

Table 1. TGER for 1980/2005 and percent of population that has attained tertiary education (2010) by age groups

	TGER80	TGER05	25-34	35-44	45-54	55-64
United States	53	82	42	43	40	41
Japan	31	55	57	50	46	29
South Korea	13	94	65	47	27	13
Norway	25	79	47	41	33	27
Ireland	17	56	48	42	30	21
Russia	45	72	55	58	54	44
Canada	48	60	56	57	47	42
New Zealand	26	81	46	42	39	34
United Kingdom	19	48	46	41	35	30
France	25	55	43	34	22	18
Israel	31	58	44	49	44	45
Sweden	36	82	42	37	30	27
Finland	32	92	39	46	39	30

Source: OECD, *Education at a Glance 2010*, Table A1.3a; *World Development Indicators*.

For most countries, the increase in TGER has been accompanied by an increase in the percent attaining a credential of program completion. In a few cases the increases for the two indicators are about the same (Japan, Ireland, Russia, Canada, the United Kingdom, and France). For example, Japan experienced an increase of 24 percent in TGER and an increase of 28 percent of the cohort attaining a credential.[1]

An equally common pattern is for both indicators to increase, but with the TGER increasing much more rapidly as in the cases of South Korea, Norway, New Zealand, Sweden, and Finland.

Data issues and patterns

Moving beyond Asia, there are several anomalies of the data that need to be considered:

1. The old measures (percent of high school graduates going on and GER) were crude. Organization of Economic Cooperation and Development

[1] Japan has experienced an increase in the percent of the cohort attaining a tertiary degree, but Japan has experienced a sharp decrease in the size of its youngest cohort so in terms of actual numbers Japanese enrolments have decreased (not shown here).

(OECD) has collected more precise data – percent of age cohort attaining a degree.

2. Some of the data may be misleading – *e.g.* the Japanese data probably neglected or undercounted tertiary type b.
3. Expansion involves both percent change and volume change – which is it ?
    a. In the case of the United States, size of cohort increases making possible volume change while cohort size is stable.
    b. In the case of Japan, size of cohort actually decreases. So cohort percent goes up, even though the number of youth attending colleges may go down.
4. Trow focused on Europe where baseline TGER were in the 10-25 percent range. But for Asia, 1980 baseline is often much lower – *e.g.* in China only 1.2 percent. Still the rapid expansion in recent years is often thought of as massification. Similarly today many African countries are going through rapid expansion from low baselines, and they refer to this as massification. So for many analysts the massification concept may refer to the rate of expansion instead of the level of participation or attainment.

A note on the United States

Unique features of these two countries labor markets and demographics explain why their enrollment and attainment rates have plateaued somewhat short universal education.

1. Human Resources
   The importance of human resources for national development is recognized in the United States but there also has been competition to use funds traditionally allocated to human resources for other purposes (*e.g.* welfare, health, defense, transportation). So there is an increased tendency to say higher education is a private good. But the public finds the costs to be high, so where market driven the demand for higher education has been somewhat dampened.
2. Major Differences in College Preparation
   Major differences in college preparation of high school students – American youth have weak preparation. Program for International Student Assessment (PISA) data are illustrative. (Table 5) College may be a shock, leading to students dropping out, at least for a while. The

percent of youth who attend and graduate from high school is high. The percent of high school students who enter some kind of tertiary institution is also high. But a very large proportion of these entrants drop out in a few months to one year after entering.

3. Re-entry
   Students possibly drop back in at a later date – thus adding numbers to older cohorts
4. Major Differences in Institutional Retention
   The norm is stricter in the United States; a typical four-year institution only expects 50 percent of entrants to graduate.
5. Institutional Openess to Transfers
   American institutions welcome quality transfers.
6. Differences in Student Loyalty
   Student loyalty is weak in United States; students readily consider transferring if it will benefit their image or marketability (an illustration is sports transfers, but equally applies to academic transfers)
7. Differences in Corporate Acceptance of Training of Others
   United States employers actually place a positive value on student transfer to acquire new experience, but Japanese employers are skeptical of such behavior. Hence Japanese participation in tertiary is largely limited to college days, whereas United States is more diversified in time and place.

Table 2. TGER for several Asian countries 1980 and 2005

Country	TGER05	TGER80
China	19.4	1.2
India	10.8	5
Indonesia	16.5	3.7
South Korea	93.5	12.8
Malaysia	29.3	4.1
Mongolia	44.7	26.3
Philippines	27.5	24.2
Thailand	43.9	10.3
Vietnam	15.7	2.5

Note: Excepting the Philippines, the Asian countries had modest TGER in 1980 (Mongolia figures are doubtful). But since the 80s there has been explosive growth in South Korea and very rapid growth in Thailand, approaching the Japanese level. And there has been significant growth in many other Asian countries. While the region is much poorer than Europe, higher education enrollment has caught up.

What about other Asian countries?

We conclude that many of the developments since the 1970s concerning massification are surprising. Specifics are quite different from those Trow predicted – the United States and Japan are passed by other countries, Asia passes Europe. Nonetheless his arguments are stimulating and clearly demonstrate dramatic expansion over the past two decades.

Correlates of massification

One method of analyzing the differences in the levels of massification is to examine the statistical association of indicators of massification (*e.g.* Tertiary Educational Attainment of those aged 25-34 and the Tertiary GER) with appropriate indicators of socioeconomic change. Table 3 presents some preliminary findings for a group of 57 countries (29 countries for educational attainment). The table suggests that the higher the economic level of a society, the higher is the percentage of youth enrolled in higher education. But the higher the population growth rate the lower is the tertiary enrollment rate. The higher the secondary enrollment rate and the higher the secondary level graduation rate the higher is the tertiary enrollment rate. The larger the private sector's share of total tertiary places, the higher is the percentage of youth enrolled in higher education. The greater the public expenditure on education and especially on research, the greater the enrollment and completion rates. Interestingly measures of economic globalization and of in-migration were not related to rates of tertiary enrollment or attainment.

These correlations invite more complex multiple regression analyses.

Table 3. Pearson correlations of socioeconomic indicators with two indicators of tertiary level participation

	Tertiary Ed attainment of those age 25-34	TGER 2005
GDP per capita	.432	.474
Population growth rate	-.279	-.597
Secondary GER	.501	.609
Graduation rate 2005	.661	.760
% Tertiary enrollment in private sector	.283	.142
Public spending on education as % of GDP	.060	.360
Public spending on R&D as % of GDP	.439	.508

Some consequences of massification

Massification is now seen as inevitable. On the positive side it expands opportunities for eager youth. But the literature suggests it may have several negative correlates:

- Resources are spread thinner
- Class sizes increase
- Students are not as well prepared
- Instruction becomes mechanized
- Some faculty become teaching machines, with research being neglected

Are these suggested negative correlates true or false? Or are they somewhere in between and if so why?

Concerning resources

Table 4 suggests a possibility concerning resources. In six cases of the ten countries included, the increase in student numbers is greater than the increase in number of faculty. But in four the opposite is true, that is the student-teacher ratio decreased with massification.

Table 4. Enrollment in total tertiary education, GER, and teaching staff, 1992-2007

Year	1992			2007			% Increase in Total tertiary	% Increase in Teaching staff
	Total tertiary	GER	Teaching staff	Total tertiary	GER	Teaching staff		
Australia	559,365	0.40	28,417	1,083,715	0.75	34,413	94	21
Hong Kong, China	85,214	0.19	5,978	194,236	0.42	10,500	128	76
Japan	2,899,143	0.30	286,166	4,032,625	0.59	515,732	39	80
South Korea	1,761,775	0.40	77,458	3,208,591	0.96	201,851	82	161
Brazil	1,591,176	0.10	134,403	5,272,877	n.a.	367,638	231	174
Mexico	1,302,590	0.13	134,424	2,528,664	0.28	274,618	94	104
Germany	2,033,702	0.35	279,806	2,278,897	n.a.	295,447	12	6
Netherlands	493,563	0.42	41,217	590,121	0.62	44,632	20	8
United Kingdom	1,385,072	0.33	89,500	2,362,815	0.58	129,930	71	45
United States	14,360,965	0.78	826,000	17,758,870	0.86	1,310,453	24	59

Source: UNESCO. For Australia: Department of Education, Employment & Workplace Relations (and its antecedents). 'STAG1992' and 'STAG2007' Staff aggregated data sets.

Notes: Mexico 1993 data, Mexico Teaching Staff for 1991, Germany 2007 Total Tertiary excludes ISCED Level 6 and hence GER 2007 (Levels 5&6) is not available, Germany Teaching Staff is for 1993. UNESCO does not provide statistics for Hong Kong, so we report estimates supplied by the Hong Kong research team. Australian figures include academic staff who only do research.

Concerning student preparation

A frequent assertion is that massification is associated with admitting increasing numbers of poorly prepared youth into higher education. Within particular countries this may be the case. But across countries, as illustrated in Table 5, the countries with the highest average academic achievement are the ones that have the highest levels of massification – in other words, a relation just the opposite of expectations.[2]

Table 5. Extent of massification and 2003 math achievement among OECD countries

	% 25-34 years old with HE in 2010	PISA 2003 Math
South Korea	65	542
Japan	57	534
Canada	56	532
Russia	55	
Ireland	48	503
Norway	47	495
New Zealand	46	523
United Kingdom	46	
Australia	44	524
Israel	44	
France	43	
Sweden	42	509
United States	42	483
Netherlands	41	538
Finland	39	544
Spain	39	485
Denmark	38	514
Poland	37	490
Iceland	36	515
Germany	26	503
Greece	26	445
Portugal	25	466
Mexico	22	385
Italy	21	466
Argentina	16	
Brazil	12	
China	6	

[2] The two columns have a high spearman rank order correlation of .65.

Faculty teaching and research

Yet another assumption is that massification leads to an increase in the academic workload of individual professors. This may be because greater effort is required to attract students, to retain them, and to secure the revenues to support academic research. Or it may stem from the need to formalize and broaden the procedures used for measuring the performance of the individuals and units that comprise the academic enterprise.

One insight on faculty work comes from the professors themselves. This is possible by using the CAP survey of 19 countries including Japan and the United States – which we have been working on for the last 5 years – in conjunction with a similar survey carried out in 1992.

The surveys give an indication of what professors do and what they think about what they do. For the analysis below, we have divided the 19 countries into three groups – the first called the elite group refers to those systems that still have low enrollment rates; at the other extreme is the advanced mass group where enrollment rates exceed 50 percent; and finally there is the in-between or transitional group. The systems in these respective stages are as follows:

- Elite: Argentina, Brazil, Malaysia, Mexico, China, South Africa
- Transitional: Hong Kong, Finland, Germany, Italy, Netherlands, Portugal
- Mass: United States, Canada, United Kingdom, Norway, Japan, South Korea, Australia

Are there differences between professors who work in university systems that have reached the higher end of the mass stage compared to those in systems that are still essentially at the elite stage?

Work load

Our interest here is in differences in faculty load as systems approach or realize the mass stage of expansion – do the professors in systems at this stage work harder or differently when compared to professors at the elite stage or the transitional stage?

Actually at the undergraduate level, professors in the elite systems have on average more students – though this is an average elevated by the large number reported for South Africa. At the graduate level, professors in the advanced mass systems have the most students. They have a modest edge at the masters level, while at the doctoral the average for professors in the elite systems is 2.7 students compared to 5 in the transitional systems and 6 in the mass systems.

Concerning total hours of work per week, there also are modest differences: 39 hours per week in the elite, 44 in transition, 45.7 in mass. For the systems at the elite stage, teaching gets the greatest allocation, whereas professors in the advanced mass stage spend as many hours on teaching as do those in the elite stage, but on top of that they spend more time on administration and on research. Hence the total is greater.

Perceptions of teaching

Tables 6 & 7 present several indicators relating to the content of teaching, comparing the findings by the elite to mass stage (additionally given the Asia focus of this meeting we provide the country scores for CAP Asia countries). For example, the professors at all three stages of massification say they spend more time than they like teaching basic skills. Also all three groups note that they stress practical knowledge. What stands out in Table 6 is the perception by professors in the massified group that they are encouraged to improve their instructional skills.

Table 6. Views on teaching

	Elite	Transition	Mass	Average	Jp	K	Ci	Hk	M
Practically oriented	78	68	65	70	53	76	76	69	68
Spend more time than I like teaching basic skills	60	56	56	57	61	58	58	56	50
Encouraged to improve instructional skills	51	40	58	50	67	62	63	53	63

Jp: Japan, K: South Korea, Ci: China, Hk: Hong Kong, M: Malaysia

Table 7. Innovations in teaching

	Elite	Transition	Mass	Average	Jp	K	Ci	Hk	M
Individualized	70	63	77	70	77	56	69	78	72
Projects	46	48	46	47	25	45	24	59	78
ICT-based	37	25	27	29	31	7	31	29	49
Distance Education	19	13	16	16	5	12	5	9	15
Develop new material	61	72	69	69	28	63	25	77	70
Curriculum development	54	55	59	56	25	49	38	62	68

Table 7 presents several potential areas for improvement. Professors in the elite stage universities are as likely to use Information and Communications Technology (ICT) or to provide some of their instruction via distance learning as are the professors in the mass systems. On the other hand, professors in the mass stage systems are more likely to provide individualized instruction and to devote more time to developing new materials for their courses as well as reviewing and improving the curriculum.

Research expectations

Whereas the expectations for teaching differ only modestly by stage, those for research are more dramatic. As illustrated in Table 8, professors in mass stage systems are much more likely to perceive pressure for high research productivity and particularly for research that is useful. While we have not provided the breakdown, these differences are especially evident in the top strata institutions of the mass stage.

To respond to these high expectations for research productivity, professors in the mass stage systems are more likely to report that they are expected to raise external funds (Table 9), though overall they are no more likely than professors in the elite and transitional systems to perceive that their institutions expect them to engage in commercially oriented research. Ironically professors in China are among those reporting the greatest pressure to engage in commercially oriented research.

Table 8. Expectations from research

	Elite	Transition	Mass	Average	Jp	K	Ci	Hk	M
Expectation of research productivity	54	62	66	61	60	61	57	70	45
Expectation of useful research	43	52	55	50	54	49	49	60	40

Table 9. Other research items

	Elite	Transition	Mass	Average	Jp	K	Ci	Hk	M
Academics expected to raise external funds	53	76	75	65	78	59	48	76	55
Institution encourages commercially oriented research	37	38	41	39	27	31	42	34	65

Management

The major differences in the academic work of elite and mass systems seem to lie in the details. The number of hours that professors work are not that different nor is there a big difference in the allocation of time by function. However, within the respective functions there are interesting differences. Professors in the mass systems report greater pressure to improve their instruction by individualizing it and by updating the curriculum as well as the instructional materials. Especially concerning research productivity and funding, professors in the mass systems report a stronger feeling of managerial pressure.

Table 10 suggests that professors in the mass systems perceive more attention being devoted by managers to performance evaluation, both in the areas of teaching and research. Yet while managers devote more effort toward performance evaluation, the professors in the mass systems report that the communication is not as good. Being asked to do more and being evaluated on their compliance with these requests, yet not receiving clear explanations of what is expected, professors in the mass systems are more likely to report that their work is a source of considerable strain.

Also we computed a Spearman rank order correlation between tertiary educational attainment of 25-34 year olds and the percent in the system who are experiencing considerable strain; the coefficient was a substantial 0.67.[3]

Still the main story seems to be that professors in mass systems have about the same reaction to their work as do professors at the elite stage – work content is broadly similar as is work satisfaction. So this leads us to question the doomsday predictions of some commentators on massification.

Table 10. Management pattern

	Elite	Transition	Mass	Average	Jp	K	Ci	Hk	M
Performance orientation	49	38	57	48	45	17	60	64	57
Dept head active in research evaluation	41	50	49	47	31	20	35	26	50
Good communication	37	25	27	27	24	20	35	26	50
Work source of considerable strain	32	43	50	40	59	68	53	42	20

[3] In a separate analysis we compared work load and content by the types of coordinating systems in the respective national systems. Professors in systems with a market coordinating system were the most likely to experience considerable strain.

Conclusion

In the field of higher education, perhaps no topic gets as much attention as massification. Focusing upon the United States and Japan, we have considered the general trends and then the reaction of professors to them. Massification, especially rapid massification, can create strains for the higher education enterprise – and for those teaching in this enterprise. Among the 19 countries included in the CAP survey, South Korea has experienced the most rapid and radical massification and the Korean professoriate voice the highest incidence of strain. But overall the differences are not excessive. Mass higher education looks much the same as elite higher education.

So how can higher education maximize the benefits associated with massification and minimize the pain?

1. Foster collaborative relation between faculty and administration
2. Proceed slowly and deliberately
3. Maintain good ratios between faculty and students
4. Restrain impulse to introduce too many curricular innovations – go about this deliberately and with adequate consultation with faculty
5. Limit emphasis on performance evaluations

Reference

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Presentations

Governance & Management

The Spread of Western Learning to the East and the Formation of the Modern Chinese Academic Profession

Fengqiao Yan *

Introduction

Some historians record that prior to the Ming Dynasty (1368-1644), the world remained in the pre-modern period, and the world development pattern was very different than today. According to the statistical and econometric analyses of Angus Maddison (2008, p.1) on world economy, China kept her leading position in the world from the 10th century to the 15th century. Europe did not catch up with China until the 17th or 18th century. Before the Qing Dynasty (1636-1912), exchanges between East and West were very rare; however, they were on the same page in academic progress. In *On the Trend of China Academic Thought Changes* (2006[1902], p.2), Liang Qichao said "if we look through the world history, Chinese academic thoughts could be ranked first both before and during the Middle Age. However, we Chinese should be shamed about our academic progress and results in modern times." China had more than 1,200 academies (*shuyuan*) during the Ming Dynasty while Europe only had dozens of universities (Fan, 2011, p.2). Therefore, Prof. William Kirby (2009) from Harvard University once said the Harvard established in 1636 could not compete with Donglin Academy founded in China at the same time. Dr. Joseph Needham, an expert on China studies, has also pointed out that before the 16th century, overall scientific development in China outclassed that of western countries (Needham, as cited in Fan 2011, p.1).

* Professor, Institute of Economics of Education, Graduate School of Education, Peking University, People's Republic of China, e-mail: fqyan@gse.pku.edu.cn

Since the Age of Discovery in the 15th century, Europe had accelerated its international trade and military expansion; the 17th century saw a series of historic events in Europe which helped to promote modernization; and the combination of rationalism and empiricism in the West in the 16th and 17th centuries helped to form the spiritual foundation of modern science and the modern scientific research method system characterized by experiments and induction, improving academic development (Barber, 1991[1970], p.60 & p.69). The new generation of scientists, including Copernicus and Newton, advanced new disciplines such as astronomy, physics, mathematics, *etc*. The founding of the Royal Society in 1662 and the French Academy of Sciences in 1666 marked the beginning of the scientific research system (Chen, 2010). Fortunes gained during the Industrial Revolution initiated by the invention of the steam engine outnumbered what humankind had accumulated previously. After that, western countries gradually became the world bellwether. The establishment of Humboldt-Universitat zu Berlin launched the modern university prototype which integrates teaching and research. At the end of the Qing Dynasty (late 19th century), the West surpassed China in science, social sciences and many other fields, while China was just awaken from its empire dream to look around the world.

Throughout history intellectuals have existed both in the East and the West. However, Eastern intellectuals differ dramatically from those in the West, in terms of 'community' and the 'individual'. The 'individual' incorporates a personal thinking mode, value system, and academic methods, whereas 'community' can be characterized as a cooperative model, organization form, social status *etc*. From a comparative perspective, Chinese academia habituates itself to a thought that man is an integral part of nature (*Tian ren he yi*). From the Sui (581-618) and the Tang (618-907) Dynasties to the late Qing Dynasty, Chinese scholars treated learning as a way to attain official position and fame, while Western scholars focused on study and speculation, becoming an independent force apart from religion and authority in the society and cultivating a tradition of learning for the sake of knowledge. Empiricism, rationalism, humanism, and romanticism in the western context has never happened in China. The three major academic forms in China – poetry and prose (*ci zhang*), philosophical connotations (*yi li*); and textual research (*kao ju*) – found no counterparts in western culture. From an historical perspective, China has undergone different academic atmospheres in different dynasties: Confucian classic (*ru xue*) studies in the Han Dynasty, metaphysics (*xuan xue*) in the Wei and Jin Dynasties, philosophy (*li xue*) in the Song and Ming Dynasties;

philology (*pu xue*) in the Qing Dynasty, *etc*. (Liu, 2008, p.33). In Chinese academic history, there have been various so-called academic paradigms as advanced by Thomas S. Kuhn and transitions between them, such as the disputes between the Old Text School (*gu wen jing xue*) and the New Text School (*jin wen jing xue*).

Only modern academia in the West and that in the East since the late 19th century are comparable. The scholarly community of modern China did not form until the end of the Qing Dynasty when western learning spread to the east; the integration between Chinese learning and western learning defines a boundary between past and modern academia in China. Since then, a modern sense of academic institutions and intellectuals has come into existence, and the Chinese academic system really has become in reality a constituent part of the world academic community. According to Zuo Yuhe (2008a, p.56) modern universities in China were products of the imitation and transplantation of western universities in modern times, and differed greatly from the Imperial College in feudal China. Zhou, Zhang, Sun & Guo (2012, p.10 & p.21) and other scholars have held that the transition from a traditional academy to a modern university dates from the late 19th century in China, and universities had become a gathering place of modern scholars. For Liu Mengxi (2008, p.112), the differentiation between modern and ancient academialies in the fact that scholars bred a sense of academic independence and absorbed new concepts from global community from the end of Qing Dynasty.

Prior to discussing formation of the modern academic profession from the end of the Qing Dynasty, a brief review of Chinese studies and research on the profession, especially the academic profession, is presented.

Profession and academic profession

At the outset two concepts need to be differentiated: What is a profession? What is an academic profession?

Various works define ‘profession’ similarly. Waddington (1985) sees a profession as a group of people of special occupation who have self-control and autonomy without interference from others. Tang (2008) suggests that profession means a particular occupation which requires abstract theory and knowledge after a prolonged formal training. Furthermore, he advances standards as follows to distinguish professional from non-professional:

> Several attributes set professionals apart from non-professionals:
> (1) establishing formal means of recruiting and training members for

> the occupation; (2) creating associations to disseminate knowledge in the field, represent and promote the interests of its practitioners, and regulate and standardize its practices; (3) establishing stringent membership requirements and standards in practice; (4) getting official recognition; (5) developing a code of ethnics to make exclusive claims on qualifications, expertise, and jurisdiction. (Tang, 2008, pp.515-517)

In a word, externally, professionals need to meet high requirements so as to avoid free entry of outsiders and to assure high income, and power to a certain extent, a lot of freedom, and self-satisfaction in work. All the definitions above are made against a western context. At that time, China had not formed such detailed social division of labor like doctors, lawyers, priests, teachers, and engineers in a background of agricultural economy. Patterned after the western academic system, the modern Chinese academic system did not yield an academic profession until the late Qing Dynasty, and thus a comparison could be reached in the fields of recruitment requirements, education and training, regulation and theory, association and other academic system, all of which are covered in the following passages.

As an objective social existence, the formation and development of a profession is very complicated. Sociologists have different views about profession, among which structural-functional analysis is the mainstream. However, recently much criticism based on Hoyle (1994) has been directed towards it: firstly profession, more of an Anglo-Saxon social phenomenon, does not apply to some occupational types in Europe, for many European professionals are employed by government; secondly, functionalistic interpretation lacks historic elements and ignores that some professions are the product of power instead of its own performance; thirdly, the restricted access to profession is the result of closure and credential rather than capacity; fourthly, analysis based on controlling the market to get professional status and indicators from elite rationalization cannot reflect real working ability; fifthly, the term 'profession' is always manipulated by elites and government in a rhetorical and ideological sense to enhance their control over schools.

As studies on profession continue, the concept is expanded from a mere technical term, to an institutional and historical thought, which is related to a certain historic stage and a country's trend during that time. In the Middle Ages, only three occupations in Europe were passed from one generation to the next, that is doctors, lawyers and priests who also worked as teachers in universities since the 12th century. At that time, universities had religious ties and only recruited clergy as professors. With social development, new occupations

requiring skills appeared, and thus different kinds of professions grew. Any occupation that demands prolonged training in a specific field can be called a profession or a semi-profession. Before the 19th century, some professions avoided dominance by the church, formed independent associations and gained high social status. In the 19th century, dentists, architects, engineers and other professions gained recognition. With the development of division of labor and enhancement of rationalism in the industrialized workplace in Europe and the United States in the late 19th and early 20th centuries, a trend toward professionalization was more and more marked. Some occupations endeavored to rise to a higher social rank through professionalization. In the United States, universities took the role of promoting professionalization in technique and culture. For instance, pharmacists and masseurs became a marginal profession, nurses, teachers in public schools, social workers, and librarians, technicians, assistants and lawyers became a semi-profession. (Waddington, 1985) When some countries entered post-industrial or knowledge-based economic societies in the late 20th century, the range of professions and degree of professionalization had advanced to a new level.

In the West, the professoriate has a long history, and only people with special training are qualified for it and enjoy some working freedom. Weber (1998) in his *Science as a Vocation*, presents four characteristics of the modern academic profession firstly, devotion to academic research can earn a living; secondly, scholars need to be specialized; thirdly, knowledge in modern academia is no longer truth like religion, but can be constantly corrected and discarded; lastly, modern academic study shall be neutral and free from political and theoretical values. Above all, the summary is based on observation and studies of western or German academia, which can be regarded as theoretical in nature rather than a practical standard for China, for the traditional Chinese intellectuals are distinct from that of modern Europe.

Although academic profession means all communities which are devoted to academic research, it is often referred to as professors in universities in English-speaking countries, for modern academic work usually takes place in universities and professors play a large role in the modern academic profession (Barber, 1991[1970], p.166). Especially in the popularization of higher education, the number of professors has increased tremendously. Another related concept is ‘intellectual’. American scholar Edward Albert Shils defined intellectual as people who regularly uses abstract symbols to express their understanding towards life, society, nature and the universe, which includes professor, experts on humanistic studies, personnel working in media and

communication, editors, writers, free-lance writers and so on (Shils, as cited in Xu, 2003, p.7-8). Externally, the range of the academic profession and that of intellectuals has overlapping and different parts. The studies on these two communities, likewise, share and differ at the same time. Their similarities lie in that both pay attention to the tension between a group of knowledgeable people with other social communities, especially the political one, while their differences rest with the research focus: the academic profession emphasizes community character, whereas intellectuals lay stress on a small number of scholarly representatives, especially humanistic thinkers and their social influence.

The academic profession expressed in sociological terms is examined in a particular economic and political context. In different societies, the academic professions have different features. In those continental countries like France, Germany and Italy, professors are public servants, enjoying tenure as part of the public service system. On the contrary, the British government abolished the tenure system in the 1980s, and replaced it with an employment system. Moreover, tenure in the United States is widely divergent from that in Europe, in that it is a special form of contract. In Latin America, professors have to compete regularly with new applicants for their occupied positions (Lawrence, 2008).

Based on the aforementioned summary of profession and the academic profession, past research and studies focus on structure and function, while neglecting political and institutional perspectives. Studies of the academic profession in higher education literature are also not fully aware of matters like associations, journals, academic standards, and academic philosophy. The next section discusses the transition and formation of modern Chinese academia around related aspects.

Transition of the Chinese traditional academy

In Chinese academic history, there were two open periods of learning which were open to other countries. The first one was in the Tang Dynasty when people studied Buddhism in India, contributing to the fusion of Confucianism, Buddhism and Taoism; the second one was the spread of western learning to the East in the Qing Dynasty in which the Chinese modern academic system was established. The academic in both of the above periods promoted the Chinese academic system; however, the focus of this paper is on the spread of western learning to the East during the late Qing Dynasty. From the end of the Qing

Dynasty, western imperialist countries accelerated external expansion to poor countries, including China. The Qing government was forced to sign a series of unequal treaties with western countries which surrendered her sovereign rights under humiliating terms. At that time, the Chinese government began to awaken from the dream of the Heavenly Kingdom, and began the modernization of learning emulating western learning. Development of the academy and national power interact with each other as both cause and effect. Realizing the limitation of the traditional academy, Chinese scholars conducted a series of revolutions, such as introduction of western learning; founding modern learning; abolishing imperial examinations; founding new types of schools; the New Culture Movement; *etc*. The process is called the spread of western learning to the East, and is divided into two periods by Liang Qichao. The first one from 1840 (First Opium War) to 1894 (the Sino-Japanese War), centered on the Westernization Movement with a policy of "Chinese learning as the base, western learning for application". The second period from 1895 to 1919, during which China carried out the Reform Movements of 1898 and 1911, overthrew the feudal system, and founded the republic. The failure of the Sino-Japanese War of 1894-1895 is attributed to the underdevelopment of education. It is said "the reason for the western countries' development is that they are better in education, rather than in military power" (as cited in Chen, 1996, p.97).

The following examples demonstrate that the effect western learning exerted on the transition of the Chinese academy is comprehensive and dispersed. Before the First Opium War, some western disciplines, including mathematics, geography, industry, *etc*., were taken to China by European missionaries and became part of the curricula in church schools (Wu & Tian, 2012, p.45). Under this aspect of Chinese *Han* learning (emphasizing textual research) and western positivism, philology began to lead the academy in the Qing Dynasty (Elman, 2012, p.29).

Philologists are called *Han* scholars; philology was inherited from textual criticism in the Han Dynasty. Philologists in the Qing Dynasty stressed more positivism research than the tradition of abstract-study (*xing xin zhi xue*) (Elman, 2012, p.43). The scholars charged with compiling *Si Ku Quan Shu* (which is also named *Complete Library in the Four Branches of Literature*) criticized the lack of academic contribution of the Ming Dynasty, and praised new creation in the Qing Dynasty (Elman, 2012, p.51). However, the traditional intellectuals' skeptical attitudes were limited merely to humanistic knowledge, as for the creation in the field of science and society, their skepticism was ignored (Elman,

2012, p.176).

There are great differences between traditional Chinese learning and borrowed western learning. The traditional Chinese academy is characterized by the following: firstly, Confucianism, predominant in the Chinese academy, is a kind of moral education, and Confucian orthodoxy which is believed by the Chinese people is different from westerners' belief system (Xu, 2003, p.94-95). The Confucian school of idealist philosophy, which was formed in the Song Dynasty and dominated the academy for a long period of time, focuses more on the person than on objects. Scholars advocated that people cultivate their original nature, to learn philosophy, and to despise the industry. Therefore, Liu Mengxi (2008, p.27) noted that the most important separation of the Chinese traditional academy and the modern academy is whether it focuses on the person or on learning. Secondly, the Chinese academy worships authority. There appeared different leading forms in each dynasty: philosophy (*zi xue*) in the pre-Qin period; study of Confucian classics (*ru xue*) in the Han Dynasty; metaphysics (*xuan xue*) in the Wei and Jin Dynasties; Buddhism (*fo xue*) in the Sui and Tang Dynasties; the Confucian school of idealist philosophy (*li xue*) in the Song and Ming Dynasties; philology (*pu xue*) in the Qing Dynasty, and New study (*xin xue*) in the late Qing Dynasty (Liu, 2008, p.9). Thirdly, there appeared a study style praising the harmonization from the warring states period (Luo, 2007, p.97). In the last two thousand years, the main stream of the Chinese academy was to oppose to separating each course of knowledge, thus the foundation of modern disciplines had not been layed. At the end of the Qing Dynasty, the Chinese academy had seen the change from learning the Confucian classics (*jing*), history (*shi*), philosophy (*zi*) and literature (*ji*) to seven branches of knowledge (that is science, engineering, farming, medicine, art, law, and business) (Zuo, 2004). In terms of form, Chinese traditional learning was limited to art of western learning. From the end of Qing Dynasty, Chinese teachers began to place more emphasis upon the classification of the academy. After the May 4th Movement of 1919, Mr. Hu Shi advocated reorganizing cultural heritage, that is to sort out Chinese academic resources in history by modern disciplines. In 1922, the School of Chinese culture (*guo xue yuan*) was founded in Peking University, where the scholars came from departments of Chinese literature, history, and philosophy. This is an action to respond Mr. Hu Shi's advocating of reorganizing cultural heritage (Liu, 2008, p.107-108). Fourthly, the Chinese traditional academy lacks logic and scientific method. Mr. Yan Fu said, logic is "the most important method, and the most important learning". He also said, "it is a truth that the more experiment you have

operated, the more logic you will get." (as cited in Liu, 2008, p.131-132). Mr. Hu Shi considered that science is a method, an attitude, and a spirit: "Bold hypothesis and cautious verification" will contribute to the scientific method.

Formation of the modern Chinese academic profession

Ancient Chinese society consisted of four kinds of people: officials (*shi*), farmers (*nong*), workers (*gong*), and merchants (*shang*). The officials (*shi*) were government officers, rather than learners. While, one of the brightest ways for the learners was to become officials, just as the old adage says a good scholar will make an official. The close connection between scholars and officials was based on the logic of governing a country-officials are the product of spirit and education, without which moral and educational skills cannot be served for political order (Yu, 2012, p.131). Therefore, the social stratum of learners (or professors) had not been formed due to the fact that only a few people had the opportunity to obtain education in Chinese feudal society. Why had there not been a modern academic career before late Qing Dynasty in China? Firstly, the intellectuals lacked independence. Chinese feudal society saw the integration of education and state (*zheng jiao he yi*), and that of government and scholars (*guan xue he yi*). Furthermore, the connection between education and government was strengthened for the sake of the establishment of the imperial civil examination system (*ke ju*), leading to the lack of academic independence, and the vagueness of the concept of teachers (Wu & Tian, 2012, p.10). Zhou Guping *et al*. (2012, p.9) pointed out that traditional intellectuals did not have their identities due to the lack of knowledge ontology, political absolutism, and the intellectuals' impotence in social economic activities. Moreover, the deep roots of integrity of government and education made people maladjusted to the transition from "learning from imperial's professors" to learning from scholars after the development of new schools (Wang, 2007, p.63). Secondly, professors lack independence in the terms of the economy. For most teaching was viewed as a sideline, rather than their way of life. Consequently, scholars would seek a chance to become either an officer or a farmer (Wang, 2007, p.57). Finally, the number of intellectuals was reduced. Before the Qing Dynasty, the scale of education was very small, both for public and private schools. After 1912, when the Republic of China was founded, the total number of students of higher education was 2,312 (as cited in Chen, 2012, p.31).

From the late Qing Dynasty, the academic profession began to form alongside the social reforms which focused up on the idea of university and

disciplinary knowledge, the establishment of modern academic institution, academic association and the academic publication system.

I. Establishment of the academic institution

From the late Qing Dynasty, China enhanced its traditional academic system emulating learning in the West. In 1905, the Qing government banned the thousand-year-old imperial examination system (*ke ju*), and then founded several state institutions of higher learning, including Northern Imperial University (1895), Nan Yang Public University (1896), Imperial University of Peking (1898), and Shan Xi University (1902), all of which were embryonic Chinese universities (Chen, 2012, p.15). During the 1920s to 1930s, China followed the example of the west to found a series of research institutions, including Academia Sinica, the National Academy of Peiping, and the Department of Chinese Classics in Peking University (Chen, 2002, Preface).

II. The idea of the university

With the spread of western learning to the East, the idea of western university management, represented by America and Germany, spread to China. Mr. Cai Yuanpei, who was educated in Germany, translated *The Features of German Universities on Academic Journal* in 1910, thereby introducing the concept of the German university to China. The key figure of the German university was academic priority, academic freedom, and academic autonomy, all of which were new to Chinese intellectuals (Zhou *et al*., 2012, p.72). In 1912, *the University Act* was promulgated by Education Minister Mr. Cai Yuanpei, declaring that the purpose of universities is to instruct indepth disciplinary knowledge, cultivate intellectuals, and provide service to the state. At the beginning of the 20th century, Dewey's pragmatism exerted a deep influence on Chinese universities as a result of the return of overseas students and Dewey's visit to China. Based on his research on American education, Mr. Cai Yuanpei defined the features of American universities as 'common', which contained vulgarization of the academy and popularization of educational opportunities. The reason for the deep influence of pragmatism was firstly because university students were required to be responsible for saving the country; secondly because it was very compatible with Chinese traditional culture (Zhou, 2012, p.72).

III. The scientific research method

One of the key points of the Chinese academic transition is the formation of scientific spirit. During the May 4th Movement in 1919, Chinese intellectuals regarded science as scientific spirit and methods rather than subjects like mathematics, philosophy, chemistry and so on (Luo, 2009, p.331).

Liang Qichao (1902[2006], p.92) defined scientific spirit as following:

> Firstly, scholars should take a skeptical attitude, tend to find the differences, and then seek for the truth, rather than merely follow the former learners. Secondly, when engage in scholarship, scholars should trace to its roots with logic and examples. Thirdly, the academic research should be taken as a system, requiring scholars to learn from the former learners, and to innovate from the former achievement. Even if the research cannot be complete, it may contribute to the latter study. Fourthly, scholars are required to be good at comparison, with the help of which to find the best answer from series of results.

Liang Qichao (1902[2006], pp.7-8) also pointed,

> Just as Bacon recommended investigation of things, he insisted that people cannot believe in the result unless it is verified; Descartes also advocated that a theory which is believed even by the opponents deserve following.

IV. The knowledge system and discipline classifications

During the May 4th Movement in 1919, 'Mr. D' (Democracy) and 'Mr. S' (Science) were introduced to China from the West. Chinese learners introduced the concept of democracy and science from Japan, the key result was to classify the disciplines (Luo, 2009, p.227). Scholars in the department of Chinese classics at Peking University adopted a modern discipline classification in sorting out the traditional civilization, abandoning the old classification of Confucian classification of classics, history, philosophy and literature. Furthermore, they constructed and explained Chinese history and culture in the new academic vernacular (Chen, 2002, p.327).

V. Associations and journals

The Science Society of China exerted the most important influence on the

development of the concept of science because it tried to explain science and methods (Zhang, 2008, p.96). In 1843, many western academic books were translated by the London Missionary Society Mission Press which was established by British missionaries in Shanghai, introducing western science to China. The translated books in Jiangnan Machinery Manufacture General Bureau represented the apogee of learning western science in the late Qing Dynasty. *Shanghai Serial* published by London Missionary Society Mission Press in 1857 was the embryonic form of modern scientific journal, while The Peking Magazine and the Chinese Scientific and Industrial Magazine created in Beijing were the real scientific journals (Zhang, 2008, pp.28-31).

Concluding remarks

During the spread of western learning to the East in the late Qing Dynasty, Chinese intellectuals were active in learning western academic achievements and reforming the traditional Chinese knowledge system. The academic profession in modern terms developed in the formation of the corollary modern academic system. It was one of the key points of Chinese intellectuals' transition to modern times that they changed from universal geniuses to experts. The following processes, summarized by Mr. Chen Pingyuan, were very important in their transition: firstly, they reformed the relationship between academy and political; then, the methods system and discipline were founded; furthermore, scholars revised the relationship between imparting professional knowledge and propagating morality; the last, they shifted the priority of devoting to learning and morality education (Chen, 1998, pp.10-11).

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Governance and Performance: the case study of Japanese academic profession

Masataka Murasawa*

1. Aim of this paper

This section focuses on the influence of governance on academic activities, especially on research outcomes, through application of a multilevel statistical analysis method.

Specifically, the aim of this study is to examine how and to what extent top-down or bottom-up governance based on the Academic Profession in Asia (APA) survey held in Japan, shown in questionnaire E1, and the time cost of governance involved with doing administrative work, shown in questionnaire B1, affect research outcomes, shown in questionnaire D4_3.

2. Top-down and bottom-up governance in Japanese higher education: influence of inside and outside actors on institutional decision-making

Prior to beginning our causal analysis, summary statistics of indicators in this slide are presented. These figures show the indicator of top-down and bottom-up governance that are composite variables of questionnaire E1 in APA.

These variables range from 0 to 11, indicating that the larger values represent the stronger impact of actors on various decision-making in each institution. As shown in Figure 1, faculty committees have more impact on decision-making within institutions than the other actors.

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

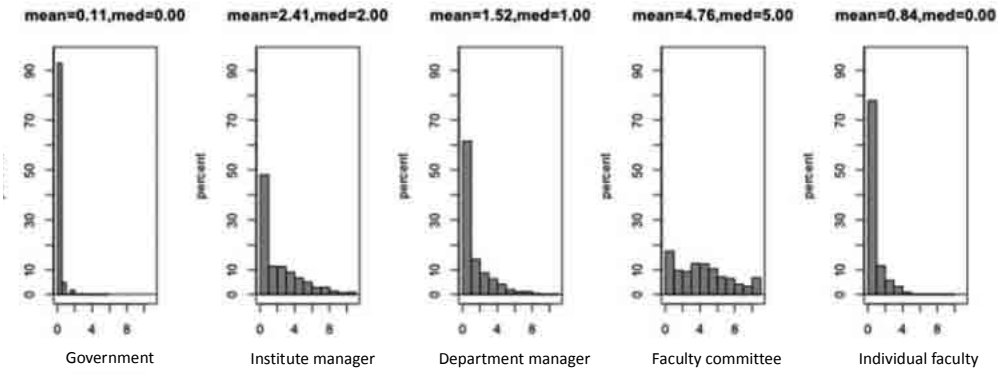


Figure 1. Actors affecting institutional decision-making

Table 1 presents the correlations between actors of governance. The relationship between each actor is negative. This suggests that each actor is alternative or even in conflict, and not complementary or not coexistent.

In this study, these variables are treated as indicators of top-down and bottom-up governance as a matter of convenience. However, the dividing point between top-down and bottom-up is unclear. Incidentally, the indicator of influence of students on internal governance is not used, because its variance is close to zero.

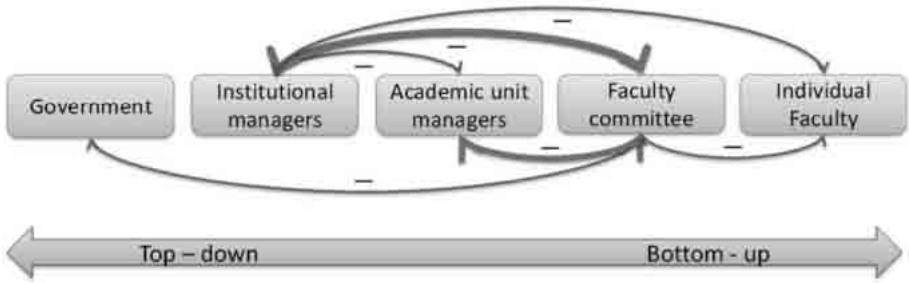
This study also examines the time cost of governance. We represent this concept by using time spent for administrative work by faculties, as shown in questionnaire B1. These figures provide the histogram, mean and median values of research, teaching administrative work and social service.

This shows that time spent on administrative work is much shorter than research and teaching, the average is 6.17 with the median of 5.0 hours.

Table1. Correlation matrix among actors influencing on institutional governance

	1	2	3	4	5	6
1. Government, stakeholders	1.000					
2. Institutional managers	.015	1.000				
3. Academic unit managers	-.032	-.086***	1.000			
4. Faculty committees/boards	-.065 *	-.437***	-.310***	1.000		
5. Individual faculty	-.030	-.100***	-.029	-.100***	1.000	
6. Students	.014	.001	-.070 *	-.029	.072 *	1.000

Note: significant at the 0.1 level; * significant at the 0.05 level; ** significant at the 0.01 level; *** significant at the 0.001 level.



Note: Indicator "Students" is not used because the variance is close to 0.

Figure 2. Relation among influential actors on institution-level governance: visualization

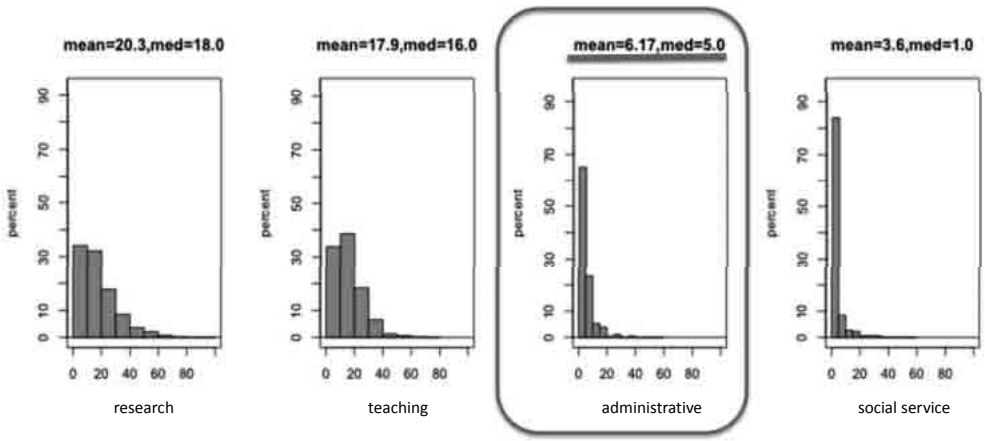


Figure 3. Histogram, mean and median of time spent on various function by Japanese academic profession

3. Performance measure: research outcome

The presented in Figure 3 histograms and the summary statistics are on two kinds of research outcomes. One is on number of refereed articles and the other is on number of all articles published. An average of 4.76 with a median of 2.00 refereed articles were written by Japanese faculties, and an average of over 8 with median 5 articles were published by Japanese faculties. As can easily be recognized, these distribution are not normal and the nature of data like articles is count data with no negative value. Therefore, it is better to apply a more suitable method, Poisson regression, to use those count data as response variables.

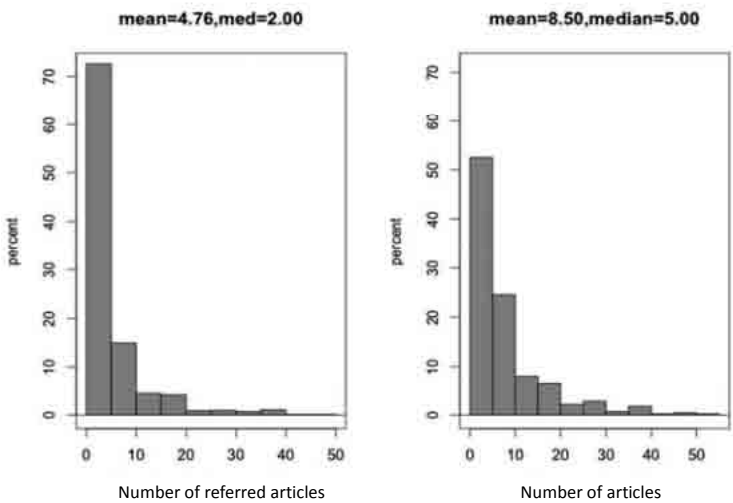


Figure 4. Histogram, mean and median of research outcome: number of articles

4. Methods

In order to accommodate the hierarchical design of APA data and the nature of count data, a generalized linear mixed model (GLMM), in other words, multilevel Poisson regression model, is employed for estimating the relationship between research outcomes and higher education governance. The GLMM represents a class of regression models arising in almost all areas of statistical application with a hierarchical data structure. It is probably suitable for the purpose of our analysis with the possible cluster effects at different levels (*i.e.*, professors in 23 institutions) that naturally exist in the sampled data.

The simple random intercept model is estimated in this study with the equation shown in the presentation:

$$Yij = \gamma_{00} + \sum \gamma_p X_{pij} + u_j + e_{ij}, \quad i=individual\ professors, \quad j=institutions$$

Where Y_{ij} represents the number of articles or refereed articles published by an individual member i, affiliated with an institution j. X_{pij} are covariates with a corresponding vector of fixed effect coefficients γ and the number of covariates is represented in p. The next variable u_j capture the random effect at institution-level, in other words, the unobserved heterogeneities at the institution-level. The last term, e_{ij}, is defined as the disturbance that is not necessarily normally distributed. In this case, based on the descriptive analysis

of the raw data shown in Figure 4, Poisson distribution would be appropriate for the maximum likelihood estimation of the above model. Thus, our estimation model would be considered as the multilevel Poisson regression model.

In this model, the effect of institution-level governance on research outcome is focused on as fixed effects. Other explanatory variables were also added: sex, year of birth, doctoral/master's degree, academic rank, discipline as the individual-level variables, type of institution as institution-level variables.

5. Estimation results

The GLMM estimation is presented in Table 2. It is noteworthy that random effects in two models are found highly significant. This indicates that it is essential to control the unobserved heterogeneities among institutions.

Squared and cubed effects of time spent in administrative work on research outcome are significant in model 1. Single and cubed effects of time spent in administrative work on research outcome are significant in the model 2.

Top-down governance represented by the influence of government and outside stakeholders on decision-making within institution, has significant effects. Top-down governance has negative effect in model 1 and model 2 in former imperial universities, and positive effect in model 2. Bottom-up governance represented by faculty committee influence on outcome has also significant, positive effect on both model but negative in model 2 with former imperial universities. Academic unit managers are difficult to define as top-down or bottom-up governance indicators, because of the negative effect with both institution managers and faculty committee. Academic unit managers have limited positive effect on both models with former imperial universities.

Estimated effects of time spent in administrative work on research outcome by discipline are graphically summarized in the form of predicted values in this Figure 5, with model 1. Research outcome of faculty gradually declines with additional administrative workload. However, with over 15 hours of workload, the outcomes gradually increase. This tendency, however, is only in theoretical figures. As practical value of administrative workload is thought to be around 5 to 6, the actual tendency is a reduction function, as shown in Figure 6.

Figure 6 denotes that academic productivity declined with an increase of time devoted to administration, It also implies that time cost of governance up to 10 hours preclude the possibility of producing 1 article, especially in the major of engineering, agriculture, natural science and health and medical science.

Table 2. Causal analysis of governance and performance: GLMM estimation

		Model 1 Number of referred articles		Model 2 Number of articles	
		Beta	S.E.	Beta	S.E.
	(Intercept)	-1.194	(.948)	1.536	(0.479) **
Fixed effects:					
Individual level					
(base=female)	Sex (Male)	.132	(.076) +	.193	(0.062) **
(base=1945)	Year of birth	.019	(.003) ***	.015	(0.003) ***
(base=bachelor)	Doctor degree	.137	(.080) +	.061	(0.061)
	Master degree	.195	(.064) **	.083	(0.052)
(base=professor)	Associate Professor	-.445	(.056) ***	-.476	(0.047) ***
	Lecturer	-.562	(.094) ***	-.558	(0.078) ***
	Assistant Professor	-1.015	(.080) ***	-1.195	(0.069) ***
(base=humanities)	Social science	-.590	(.149) ***	-.018	(0.089)
	Natural science	1.074	(.118) ***	.660	(0.084) ***
	Engineering	1.309	(.116) ***	.889	(0.081) ***
	Agriculture	1.277	(.130) ***	.815	(0.096) ***
	Health and Medicine	1.064	(.126) ***	.614	(0.092) ***
	Fine arts	-.115	(.474)	.033	(0.251)
	Teacher training	.142	(.202)	-.142	(0.155)
	Other	-.490	(.518)	-.004	(0.268)
	time spent on research (classes are in session)	.014	(.002) ***	.007	(0.002) ***
	time spent on research (classes are not in session)	-.004	(.001) **	.001	(0.001)
	time spent on teaching (classes are in session)	-.002	(.003)	-.009	(0.002) ***
	time spent on teaching (classes are not in session)	.014	(.004) ***	.014	(0.003) ***
	time spent on administrative work (classes are in session)	.032	(.025)	-.034	(0.007) ***
	time spent on administrative work (classes are not in session)	**-.007**	**(.006)**	**.001**	**(0.005)**
	time spent on administrative work (classes are in session) squared/100	**-.654**	**(.261) ***	**-**	**-**
	time spent on administrative work (classes are in session) cubed/1,000	**.284**	**(.080) *** **	**.085**	**(0.015) *** **
	time spent on social service work (classes are in session)	.024	(.008) **	.018	(0.007) *
	time spent on social service work (classes are not in session)	.002	(.008)	.004	(0.007)
	Influence on decisions: Government or external stakeholders	**-.189**	**(.063) ** **	**.201**	**(0.035) *** **
	influence on decisions: Institutional managers	**-.011**	**(.014)**	**-.003**	**(0.013)**
	influence on decisions: Academic unit managers	**.013**	**(.016)**	**.009**	**(0.014)**
	influence on decisions: Faculty committees, boards	**.027**	**(.011) ***	**.024**	**(0.010) ***
	influence on decisions: Individual faculty	**-.029**	**(.021)**	**-.035**	**(0.019) +**
institution level					
(base=non imperial university)	former imperial university	-.752	(.460)	-.238	(0.288)
(base=bachelor university)	Extensive doctor university	1.238	(.868)	-.228	(0.412)
	Intensive doctor university	1.452	(.891)	-.065	(0.427)
	Extensive master university	1.050	(.860)	-.229	(0.406)
	Intensive master university	1.574	(.877) +	-.063	(0.419)
interaction effects	**former imperial univ. x influence: Government**	**.124**	**(.108)**	**-.179**	**(0.066) ** **
	former imperial univ. x influence: Institutional managers	**.032**	**(.021)**	**-.019**	**(0.017)**
	former imperial univ. x influence: Academic unit managers	**.050**	**(.023) ***	**.039**	**(0.019) ***
	former imperial univ. x influence: Faculty committee	**-.025**	**(.019)**	**-.047**	**(0.015) ** **
	former imperial univ. x influence: Individual faculty	**.049**	**(.032)**	**.007**	**(0.026)**
Random effects:	Institution (standard deviation)	.572 ***		.333 ***	
Goodness of Fit indices	deviance explained (v.s. no random effect)	.033 ***		.039 ***	
	deviance explained (v.s. with random effect, intercept only)	.528 ***		.527 ***	
	deviance explained (v.s. null model: no random effect, intercept only)	.585 ***		.586 ***	
	n	651		579	
	n groups (institution)	23		23	

Signif. codes: 0 '***', 0.0 01 '**', 0.01 '*', 0.05 '+'

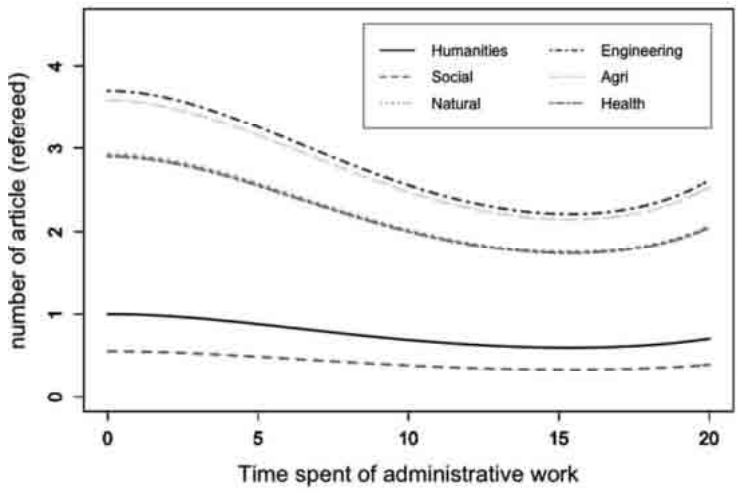


Figure 5. Change in the number of articles by the time spent on administrative work: theoretical value (model 1)

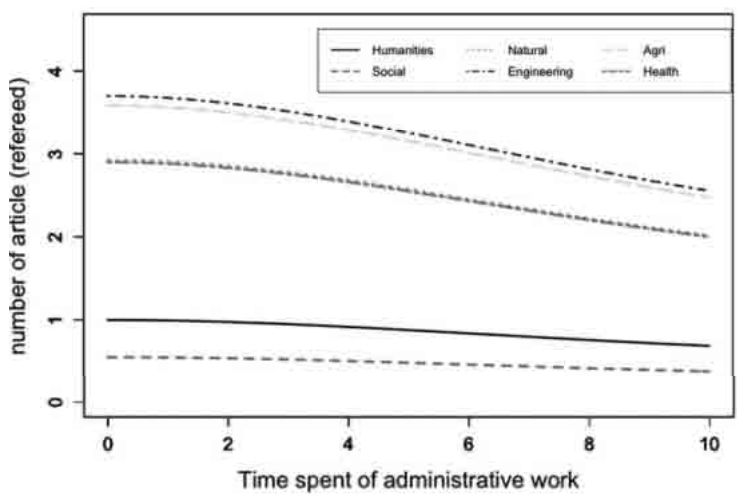


Figure 6. Change in the number of articles by the time spent on administrative work: theoretical value (model 1)

The same tendencies can be seen in Figure 7, in predicted values of research outcome with time cost of governance, based on model 2. Although a gap exists among disciplines, up to 12 hours of administrative workload reduce research outcomes. Then, with over 12 hours of administrative workload, research outcomes begin to increase, as the hypothetical figure shows. However, practical the representative value of time spent for administration is an

average of 6 hours and a median of 5 hours. Therefore, the actual range would be up to around 10. Under this hypothesis, time increase in administration would preclude writing articles (Figure 8).

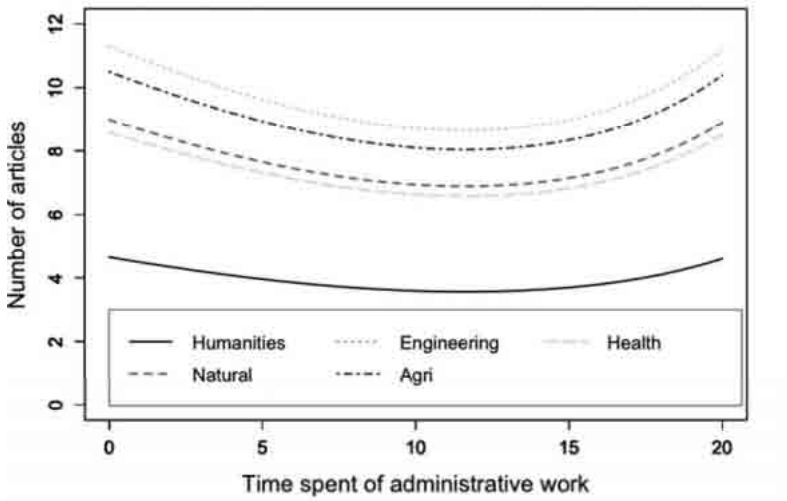


Figure 7. Change in the number of articles by the time spent on administrative work (model 2)

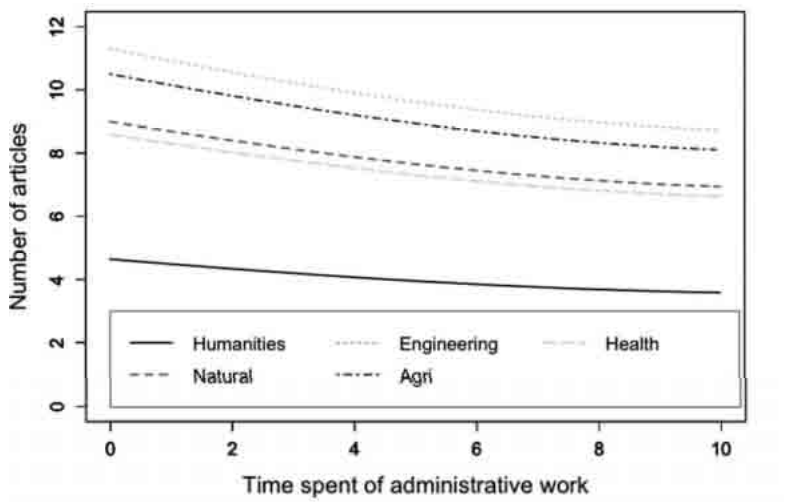


Figure 8. Change in the number of articles by the time spent on administrative work (model 2)

6. Conclusion

Finally, the results may be summarized as follows: Firstly, time cost of governance had mostly a linear relation with research outcomes, reducing research performance. However, there is a gap among disciplines. Secondly, top-down governance effects were inconsistent. Negative effects were seen on refereed articles, and all articles of former imperial universities. Positive effects were seen on all articles published. Those effects may imply that government-led governance does raise the QUANTITY but not the QUALITY of outcomes for Japanese faculties.

Thirdly, bottom-up governance effects are consistent. Positive effects of faculty committees on outcomes could be seen. Fourth, it would be hard to evaluate the positive effects of academic unit managers on outcomes in former imperial university. Is this a top-down or a bottom-up effect? Results of this study suggest reconsideration of the enforcement of top-down governance under Japanese higher education context.

Academic Profession and University Governance Participation in Japan

Akiyoshi Yonezawa*

Introduction

University governance is becoming a core policy issue in Japan and Asia. The increasing pressure of globalization forces every university to implement strategic and speedy decision-making for survival. On the other hand, strengthened leadership by higher education managers may cause tension with faculties' wish to participate in university governance. In the case of Japan, university faculties have enjoyed a systemic assurance of governance participation through faculty and school level "professorate (*Kyojukai*)" under legal settings. Namely, Article 93 of the School Education Act requires each university to have professorates in order to discuss important matters, and that the professorate may include associate professors and other staff members. This implies a powerful role for professors to participate in the university's governance, and also limited leadership influence by presidents and other institutional level managers.

However, in 2013, amendment of this system is now under discussion by the Central Council of Education, the advisory committee of the Ministry of Education, Culture, Sports, Science and Technology (MEXT). The aim of this proposed amendment is to strengthen the decision-making power of university presidents and other institutional level managers. However, there is widespread agreement among academics in Japanese universities that institutional governance authority should be located at the faculty or school level professorate, as a symbol of university autonomy.

* Associate Professor, Graduate School of International Development, Nagoya University, e-mail: yonezawa@gsid.nagoya-u.ac.jp

Discussion of university governance, especially related to the governance authority of professoriate has a long history. Clark (1983) developed a coordination model among university, state, and government. Here, he used a term "academic oligarchy", symbolizing a very strong authority of the professoriate in Italy in 1970s. The introduction of New Public Management in the late 1980s in Europe brought a concept of "institutional autonomy" that referred the United States and British university governance where the institutional managers (university presidents or vice-chancellors) have stronger leadership authority, and intervention by state governments is rather limited.

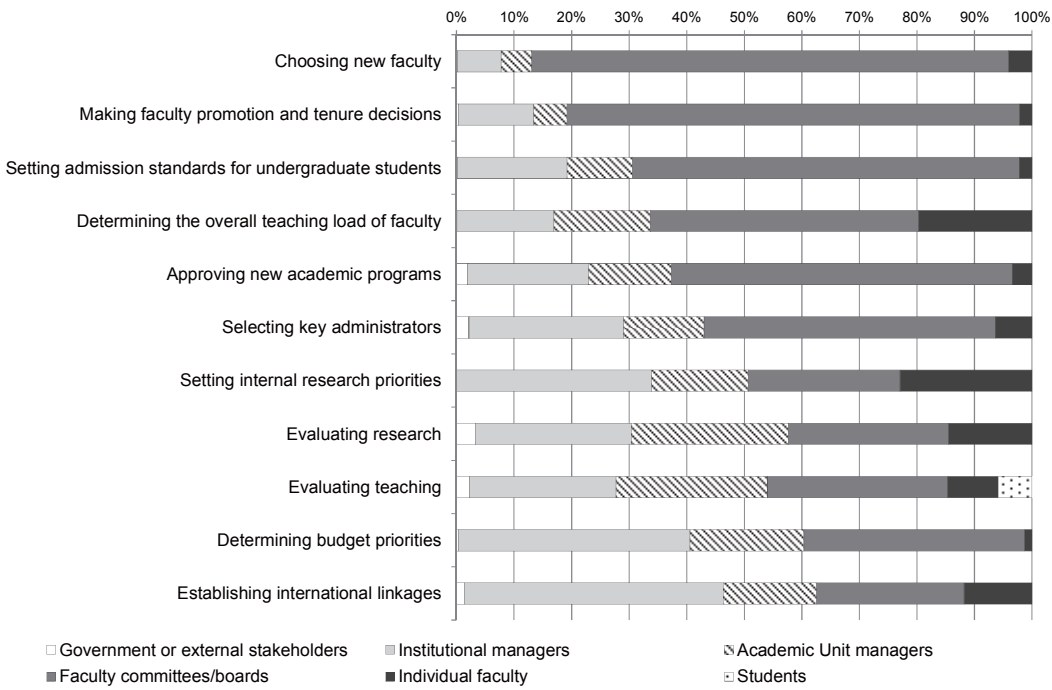
At the same time, the general characteristics of these institutional managers have also shifted from academic icon towards business oriented managers. Ehara (1998) utilized a discussion by McNay (1995) on the changing organizational culture of British universities, to examine the future direction of university governance in Japan. In McNay's argument there are four types of university governance based on the degree of control on university policy definition and practices: (1) collegium (loose policy definition and loose practices); (2) bureaucracy (loose and rigorous); (3) corporation (rigorous and rigorous); and (4) enterprise (rigorous and loose) are identified. Ehara (2010) argues that the recent university reforms have transformed the organizational culture of universities from collegium into enterprise.

Through the comparison of Carnegie data in 1992 and Changing Academic Profession (CAP) data in 2007, Fujimura (2008) concluded that the degree of participation towards university governance by faculty members has decreased among national (public) universities in Japan. On the contrary, he also suggested that the participation by faculty members in private universities, has rather improved while the absolute degree of participation is far below that in public universities. However, his discussion is basically limited to the argument of centralization (top-down) and decentralization (bottom-up) in university governance.

What are the determinants of the characteristics of participation towards university governance by individual faculty members? In this article, the author implements an exploratory analysis of the characteristics of faculty participation towards university governance in Japanese universities, by utilizing data of the Academic Profession in Asia (APA) survey by Arimoto *et al*. The data was collected from stratified quota sampling of 23 universities in Japan. The survey team administered 6,283 questionnaires to faculty members using the name lists available on the websites through postal mails, and received 1,045 responses (16.6%) in November and December 2011.

Influential actors in decision-making

In the questionnaire, actors having primary influence on various types of decisions were queried. As can be seen in the Figure 1, there appears three main actors in the decisions, namely, (1) faculty committee/boards, (2) institutional managers, and to less degree, (3) academic unit managers. In the case of Japan, the exact term used for the category of faculty committee/boards is *Kyojukai*. The questions related to faculty status (choosing new faculties, making faculty promotion and tenure decisions), and academic planning and policy (setting admission standards for undergraduate students, determining the overall teaching load of faculty, and approving new academic programs) are decided mainly by university faculty. On the other hand, decisions related financial planning and policies (determining budget priorities, evaluating teaching and research), and international linkages are decided mainly by the university managers.



Source: by author based on the APA data

Figure 1. Actors who have primary influence on decisions

As to decisions by the university faculty, institutional managers have more influence than academic unit managers in almost all items. As to evaluating teaching and research, academic unit managers have almost equal influence with institutional managers. In Japan, there is some variety in the appointment system of institutional managers. In the case of national universities, each university organizes committee appoint a presidential selection consisting mainly of the university board and senate members both from inside and outside of the university. Based on the recommendation of the selection committees, the MEXT appoints the president of national universities. Then the national university presidents appoint the vice presidents and other board members.

Therefore, theoretically, decisions by institutional managers (presidents and others) should be independent from the preference of faculty representatives. Some national university presidents are actually appointed from outside the university, and sometimes from among non-academics. However, most of the national universities implement the election or 'opinion survey' for knowing the preference of the faculty members, and strong candidates are highly likely to appear from inside. Adding to this, in almost all cases, deans of schools/faculties are elected by the voting of the faculty members. On the other hand, directors of research institutes and centers tend to be appointed by the university presidents, again, frequently referring to the preference of the academic members. Local public universities have similar system with national universities.

More variation can be recognized among the private universities as to the appointment of institutional managers. As legal entities, private universities are operated by school corporations. The top decision-making bodies of a school corporation are the governing boards headed by the chair (*Rijicho*). In some cases, *Rijicho* and the governing board have strong influence in the selection of university presidents. Also the Rijicho and the university president are frequently the same person. On the other hand, old universities typically implement election as the method of selecting university presidents, and the elected presidents may also assume the role of *Rijicho*. Deans are appointed in some private universities but elected in most of the private universities.

Personal influence in helping to shape key academic policies

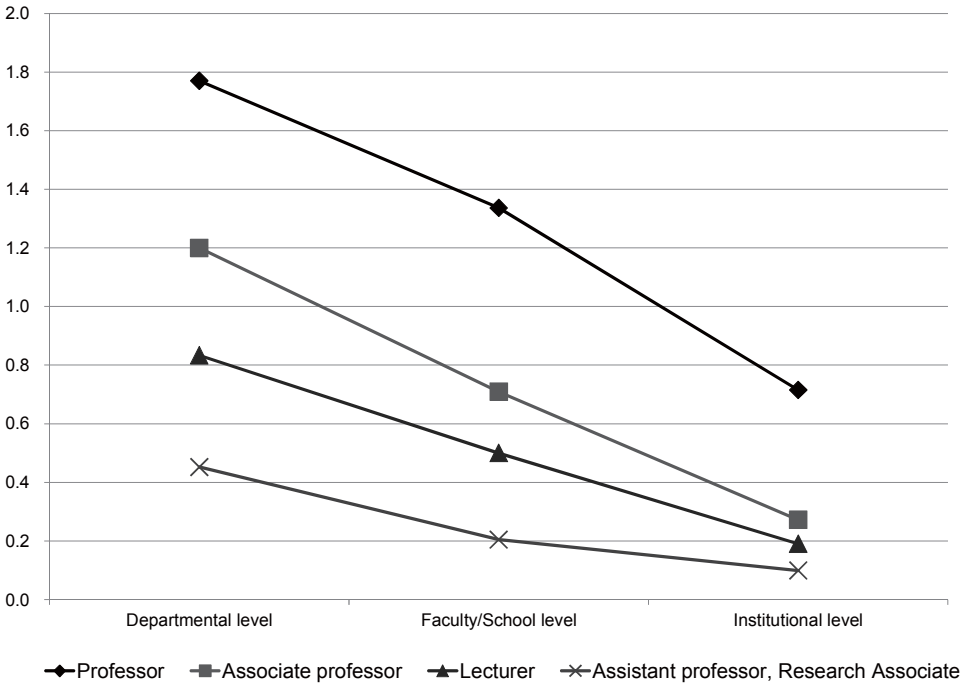
The *Kyojukai* in Japan may also define personal influence as a factor shaping key academic policies among faculty members. The actual discussion of the *Kyojukai* meeting is closed with only members and related administrative

staff as observers. The record of the proceedings may be opened, but it is almost impossible to determine who is influential in the actual discussion. Therefore, we do not have a clear picture based on research of the actual decision-making process through *Kyojukai*. There is a big diversity in the decision-making process and structure among different institutions and schools.

As to the membership professors and associate professors are typically included as members of *Kyojukai*. Lecturers or assistant professors may also be members, but it depends on the regulation and customs of respective schools. Research associates, research assistants and other non-faculty researchers at many are not allowed to attend *Kyojukai*. Some schools and universities also hold *Kyojukai* only for full professors in addition to the regular *Kyojukai*. In *Kyojukai*, main examination agendas such as degree granting and personnel matters are decided by vote of faculty members. Large schools, for example, those with more than one hundred faculty members, tend to treat *Kyojukai* as a meeting for approval, rather than one for active discussion. Many schools tend to have committees for discussion of specific topics such as academic affairs, or small group members to assist the deans (*Shikkobu*). At the department and smaller levels, meetings tend to be open to all academic members, including non-academic members as observers.

Figure 2 outlines the manner in which governance structure of Japanese universities may define the role of personal influence in shaping key academic policies. In general, personal influence tends to increase at a smaller level. It is quite interesting that the results do not indicate that the personal influence is not necessarily highly assured by the existence of *Kyojukai* system at both school/faculty level and institutional levels. At the same time, respondents with higher job status tend to have more personal influence. Especially, the full professorship appears to be a minimum requirement for possessing personal influence at the institutional level.

Decisions of selecting key administrators and setting internal research priorities are decided both by the university faculty and managers. Here, it should be noted that the faculty in the Japanese case is absolutely dominated by *Kyojukai*. In other words, the influence of the individual faculty is highly limited. Their influence can be seen only partially in decision related to setting internal research priorities and evaluating research.



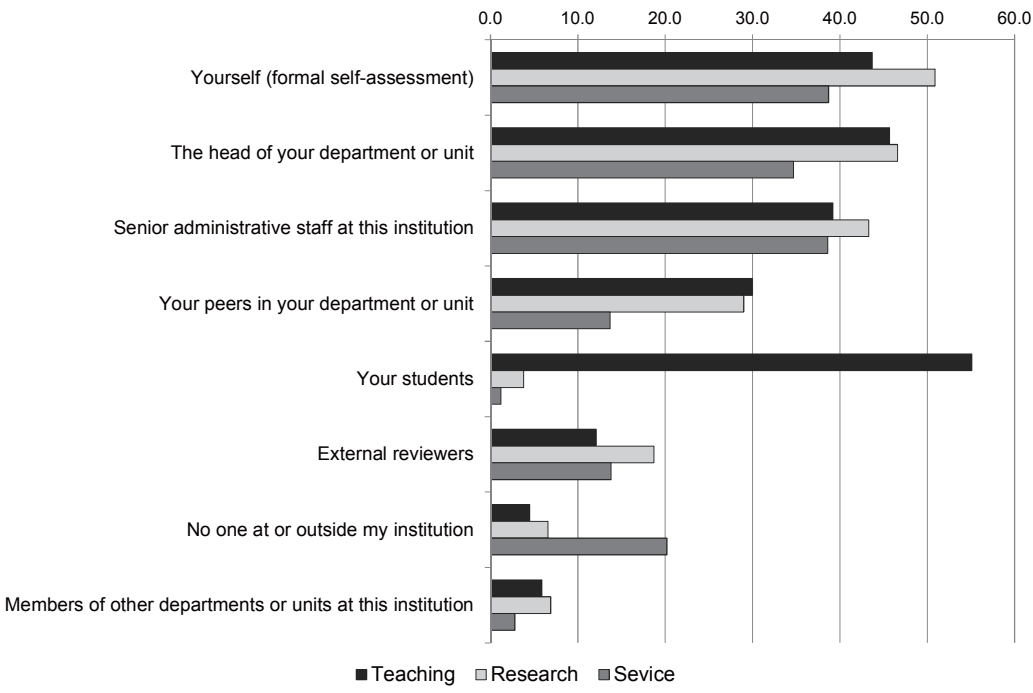
Source: by author based on the APA data

Figure 2. Personal influence in helping to shape key academic policies

Evaluation and assessment

In Japan, the idea of university evaluation occurred in the late 1980s. Since then the practices of evaluation and assessment have been strengthened to demonstrate accountability, quality improvement, and strategic management. Especially after the incorporation of national universities and the introduction of mandatory institutional level accreditation for all public and private universities in 2004, regular based evaluation and assessment towards faculty members have been widely implemented.

In the questionnaire, the assessors of regular based evaluation are answered as multiple choice, and the result is shown at Figure 3. In teaching, students are the primary assessor, and over half of the respondents answered that their teaching is evaluated by their students. At the same time, the result shows that department heads, senior administrative staff and respondents as self-evaluation are equally committed to the assessment in education, research and services respectively.



Source: by author based on the APA data

Figure 3. Assessors of regular based evaluation

Perspectives on governance structure

In the questionnaire, perspectives of respondents towards various aspects of governance structures were asked. Figure 4 presents the summary results of these questions.

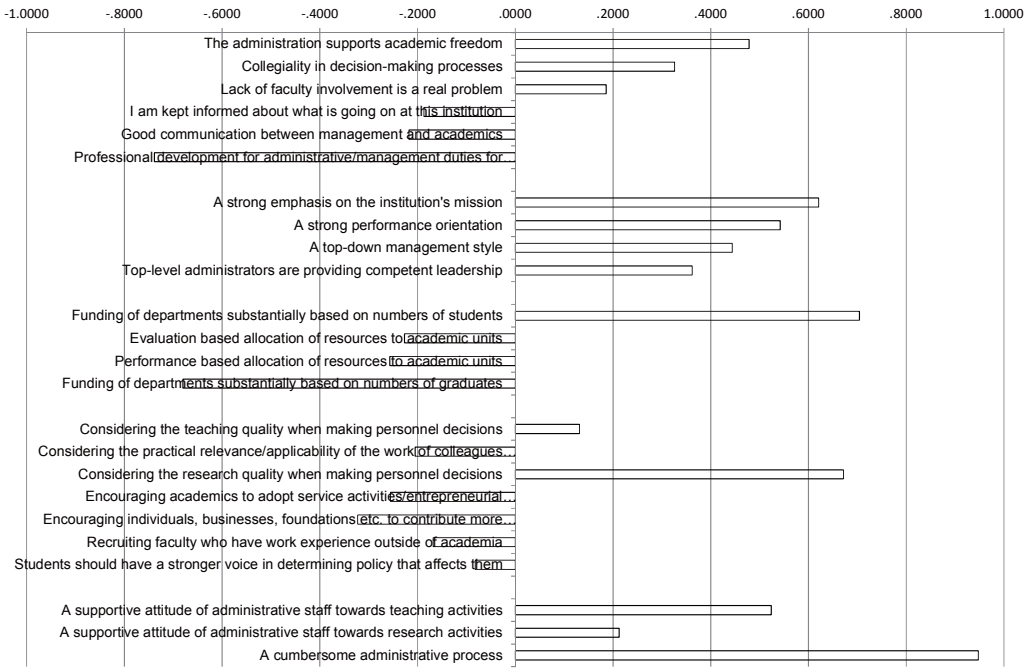
A relatively positive response is shown for collegiality in university governance. Support of academic freedom by university administrators is also perceived positively. However, negative responses appear on communication between management academics, information sharing, provision of professional development for administrative/management duties for individual faculties, and faculty involvement towards university governance.

Top-down governance appears to be more common in recent Japanese universities. Respondents pointed attested to the existence of a top-down management style, stress of institutional mission, competent leadership by the top level administrators, and strong performance orientation. However, actual

administrative practices may not conform to this direction. Funding of departments is basically perceived to be decided by the number of students, and performance based funding does not appear to have been substantially implemented.

Strong attention towards research capacity in the personnel assessment also continues. Responses show that research quality is considered more than teaching quality and practical relevance/applicability of the work. The university industry linkage is not encouraged substantially. Respondents were also satisfied with the supportive attitudes towards teaching and research activities. However, they complained about a cumbersome administrative process.

The aforementioned results suggest incompleteness in practice of stressed ideas both in top-down management and in collegiality. These could be attributed to a long standing bureaucratic routines and customs that may protect a high level of academic freedom and individual autonomy.



Source: by author based on the APA data

Figure 4. Perspectives on governance structure

Conclusion

As to the characteristics of university governance in Japan, we may define it as closer to bureaucratic than collegial. Here, the job status does matter in participation towards governance. At the same time, considering the fact that presidents and deans tend to be elected by the faculties, one cannot draw clear distinction between faculty and mangers in university governance. On the other hand, market based stakeholders, namely, students and industry have substantially less influence in university governance.

This article captures the basic characteristics of university governance in Japan, especially focusing on the participation by the academics. More detailed comparative study with other Asian countries is needed.

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Presentations

Teaching & Research Activities

Survey on the Academic Profession in Cambodia

Yuto Kitamura* and Naoki Umemiya**

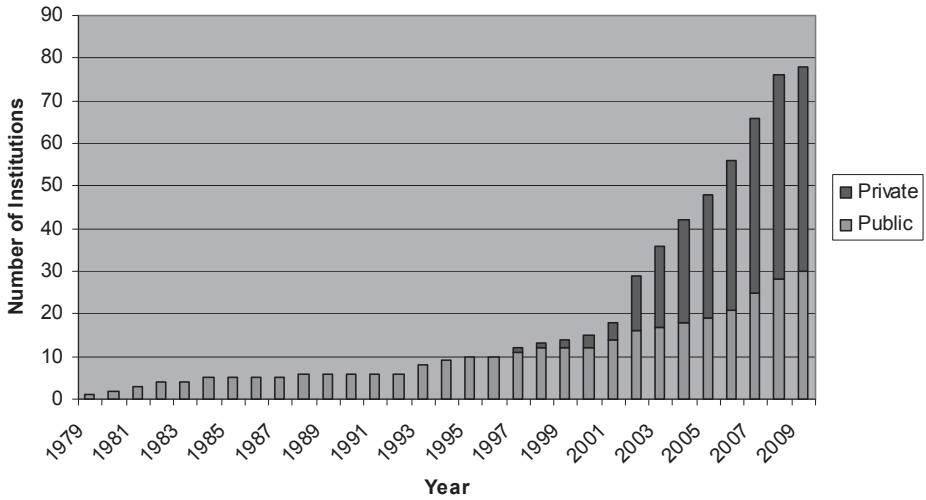
1. Introduction

Cambodia has been expanding its higher education system since the late 1990s, particularly after a relaxation of the university law in 1997 to allow the private sector to establish universities. As can be seen in Figure 1, there was a rapid growth in the number of higher education institutions during the 2000s, and this was mainly due to the establishment of private institutions. This phenomenon reflects the growing need and demand for a highly skilled labor force in the Cambodian labor market under the strong influence of the globalized economy. Also, because of economic growth, there has been an expansion of the middle class population, and the younger generation in this growing middle class has increased aspirations for higher levels of education.

Because of this rapid development of the higher education system, there has been a growing awareness of the importance of improving the quality of teaching and learning at higher education institutions. However, it is not easy to improve the quality of higher education in Cambodia because of its relatively short history, particularly due to the destruction of the entire education system including higher education by the Coalition Government of Democratic Kampuchea in the late 1970s. One of the most serious problems is the shortage of qualified academic staff. (Chealy, 2009) This paper analyzes data obtained through a survey conducted as part of an international research project led by the Research Institute for Higher Education of Hiroshima University on the

* Associate Professor, Graduate School of Education, The University of Tokyo, Japan, e-mail: yuto@p.u-tokyo.ac.jp
** JICA Expert (University Administrative Management), Malaysia-Japan International Institute of Technology (MJIIT), Malaysia/Japan, e-mail: umemiya@mjiit.jp

academic profession in Asian countries, with an objective to reveal and better understand current conditions and challenges of academic staff at higher education institutions in Cambodia.



Source: Williams & Kitamura (2011)

Figure 1. Growth in the number of higher education institutions (1979-2009)

2. Data collection

This survey on the academic profession in Cambodia was conducted in collaboration with the Japan International Cooperation Agency (JICA) which coordinated the survey activities in Cambodia. The survey was conducted at 11 selected universities, both public and private, that deliver undergraduate and graduate programs. The respondents were academic staff of the targeted universities.

The self-administered questionnaire, which had been commonly designed for all ten countries participating in the research project, was modified slightly by the authors in order to capture the realities of academic staff in Cambodia. Both English and Khmer language versions of the questionnaire were prepared and delivered to the universities in November 2011, along with technical guidelines for completing the questionnaires.

According to the statistics of the academic staff at each university, it was expected that a minimum of 800 completed questionnaires should be collected. It was also noted that a number of academic staff teach at more than one university and thus they would be required to complete only one questionnaire

for the university they think appropriate for their responses. The completed questionnaires were collected by the end of February 2012.

The questionnaires were actually collected from only 10 universities, with one university being dropped from the survey due to a mismatch with the scope of the study. A total of 539 questionnaires were collected but eight duplications were found (*i.e.*, eight respondents completed two questionnaires) and were thus excluded. Among the eight duplicated pairs, seven were from the Institute of Technology of Cambodia and one was from Cambodia University of Specialties. So a total of 531 completed questionnaires were analyzed (Table 1).

Table 1. Collected completed questionnaires

Name	Type	Location	No. of questionnaires
Norton University	Private	Capital	95 (17.9%)
Royal University of Agriculture	Public	Capital	65 (12.2%)
Royal University of Phnom Penh	Public	Capital	99 (18.6%)
Institute of Technology of Cambodia	Public	Capital	64 (12.1%)
Pannasastra University of Cambodia	Private	Capital	44 (8.3%)
University of Battambang	Public	Non-capital	29 (5.5%)
Cambodia University of Specialties	Private	Capital	44 (8.3%)
Royal University of Law and Economics	Public	Capital	25 (4.7%)
Svay Rieng University	Public	Non-capital	15 (2.8%)
Royal University of Fine Arts	Public	Capital	51 (9.6%)
Total			531 (100.0%)

The majority of respondents were male (452 respondents; 85.1%) while 13.4 percent of respondents were female (71 respondents). The rest (eight respondents; 1.5%) were unknown. This proportion reflects the composition of academic staff by gender in the overall higher education system in Cambodia, which was confirmed by both university administrators of the targeted institutions as well as officials of the Cambodian Directorate General of Higher Education at the Ministry of Education, Youth and Sport (MoEYS).

As Table 2 shows, around 65% of the respondents were relatively young and under 40 years old, mainly because of the historical circumstances of Cambodia. This proportion also reflects the composition of academic staff by age group in the overall higher education system in Cambodia, which was confirmed by both university administrators and ministry officials (same as gender). The Coalition Government of Democratic Kampuchea (1975-1979), which was led by Pol Pot, abolished the entire education system and destroyed many educational facilities. More than three quarters of all university academic

staff and 96 percent of students were massacred by the Khmer Rouge (Ayres, 2000). Even after the end of the Pol Pot regime period, there were continuous internal conflicts and civil wars in Cambodia up to the middle of the 1990s, and it was very difficult for higher education institutions to educate and train their academic staff. This situation has resulted in fewer staff in their 40s and 50s.

Table 2. Composition of respondents by age

Age	Number
Over 61 years old	4 (0.8%)
51-60 years old	44 (8.3%)
41-50 years old	115 (21.7%)
31-40 years old	221 (41.6%)
21-30 years old	131 (24.7%)
Other or N.A.	16 (3.0%)
Total	531 (100.0%)

3. Career and professional situation

It is widely recognized that the qualifications of academic staff affect the quality of teaching and learning at higher education institutions. In the case of Cambodia, this has been a serious problem and the government and higher education institutions have been placing significant emphasis upon upgrading the academic qualifications of academic staff since the 1990s (Chealy, 2009). However, the average number of years of education after secondary level for academic staff at both public and private institutions was still around 5.5 years in 2008 (Williams & Kitamura, 2011). This means that the majority of academic staff have received an undergraduate education and some post-graduate training.

At the institutions where the survey was conducted the situation seems to be somewhat better than many other higher education institutions in Cambodia. The majority of respondents (375 respondents; 71%) held a master's degree. But at the same time, we have to recognize that doctoral degree holders were still limited to only 9 percent (49 respondents) of all respondents, while 19 percent (101 respondents) held only bachelor's degrees.[1]

As Table 3 shows, the proportion of doctoral degree holders was high in the social sciences, engineering and agriculture, while it was low in the humanities,

[1] There were six respondents (1.1%) who did not provide clear information about their educational background.

natural sciences and fine arts. However, it is important to note that in any disciplinary field the proportion of doctoral degree holders is usually 20 percent or lower, and we need to stress that more efforts to encourage and support academic staff to upgrade their academic qualifications are required.

Table 3. Degrees of academic staff (by discipline)

	Humanities	Social sciences	Natural sciences	Engineering	Agriculture	Health/ Medical sciences	Fine arts	Teacher Training & Education science	Other	Not applicable	Total
Doctor's	2	12	5	10	6	0	1	5	4	0	45
Master's	29	65	56	42	36	2	8	16	39	2	295
Bachelor's	15	6	7	5	2	0	31	4	11	2	83
Sub-total	46	83	68	57	44	2	40	25	54	4	423
% of Doctor's	4.3	14.5	7.4	17.5	13.6	0.0	2.5	20.0	7.4	0.0	10.6

The majority of respondents obtained their bachelor's degree in Cambodia, particularly those who were under 40 years old, and this can be considered to be a result of the expansion of the Cambodian higher education system, as Figure 1 shows. At the same time, it is obvious that over half of the master's degree holders and the doctoral degree holders obtained their degrees abroad. This data shows that even though Cambodian higher education institutions have significantly developed their bachelor's programs, most of them are still struggling to provide post-graduate programs. (Table 4)

Table 4. Country in which academic staff obtained their degrees (by age)

Age	Cambodia			Overseas			Total		
	Bachelor's	Master's	Doctor's	Bachelor's	Master's	Doctor's	Bachelor's	Master's	Doctor's
Over 41 yrs old	97	52	6	49	75	19	146	127	25
Under 40 yrs old	325	133	5	16	148	19	341	281	24
Total	422	185	11	65	223	38	487	408	49

It is interesting to note that among the respondents who held a doctoral degree, those who were 41 years old or older mainly obtained their degrees in the United States, while those who were 40 years old or younger obtained their degree in Japan (Table 5). These data reflect the fact that the Japanese government and Japanese higher education institutions have been actively providing opportunities for Cambodian academic staff to receive post-graduate education since the 1990s, mainly by offering scholarships to young Cambodian scholars as part of its official development assistance.

Table 5. Country in which academic staff obtained their doctoral degree

Age	BD	CZ	UK	FR	DE	ID	JP	KR	PH	PL	RU	SG	TH	US	Total
Over 41	1	1	0	1	0	0	2	1	2	0	2	1	0	8	19
Under 40	0	0	1	2	1	1	9	0	2	1	1	0	1	0	19
Total	1	1	1	3	1	1	11	1	4	1	3	1	1	8	38

Note: Bangladesh: BD, Czech: CZ, England: UK, France: FR, Germany: DE, Indonesia: ID, Japan: JP, Korea: KR, Philippines: PH, Poland: PL, Russia: RU, Singapore: SG, Thailand: TH, United States: US

Moreover, almost all of the academic staff who held doctoral degrees were found at higher education institutions in Phnom Penh, the capital city of Cambodia. Regarding the degree they obtained, we did not find any significant difference between the capital city and non-capital cities up to the master's level. We anticipate that gradually there will be more academic staff who hold the highest degree, but at this moment, the Cambodian higher education system is still in the initial stage of expanding outside Phnom Penh, and it may take more time to see more qualified academic staff at institutions in non-capital cities since there still are not enough highly qualified staff even in Phnom Penh. (Table 6)

Table 6. Country in which academic staff obtained their degree (by type of institution)

Type of institution	Cambodia			Overseas			Total		
	Bachelor's	Master's	Doctor's	Bachelor's	Master's	Doctor's	Bachelor's	Master's	Doctor's
Capital public	254	82	5	32	158	23	286	240	28
Non-capital public	40	31	0	2	7	1	42	38	1
Private	138	81	6	35	60	14	173	141	20
Total	432	194	11	69	225	38	501	419	49

Table 7. Duration of current employment contract

Type of institution	Permanently employed	Fixed-term employment	Other	N.A.	Total
Capital public	242	41	13	8	304
Non-capital public	38	3	0	3	44
Private	71	89	18	5	183
Total	351	133	31	16	531

Regarding the working conditions of academic staff, more than half of them (66%) were permanently employed, while 25 percent of respondents were on fixed-term employment contracts. It is clear that public institutions offer more permanent employment, as over 50 percent of the respondents at private institutions were in fixed-term employment. (Table 7)

Also, nearly half of the respondents (44%) had additional employment, with around half of these working for another university. This situation reflects the low salary level of academic staff at higher education institutions in Cambodia and the need for them to earn additional income. Also, there is a shortage of academic staff at many higher education institutions because of the rapid expansion of the higher education sector and a lack of qualified teaching personnel at many institutions. It is apparent that at private universities, more than half of the academic staff engage in paid work in addition to their regular jobs. (Table 8)

Table 8. Additional employment / Additional remunerated work

Type of institution	No	University	Business	Non-profit	Self-employed	Other	N.A.	Total	% of those who have additional work
Capital public	180	67	9	16	20	1	11	304	37.2
Non-capital public	33	6	1	0	3	1	0	44	25.0
Private	71	45	20	25	12	5	5	183	58.5
Total	284	118	30	41	35	7	16	531	43.5

The data presented in this section reveal that the situation seems to be improving, at least at the leading institutions at which the survey was conducted this time; however, there is still a need to make further efforts.[2]

[2] We also collected data on the academic rank of the respondents and the majority reported that they were either a Professor (33%) or Lecturer (56%), while very few responded that they were either an Associate Professor (2%) or Assistant Professor/Research Associate (1%). The rest placed themselves in some other category such as Research Assistant, Assistant, and Other. In fact, this data puzzled us because to our knowledge, most of the academic staff at higher education institutions in Cambodia hold the rank of Lecturer and very few are ranked as executives (*i.e.*, Rector, Vice-Rector, Director, *etc.*) and/or Professor. A new system of classifying academic rank was introduced quite recently in 2012 and very few academic staff have adopted the new ranks which are based on the American system (*i.e.*, Professor, Associate Professor, Assistant Professor, *etc.*). We discussed this with a high ranking official from the Accreditation Committee of Cambodia and he confirmed that some of the academic staff simply refer to themselves as Professor, even though their actual rank is Lecturer, because they may be senior at the particular institution and/or consider the word "Professor" as a general designation for academic staff at higher education institutions.

4. General work situation and activities

This section discusses the major findings from the analysis of responses with regard to the general work situation and activities of the respondents. Firstly, respondents were asked how many hours they spent in a typical week on each of several different categories of activities, when classes are in session. Table 9 shows the mean hours spent on each category of activity by age group.

Table 9. Mean hours spent when classes are in session by age group

Age	Number	Teaching	Research	Service	Administration	Other academic activities	Total
Over 61 years old	4	8.00	2.00	0.00	3.00	2.00	15.00
51-60 years old	44	15.41	11.77	6.67	9.09	5.25	48.19
41-50 years old	115	13.00	11.82	15.00	11.00	6.63	57.44
31-40 years old	221	13.70	9.95	8.33	11.04	7.25	50.27
21-30 years old	131	18.05	14.41	6.42	13.97	5.83	58.67
Other or N.A.	16	18.43	5.00	0.00	2.00	12.50	37.93
Total	531	14.77	11.45	9.43	11.47	6.63	53.75

Major findings from this table can be summarized as follows: First, the teaching load for each staff member, especially those between 21 and 30 years old, was heavy. The greatest amount of time (14.77 hours on average) was spent on teaching. This could be due to the overall shortage of academic staff, which has resulted in a heavy teaching load for each staff member. Second, all staff across different age groups spent a great deal of time on administrative work. The second greatest amount of time, 11.47 hours on average, was spent on administration. Third, less time (11.45 hours on average) was spent on research. Fourth, of the different age groups, young staff in their 20s spent the greatest amount of time, and those in their 30s spend the second greatest amount of time on administration, which is not very usual in other countries, where administration work is taken care of by senior staff. This is due to the specific historical background of Cambodia, resulting in a shortage of senior staff who would normally be expected to take on this responsibility. Academic staff in their 20s and 30s have to spend more time on teaching and administration, which results in their spending less time on research. This is one of the most serious issues for Cambodian universities.

Then the respondents were asked how many hours they spent in a typical week on each of these activities, when classes were not in session. Table 10

shows the mean hours spent on each category of activity by age group.

It was found that first, academic staff spent the greatest amount of time (12.01 hours on average) on research. Much time was also spent on teaching and administration: on average, 10.49 hours and 8.84 hours, respectively. Interestingly, the teaching load was heavy, even when classes were not in session. This could be because academic staff spent time on part-time teaching outside their university as discussed earlier.

Table 10. Mean hours spent when classes are not in session by age group

Age	Number	Teaching	Research	Service	Administration	Other academic activities	Total
Over 61 years old	4	3.33	8.00	5.00	4.00	2.00	22.33
51-60 years old	44	11.94	14.10	6.86	4.56	8.30	45.75
41-50 years old	115	11.04	10.83	12.20	11.69	5.20	50.96
31-40 years old	221	9.28	12.43	7.75	9.49	3.73	42.68
21-30 years old	131	12.38	11.52	3.77	7.85	3.73	39.25
Other or N.A.	16	16.50	10.00	0.00	0.00	0.00	26.50
Total	531	10.49	12.01	7.03	8.84	4.53	42.90

Table 11 shows the mean hours spent on each activity when classes were in session, by type of institution.

It was found that first, the teaching load was heavy, especially at private universities. On average, 17.78 hours was spent on teaching at private universities; at public institutions it was only about 13 hours. Second, academic staff at public institutions in non-capital cities worked for a longer time (63.05 hours on average) compared to less than 55 hours at other types of institutions. In particular, they spent a great amount of time on administration (23.73 hours on average). A relatively longer time (12.44 hours on average) was spent on research at public institutions in the capital city while only around 10 hours was spent on research at other types of institutions.

Table 11. Mean hours spent when classes are in session by type of institution

Type of institution	Number	Teaching	Research	Service	Administration	Other academic activities	Total
Capital public	304	13.30	12.44	7.93	11.12	6.28	51.08
Non-capital public	44	13.14	9.85	10.83	23.73	5.50	63.05
Private	183	17.78	10.05	10.61	7.16	7.50	53.11
Total	531	14.77	11.45	9.43	11.47	6.63	53.75

Table 12. Mean hours spent when classes are not in session by type of institution

Type of institution	Number	Teaching	Research	Service	Administration	Other academic activities	Total
Capital public	304	9.85	12.86	6.60	10.69	3.93	43.93
Non-capital public	44	6.64	4.25	15.33	12.00	10.00	48.22
Private	183	11.79	11.13	6.79	5.18	5.11	40.00
Total	531	10.49	12.01	7.03	8.84	4.53	42.90

Table 12 presents the mean hours spent on each activity when classes were not in session, by type of institution.

A similar tendency was found even when classes were not in session. In addition, academic staff at public institutions in non-capital cities spent much time on service when classes were not in session.

Table 13. Evaluation of facilities, resources and personnel by type of institution

Type of institution	Classroom	Technology for teaching	Laboratories	Research equipment & instruments	Computer facilities	Library facilities	Personal office space	Secretarial support	Telecommunications
Capital public	2.60	2.83	3.51	3.48	3.08	2.74	3.14	3.16	3.28
Non-capital public	1.55	1.68	2.13	2.15	1.66	1.78	2.05	2.30	2.08
Private	2.19	2.34	2.68	2.84	2.30	2.22	2.66	2.49	2.54
Total	2.37	2.57	3.11	3.16	2.70	2.49	2.89	2.86	2.93

Type of institution	Teaching support staff	Research support staff	Research funding	Retirement arrangements	Paid Sabbatical leave	Travel funds	Other fringe benefits	Intellectual atmosphere	Sense of community
Capital public	3.40	3.69	4.04	3.77	3.63	4.16	4.48	3.27	3.14
Non-capital public	2.56	2.73	2.53	3.06	2.55	2.63	3.29	2.66	2.36
Private	2.53	2.97	3.22	3.58	3.35	3.28	3.64	2.71	2.50
Total	3.02	3.37	3.65	3.65	3.45	3.75	4.11	3.03	2.85

Note: Scores are the average of the points scored by respondents for each question on a scale of 1 to 5, where 1 is "excellent" and 5 is "poor".

Table 13 explains how academic staff evaluated the different kinds of facilities, resources or personnel they needed to support their work, by type of institution.

It was found that the highest ratings for all items occurred at public institutions in non-capital cities, the second highest at private institutions, and the lowest at public institutions in the capital city, except for "teaching support staff" which was rated the highest at private institutions. Though the reason for this result needs to be investigated further, one possible reason is that public

institutions in non-capital cities are relatively new, and thus facilities are in good condition. Second, some items such as "research funding", "travel funds" and "other fringe benefits" were rated very low at public institutions in the capital city.

5. Teaching

This section discusses major findings from the analysis of responses with regard to teaching. Table 14 explains how the respondents rated the quality of the students currently enrolled in their department, by type of institution.

The average rating was between good and fair overall. No big difference was found across the different types of institutions.

Table 14. Evaluation on quality of students

Type of institution	Excellent (1)	Good (2)	Fair (3)	Poor (4)	Don't know	N.A.	Total	Mean
Capital public	10	160	113	6	4	11	304	2.37
Non-capital public	1	19	15	3	1	5	44	2.46
Private	23	82	53	12	3	10	183	2.28
Total	34	261	181	21	8	26	531	2.34

Note: Scores are the average of the points scored by respondents for the question on a scale of 1 to 4, where 1 is "excellent" and 4 is "poor".

Table 15 summarizes the responses to the question: "Over the past five years, to what extent has the quality of educational activities improved at your university?"

Academic staff across the different types of institutions considered that the quality of educational activities had improved, overall. No big difference was found across the different types of institutions.

Table 15. Opinion on improvement of the quality of educational activities

Type of institution	Deteriorated significantly (1)	Deteriorated (2)	Deteriorated somewhat (3)	Improved to some extent (4)	Much Improved (5)	N.A.	Total	Mean
Capital public	2	2	25	213	44	18	304	4.03
Non-capital public	2	0	2	19	12	9	44	4.11
Private	5	2	13	81	57	25	183	4.16
Total	9	4	40	313	113	52	531	4.08

Note: Scores are the average of the points scored by respondents to the question on a scale of 1 to 5, where 1 was "deteriorated significantly" and 5 was "much improved".

6. Research

This section discusses the major findings from the analysis of responses with regard to research. Table 16 shows the number of different scholarly contributions respondents had completed in the past three years, by type of institution.

It was found that public institutions in the capital city were the most productive in five out of the ten items, *i.e.*, books authored, books edited, articles, research reports/monographs, and papers presented at conference, while private institutions were the most productive in the other five items, *i.e.*, professional articles, patents, computer programs, artistic works, and video or films. Public institutions in non-capital cities were less productive overall.

Table 16. Average number of scholarly contributions by type of institution

Scholarly Contributions	Capital public	Non-capital public	Private	Total
(1) Scholarly books you authored or co-authored	4.28	3.11	1.71	3.63
(2) Scholarly books you edited or co-edited	8.24	5.00	4.89	6.86
(3) Articles published in an academic book or journal	5.25	2.50	4.53	4.96
(4) Research report/monograph written for a funded project	3.69	2.00	2.72	3.43
(5) Paper presented at a scholarly conference	4.18	1.00	3.52	3.92
(6) Professional article written for a newspaper or magazine	1.96	3.50	4.59	3.23
(7) Patent secured on a process or invention	0.00	0.00	0.50	0.14
(8) Computer program written for public use	1.94	0.00	3.60	2.33
(9) Artistic work performed or exhibited	1.71	0.00	2.50	2.00
(10) Video or film produced	3.00	0.00	4.17	3.32

7. Internationalization

Though there was no section as such for "internationalization" in the questionnaire, this section discusses the major findings from the questions related to internationalization across different sections of the questionnaire, as it is an important topic for universities today. We tried to ascertain whether there were any differences across the different types of institutions in terms of internationalization, because in other countries, internationalization tends to be promoted more at universities in capital cities than at those in non-capital areas.

Table 17 shows the frequency of foreign academics having taught courses during the past three years.

Table 18 shows the frequency of international conferences and seminars held during the past three years.

Table 19 shows the frequency of foreign students having been enrolled during the past three years.

Table 20 shows the frequency of the institution's students having studied abroad during the past three years.

Table 21 shows the number and percentage of academic staff who have collaborated with international colleagues during the past three years.

Table 17. Frequency of foreign academics having taught courses by type of institution

Type of institution	Frequently (1)	Occasionally (2)	Rarely (3)	Never (4)	Don't know	N.A.	Total	Mean
Capital public	31	159	36	18	21	39	304	2.00
Non-capital public	8	9	4	2	4	17	44	1.70
Private	44	36	24	17	21	41	183	1.80
Total	83	204	64	37	46	97	531	1.91

Note: Scores are the average of the points scored by respondents for the question on a scale of 1 to 4, where 1 is "frequently" and 4 is "never".

Table 18. Frequency of international conferences and seminars by type of institution

Type of institution	Frequently (1)	Occasionally (2)	Rarely (3)	Never (4)	Don't know	N.A.	Total	Mean
Capital public	26	136	66	22	16	38	304	2.20
Non-capital public	8	16	4	2	0	14	44	2.00
Private	29	74	32	10	7	31	183	2.06
Total	63	226	102	34	23	83	531	2.14

Note: Scores are the average of the points scored by respondents for the question on a scale of 1 to 4, where 1 is "frequently" and 4 is "never".

Table 19. Frequency of foreign students having been enrolled by type of institution

Type of institution	Frequently (1)	Occasionally (2)	Rarely (3)	Never (4)	Don't know	N.A.	Total	Mean
Capital public	12	52	75	73	36	56	304	2.55
Non-capital public	0	2	9	7	4	22	44	2.68
Private	14	32	52	19	24	42	183	2.20
Total	26	86	136	99	64	120	531	2.44

Note: Scores are the average of the points scored by respondents for the question on a scale of 1 to 4, where 1 is "frequently" and 4 is "never".

Table 20. Frequency of the institution's students having studied abroad by type of institution

Type of institution	Frequently (1)	Occasionally (2)	Rarely (3)	Never (4)	Don't know	N.A.	Total	Mean
Capital public	62	99	37	31	21	54	304	1.98
Non-capital public	2	9	4	2	4	23	44	1.90
Private	19	54	45	7	20	38	183	2.00
Total	83	162	86	40	45	115	531	1.98

Note: Scores are the average of the points scored by respondents for the question on a scale of 1 to 4, where 1 is "frequently" and 4 is "never".

Table 21. Number and percentage of staff who have collaborated with international colleagues by type of institution

Type of institution	Yes		No		N.A.		Total	
	number	%	number	%	number	%	number	%
Capital public	107	35.2	72	23.7	125	41.1	304	100.0
Non-capital public	7	15.9	6	13.6	31	70.5	44	100.0
Private	47	25.7	38	20.8	98	53.5	183	100.0
Total	161	30.3	116	21.8	254	42.9	531	100.0

Based on Tables 17 to 21, it was found that internationalization is advanced not only at institutions in the capital city but also at the relatively new institutions in non-capital cities, as no big differences were found in the mean frequency of different activities across different types of institutions.

While the above tables are related to internationalization in terms of the activities of academic staff, the two tables below are related to internationalization in terms of research outputs. Table 22 shows the number and percentage of academic staff who have published papers in a language different from the language of instruction at their current institution. Table 23 shows the number and percentage of academic staff who have co-authored with colleagues located in other/foreign countries.

From these two tables, it was found that, in terms of international research outputs, public and private institutions in the capital city were superior to public institutions in non-capital cities. The number and percentage of academic staff who have published a paper in a different language or co-authored with international colleagues at those universities in non-capital cities was relatively limited.

Table 22. Number and percentage of academic staff who have published papers in a different language by type of institution

Type of institution	Yes		No		N.A.		Total	
	number	%	number	%	number	%	number	%
Capital public	65	21.4	67	22.0	172	56.6	304	100.0
Non-capital public	4	9.1	10	22.7	30	68.2	44	100.0
Private	29	15.8	40	21.9	114	62.3	183	100.0
Total	98	18.5	117	22.0	316	59.5	531	100.0

Table 23. Number and percentage of academic staff who have co-authored with international colleagues by type of institution

Type of institution	Yes		No		N.A.		Total	
	number	%	number	%	number	%	number	%
Capital public	48	15.8	68	22.4	188	61.8	304	100.0
Non-capital public	2	4.5	11	25.0	31	70.5	44	100.0
Private	15	8.2	38	20.8	130	71.0	183	100.0
Total	65	12.2	117	22.0	349	65.8	531	100.0

8. Overall satisfaction

Table 24 shows the overall satisfaction rate of staff with their current job, by type of institution.

It was found that first, overall satisfaction was high on average (2.05 points). Second, among the different types of institutions, academic staff at public institutions were satisfied more than those at private institutions. Overall, academic staff at public institutions in non-capital cities were the most satisfied. The mean rating by staff at non-capital city universities was 1.50 on a scale of 1 to 5.

Table 24. Overall satisfaction of staff with current job by type of institution

Type of institution	1 (Very high)	2	3	4	5 (Very low)	N.A.	Total	Mean
Capital public	101	110	67	14	3	9	304	2.01
Non-capital public	31	7	4	1	1	0	44	1.50
Private	54	56	46	14	8	5	183	2.25
Total	186	173	117	29	12	14	531	2.05

Note: Scores are the average of the points scored by respondents for the question on a scale of 1 to 5, where 1 is “very high” and 5 is “very low”.

Table 25 shows overall the satisfaction rate of staff with their current job, by age group. It was found that the younger the staff, the lower the satisfaction.

Table 25. Overall satisfaction of staff with current job by age group

Age	Number	Mean
Over 61 yrs old	4	1.25
51-60 yrs old	44	1.60
41-50 yrs old	115	2.00
31-40 yrs old	221	2.02
21-30 yrs old	131	2.32
Other or N.A	16	2.00
Total	531	2.05

Note: Scores are the average of the points scored by respondents for the question on a scale of 1 to 5, where 1 is "very high" and 5 is "very low".

Table 26. Result of regression analysis on overall satisfaction

		Unstandardized Coefficients	Standardized Coefficients	t
Degree	Master's	-.123	-.060	-.677
	Bachelor's	-.153	-.063	-.658
Academic Discipline	Social Science	-.218	-.098	-.831
	Natural Science	-.571	-.220	-2.080*
	Engineering	-.017	-.006	-.061
	Agriculture	-.037	-.013	-.131
	Health	-1.739	-.116	-1.916
	Fine Arts	-.674	-.232	-2.180*
	Teaching	.713	.148	1.925
	Others	-.487	-.179	-1.737
Type of Institution	Non-capital Public Institutions	-.586	-.168	-2.771**
	Private Institutions	.006	.003	.037
Rating on the quality of students		.299	.215	3.557**
Gender		-.330	-.114	-1.916
Duration of current employment contract (permanent or fixed)		-.004	-.003	-.038
Hours per week when classes are in session (teaching)		.008	.086	1.384
Overall annual gross income in US dollars from current higher education		-2.28E-005	-.090	-1.374

R Square = 0.215, Adjusted R Square = 0.159, * P<0.05, ** P<0.01

Then a regression analysis was conducted, with the overall satisfaction rating as a dependent variable and several variables such as type of degree, academic discipline, type of institution, rating on the quality of students, *etc*., as dependent variables. Table 26 is the result of the analysis.

It was found that first, if the rating on the quality of students is high, the satisfaction level also tended to be high. Second, the satisfaction level of academic staff at public universities in non-capital cities tended to be high, compared to those at public and private institutions in the capital city. Third, the satisfaction level tended to differ across different disciplines.

9. Conclusions

Findings from this survey discussed above can be summarized as follows:

(1) Qualification of academic staff

First, a general tendency to pursue higher degrees at least master's level was found. Second, Japan was found to be a destination for seeking degrees, especially among the younger generation.

(2) Geographic comparison

First, higher satisfaction was found among the academic staff of public institutions in non-capital cities. We need to further investigate the reason behind this tendency. Second, internationalization of research outputs was observed, mainly at capital public institutions, while internationalization was being advanced not only at institutions in capital cities but also at the relatively new institutions in non-capital cities in terms of activities.

(3) Challenges for academic staff

First, academic staff are burdened with greater workloads in terms of teaching and administration and do not have much time for research. Second, academic staff, particularly those in their 30s, are spending long hours working part-time jobs. This is because the kind of work normally taken care of by those in their 40s and 50s need to be shouldered by those in their 30s, because of historical reasons particular to Cambodia.

(4) Items for further investigation

First, we need to understand the quality of teaching/learning and research, and whether higher education institutions and their academic staff are really responding to the needs and demands of Cambodian society today. Second, we need to examine how to improve the working conditions at different types of higher education institutions in Cambodia.

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Educational and Research Activities of the Academic Profession in Japan
－based on the Japanese survey in 2011－

Tsukasa Daizen* and Naomi Kimoto**

Introduction

The main activities of the academic profession are educational and research in nature. The principal purpose of this article is to clarify the present conditions of the educational and research activities of Japanese university professor based on the Academic Profession in Asia (APA) survey carried out in Japan in 2011.

Survey method

Faculties targeted by the questionnaire survey were chosen by a two-stage sampling procedure. Initially, university institutions were sampled, and then target faculties were sampled from those institutions.

At first, from 726 universities which were established in Japan in 2005, we chose 23 universities (five research universities and eighteen non-research universities) based upon university classification (research university or non-research university)[1], establisher (national, public or private institution) and the number of students enrolled.

We randomly selected the faculty by the number shown in Table 1 from the faculty list in the homepage of each 23 universities and sent the questionnaire in

* Professor, RIHE, Hiroshima University, Japan, e-mail: tdaizen@hiroshima-u.ac.jp
** Lecturer, Prefectural University of Hiroshima, Japan, e-mail: kimoto@pu-hiroshima.ac.jp
[1] The criteria used to identify research universities were taken from the typology developed by Amano (1984).

the beginning of November, 2011 to 6,276 faculties and, in the beginning of December, sent a postcard urging the surveyed faculty reply to the questionnaire, responses to which were collected until the end of January, 2013. The number of faculty members responding to the survey was 1,048 (514 from the research universities and 534 from the non-research universities) and the response rate was 16.7 percent.

Table 1. Response rate of each university

No of University	Institution type 1	Institution type 2	Foundation	The number of all faculty	The number of the questionnaire distribution	The number of respondents	Response rate (%)
1	Research Univ.	I	National	1,457	583	109	18.7
2	Research Univ.	I	National	1,654	656	105	16.0
3	Research Univ.	I	National	2,572	875	194	22.2
4	Research Univ.	I	Private	629	252	36	14.3
5	Research Univ.	I	Private	1,811	589	70	11.9
6	Non-research univ.	I	National	519	207	43	20.8
7	Non-research univ.	II	National	424	168	35	20.8
8	Non-research univ.	I	National	334	135	26	19.3
9	Non-research univ.	II	Public	672	268	47	17.6
10	Non-research univ.	III	Private	847	339	52	15.3
11	Non-research univ.	III	Private	851	321	64	20.0
12	Non-research univ.	I	Public	129	57	9	15.8
13	Non-research univ.	II	Private	661	264	49	18.5
14	Non-research univ.	III	Private	65	65	6	9.2
15	Non-research univ.	IV	Private	256	256	53	20.7
16	Non-research univ.	IV	Private	167	167	28	16.8
17	Non-research univ.	IV	Private	141	141	14	9.9
18	Non-research univ.	III	Private	466	466	11	2.4
19	Non-research univ.	III	Public	119	119	19	16.0
20	Non-research univ.	III	Private	167	167	32	19.2
21	Non-research univ.	III	Private	59	59	16	27.1
22	Non-research univ.	IV	Private	74	74	18	24.3
23	Non-research univ.	V	Public	55	55	12	21.8
	Total			14,129	6,282	1,048	16.7

Note: Type I: The institution which offer a doctorate degree by all specialized fields, Type II: The institution which offer a doctorate degree by more than 50 percent of specialized fields, Type III: The institution which offer a master degree by all specialized fields, Type IV: The institution which offer a master degree by more than 50 percent of specialized fields, Type V: The institution which offer only a baccalaureate degree.

Profile of the respondents

Tables 2 & 3 present the nine attributions of the respondents to *the APA survey* and the Japanese overall faculty of 2010 (MEXT, 2010).

Table 2. Response rate of each university

Attribute	Categories	APA in Japan (2011)		School teacher statistical survey (2010)		
Establisher	National	49.0	(513)	35.8	(61317)	***
	Public	8.3	(87)	7.4	(12619)	
	Private	42.7	(448)	56.8	(97300)	
	Total		(1048)		(171236)	
Gender	Male	84.8	(882)	79.7	(136541)	***
	Female	15.2	(159)	20.3	(34695)	
	Total		(1041)		(171236)	
Age	39 and under	25.0	(256)	26.3	(45099)	n.s.
	40～49	29.3	(299)	28.9	(49429)	
	50～59	25.2	(258)	25.8	(44158)	
	60 and over	20.5	(210)	19.0	(32550)	
	Average age	48.3		48.5		
	Total		(1023)		(171236)	
Academic rank	Professor	42.9	(449)	40.5	(69,270)	***
	Associate professor	26.5	(278)	24.1	(41,294)	
	Lecturer	7.3	(76)	11.3	(19,353)	
	Others	23.3	(244)	24.1	(41,319)	
	Total		(1047)		(171236)	
Academic discipline	Humanities	10.7	(111)	13.4	(23,144)	***
	Social sciences	12.5	(130)	13.8	(23,768)	
	Natural sciences	19.8	(206)	8.7	(14,965)	
	Engineering	27.5	(286)	15.1	(26,056)	
	Agriculture	5.8	(60)	3.8	(6,581)	
	Health/medical sciences	18.8	(195)	33.0	(57,049)	
	Others	4.9	(53)	12.3	(21,165)	
	Total		(1039)		(172,728)	

Note: The values in the table are ratio. The values in ( ) are frequency.
*** $p<0.001$, n.s.: no significant

Establisher

There are three establishers of post-secondary educational institutions in Japan: national, public and private. Of the 1,048 respondents, 513 (49.0%) from the national university, 87 (8.3%) from the public university and 448

(42.7%) from the private university.

Looking at the establisher of institution which all the 171,236 Japanese university professors belong to, 35.8 percent from the national university, 7.4 percent belong to the public university and 56.8 percent belong to the private university.

There are significant differences in the proportions of the three establishers between the APA survey and the School Teacher Statistical Survey 2010. The percentage of teachers who belong to the national university in the APA survey was significantly higher than in the School Teacher Statistical Survey 2010.

Gender

The composition ratio of respondents by gender was 84.8 percent men and 15.2 percent women. The male professors of the APA survey was approximately 5 percent higher than the male professors of the School Teacher Statistical Survey 2010.

Age

The composition ratio of respondents by age was 39 under (25.0%), 40-49 (29.3%), 50-59 (25.2%), and 60 and over (20.5%). Compared to the composition ratio by age of APA survey 2011 was not different from the composition ratio by age of School Teacher Statistical Survey 2010.

Academic rank

The composition ratio of respondents by academic rank was professor 42.9 percent, associate professor 26.5 percent, lecturer 7.3 percent and others 23.3 percent. Compared to the composition ratio by the academic rank of APA survey 2011 was significantly different from the composition ratio by the academic rank of School Teacher Statistical Survey 2010. The ratio of professor or associate professor of the APA survey 2011 was significantly higher than the ratio of professor or associate professor of School Teacher Statistical Survey 2010.

Academic discipline

The composition ratios of respondents by academic disciplines were: Humanities 10.7 percent, Social sciences 12.5 percent, Natural sciences 19.8 percent, Engineering 27.5 percent, Agriculture 5.8 percent, Health/medical sciences 18.8 percent, and Others 4.9 percent. Compared to the School Teacher Statistical Survey 2010, there were more respondents in the fields of Natural

science and Engineering and there were fewer respondents in the fields of Health/medical sciences.

Academic credentials

The composition ratio by academic credentials was doctorates 81.6 percent, master's degrees 14.8 percent and bachelor's degree 3.7 percent (Table 3).

Employment situation

The composition ratio by type of employment was: permanently employment 66.5 percent, fixed-term employment 31.2 percent and others 2.3 percent.

Years of working in affiliated university

Respondents have been working in the affiliated university for an average 10.7 years.

Years of working in higher education institutions

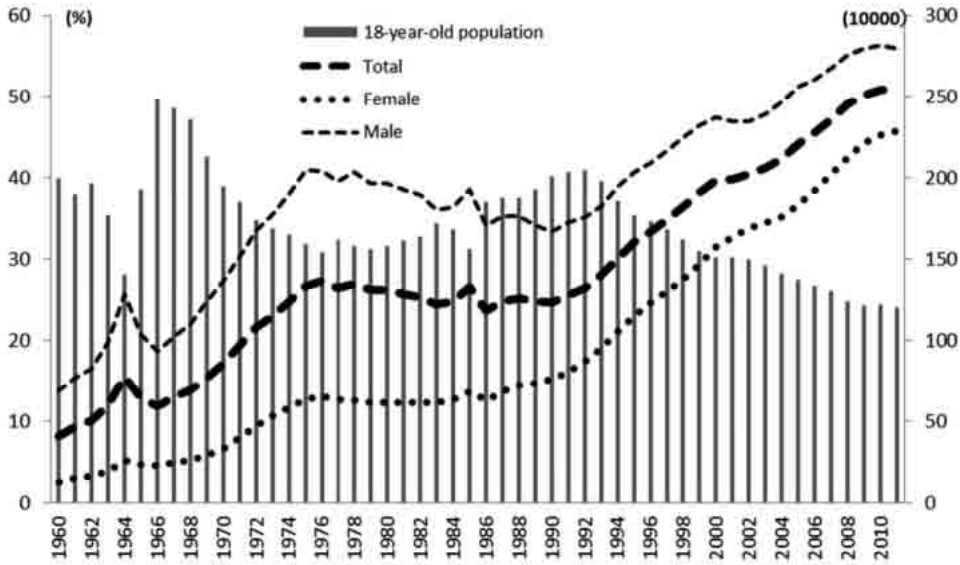
Respondents have been working in higher education institutions for an average 15.3 years.

Table 3. The attribute distribution of the respondents and all faculty in Japan

Attribute	Categories	APA in Japan (2011)	
Academic credentials	Doctorates	81.6	(845)
	Master's degrees	14.8	(153)
	Bachelor's degrees	3.7	(38)
	Total		(1033)
Employment situation	Permanently employed	66.5	(691)
	Fixed-term employmen	31.2	(324)
	Other	2.3	(24)
	Total		(1036)
Years of working (in the Affiliated university)	Average years	10.7	(853)
Years of working (in the Higher Education Institutions)	Average years	15.3	(958)

Education activities

Figure 1 shows that in contrast with the decreasing population of 18 year-olds[3] in Japan, the rate of advancement to higher education is more than 50 percent, placing Japan in the *universal access* stage of education (Table 4).



Source: Ministry of Education, Culture, Sports, Science, and Technology "School Basic Survey"

Figure 1. 18 year-old population and Advancement Rate to Higher Education (1960–2010)

Table 4. Percentage of advancement to higher education institutions (2011)

Institution	Total	Male	Female
University	51.0	56.0	45.8
University & Junior College	56.7	57.2	56.1
Higher Education	79.5	77.8	81.4

Figure 2 depicts a breakdown of the types of classes that faculty members teach. On average, 75 percent of the classes taught by faculty members are at the undergraduate level and 25 percent are post-graduate level. In other words,

[3] This is the age at which students graduate from high school.

faculty members are responsible for teaching a broad range of class levels, from liberal arts education to specialized graduate school courses.

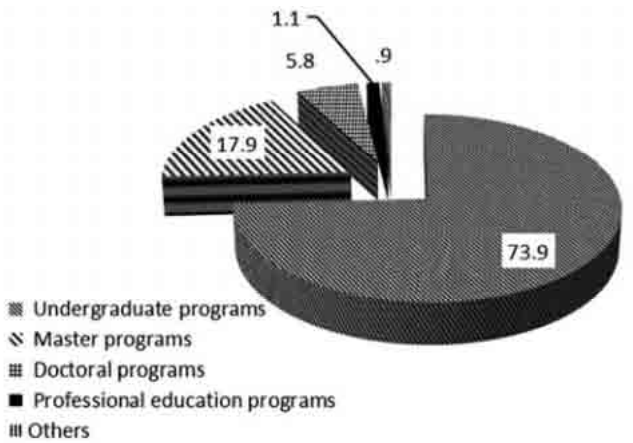


Figure 2. Breakdown of faculty members' teaching responsibilities

However, the numerical standards of university education in Japan are not strictly defined. Figure 3 presents the percentages of faculty members who reported that their university has standards for the five given items. (Q: Does your institution set quantitative load targets or regulatory expectations for individual faculty?) The totals show that 60.4 percent of universities stipulate the number of instructional hours; however, standards for quantitative targets, such as the percentage of students who pass exams and the number of students in a class, are not considered important.

Based on the current situation described above, by comparing institution type and the institution's Academic discipline,[4] we clarified certain characteristics pertaining to university education in Japan. However, owing to the small sample of universities in the category "Institutions that only award a baccalaureate degree" and faculty type "Others," they have been omitted from the analysis.

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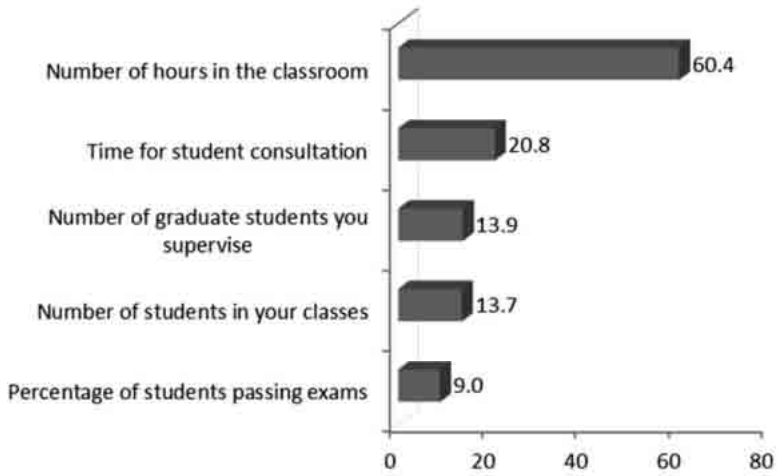
[4] ・Humanities & Social Sciences
・Natural Sciences & Agriculture
・Engineering
・Health/Medical Science
・Others



Note: Numerical values represent the proportion of "yes" responses.

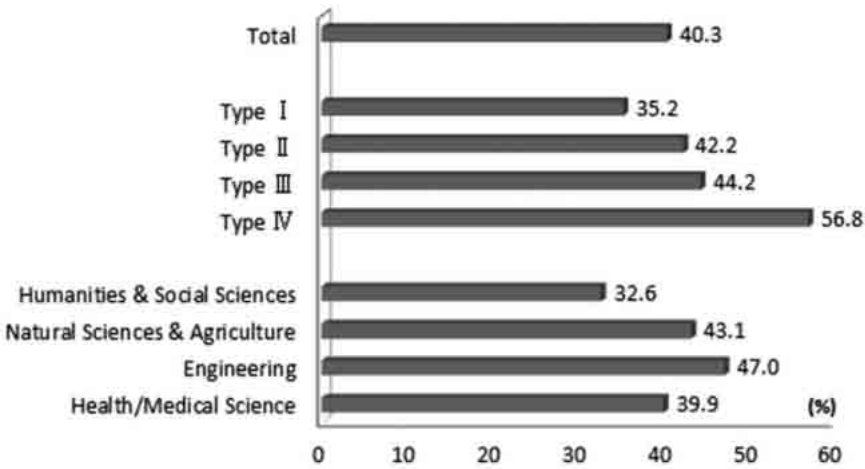
Figure 3. Percentage of universities with numerical standards

Quality of students

Amid the advancement of student diversity, how do faculty members evaluate the quality[5] of students? Figure 4 presents the results of a questionnaire where faculty members were asked to compare their current students with students from five years ago. Overall, 40.3 percent of the faculty members evaluated the quality of the current student population as "Poor". Although not shown in the figure, the percentages of faculty members who selected other evaluations are as follows: "Excellent" (1.6%); "Good" (7.8%); "Fair" (40.5%); and "Don't know" (9.8%).

A few faculty members thought that the quality of students was improving, although the proportion of faculty members who rated the current student quality as "Fair" was almost the same as those who responded with "Poor". However, the rate of "Poor" responses varied with university institution ($p<0.01$) and faculty type ($p<0.01$). In particular, many faculty members at the so-called Type IV institutions (56.8%) and from faculties of Engineering and Natural Sciences & Agriculture (Engineering, 47.0%; Natural Sciences & Agriculture, 43.1%) responded with "Poor".

[5] It is unclear whether the "quality" mentioned here refers to "academic ability" or to "communication ability", *etc*.



Note: Numerical values represent the rate of "Poor" responses from the choices of "Excellent", "Good", "Fair", "Poor", and "Don't know".

Figure 4. How would you rate the quality of students currently enrolled in your faculty? (Compared with five years ago)

Educational goals

What kinds of goals form the educational base of faculties and universities? (Q: How much does each of the following goals have to do with the objectives of education in your institution?)

Figures 5 & 6 present the results of the faculty members' choices regarding four educational goals.[6] The numerical values represent the rate of "Strongly related" responses.

Overall, "To have students acquire the knowledge and qualifications necessary for them to become professionals" was the most highly represented educational goals, accounting for 56.6 percent of the responses. A significant difference was confirmed between university institutions ($p<0.01$) and faculty types ($p<0.01$). In the Humanities & Social Sciences category, highly represented educational goals were "To have students acquire a broad range of academic interests and knowledge" (57.8%) and "To have students acquire knowledge and qualifications necessary for a member of society" (53.2%)

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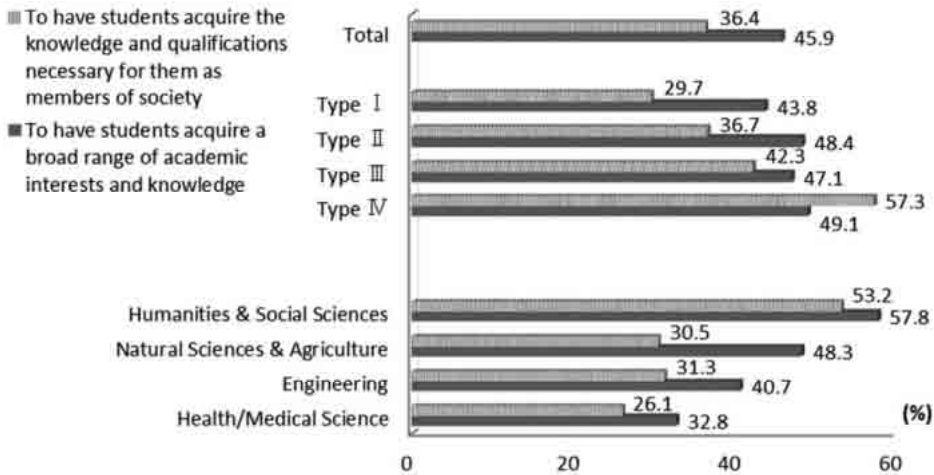
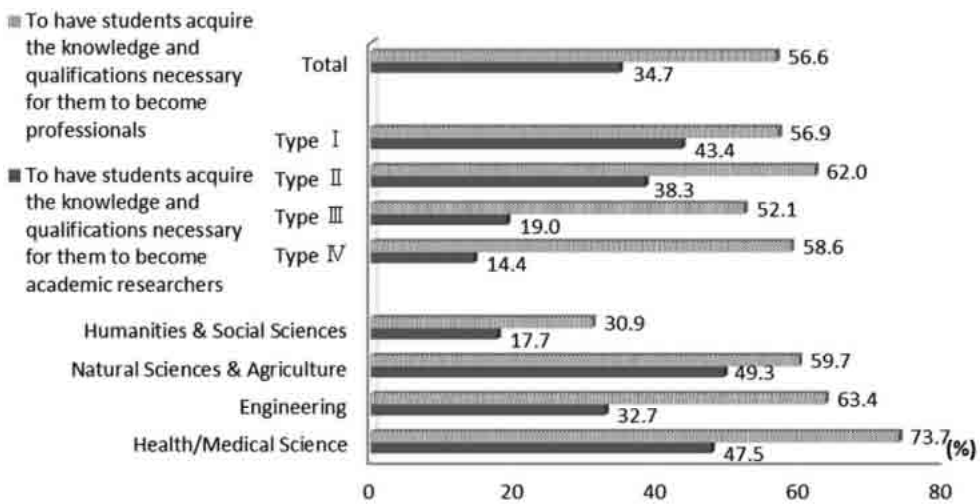
[6] ・To have students acquire knowledge and qualifications necessary for a member of society
・To have students acquire a broad range of academic interests and knowledge
・To have students acquire knowledge and qualifications necessary as a professional
・To have students acquire knowledge and qualifications necessary as an academic researcher

(Figure 5). In contrast, in Health/Medical Science (73.7%), Engineering (63.4%), and Natural Sciences & Agriculture (59.7%), the goal "To have students acquire knowledge and qualifications necessary as a professional" was highly represented (Figure 6). Furthermore, a large number of faculty members responded with "To have students acquire the knowledge and qualifications necessary for them to become academic researchers" in Type I (43.4%), Natural Sciences & Agriculture (49.3%), and Health/Medical Science (47.5%).



Note: Numerical values represent the rate of "Strongly related" responses.

Figure 5. Educational goals 1



Note: Numerical values represent the rate of "Strongly related" responses.

Figure 6. Educational goals 2

Table 5. Average time spent on educational activities per week (When classes are in session/When classes are not in session)

(h)

Institution type	When classes are in session		When classes are not in session	
	Average time	Median	Average time	Median
Type Ⅰ	15.5	14.7	6.2	4.4
Type Ⅱ	19.3	16.7	8.3	6.0
Type Ⅲ	21.6	20.0	7.5	5.1
Type Ⅳ	22.4	20.1	9.5	5.6

Academic Unit	When classes are in session		When classes are not in session	
	Average time	Median	Average time	Median
Humanities & Social Sciences	20.6	19.7	5.8	4.3
Natural Sciences & Agriculture	17.2	15.6	7.5	5.3
Engineering	17.5	15.7	8.1	5.6
Health/Medical Science	14.0	10.2	6.0	3.6
Total	17.9	16.4	7.1	5.0

Time spent on educational activities

How much time do faculty members spend on educational activities (preparation of instructional materials and lesson plans, classroom instruction, advising students, reading, and evaluating student work)? Faculty members were asked how much time they spent on educational activities as an average per week. The results are shown in Table 5. The fact that time spent on educational activities when classes were not in session is significantly less than when classes were in session can be attributed to the amount of number of hours in the classroom. The total average time spent on educational activities when classes were in session was 17.9 hr. and 7.1 hr. when classes were not in session. However, the time spent on activities varied according to the university institution and faculty type. The time spent on activities for Type I institutions (in session, 15.5 hr.; not in session, 6.2 hr.) was low both in session and not in session; in contrast, the time spent on activities for Type IV (in session, 22.4 hr.; not in session, 9.5 hr.) was high in both. In comparing academic discipline, the category with the most time spent on teaching activities when classes were in session was Humanities & Social Sciences (in session, 20.6 hr.).

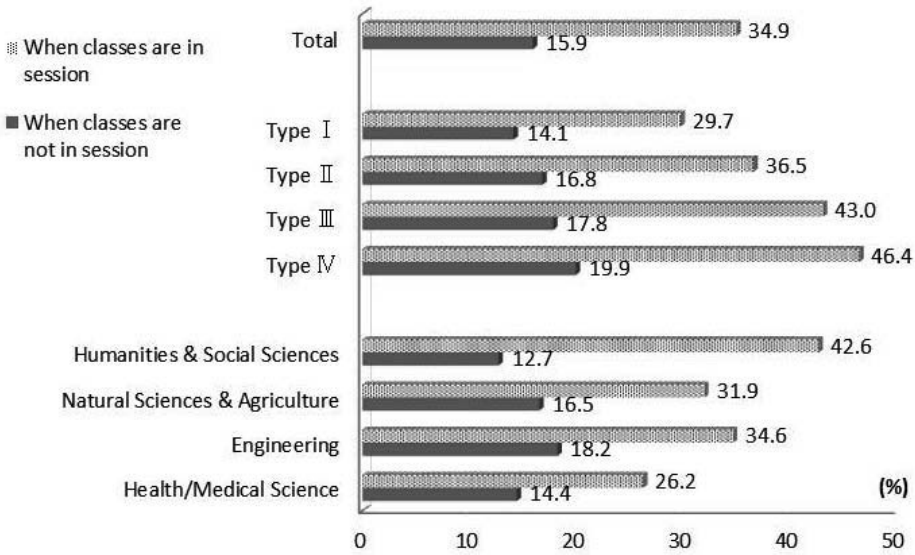


Figure 7. Proportion of time spent on educational activities per week (When classes are in session/When classes are not in session)

Next, Figure 7 shows the amount of time faculty members spent on educational activities as a proportion of the total amount of time spent on activities when classes were in session and not in session. Overall, the educational activities rate was 34.9 percent when classes were in session and 15.9 percent when classes were not in session. This activities rate also varied according to the institution type and faculty type. As seen in Figure 7 the activity rate for Type I institutions when classes were both in session and not in session was low; in contrast, the educational activities rate for Type IV (in session, 46.4%; not in session, 19.9%) was high. For Type IV, teaching accounted for approximately half of the time spent on activities when classes were in session. The rate for the Humanities & Social Sciences faculty was high (42.6%), 16.4 percent higher than for Health/Medical Sciences faculties, which had the lowest rate (26.2%).

Details of teaching activities

What kind of teaching activities do university faculty members perform? Figure 8 depicts the results for 10 teaching activities. In Japan, teaching methods have become primarily classroom instruction or lecture. The implementation rates for "Classroom instruction/lecturing" (91.9%) and "Practice instruction/ laboratory work" (59.4%) are high; however, "Learning in

projects/project groups" (24.8%) is not applied as frequently. Furthermore, "Face-to-face interaction with students outside of class" (58.7%) and "Electronic communications (e-mail) with students" (57.0%) are proactively implemented, whereas "Development of course material" (27.3%) and "Curriculum/program development" (22.8%) are conducted passively. The implementation rate of "Distance education" (5.8%) is also low.

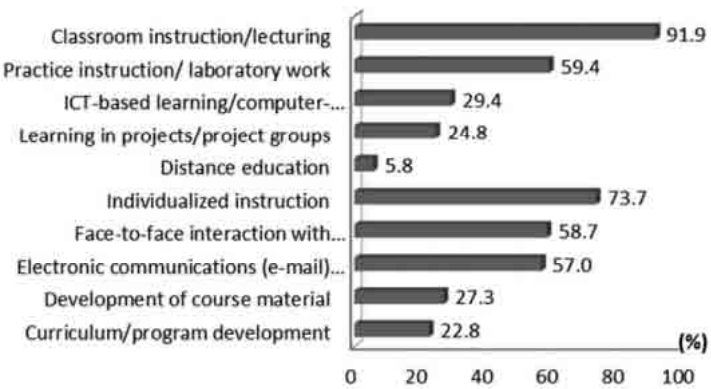


Figure 8. Details of teaching activity

Educational environment

The quality of the educational environment influences the effectiveness of teaching. Faculty members were asked to evaluate nine items. Table 6 presents the rate of "Excellent" or "Very good" responses.

An examination of the totals reveals that only "Telecommunications" has a rate above 50 percent (51.8%). In particular, the rates for institution types, excluding Type I, and for Humanities & Social Sciences are below 50 percent. Thus, the quality of the teaching environment at universities in Japan is below "good". Furthermore, the rate for "Teaching support staff" had the lowest total (19.1%). Upon examination of the correlations between these nine items and time spent on educational activity when classes are in session, correlations with "Library facilities and services", "Office space", "Laboratories", "Telecommunications", and "Computer facilities" were high ($p<0.01$). This indicates that it is not personal assistance (*e.g.*, staff support) that influences educational activity but rather physical elements (*e.g.*, facilities and equipment).

Table 6. Educational environment

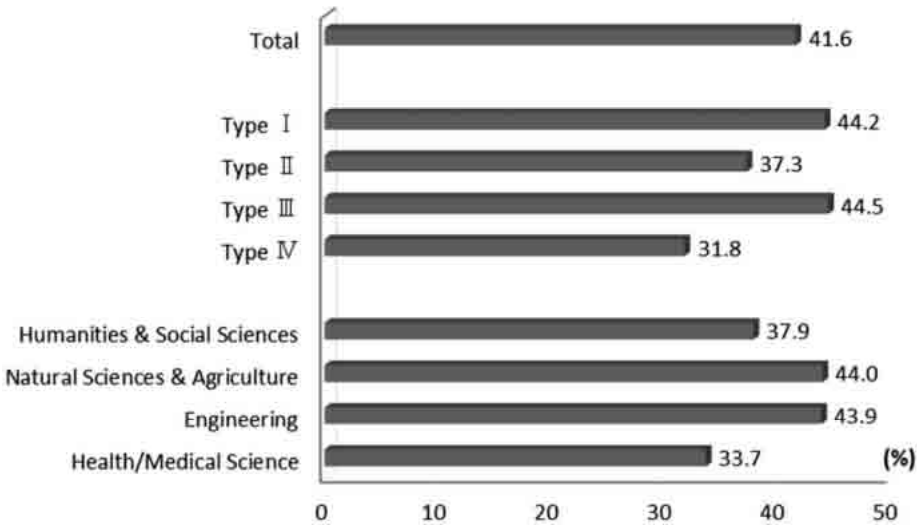
		Total	Institution type				Academic Unit			
			Type Ⅰ	Type Ⅱ	Type Ⅲ	Type Ⅳ	Humanities & Social Sciences	Natural Sciences & Agriculture	Engineering	Health/Medical Science
Facilities	Library facilities and services	46.8	58.1	27.1	41.2	24.8	41.3	50.0	43.7	54.0
	Classrooms	43.7	43.0	43.1	48.5	41.6	37.8	44.5	48.0	38.5
	Your office space	43.2	46.6	28.7	41.4	46.0	46.8	47.4	42.1	35.9
	Laboratories	33.2	37.8	25.0	30.7	23.5	14.2	42.1	39.0	30.1
Equipment	Telecommunications	51.8	59.4	44.2	43.6	38.4	45.6	58.1	54.1	51.0
	Technology for teaching	42.1	40.8	36.4	49.8	38.0	34.1	46.9	47.0	38.3
	Computer facilities	42.1	47.3	34.9	36.2	33.0	34.1	46.9	47.0	38.3
Human	Secretarial support	30.7	33.2	20.0	33.7	27.4	34.6	32.1	27.1	27.0
	Teaching support staff	19.1	19.8	13.4	22.4	17.0	22.3	19.4	16.6	16.3

Note: Numerical values represent the rate of "Excellent" and "Very good" responses on a five-tier rating system from "Excellent" to "Poor".

Quality of education

Now that Japan has entered the universal access stage of higher education, has the quality of university instruction improved over the past five years? Figure 9 shows the results of faculty members' responses related to these questions. The numerical figures represent the proportion of faculty members who responded "Much Improved" or "Improved to some extent".

Less than half (41.6%) of the respondents acknowledged an improvement in the quality of university education in Japan. In terms of university institution types, faculty members of Type III (44.5%) and Type I (44.2%) institutions considered that their university educational activities had been improved compared with those of Type II (37.3%) and Type IV (31.8%). More faculty members from the faculties of Natural Sciences & Agriculture (44.0%) and Engineering (43.9%) recognized improvements of their university educational activities than did those from Humanities & Social Sciences (37.9%) and Health/Medical Science (33.7%), ($p<0.05$).



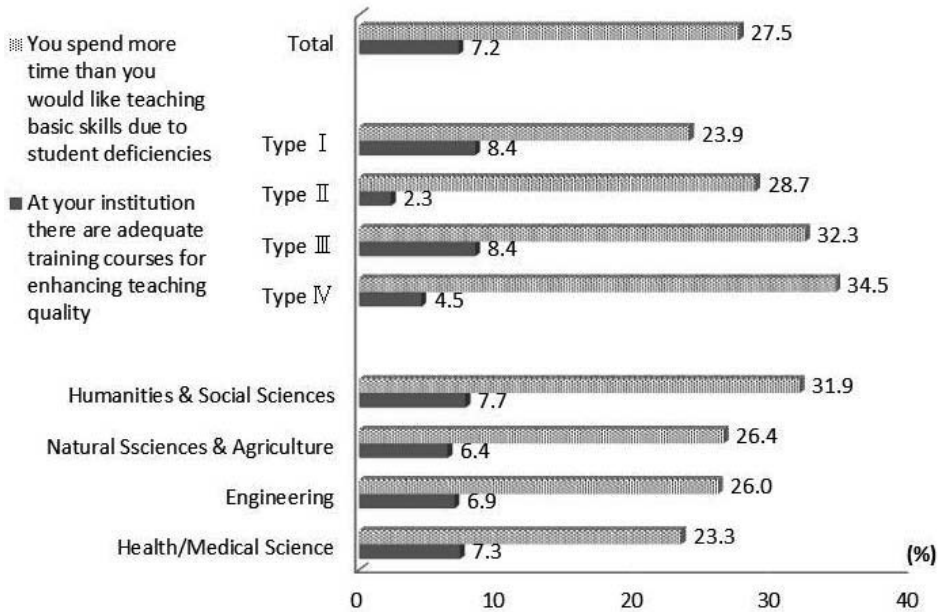
Note: Numerical values represent the proportion of faculty members who responded "Much Improved" or "Improved to some extent".

Figure 9. Has the quality of university education been improved? (Compared with five years ago)

Methods to improve teaching

In what ways are faculty members improving the quality of education? Figure 10 gives the results of two items.

Faculty members who responded "Strongly agree" to the statement "You spend more time than you would like teaching basic skills owing to student deficiencies"; that is, faculty members engaged in improving education on an individual level, totaled 27.5 percent. In the analysis of institution type and faculty types, "Strongly agree" responses accounted for 20-30 percent. In particular, the rate was higher for faculty members at Type IV (34.5%) and Type III (32.3%) institutions compared with those at Type II (28.7%) and Type I (23.9%) institutions. Among the various faculties, the Humanities & Social Sciences faculty had the highest rate (31.9%), ($p<0.001$). Thus, what can be said for initiatives at the institutional level? Faculty members who responded "Strongly agree" to the statement "At your institution there are adequate training courses for enhancing educational quality"; that is, the total rate of university institutions providing training at the institutional level, accounted for only 7.2 percent. This indicates that teaching improvements in Japan are not being actively carried out at the individual level, and that teaching improvements at the institutional level are falling even further behind.



Note: Numerical values represent the proportion of "Strongly agree" responses.

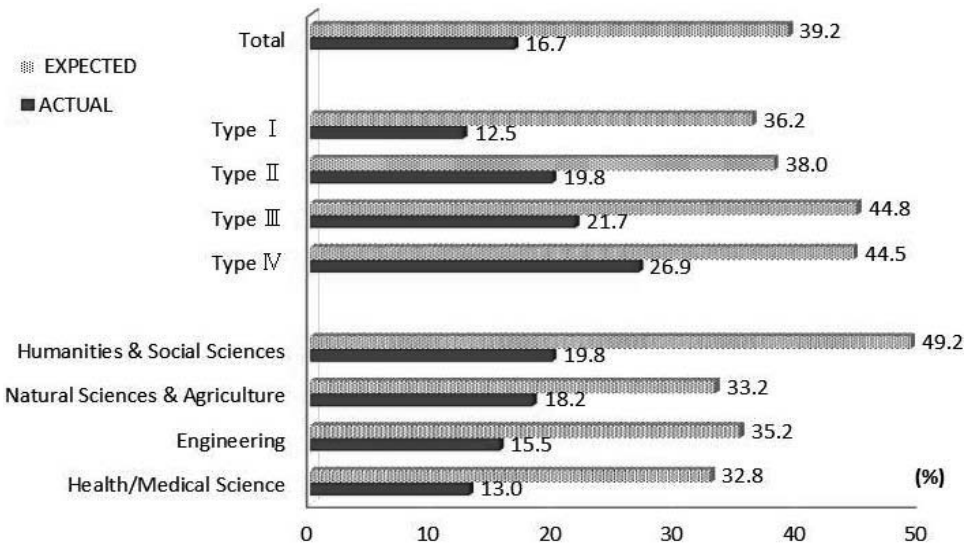
Figure 10. Working to improve education (faculty members)

Evaluation of educational activities

While emphasis is placed on faculty members' *research* activities during promotion reviews, their *educational* activities are not strongly assessed. Amid demands for a quality assurance and improvements in education, how do faculty members feel about the evaluation of their educational activities? Figure 11 shows the proportion of faculty members who responded "Strongly emphasized" when asked "How much do you *expect* that teaching activities will be emphasized when faculty are promoted at your institution?" or "How much do you think that teaching activities are *actually* emphasized when faculty are promoted at your institution?" In total, 39.2 percent of faculty members held strong expectations for the evaluation of educational activities. However, the rate for the actual emphasis on teaching activities was 16.7 percent. Responses also varied according to institution type and faculty type ($p<0.001$).

That is to say, faculty members in the Humanities & Social Sciences (49.2%) and those at Type III (44.8%) and Type IV (44.5%) institutions had high expectations for the evaluation of teaching. However, where expectation rates were high, the actual emphasis was low (Humanities & Social Sciences faculties,

actual emphasis: 19.8%; Type IV, actual emphasis: 26.9%; and Type III, actual emphasis: 21.7%), and although there was a slight tendency for the emphasis to be placed on educational activities at the time of promotion reviews, no significant difference was found.



Note: Numerical values represent the proportion of "Strongly emphasized" responses.

Figure 11. Evaluation of educational activities

Summary

Findings of the study "The Changing Academic Profession in Asia 2011 – An Investigation in Japan" are as follows:

1. Faculty members evaluation of the quality of students as compared with five years ago varied according to the university institution and faculty type. That is to say, there were a high number of "Poor" responses from faculty members at Type IV institutions and from faculties in the natural sciences.
2. Educational goals varied according to the institution and faculty type.
3. Average time spent on educational activities per week was high for faculty members at Type IV institutions and in Humanities & Social Sciences faculties.
4. Faculty members were proactive with regards to teaching based on face-to-face interaction with students but passive with regards to the development of course material and the curriculum/program.

5. At present, faculty members are conducting educational activities in a poor-quality educational environment.
6. Less than half of the faculty members surveyed thought that the quality of education had improved compared with five years ago. Among them, many faculty members from Type IV and faculties of Humanities & Social Sciences and Health/Medical Science responded negatively.
7. In terms of improving education at universities in Japan, both the initiatives of individual faculty members and institutions are falling behind acceptable standards.
8. There were many faculty members in the Humanities & Social Sciences faculties and at Type IV who had high expectations for the evaluation of educational activities. However, the reality failed to meet these expectations.

Thus, it is apparent that the burden of educational activities experienced by faculty members varies among universities and faculties. University entrance rates are currently exceeding 50 percent, placing Japan in the universal access stage of education. In addition, those students entering university are becoming more diverse. Many faculty members at Type IV and in Engineering and Natural Sciences & Agriculture faculties strongly believe there has been a decrease in the quality of students. In addition, faculty members are teaching in poor educational environments. Furthermore, the proportion of time spent on educational activities at Type IV and among the Humanities & Social Sciences faculties exceeds 40 percent.

This study leads one to conclude that in addition to higher education policy to promote educational activities by competitive funding, higher education policy to subsidize the education expenses based on external evaluation of educational results is also a necessity.

Research activity

In academic circles, research activities have, for the most part, been identified as the prime academic pursuit for faculty. It is then useful to know the extent to which faculty are involved in research and to what extent they make scholarly contributions through their research activities.

How much do Japanese faculty members contribute through their research? On average, in 2011, a Japanese faculty member writes 1.8 academic books, edits 0.6 books, publishes 9.5 papers in academic journals, publishes 1.3 monographs, and presents papers 8.7 times at academic conferences (Table 7).

Table 7. Research productivity in the previous three years

	Minimum	Maximum	Average	Standard deviation	Weight
Authored Scholarly books you authored or co-authored	0	40	1.8	3.07	10
Edited Scholarly books you edited or co-edited	0	10	0.6	1.23	5
Academic articles published in an academic book or journal	0	150	9.5	12.97	3
Research report/monograph written for a funded project	0	30	1.3	2.32	3
Paper presented at a scholarly conference	0	200	8.7	17.40	2
Professional article written for a newspaper or magazine	0	50	1.5	4.44	1
Patent secured on a process or invention	0	20	0.5	1.56	3
Computer program written for public use	0	30	0.2	1.72	1
Artistic work performed or exhibited	0	50	1.0	3.59	3
Video or film produced	0	5	0.1	0.38	1
Research output score	0	1,008	64.0	79.27	

We calculated the research productivity score by fitting 10 points to one of the "Authored Scholarly books", 5 points to one of the "Edited scholarly books", 1 point to one of the "Academic articles", 3 points to one of the "Research report/monograph", 2 point to one of the "Paper presented at a scholarly conference", 1 point to the "Professional article written for a newspaper or magazine", 3 point to one of the "Patent", 1 point to one of the "Computer program", 3 point to one of the "Artistic work" and 1 point to one of the "Video or film produced".

Distribution of the research productivity score resembles log-normal distribution as shown in Figure 12. Log-normal distribution has the character in which corresponding distribution turns into a normal distribution, when the logarithm of the random variable according to Log-normal distribution is calculated. So, in the following analysis, the logarithm of research productivity score is used.

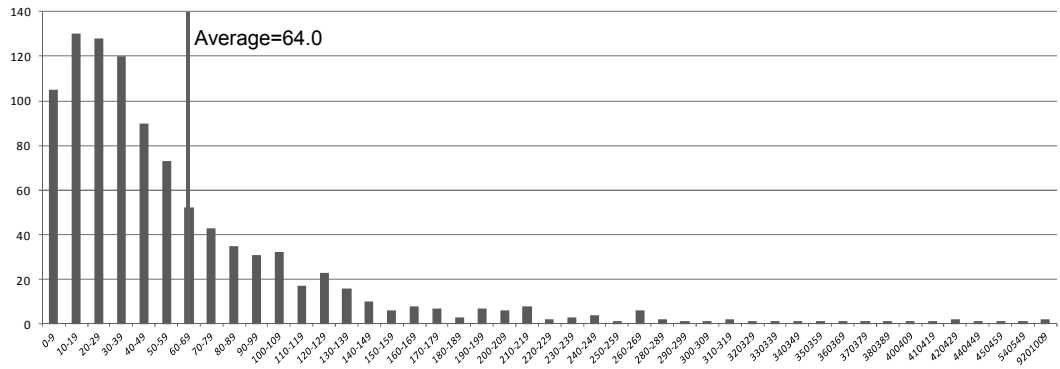


Figure 12. Distribution of the research productivity score

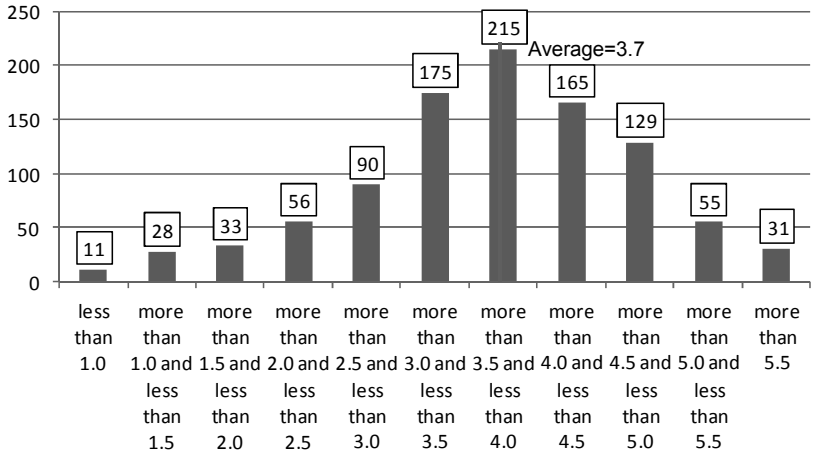


Figure 13. Distribution of LRPS

In addition, below, the logarithm of research productivity score is written as LRPS. Figure 13 is the distribution of LRPS. The minimum, maximum, average and standardized deviation of research productivity score was 0, 6.9, 3.7 and 1.06 respectively.

Figure 13 is the distribution of LRPS. How can we explain these differences in the LRPS?

Data and conceptual model of the determinants of research activities

It is faculty members 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 14 and is discussed below.

The variables used in this paper are as shown in Table 8.

In the following, in developing and application of the model, the initial step is to clarify the relationship between each independent variable and the dependent variable research productivity.

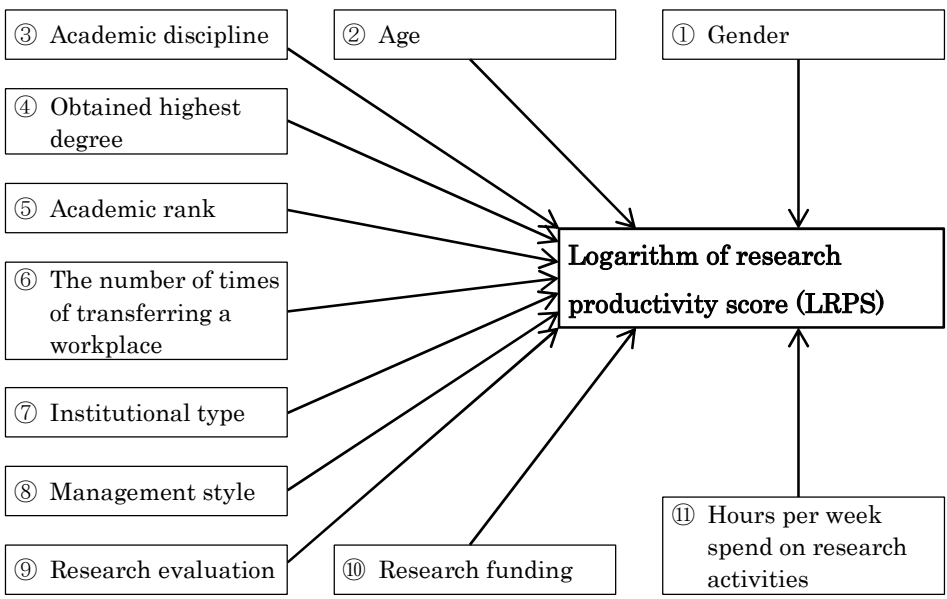


Figure 14. Conceptual model of determinants for LRPS

Table 8. The variables used in this paper

Variables	Category
Dependent variables	
LRPS	the logarithm of research productivity score
Independent variables	
① Gender	Male=1, Female=0
② Age	the actual number
③ Academic discipline	
Humanities	Discipline which faculty has acquired the highest degree is Humanities=1, Others=0
Social sciences	Discipline which faculty has acquired the highest degree is Social sciences=1, Others=0
Natural sciences	Discipline which faculty has acquired the highest degree is Natural sciences=1, Others=0
Engineering	Discipline which faculty has acquired the highest degree is Engineering=1, Others=0
Agriculture	Discipline which faculty has acquired the highest degree is Agriculture=1, Others=0
Health/Medical sciences	Discipline which faculty has acquired the highest degree is Health/Medical sciences=1, Others=0
④ Obtained highest degree	Doctor=1, Others=0
⑤ Academic rank	
Professor	Professor=1, Others=0
Associate	Associate professor=1, Others=0
Assistant professor	Assistant professor=1, Others=0
⑥ The number of times of transferring a workplace	the actual number
⑦ Institutional type	
Type I	The institution which offer a doctorate degree by all specialized fields=1, Others=0
Type II	The institution which offer a doctorate degree by more than 50% of specialized fields=1, Others=0
Type III	The institution which offer a master degree by all specialized fields=1, Others=0
Type IV	The institution which offer a master degree by more than 50% of specialized fields=1, Others=0
⑧ Management style	
Collegial management	factor scores
Supportive management	factor scores
Top-down management	factor scores
Performance oriented management	factor scores
⑨ Research evaluation	Someone at or outside your institution evaluate your research activities=1, No one evaluate your research activities=0
⑩ Research funding	the actual number in the previous three years
⑪ Hours per week spend on research activities	the actual number (The average of hours when classes are in session and classes are not in session)

① Gender

The extent to which Japanese higher education remained a male-dominated profession in the last decade of the twentieth century can be seen in Figure 15. As of 2011, 84.6 percent of all faculty was male and 15.40 percent were female. In Japan, representation of women has changed very slowly since 1955 when they constituted only 5.0 percent.

Figure 16 showed the relationship between Gender and research productivity. Male professor's LRPS is higher than female professor's LRPS. (0.1% of levels of significance)

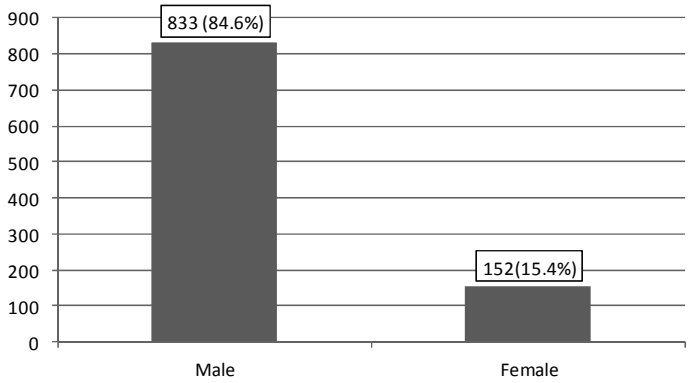
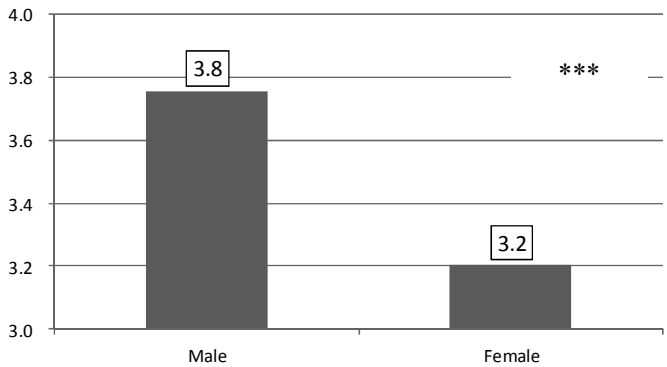


Figure 15. Gender distribution of university faculty (Frequency (%))



Note: *** p<0.001

Figure 16. LRPS by Gender

② Age

Concerning age of the university professor, the youngest age is 24 years old, the most senior age is 75 years old and the average age is 48.3 years old.

Figure 17 presents the relationship of age and LRPS which increased with age. (5% of levels of significance)

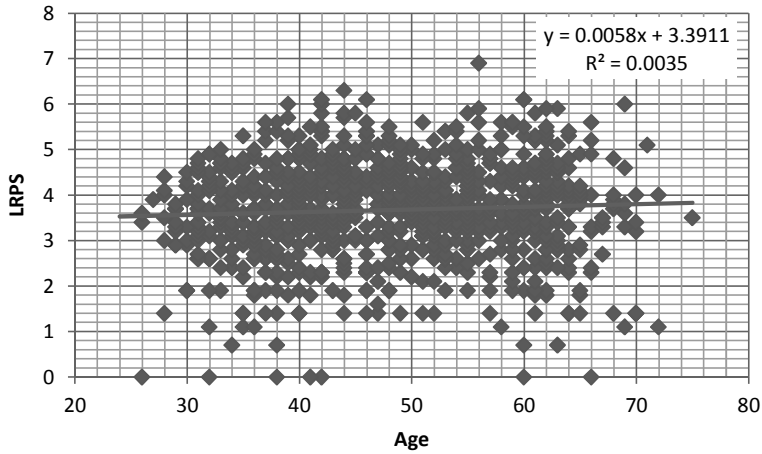


Figure 17. Relationship LRPS and the age

③ Academic discipline

In Figure 18 the distribution of the specialized field where a respondent acquired the best degree is presented.

As having been shown in Table 8, compared to the national data, there were more respondents in the fields of Natural science and Engineering and there were less respondents in the fields of Health/medical sciences.

Figure 19 shows the relationship between the LRPS and academic discipline. The university professor who specialized in engineering raised the biggest research productivity. And, the faculty who specialized in humanities raised the smallest research productivity.

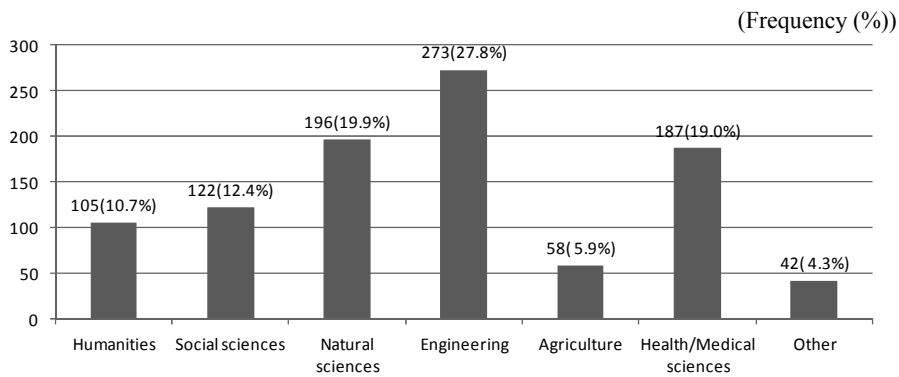


Figure 18. Distribution of university faculty by Academic discipline

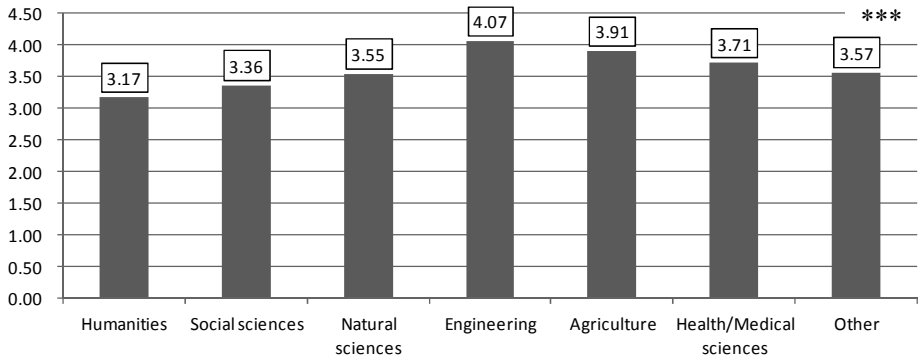


Figure 19. LRPS by the Academic discipline

④ Obtained highest degree

In Japan, the proportion of faculty with doctorates increased substantially overtime: from 10 percent in 1967, to 40 percent in 1983, and to 78 percent 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 APA survey, most faculty (95.8%) had received doctoral degree from a Japanese institution – 2.3 percent received degrees in the United States, and the rest in other countries.

Figure 21 showed the relationship between research funding and academic credentials. The university faculty who have a doctorate degree has a higher research productivity than the university faculty who have a master or bachelor degree. (0.1% of levels of significance)

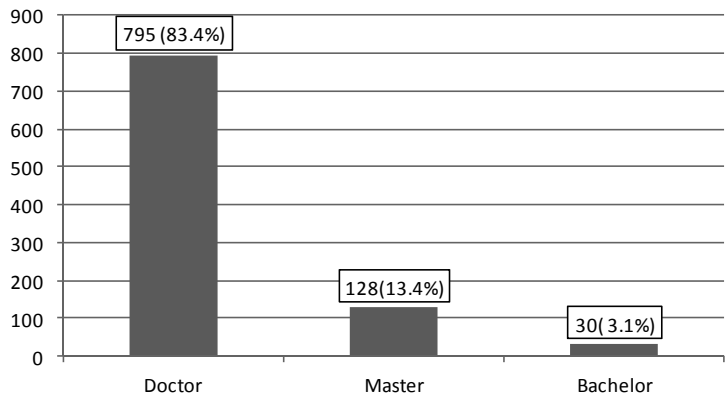


Figure 20. Academic credentials of university faculty

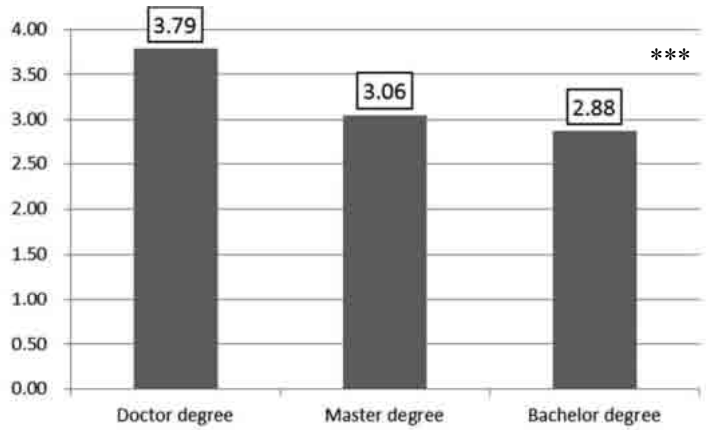


Figure 21. LRPS by the academic credentials

⑤ Academic rank

Academic professionals in Japanese institutions holds one of four academic ranks: *jokyo* (assistant professor), *koshi* (lecturer), *jyunkyoju* (associate professor), and *kyoju* (full professor).

The proportion of full professors increased from 31.0 to 40.1 percent from 1970 to 2009. The composition of the samples in both the APA survey have remained effectively unchanged in terms of the ratios of full professors over the period 1992 to 2007. (Figure 22)

Figure 23 showed the relationship between LRPS and the academic rank. Full and associate professors have a higher research productivity than assistant professors.

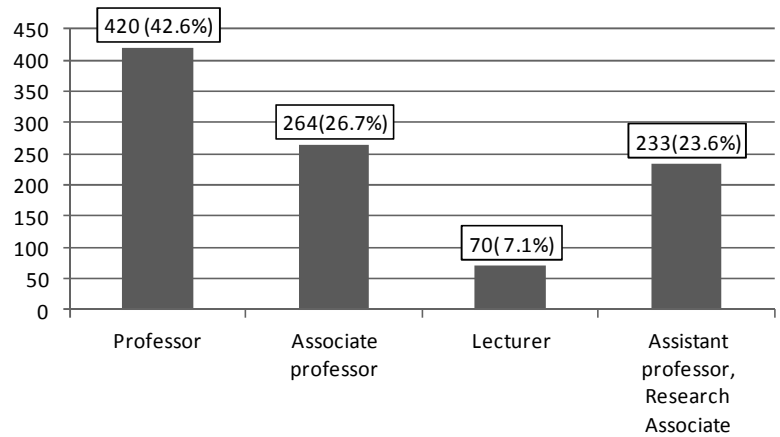


Figure 22. Distribution of academic rank

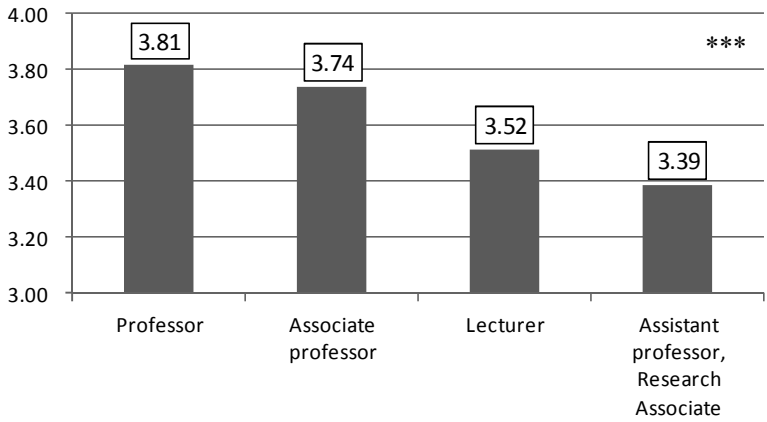
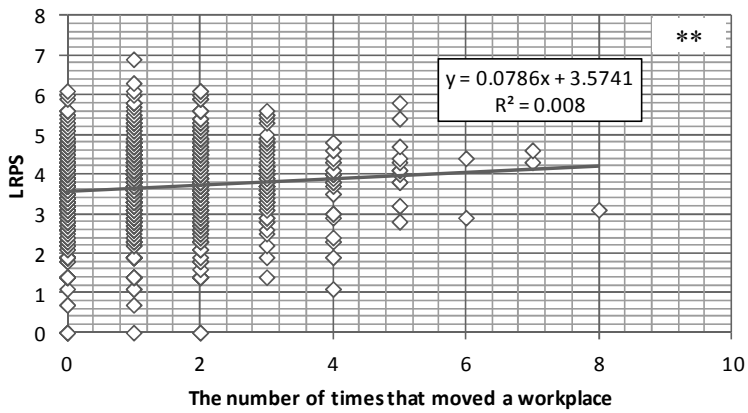


Figure 23. LRPS by the academic rank



Note: ** p<0.01

Figure 24. Relationship LRPS and the number of times of transferring a workplace

⑥ The number of times transferring workplace

Concerning the number of times university professors changed workplaces, the smallest number is 0, the maximum number 8 and the average age is 1.8.

Figure 24 shows the relationship research productivity and the number of times that moved a workplace. There is no significant relationship between research productivity and the number of times that workplace is changed.

⑦ Institutional type

In this study, with reference to the Carnegie classification, we classify higher education institutions into 5 types: Type I, the institution which offer a

doctorate degree by all specialized fields; Type II, institution which offer a doctorate degree by more than 50 percent of specialized fields; Type III, the institution which offer a master degree by all specialized fields; Type IV, the institution which offer a master degree by more than 50 percent of specialized fields; and Type V, the institution which offer only a baccalaureate degrees.

The breakdown of the 23 universities targeted in the Japanese study is: eight Type I institutions, three Type II institutions, seven Type III institutions, four Type IV institutions, and one Type V institutions.

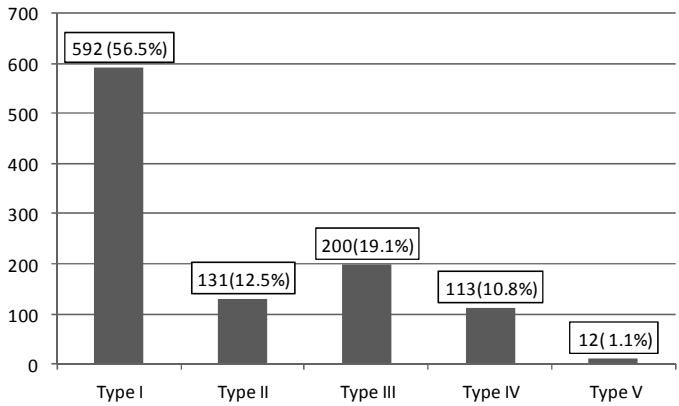


Figure 25. Distribution of the type of university

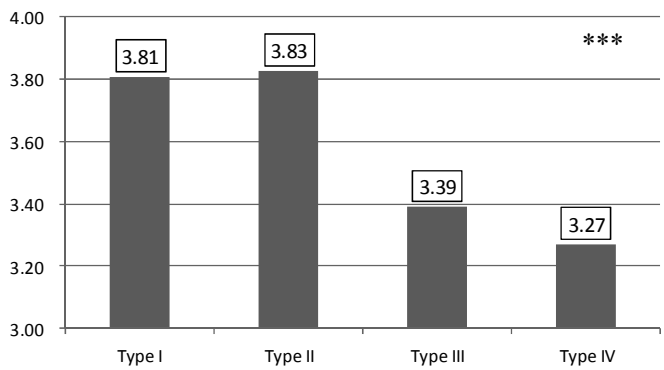


Figure 26. Research productivity by the type of university

⑧ Management style

Factor analysis of the fourteen management style issues resulted in a four-factor solution. The four factors were labelled: Collegial management,

Supportive management, Top-down management, and Performance oriented management. The factors and their item loadings are displayed in Table 9.

Table 9. Four Management Style Factors

	Factor 1	Factor 2	Factor 3	Factor 4	
	Collegial management	Supportive management	Top-down management	Performance oriented management	Communality
Good communication between management and academics	0.69	0.19	-0.21	-0.10	0.57
I am kept informed about what is going on at this institution	0.55	0.17	-0.17	0.00	0.36
A strong emphasis on the institution's mission	0.54	0.07	0.08	0.08	0.31
Top-level administrators are providing competent leadership	0.54	0.07	0.28	-0.03	0.38
The administration supports academic freedom	0.52	0.22	-0.34	0.11	0.44
Collegiality in decision-making processes	0.43	0.11	-0.09	0.10	0.21
Professional development for administrative/management duties for individual faculty	0.33	0.17	0.01	-0.05	0.14
A supportive attitude of administrative staff towards research activities	0.26	0.90	0.00	0.05	0.88
A supportive attitude of administrative staff towards teaching activities	0.28	0.75	0.01	-0.05	0.65
A top-down management style	-0.05	-0.09	0.61	0.10	0.40
Lack of faculty involvement is a real problem	-0.40	-0.12	0.50	0.06	0.43
Students should have a stronger voice in determining policy that affects them	0.03	0.06	0.19	0.05	0.04
A strong performance orientation	0.14	0.10	0.10	0.49	0.28
A cumbersome administrative process	-0.13	-0.21	0.12	0.35	0.20
Factor contribution	2.26	1.63	0.97	0.43	5.29
Cumulative factor contribution rate	16.15	27.77	34.72	37.77	

Factor extraction methods: Principal factor method
Rotation method: Varimax
Note: The numerical value in the table shows a Varimax factor loadings.

Each factor score of these four factors were used as four variables in the third category, the management style, which was shown in the analytical framework.

Figures 27, 28, 29 & 30 show the relationship research productivity and the factor score of each four management style.

When the correlation coefficient of LRPS and the four factors of management style are calculated, the university professor at institutions with Collegial management, Factor 1, or Performance-oriented management, Factor 4, raise LRPS (correlation coefficient = 0.087 and 0.081, P <0.01 and p<0.05). Those at institutions with supportive management, Factor 2 or top-down management, Factor 3, decrease LRPS (correlation coefficient = -0.044 and -0.062, n.s. and p<0.05).

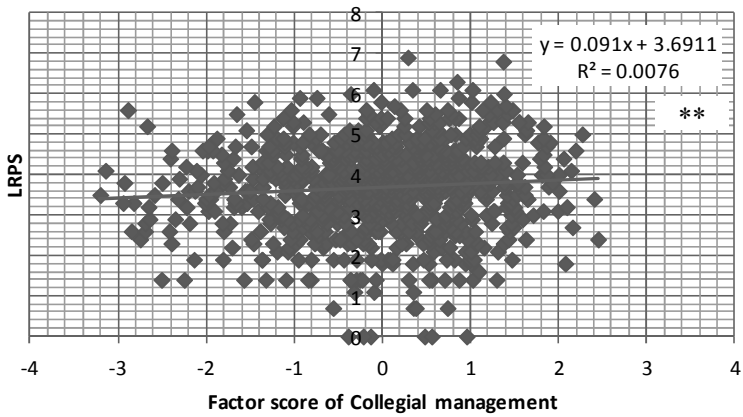


Figure 27. LRPS by Factor score of the collegial management

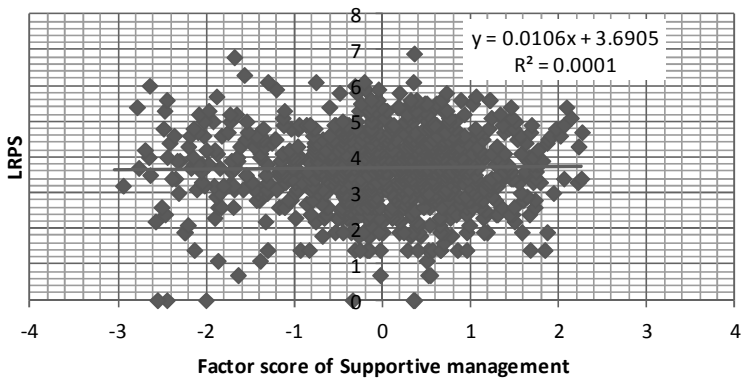
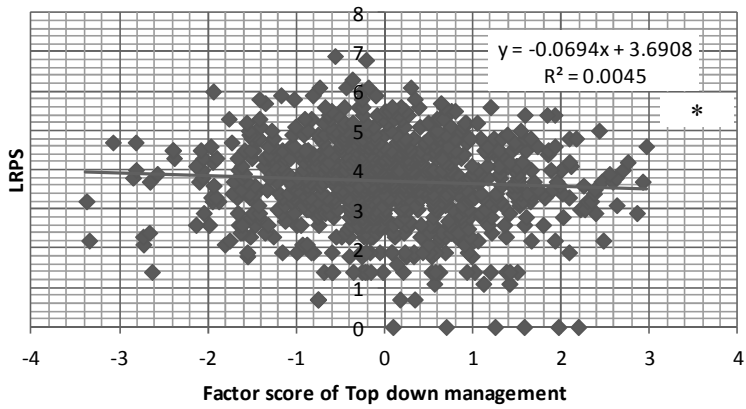


Figure 28. LRPS by Factor score of the supportive management



Note: * p<0.05

Figure 29. LRPS by Factor score of the top down management

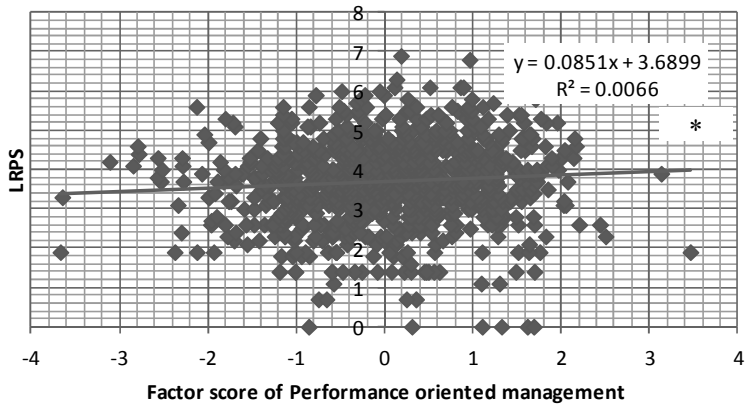


Figure 30. LRPS by Factor score of the perfomance oriented management

⑨ Research evaluation

Formal schemes of academic staff evaluation have been introduced fairly recently into universities. In 2011, 85.1 percent of faculty reported that their research activities were evaluated, almost double the proportion in 1992 (Figure 31).

Figure 32 shows the relationship between LRPS and the situation of research evaluation. The faculty that their research activities are evaluated regularly has higher LRPS than the faculty who is not so.

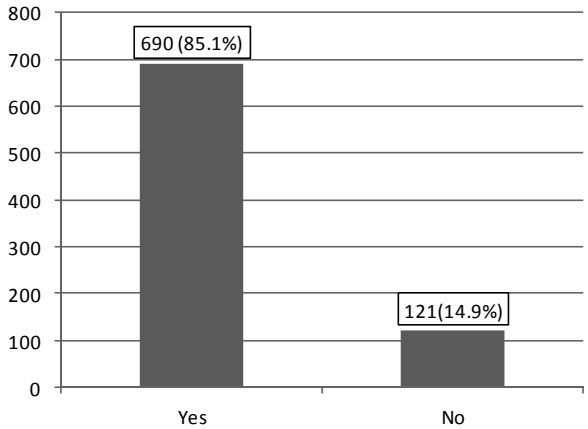


Figure 31. Faculty reporting that their research activities are regularly assessed

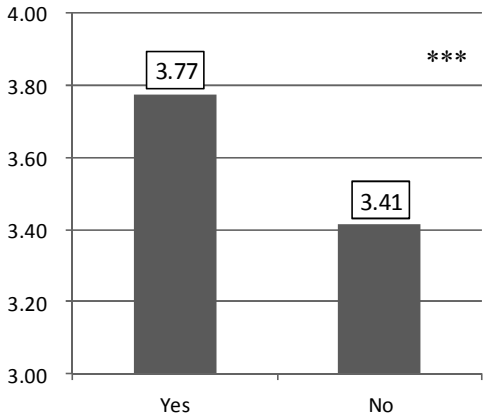


Figure 32. LRPS according to the situation of research evaluation

⑩ 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 APA survey indicate that almost all faculties, 98.9 percent, have received grants for individual or collaborative research projects in the previous three years. About 21.4 percent of the respondents have had grants totaling less than $24,999, while about 33.3 percent have received $100,000 or more in 2007 (Figure 33).

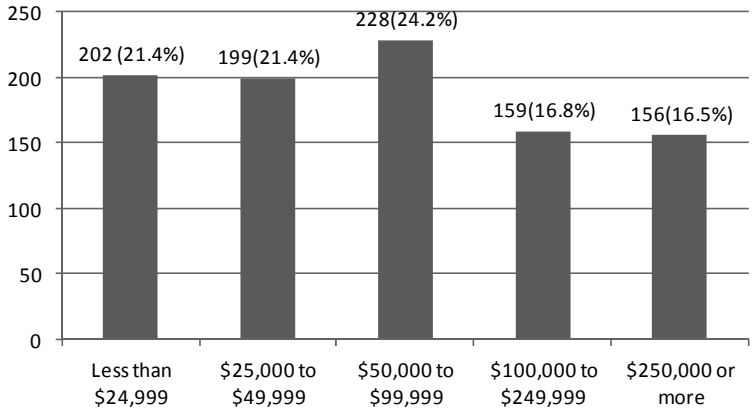


Figure 33. Research funding

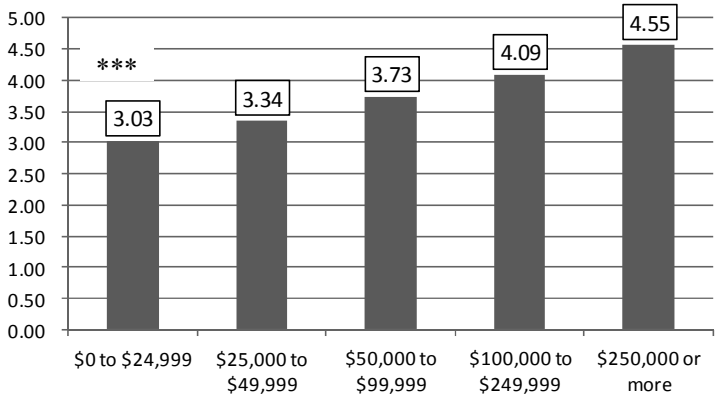


Figure 34. LRPS according to the Research funding

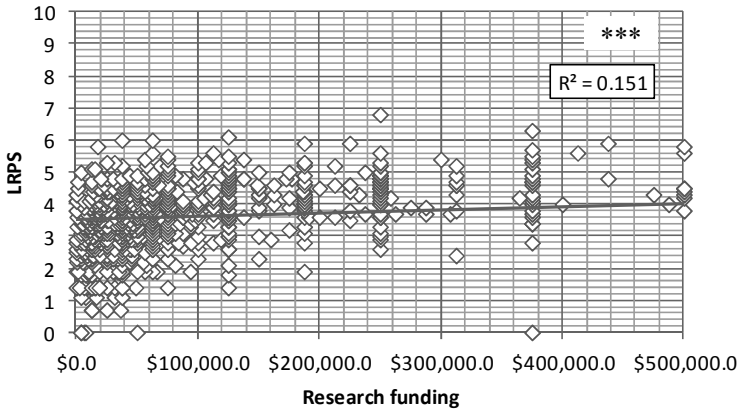


Figure 35. LRPS according to the Research funding

Figures 34 & 35 show a significant relationship between research funding and LRPS. When research funding increases, the LRPS increases.

⑪ Hours per week spend on research activities

Concerning the hours per week spend on research when university professors classes are in session, the smallest number is 0, the maximum number is 100 and the average age is 20.3.

Figure 36 shows LRPS and the hours per week spend on research when classes are in session. There is a significant relationship between LRPS and the hours per week spend on research.

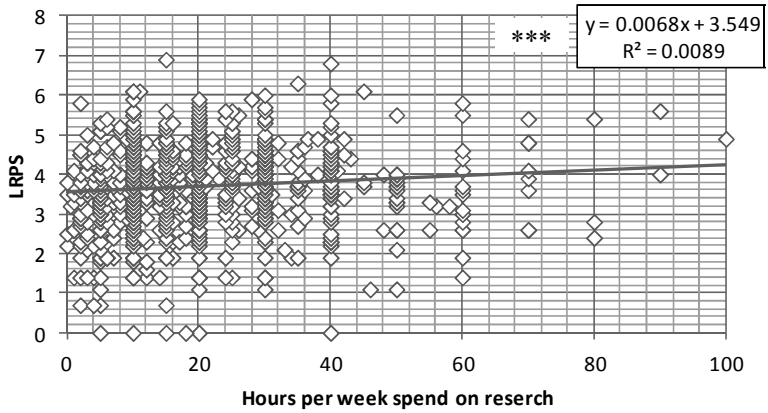


Figure 36. LRPS and the hours per week spend on research

The determinants of research productivity score

To clarify which of the explanatory variables presented in Table 8 significantly determine the LRPS, a multi-regression analysis was performed. The results are displayed in Table 10.

The statistically significant variables are Research funding, Assistant professor, Hours spent per week on research activities, Age and Obtained highest degree on the research productivity score.

Judging from the standardized regression coefficient, Assistant professor and younger faculty have lower research productivity scores and the Research funding, Hours spent per week on research activities and Obtained highest degree becomes higher so that research productivity score became higher.

Table 10. The determinants of LRPS

	Research productivity score	
① Gender	0.069	n.s.
② Age	-0.140	*
③ Academic discipline		
Humanities	-0.058	n.s.
Social sciences	-0.049	n.s.
Natural sciences	-0.148	n.s.
Engineering	0.093	n.s.
Agriculture	0.056	n.s.
Health/Medical sciences	0.056	n.s.
④ Obtained highest degree	0.123	*
⑤ Academic rank		
Professor	0.098	n.s.
Lecturer	-0.008	n.s.
Assistant professor	-0.204	***
⑥ The number of times of transferring a workplace	0.084	n.s.
⑦ Institutional type		
Type I	-0.082	n.s.
Type II	-0.035	n.s.
Type III	-0.145	n.s.
Type IV	-0.162	n.s.
⑧ Management style		
Collegial management	0.043	n.s.
Supportive management	0.077	n.s.
Top-down management	-0.017	n.s.
Performance oriented management	0.024	n.s.
⑨ Research evaluation	0.055	n.s.
⑩ Research funding	0.277	***
⑪ Hours spent per week on research activities	0.118	**
R^2	0.312	

Note: *** p<0.001, **p<0.01, * p<0.05, + P<0.10

Next calculated were the determinants of Research funding and Hours spent per week on research activity that was the determinants of research productivity score. Table 11 presents the results.

First, the determinants of the hours spent per week on research activity are Type III and Research evaluation.

Hours spent per week on research activity for professors who belong to Type III university is significantly fewer than Hours spent per week on research activity for those who does not belong to Type III university. And, Hours spent per week on research activity of the faculty who replies that their own research activities are evaluated inside and outside the their university became longer.

Table 11. The determinants of the hours spent per week on research activities and the research funding

	⑪ Hours spent per week on research activities		⑩ Research funding	
① Gender	0.047	n.s.	0.003	n.s.
② Age	-0.024	n.s.	-0.14	*
③ Academic discipline				
Humanities	-0.015	n.s.	0.048	n.s.
Social sciences	0.060	n.s.	0.080	n.s.
Natural sciences	0.067	n.s.	0.241	*
Engineering	-0.118	n.s.	0.332	**
Agriculture	-0.080	n.s.	0.224	*
Health/Medical sciences	-0.137	n.s.	0.169	*
④ Obtained highest degree	0.071	n.s.	0.023	n.s.
⑤ Academic rank				
Professor	-0.088	n.s.	0.277	***
Lecturer	0.023	n.s.	-0.019	n.s.
Assistant professor	0.050	n.s.	-0.146	**
⑥ The number of times of transferring a workplace	-0.048	n.s.	-0.002	n.s.
⑦ Institutional type				
Type I	-0.449	n.s.	0.083	n.s.
Type II	-0.375	n.s.	-0.012	n.s.
Type III	-0.498	*	0.054	n.s.
Type IV	-0.325	n.s.	-0.079	n.s.
⑧ Management style				
Collegial management	0.033	n.s.	0.078	n.s.
Supportive management	-0.019	n.s.	0.012	n.s.
Top-down management	-0.019	n.s.	0.043	n.s.
Performance oriented management	-0.026	n.s.	0.095	*
⑨ Research evaluation	0.113	*	0.057	n.s.
⑩ Research funding	0.045	n.s.	—	
⑪ Hours spent per week on research activities	—		—	
R^2	0.116		0.160	

Note: *** p<0.001, **p<0.01, * p<0.05, + p<0.05

Furthermore, the determinants of Research funding are Age, Natural sciences, Engineering, Agriculture, Health/Medical sciences, Professor, Assistant professor and Performance oriented management.

Older faculty came to have fewer amounts of acquisition research funds than younger faculty. Assistant professor came to have fewer acquisition research funds than faculty of other academic rank. The faculty who specialized in Natural sciences, Engineering, Agriculture and Health/Medical sciences have more acquisition research funds than faculty of other specialized

fields. Professor came to have fewer acquisition research funds than faculty of other academic rank. The faculty who belonged to the university which intended Performance oriented management got research funds more than those who belonged to the university of other management styles.

Summary

Both correlation analysis and analysis of variance indicate that the determinants of research productivity score in Japan are as follows:

1. Male faculty research productivity score are higher than female faculty. (0.1% of levels of significance)
2. The faculty specialized in engineering have higher research productivity score than the faculty specialized in humanities. (0.1% of levels of significance)
3. The faculty who acquired a doctorate as the highest obtained degree have higher research productivity score than the faculty who acquired master's degree. (0.1% of levels of significance)
4. Professors have higher research productivity scores than Assistant professor. (0.1% of levels of significance)
5. The faculty who belonged to the university which provided doctoral degrees in all fields, have higher research productivity scores than the faculty who belonged to the university which provided mainly master's degree. (1% of levels of significance)
6. The faculty who belong to a university where management style had a characteristic of Collegial management or Performance oriented management have higher research productivity scores than the faculty who do not belong to such a university. (0.1% of levels of significance and 1% of levels of significance)
7. The faculty who replied that their own research activities are evaluated by outside person, have higher research productivity scores than the faculty who are not so. (1% of levels of significance)
8. The faculty who receive more research funds have higher research productivity score than the faculty who do not. (0.1% of levels of significance)
9. The faculty who take a lot of time for their research activities have higher research productivity score than the faculty who do not. (1% of levels of significance)

10. Performance of multiple regression analysis using all explanation variables revealed that research productivity score was directly determined by the amount of research funding and the number of research productivities' hours. Other variables mentioned above indirectly determined the research productivity score as a parameter with the amount of research funding or the number of research productivities' hours.

The aforementioned results suggest that the causal relation of determinants of the logarithm of research productivity score is as represented in Figure 37.

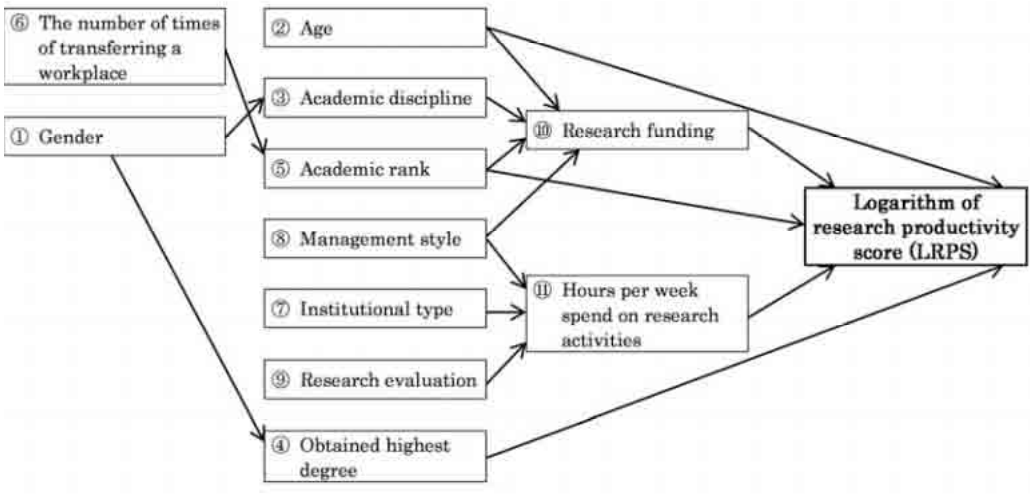


Figure 37. Relations of the determinants of research productivity score

Conclusion

In the knowledge-based society, it is important to accumulate a diversity of new knowledge and to use them in the society efficiently. A university is the important point of the knowledge based society. That is, in order to maintain and develop the knowledge-based society, it is necessary to produce knowledge through fundamental research activities and to reproduce future knowledge user and producer through applied research activities or an educational activity in the university. In the university, the university professor is expected to play main roles of educational and research activities with sufficient balance.

How does the university professor recognize about the situation which research activities and an educational activity make compatible? What kind of

relationships between the situation which research activities and an educational activity are compatible with each other and a university professor's own research productivity scale are there?

We calculated the average value of LRPS according to the reply to the question how are teaching and research hardly compatible with each other. The LRPS of the university professor who answered "Strongly agree" was the lowest (3.43), and LRPS of the university teacher who answered "Disagree" was the highest (3.78). That is, a university professor who has answered that research activities and educational activities are compatible with each other, was performing high average of LRPS. (Figure 38)

Amid global economic depression, it has been difficult for a college student to be employed. While a college student's quality is diversified, the university professors have been expected to not only open a course of many lessons, but in order to improve the quality of educational activities, be engaged in self-inspection activity or Faculty Development (FD) activities. To be sure, for these 20 years, the educational reform has been the center of the university reform in Japan. But, from the results of Figure 38, in order to get university professors to raise the quality of their own educational activities positively, it is necessary to implement the measures that a university professor can get the result of research activities.

That is, when reforming the higher education system from now on, it is important to advance reform of educational activities and research activities with sufficient balance.

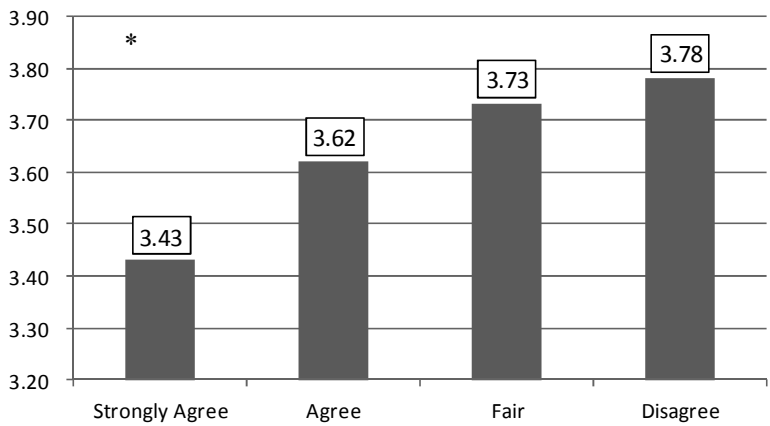


Figure 38. LRPS and the response to "Teaching and research are hardly compatible with each other"

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Teaching and Research Concentration of Academics in Malaysian Public Universities

Aida Suraya Md.Yunus* and Vincent Pang**

Introduction

It is generally believed that the passion for teaching and research has out-weighted the 'attraction' of remuneration for scholars to join academia. The work conditions may also be less conducive and attractive as compared to other professions. In Malaysia, factors affecting the academic profession were complicated by the introduction of a multitude of initiatives which were related to the goal of making Malaysia a regional centre for excellence in education.

The statement of problem

It has been observed that criteria for promotion that emphasize greatly research performance especially in research universities have resulted in less concentration on teaching as compared to research, publication and consultancy works. The multiple efforts that Malaysian universities are undertaking to be included in the world ranking of universities, and incentives given for publications, consultancy work and patents have also added to enhance in concentration on research. Each university sets a key performance indicator (KPI) for the academics, for example, three publications in Institute for Scientific Information (ISI) journals per year for professors, two for associate

* Research Fellow, National Higher Education Research Institute (IPPTN), Penang, Malaysia / Professor & Director, Centre for Academic Development & Faculty of Educational Studies, Universiti Putra Malaysia, e-mail: aida@upm.edu.my
** Research Fellow, IPPTN, Penang, Malaysia / Professor & Dean, Centre for the Promotion of Knowledge and Language Learning, Universiti Malaysia Sabah, e-mail: pvincent@umtp.ums.edu.my

professors and one for junior academics. How have these performance criteria affected the goal of ensuring excellence in teaching and research?

In 2007, Malaysia collaborated in the Changing Academic Profession (CAP) project, which was conducted by the National Higher Education Research Institute. This Academic Profession in Asia (APA) study is a continuation of the CAP project (2007); however, some improvements were made in the instrument to reflect more on what Asian universities are facing. In Malaysian higher education, 2007 is a very memorable year. It is only one year after four universities were designated as research universities in October 2006. Apart from that, the Ministry of Higher Education, Malaysia (MOHE) launched the National Higher Education Strategic Plan (NHESP) for 2007-2011, referred to as the 'Laying the Foundation' Phase. The NHESP has now entered the 'Strengthening and Enhancement' phase in 2011-2015.

2007 is also the year that the Malaysian Qualifications Agency (MQA) was established, thus the Malaysian Qualifications Framework (MQF) was determined, standards that must be adhered to were set, codes of practices were formulated and many more. It was also the year when top down directive was given for Malaysian higher education institutions to adopt the outcome-based education. Many events were charted in the Malaysian Higher Education calendar.

Considering the overwhelming initiatives introduced in 2007, it is worth noting how the academic profession has changed since then. This paper will analyze the impact of these initiatives for academics in the three classifications of public universities in Malaysia: research, comprehensive, and focused. It has a specific focus on their research and teaching concentration.

Classification of public universities

Vision and mission are the pillars of the higher education institutions. They are directions and guidance to achieving success in the academic realms. All of the public higher education institutions (HEIs) possess different vision and mission statements, which are created according to the current and national needs. As stated previously public HEIs in Malaysia are grouped into three categories.

Research universities place more emphasis on research compared to other functions of universities. It is provided with higher financial allocations and thus is expected to produce more outcomes and outputs in publications, patents and commercialization. A comprehensive university offers a wide range of

academic programmes. It places equal emphasis on teaching and research. A focused university places emphasis on a specific discipline. For example, Universiti Utara Malaysia is a management university, Universiti Pendidikan Sultan Idris is an education university, while Universiti Teknikal Melaka is an engineering university. Of the twenty public universities in Malaysia, five are classified as research universities, four are comprehensive and twelve are focused universities. The twelve focused universities include a network of four technical universities which call themselves the Malaysian Technical University Network (MTUN) (MOHE, 2013a). The technical universities are upgrades of former technical university colleges that share similar history and contexts. They are categorized as focused universities because the study programmes that are offered are limited, thus focused. Most of the technical universities only offer engineering programmes or engineering related programmes such as engineering education.

With the differentiation of mission in the university categories, it is expected that academics working in different types of universities perform different processes and attain outcomes with some degrees of difference.

The National Higher Education Strategic Plan (NHESP)

To systematically achieve the vision of making Malaysia a regional centre of educational excellence, the MOHE was established, and after extensive discussions, and consultations with all stakeholders, the NHESP was instituted in 2007. This document articulates the ministry's vision for the transformation of higher education to 2020 and beyond. Seven strategic thrusts were outlined in the plan:

1. Widening access and enhancing equity
2. Improving the quality of teaching and learning
3. Enhancing research and innovation
4. Strengthening institutions of higher education
5. Intensifying internationalisation
6. Inculcating lifelong learning
7. Reinforcing the delivery system of MOHE (MOHE, 2007a).

To facilitate effective implementation of the strategic plan, the National Higher Education Action Plans were initiated. The Action Plans provided key implementation mechanisms and schedules and specify outcomes of the duration

covered. The first Action Plan has been implemented during 2007-2010 period. Its focus was on setting the foundation for the long term strategic plan. Various systems and Critical Agenda Projects were established to jumpstart the strategic plan (MOHE, 2007b).

The second plan was launched in 2011 with the focus on enhancement and expansion of higher education of Malaysia (MOHE, 2011a). Basically this phase focuses on the execution of all the Critical Agenda (CA) projects that were established in the first phase. The second phase also incorporates Malaysia's global outreach programmes (MOHE, 2011b). Its special agenda is to widen Malaysia's global engagement through soft power. The strategies and actions to be implemented include (1) enhancing global outreach through sharing of knowledge, (2) establishing a hub for knowledge and skills via internationalization, (3) widening international networks via student alumni, and (4) increasing the visibility of Malaysia through contributions and reputation.

Introduction of the strategic plan and the actions plans have challenged the academics in that their job scope was expanded to include many tasks which had not been previously included. Most of these include planning, implementing, measuring, reporting and documenting processes and performance outcomes.

Critical Agenda (CA) projects

The CA projects serve as pillars for the NHESP. CA projects are catalysts for the transformation of Malaysian higher education institutions. Some of the important CA projects and their respective missions are shown in Table 1. These resulted in the creation of many related agenda which will be described in the following sections. They therefore affected many aspects of the academic profession, the details of which will be presented in the sections to follow.

Table 1. CA Projects and their functions

No	CA project	Function
1	APEX	Creating a world class university and instating a model to be followed by other university in achieving excellence in higher education.
2	Governance	Creating a world class higher learning administration, strengthen with integrity and encouraged by autonomy in creating a quality higher learning environment.
3	Leadership	Strengthening leadership in HEIs to be the main pillars in transforming the HEIs into world class institutions. This CA project is chaired by The Higher Education Leadership Academy (AKePT).

No	CA project	Function
4	Academia	Increasing excellence in creating quality students and institutions, conducive learning environment for students and academicians, and collaboration with local industries and abroad. This can be done by increasing professional quality, giving professional training and increase in recognition of professionals.
5	Teaching & Learning	Improving curricula to be more innovative, dynamic, up-to-date, and relevant with the current demands. Infrastructure and quality lecturers and method of delivery are also to be improved for more effective learning.
6	Research & Development	Producing innovation and intellectual property as a way to expand knowledge and ultimately new discoveries to contribute to the nation's development.
7	Internationalisation	Ensuring the quality excellence of local HEIs to thrive in the international stage through implementing significant transformations and also continuous monitoring performance in relation to world standards.
8	MyBrain 15	Ensuring the production of number of quality doctoral to increase innovation that will steer the nation's economy and competitiveness. The core function of MyBrain15 is to be a platform for the formation of innovative and critical graduate that can perform in international stages.
9	Graduate Employability	Steps implemented by the MOHE to increase graduate employability inclusive of Industrial Training, Apprenticeship, Finishing School and Entrepreneurship Training. These programs will ensure the marketability and increase competitiveness among fresh graduates internationally, and reduce unemployment.
10	Lifelong Learning	Recognition of the importance and awareness of lifelong learning and the implementation of programs, which encourage the learning for experienced workers. This CA project also focuses on the acculturation and the strengthening of lifelong learning, as well as recognition of such qualifications and also improvement of infrastructure to encourage such programs.
11	Quality Assurance	Ensuring quality programs in HEIs through the monitoring and awarding body such as the MQA. The two core objectives of this CA project are to improve quality of studies programs of HEIs, as well as increasing international recognition.
12	Students Holistic Development	This CA project focuses on building balanced students characters in terms of personality, patriotism, discipline and also human values. The implementation is included in co-curricular activities, which build a balanced all-round character of the students.
13	Industry-Academia	Producing graduates that can become a quality workforce for local or international market. The CA project also focuses on bridging the gap between industry and the academia to create innovative product, to thrive the nation's economy.
14	E-Learning	Creating a repository of digital learning materials that promotes sharing with all HEIs. On the other hand, the e-learning CA project encourage the acculturation of an e-learning community, as well as preparing infrastructure and the material contents that are vital to the e-learning delivery.
15	Top Business School	Transforming current business schools to be top business schools that can compete with business schools around the world.

No	CA project	Function
16	Centre of Excellence	Transforming pioneer Higher Institution Centre of Excellence (HICoE) into developing respective expertise and achieving excellence in the world stage in line with the aims of NHESP to own 20 HICoE by 2020.
17	Entrepreneurship	Creating students who are creative and innovative, and ensuring the graduates are marketable and increase the economy of the nation. In the social aspect, entrepreneurship can increase the ability of the large community to narrow the gap between the urban and interior parts of the nation.
18	Knowledge Transfer Program	Encourage and recognize the involvement of academician in creating a knowledgeable and high income society. This can be done through interaction between stakeholders and HEIs to collaborate in order to be productive and relevant. This will ultimately prepare a platform for expertise to be involved in trainings in HEIs and problem solving in the community.

Academic qualifications framework

Following approval of the Malaysian Qualifications Agency Act by the Parliament in 2007, the MQA was established and the MQF was documented and disseminated. The agency and framework are to assure the quality of higher education and the achievement of the vision and mission of higher learning institutions in the country. The framework specifies nine academic programme areas that are to be given emphasis in planning, implementation and evaluation:

The MQF prescribes eight domains of learning outcomes, which state the content and knowledge or skills that students should know and acquire upon completion of their academic programmes: (1) Knowledge, (2) Practical skills, (3) Social skills and responsibilities, (4) Values, attitudes and professionalism, (5) Communication, leadership and team skills, (6) Problem solving and scientific skills, (7) Information management and lifelong learning skills, and (8) Managerial and entrepreneur skills (MQA, 2008). The framework subsequently evolved into the Code of Practice for Institutional Audit (COPIA) which outlines the detail for quality standards for higher education institutions, and the Code of Practice for Programme Accreditation (COPPA) which details the standards for academic programmes. The quality standards are specified in nine areas: (1) Institutional Vision, Mission and Educational Goals, (2) Curriculum Design and Delivery, (3) Assessment of Students, (4) Student Selection and Support Services, (5) Academic Staff, (6) Educational Resources, (7) Programme Monitoring and Review, (8) Leadership, Governance and

Administration, and (9) Continual Quality Improvement (MQA, 2008).

These changes which are associated with the enactment of the qualification act have directly underlined the importance of documentation work pertaining to academic quality assurance. They led to a sudden increase of workload in terms of documenting, maintaining and revising quality documents especially self-review reports for institutions and all their programmes. It raised the issue of efficiency and effectiveness of the use of time for documentation purposes rather than for the core activities of academics – teaching, research, consultation and services.

Research funds

Several grant schemes are allocated for research by the MOHE. Among them is the Fundamental Research Grant Scheme (FRGS). FRGS promotes new ideas concepts and theories that will lead to new discoveries and the expansion of knowledge. They are also the catalyst for contributions of intellectual enhancement, emergence of new technologies, and enlightenment of culture for a better nation.

Three types of research funding are awarded under the FRGS: (i) research funding for projects applied by the researcher through the research management at his/her respective public of higher education institutions, (ii) research funding for projects identified by the fundamental research grant committee in a top down process, (iii) incentive funding for selected public of higher education institutions

These grants are managed through various schemes. Among the schemes are:

(i) Long-term Research Grant Scheme (LRGS)
LRGS is a grant for research of a more extensive manner requiring a high degree of commitment. It places emphasis upon research in generating new theories, as well as the expansion of knowledge.

(ii) Exploratory Research Grant Scheme (ERGS)
Grants allocated for this type research are in new and unexplored areas or in local context. They are pioneering researches in uncharted territories of specific knowledge. The aim is to eventually lead to creation of a new discipline or to inquire into problems. This grant is awarded to researchers who explore new concepts, and to innovators who catalyse new discoveries in their respective fields, and ultimately, the widespread of specific knowledge.

(iii) Prototype Research Grant Scheme (PRGS)
PRGS is to encourage prototype development. The research projects are to bridge the gap between laboratory or research findings and actual marketable products. Its emphasis is upon proving a workable concept, evaluation, up-scaling, pre-clinical testing, as well as field testing. The purpose of this grant is mainly to encourage the design and creation of new technology in higher learning institutions to fulfill the needs of a knowledge-based economy and the implementation of New Economic Model for Malaysia.[1]

(iv) Research Acculturation Grant Scheme (RAGS)
RAGS are grants given to young researchers in non-research public HEIs to encourage research acculturation to prepare themselves and the university in building research performances and to enable them to compete for research at national level and international level. A lump sum is allocated to HEIs, and the HEIs are given the autonomy to award, manage, and evaluate the funds (MOHE, 2013b).

Apart from grants from MOHE, which is the main source of research funds, some academics also seek funds from other ministries such as the e-Science fund from the Ministry of Science, Technology and Innovation (MOSTI) and Agriculture R&D Fund from the Ministry of Agriculture and Agro-base Industries. There are also academics who obtain grants from non-governmental sources such as United Nations Educational, Scientific and Cultural Organization (UNESCO), World Wide Fund for Nature (WWF), and the industries.

With the rapid growth of the number of HEI and hence the number of researchers in recent years, the share of funds for each academic is diminishing. This poses challenges and difficulties for academics since it has direct bearing on academic productivity in terms of publications, patents and commercialization.

Research assessment

In the quest for excellence in research-related initiatives, the Malaysian Research Assessment system (MyRA) has been developed by MOHE to assess the processes and outcomes of research, development and commercialisation. MyRA also functions as a pathway and gatekeeper for the application of research university status. Performance of research universities are evaluated through

[1] http://www.epu.gov.my/en/new-economic-model

this tool.

MyRA covers eight criteria in its evaluation. The criteria and respective weights are: Quantity and Quality of Researches (25), Quantity and Quality of Research (30), Quantity of Postgraduates (10), Quality of Postgraduates (5), Innovation (10), Professional Services and Gifts (7), Networking and Linkages (8), and Networking and Linkages (MOHE, 2013c).

Measuring research performance of institutions affects the academic profession because their work is the delivery system. It reminds academics that their research work and outputs are under scrutiny by university administrators and their performance is being monitored constantly. This could result in increased stress and might affect the well-being of academics.

Rating of teaching and learning system

The teaching and learning system in Malaysian HEIs is rated using SETARA[2], which was developed and measured by MOHE. The function of SETARA is to assess the quality teaching and learning at the undergraduate level of HEIs according of the MQF. Criteria of SETARA are clustered into (1) governance, (2) physical and financial resources, (3) talent, (4) process, and (5) quality of graduate and graduate satisfaction.

The measurement of governance considers governing body, academic governance, management and staff, strategic planning, academic autonomy, lines of responsibility and decision-making, student representation, and organisational climate. Physical and financial resources take into account infrastructure, finance and support services. Talent takes into account quality, experience, and diversity of academic staff and the diversity of the students. The curriculum process includes the design of curriculum, quality delivery and pedagogy, quality assessment, monitoring, and ancillary activities. Measurement of the quality of graduate and graduate satisfaction considers graduate marketability, graduate satisfaction, employers' satisfaction, and generic student attributes.

A number of academic programmes which are linked to professional bodies are also rated through d-SETARA, which is a discipline-based rating system using the same criteria. SETARA and d-SETARA[3] place greater emphasis on benchmarking between HEIs and disciplines rather than creating competition (MQA, 2013b).

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[2] Rating System for Higher Education Institutions
[3] Discipline-based Rating System for Higher Education Institutions

Similar to the implication of MyRA for the academic profession, the rating of teaching and learning has resulted in complaints and dissatisfaction among the members of academic professions in that their workload is increased and their resources are diluted.

Objectives of study

The aim of this collaborative study is to describe and compare the academic profession (full-time employed faculty in four-year higher education institutions) of Asian societies with special attention to the role of academies in their diverse and dynamic background in teaching, research and services.

This paper only addresses two aspects of the changing roles of academic profession; teaching and research. In relation to the APA study, this paper addresses only the following research questions: Does the Asian academic profession find that different aspects of their work reinforce each other or do they experience significant role strain? Specifically, this paper discusses academics' inclination towards teaching and research, their involvement in specific teaching and research activities, the extent of collaboration in research activities, and the source of funding for their research.

Research methodology

The APA study, initiated by the Research Institute for Higher Education (RIHE), Hiroshima University, is the Asian version of the CAP project (2007). It began with the Hiroshima International Workshop, which was held July 17-18, 2011, to establish the methodology and survey. It was attended by members representing 10 Asian countries. The survey was further refined through discussions via e-mail. To allow comparisons with CAP project (2007), the format of the APA survey does not differ much from the CAP survey.

Each country was given the freedom to make minor changes to the survey so that the items are relevant in the context of higher education in their countries. However, to allow across country comparisons, the format of the original questionnaire was maintained. It was agreed by all members that in order to minimize measurement bias across countries, country teams were to maintain a high level of standardization in terms of question order, question wording, response options, reference periods, and layout and formal design. It was also reinforced that cultural patterns and language specifics might require functional rather than formal equivalents and country teams may design national extensions

to the questionnaire.

The target was to have at least 800 respondents from each participating countries. In Malaysia, the questionnaire was sent to all 20 public institutions and extra care was undertaken to ensure a fair representation of respondents across academic ranks and disciplines. Responses were received from 18 universities (90%). From the earlier studies involving academics, it was anticipated that the response rate would be very low, thus 3,000 questionnaires were hand delivered or posted to enumerators appointed in each institution. They were briefed by personal interaction or phone call on methods in selecting samples to ensure a true reflection of the changing academic profession in Malaysia. Several reminders were made before the team decided to end the data collection as the number of respondents met the target of 800. However, after the data cleaning process, a few responses had to be excluded.

Findings and discussions

Background

The majority who responded were males (60.7%) and married (86.8%). The team managed to get an ample response across the three academic ranks: professors (14%), associate professor (21.8%) and lecturers (64.2%), although this may not reflect the proportion in Malaysian higher education. According to the Malaysian Higher Education Statistics 2011 (MOHE, 2012), 29,198 academics served in universities with a composition of 6.86 percent professors and 16.48 percent associate professors. There is also a fair distribution across types of universities (Table 2).

Table 2. Distribution of respondents

Background Information	Categories	Frequency	%
Gender	Male	476	60.7
	Female	308	39.3
Marital status	Married/Partner	676	86.8
	Single	103	13.2
Academic rank	Professor	106	14.0
	Associate professor	165	21.8
	Lecturer/ Assistant professor	487	64.2
Types of institutions	Research	320	40.0
	Comprehensive	278	34.8
	Technical	202	25.2

Activities emphasized

Respondents were asked to indicate which of the four academic roles were more emphasized. As shown in Table 3, research is the most emphasized, followed by teaching, administrative and management work and social services. This matches the weightings given for these components in yearly appraisals and promotions to positions of associate professor or professor.

Based on the data, the percentage who agreed on 4 (Emphasized) and 5 (Strongly emphasized) are almost equal between research and teaching. Although teaching is given less weighting in promotion criteria, academics seem to be conscious that their role as a teacher must balance their role as a researcher.

Table 3. Roles emphasized in academia

Item	Research		Teaching		Admin. and Mgmt.		Social Services	
	N	%	N	%	N	%	N	%
1 Not emphasized	9	1.1	7	0.9	17	2.1	18	2.2
2	45	5.6	24	3.0	70	8.8	96	12.0
3	126	15.8	168	21.0	327	40.9	302	37.8
4	226	28.2	301	37.6	261	32.6	265	33.1
5 Strongly emphasized	383	47.9	290	36.2	112	14.0	106	13.2

Due to the under emphasis of social services and community engagement work, the MOHE had started to provide a special grant, Knowledge Transfer Programme (KTP) in 2011, to enable the development and improvement of the quality of products, services and policies to be shared for mutual benefits between the stakeholders *i.e.* academia, industry, community and the graduate/postgraduate intern. Guidelines, which were piloted on the Malaysian Apex University, Universiti Sains Malaysia, are being finalized to assess the community engagement work conducted by each university. As can be seen, only 13.2 percent agreed that there was a strong emphasis on social services.

Inclination towards teaching and research

The respondents were asked to indicate whether their inclination was primarily in teaching, research or both. A majority of academics in all types of universities (research, comprehensive and technical) preferred both. Those who were inclined towards research alone were very small while the percentage that was interested primarily in teaching ranges from 8.5% to 14.5% (Table 4).

These results are very encouraging because it provided evidence that the drive for research as the main agenda in Malaysian universities had not deterred academics' passion for teaching.

Table 4. Inclination towards teaching and research by university types

Item	Research		Comprehensive		Technical	
	n	%	n	%	n	%
Primarily in teaching	27	8.5	40	14.5	20	10.2
In both, but leaning towards teaching	142	44.5	102	37.1	84	42.85
In both, but leaning towards research	145	45.4	124	45.1	84	42.85
Primarily in research	5	1.6	9	3.3	8	4.1
Total	319		275		196	

To gain a better picture of the changing academic profession, the existing data were compared to findings in the CAP project (2007) as discussed in Azman, Pang, Sirat & Yunus (2014, forthcoming). Data from Malaysian CAP project (2007) was captured from 816 respondents across 18 public universities. In Table 4, it can be seen that the inclination on 'both teaching and research but leaning towards teaching' has increased in research universities although the drive towards research, especially after 2007, was overwhelming. The percentage of those whose inclinations were 'primarily in research' had also decreased and this trend was evident in all types of universities. It is also evident that academics are trying to strike a balance between the two concentrations; teaching and research. This phenomenon was highlighted by Gray, Froh and Diamond (1992):

> The results indicate that people in the university community tend to favor a balance between research and undergraduate teaching. In contrast, respondents reported that the "university" places greater emphasis on research than on teaching. Differences in the way respondents perceived the direction the university is taking and the direction it should take suggested a conflict between the culture of the university and the values of individuals.

The findings had also shown that the percentage whose inclination was on 'both teaching and research but leaning towards research' had decreased tremendously in research universities but an upward trend can be traced for

comprehensive and technical universities (Table 5). The findings may be in conflict with the expectations for research universities. However, from the Scival Spotlight 2011 report of Universiti Putra Malaysia and the number of ISI publications of Universiti Malaya which was merely 500 in 2007 to more than 2000 in 2011 (refer to university websites), the productivity of Malaysian research universities cannot be denied. It may be extrapolated from this study that provision of extra funding and resources for research, and university strategies such as reducing undergraduate education and concentrating more on graduate education has provided academics the much needed environment to excel in teaching as well as research, development and commercialization. In other words, the right kind of environment may lead to producing more but with lesser effort.

Table 5. The changing inclination towards teaching and research by university types

Item	Research		Comprehensive		Technical	
	2007	2012	2007	2007	2012	2007
Primarily in teaching	4.4	8.5	8.9	14.5	6.4	10.2
In both, but leaning towards teaching	38.5	44.5	54.9	37.1	51.4	42.85
In both, but leaning towards research	54.9	45.5	34.5	45.1	39.4	42.85
Primarily in research	2.2	1.6	1.7	3.3	2.8	2.3

Involvement in specific teaching activities

Academics' involvement in specific teaching activities was also captured in the survey. They were asked to response 'yes' or 'no' to the items given. To ease the discussion, the highest for each item is underlined (Table 6). The findings show that academics of research universities are more involved in most of the teaching activities listed and the technical universities are also doing a fair bit. However, academics of comprehensive universities are doing somewhat less than the academics in research and technical universities. This can be related to a statement by Jenkins (2004) that research and teaching are closely interdependent and most teaching is conducted by people who are active in advancing knowledge. In short, active researchers are more committed in executing and trying out various teaching activities.

Generally, classroom instruction remains dominant in Malaysian public

universities. It can be seen that involvement in distance education was rather low as compared to the rest of the activities (42% in research universities and 22.8% in technical universities). In Malaysia, public universities are focusing less on distance education. It is has been utilized by private universities especially Open University Malaysia (OUM), Multimedia University (MMU) and University Tun Razak (Uni Razak). In line with this, it can also be seen that ICT-based learning is also rather low. However, many are using e-mails as a way of communicating with students.

Table 6. Involvement in specific teaching activities by university types

Item	Research				Comprehensive				Technical			
	Yes		No		Yes		No		Yes		No	
	n	%	n	%	n	%	N	%	N	%	n	%
Classroom instruction	314	98.1	6	1.9	266	96.0	11	4.0	188	93.1	14	6.9
Individual instruction	259	80.9	61	19.1	192	69.3	85	30.7	130	64.4	72	35.6
Learning in project	257	80.6	62	19.4	215	77.9	61	21.1	170	84.2	32	15.8
Practice instruction	203	63.4	117	36.6	149	53.8	128	46.2	127	62.9	75	37.1
ICT-based learning	160	50.0	160	50.0	137	49.6	139	50.4	106	52.5	96	47.5
Distance education	134	42.0	185	58.0	65	23.7	209	76.3	46	22.8	156	77.2
Development of course material	249	77.8	71	22.2	203	73.3	74	26.7	151	74.8	51	25.2
Curriculum/program development	243	75.9	77	24.1	186	67.4	90	32.6	156	77.2	46	22.8
Face-to-face interaction with student outside of class	266	83.1	54	16.9	234	84.5	43	15.5	176	87.1	26	12.9
Electronic communication (e-mail) with students	273	85.3	47	14.7	217	78.3	60	21.7	160	79.2	42	20.8

Involvement in specific research activities

Apart from teaching activities, respondents were also asked to indicate their involvement in various research activities and comparisons were made by types of universities as indicated in Table 7. Similar to Table 6 above, the highest percentage is underlined. Research universities surpassed the comprehensive and technical universities in all research activities. Furthermore, technical universities were found to be more involved in the listed research activities when compared to comprehensive universities.

Table 7. Involvement in specific research activities by university types

Item	Research		Comprehensive		Technical	
	N	%	N	%	N	%
Preparing experiment, inquiries *etc*.	203	65.4	145	52.2	99	49.0
Conducting experiment, inquiries *etc*.	207	64.7	130	46.8	105	52.0
Supervising a research team or graduate research assistants.	254	79.4	163	58.6	128	63.4
Writing academic papers that contain research result or findings.	288	90.0	212	76.3	160	79.2
Being involved in the process of technology transfer.	156	48.8	92	33.1	62	30.7
Answering calls for proposal or writing.	233	72.8	158	56.8	120	59.4
Managing research contracts and budget.	223	69 .7	140	50.6	128	63.4
Purchasing or selecting equipment and research supplies.	225	70.3	138	49.6	120	63.2

Ninety percent of the respondents of research universities indicated that they are involved in writing academic papers that contain research results or findings, as compared to 76.3 percent and 79.2 percent in comprehensive and technical universities respectively. The lowest are for being involved in the process of technology transfer, ranging from 30.7 percent involvement in technical universities to 48.8 percent in research universities, followed by conducting experiments, inquiries *etc*. (64.7% in research universities, 52% in technical universities) and preparing experiments, inquiries *etc*. (65.4% in research universities, 49% in technical universities). In research and comprehensive universities, there is a good mix between science and social science disciplines, thus technology transfer and conducting experiments may be much lower as compared to the other research activities listed because it is not the nature of the disciplines. As for writing academic papers, the high percentage is largely contributed to the high expectations of the universities and the monitoring of performance based on the key performance index set by each university for academics.

Collaboration in research activities

In Table 8, findings regarding the extent of collaboration in conducting research projects are presented. The items focused on whether researchers were conducting individual work or collaborating in their projects, either with those in

the same country or in other countries. Across the three types of institutions, it can be seen that a majority were not working individually in their projects. However, quite a number were still not collaborating.

Table 8. Collaboration in research activities by university types

Item	Research				Comprehensive				Technical			
	Yes		No		Yes		No		Yes		No	
	N	%	N	%	N	%	N	%	N	%	N	%
Are you working individually/ without collaboration on any of your research projects?	89	27.8	219	68.4	65	23.4	175	62.9	44	23.9	139	75.5
Do you have collaborators in any of your research projects?	275	85.9	34	10.6	205	73.7	38	13.7	168	83.2	17	8.4
Do you collaborate with persons at other institutions in your country?	246	76.9	63	19.7	163	58.6	79	28.4	145	71.8	42	20.8
Do you collaborate with international colleagues?	160	50.0	148	46.3	107	38.5	133	47.8	76	37.6	109	52.5

A higher percentage of those from research universities was conducting collaborative research projects, more dominantly with colleagues within the country. In research universities, only 50 percent were collaborating with international colleagues and the percentages are even lower in comprehensive and technical universities (38.5% and 37.6% respectively). Lack of funding may be a major factor in the lack of collaboration in research projects especially with international colleagues. In multiplying the efforts of promoting collaborative projects, the CA project of the National Higher Education Strategic Plan which was discussed earlier, had included one strategic objective for CA project (Academia) specifically "number of academics who have published in collaboration with at least two others from two different faculties or two different institutions". In the revision of the strategic objectives for CA project (Academia) in early 2013, the strategic objective was extended to include collaboration with international colleagues. This is one of the strategies undertaken to increase visibility of and reference to Malaysian universities thus boosting their position in the various world university rankings.

Source of funding for research

Generally, most of the funding for research in Malaysian public universities is obtained through the national government or organizations (Table 9); mainly

MOSTI and MOHE. Apart from that, grants are secured from international organizations such as the Malaysia Toray Science Foundation and the United Nations Development Programme. Especially in research universities, special budgets are given by the government for internal grant allocation.

Table 9. Source of funding for research activities

Item	N	Mean (%)	SD
Your own institution	570	42.85	36.78
National government or organizations	542	60.03	34.77
Foreign government or international organizations	423	1.42	5.56
Nongovernment organizations of Business firms	418	1.51	6.80
Others	411	0.79	7.54

Table 10. Scholarly output of respondents

Item	N	Mean
Scholarly books you authored or co-authored	597	0.98
Scholarly books you edited or co-edited	574	0.94
Articles published in an academic book or journal	659	4.80
Research report/monograph written for a funded project	618	2.08
Paper presented at a scholarly conference	680	3.95
Professional article written for a newspaper or magazine	565	0.98
Patent secured on a process or invention	557	0.40
Computer program written for public use	548	0.29
Artistic work performed or exhibited	555	0.29
Video or film produced	544	0.12
Others	533	0.05

Scholarly outputs

Lastly, it is good to compare how much the transformation in Malaysian higher education has actually materialized in terms of scholarly outputs. Respondents were asked to indicate their scholarly outputs in the last three years. As shown in Table 10, quite a number had produced articles in academic books or journals (mean = 4.80) and had presented papers at a scholarly conference (mean = 3.95) and produced research monographs (mean = 2.08). However, not many are focusing on writing or editing books.

As observed in Universiti Putra Malaysia, and the trend is similar in other institutions, only those in social science disciplines are into publishing books or book chapters. And only those in sciences are working on patents.

These numbers are far from encouraging. As these data were elicited from

respondents comprised of only 14 percent professors but 64.2 percent of lecturers, that may explain the small number of scholarly outputs being produced. As has been discussed earlier, productivity has increased tremendously, especially in research universities since 2007. Likewise, it has also been very encouraging in comprehensive and technical universities.

Conclusion

In the over-zealousness of academics to perform in research and publications due to the over-emphasis by both the MOHE and also the universities, the findings show that academics especially in research universities were giving balanced concentration to both. This is very promising because academics must ensure balanced concentration on teaching and research, while not forgetting other commitments such as community engagement and administrative duties.

In terms of inclination, the findings verified that a majority of the respondents were inclined to both research and teaching although some were inclined to teaching while quite a number were inclined towards research. The number who was interested primarily in research or primarily in teaching was very small and that is a good indication. As a higher education institution, there must be a balance in both kinds of activities. Teaching and research complement each other.

The focus on teaching may be contributed largely by the establishment of the MQA which assures quality education through its many standards such as COPPA, programme standards, guidelines for good practices (GGP) and also the SETARA and d-SETARA rating to assess teaching and learning. Furthermore, CA projects such as CA project (teaching and learning) and CA project (e-Learning) are the MOHE's platform to monitor progress and performances of universities.

The focus on teaching may not be due to extrinsic driving forces alone, but it may also be driven by intrinsic motivation such as passion for teaching. Although these academics may have other career options, but the main reasons that most join academia is their passion for both research and teaching.

Morshidi's (2009) conclusion from the CAP project (2007) portrayed Malaysian academics as civil servants with tenured positions who were too complacent, and that Malaysian academics need to project some elements of extraordinariness in their work and output. The situation was very true prior to 2007. The designation of four Malaysian universities as research universities in

2006, and later one more institution made the benchmark standards, has somehow accelerated the research and development efforts of academics. From 2007 onwards, Malaysian higher education has undergone tremendous transformation. With the extreme demands, academics are now more targeted to publish in journals with high impact. It is no longer "publish or perish" culture but "publish in ISI or perish" culture. The focus is on quality, impact actor, citations, research, development and commercialization (R&D&C) outputs including patents and copyrights, and commercialization. Exerting extra pressure and tension may sometimes be the right ingredient for universities to expedite their progression in becoming 'world class' and to be more recognized and relevant.

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Development and Challenge of Academic Profession in Taiwan

Chen, Robin Jung-Cheng*

Introduction

Taiwan higher education has dramatically extended its scale, publicly and privately, for the past ten years which leads university management more difficult challenges because of the limitation of national resource distribution. In addition, diploma inflation, difficulty recruiting students and reduced learning quality all put higher education into a challenge situation. When it comes to the academic professional development, many academics are facing more challenges and changes compared to past decades. This study explores the reasons for and the consequences of these challenges and changes in Taiwan.

For the past decade, research has become a fundamental activity for academics in Taiwan. As Clark (1973) argued, "research university", a term once used to describe the top 100 American universities, now is an appropriate label for the leading universities in most developed countries. Internationally, scientific and technological research capabilities can ultimately predict a country's membership in the "First" as opposed to the "Third World" (Gottlieb & Keith, 1997). In any disciplinary area, professors at research universities are expected to produce knowledge, use the latest research results in their teaching, and train students to conduct research. Today in Taiwan most universities have strict regulations requiring journal publication, and that becomes the major indicator of academic promotion. "Publish or perish" has become the dominant value for academics, and is essential to academic survival.

The study is part of the largest ever international comparative study, which

* Assistant Professor, National Cheng-Chi University, Taiwan / Coordinating Professor, Seattle Pacific University, USA, e-mail: robin@nccu.edu.tw

includes Japan, China, South Korea, Vietnam, Malaysia, Indonesia, Cambodia and Taiwan, and is a follow-up to a similar study sponsored by the United States Carnegie Foundation in the early 1990s. The study uses a common survey instrument developed and conducted by Research Institute for Higher Education (RIHE), Hiroshima University, Japan with a serial of meetings. Data from Taiwan will be incorporated into a larger international data set which will enable international comparisons regarding the changing nature of the academic profession.

Core concepts of this paper include:

- To what extent is the nature of academic work related to publication?
- What are the external and internal drivers of these changes?
- How do the academic professions respond to changes in their external and internal environment?
- What is the capacity of academics to contribute to the higher education in Taiwan and what are the consequences?

The current development of higher education in Taiwan

Oversupply of universities

The total number of higher education institutes was 154 in 2000, and increased to 163 in 2010. (Ministry of Education, 2011) The increasing number was only 9 within a decade which resulted from the growing number of universities. In the previous decade, 1990 to 2000, the number of universities has dramatically increased from 57 to 135. And the private one has added 37. On the other hand, the number of the public and private junior colleges decreased 42. Junior colleges decreased 4 in a decade and all of them are private. According to this data, increased number of universities is from the restructuring of the colleges and junior colleges. Does it raise higher education competiveness by upgrading colleges to universities? Will upgrading colleges result in disproportional resource distribution? More research and exploration are required to reach a definitive conclusion.

Declining student enrollments

The number of births in 2001 was 260,354, then declined to 205,854 in 2005. In 2010, the number even reduced to 166,886. The birth rate decreased

from 15.93 per thousand people in 1986 to 7.21 making Taiwan the country having the lowest birth rate in the world. In other words, the population is aging and will show negative growth. The Council for Economic Planning and Development speculates that the population's negative growth will happen in 2022. (Chen, 2010) If 18 years is taken as the age of entry into university, persons born in 1995 will go to university in 2013 and the number will be 329,581. In 2016, the number will decline to 271,450 in 2028, and the number will continue to reduce to 166,866 (Department of Household Registration, 2011). In brief, the low birth rate's impact on higher education will be more serious in the next decade. Individuals unable to go to university because of accident, death or mentally challenged are not included. The number of first year students will decline to 247,966 (Ministry of Education, 2011), forming a gap compared to the birth rate. The data show that higher education does not have a positive condition in the next decade if there are no other sources of students.

Increased teacher quality

If the number of doctoral degrees is an indicator of teacher quality in higher education, Taiwan's higher education has improved rapidly in the past decade. The number of teachers in higher education was 77,297 in 2010, and the teachers from the public universities and colleges holding a doctoral degree increased from 64.9 percent in 2000 to 82.9 percent in 2010. In private universities and colleges, the teachers with a doctoral degree increased from 37.8 percent in 2001 to 61.9 percent in 2010. (Ministry of Education, 2011) The growth is nearly double. In vocational schools and junior colleges, the number of the teacher having a doctoral degree also doubles. When analyzing by age, 45 to 49 year-old university and college teacher counts the highest proportion (23.8%) in 2010. Compared with the year 2000, 35 to 39 year-old teachers were the highest proportion (24.4%). The teacher's age extended 10 years old in the past decade.

Legalization of university evaluation

Taiwan began improving the quality of higher education's teaching and research in 2006. The Ministry of Education authorized the Higher Education Evaluation and Accreditation Council of Taiwan to conduct the first five-year university evaluation. The university evaluation's primary characteristic was to

ensure quality instruction and the practice of self-improvement mechanisms. The evaluation's result will become the basis of the university scale's adjustment, the tuition and incidental fees and funds' subsidy. Although the result of the evaluation raised dispute from some universities, the evaluation still makes the universities pay more attention to practice and improvement of teaching, counseling and the quality of teacher work. And the public can also take the result in to consideration when their children are selecting the university they will attend.

The second evaluation period began in 2011. It differs when compared with the first period because of "item 4: achievement and social accountability". This item is to ensure student's learning achievement and responsibility. In other words, universities are to have a complete learning evaluation mechanism in the future to choose the students who can accord with the university's development. University should also create a mechanism which can help the students reach basic accomplishment and core ability. This learning evaluation is to ensure students have these capabilities before their graduation. That is to say that the evaluation has already revealed students' learning achievements, and the view of the "input" when the enrollment to "output" when the graduation has replaced the view of traditional method that focused on teaching. In sum, the most important thing is how much students have learned from school. The rigid demand of achievement became a significant emphasis of university administration because of the university evaluation. The professor evaluation, exit mechanism of university, teaching quality assurance mechanism and so on, all of them have seriously impacted academic freedom, which is the spirit of the medieval university, because the scholars queried about academic freedom could not ensure the quality of education (Chen, 2010). Scenes of the students gathered and followed when professors gave lecture did not exist anymore. What kinds of the basic accomplishments and core abilities that students should have when graduating and how these capabilities can match the market are the new thing that concern universities.

Universal university education

According to higher education models (Trow, 1970s), higher education development can be divided into three categories. The elite: represents that persons receiving higher education are below 15 percent when concerned with the same age people. The mass: represents that persons receiving higher education are below the 50 percent when concerned with the same age people.

The universal: represents that persons receiving higher education are over the 50 percent when concerned with the same age people.

University education in Taiwan was the elite education, only the privileged people could get into the university. But with rapid changes of Taiwanese society, the Ministry of Education has already declared that the university is universal education and changed the property of university education.

Transformation and challenges of the academic profession

Scoot (1995) considered that higher education not only presented a society's political and economic development, but also a cooperative product of the intellectual and the scientific community. The intellectual's reflection and the system's changes are mutually influenced, and, most of the interactions cannot avoid the impact of global political and economic change. Therefore, we cannot just consider a small number of traditional dimensions when discussing assessment of a university's ranking compared to international peers and the academic profession's development. When it comes to competing internationally, the most obvious example is the world university's ranking. Bowen, Kurzweil & Tobin's (2005) study demonstrated that the problem became more complex when the ranking got into the higher education's operation, including the number of Nobel Prize recipients, the essay reference rate, numbers accepted by the top periodicals and the amount that printed on the Science Citation Index or the Social Sciences Citation Index are all taken into consideration. Nonetheless, this paper finds no method to replace the above-mentioned one. In consequence, the academic profession development impacted by the globalization may become more standardized and more regularized.

Concerning innovation and the profession of knowledge production, will this development limit the academic profession or improve the quality of the academic? It is worthy of further study. Teaching, research, and service are the three main areas traditionally related to academic development. But when every scholar defines professional knowledge in a more detailed manner and tries to respond to the demand of global competition, these three main areas clearly start to change. However, the role of the academic profession still faced the double pressure of external challenges and internal demand. What deserves notice is the role of the institution has become more and more important, including the power of controlling management and resource distribution. These reasons have all changed the appearance of academic development

(Henkel & Little, 1988).

Apart from these essentially-change reasons, disagreement of the occupational status in academic works is also included. The generalized academic staff is usually used to indicate the employee having the service efficiency (Enders & de Weert, 2009). As a result, even to be classified as an academic staff and doing the academic profession, the staff still cannot be sorted together because of the delicate division and strong competition. As Hasley (1992) has mentioned in his work "Decline of Donnish Dominion", the power of British higher education institute faculty has declined because of the scale of the higher education system is getting larger. So we have to understand that the academic profession is not a firm organic operation, we should be psychologically prepared because the academic profession has started to collapse. Academic circles in the United States also observed a familiar situation. For example, Clark (1987) noticed that a barrier has been produced between the senior level and junior level at an institution. The design and practice of tenure also have been questioned gradually. The academic environment has dramatically changed in the past 30 years, and the change shook tenured scholars' status.

In sum, many higher education systems around the world have undergone the significant structural changes. It also altered the academic profession's traditional characteristics. From Enders & de Weert (2009, p.3), we can generalize some common phenomena as the following:

- Higher education's generalization is facing changing student characteristics and expectations.
- Pressure to protect academic freedom is increasing gradually. Funds for teaching and research have already transferred because resource allocation and outcomes subsidies have changed. This makes the academic profession have to face pressure of producing more public goods under fewer government subsides.
- Gradually-increasing achievement and quality evaluation leads to a culture of examining and effects.
- Change of a state management model and the employment relationship related to the public level have gradually integrated into the private company's operation.
- Appearance of a new relationship between government, industry, and the university lead to political priorities in higher education and research. It will focus on the practice of socially-related knowledge and an emphasis on the application, equality and practicality of knowledge. These phenomena

all excite the new model of knowledge production.
- New management models and the management class of higher education institutions appear.
- Use of technology in research, teaching and learning will replace alternative education.
- Internationalization and globalization will gradually deepen their influence on the higher education system.

Methodology

The sampling population is composed of faculty in higher education institutes that offer baccalaureate degree or higher and researchers in independent research institutes. Both faculty and researchers refer to assistant professor, associate professor, professor, assistant research fellow, associate research fellow and research fellow. All of these academics are included in the desired population of this survey.

An ideal sample size for Taiwan is 400, according to the cooperation meeting held in Hiroshima. To achieve an effective sample size of 400, it is necessary for the actual sample size to be larger than 400 to account for non-response of the target population. The sample size needs to be adjusted to reflect anticipated response rate. Experience in previous survey studies in Taiwan suggest that response rates to survey tend to hover around 30 percent. A conservative response rate of 30 percent has been assumed for the survey. Therefore, this study design sample size has been rounded up to 1,200, and the number of the respondents is 412.

Preparation of the sample involved the National Academy for Educational Research (NAER), the agency that organizes hundreds of committees conducting all kinds of text books reviewing and compilation. NAER was asked to provide a full list of committee members who nearly cover different types and scales of higher education institutes in Taiwan to draw as sample.

In order to explore academic profession development and change, the study investigated questions divided into six parts. The first part of the survey addressed career and professional situation, the second part of the survey addressed general work situation and activities, the third part of the survey addressed teaching, the fourth part of the survey addressed research, the fifth part of the survey addressed management, and the last part addressed demographics. Both descriptive statistics and inferential analysis were used in analysis of data collecting. Creswell (2008) points out that using descriptive statistics will

enable the analysis of the trends and tendencies of the data and provide an explanation of "why the results turned out the way they did" (p.57). In addition, inferential analysis will help to draw inferences and make predictions based on the data.

Findings and discussion

Currently, Taiwan has three main academic positions in universities or research institutes: professor, associate professor, and assistant professor, and there are only few lectures and teaching assistants remaining for the previous system. Whether the academic change is from external or internal expectations, getting more publications in journals or books seem to be the first priority for academics to develop their profession. Therefore, the Table 1 to Table 6 present figures that allow comparison of the distribution of academics across the samples in terms of academic background and demographics to exam their academic publications. Note that certain numbers do not sum to the 412 due to missing data.

In summary, the figures show that:

- The distribution of males and females working as academics (66.35% to 33.65%) fits the distribution of population (67.6% to 32.4%) (Ministry of Education, 2013) and male academics show a greater production than females in publication (mean: 7.07 to 4.75);
- Most academics are married or partnered (88.89%) and have more publications for the past three years than singles (mean: 6.55 to 4.03);

Table 1. Articles published in an academic book or journal (by gender)

	Mean	N	percent	Std. Deviation	Minimum	Maximum
Male	7.07	209	66.35	6.947	0	50
Female	4.75	106	33.65	3.355	0	15
Total	6.29	315	100	6.078	0	50
Missing		97				

Table 2. Articles published in an academic book or journal (by family status)

	Mean	N	percent	Std. Deviation	Minimum	Maximum
Married/Partnered	6.55	280	88.89	6.313	0	50
Single	4.03	35	11.11	2.802	0	13
Total	6.27	315	100	6.074	0	50
Missing		97				

- Academics whose spouse doesn't have full time job shows much more productivity in publication (mean: 9.70 to 5.74);
- Highest degree earned is close to evenly distributed between domestic and overseas institution (48.8% to 51.2), and the publications is slightly different (mean: 5.51 to 7.17);

Table 3. Articles published in an academic book or journal (by employed spouse/partner)

	Mean	N	percent	Std. Deviation	Minimum	Maximum
Full time	5.74	239	83.86	4.470	0	21
Non full time	9.70	46	16.14	11.183	0	50
Total	6.38	285	100	6.220	0	50
Missing		127				

Table 4. Articles published in an academic book or journal (by highest degree)

	Mean	N	percent	Std. Deviation	Minimum	Maximum
Domestic	5.51	142	48.80	4.120	0	21
Overseas	7.17	149	51.20	7.545	0	50
Total	6.36	291	100	6.164	0	50
Missing		121				

Table 5. Articles published in an academic book or journal (by discipline)

	Mean	N	percent	Std. Deviation	Minimum	Maximum
Humanity	5.15	59	19.80	4.151	1	20
Social science	5.37	56	18.79	3.570	0	15
Nature science	6.58	31	10.40	5.309	1	18
Engineering	6.68	34	11.41	7.938	0	40
Agriculture	5.50	2	0.67	.707	5	6
Health/Medical science	19.50	10	3.36	16.913	4	50
Fine Arts	2.33	9	3.02	1.732	0	5
Teacher training and education science	6.22	93	31.21	4.479	0	21
Others	7.25	4	1.34	4.573	2	12
Total	6.28	298	100	6.129	0	50
Missing		114				

Table 6. Articles published in an academic book or journal (by academic rank)

	Mean	N	percent	Std. Deviation	Minimum	Maximum
Professor/ Research fellow	7.65	150	47.32	7.588	0	50
Associate professor/ Associate research fellow	5.39	102	32.18	4.110	0	20
Lecture	1.67	3	0.95	.577	1	2
Assistant professor/ Assistant research fellow	4.75	59	18.61	3.288	0	15
Research assistant	.67	3	0.95	.577	0	1
Total	6.26	317	100	6.051	0	50
Missing		114				

- The selected sample is distributed proportionately across different disciplines despite slight under and over-representation at few disciplines due to the availability of the academics, and among those, in health/medical science discipline shows the largest production in publication (mean=19.5) while the fine arts discipline has only 2.33;
- Respectively, professor, associate professor, and assistant professor show an ordinal production in publication (7.65, 5.39, 4.75), and this also indicates the respondents are more likely to be senior academics.

Though the above set of descriptive statistics includes several individual variables with demographics and background, it is worth examining variables that are related to current changes of higher education: satisfaction of work, change of working condition, the quality of students. The academic productivity is also taken as the dependent variable to see the correlation. Surprisingly, a moderate positive correlation with research paper productivity is the quality of students. From descriptive material presented Table 7, marking "excellent" review for the quality of students reaches 5.70 publications in average; "good" for the quality of students reaches 7.72 publications in average; "fair" for the quality of students reaches 5.50 publications in average; "poor" for the quality of students reaches 4.50 publications in average; "don't know" for the quality of students reaches 2.50 publications in average. Table 8 shows the tests of between-subjects effects (F value= 3.023; p=.018). The quality of the students has its significant meaning of producing research papers for academics. With the same tests of different variables: satisfaction of work, change of working condition, there is no significant meaning with research paper

production.

These findings provide support that the correlates of academics publication productivity differ markedly across disciplines and demographic backgrounds.

Table 7. Dependent variable: Articles published in an academic book or journal

Quality of the students	Mean	Std. Deviation	N
Excellent	5.70	3.91	27
Good	7.72	7.26	134
Fair	5.50	4.33	98
Poor	4.50	3.65	18
Don't know	2.50	0.70	2
Total	6.50	5.96	279

Table 8. One-way ANOVA of articles published in an academic book or journal with the quality of students

Source	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	417.396[a]	4	104.349	3.023	.018
Intercept	1100.930	1	1100.930	31.893	.000
Quality of the students	417.396	4	104.349	3.023	.018
Error	9458.354	274	34.520		
Total	21657.000	279			
Corrected Total	9875.749	278			

a: R Squared = .042 (Adjusted R Squared = .028)

Conclusion

Higher education in Taiwan has changed dramatically in the past ten years. The university's position has been transformed from elite education to universal education, meaning that the university focus has shifted from isolation in the so-called ivory tower to the secular society and responds to market demand and operating achievement. In the viewpoint of "achievement accountability", all of these factors have to be emphasized: the professor's research papers output, the world ranking, the university evaluation, the standardization of the teaching content and the graduates' abilities have to match the market's orientation. The government's role of operating higher education also transferred from the comprehensive controller into a supervisor in the second line. So the government's subsidies changed to focus on the joint project in order to save the

resources and the university management has turned to be more independent from government.

The value of getting published has driven the higher education institute policy in Taiwan. With respect to the relative importance of ascription versus either achievement or institutional characteristics in discussing publication productivity, the findings for academics in different discipline are quite similar. For example, across disciplines the mentioned variables, much of the male-female productivity gap that exists in each discipline can be explained by examining the gender differences in variables that correlate strongly with publication productivity. For instance, females receive fewer grants than males and are employed disproportionately in disciplines with low averages for article productivity such as humanities.

Most academics agree that working conditions higher education have changed during the past decade. But only less than one third of respondents hold positive views while the remainder of more than two thirds of respondents think working condition will worsen. The pressure of getting published might be one of the pressure sources according to the above analysis, but there are much more about the external factors, including decreasing population, limited government finical support, international competition, imbalance of graduate supply to market demand, and the misplaced priority arrangement for the professoriate in conducting research, teaching and service.

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The Academic Profession in Vietnam

Pham Thanh Nghi*

Introduction

The academic profession everywhere in the world is undergoing dramatic change. According to Altbach (2003) the long-established academic communities from the Global North are at the center at least for the immediate future, an immutable reality of the world knowledge system. Universities in developing countries and their academic communities must function in the unequal world of peripheries. Related to peripherality is dependency. Third World academics often perceive themselves as dependent on the main centers of knowledge and the world scientific networks. As part of the third world community, Vietnamese academic community was formed and develops depending on the development of its higher education system. The so called academic profession emerged in Vietnam with the establishment of the first higher education institutions at the beginning of 20th century, and currently faces with dramatic change. This paper examines the Vietnamese academic profession at a time of higher education transition from bureaucratic control to a market mechanism.

1. Higher education development and formation of academic profession in Vietnam

If establishment of the Temple of Literature in Thang Long (Hanoi today) in 1070 as the formal inauguration of higher education in Vietnam, the system has existed for nearly one thousand years. The provision of higher learning through classical education during feudal time was understandably elite by the nature and

* Professor, Vietnam Academy of Social Sciences, Vietnam, e-mail: ptnghi2008@gmail.com

aimed at meeting administrative requirements of the imperial court (Lam, Nung & Sloper, 1995, p.135). Centuries later, in 1918, regulations about higher education in Indochina was promulgated that affected the establishment of the College of Medicine and Pharmacy (1902), Teacher Training College (1917), College of Veterinary Medicine (1918), College of Law and Administration (1918), College of Agriculture and Forestry (1918), College of Engineering (1918), College of Fine Art and Architecture (1924), College of Literature (1923), and College of Experimental Sciences (1923) (Hac, 1995). Some colleges were merged to form the University of Indochina in Hanoi in 1939. Providing in theory the needs of the entire Indochina area, it had enrolled some 1,200 students by 1945. Most lecturers were French or graduated at French universities.

During the war of resistance against the French Colonialists, 1945-1954, there was a partition of the whole country into two areas: the French controlled areas and the liberated areas. In the former one, higher education remained the same as in the period of French colony. In the liberated areas, the Vietnam War resistance government paid attention to the development of colleges or classes at the university level. In 1950 three tertiary education centers developed in the province of Thanh Hoa, in the inter-provincial area of Viet Bac and Nanning, China. After 1954, these three tertiary education centers were unified into the University of Hanoi (Hac, 1995, pp.51-52).

The division of Vietnam into the Democratic Republic of Vietnam in the North, and the Republic of Vietnam in the South in 1954 heralded two parallel systems of higher education. Higher education in the North developed on the Soviet model and higher education in the South was contrasted on the American model. In the academic year 1974/1975, there were thirty higher education institutions in the North. During the war, many institutions were divided into small colleges and some were relocated to rural areas. In the South, before reunification of the country, there were four public universities located in Saigon, Hue, Can Tho and Thu Duc; three community colleges in My Tho, Nha Trang and Da Nang; and seven private tertiary education institutions in various locations (Hac, 1995).

In 1975, all colleges and universities in Vietnam were united into a national system regulated according to the model of Soviet Union. At the Sixth Congress held in 1986, the philosophy of Communist Party of Vietnam was fundamentally changed to move the country from a centrally planned economy to a market economy. In responding to this socio-economic change, the higher education system began, in 1987, a series of important policy initiatives in keeping with national policies for innovation. Principal among those was the

acknowledgement that higher education programs should aim at serving not only the state and collective economic sectors, but also all other economic sectors; that higher education budgets should be based not only on the allocation of finance by the State but also on the mobilization of other resources, including payment of tuition fees; that the scope of higher education and training should develop on the basis of diversity of training forms; and that at the same time, the development of formal training should follow a more rational and systematic pattern which would ensure both quality in education and also satisfy new and emerging requirements of the society and economy (Dao, Thiep & Sloper, 1995).

Restructuring of the higher education system began in the early 1990s and has continued. The process started with the establishment of two national universities in Hanoi and Ho Chi Minh City and three regional universities in Thai Nguyen, Hue and Da Nang as multi-disciplinary institutions. Other changes have taken place at the provincial level. Hong Duc University was established in Thanh Hoa in 1997 as a first multi-disciplinary university functioning under of the supervision of provincial authority. Following this event, Hai Phong province celebrated the inauguration of Hai Phong University in the second largest city in the North as a multi-disciplinary university under supervision of Hai Phong Provincial People Committee. The University of An Giang was established as the third multi-disciplinary institution under the provincial supervision. At present, nearly each province has its own university. Modern Vietnamese higher education has developed rapidly in the past 20 years. There are 414 higher education institutions, among which 188 universities and 226 three years colleges.

Higher education institutions in Vietnam can be classified as follows:

- Multidisciplinary institutions;
- Specialized institutions in such areas as engineering, agriculture-forestry-fishery, economics, medicine, pharmacy, sports, culture and arts;
- Local multidisciplinary universities;
- Teacher training colleges and universities;
- Junior colleges.

The emergence of non-public colleges and universities in the early 1990s was considered an important change towards a diversified system of higher education. Since that time, the sector of non-public higher education has grown dramatically. In academic year 2010-2011, there were 80 private tertiary institutions in the country with enrollments of 333,921 students. Compared to public institutions, non-public universities and colleges have more autonomy in

organization, governance, staff management and financial mobilization.

Although economic reform started in 1986, the economic and social situation in the country was still difficult during the period of 1980-1990. In this period, the number of academics was increased, the student enrollment declined slightly. This led to decreases in the student/academic ratio. (Table 1).

Table1. Data on academics and students, 1980-2011

Academic years	1980/1981	1989/1990	2001/2002	2010/2011
Numbers of academics	17,592	20,681	35,938	74,573
No. of Doctoral degree holders	1,409	2,494	4,970	7,924
Percentage	8.0	12.0	13.8	10.6
No. of Master's degree holders	NA	NA	9,543	30,374
Percentage	-	-	26.5	40.7
No. of students enrolled	153,671	126,025	974,119	2,164,774
Student/faculty ratio	8.73	6.09	27.1	29.8

The situation was different from of 1989-2002. Higher education expanded dramatically. The number of academics increased only 1.7 times, while student enrollments had grown 7.7 times which made the student/faculty ratio increase to more than four times from 6.09 : 1 to 27.1 : 1 (Table 1). This ratio was relatively stabilized during the next decade and reached 29.8 : 1 in the academic year 2010-2011. During this period, student enrollments and academics working for higher education institutions had increased two times. The expansion of student enrollment was faster in the university sector (four year training) compared to the college sector (three year training).

Qualification of the academics in higher education institutions gradually improved. The proportion of doctoral degree holders to the total number of academics increased from 8.0 percent in the academic year 1980-1981 to 13.8 percent in the academic year 2001-2002 and then declined to 10.6 percent in the academic year 2010-2011. This proportion in the university sector is much higher than in the college sector (Table 1, 2 & 3). The change of this proportion in each sector and the whole system is rooted in the dramatic increase of student enrollment during the last two decades.

In the last decade, the rate of master's degree holders in both university and college sectors increased steadily (Table 2 & 3). There were 44.9 percent academics holding master's degrees in the university sector, and 31.8 percent in the college sector, in the academic year 2010-2011.

Table 2. University academic qualification 2001-2011

Academic years	Total		Doctoral degree holders		Master's degree holders	
	Number	% of total	Number	% of total	Number	% of total
2001/2002	25,546	100	4,812	18.8	7,583	29.7
2004/2005	33,989	100	5,744	17,6	11,460	33.7
2007/2008	38,217	100	5,643	14.8	15,421	40.4
2010/2011	50,952	100	7,338	14.4	22,865	44.9

Table 3. College academic qualification 2001-2011

Academic years	Total		Doctoral degree holders		Master's degree holders	
	Number	% of total	Number	% of total	Number	% of total
2001/2002	10,392	100	158	1.5	1,960	18.9
2004/2005	13,677	100	246	1.8	3,079	23.9
2007/2008	17,903	100	243	1.4	4,854	27.1
2010/2011	23,622	100	586	2.5	7,509	31.8

Like other developing countries, at the stage of academic profession formation, Vietnam relied heavily on postgraduate education in other countries. As a colony, the first group of lecturers came to Vietnam from France. All academics at that time were trained overseas. In 1951 the first group of Vietnamese students was sent to the Soviet Union for undergraduate studies. And in 1955, postgraduate education for Vietnamese started in such countries as Soviet Union, the German Democratic Republic, Poland, Hungary, Czechoslovakia, and Rumania. Until 1990 the postgraduate education for Vietnamese was undertaken mainly in Eastern European countries. Between 1980 and 1990 Vietnam yearly sent about 1,000 persons to short-term and long-term practical training or formal studies without aiming to attain degrees and long-term studies to attain degrees (Dat & Sloper, 1995).

The government is committed to sending students abroad through, for example, schemes such as Program 322, which each year sends around 450 of Vietnam's best and brightest students overseas for study, at annual cost of 100 billion Vietnamese dong (HERA, 2005, p.73). Country-specific programs also exist, for example, the Training Vietnamese Citizens in the Russian Federation under the Debt Processing Agreement, which at an annual cost of some 48 million Vietnamese dongs has sent 305 students to Russia for studies. Another program, the Vietnamese-American Education Foundation project, sends 100 doctoral students annually to the United States in the priority areas of medicine, natural sciences and technology, mathematics, and environmental sciences.

Most of these students are enrolled from universities and research institutes and are expected to be back and continue their academic career.

In the Higher Education Law, passed by the National Assembly in 2012, academics working in a higher education institution are required at least to have a master's degree. At present, the level of academic qualification is still rather low (Table 2 & 3). The Higher Education Reform Agenda (HERA, 2005) is aimed at increasing by 2020, 60 percent of academics having master's degrees and 35 percent having doctoral degrees. This goal seems by 2020, but it is seen as a long-term goal of the higher education system. Vietnam's in-country postgraduate training is growing rapidly, with large enrollments, but it is faced with quality problems. In 2012 and 2013, the Ministry of Education and Training carried out several quality inspections and, as a result, many master's and doctoral training programs were forced to stop enrollment.

In order to analyze in more details characteristics of academic profession in Vietnam, a survey was undertaken in October 2012. The training profile of respondents selected at 16 universities is presented in Table 4. Among 799 academics, there are 231 doctoral, 388 master's and 155 bachelor's degree holders as highest degrees. The largest number of academics has been trained in the country. At the level of bachelor's degree, only 17 percent of academics have been trained overseas. This rate increases to 19.5 percent at master's degree and 33.3 percent at doctoral degree. These academics have graduated from countries such as Russia, Australia, France, Germany, USA and Japan.

Table 4. Training profile of respondents

Bachelor's degree			Master's degree			Doctoral degree		
Total	In-country	Overseas	Total	In-country	Overseas	Total	In-country	Overseas
799	644	135	614	495	119	231	154	77
100%	83%	17%	100%	80.5%	19.5%	100%	66.6%	33.3%

Table 5. Academic rank of respondents

Academic rank	Frequency	Valid percent
Professor	2	0.3
Associate Professor	30	3.8
Lecturer	650	83.0
Research associate	21	2.7
Research assistant	20	2.6
Other	60	7.7
Total	783	100

Table 6. Overall satisfaction with the academic profession

	Frequency	Valid Percent
1 – Very high	127	16.2
2	361	45.9
3	246	33.6
4	28	3.6
5 – Very low	6	0.8
Total of academics responded	786	100

Table 7. Time spent by academics on teaching, research, service and administration

Activities	Hours per week when classes are in session	Hours per week when classes are not in session
Teaching	15.4	18.8
Research	14.2	19.7
Service	7.2	7.2
Administration	9.3	10.3
Other academic activities	8.3	9.5
Total	54.4	65.5

In terms of academic rank, most respondents (83%) are lecturers, two respondents (0.3%) have the title of professor, 3.8 percent are associate professors, and the rest are research associate, research assistant or others (Table 5).

Most academics are satisfied with their career; 62.1 percent demonstrated high and very high levels of satisfaction, only 4.4 percent expressed an unsatisfactory attitude toward the academic profession (Table 6). This high level satisfactory attitude could be explained by prestige of teaching and learning activities in Vietnamese culture. Moreover, at present, academics working at universities and colleges have above average income in the society. Academics enjoy their professional activities and at the same time they are able to cover the living expenses.

Student enrollment expansion in the last two decades has led to heavy work loads for academics. In term of regulation, each academic is required to teach 280 teaching hours per year, but in practice academics are asked to work many more hours and get paid for that. Consequently, they have not much time left for research. Hours spent on teaching and research reported by respondents are fairly balanced (Table 7), they spend more time on each activity when classes are not in session. Vietnamese academics spend much more time on teaching per week, 34.2 hours (when classes are in session and not in session), compared to

25 hours by Japanese and 26.8 hours by Taiwanese. Vietnamese academics also spend more time on teaching when classes are not in session. Regarding time spent on research activities, Japanese and Taiwanese academics spend more hours both when classes are in session and not in session. Japanese spend 46.3 hours on research per week; Taiwanese spend 41.2 hours; while Vietnamese academics spend only 34.1 hours.

Concerning preferences for "teaching or research", academics clearly leaning toward teaching (Table 8). This situation is rooted in differentiation of functions given to higher education institutions in Vietnam. Teaching and research are separated in Vietnamese academic institutions. The primary function of higher learning institution is teaching; research function is engaged to research institutions traditionally organized separately from colleges and universities. However, as demonstrated in a Venn diagram (Light, 1974), "an academic profession is that subset of a scholarly profession with academic appointments at institutions of higher education. As a body, it exercises the first two powers of profession and to a large degree regulates the quality of professional work" (p.11). Research and teaching graduate students are considered as two important functions of academics at a university.

Table 8. Teaching and research preferences

	Frequency	Valid Percent
Primarily in teaching	187	23.8
In both, but leaning towards teaching	390	49.6
In both, but leaning towards research	183	23.3
Primarily in research	26	3.3
Total	786	100

Table 9. Disciplines of training, academic unit and current teaching

No	Disciplines	Highest degree	Academic unit	Current teaching
1	Humanities	16.8	10.7	14.0
2	Social sciences	30.7	28.5	28.9
3	Natural sciences	15.3	13.9	14.7
4	Engineering	1.0	1.1	1.2
5	Agriculture	4.5	4.6	4.1
6	Health/Medicine sciences	2.2	2.5	2.1
7	Fine arts	0.3	0.2	0.1
8	Teaching and education science	20.4	28.9	25.6
9	Others	8.8	9.6	9.3
10	Total	100.0	100.0	100.0

Since reorganization in 1987, Vietnamese higher education institutions have aimed at strengthening the research function by organizing research centers or research institutes within universities and attract researchers working at research institutes outside the university to teach postgraduate courses.

There is good correspondence between disciplines, academic units and current teaching of the academics (Table 9). Academics have a tendency of selecting academic units and current teaching in accordance with their discipline. The relation between disciplines and academic units is high with r = 0.70, while the relation between discipline and current teaching is even higher with r = 0.747. Many academics with highest degrees in humanities and social sciences work for other academic units and teach subjects other than humanities and social sciences, while many academics from other disciplines work for education units and teach educational subjects.

There were 231 respondents with doctoral degree who provided characteristics of their doctoral training (Table 10). Most of them wrote a dissertation (85.3%), chose their own research topic (80.1%), received intensive faculty guidance (76.6%), and took a prescribed set of courses (66.7%). To less extent, the doctoral training is also characterized by providing instructional skills (36.3%), being involved in research projects (40.2%) and serving an institutional or departmental committee (33.7%).

Although the quality of higher education in Vietnam is considered below international standards, academics are optimistic about the graduate education they received; 84.7 percent of respondents evaluated the training for academics as a teacher good and excellent; 75.2 percent evaluated the training for academics as a researcher good and excellent.

Table 10. Characteristics of doctoral training (n=231)

No	Characteristics	Frequency	Percent
1	Taking a prescribed set of courses	154	66.7
2	Writing a thesis or dissertation	197	85.3
3	Receiving intensive faculty guidance	177	76.6
4	Choosing own research topic	185	80.1
5	Receiving a scholarship or fellowship	95	41.1
6	Receiving an employment contract	70	30.3
7	Receiving training in instructional skills	84	36.3
8	Being involved in research projects	93	40.2
9	Serving an institutional or departmental committee	78	33.7

Vietnam is a nation which has low mobility of human resources. Working people stay at one institution longer compared to working people in other nations. Higher education professors in Vietnam move more frequently compared to researchers. The average time of changing jobs among 413 lecturers is 2.82, while this number among 66 researchers is only 1.85.

Vietnamese higher education institutions basically employ academics and other staff using a tenure system. Employees are given a secured job for life and all are paid more or less the same, regardless of their qualification and contributions. This equalized system has resulted in low working motivation and an abundance of less qualified academics in the system. Most respondents (95.7%) are full-time employees for higher education institutions. 66.4 percent academics have no additional work, the rest has additional work for another research institute or higher education institution (20%), business organization (5.7%), non-profit organization (3.4%) or as self-employed (9.9%).

Academics receive the major part of income from their institutions (98.26 million VND per year, about 5,000 USD). Only 148 academics (of 725) said that they have additional income from all other concurrent employers (48.84 million VND). 84 academics have additional income from self-employment with 51.52 million VND. Among 725 academics, who responded this question, 77 persons (10.6%) have major income less than VND 30 millions; 77 percent have income less than VND 100 millions.

There are interesting data on reasons why academics leave or remain in higher education institutions (Table 11). Income and resources for research are considered by the respondents as major reasons to leave with 49.6 percent and 39.1 percent respectively, while major reasons to stay are the academic cooperation among colleagues (47.7%), academic reputation of institution/department (43.2%), region in which this institution is located (42.9%), family reason (40.8%), and resource for research (38.6%). It is clear that income of academic profession is less attractive than many other professions. Young academics usually leave universities for other jobs that help them improve their family financial situation and social status. The major reason to make academics to stay is the cooperation among colleagues. As Parsons and Platt state, a collegial mode of relationship among faculty is the dominant form (Light, 1974, tr.9). It means that the collegial environment or creative work in the university environment attracts many academics who value human relations and creative nature of teaching and research work at the university.

Table 11. Reasons to leave or stay

No.	Reasons	To leave (%)	To stay (%)
1	Income	49.6	18.2
2	Resource for research	39.1	38.6
3	Academic reputation of institution/department	30.2	43.2
4	Academic cooperation among colleagues	27.2	47.7
5	Region in which this institution is located	26.9	42.9
6	Teaching load	23.3	33.6
7	Administrative load	19.9	29.4
8	Teaching language	17.4	33.0
9	Family reason	28.4	40.8
10	Other	25.7	30.7

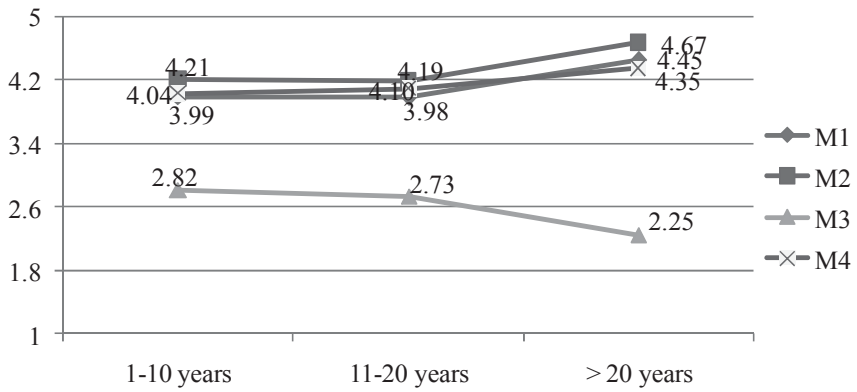

Figure 1. Changes of teaching motivation in the academics

A motivational study of Vietnamese professors undertaken by Luot (2012) as an additional evidence to confirm that work motivation has more significant meaning than financial encouragement. According to Luot, teaching activities are stimulated by a system of motivation including self-determination (M1), development of students (M2), income (M3) and professional development (M4). Each mentioned above motivation could play a dominant or a minor role in stimulating academics to work.

Luot (2012) also found that the combination of motivations, where self-determination, development of students and professional development play dominant role and income, as a motivation, plays minor role, consists of 69.17 percent cases while the combination of motivations, where all four motivations

plays a dominant role, consists of only 16.06 percent cases. Income, as a motivation, plays less and less important role in the system of motivation of the academics when they move further on their professional carrier (Figure 1). The examination of teaching and research activities undertaken by academics may help discover major characteristics of academic profession in Vietnam.

2. Teaching

Vietnam's Higher Education Reform Agenda (HERA) claims that the system of higher education is confounded by:

- poor quality of training and poor qualification of academic staff;
- subjects being too theoretically focused and not linking with market needs;
- imbalance between supply and demand in the labor market;
- research activities in HEIs being paid minimal attention because of a strong orientation to teaching, not research;
- limited resources.

Although academics in universities have a heavy teaching workload. The persistence of the Soviet model of separating research and teaching by (a) researchers in national institutes being isolated from training activities and the real demands of national social and economic needs; and (b) universities traditionally being more teaching oriented are considered as factors that impede attempts to modernize and reform teaching and learning at universities (Harman & Bich, 2010, p.74).

The weakness of separating teaching from research has been alleviated in recent years by the attempt to establish numerous research centers or institutes within universities. Responding to the questions "how much academics think that research and teaching activities are actually emphasized" and "how much they expect these activities to be emphasized", academics have mentioned an actual imbalance between teaching and research and expected more balance between teaching and research (Table 12).

According to academics, teaching is currently more emphasized than research; therefore, they expect the university to place greater emphasis on research. The relation between actual and expected emphasis on research (with $r = 0.47$) is less strong than actual and expected teaching (with $r = 0.60$). At the same time, the relation between actual teaching and actual research (with $r = 0.710$) is less strong than expected teaching and expected research (with $r = 0.725$), despite that two these relations are strong.

There are several objectives of education in a higher education institution, but "to have students acquire knowledge and qualification necessary for a member of society" is defined by academics as the most important goal; "to have students acquire a broad range of academic interest and knowledge" and "to have students acquire knowledge and qualification necessary as a professional" are listed in the second and third places, while "to have students acquire knowledge and qualification necessary as an academic researcher" is listed in the fourth place (Table 13). Educational goals as defined by academics are not really practical; training a professional is not defined as the most important goals of the university. This explains why higher education institutions are criticized by the public not to respond well enough to the needs of society.

Most academics do not highly value the quality of currently enrolled students; only 52.5 percent respondents said that quality of the students is good and 4.5 percent said excellent (Table 14). In recent years, the student enrollments have expanded dramatically and minimum scores for entering higher education were rather low; a few non-public colleges and universities have enrolled students with scores lower than the minimum requirements.

Table 12 . Evaluation by academics on emphasis of teaching and research

	Actually emphasized (1) on scale 1-5	Expected to be emphasized (2) scale 1-5	Relations between (1) and (2)
Research	3.81	4.14	0.47**
Teaching	4.17	4.33	0.60**
Administration	3.65	3.62	0.27**
Social service	3.35	3.54	0.35**

Note: ** Correlation is significant at the 0.01 level (2-tailed)

Table 13. Objectives of education in the institution

No	Objectives of education	Mean	Percent of respondents saying "related" and "strongly related"
1	To have students acquire knowledge and qualification necessary for a member of society	4.06	73.6
2	To have students acquire a broad range of academic interest and knowledge	3.90	67.3
3	To have students acquire knowledge and qualification necessary as a professional	3.89	64.4
4	To have students acquire knowledge and qualification necessary as an academic researcher	2.97	28.6

Table 14. Quality of students and quality of educational activities

No	Quality	Mean	Percent of respondents saying "excellent" and "good"; or "improved" and "much improved"
1	The quality of the students currently enrolled	2.42	57.0
2	The quality of educational activities been improved	4.17	87.0

There is a different picture on quality improvement of the educational activities. 37 percent of respondents said that the quality of educational activities is much improved and 50 percent said that it has improved to some extent (Table 13). In recent years, teaching and learning conditions in higher education institutions in Vietnam have improved significantly. For example, the number of academics with post-graduate degrees has increased and facilities for teaching and learning have improved impressively.

As Harman and Bich (2010) have pointed out, learning materials, passive and outdated teaching methods, poor lecturer preparation and time students spend in lectures do not compare favorably with many countries in the region. There is a great challenge for academic staff to adapt their mindsets to more interactive styles of teaching and learning. Students defer to the "wisdom" of the lecturers, expect them to provide all the answers, memorize what they are told and regurgitate this information when required. Not much independent thinking is taught. This passive style of learning prevents students from performing creatively and independently in an information society where the skills of critical thinking, problem solving and learning how to learn throughout life are so crucial (pp.75-76).

Altbach (2003) has described the dependency of third world academics on the main centers of knowledge and the world scientific networks of the developed world. Vietnamese academics, who gained foreign degrees, constitute a significant part of the professoriate and are treated as power elite of the academic community. Scholars returning from abroad often wish to implant the values they absorbed during their studies to upgrade local standards, even though some time such replication is not desirable in local conditions. These academics follow the latest international academic development and seek to maintain links with colleagues in the country where they studied, import scientific equipment as well as ideas. Activities organized at the university with international involvement are dependent very much on academics returning from overseas studies.

The level of international involvement reflects the level of internationalization of a higher education institution. According to Ellingboe (1998), internationalization is a process of integration of international perspective into the system of higher education. This perspective is future – oriented, multi – dimensional, inter – disciplinary, leadership – oriented and attractive to stakeholders. This perspective has an impact on internal dynamics to respond and adapt to the external diversified, globally oriented and changing environment. Ellingboe (1998) has identified 5 factors having impacts on internationalization of a higher education institution: leadership; participation of international forces in the institution activities; the preparation of the curriculum appropriate to the international standards; the availability of international academics and students in the university life; and availability of many units in designing programs such as accommodation units, centers for conference planning, professional centers, cultural centers, linguistic centers, student centers *etc*. (p.205).

Among 280 academics responding to the question regarding teaching abroad and using other languages; 10.7 percent of them said that they teach a course abroad and 90.7 percent said that they teach a course in a language different from the language of instruction. Vietnamese is a formal language of teaching at universities; other language could be used for teaching in a special course or at an institution with permission of the appropriate authority. It is clear that only small proportion of academics (about 32%), who has involved in teaching a language other than Vietnamese.

Activities with participation of foreign partners are not organized intensively at Vietnamese universities. Only 25.6 percent of academics said that foreign academics teach frequently in their universities and 50.7 percent said occasionally. The same situation is found in the assessment of participation of academics in international conferences, enrollments of international students and studying abroad by Vietnamese students (Table 15).

Table 15. Activities with foreign partners

No	Activities	% said "frequently"	% said "occasionally"	Total
1	Foreign academics have taught courses	25.6	50.7	76.3
2	International conferences and seminars have been held	22.8	54.6	77.4
3	Foreign students have been enrolled	32.8	36.5	69.3
4	Students have studied abroad	36.8	40.0	76.8

3. Research and application

There are three different kinds of public institutions involved in research activities in Vietnam. The most important are the national research institutes that administratively report to the Office of the Prime Minister and are supervised by the Vietnam Academy of Natural Sciences and Technology (VAST) and Vietnam Academy of Social Sciences (VASS). Secondly, there are about 180 R&D units (laboratories and institutes) within various national ministries or under control of other government agencies. The third group of institutions includes the public universities that undertake research within faculties, departments and their own research institutes. Among these, the two national universities and two largest polytechnic universities have the most developed research activities (Bezanson, 2000).

The government has made clear in its public statements and in HERA that research capacity must be developed in universities, particularly the 14 key universities that were identified in 2004. In recent years, the emphasis given to different kinds of institutions has changed to some extent. For example, funding for basic research in national institutes has been reduced, forcing them to become increasingly involved in applied research and technology services, with funding being based on contracts with ministries, government agencies and sometimes firms. Universities, on the other hand, have been encouraged to expand their basic research and also to seek contracts from ministries and the private sector (Bezanson, 2000; Nguyen, 2000).

Regarding research, academics characterized the basic/theoretical and applied/practical-oriented emphasis in their research. On Table 16, the average point indicated for applied/practical-oriented research and basic/theoretical oriented research is 2.23 and 2.45 respectively, while the average point indicated for the socially-oriented/intended research for betterment of society and the commercially-oriented/intended research for technology transfer is 3.18 and 3.72 respectively, where on the scale, 1 means “very much emphasized” and 5 means “not emphasized at all”. In practice, university professors are being funded for basic research from the government budget, while they need to seek funding from other sources such as foundations and contracts with business enterprises for socially-oriented or commercially/intended research for technology transfer.

Research is weak with university professors having little time available due to high teaching loads and access to very limited funding. Most research is still conducted in specialized research institutes, which are not yet linked closely with teaching, even where they are part of a university. The weakness is a

legacy of the concept that universities were seen more as teaching institutions that are narrowly focused on professional training and certification, to the neglect of their other roles (Nghi, 2010, p.56).

In spite of impressive economic development over the past decade, only a small proportion of Vietnam's R&D is conducted in enterprises. On the other hand, it is clear that there is a small but growing demand for technology and training services that universities and research institutes find difficult to meet. In many traditional sectors, such as agriculture and forestry, research institutes and universities play an important role in bringing technical solutions to producers (Harman & Ngoc, 2010).

At the individual level, academics intensively participate in writing research papers, and in preparing and conducting experiments and inquiries. To a lesser extent, academics participate in supervising a research team or graduate research, purchasing or selecting equipment and being involved in the process of technology transfer (Table 17).

Table 16. Relations of basic/applied/commercially-oriented research

No	Items	Mean (1 very much – 5 not at all)	Valid percent of much + very much
1	Basic / theoretical	2.45	53.3
2	Applied / practical-oriented	2.23	69.1
3	Commercially-oriented / intended for techno. transfer	3.72	21.5
4	Socially-oriented / intended	3.18	32.4

Table 17. Academics participation in research activities

No	Activities academics participate	Valid percent of "yes"
1	Preparing experiments, inquiries etc.	50.5
2	Conducting experiments, inquiries etc.	56.1
3	Supervising a research team or graduate research	26.2
4	Writing academic papers	75.6
5	Involved in the process of technology transfer	18.3
6	Writing proposals or research grants	45.0
7	Managing research contracts and budgets	17.4
8	Purchasing or selecting equipment and research supplies	31.0

Table 18. Research output for higher education in Vietnam in 2005

Ownership	Type of management	Number of published articles	Percentage in international journal	Average publications per academics
Public	Total	17,088	0.03	0.45
	National	146	0	0.36
	Regional	292	0.09	0.09
	Other	15,941	0.02	0.80
	Local	30	16	0.03
	Colleges	726	28	0.07
Semi-public		72	0	0.07
Non-public		38	0	0.01
Total		1717,198	0.03	0.39

Source: The World Bank (2008, pp.37-38) (data are drawn from the MOET 2005).

Table 19. Output of research and professional activities

	Items	No. publications per academic in three years
1	Scholarly books authored, co-authored	2.99
2	Scholarly books edited, co-edited	0.59
3	Articles published in an academic book or journal	1.70
4	Research report/monograph written for a funded project	0.52
5	Paper presented at a scholarly conference	1.25
6	Professional article written for a newspaper or magazine	0.73
7	Patent secured on a process or invention	0.02
8	Computer program written for public use	0.04
9	Artistic work performed or exhibited	0.02
10	Video or film produced	0.09
11	Others	0.02

Due to the low proportion of doctorates in Vietnamese universities and the rank structure of the academic profession, most academics in Vietnam are not actively involved in research measured by the number of articles and publications produced. Table 18 provides data on research output in 2005 for public, semi-public and non-public institutions. Public institutions have the best record with over 17,000 publications, but only 0.03 percent of these were in international journals. The average publication per academic was low (0.45 publications per academic).

The output of research and professional activities taken from our survey (Table 19) is more positive compared to the statistical data from the Ministry of Education and Training. The average number of articles published per academic in academic books or journals is 1.70 compared to 0.45 in the Ministry of Education and Training (MOET) Survey data.

A case study (Hien, 2010) revealed that "a vast gulf still separates Vietnamese universities from their peer institutions in the region" (p.2). This study also found that within the South East Asian countries, the level of research intensity within a country correlates strongly with per-capita GDP and even more strongly with Human Development index (p.3). Our survey results indicate that the indicator of research and professional activities of Vietnamese universities is low. For example, patent secured on a process or invention and paper presented at a scholarly conference is 0.02 and 1.25 per academic in three years respectively may be low, but 2.99 scholarly books authored or co-authored per academic in three years seems high. The high scholarly book index may be resulted in the recent MOET policy on encouraging academics to write reference books for students.

Publication of research results in international journals is considered an important indicator of research quality of institutions and countries. In our survey, 19.9 percent of respondents stated that they have publications in a language different from the language of instruction and only 2.3 percent respondents confirmed that they have publications in a foreign country (Table 20). Harman and Ngoc (2010, p.98) argue that low research productivity seems to stem from a number of factors, particularly lack of adequate time for research, lack of appropriate working conditions and the absence of financial incentives to engage in research.

Table 20. Outcomes published in foreign countries

	Items	Percentage of academics having publications
1	Published in a language different from the language of instruction at current institutions	19.1
2	Co-authored with colleagues located in the country of current employment	27.4
3	Co-authored with colleagues located in foreign countries	7.9
4	Published in a foreign country	2.3
5	On-line or electronically published	17.1
6	Peer-reviewed	27.6

Conducting research, academics need to work individually and at the same time work in a team. 45 percent of academics confirmed that they work individually in any research projects. Majority of academics (84.7%) has collaboration in research with persons inside and outside their institutions. 65.2 percent academics collaborate with persons at other institutions in Vietnam and only 28.3 percent said they have collaborative works with international colleagues (Table 21). International cooperation now has place in teaching, research and undertaking development projects. When the country is open to the outside world, professional people have accepted a new way of doing things. Professional teams are formed on the base of skills and cultural values to undertake research and development projects.

Data on Table 22 show that one fourth of respondents have confirmed their membership in a scientific society in the country and only 5.8 percent said that they are a member of an international scientific association. In terms of conference participation, less than half of academics who responded to the questionnaire noted that they attended scientific conference in Vietnam and about one fourth said that they participated in a conference organized outside Vietnam in the last three years. This means that there are a significant number of academics who have no chance to share scientific and professional information, to make contact with colleagues or to form a network of professionals.

Table 21. Collaboration in research

	Alternatives	Percentage of academics saying "yes"
1	Working individually in any research projects	45.0
2	Having collaboration in any of research projects	84.7
3	Having collaboration with persons at other institutions in the country	65.2
4	Having collaboration with international colleagues	28.3

Table 22. Membership and participation in professional organizations

No	Items	Percentage of academics has confirmed
1	Member of a scientific society	26.9
2	Member of an international scientific society	5.8
3	Attending scientific conferences in the country	46.0
4	Attending scientific conferences outside Vietnam	27.3

Regarding the research budget, only 214 respondents mentioned the budget of their research project. 60 percent participated in a research project funded up to 100 million VND (around USD 5,000) and about 10 percent of respondents said that they participated in a research project being funded from 1 billion VND (USD 50,000) to 28 billion VND (USD 1.4 million). There are several levels of funding for research projects in Vietnam. At the institutional project level, academics usually get sufficient funding to undertake the first stage of basic research, to define research problems or to review literature for further study. At the ministerial project level, academics are required to conduct independent research in their discipline or to solve a particular practical problem that is significant to their profession or has practical application. At the national project level, academics have an opportunity to undertake a significant project for their discipline or for practical application, and they receive relatively high funding to undertake such a research project. Most academics conduct research at the first and second levels of funding, which are lacking in attractiveness to most academics.

Conclusion

Vietnamese academics perform their tasks at a time of transition from complete centralized control to a more decentralized system. HERA goals for improving curriculum, innovating teaching methodology, integrating research into teaching and intensively developing academic staff are a positive sign. Due to the low proportion of academics possessing doctoral degree, there is an urgent need to invest in their research careers and to decrease teaching loads to make time available for research engagement. As statistical data and survey results have shown, the level of international involvement in Vietnamese higher education is very low; the question here is how to create conditions for academics to involve in the overseas training, academic exchange, and participation in international conferences and at the same time invite foreign academics to teach and to conduct research with Vietnamese colleagues. Although most academics are satisfied with their career, their income is still relatively low compared to their counterparts in other countries, and there is also a serious need for substantial investment in academic staff development. Academic staff development includes not only introducing an intensive postgraduate education but also developing appropriate induction programs for new academics, introducing performance reviews and establishing appropriate incentive and reward mechanisms. The academic profession is a

newly-emerging career in Vietnam, but it plays an important role in the process of industrialization and modernization of the country. There is a very challenging task for the higher education system to create appropriate conditions for academics to undertake balanced activities and to develop their careers.

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Conclusion

What have We Learned from the International Survey on the Academy in Selected Asian Countries?

Futao Huang*

As discussed in each chapter, this proceeding covers a wide range of topics relating to several important aspects of the academy in selected Asian countries and the United States as well as worldwide. Though notable differences exist in individual presentations in terms of their research interest and methodology of research, etc., the two keynote speeches and other presentations based on national surveys with a common questionnaire have provided preliminary findings about characteristics of the academic profession in participating countries by describing their teaching and research activities as well as major patterns of governance/management in higher education. In some countries, e.g. Cambodia and Malaysia as well as Vietnam, simple arguments on the factors affecting changes in academics' teaching and research activities, and governance/ management styles in individual countries were also made.

With respect to outlines of all the presentations which are included in the proceeding, differing from the presentations made by the speakers who mainly employed the data from national surveys in Cambodia, Japan, Malaysia, Taiwan and Vietnam, the two keynote speeches which were offered by Professor Arimoto from Japan and Professor Cummings from the Unites States present much broader portraits of the changing academic profession. For example, Professor Arimoto's speech examined changes in the role of higher education and especially their influences on the academic profession from historical and comparative perspectives. He argued for the necessity of the teaching/research nexus and the importance of integration of teaching, research and learning

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

though he admits it is extremely difficult for any university to do it nowadays. In addition, his speech also touched on conflicts between the ideals and the reality of the academy through an analysis of the Carnegie and CAP surveys and the characteristics of the academy in the 21st century. Professor Cummings reviewed issues about what has happened since the late 1970s when Martin Trow presented his hypothesis about the massification of higher education, and what implications for the academy and for youth, particularly for Asian academics in their teaching, research, governance and management arrangements are. By identifying the academy from nineteen participating countries teams into three different types: those from the elite stage, the transitional stage and the mass stage, seemingly, his comparative study suggests that no essential differences could be found in key academic activities which were undertaken by the academy from the different types. Though Professor Yan from China made an oral presentation of major features of Chinese academics in their teaching and research activities and their views on governance patterns by utilizing some data from the Chinese survey, it is interesting to note that Professor Yan's paper made an intensive and detailed introduction of the emergence of and changes in Chinese academics from an historical standpoint. His account of the characteristics of China's academy should surely help us have a better understanding of the academy in the contemporary China.

In contrast, the rest of the presentations about Cambodia, Malaysia, Japan, Taiwan and Vietnam are concerned with preliminary findings of their surveys from various perspectives. To illustrate, Associate professor Yuto Kitamura and Mr. Naoki Umemiya from Japan talked about current conditions and challenges for faculty members at higher education institutions in Cambodia. Their presentation elaborated many issues concerning academics' careers and professional situation, their general work situation, academics' activities concerning teaching, research, internationalization, and their overall satisfaction with their current jobs. Prof. Pham Thanh Nghi from Vietnam presented an analysis of major findings about academics' teaching, research and their participation in governance/management activities. Their presentations touched on a wide range of issues and provided overall portraits of academics characteristics in the two countries at the system, institutional and individual levels. In contrast, Prof. Tsukasa Daizen and Lecturer Naomi Kimoto from Japan facilitated an emphasis on educational and research activities of the academic profession in Japan. Their report highlighted the key teaching and research activities undertaken by Japan's academics. Prof. Aida Suraya Md. Yunus from Malaysia also dealt with teaching and research concentration of

academics in the three types of Malaysian public universities : research, comprehensive and technical institutions. Dr. Robin Jung-Cheng Chen outlined the development and challenges of the academic profession in Taiwan. His presentation identified the main issues facing the academic profession there with a sharpened focus on teaching and research activities. Differing from other country reports, Associate Professors Akiyoshi Yonezawa and Masataka Murasawa from Japan examined issues in the governance and management arrangements in Japan; they considered the relation between participation in governance by individual faculty and their academic productivity.

Arguably, at this stage, it appears that there is not a typical Asian pattern. Except for the similarities which could be found in the high percentages with full-time employment and who are male in all the countries, there was little evidence of a distinctive Asian pattern of the academy. However, the data suggests there exist two clear types of academies across the participating countries. One type is represented by Japan and Taiwan and the other type includes the other four countries: Cambodia, China, Malaysia, and Vietnam. Furthermore, all the country reports indicate that governance and management arrangements are basically shared across all the participating countries. Though institutional managers have primary influence on various important decisions, especially on selecting key administrators and deciding budgeting priorities in Japan, Taiwan, and Vietnam, compared with Japan and Taiwan, seemingly, individual academics from Vietnam have the least influence on important decisions, including academics matters. Additionally, the academics' behavior and perceptions vary significantly by type of institution, by discipline, by age, by gender, by academic degree, and so forth.

With respect to implications for research, they can be summarized as follows:

- Does there exist a distinctive Asian pattern of the academic profession?
- Should an Asian pattern or identity of the academic profession be sought for or created? Or should the Asian academic profession become more internationalized and go beyond national or regional boundary?

Regarding implications for policy, they include the following aspects:

- How to address issues related to the increasingly aging population of the academic profession in Japan and Taiwan and to produce a younger generation?
- How to make the academic profession in Japan and Taiwan better prepared

for the increasingly diversified student body in the process of the transformation of higher education from mass higher education to near universal access to higher education?

- How to produce an academic profession of high quality to meet rapidly expanding higher education systems in countries like Cambodia and Vietnam?
- How to improve young academics' life and working conditions, especially those from the private sector, and make the academic profession a more attractive profession in emerging countries?

Though a much clearer picture of the academy in the selected Asian countries has been provided, numerous issues still need to be addressed. For example, how to improve the quality of national data sets and to make them more compatible? How to make an in-depth and comparative study of the academic profession across the participating countries? And how to link our academic outcomes to political and legal decisions that might lead to a positive and healthy impact on the academic profession in each country?

Appendices

Appendix 1: Conference Program*

The Changing Academic Profession in Asia
Teaching, Research, Governance and Management

Date: January 24-25, 2013
Venue: Hiroshima Garden Palace

Thursday, January 24

8:30 - Registration

***** Opening Ceremony *****

9:00 - 9:15 **Opening Remarks**
Eiko Tsuchiya, Executive and Vice President (Research), Hiroshima University, Japan
Masashi Fujimura, Director & Professor, Research Institute for Higher Education, Hiroshima University, Japan
Akira Arimoto, President, Kurashiki Sakuyo University / Director, Research Institute for Higher Education, Kurashiki Sakuyo University, Japan

9:15 - 9:25 **Orientation**
Futao Huang, Professor, Research Institute for Higher Education, Hiroshima University, Japan

***** Keynote Speeches *****

Chairs:
Reiko Yamada, Professor, Department of Education and Culture, Faculty of Social Studies, Doshisha University, Japan
Fumihiro Maruyama, Professor, Research Institute for Higher Education, Hiroshima University, Japan

9:25 - 10:05 **Keynote Speech 1**
"Academic Profession in the International and Comparative Perspectives: Trends of Asia and world"
Akira Arimoto, President, Kurashiki Sakuyo University / Director, Research Institute for Higher Education, Kurashiki Sakuyo University, Japan

10:05 - 10:45 **Keynote Speech 2**
"Massification of Higher Education: Implications for the academy"
William K. Cummings, Professor of International Education, The Elliott School of International Affairs, The George Washington University, USA

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* As of January 2013

10:45 - 11:00 Coffee Break

***** Session 1: Governance & Management *****

11:00 - 11:30 **Presentation 1: China**
"Similarities and Differences of Perception of Academic Profession Across Three Types of Institutions"
Fengqiao Yan, Professor, Graduate School of Education, Peking University, China
Aimin Wang, Deputy Director, Beijing City University, China

11:30 - 12:00 **Presentation 2: Japan**
"Academic Profession and University Governance in Japan"
Akiyoshi Yonezawa, Associate Professor, Graduate School of International Development, Nagoya University, Japan
Masataka Murasawa, Associate Professor, Research Institute for Higher Education, Hiroshima University, Japan

12:00 - 12:30 Discussion

12:30 - 13:30 Lunch

***** Session 2: Teaching & Research Activities *****

Chairs:
Keiichiro Yoshinaga, Associate Professor, Center for Higher Educational Development, Tokyo University of Agriculture and Technology, Japan
Jung Cheol Shin, Associate Professor, Department of Education, Seoul National University, South Korea

13:30 - 14:00 **Presentation 3: Cambodia**
"Current Conditions and Challenges for Faculty Members at Higher Education Institutions in Cambodia"
Yuto Kitamura, Associate Professor, Faculty of Human Sciences, Sophia University, Japan
Naoki Umemiya, Deputy Director, Technical & Higher Education Division, Human Development Department, Japan International Cooperation Agency (JICA), Japan

14:00 - 14:30 **Presentation 4: Indonesia**
"Trends in Teaching and Research among Academic Profession in Indonesia"
Nizam, Secretary for the Board of Higher Education, Ministry of National Education, Indonesia / Professor of Civil Engineering, Universitas Gadjah Mada, Indonesia

14:30 - 15:00 Discussion

15:00 - 15:15 Coffee Break

15:15 - 15:45 **Presentation 5: Japan**
"Education and Research Activities of the Academic Profession in Japan: by using the APA survey in 2011"
Tsukasa Daizen, Professor, Research Institute for Higher Education, Hiroshima University, Japan
Naomi Kimoto, Assistant Professor, Comprehensive Education Center, Prefectural University of Hiroshima, Japan

15:45 - 16:15 **Presentation 6: Malaysia**
"Teaching and Research Concentration of Academics in Malaysian Public Universities"
Aida Suraya Md. YUNUS, Professor, Universiti Putra Malaysia, Serdang, Selangor, Malaysia / Director of Centre for Academic Development, National Higher Education Research Institute, Penang, Malaysia

16:15 - 17:00 Discussion

18:30 - 20:30 Reception at Hotel Granvia Hiroshima

Friday, January 25

8:30 - Registration

***** Session 2: Teaching & Research Activities *****

Chairs:
Khieu Vicheanon, Deputy Secretary General, Cambodian Accreditation Committee, Cambodia
Kazunori Shima, Associate Professor, Research Institute for Higher Education, Hiroshima University, Japan

9:00 - 9:30 **Presentation 7: Taiwan**
"Development and Challenge of Academic Profession in Taiwan"
Robin J. CHEN, Director, Office of R&D and International Affairs, National Academy for Educational Research, Taiwan

9:30 - 10:00 **Presentation 8: Vietnam**
"Academic Profession in Vietnam: Prelimenary findings from 2012 survey"
Pham, Thanh Nghi, Senior Researcher, Vietnam Association of Psychological and Educational Sciences, Vietnam

10:00 - 10:30 Discussion

10:30 - 10:50 **Concluding Remarks**
Futao Huang, Professor, Research Institute for Higher Education, Hiroshima University, Japan

10:50 - 11:00 **Closing Speech**
Akira Arimoto, President, Kurashiki Sakuyo University / Director, Research Institute for Higher Education, Kurashiki Sakuyo University, Japan

Appendix 2: List of Participants*

OVERSEAS PARTICIPANTS

Invited Experts

Cambodia

Khieu Vicheanon	Deputy Secretary General, Cambodian Accreditation Committee, Cambodia

China

Fengqiao Yan	Professor, Graduate School of Education, Peking University
Aimin Wang	Deputy Director, Beijing City University

Indonesia

Nizam	Secretary for the Board of Higher Education, Ministry of National Education, Indonesia / Professor of Civil Engineering, Universitas Gadjah Mada

Malaysia

Aida Suraya Md. Yunus	Professor, Universiti Putra Malaysia, Serdang, Selangor, Malaysia / Director of Centre for Academic Development, National Higher Education Research Institute, Penang, Malaysia

South Korea

Jung Cheol Shin	Associate Professor, Department of Education, Seoul National University

Taiwan

Robin J. Chen	Director, Office of R&D and International Affairs, National Academy for Educational Research, Taiwan

Vietnam

Pham, Thanh Nghi	Senior Researcher, Vietnam Association of Psychological and Educational Sciences, Vietnam

USA

William K. Cummings	Professor of International Education and International Affairs, The Elliott School of International Affairs, The George Washington University

and another 1 overseas participant

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* As of January, 2013

JAPANESE PARTICIPANTS

Vice-President

Eiko Tsuchiya	Executive and Vice President (Research), Hiroshima University, Japan

Invited Experts

Akira Arimoto	President, Kurashiki Sakuyo University / Director, Research Institute for Higher Education, Kurashiki Sakuyo University, Japan
Yuto Kitamura	Associate Professor, Faculty of Human Sciences, Sophia University, Japan
Naoki Umemiya	Deputy Director, Technical & Higher Education Division, Human Development Department, Japan International Cooperation Agency (JICA), Japan
Naomi Kimoto	Assistant Professor, Comprehensive Education Center, Prefectural University of Hiroshima, Japan
Akiyoshi Yonezawa	Associate Professor, Graduate School of International Development, Nagoya University, Japan
Reiko Yamada	Professor, Department of Education and Culture, Faculty of Social Studies, Doshisha University, Japan
Keiichiro Yoshinaga	Associate Professor, Center for Higher Educational Development, Tokyo University of Agriculture and Technology, Japan

Research Institute for Higher Education（RIHE）

Masashi Fujimura	Director and Professor
Tsukasa Daizen	Professor
Futao Huang	Professor
Fumihiro Maruyama	Professor
Yumiko Hada	Professor
Satoshi P. Watanabe	Professor
Jun Oba	Associate Professor
Masataka Murasawa	Associate Professor
Kazunori Shima	Associate Professor

and another 34 Japanese participants

Appendix 3: Questionnaire

Version 6. 27 September 2011

A. Career and Professional Situation

A1 For each of your degrees, please indicate the year of completion and the country in which you obtained it.

Degree	Year	Earned in country of current employment	no, please specify country
First degree (Bachelor degree)	☐☐☐☐	Yes ☐ No ☐	
Second degree (Master degree)	☐☐☐☐	Yes ☐ No ☐	
Doctoral degree	☐☐☐☐	Yes ☐ No ☐	
Other degree	☐☐☐☐	Yes ☐ No ☐	

A2 Please, identify your academic discipline. (Check one in each column)

Check one in each column

Highest Degree	Current Acad. Unit	Current Teaching	
1 ☐	1 ☐	1 ☐	Humanities
2 ☐	2 ☐	2 ☐	Social sciences
3 ☐	3 ☐	3 ☐	Natural sciences
4 ☐	4 ☐	4 ☐	Engineering
5 ☐	5 ☐	5 ☐	Agriculture
6 ☐	6 ☐	6 ☐	Health/Medical sciences
7 ☐	7 ☐	7 ☐	Fine arts
8 ☐	8 ☐	8 ☐	Teacher training and Education science
9 ☐	9 ☐	9 ☐	Other: (please specify) ..... (please specify)
12 ☐	12 ☐	12 ☐	Not applicable

A3 How would you characterize the graduate education or training you received in your doctoral degree? (If you do not hold a doctoral degree: Please go to question A4)

Check all that apply

1 ☐ You were required to take a prescribed set of courses

2 ☐ You were required to write a thesis or dissertation

3 ☐ You received intensive faculty guidance for your research

4 ☐ You chose your own research topic

5 ☐ You received a scholarship or fellowship

6 ☐ You received an employment contract during your studies (for teaching or research)

7 ☐ You received training in instructional skills or learned about teaching methods

8 ☐ You were involved in research projects with faculty or senior researchers

9 ☐ You served on an institutional or departmental (unit) committee

A4 How would you assess the quality of the graduate education or training you received for your role as teacher or researcher?

	Excellent	Good	Fair	Poor	Not applicable	
1	☐	☐	☐	☐	☐	The training for your role as teacher
2	☐	☐	☐	☐	☐	The training for your role as researcher

A5 Since you took a bachelor degree, how long have you been employed as a full time position in the following? [If "0," so indicate]

1 ☐☐ Higher education institutions
2 ☐☐ Research institutes
3 ☐☐ (Other) Government or public sector institutions
4 ☐☐ (Other) Industry or private sector institutions
5 ☐☐ Self-employed

A6 By how many institutions have you been employed since attaining your bachelor degree?

1 ☐☐ Higher education institutions
2 ☐☐ Research institutes
3 ☐☐ Other institutions (including self-employment)

A7 Please indicate the following

1 ☐☐☐☐ Year of your first full-time appointment (beyond research and teaching assistant) in the higher education institutions
2 ☐☐☐☐ Year of your first full-time appointment (beyond research and teaching assistant) in the Research institutes
3 ☐☐☐☐ Year of your first appointment to your current institution (beyond research and teaching assistant)
4 ☐☐☐☐ Year of your appointment/promotion to to your current rank at your current institution
5 ☐☐ For how many years have you interrupted your service at your current institution for family reasons , personal leave or full-time study? [If "0," so indicate]

A8 How is your employment situation in the current academic year at your higher education institution/research institute? [Check one only]

1 ☐ Full-time employed
2 ☐ Part-time employed, 3 ☐☐ % of full-time
4 ☐ Other (please specify) .....

A9 Do you work for any additional employers or do additional remunerated works in the current academic year?

1 ☐ No
2 ☐ In addition to your current employer, you also work at another research institute or higher education institution
3 ☐ In addition to your current employer, you also work at a business organization outside of academe
4 ☐ In addition to your current employer, you also work at a non-profit organization or government entity outside of academe
5 ☐ In addition to your current employer, you are also self-employed.
6 ☐ Other: .....
(please specify)

A10 How would you describe your current institution?

Check one only

1 ☐ The institution which offer a doctorate degree by all specialized fields

2 ☐ The institution which offer a doctorate degree by more than 50 % of specialized fields

3 ☐ The institution which offer a master degree by all specialized fields

4 ☐ The institution which offer a master degree by more than 50 % of specialized fields

5 ☐ The institution which offer only a baccalaureate degree

6 ☐ Other:.....

(please specify)

A11 What is your academic rank (If you work in a research institutions with ranks differing from those at higher education institutions, please choose the rank most closely corresponding to yours)?

1 ☐ Professor

2 ☐ Associate professor

3 ☐ Lecturer

4 ☐ Assistant professor, Research associate

5 ☐ Research assistant, Assistant

6 ☐ Other(Please specify) .....

A12 What is the duration of your current employment contract at your higher education institution or research institute? [Check only one]

Check only one

1 ☐ Permanently employed

2 ☐ Fixed-term employment *without* permanent/continuous employment prospects

3 ☐ Other: .....

(please specify)

A13 What is your overall annual gross income (including supplements) from the following sources?

1 ☐☐☐☐ Your current higher education institution/research institute [NATCAT: Currency and number of boxes]

2 ☐☐☐☐ All other concurrent employers[NATCAT: Currency and number of boxes

3 ☐☐☐☐ Other income (e.g. self-employment) [NATCAT: Currency and number of boxes]

A14 During the current academic year, have you done any of the following?

Check all that apply

1 ☐ Served as a member of national/international scientific committees/boards/bodies

2 ☐ Served a peer reviewer (e.g. for journals, research sponsors, institutional evaluations)

3 ☐ Served as an editor of journals/book series

4 ☐ Served as an elected officer or leader in professional/academic associations/organizations

5 ☐ Served as an elected officer or leader of unions

6 ☐ Been substantially involved in local, national or international politics

7 ☐ Been a member of a community organizations or participated in community-based projects

8 ☐ Worked with local, national or international social service agencies

9 ☐ Other:.....

(please specify)

A15 In thinking about leaving or staying at this institution, how important are the following considerations?

	Strong Reason to Leave 1	2	Neutral 3	4	Strong Reason to Stay 5	Not Applicable 6	
1	☐	☐	☐	☐	☐	☐	Income
2	☐	☐	☐	☐	☐	☐	Resources for research
3	☐	☐	☐	☐	☐	☐	Academic reputation of institution/department
4	☐	☐	☐	☐	☐	☐	Academic cooperation among colleagues here
5	☐	☐	☐	☐	☐	☐	Region in which this institution is located
6	☐	☐	☐	☐	☐	☐	Teaching load
7	☐	☐	☐	☐	☐	☐	Administrative load
8	☐	☐	☐	☐	☐	☐	Teaching language
9	☐	☐	☐	☐	☐	☐	Family reason
10	☐	☐	☐	☐	☐	☐	Other:

B. General Work Situation and Activities

B1 Considering all your professional work, how many hours do you spend in a typical week on each of the following activities? [If you are not teaching during the current academic year, please reply to the second column only.]

	Hours per week when classes are in session	Hours per week when classes are not in session	
1	☐☐	6 ☐☐	Teaching (preparation of instructional materials and lesson plans, classroom instruction, advising students, reading and evaluating student work)
2	☐☐	7 ☐☐	Research (reading literature, writing, conducting experiments, fieldwork)
3	☐☐	8 ☐☐	Service (services to clients and/or patients, unpaid consulting, public or voluntary services)
4	☐☐	9 ☐☐	Administration (committees, department meetings, paperwork)
5	☐☐	10 ☐☐	Other academic activities (professional activities not clearly attributable to any of the categories above)

B2 Regarding your own preferences, do your interests lie *primarily* in teaching or in research?

Check only one

1 ☐ Primarily in teaching
2 ☐ In both, but leaning towards teaching
3 ☐ In both, but leaning towards research
4 ☐ Primarily in research

B3 Please indicate the degree to which each of the following affiliations is important to you.

	Very important 1	2	3	4	Not at all important 5	
1	☐	☐	☐	☐	☐	My academic discipline/field
2	☐	☐	☐	☐	☐	My department (at this institution)
3	☐	☐	☐	☐	☐	My institution

B4 At this institution, how would your evaluate each of the following facilities, resources, or personnel you need to support your work?

	Excellent 1	2	3	4	Poor 5	
1	☐	☐	☐	☐	☐	Classrooms
2	☐	☐	☐	☐	☐	Technology for teaching
3	☐	☐	☐	☐	☐	Laboratories
4	☐	☐	☐	☐	☐	Research equipment and instruments
5	☐	☐	☐	☐	☐	Computer facilities
6	☐	☐	☐	☐	☐	Library facilities and services
7	☐	☐	☐	☐	☐	Your office space
8	☐	☐	☐	☐	☐	Secretarial support
9	☐	☐	☐	☐	☐	Telecommunications (Internet, networks, and telephones)
10	☐	☐	☐	☐	☐	Teaching support staff
11	☐	☐	☐	☐	☐	Research support staff
12	☐	☐	☐	☐	☐	Research funding
13	☐	☐	☐	☐	☐	Retirement arrangements
14	☐	☐	☐	☐	☐	Paid sabbatical leaves
15	☐	☐	☐	☐	☐	Travel funds for academics
16	☐	☐	☐	☐	☐	Other fringe benefits (e.g., medical insurance, life insurance, housing, education)
17	☐	☐	☐	☐	☐	The intellectual atmosphere
18	☐	☐	☐	☐	☐	The sense of community

B5 Please indicate your views on the following

	Strongly Agree 1	2	3	4	Strongly Disagree 5	
1	☐	☐	☐	☐	☐	Scholarship is best defined as the preparation and presentation of findings on original research
2	☐	☐	☐	☐	☐	Scholarship includes the application of academic knowledge in real-life settings
3	☐	☐	☐	☐	☐	Scholarship includes the preparation of reports that synthesize the major trends and findings of my field
4	☐	☐	☐	☐	☐	This is a poor time for any young person to begin an academic career in my field
5	☐	☐	☐	☐	☐	If I had it to do over again, I would not become an academic
6	☐	☐	☐	☐	☐	My job is a source of considerable personal strain
7	☐	☐	☐	☐	☐	Teaching and research are hardly compatible with each other
8	☐	☐	☐	☐	☐	Faculty in my discipline have a professional obligation to apply their knowledge to problems in society

B6 How would you rate your overall satisfaction with your current job?

Very high 1	2	3	4	Very low 5
☐	☐	☐	☐	☐

B7 Since you started your career, have the overall working conditions in higher education improved or declined?

Very much improved 1	2	3	4	Very much deteriorated 5
☐	☐	☐	☐	☐

B8 We would like to learn more about your attitudes toward international connections in higher education. Please indicate how you feel about the following issues. (please check only one column on each decision)

	Agree		Neutral		Disagree	Not Applicable	
1	☐	☐	☐	☐	☐	☐	Connections with scholars in other countries are very important to my professional work.
2	☐	☐	☐	☐	☐	☐	In order to keep up with developments in my discipline, a scholar must read books and journals published abroad.
3	☐	☐	☐	☐	☐	☐	Universities and colleges should do more to promote student and faculty mobility from one country to another.
4	☐	☐	☐	☐	☐	☐	The curriculum at this institution should be more international in focus.

C. Teaching (Refer to the current academic year or the previous academic year (if you do not teach in this academic year). If you do not/did not teach in this or the previous academic year go to section D)

C1 How much does each of the following goals have to do with the objectives of education in your institution? Please answer on a scale of 1 (not related) – 5 (strongly related) (please check only one column on each decision)

	Not Related 1	2	3	4	Strogly Related 5	
1	☐	☐	☐	☐	☐	1. To have students acquire knowledge and qualifications necessary for a member of society
2	☐	☐	☐	☐	☐	2. To have students acquire a broad range of academic interests and knowledge
3	☐	☐	☐	☐	☐	3. To have students acquire knowledge and qualifications necessary as a professional
4	☐	☐	☐	☐	☐	4. To have students acquire knowledge and qualifications necessary as an academic researcher

C2 How would you rate the quality of the students currently enrolled in your department?

Excellent	Good	Fair	Poor	Don't know
1	2	3	4	5
☐	☐	☐	☐	☐

C3 Please indicate the proportion of your teaching responsibilities during the current academic year that are devoted to instruction at each level below [If "0," so indicate]

	Percent of instruction time	
1	☐	☐ Undergraduate programs
2	☐	☐ Master programs
3	☐	☐ Doctoral programs
4	☐	☐ Continuing professional education programs
5	☐	☐ Others

C4 During the current (or previous) academic year, have you been involved in any of the following teaching activities?

Check all that apply

1 ☐ Classroom instruction/lecturing
2 ☐ Individualized instruction
3 ☐ Learning in projects/project groups
4 ☐ Practice instruction/ laboratory work
5 ☐ ICT-based learning/computer-assisted learning
6 ☐ Distance education
7 ☐ Development of course material
8 ☐ Curriculum/program development
9 ☐ Face-to-face interaction with students outside of class
10 ☐ Electronic communications (e-mail) with students

C5 Does your institution set quantitative load targets or regulatory expectations for individual faculty for the following:

Check all that apply

1 ☐ Number of hours in the classroom
2 ☐ Number of students in your classes
3 ☐ Number of graduate students for supervision
4 ☐ Percentage of students passing exams
5 ☐ Time for student consultation

C6 Please indicate your views on the following:

	Strongly agree 1	2	3	4	Strongly disagree 5	
1	☐	☐	☐	☐	☐	You spend more time than you would like teaching basic skills due to student deficiencies
2	☐	☐	☐	☐	☐	At your institution there are adequate training courses for enhancing teaching quality
3	☐	☐	☐	☐	☐	Practically oriented knowledge and skills are emphasized in your teaching
4	☐	☐	☐	☐	☐	In your courses you emphasize international perspectives or content
5	☐	☐	☐	☐	☐	Your research activities reinforce your teaching
6	☐	☐	☐	☐	☐	Your service activities reinforce your teaching

C7 During the current (or previous) academic year, are you teaching any courses.

Check all that apply

1 ☐ Abroad
2 ☐ in a language different from the language of instruction at your current institution

C8 During the past three years at this institution, how frequently have the following occurred? (please check only one column on each decision)

	Frequently	Occasipnal y	Rarely	Never	Dom't Know	
1	☐	☐	☐	☐	☐	Foreign academics have taught courses
2	☐	☐	☐	☐	☐	International conferences and seminars have been held
3	☐	☐	☐	☐	☐	Foreign students have been enrolled
4	☐	☐	☐	☐	☐	Our students have studied abroad

C9 Over the past five years, to what extent has the quality of educational activities been improved in your University?

Much Improved	Improved To Some Extent	Unchanged	Deteriorated Somewhat	Significantly Deteriorated
5	4	3	2	1
☐	☐	☐	☐	☐

C10 How much do you EXPECT that each of the following activities will be emphasized when faculty are promoted in your institution? Please answer on a scale of 1 (Not emphasized) to 5 (Strongly emphasized)

	Not Emphasized				Stronglyi Emphasized	
	1	2	3	4	5	
1	☐	☐	☐	☐	☐	Research
2	☐	☐	☐	☐	☐	Teaching
3	☐	☐	☐	☐	☐	Administration and Management
4	☐	☐	☐	☐	☐	Social Services
5	☐	☐	☐	☐	☐	Other ( )

C11 How much do you think that each of these activities is ACTUALLY emphasized when faculty are promoted in your institution? Please answer on a scale of 1 (Not emphasized) to 5 (Strongly emphasized)

	Not Emphasized				Stronglyi Emphasized	
	1	2	3	4	5	
1	☐	☐	☐	☐	☐	Research
2	☐	☐	☐	☐	☐	Teaching
3	☐	☐	☐	☐	☐	Administration and Management
4	☐	☐	☐	☐	☐	Social Services
5	☐	☐	☐	☐	☐	Other ( )

D. Research (Refer to the current academic year or the previous academic year (if you are not active in research in this academic year). If you are not/were not active in research in this or the previous academic year go to section E.)

D1 How would you characterize your research efforts undertaken during this (or the previous) academic year?

	Yes	No	
1	☐	☐	Are you working individually/without collaboration on any of your research projects?
2	☐	☐	Do you have collaborators in any of your research projects?
3	☐	☐	Do you collaborate with persons at other institutions in your country?
4	☐	☐	Do you collaborate with international colleagues?

D2 How would you characterize the emphasis of your primary research this (or the previous) academic year?

	Very much 1	2	3	4	Not at all 5	
1	☐	☐	☐	☐	☐	Basic/theoretical
2	☐	☐	☐	☐	☐	Applied/practically-oriented
3	☐	☐	☐	☐	☐	Commercially-oriented/intended for technology transfer
4	☐	☐	☐	☐	☐	Socially-oriented/intended for the betterment of society

D3 Have you been involved in any of the following research activities during this 9or the previous) academic year?

Check all that apply

1 ☐ Preparing experiments, inquiries etc.
2 ☐ Conducting experiments, inquiries etc.
3 ☐ Supervising a research team or graduate research assistants
4 ☐ Writing academic papers that contain research results or findings
5 ☐ Involved in the process of technology transfer
6 ☐ Answering calls for proposals or writing research grants
7 ☐ Managing research contracts and budgets
8 ☐ Purchasing or selecting equipment and research supplies

D4 How many of the following scholarly contributions have you completed in the past *three* years?

(Number completed in the past three years)

1	☐☐	Scholarly books you authored or co-authored
2	☐☐	Scholarly books you edited or co-edited
3	☐☐	Articles published in an academic book or journal
4	☐☐	Research report/monograph written for a funded project
5	☐☐	Paper presented at a scholarly conference
6	☐☐	Professional article written for a newspaper or magazine
7	☐☐	Patent secured on a process or invention
8	☐☐	Computer program written for public use
9	☐☐	Artistic work performed or exhibited
10	☐☐	Video or film produced
11	☐☐	Others (please specify):

(please specify)

D5 Have you experienced the following in the last three years ?

	Yes	No	
1	☐	☐	published in a language different from the language of instruction at your current institution
2	☐	☐	co-authored with colleagues located in the country of your current employment
3	☐	☐	co-authored with colleagues located in other (foreign)countries
4	☐	☐	published in a foreign country
5	☐	☐	On-line or electronically published
6	☐	☐	Peer-reviewed

D6 If you received any grants or special funding support for research in the last three years as an individual or as part of an academic group, please estimate the total amount received during the three year period. (if you did not receive any grants for search in the last three years, please go to question D8.)

$ ☐☐☐☐☐☐

D7 In the current (or previous) academic year, which percentage of the funding for your research came from

1 ☐☐ % Your own institution
2 ☐☐ % National government or organizations
3 ☐☐ % Foreign government or International organizations
4 ☐☐ % Nongovernmental organizations or Business firms
5 ☐☐ % Others:.....
(please specify)

D8 Please answer the following questions about jour membership and participation in professional organizations.

1 ☐☐☐ To how many (name of country) disciplinary/scientific societies do you belong?
2 ☐☐☐ To how many international disciplinary/scientific societies do you belong?
3 ☐☐☐ During the past three years, how many discipl inary/scientific conferences did you attend in (name of country)?
4 ☐☐☐ During the past three years, how many disciplinary/sci ent ific conferences did you attend outside (name of country)?

E. Management

E1 At your institution, which actor has the primary influence on each of the following decisions (please check only one column on each decision)?

	Government or external stakeholders	Institutional managers	Academic Unit managers	Faculty committees/ boards	Individual faculty	Students	
1	☐	☐	☐	☐	☐	☐	Selecting key administrators
2	☐	☐	☐	☐	☐	☐	Choosing new faculty
3	☐	☐	☐	☐	☐	☐	Making faculty promotion and tenure decisions
4	☐	☐	☐	☐	☐	☐	Determining budget priorities
5	☐	☐	☐	☐	☐	☐	Determining the overall teaching load of faculty
6	☐	☐	☐	☐	☐	☐	Setting admission standards for undergraduate students
7	☐	☐	☐	☐	☐	☐	Approving new academic programs
8	☐	☐	☐	☐	☐	☐	Evaluating teaching
9	☐	☐	☐	☐	☐	☐	Setting internal research priorities
10	☐	☐	☐	☐	☐	☐	Evaluating research
11	☐	☐	☐	☐	☐	☐	Establishing international linkages

E2 How influential are *you*, personally, in helping to shape key academic policies?

	Very influential 1	Somewhat influential 2	A little influential 3	Not at all influential 4	Not applicable 5	
1	☐	☐	☐	☐	☐	At the level of the department or similar unit
2	☐	☐	☐	☐	☐	At the level of the faculty, school or similar unit
3	☐	☐	☐	☐	☐	At the institutional level

E3 By whom is your teaching, research, and service regularly evaluated?

Check all that apply

	Your teaching	Your research	Your service	
1	☐	☐	☐	Your peers in your department or unit
2	☐	☐	☐	The head of your department or unit
3	☐	☐	☐	Members of other departments or units at this institution
4	☐	☐	☐	Senior administrative staff at this institution
5	☐	☐	☐	Your students
6	☐	☐	☐	External reviewers
7	☐	☐	☐	Yourself (formal self-assessment)
8	☐	☐	☐	No one at or outside my institution

E4 At my institution there is…

	Strongly agree 1	2	3	4	Strongly disagree 5	
1	☐	☐	☐	☐	☐	… A strong emphasis on the institution's mission
2	☐	☐	☐	☐	☐	… Good communication between management and academics
3	☐	☐	☐	☐	☐	… A top-down management style
4	☐	☐	☐	☐	☐	… Collegiality in decision-making processes
5	☐	☐	☐	☐	☐	… A strong performance orientation
6	☐	☐	☐	☐	☐	… A cumbersome administrative process
7	☐	☐	☐	☐	☐	… A supportive attitude of administrative staff towards teaching activities
8	☐	☐	☐	☐	☐	… A supportive attitude of administrative staff towards research activities
9	☐	☐	☐	☐	☐	…professional development for administrative/management duties for individual faculty

E5 Please indicate your views on the following issues.

	Strongly agree 1	2	3	4	Strongly disagree 5	
1	☐	☐	☐	☐	☐	Top-level administrators are providing competent leadership
2	☐	☐	☐	☐	☐	I am kept informed about what is going on at this institution
3	☐	☐	☐	☐	☐	Lack of faculty involvement is a real problem
4	☐	☐	☐	☐	☐	Students should have a stronger voice in determining policy that affects them
5	☐	☐	☐	☐	☐	The administration supports academic freedom

E6 To what extent does your institution emphasize the following practices?

	Very much 1	2	3	4	Not at all 5	
1	☐	☐	☐	☐	☐	Performance based allocation of resources to academic units
2	☐	☐	☐	☐	☐	Evaluation based allocation of resources to academic units
3	☐	☐	☐	☐	☐	Funding of departments substantially based on numbers of students
4	☐	☐	☐	☐	☐	Funding of departments substantially based on numbers of graduates
5	☐	☐	☐	☐	☐	Considering the research quality when making personnel decisions
6	☐	☐	☐	☐	☐	Considering the teaching quality when making personnel decisions
7	☐	☐	☐	☐	☐	Considering the practical relevance/applicability of the work of colleagues when making personnel decisions
8	☐	☐	☐	☐	☐	Recruiting faculty who have work experience outside of academia
9	☐	☐	☐	☐	☐	Encouraging academics to adopt service activities/entrepreneurial activities outside the institution
10	☐	☐	☐	☐	☐	Encouraging individuals, businesses, foundations etc. to contribute more to higher education

F. Personal Background

F1 What is your gender?

1 ☐ Male

2 ☐ Female

F2 Year of birth

1 9 ☐☐ Year

F3 What is your familial status

1 ☐ Married/partner

2 ☐ Single

3 ☐ Other:.....

(please specify)

F4 If married/partner, is she/he employed?

1 ☐ Yes, full-time

2 ☐ Yes, part-time

3 ☐ No

F5 Is your spouse/partner also an academic?

1 ☐ Yes

2 ☐ No

F6 Do you have children living with you?

1 ☐ Yes, 1 child

2 ☐ Yes, 2 children

3 ☐ Yes, 3 or more children

4 ☐ No

F7 Did you ever interrupt your employment in order to provide child or elder care in the home?

1 ☐ Yes

2 ☐ No

3 ☐☐ If yes, for how many years?

F8 What was/is your nationality/citizenship and your country of residence

	Citizenship	Country of Residence
At birth		
At the time of your first degree		
Currently		
	(please specify)	(please specify)

F9 What is first language/mother tongue?

_____

(please specify)

F10 Which language do you primarily employ in teaching?

1 ☐ First language/mother tongue

2 ☐ Other:.....

(please specify)

F11 Which language do you primarily employ in research?

1 ☐ First language/mother tongue

2 ☐ Other:.....

(please specify)

F12 How many years since the award of your first degree have you spent…

1 ☐☐ …in the country of your first degree

2 ☐☐ …in the country in which you are currently employed, if different from the country of your first degree

3 ☐☐ …in other countries (outside the country of your first degree and current employment)

Following the initial analysis of the data provided by the questionnaire, we are lanning to examine some issues in more detail through interviews. If you could be available for an interview, please let us have details of how we may contact you..

Your Institution : _____

Your Name : _____

E-mail Address : _____

Telephone Number : _____

We would like to thank you for your kind cooperation in answering the questionnaire.

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